



Ross County Solar

Exhibit V

Visual Resource Assessment and Mitigation Plan

Case No. 20-1380-EL-BGN

Visual Resource Assessment

Ross County Solar Project

Buckskin and Paint townships, Ross County, Ohio



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1.0 INTRODUCTION

1.1 Purpose of the Investigation

Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C. (EDR) was retained by Ross County Solar, LLC (Applicant) to prepare a Visual Resource Assessment (VRA) for the proposed up to 120 MW Ross County Solar Project (Project), which is proposed to be located in Buckskin and Paint townships in Ross County, Ohio (see Figure 1.1).

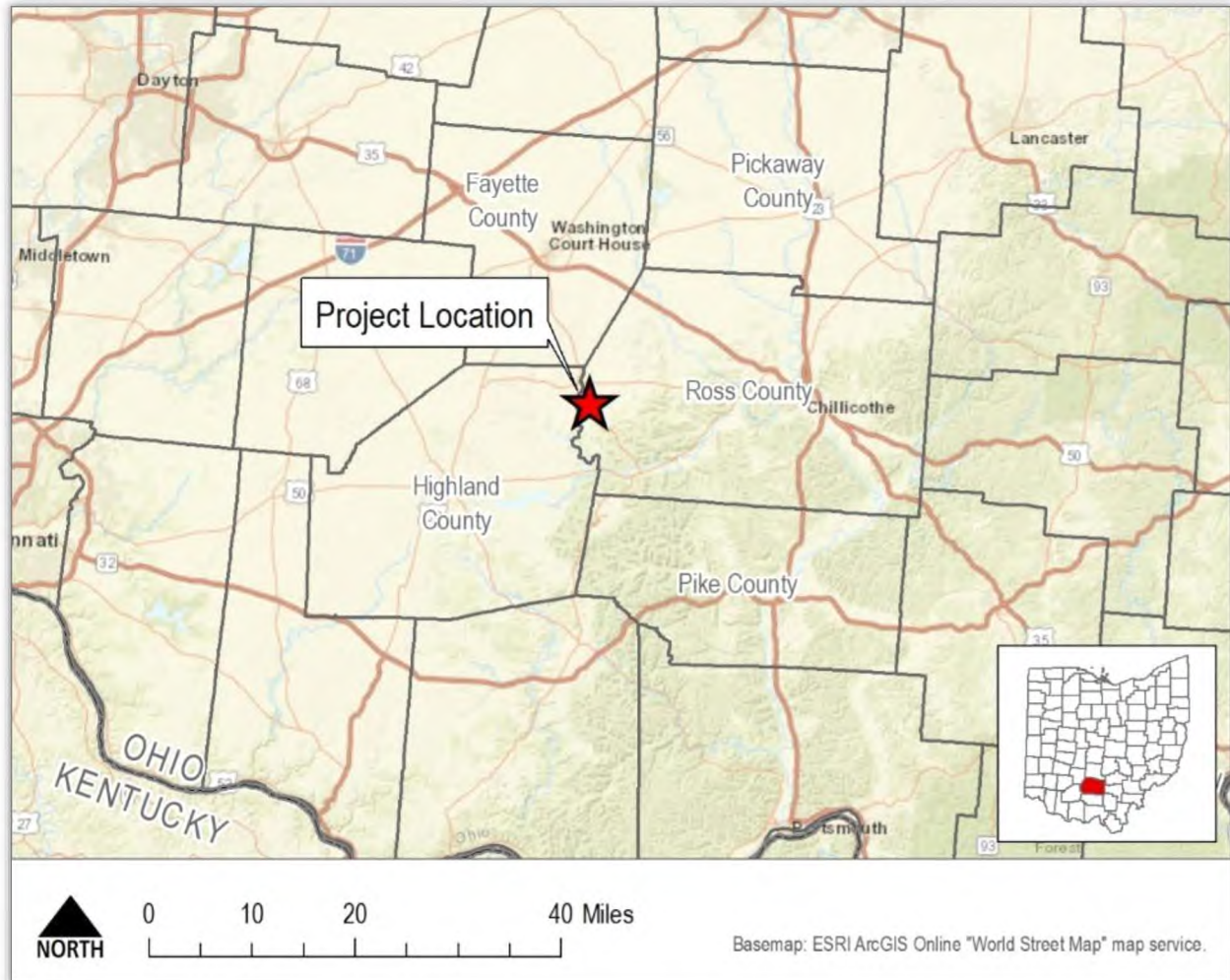


Figure 1.1. Regional Context Map

This report has been prepared to satisfy those portions of the requirements of Ohio Administrative Code (OAC) 4906-4-08(D) that relate to the identification of Visually Sensitive Resources (VSRs), project visibility, and potential visual impacts resulting from construction of the proposed solar-powered electric generation facility.

Recognizing these requirements, this VRA will:

- + Describe the visible components of the proposed Project.
- + Define the visual character of the visual study area (VSA).
- + Inventory and evaluate the existing VSRs within the VSA.
- + Evaluate the potential visibility of the Project within the VSA.
- + Create photographic simulations of the proposed Project from select locations.
- + Assess the visual impacts associated with the proposal.
- + Describe proposed mitigation measures considered to reduce/minimize potential visual impacts.

This VRA was prepared by a team of experienced visual resource assessment experts in accordance with the policies, procedures, and guidelines contained in established visual resource assessment methodologies.

1.2 Project Location and Description

The Project is proposed to be located on 27 parcels of private agricultural land in Buckskin and Paint Townships in Ross County, Ohio. The parcels being considered for construction of the Project total approximately 1,433 acres (Project Area). However, it is anticipated that only approximately 661 acres will be occupied by the operational Project.

The proposed Project is a solar-powered electric generation facility with a generating capacity of up to 120 MW. The Project will use arrays of ground-mounted photovoltaic (PV) modules, commonly known as PV panels, to provide renewable energy to the Ohio bulk power transmission system to serve the needs of electric utilities and their customers. PV panels will be affixed to a metal racking system mounted on piles that will be driven or screwed into the ground in rows/arrays. Known as PV arrays, the rows generally will follow the existing topography of the Project Area with minimal grading or alteration of existing contours. PV arrays will be grouped in separate, contiguous clusters, each of which will be fenced and gated for equipment security and public safety.

The PV arrays currently proposed for the Project will include a single-axis “tracking” style racking system. Using this system, the rows will be oriented in a roughly north-south direction and equipped to rotate the panels from east to west so as to continuously face the direction of sunlight. The single axis tracker will face the PV arrays to the east at sunrise, rotate throughout the day, and end up facing west at sunset. When no sun is present the panels will return to a horizontal stow position of 0 degrees. The PV arrays will be connected to inverters which will convert the direct current (DC) generated by the solar panels to alternating current (AC), and then to a series of below ground collection lines that will deliver the electricity to a new Facility substation, which will step-up the voltage in order to allow connection to the regional electrical grid. Associated support facilities include gravel access roads and meteorological stations within the arrays. The preliminary location of proposed Project components is illustrated in Figure 1.2.

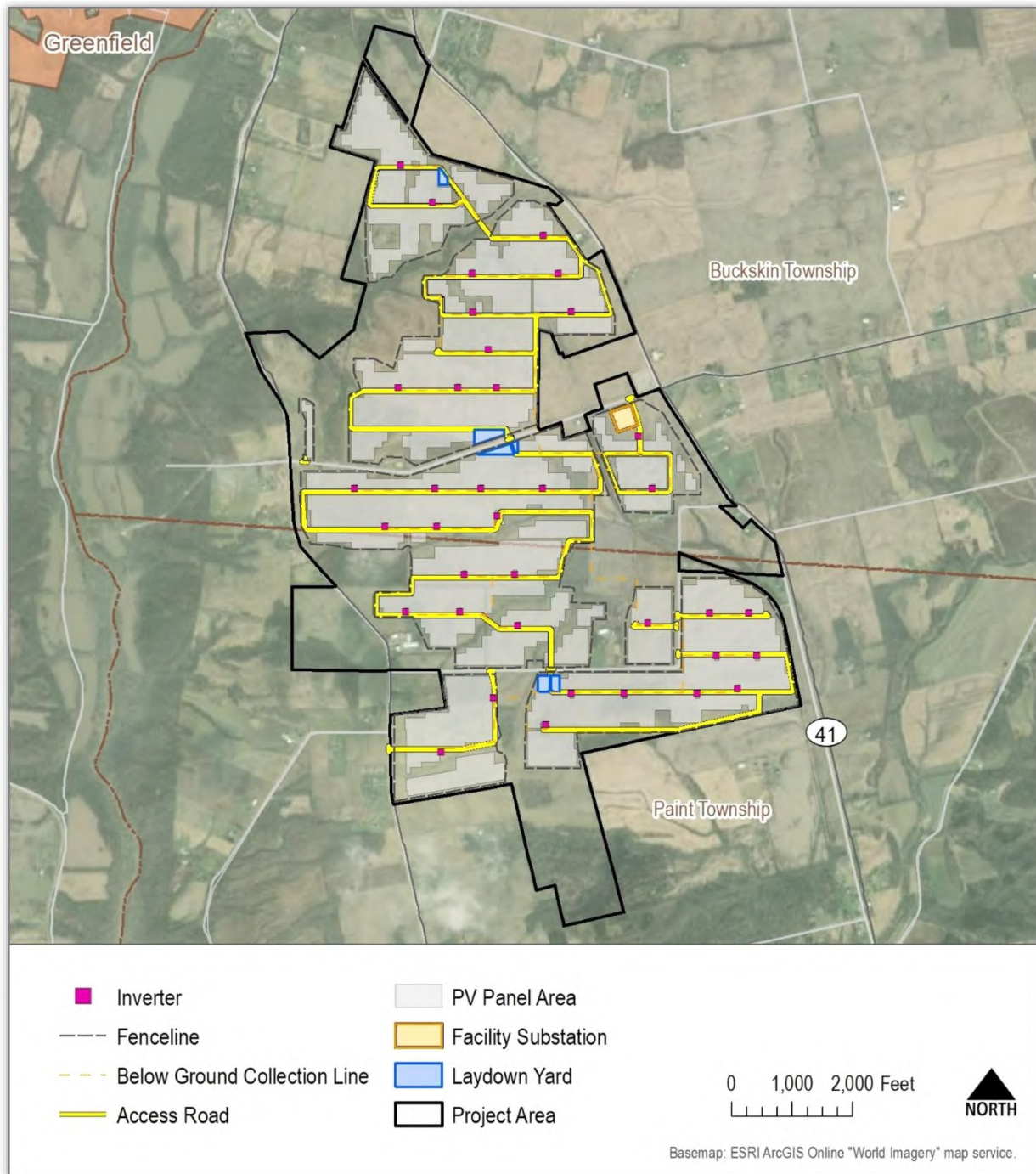


Figure 1.2. Preliminary Project Layout Map

1.2.1 Visual Study Area

OAC 4906-4-08(D) requires that visual impacts to recreational, scenic, and historic resources from a proposed generating facility be evaluated within a 10-mile radius. However, based on the low profile of the proposed equipment, and the results of the visibility analysis presented herein, it was determined that 10 miles would be an excessive VSA for this Project. To define an appropriately sized VSA, the viewshed analysis was conducted (using lidar data) to better understand the Project's area of potential effect. This viewshed analysis indicates that areas of potential Project visibility, where the greatest number of PV panels will potentially be visible, are concentrated within 0.5 mile of the Project. However, there is a concentrated area of potential visibility that extends to the northeast of the Project just beyond 1.5 miles. Additional areas of potential visibility are scattered to the southwest of the Village of Greenfield, as well as to the north of the village extending out to 4 miles. To the north and east of the Project there are scattered areas of potential visibility that extend out beyond 4 miles from the border of Fayette County with Ross County south toward the Village of South Salem. Only very small corridors of potential visibility extend to 5 miles from the Project. As such it was determined that a 5-mile radius from the Project would be a sufficient VSA for the purposes of this study. The resulting VSA encompasses a total of approximately 116.1 square miles. The location and extent of the VSA is illustrated in Figure 1.3.

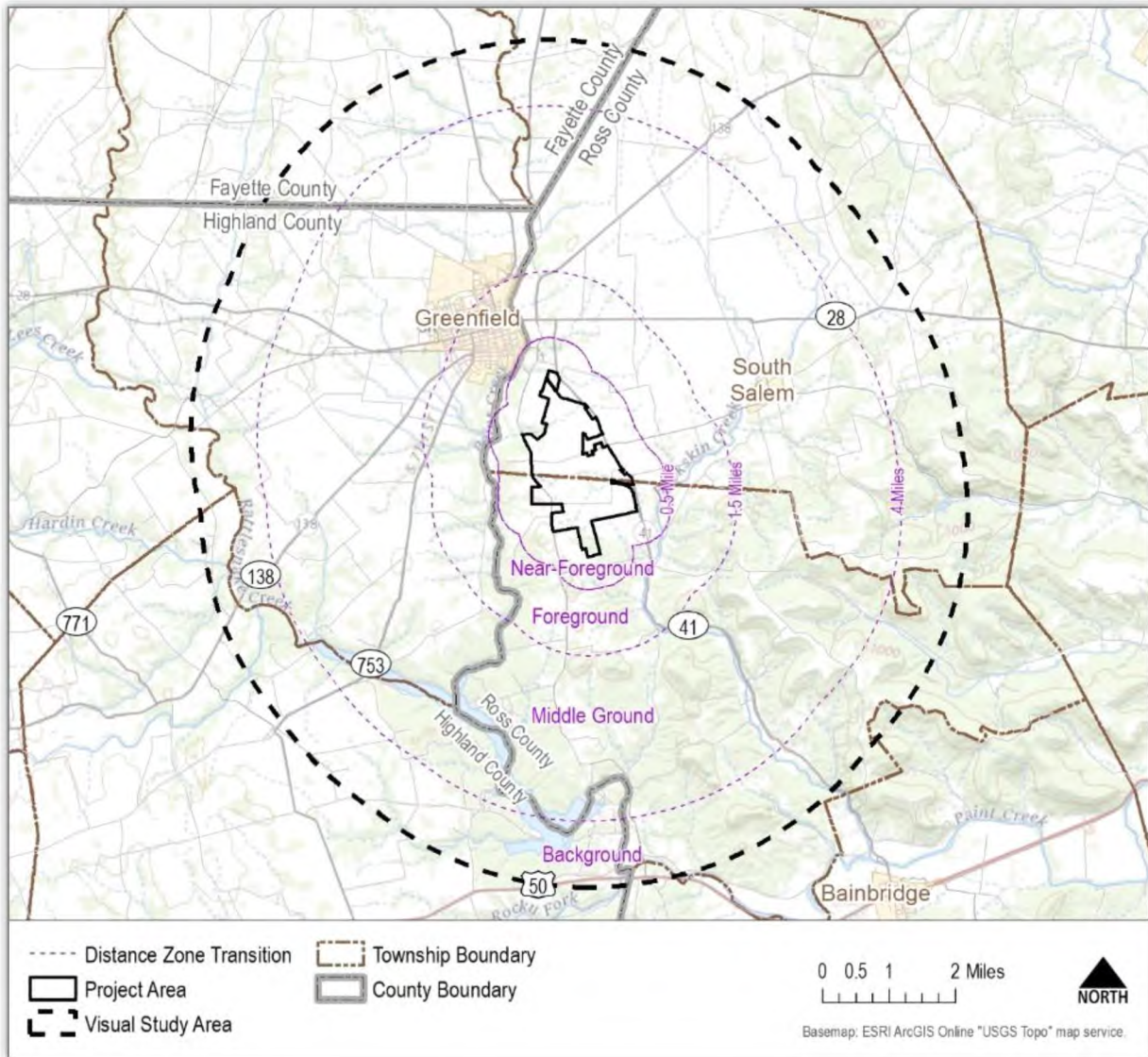


Figure 1.3. Visual Study Area

1.2.2 Landscape Character

Definition of landscape character within a given VSA provides a useful framework for the analysis of a facility's potential visual effects. Landscape types (LTs) within the VSA were categorized based on the similarity of various features, including landform, vegetation, water, and/or land use patterns, in accordance with established visual resource assessment methodologies (Smardon et al., 1988; USDA Forest Service, 1995; USDOT Federal Highway Administration, 1981; USDI Bureau of Land Management, 1980). The USGS National Land Cover Database (NLCD) was used to help define the character and location of various LTs within the VSA (see Figure 1.4). The landscape types defined within the VSA are presented in Table 1.1.

Table 1.1. Landscape Types Within the Visual Study Area

Landscape Type	Total Area of LT within the Visual Study Area (mi ²)	Percent of Total Area within Visual Study Area
Pasture and Cropland	62.7	54.0%
Forest ¹	42.6	36.6%
Developed	6.5	5.6%
Open Water/Wetland	2.0	1.8%
Grassland/Shrubland	2.3	2.0%
Total	116.1	100%

¹Includes forested wetland areas.

The Project components are proposed to be built almost entirely within the Pasture and Cropland LT, which makes up 54.0% of the VSA. Given the fact that agricultural land in this region typically offers the greatest potential for long-distance views, this landscape type is likely to have the greatest opportunities for views of the Project. The Forest LT, which makes up 36.6% of the VSA, occurs in small distinct locations throughout the northern two-thirds of the VSA. The Forest LT is also concentrated along the Paint Creek and Rattlesnake Creek corridors, around Paint Creek Lake, and in the southeastern portion of the VSA where the Till Plains of Central Ohio meet the Appalachian Plateau. Views of the Project from within the Forest LT are typically limited by the presence of dense vegetation. The Developed LT makes up 5.6% of the VSA including the villages of Greenfield and South Salem. These areas typically find outward views across landscaped yards and planted vegetation, but may be limited due to the presence of closely situated buildings, utility poles, or other visual clutter. The Open Water/Wetland LT makes up approximately 1.8% of the VSA and is primarily concentrated in the southern portion of the VSA (associated with Paint Creek Lake), where long distance views are typically limited due to the presence of tree-lined banks and adjacent areas of Forest LT. The Grassland/Shrubland LT is a small component of the VSA, occupying approximately 2.0% of the land area in the form of small scattered patches, typically interior to Forest LTs.

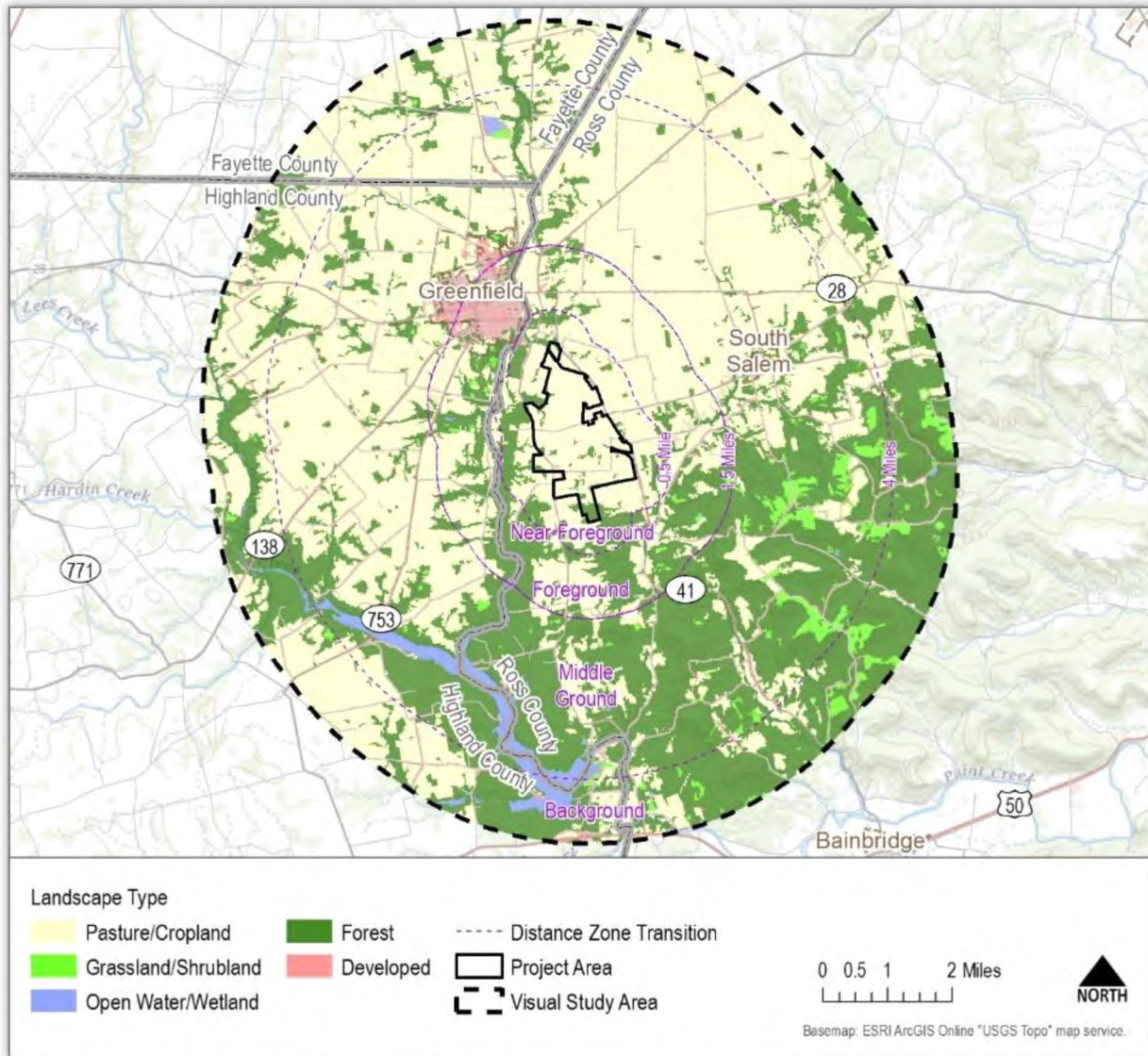


Figure 1.4. Landscape Types Within the Visual Study Area

1.2.3 Distance Zones

Distance zones are typically defined in visual studies to divide the VSA into distinct classifications based on the various levels of landscape detail that can be perceived by a viewer. Four distinct distance zones were developed for this purpose. To define these zones, EDR consulted several well-established agency protocols, including those published by the U.S. Forest Service (USFS), Bureau of Land Management (BLM), and U.S. Department of Transportation (USDOT), to determine the appropriate extent of each distance zone. It is important to note that the distance zones recommended by each of these protocols were considered in the context of this VSA. For example, the BLM recommends a combined foreground-middle ground zone extending from 0 to 5 miles.

While this may be appropriate in a western landscape with frequent, unscreened views over very long distances, it does not translate to eastern landscapes where views are often contained within 1.0 mile of the viewer. Conversely, the USFS (1995) suggests the foreground be defined as an area extending 0.5 mile from the viewer. Due to the characteristics of the specific landscape being evaluated in this VRA, EDR defined distance zones within the VSA (as measured from the proposed Project) as follows:

- + *Near-Foreground*: 0 to 0.5 mile. At this distance, a viewer is able to perceive details of an object with clarity. Surface textures, small features, and the full intensity and value of color can be seen on foreground objects.
- + *Foreground*: 0.5 to 1.5 miles. At this distance, elements in the landscape tend to retain visual prominence, but detailed textures become less distinct. Larger scale landscape elements remain as a series of recognizable and distinguishable landscape patterns, colors, and textures.
- + *Middle ground*: 1.5 to 4.0 miles. The middle ground is usually the predominant distance at which landscapes are seen. At these distances, a viewer can perceive individual structures and trees but not in great detail. This is the zone where the parts of the landscape start to join together; individual hills become a range, individual trees merge into a forest, and buildings appear as simple geometric forms. Colors will be distinguishable but subdued by a bluish cast and softer tones than those in the foreground. Contrast in texture between landscape elements will also be reduced.
- + *Background*: Over 4.0 miles. The background defines the broader regional landscape within which a view occurs. Within this distance zone, the landscape is simplified; only broad landforms are discernable, and atmospheric conditions often render the landscape an overall bluish color. Texture has generally disappeared, and color has flattened, but large patterns of vegetation are discernable. Silhouettes of one land mass set against another and/or the skyline are often the dominant visual characteristics in the background. The background contributes to scenic quality by providing a softened backdrop for foreground and middle ground features, an attractive vista, or a distant focal point.

The area of each LT falling within each distance zone in the VSA is summarized in Table 1.2. As shown in this table, the distribution of LTs within the individual distance zones is relatively uniform. The Pasture and Cropland LT makes up between 51.0% and 71.3% of each of the distance zones. Also of note, the Developed LT, where the majority of VSRs and viewers occur, largely consists of the Village of Greenfield which is primarily located in the foreground and middle ground distance zones.

Table 1.2. Distance Zones by Landscape Type

Landscape Type	Total Area (square miles) of Landscape Type and Percent of Distance Zone ¹			
	Near-Foreground (0 – 0.5 mile)	Foreground (0.5 – 1.5 miles)	Middle Ground (1.5 – 4.0 miles)	Background (>4.0 miles)
Pasture and Cropland	5.0 (71.3%)	6.9 (51.5%)	32.9 (54.3%)	18.0 (51.0%)
Forest	1.6 (23.2%)	4.9 (37.0%)	21.7 (35.9%)	14.3 (40.5%)
Developed	0.4 (5.3%)	1.4 (10.2%)	3.2 (5.2%)	1.6 (4.7%)
Open Water/Wetland	<0.1 (<0.1%)	<0.1 (0.3%)	1.4 (2.4%)	0.5 (1.5%)
Grassland/Shrubland	<0.1 (0.2%)	0.1 (0.9%)	1.3 (2.2%)	0.8 (2.3%)
Total Distance Zone Area²	7.0	13.3	60.5	35.2

¹The calculations used to generate this table were based on unrounded numbers; therefore, the rounded results may not add up precisely.

²The VSA includes approximately 116.1 square miles, or approximately 74,293 acres.

1.2.4 Visually Sensitive Resources

VSRs within the VSA were identified per the requirements of OAC 4906-4-08(D). The categories of VSRs that typically would be required for consideration in a VRA include the following:

- + **Properties of Historic Significance:** National Historic Landmarks, National or State Historic Sites, Sites listed on National or State Registers of Historic Places (NRHP, SRHP); Sites Eligible for Listing on the NRHP or SRHP; National or State Historic Sites, Ohio Historic Structures, Historic Bridges, Ohio Genealogical Society (OGS) Cemeteries, and Ohio Historic State Markers.
- + **Designated Scenic Resources:** Rivers Designated as National or State Wild, Scenic, or Recreational; Sites, Areas, Lakes, Reservoirs or Highways Designated or Eligible for Designation as Scenic; Other Designated Scenic Resources.

- + **Public Lands and Recreational Resources:** National Parks, Recreation Areas, Seashores, and/or Forests; National Natural Landmarks; National Wildlife Refuges; Heritage Areas; State Parks; State Nature Preserves or Wildlife Areas; State Forests; State Fishing/Waterway Access Sites; Other State Lands, Designated Trails; Local Parks and Recreation Areas; Publicly Accessible Conservation Lands/Easements; Rivers and Streams with Public Fishing Rights Easements; Named Lakes, Ponds, and Reservoirs.
- + **High Use Public Areas:** State, US, and Interstate Highways, Schools, Cities, and Villages.

Table 1.3 provides a cumulative list of the types of identified VSRs that occur within the VSA.

Table 1.3. Visually Sensitive Resources

Type of Visually Sensitive Resource	Number Identified within the Visual Study Area
Properties of Historic Significance	101
Designated Scenic Resources	1
Public Lands and Recreational Resources	27
High Use Public Areas	11
Total	140

The locations of mapped VSRs within the VSA are illustrated in Figure 1.5. Additional information regarding the specific VSRs included in the VSA, and potential Project visibility from these VSRs, is included in Section 2.1.3 beginning on page 21 and Appendix E.

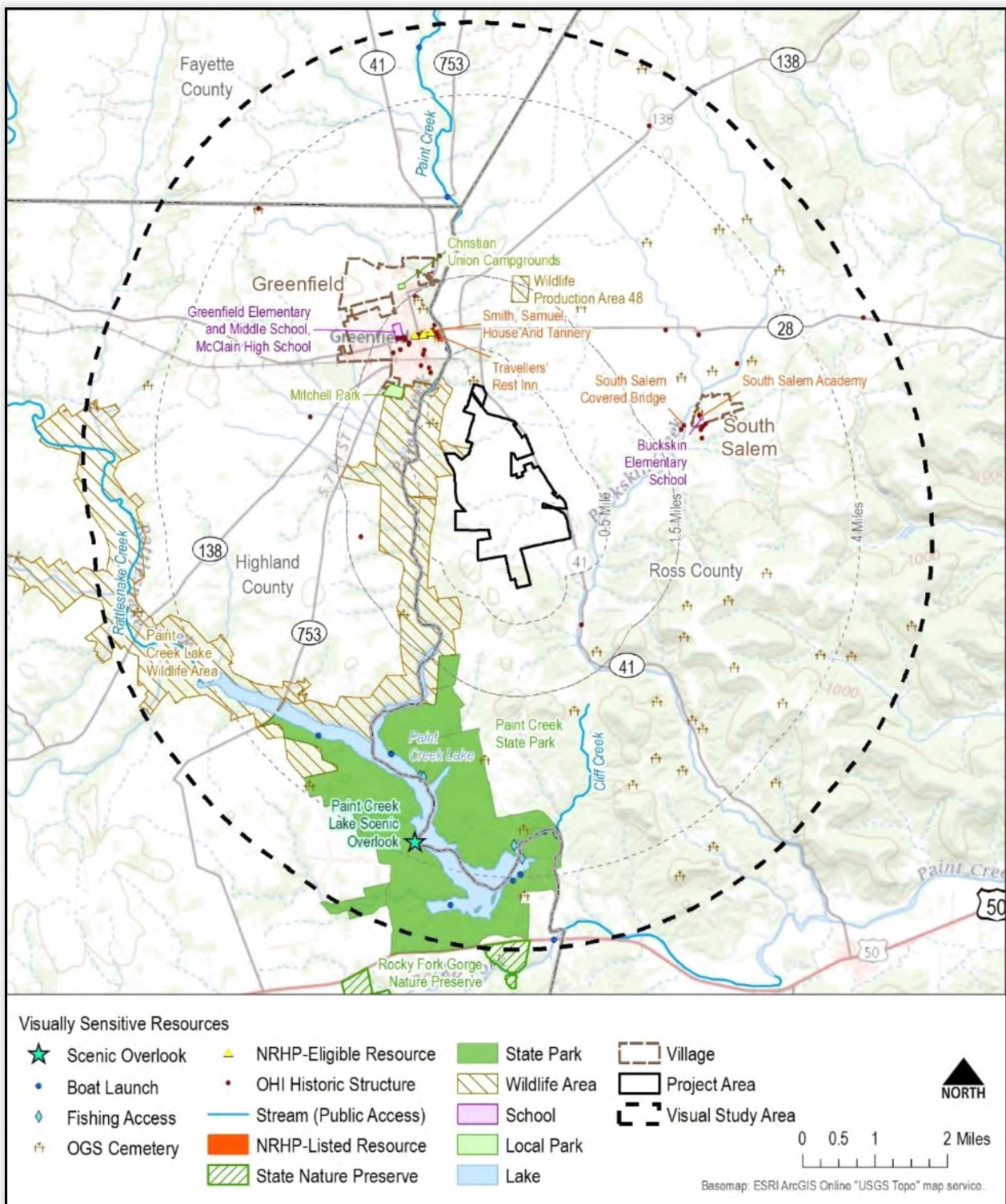


Figure 1.5. Location of Visually Sensitive Resources

2.0 VISUAL RESOURCE ASSESSMENT

The specific techniques used to assess potential Project visibility and visual effects, along with the results of those assessments, are described below.

2.1 Viewshed Analysis

2.1.1 Viewshed Methodology

PV Panel Viewshed Analysis

A lidar-based digital surface model (DSM) viewshed analysis for the proposed PV panels was conducted to estimate Project visibility considering the screening effects of topography, structures, and vegetation. A viewshed analysis based on topography alone is not provided because the results of such an analysis do not accurately represent conditions within the VSA. The DSM viewshed analysis for the proposed PV panels was prepared using: 1) a DSM derived from the Ohio Statewide Imagery Program's (OSIP) 2006 lidar data for Ross, Fayette, and Highland counties, Ohio; 2) sample points representing solar panel locations, placed 300 feet apart in a grid pattern throughout all proposed PV panel areas; 3) an assumed maximum solar panel height of 15 feet; 4) an assumed viewer height of 6 feet; and 5) Esri ArcGIS® software with the Spatial Analyst extension.

A few modifications were made to the lidar-derived DSM prior to analysis. Transmission lines and road-side utility lines that are reflected in the lidar data are mis-represented in the DSM as solid walls/screening features. In order to correct this inaccuracy, DSM elevation values within transmission line corridors and within 50 feet of road centerlines were replaced with bare earth elevation values. Additionally, all areas within the PV array fence lines were cleared of any vegetation to reflect the bare-earth elevation in these locations. This modified DSM was then used as a base layer for the viewshed analysis. Once the viewshed analysis was complete, a conditional statement was used within ArcGIS® to set solar panel visibility to zero in locations where the DSM elevation exceeded the bare earth elevation by 6 feet or more, indicating the presence of vegetation or structures that exceed viewer height. This was done for two reasons: 1) in locations where trees or structures are present in the DSM, the viewshed would reflect visibility from the vantage point of standing on the tree top or building roof, which is not the intent of this analysis, and 2) to reflect the fact that ground-level vantage points within buildings or areas of vegetation exceeding 6 feet in height generally will be screened from views of the Project.

Because it accounts for the screening provided by structures and trees, the DSM viewshed analysis is a very accurate representation of Project visibility. However, it is worth noting that because certain characteristics of the Project and the VSA that may serve to restrict visibility (e.g., color, atmospheric/weather conditions, and distance from viewer) are not taken into consideration in the viewshed analyses, being located within the DSM viewshed does not necessarily equate to actual Project visibility, nor does it indicate that adverse visual impacts will occur within these geographic locations.

Facility Substation Viewshed Analysis

A DSM viewshed analysis was also conducted for the Facility substation. Because precise locations of Facility substation interior components are not known at this time, the analysis was run based on five representative points within the proposed Facility substation footprint. These points were assigned a height of 65 feet to represent the height of the proposed lightning masts, which are the tallest Facility substation components. All other data sources and assumptions used in the Facility substation viewshed analysis are as described above for the PV panel viewshed analysis.

2.1.2 Viewshed Results

PV Panel Viewshed Analysis

Potential visibility of the proposed PV panels, as indicated by the DSM viewshed analysis, is illustrated in Figures 2.1 and 2.2, (on pages 17 and 18) and summarized in Table 2.1. As indicated by this analysis, the Project will be screened from approximately 88.7% of the VSA by intervening topography, vegetation, and structures.

Table 2.1. PV Panel Viewshed Analysis Results Summary

Analysis	VSA (square miles)	Visibility by Distance Zone ¹ (square miles of visibility and percent of distance zone)			
		Near- Foreground 0-0.5 Mile	Foreground 0.5-1.5 Mile	Middle Ground 1.5-4.0 Mile	Background 4.0-5.0 Mile
Total Area	116.1	7.0	13.3	60.5	35.2
DSM Viewshed Visibility	13.1 (11.3%)	4.0 (57.6%)	2.3 (16.9%)	5.2 (8.5%)	1.6 (4.6%)

¹The calculations used to generate this table were based on unrounded numbers; therefore, the rounded results may not add up precisely.

The majority of PV panel visibility, based on percentage of area, is concentrated within the near-foreground distance zone, with 57.6% of the area out to 0.5 mile from the Project Area indicated as

having potential views of some portion of the Project. Views from areas beyond the near-foreground and into the foreground distance zone (0.5-1.5 miles) are more well screened, with 16.9% of the foreground distance zone indicated as having the potential for views of the PV panels. The DSM viewshed analysis indicates that potential Project visibility is further reduced at distances beyond the foreground. Approximately 8.5% of the VSA may be able to view the PV panels in the middle ground (at distances between 1.5 and 4 miles) and at background distances, the viewshed analysis suggests the Project could be visible from only 4.6% of the area between 4 and 5 miles away.

Within the VSA, the topography and vegetation associated with Buckskin Creek, Paint Creek, Rattlesnake Creek, and Paint Creek Lake, as well as the beginnings of Appalachian Plateau play a significant role in limiting potential PV panel visibility. In some areas within the Project Area, views of the PV panels will be obscured or blocked by isolated woodlots that will be preserved by the Applicant. Outside of the near foreground, potential visibility is primarily concentrated to the northeast of the project within the open plain bounded by Paint Creek to the west and Buckskin Creek to the east. The structures and vegetation associated with the villages of Greenfield and South Salem also significantly limit views from the northwest and east beyond 1.5 miles. Limited corridors of potential visibility extend to the west out to 4 miles where elevated areas and open agricultural fields allow for long-distance views. Limited areas of potential visibility are demonstrated to the north and east of the Project due to scattered high points in the landscape which allow for uninterrupted views toward the project. Only a few small corridors of visibility extend beyond 4 miles within the VSA. The combination of structures and vegetated areas, combined with the relatively low panel height, would prohibit visibility from further distances.

It should be noted that the viewshed analysis treats all structures and vegetation as if they were opaque, and therefore, small woodlots and hedgerows are assumed to fully block views of the Project. In leaf-on conditions, this likely will be the case, but during leaf-off conditions, narrow or sparsely vegetated hedgerows and woodlots may not provide enough screening to fully obscure views of the Project. However, partial screening will still be provided by tree trunks and branches in these locations, even under leaf-off conditions, so any views of the PV panels would be significantly obstructed. It is also important to note that the lidar data used in this analysis are from 2006, and therefore, the analysis does not reflect any changes that have occurred since that time. However,

based on review of recent aerial photography and in-field analysis, the lidar data appear to accurately reflect current vegetative screening conditions within the VSA.

Figures 2.1 and 2.2 illustrate the results of the DSM viewshed analysis for a 5-mile radius and a 1.5-mile focused radius, respectively. As these figures illustrate, visibility beyond a 2-mile radius primarily will be limited to the broad plain between Paint Creek and Buckskin Creek to the northeast of the Project. The viewshed maps also illustrate how potential views of the Project will include a smaller portion of the proposed PV panel arrays as one moves further away from the Project.

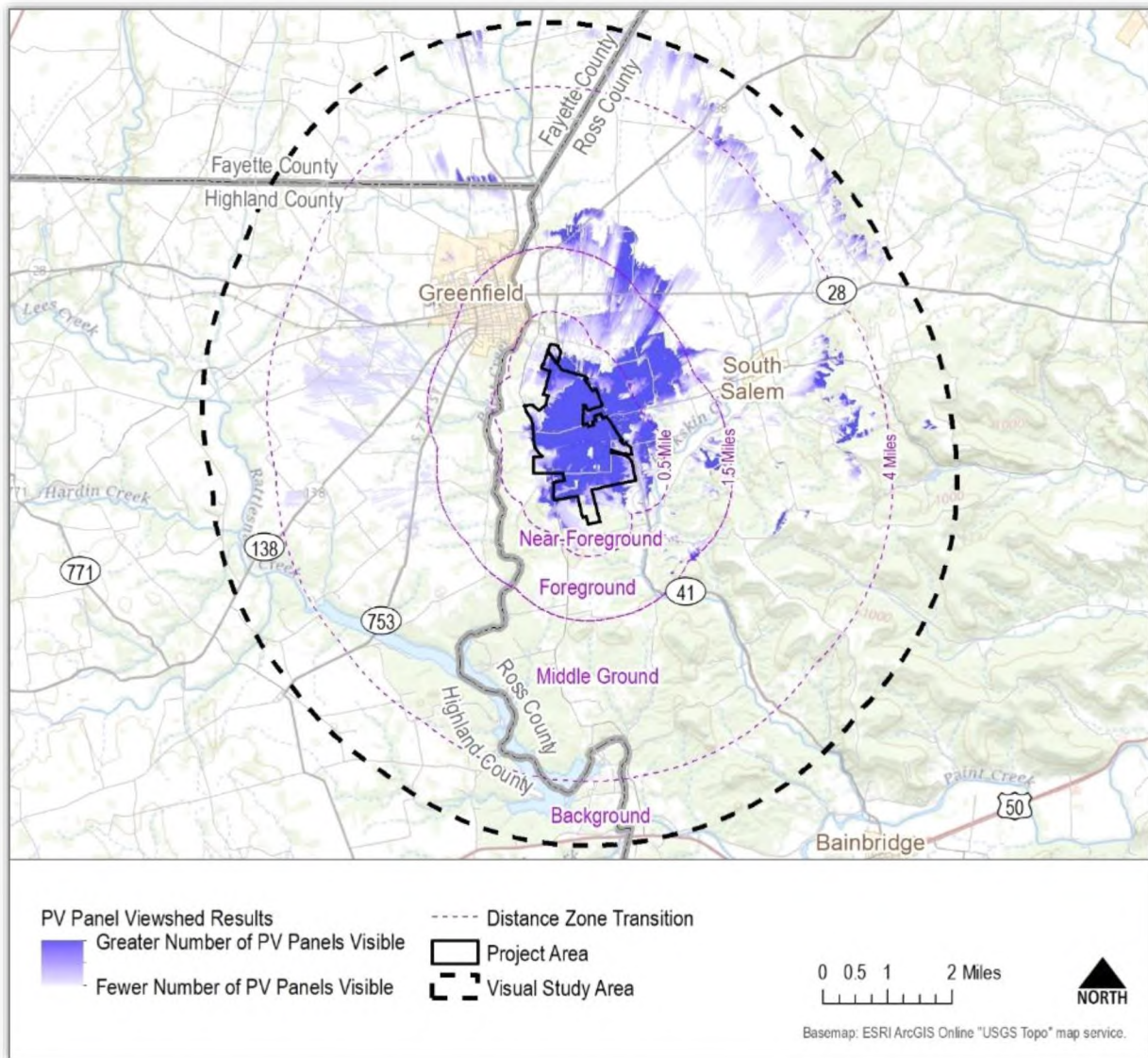


Figure 2.1. PV Panel Viewshed Analysis Results Within the VSA

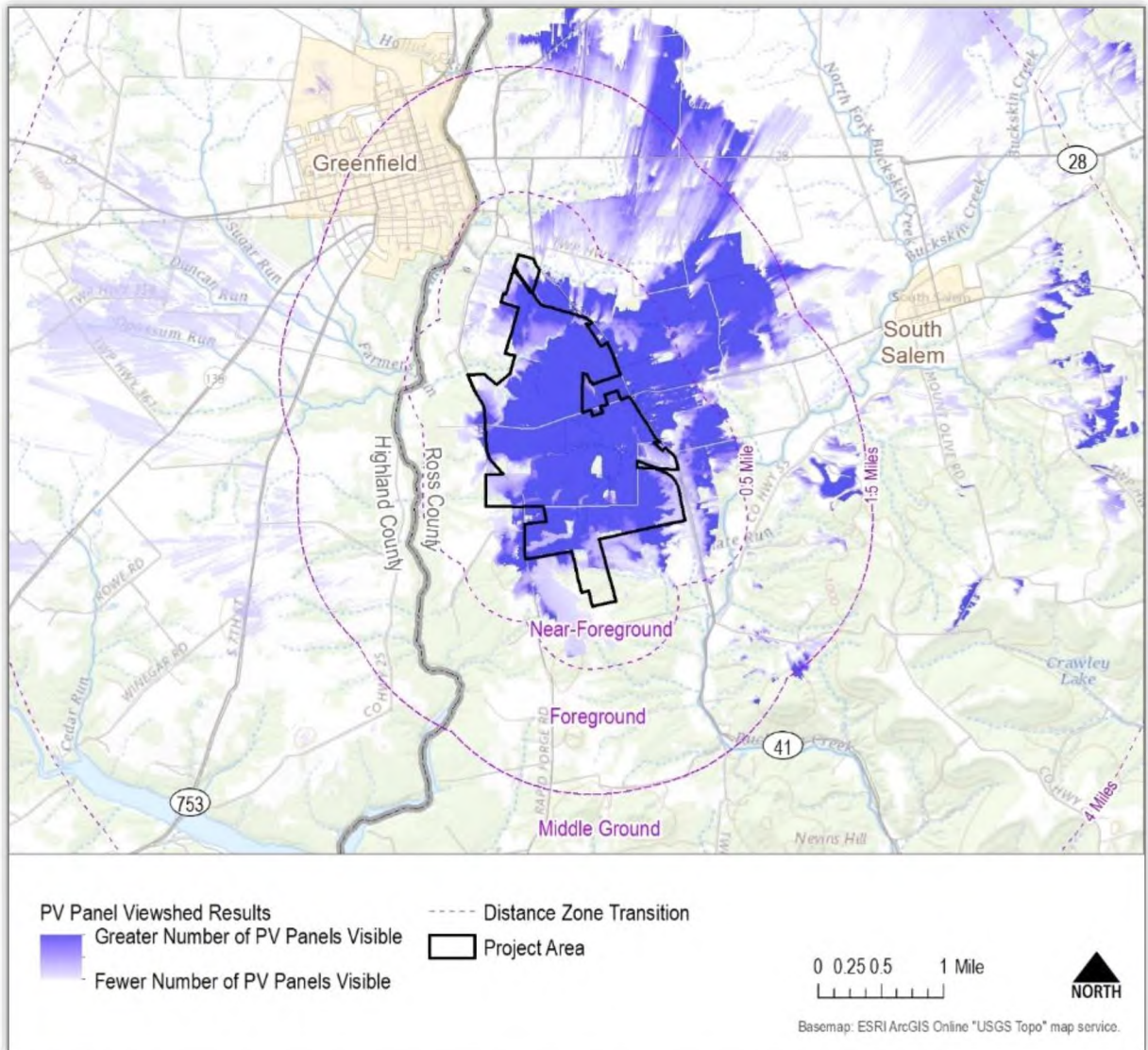


Figure 2.2. PV Panel Viewshed Analysis Results Within the Foreground Distance Zone

Facility Substation Viewshed Analysis

Potential visibility of the proposed Facility substation, as indicated by the viewshed analysis, is illustrated in Figure 2.3 and summarized in Table 2.3 below. As indicated by this analysis, this Project component will be screened from approximately 89.8% of the VSA by intervening landforms, vegetation, and structures.

Table 2.2. Facility Substation Viewshed Analysis Results

Analysis	VSA (square miles)	Visibility by Distance Zone (square miles of visibility and percent of distance zone)			
		Near- Foreground 0-0.5 Mile	Foreground 0.5-1.5 Miles	Middle Ground 1.5-4.0 Miles	Background 4.0-5.0 Miles
Total Area	116.1	7.0	13.3	60.5	35.2
DSM Viewshed Visibility	6.3 (5.4%)	2.7 (39.1%)	1.2 (9.2%)	2.0 (3.3%)	0.3 (0.9%)

¹The calculations used to generate this table were based on unrounded numbers; therefore, the rounded results may not add up precisely.

Potential Facility substation visibility is indicated in areas similar to what was described for the PV panels. The topography and vegetation associated with Buckskin Creek, Paint Creek, Rattlesnake Creek, and Paint Creek Lake, as well as the beginnings of Appalachian Plateau play a significant role in limiting potential PV panel visibility beyond 1.5 miles. Outside of the near foreground, potential visibility is more pronounced in the middle ground between State Route 138 and State Route 28.

It is important to keep in mind that the Facility substation viewshed analysis presents theoretical visibility. It ignores the narrow profile and neutral color of the masts, which will likely make these structures difficult to discern at distances beyond the foreground.

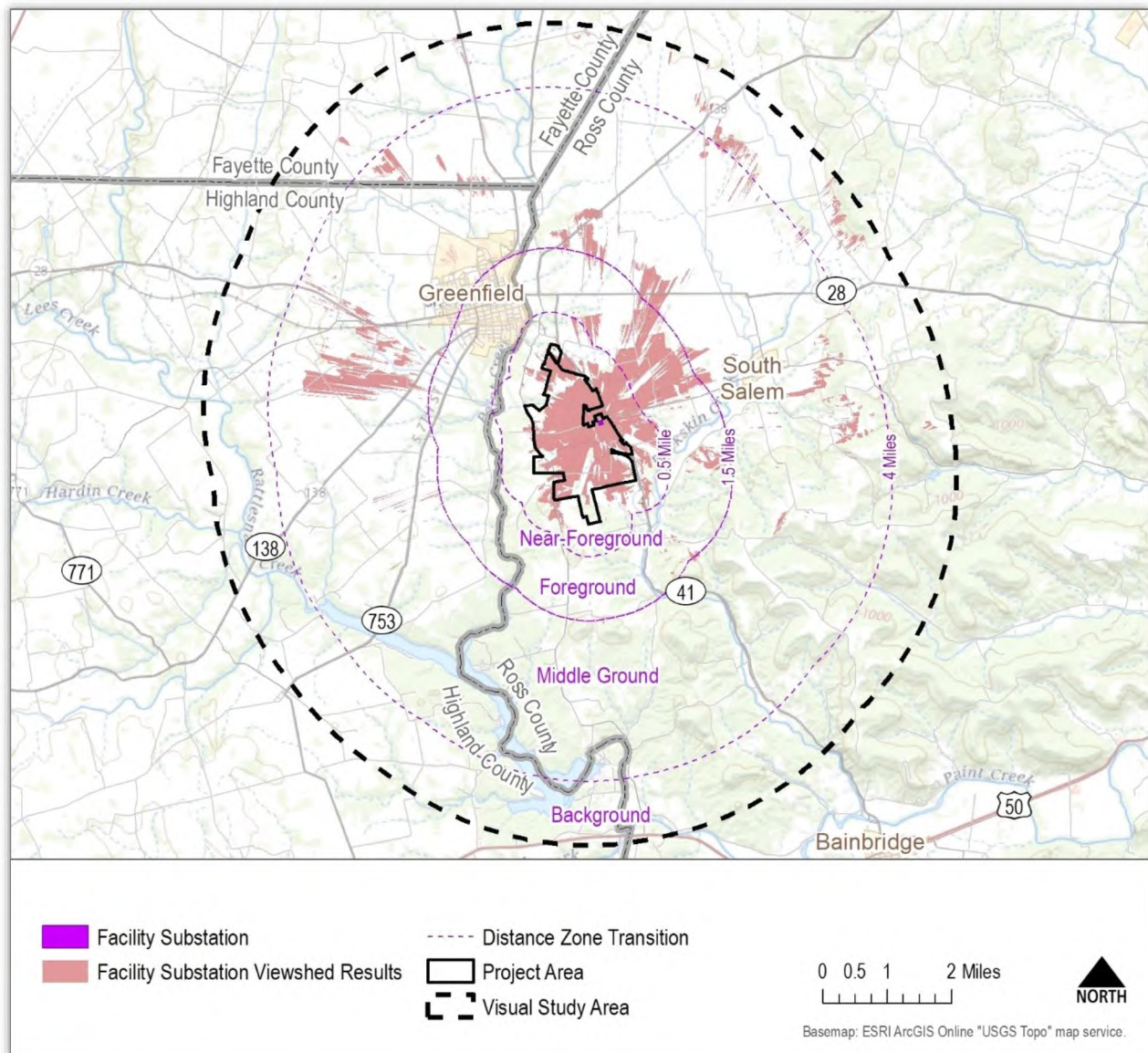


Figure 2.3. Facility Substation Viewshed Analysis Results

2.1.3 Visibility Results from Visually Sensitive Resources

The DSM viewshed analysis suggests that 30 of the 140 VSRs identified within the VSA (21%) may have some level of PV panel visibility, while one additional VSR (<1%) may have some level of Facility substation visibility (see Table 2.3).

Table 2.3. Visually Sensitive Resources with Potential Project Visibility

Visually Sensitive Resources	Total Number of Resources within the Visual Study Area	Total Number of Resources with Visibility
Properties of Historic Significance	Total 101	Total 19
National/ State Historic Landmarks	0	0
National/ State Historic Sites	0	0
Sites Listed on National or State Registers of Historic Places (NRHP/SRHP)	4	0
Sites Eligible for Listing on NRHP or SRHP	7	0
Ohio Historic Structures	45	12 ¹
Historic Bridges	0	0
OGS Cemeteries	45	7
Ohio Historic State Markers	0	0
Designated Scenic Resources	Total 1	Total 0
Rivers Designated as National or State Wild, Scenic or Recreational	0	0
Sites, Areas, Lakes, Reservoirs or Highways Designated or Eligible for Designation as Scenic	0	0
Other Designated Scenic Resources (Easements, Roads, Districts, and Overlooks)	1	0
Public Lands and Recreational Resources	Total 27	Total 5
National Parks, Recreation Areas, Seashores, and/or Forests	0	0
National Natural Landmarks	0	0
National Wildlife Refuges	0	0
Heritage Areas	0	0
State Parks	1	0
State Nature Preserves	1	0
Wildlife Areas	2	2
State Forests	0	0
State Fishing/Waterway Access	17	0
Other State Lands	0	0
Trails	0	0
Local Parks and Recreation Areas	2	2

Visually Sensitive Resources	Total Number of Resources within the Visual Study Area	Total Number of Resources with Visibility
Publicly Accessible Conservation Lands/Easements	0	0
Rivers and Streams with Public Fishing Access	3	1
Named Lakes, Ponds, and Reservoirs	1	0
High-Use Public Areas	Total 11	Total 7
State, US, and Interstate Highways	7	4
Schools	2	1
Cities, Villages, Hamlets	2	2
Total Number of Visually Sensitive Resources	140	31

¹One Ohio Historic Structure is indicated as having views of the substation only (PV panels are not anticipated to be visible from this resource). See Appendix E for additional detail on VSR visibility.

The section below describes the individual VSRs with potential PV panel visibility that occur within the VSA, their distance from the Project, and potential views of the proposed PV panels based on the DSM viewshed results. VSRs demonstrated as having views of the above-ground electrical components are marked with an asterisk (*).

Visually Sensitive Resources Viewshed Analysis Results Summary

Properties of Historic Significance

Ohio Historic Structures

Of the 45 Ohio Historic Structures within the VSA, 12 are indicated as having potential Project visibility, primarily within the foreground, middle ground, and background distance zones. Much of the area within these zones consists of open agricultural fields, and proposed mitigation screen plantings are not taken into consideration in the viewshed analysis. Six Ohio Historic Structures are located in the foreground distance zone within the Village of Greenfield. Existing vegetation and density of buildings and residences will limit views of the Project from these sites. Resources in the middle ground distance zone with potential for the highest area of Project visibility are located to the west, north, and east of the Project. There are five resources located in this zone that are shown to have potential visibility, due to their locations at geographic high points or slopes facing the Project. However, at this distance the effects of visibility will be softened, and vegetation on the horizon will make distinguishing individual components of the Project more difficult. Only one Ohio Historic Structure located in the background distance zone has potential visibility of the PV panels. Views are possible across open agriculture fields due to the higher topography at this site. However, at this distance from the Project, the effects of visibility will be softened and vegetation on the

horizon will make distinguishing individual components of the Project difficult. Resources anticipated to have Project visibility, along with their distance from the Project, are listed below:

Foreground Distance Zone:

- + George L Gregg House; 0.9 mile
- + Town Hall; 1.1 mile
- + Welfare Finance Corp; 1.1 mile
- + Gossett's; 1.1 mile
- + Dr GB Doan Office; 1.1 mile
- + Greenfield Municipal Hosp*; 1.2 miles

Middle Ground Distance Zone:

- + Fout House; 2.0 miles
- + Caldwell Farm; 2.0 miles
- + Rannels House; 2.1 miles
- + Charles Hiles Farm; 2.2 miles
- + Ruth Hughley House; 2.3 miles

Background Distance Zone:

- + Gail Finch House; 4.4 miles

OGS Cemeteries

Of the 45 OGS Cemeteries within the VSA, seven are indicated as having potential Project visibility. There are six cemeteries located in the middle ground distance zone (>1.5 miles and <4 miles). Murray Farm Cemetery will have views of the Project across open agricultural land. However, in areas where visibility of the Project is anticipated, proposed mitigation plantings will be relied upon to provide screening and soften the visible effects of the PV arrays. The other five cemeteries within this zone will have limited pockets of visibility softened by intervening vegetation and visual distractions. Actual Project visibility at these locations is likely to require concentrated attention at specific locations on site. Finch Cemetery, located in the background distance zone, will have limited pockets of visibility. Visibility is softened at this distance and vegetation on the horizon will make distinguishing individual components of the Project difficult. Cemeteries anticipated to have visibility along with their distance from the Project are listed below:

Middle Ground Distance Zone:

- + Murray Farm Cemetery; 1.9 miles

- + Wesley Chapel Cemetery; 2.4 miles
- + Morton Cemetery; 2.8 miles
- + Hixon-Sutton Cemetery; 2.8 miles
- + Depoy-Wright Cemetery; 3.1 miles
- + Unnamed Cemetery; 3.9 miles

Background Distance Zone:

- + Finch Cemetery; 5.1 miles

Public Lands and Recreational Resources

Wildlife Areas

The Paint Creek Lake Wildlife Area is a 5,090-acre, state-managed wildlife area located adjacent to the Project to the west. The Project is anticipated to be visible along portions of the eastern periphery of the wildlife area with direct views of the Project. Visibility within the nature preserve and along a significant portion of the boundary are not anticipated due to the densely forested conditions within and adjacent to the wildlife area that will block views of the Project. In addition, Wildlife Production Area 48 is located in the foreground distance zone, approximately 1.4 miles to the north of the Project. Visibility in a portion of the site is obscured by intervening vegetation. Visibility is limited to areas of the wildlife area with higher elevation and slopes facing the Project. However, in areas where visibility of the Project is anticipated, proposed mitigation plantings will be relied upon to provide screening and soften the visible effects of the PV arrays.

Local Parks and Recreation Areas

Mitchell Park is located approximately 0.9 mile to the northwest of the Project, on the south side of the Village of Greenfield. Visibility within the park will be extremely limited by existing vegetative screening associated with the Paint Creek corridor adjacent to the park. Christian Union Campgrounds is located approximately 1.8 miles northwest of the Project, on the north side of the Village of Greenfield. Visibility of the Project will be extremely limited to the eastern edge of the campground with potential views of the Project along a road corridor. In both parks, in areas where visibility of the Project is anticipated, proposed mitigation plantings will be relied upon to provide screening and soften the visible effects of the PV arrays.

Rivers, Streams, and Public Fishing Access

Visibility from rivers, streams, and public fishing access areas varies considerably based on proximity to the Project, elevation, and the orientation of the water body. Paint Creek is located adjacent to the Project, approximately 0.5 miles at its closest point. However, the lower topography and existing forest vegetation associated with Paint Creek block views of the Project from significant portions of the creek. Any views of the Project will be further limited by mitigation plantings.

High-Use Public Areas

State, US, and Interstate Highways

Visibility at roadways throughout the VSA varies considerably based on proximity to the Project, elevation, and roadway orientation. State Highways indicated as having potential Project visibility are listed below in Table 2.4, along with the distance they travel through the VSA, and their daily usage.

Table 2.4. Length and Daily Usage of State Highways with Potential Visibility within the VSA

Road	Total Length within the VSA (miles)	Average Vehicles/Day Range on Segments within the VSA ¹
SR 28	10.9	2,121 – 10,107
SR 41	14.6	2,072 – 10,107
SR 138	11.5	1,318 – 10,107
SR 753	12.4	1,480 – 9,559

¹Source: Ohio Department of Transportation, 2018

Cities, Villages, and Hamlets

The Village of Greenfield is located approximately 0.5 mile northwest of the Project, which is in the near foreground distance zone. Within the Village of Greenfield, visibility is anticipated to be limited to an area in the northwest corner of the village that is at a higher elevation, creating open views towards the Project. Visibility is limited in the village due to existing vegetation associated with the Paint Creek corridor, which creates a natural screen to the Project. In addition, visibility of the Project is not anticipated within the business district or more densely populated portions of the village. The Village of South Salem is located approximately 2.2 miles east of the Project and falls within the middle ground distance zone. Visibility within the village is limited by the existing vegetation along Buckskin Creek, which runs to the west of the village. Potential visibility exists

along narrow roadway corridors in the east side of the village with higher elevation. However, at this distance the effects of visibility will be softened, and vegetation on the horizon will make distinguishing individual components of the Project more difficult. In addition, any views of the Project will be further limited by mitigation plantings.

Schools

Greenfield Elementary and Middle School and McClain High School are located in the foreground distance zone approximately 1.2 miles from the Project. Due to intervening vegetation and structures, visibility will be extremely limited.

2.1.4 Field Verification Methodology

EDR conducted a site visit to the VSA on August 28, 2020. The purpose of this field review was to verify potential visibility of the Project (as suggested by the viewshed analysis), to document the visual character of the various LTs within the VSA, identify the type and extent of existing visual screening, and obtain photographs for subsequent use in the development of visual simulations.

During the site visit, EDR staff members drove public roads and visited public vantage points within the VSA, and obtained photographs from 21 individual viewpoints utilizing a digital SLR camera with lens settings of 29 and 35 mm (equivalent to 45 and 55 mm on a standard 35 mm full frame camera). Viewpoint locations were recorded using hand-held global positioning system (GPS) units, and all field notes, GPS points, focal length parameters, times, and dates were documented electronically. Those viewpoint locations are shown in Appendix A. A photolog, including a representative photograph (toward the Project Area) from each viewpoint, is included in Appendix B.

2.1.5 Field Verification Results

Field verification generally confirmed the results of the DSM viewshed analysis. Open views toward the Project are largely restricted to areas adjacent to the Project Area where public roads are bordered by open agricultural fields. These roads include State Route 41, County Route 1 (Rapid Forge Road), County Road 54 (Lower Twin Road), Rolfe Road, and County Road 41A (Rapid Forge Road). State Route 41 runs along the eastern edge of the Project Area from north to south for

approximately 2.5 miles. The current PV panel layout is positioned 250 feet from this roadway. County Road 54 runs through the middle of the Project Area from east to west for approximately 1.2 miles; the Project current PV panel layout is set back a minimum of 55 feet from this roadway. County Road 1 runs along the western edge of the Project Area for approximately 1.6 miles; the current PV panel layout is set back 260 feet from the edge of the roadway. Rolfe Road runs through the southern quarter of the Project Area from east to west for approximately 1.6 miles. The current PV panel layout is set back a minimum of 65 feet from this roadway.

Field review confirmed that views of the Project from more distant portions of the VSA (beyond 1 mile) will largely be screened by the mature vegetation associated with Buckskin Creek, Paint Creek, Rattlesnake Creek, and Paint Creek Lake, as well as the beginnings of Appalachian Plateau. Increased opportunities for views of portions of the Project are available from the northeast between the Paint Creek and Buckskin Creek due to the lack of topographical change and limited intervening forest vegetation. Field review of the isolated areas of more distant visibility confirmed that discerning the proposed Project will be a much greater challenge than suggested by the viewshed analysis due to vegetative screening and the effects of distance. During the growing season, visibility of the Project from residences and roadways may also be limited by crop (corn) growth in the foreground agricultural fields. The combination of relatively low panel height, along with existing streamside vegetation, hedgerows, and the atmospheric effects of distance, will limit visibility of the Project from the majority of the VSA, confirming the results of the viewshed analysis.

2.2 Visual Simulations

Visual simulations from four representative locations were produced in order to illustrate the appearance of the Project and to evaluate its potential visual impact on the existing landscape and viewers within the VSA. The locations of the viewpoints selected for the production of visual simulations are illustrated in Figure 2.4.

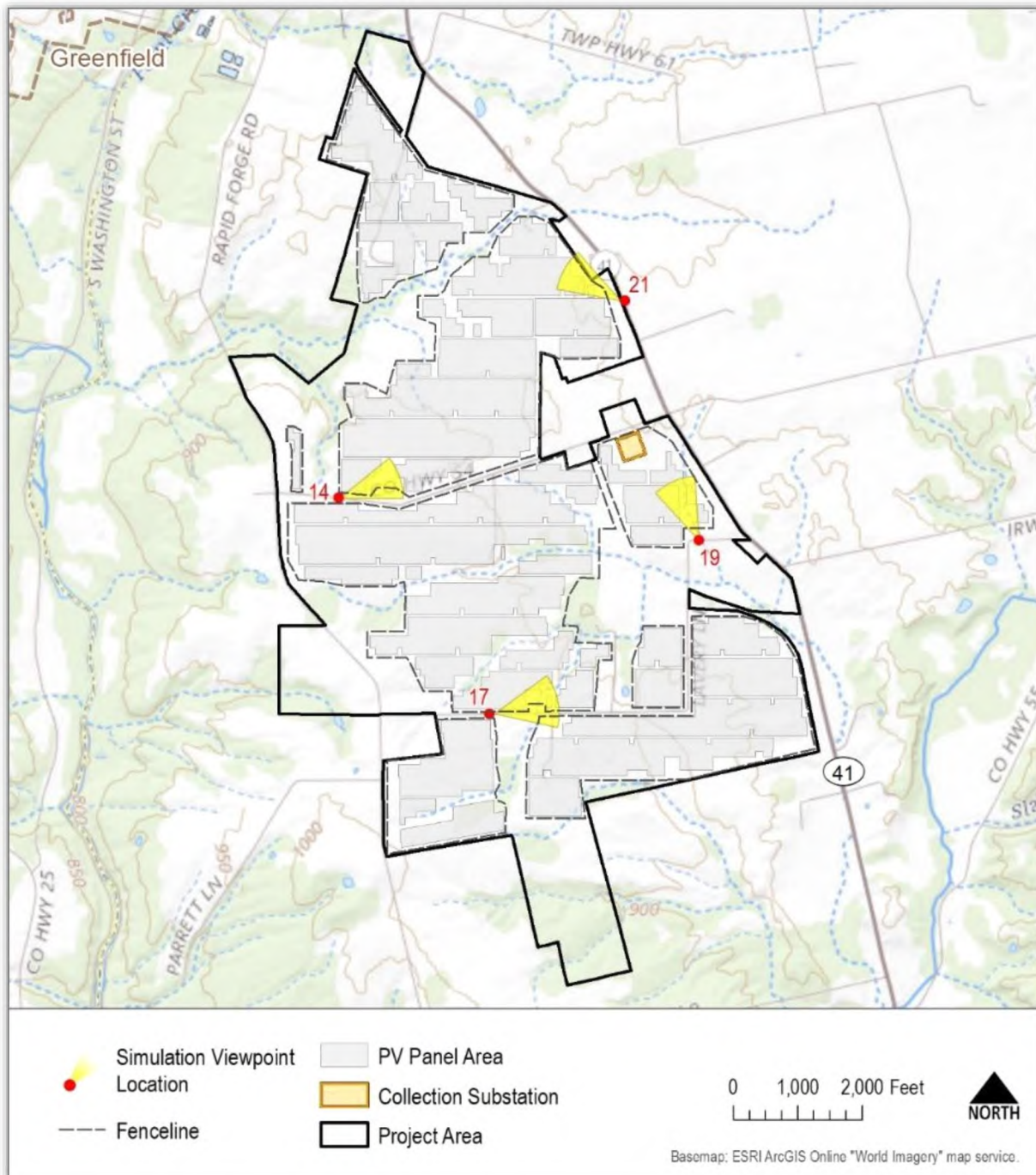


Figure 2.4. Visual Simulation Viewpoint Location Map

2.2.1 Visual Simulation Methodology

Visual simulations of the proposed Project were developed by constructing a three-dimensional (3D) computer model of the proposed PV arrays and full Project layout based on specifications,

dimensions, and locations provided by the Applicant. Next, the camera specifications used to take the selected photograph in the field were replicated in the 3D model. This was accomplished by positioning the 3D camera in the same real-world coordinate system as the Project model using GPS coordinates collected at each photo location. The camera was then aligned and the camera's target position (view direction) and adjusted until the modeled 3D elements aligned exactly with the elements in the photograph. Once this step was complete, the Project was included in the photograph at the correct location, perspective, and scale. At this point, the appropriate sun angle was simulated based on the specific date, time, and location (latitude and longitude) at which the photograph was taken. This information allowed the program to realistically illustrate highlights, shading, and shadows for all Project components shown in the view. All PV panel simulations include single-axis tracker arrays with the panels oriented toward the sun, on an east-west axis, on north-south aligned arrays.

At viewpoints where mitigation plantings are proposed (see Appendix C), vegetative screening is included in the simulations and represented at a height that would be achieved approximately 5-7 years after installation.

2.2.2 Visual Simulation Results

The visual simulations and a discussion of the potential visual effects associated with the Project are summarized below. Full-sized images are presented in Appendix D.

Viewpoint 14 | County Road 54 (Lower Twin Road)



Inset 2.1. Left: Existing Conditions. Right: Visual Simulation

Existing Conditions

Viewpoint 14 is located on County Road 54 (Lower Twin Road) in Buckskin Township, Ross County, approximately 100 feet from the nearest proposed PV panel, in the near-foreground distance. The existing view to the northeast from this location is dominated by flat agricultural fields in the near foreground and foreground, which proceeds directly away from the viewer toward two masses of deciduous trees within the middle ground. Past the deciduous trees the elevation begins to increase with slightly elevated agricultural fields to forested hills in the background. Man-made structures visible at this viewpoint include a silo and barn in the near foreground, scattered residences along the periphery of the corn field in the midground, and several residences in the background at the base of the forested hills. In addition, electric transmission lines and poles are visible in the near foreground, running towards the midground along the right side of the photo, to an existing electric sub station located in middle ground on the periphery of the corn. This view has an open feel and a strong rural/working agricultural character, and the mix of land uses, colors, and textures result in a pleasing composition and moderate to high scenic quality.

Proposed Project

With the proposed Project in place, the PV array is highly visible in the near foreground on the left side of the field of view and extends towards the middle ground on the right side of the field of view. The corn field is now occupied by an array of PV panels enclosed by a perimeter agricultural fence. The grounds are further surrounded by a mowed lawn. On the left side of the frame the PV panels are in line with the background hills. However, the deciduous trees in the middle ground in the middle and right side of the frame remain visible, as do the forested hills in the background, providing for more depth to the field of view. In the background to the left of the existing silo the Project substation is visible. The PV array is neat and orderly, and compatible in line, color, and land use connotation with the existing utility infrastructure already present in this view. However, the PV panels become the dominant focal point and alter the existing character and scenic quality of the view. Exchanging the PV panels for the corn crop replaces the variation in color and foliage texture with a dark, dense crease along the near foreground and extending toward the middle ground on the right side of the photo, which reduces the sense of openness in the existing view. While not totally out of place in a working production landscape, the presence of the Project changes the perceived land use focus from agriculture to solar energy production.

Viewpoint 17 | Rolfe Road

Inset 2.3. Left: Existing Conditions. Right: Visual Simulation

Existing Conditions

Viewpoint 17 is located on Rolfe Road in Paint Township, Ross County, approximately 87 feet from the nearest proposed PV panel. The existing view to the east features a flat agricultural field on the left of the photo, bordered by a line of deciduous trees within the foreground. The trees block the middle ground and the background features the tops of forested hills visible just above or through the line of trees in the foreground. On the right side of the photo, an existing electric transmission line follows Rolfe Road, with agricultural fields lining the road through the middle ground. Several deciduous trees are present in the foreground and breakup the long views towards the forested hills in the background. Only one roofline is barely visible in the right of this field of view and is mostly screened by vegetation. Evidence of man-made structures are also barely evident through the vegetation on the left of this field of view. This view has a strong rural/working agricultural character, and the mix of land uses, colors, and textures result in a pleasing composition and moderate to high scenic quality.

Proposed Project

With the proposed Project in place, the PV array is highly visible in the near foreground on the left side of the field of view, blocking views of the majority of the foreground and background vegetation due to their proximity to the viewer. Views in the middle and right sides of the frame are relatively unchanged, except in the middle ground where the agricultural fields are now PV panels. However, panels do not exist in the foreground and the forested hills in the background are still visible, which provides for uninterrupted distant views. The PV array is neat and orderly, and compatible in line, color, and land use connotation with the existing utility infrastructure already present in this view.

However, the PV panels become the dominant focal point in the left side of the frame, and alter the existing character and scenic quality of the view. While not totally out of place in a working production landscape, the presence of the Project changes the perceived land use focus from agriculture to solar energy production.

Viewpoint 19 | Rolfe Road



Inset 2.5. Left: Existing Conditions. Right: Visual Simulation

Existing Conditions

Viewpoint 19 is located on Rolfe Road in Buckskin Township, Ross County, approximately 267 feet from the nearest proposed PV panel. The existing view to the west-northwest features an agricultural field, which rises slightly upward as the field extends away from the viewer toward an existing electric sub station. The middle ground gently undulates as it extends into the background. The background features an existing electric utility station, electric transmission line, and a silo on the horizon. The view is largely comprised of the yellow and green foliage of the corn crop, except in the middle of the frame where the agriculture field is broken up by a mix of colors and textures associated with vegetation occurring along a low lying drainage corridor. This view has an open feel and a strong rural/working agricultural character, and the mix of land uses, colors, and textures result in a pleasing composition and moderate to high scenic quality.

Proposed Project

With the proposed Project in place, the PV panels are arranged in a prominent band extending across the foreground enclosed within a perimeter agricultural fence. The panels face away from the viewer, allowing visibility to the ground plane and PV panel supports. The PV array is neat and orderly, and compatible in line, color, and land use connotation with the existing utility infrastructure

already present in this view. However, the PV panels become the dominant focal point, and alter the existing character and scenic quality of the view. Due to their proximity to the viewer, the panels block views of more distant landscape features and reduce the sense of openness in the existing view. While not totally out of place in a working production landscape, the presence of the Project changes the perceived land use focus from agriculture to solar energy production.

Proposed Mitigation



Inset 2.6. Left: Visual Simulation. Right: Mitigation 5-7 Years

Upon installation, perimeter mitigation planting will start to suggest pockets of volunteer vegetation along the edge of the PV panel array that creates periodic breaks in the horizontal line of the fencing and panels. After 5 to 7 years of growth, portions of the array are still visible, but now appear to be integrated into the vegetation that occurs in front of them. The view has lost some of its openness on the right and left sides and feels more enclosed. Its working production character is softened as the more natural successional vegetation serves to break up the strong horizontal line of the PV array. The variety of colors and forms provided by the mitigation plantings enhance scenic quality and, along with windows of Project visibility, add elements of interest to the view.

Viewpoint 21 | State Route 41

Inset 2.7. Left: Existing Conditions. Right: Visual Simulation

Existing Conditions

Viewpoint 21 is located on State Route 41 in Buckskin Township, Ross County, approximately 328 feet from the nearest proposed PV panel. The existing view to the west-northwest features a generally flat agricultural field extending away from the viewer toward a line of deciduous trees along the background, with sporadic trees in the middle ground. There are also deciduous trees associated with a farm on the far right side of the frame. Manmade structures such as a silo and utility lines are visible on the right side of the frame, and contrast against the backdrop of dark deciduous trees and the bright sky. The view is largely comprised of the soft textured foliage of the soybean crop, except where interrupted by florets of deciduous trees amongst the soybeans and roadside grass in the near foreground. This view has an open feel and a strong rural/working agricultural character, and the mix of land uses, colors, and textures result in a pleasing composition and moderate to high scenic quality.

Proposed Project

With the proposed Project in place the soybean field has been replaced with PV panels, as well as an access road and agricultural fencing that follow the perimeter of the panels. In the near foreground the grassy right-of-way now extends to the perimeter fencing in the foreground. The PV array is highly visible in the foreground on the left side of the field of view and extends to the middle ground as the viewer moves towards the right side of the field of view. Due to the proximity of the panels to the viewer, all views on the left to middle of the frame are blocked and on the right side of the frame the background trees appear just above the panels. The PV array is neat and orderly, and compatible in line, color, and land use connotation with the existing utility infrastructure already

present in this view. However, the PV panels become the dominant focal point in the left side of the frame, and alter the existing character and scenic quality of the view. While not totally out of place in a working production landscape, the presence of the Project changes the perceived land use focus from agriculture to solar energy production.

Proposed Mitigation



Inset 2.8. Left: Visual Simulation. Right: Mitigation 5-7 Years

Upon installation, perimeter mitigation planting will start to suggest a band of volunteer vegetation along the outside of the perimeter fence along the access road that creates periodic breaks in the horizontal line of the fencing and panels. After 5 to 7 years of growth, portions of the array are still visible, but now appear to be integrated into the vegetation that occurs in front of them. The view has lost some of its openness on the rightside and feels more enclosed. Its working production character has transitioned to a landscape dominated by more natural successional vegetation. The variety of colors and forms provided by the mitigation plantings enhance scenic quality and, along with windows of Project visibility, add elements of interest to the view.

Summary

In summary, in locations where panels are directly adjacent to roads and residences, it is likely that the proposed PV arrays could have an adverse effect on the scenic quality or existing landscape character. However, as demonstrated in the simulations, installation of mitigation plantings along the perimeter of the PV arrays lessens the visual impact of the Project in these near-foreground views. The plantings provide significant screening and break up the horizontal lines created by the PV arrays and fence line. This helps the Project blend with the new and existing vegetation rather than stand out as a discordant element in the landscape.

The Facility substation and above-ground electrical facilities are likely to result in visual effects from foreground viewpoints along County Road 54 (Lower Twin Road) and State Route 41.

2.3 Reflectivity and Glare

PV panels such as those proposed for the Project are designed to absorb as much sunlight as possible and, in most conditions, reflect very little light. Most PV panels include anti-reflective coatings to maximize energy absorption. However, the front surfaces of PV modules are smooth, specular surfaces, which can still reflect sunlight at high incident angles, like glass windows on a building. The Glare Analysis prepared for this Project and included with the Certificate Application did not identify any concerns with glare at airports or major roads surrounding the Project.

3.0 CONCLUSIONS

3.1 Visual Resource Assessment Summary

Based on the analyses described above, the following conclusions can be drawn regarding the visibility and visual effect of the proposed Ross County Solar Project.

The PV panel viewshed analysis indicates that the proposed solar arrays will be screened from view in approximately 88.7% of the 5-mile radius VSA. Visibility of significant portions of the Project is concentrated within the Project Area itself and the open fields located immediately adjacent to the Project. PV panel visibility is highest within the near-foreground (up to 0.5 mile) and foreground (up to 1.5 miles) distance zones. At middle ground distances, potential visibility extends out to 4 miles in a limited fashion to the west (between Rattlesnake Creek and the Village of Greenfield), northeast (between the Paint Creek and Buckskin Creek corridors), and east (to the east and southeast of the Village of South Salem). There are limited corridors where potential visibility extends out to the 5 mile VSA limit.

PV panel viewshed analysis of the 140 identified VSRs within the VSA indicates that 30 (21%) have potential PV panel visibility, and one additional resource has potential visibility of the Facility substation (<1%). Of the 30 resources with potential PV panel visibility, 26 (87%) are located beyond the near-foreground (i.e., >0.5 mile). Viewshed results suggest that areas of potential visibility from

VSRs in the middle ground and background will generally be small and/or include only a limited number of PV panel arrays.

The Facility substation viewshed analysis indicates that the tallest structures associated with these Project components will have potential visibility from 5.4% of the VSA. Actual visibility of these components from middle ground and background locations will be diminished due to the narrow profile and neutral color of these components, which will blend with the background vegetation and sky.

Field review generally confirmed the results of the viewshed analysis and further suggests that visibility of the Project will be largely restricted to areas within the near-foreground distance zone. Beyond 0.5 mile, screening provided by wooded stream corridors, structures, and woodlots, in combination with the low height of the PV panels, will significantly limit Project visibility.

As illustrated in the visual simulations, the Project will result in varying levels of visual impact when viewed from adjacent roads. This impact may be somewhat mitigated by the presence of seasonal crops in actively farmed fields, but during the rest of the year the Project will introduce substantial areas of utilitarian structures that will alter the scenic quality and/or existing agricultural character of the landscape. However, as demonstrated in Viewpoint 17 (comparing the right and left of the image), this visibility and potential visual impact diminishes rapidly as the Project is viewed from greater distances. Consequently, it is anticipated that impacts will be largely limited to areas directly adjacent to the Project.

As discussed in Section 2.2.2 of this VRA, the introduction of mitigation plantings along the perimeter of the PV arrays lessens the visual impact of the Project when viewed at near-foreground distances. The plantings provide significant screening and serve to break up the horizontal lines created by the PV panels and fence line. This helps the Project blend with the new and existing vegetation rather than stand out as a discordant element of the landscape. Vegetative mitigation will minimize the visual impact on adjacent roadways and residences, and will provide aesthetic benefits.

3.2 Mitigation

The Applicant is proposing perimeter plantings intended to screen or soften views of the solar arrays. As shown in the visual simulations, the conceptual planting plan softens the horizontal line

created by the installation of the PV panels and aids in blending the Project into the surrounding landscape. Although the mitigation represented in the visual simulations is conceptual at this time, the design approach and goals for the visual mitigation will not change, even if plant material in certain locations may need to be adjusted. The conceptual mitigation plan developed for this Project is based on the philosophy that 100% opaque screening is not necessary, and that introduction of native materials will better mimic the existing screening found on and around the Project Area (see Appendix C: Landscape Mitigation Plan for additional details).

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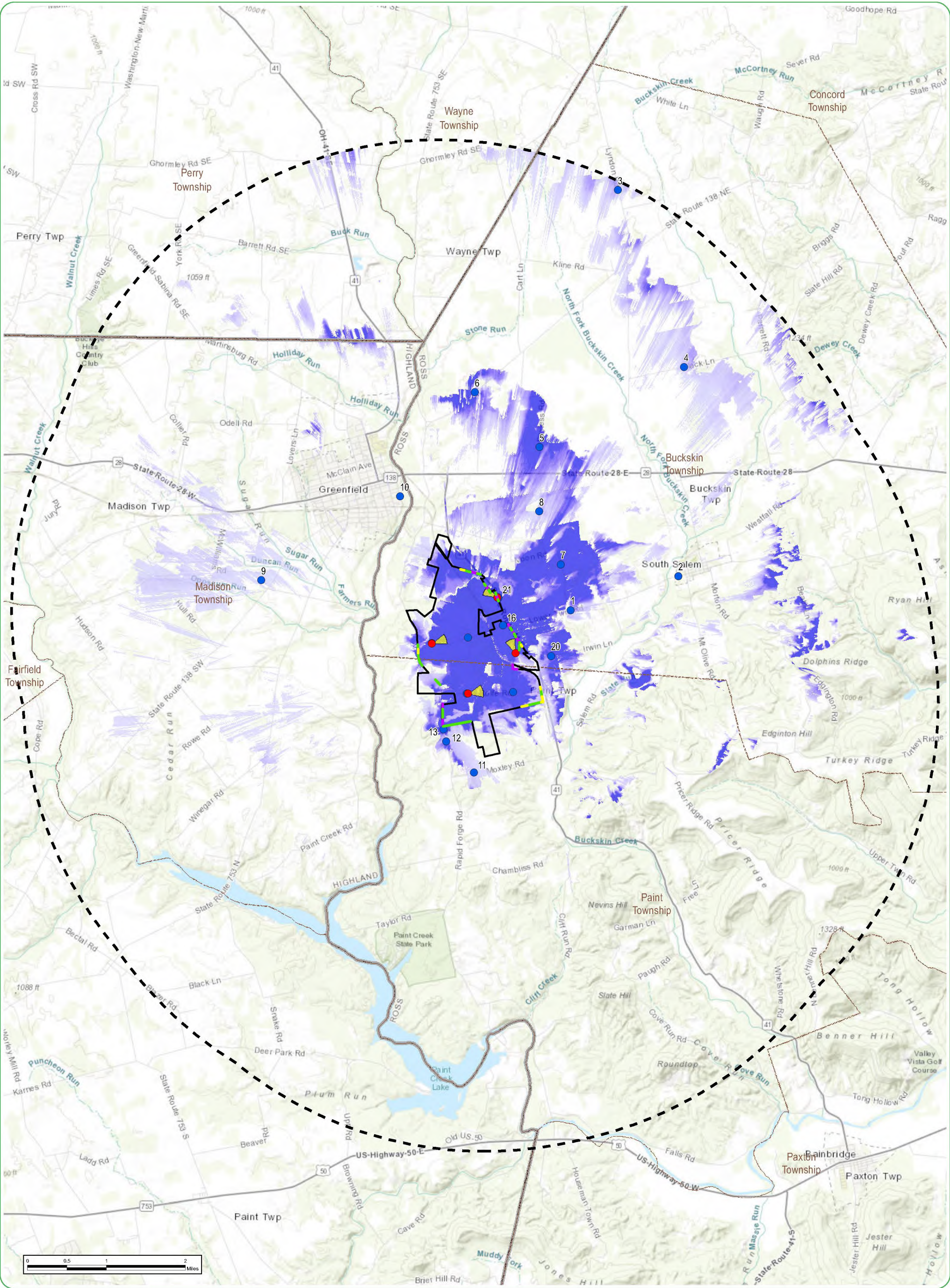
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Appendix A

Viewpoint Location Map



Ross County Solar
Buckskin and Paint Townships, Ross County, Ohio
Visual Resource Assessment
Appendix A: Viewpoint Location Map

Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" map service. 2. This map was generated in ArcMap on October 19, 2020. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

- | | | |
|-------------------------------|-------------------|---------------------|
| ● Selected Viewpoint Location | Landscape Modules | ▭ Project Area |
| ● Viewpoint Location | — Module 1 | ▭ Visual Study Area |
| ▭ Viewpoint COV | — Module 2 | ▭ Township Boundary |
| | — Module 3 | ▭ County Boundary |
| | — Module 4 | |



Appendix B

Viewpoint Photolog



Viewpoint 1

39.32823522° N, 83.33724963° W

VP 1 | View looking west-southwest from the intersection of County Road 61 and County Road 54 in the Township of Buckskin, Ross County. Located in the N/A VSR, 0.9 miles from the nearest proposed PV panel, in the foreground distance zone.



Viewpoint 2

39.33467742° N, 83.31186872° W

VP 2 | View looking west-southwest from County Road 54 (Broadway Street) in the Township of Buckskin, Ross County. Located in the Village of South Salem VSR, 2.4 miles from the nearest proposed PV panel, in the middle ground distance zone.



Viewpoint 3

39.40544756° N, 83.32694356° W

VP 3 | View looking south-southwest from County Road 55 in the Township of Buckskin, Ross County. Located in the Finch Cemetery VSR, 5.1 miles from the nearest proposed PV panel, in the background distance zone.



Viewpoint 4

39.37307176° N, 83.31090904° W

VP 4 | View looking southwest from County Road 68R in the Township of Buckskin, Ross County. Located in the N/A VSR, 3.8 miles from the nearest proposed PV panel, in the middle ground distance zone.



Viewpoint 5

39.35815157° N, 83.34497078° W

VP 5 | View looking southwest from Bayless Road in the Township of Buckskin, Ross County. Located in the N/A VSR, 1.8 miles from the nearest proposed PV panel, in the middle ground distance zone.



Viewpoint 6

39.36808108° N, 83.36032532° W

VP 6 | View looking south from State Route 138 in the Township of Buckskin, Ross County. Located in the SR 138 VSR, 2 miles from the nearest proposed PV panel, in the middle ground distance zone.

Ross County Solar Project

Buckskin and Paint Townships, Ross County, Ohio

Appendix B - Viewpoint Photolog

Sheet 1 of 4

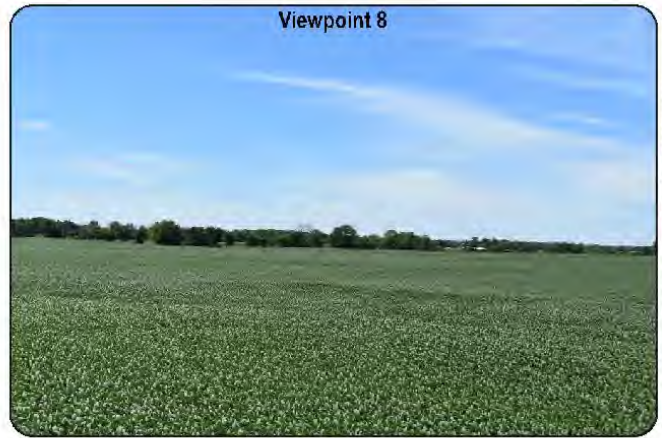




Viewpoint 7

39.33662771° N, 83.33965308° W

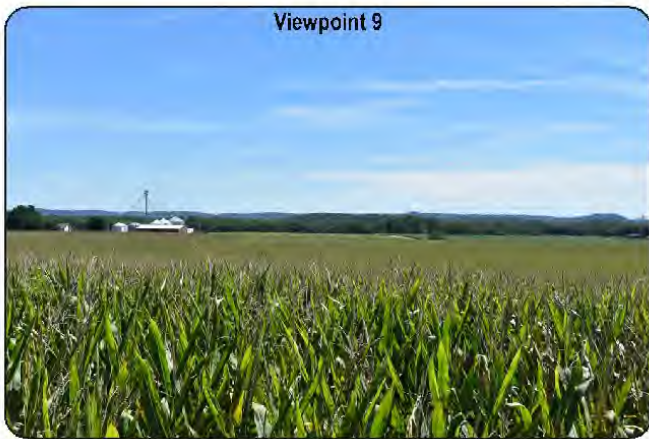
VP 7 | View looking west-southwest from County Road 61 in the Township of Buckskin, Ross County. Located in the N/A VSR, 0.9 miles from the nearest proposed PV panel, in the foreground distance zone.



Viewpoint 8

39.34633305° N, 83.34489361° W

VP 8 | View looking southwest from County Road 56 (Coyner Road) in the Township of Buckskin, Ross County. Located in the N/A VSR, 1.2 miles from the nearest proposed PV panel, in the foreground distance zone.



Viewpoint 9

39.33319913° N, 83.41045363° W

VP 9 | View looking east-southeast from County Road 360 (McWilliams Road) in the Township of Madison, Highland County. Located in the Rannels House VSR, 2.1 miles from the nearest proposed PV panel, in the middle ground distance zone.



Viewpoint 10

39.34884417° N, 83.37778560° W

VP 10 | View looking south-southeast from South McArthur Way in the Township of Madison, Highland County. Located in the Village of Greenfield VSR, 0.8 miles from the nearest proposed PV panel, in the foreground distance zone.



Viewpoint 11

39.29827551° N, 83.35973351° W

VP 11 | View looking north-northwest from County Road 9 (Moxley Road) in the Township of Paint, Ross County. Located in the N/A VSR, 0.7 miles from the nearest proposed PV panel, in the foreground distance zone.



Viewpoint 12

39.30395836° N, 83.36637478° W

VP 12 | View looking northeast from County Road 1 (Rapid Forge Road) in the Township of Paint, Ross County. Located in the N/A VSR, 0.2 miles from the nearest proposed PV panel, in the near-foreground distance zone.

Ross County Solar Project

Buckskin and Paint Townships, Ross County, Ohio

Appendix B - Viewpoint Photolog

Sheet 2 of 4





Viewpoint 13

39.30613296° N, 83.36703467° W

VP 13 | View looking northeast from County Road 1 (Rapid Forge Road) in the Township of Paint, Ross County. Located in the N/A VSR, 380.1 feet from the nearest proposed PV panel, in the near-foreground distance zone.



Viewpoint 14

39.32191860° N, 83.36997026° W

VP 14 | View looking northeast from County Road 54 (Lower Twin Road) in the Township of Buckskin, Ross County. Located in the N/A VSR, 101.3 feet from the nearest proposed PV panel, in the near-foreground distance zone.



Viewpoint 15

39.32303360° N, 83.36143640° W

VP 15 | View looking east from County Road 54 (Lower Twin Road) in the Township of Buckskin, Ross County. Located in the N/A VSR, 187.6 feet from the nearest proposed PV panel, in the near-foreground distance zone.



Viewpoint 16

39.32532853° N, 83.35319623° W

VP 16 | View looking southwest from County Road 54 in the Township of Buckskin, Ross County. Located in the N/A VSR, 202.2 feet from the nearest proposed substation, in the near-foreground distance zone.



Viewpoint 17

39.31275207° N, 83.36156766° W

VP 17 | View looking east from Rolfe Road in the Township of Paint, Ross County. Located in the N/A VSR, 86.9 feet from the nearest proposed PV panel, in the near-foreground distance zone.



Viewpoint 18

39.31310491° N, 83.35064814° W

VP 18 | View looking north-northeast from Rolfe Road in the Township of Paint, Ross County. Located in the N/A VSR, 99 feet from the nearest proposed PV panel, in the near-foreground distance zone.

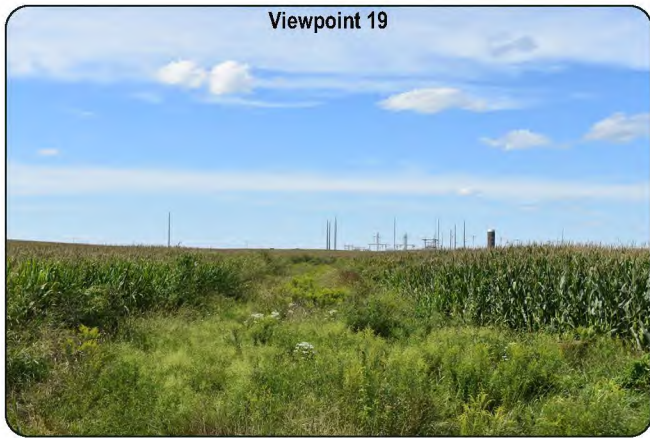
Ross County Solar Project

Buckskin and Paint Townships, Ross County, Ohio

Appendix B - Viewpoint Photolog

Sheet 3 of 4





39.32026121° N, 83.35013433° W

VP 19 | View looking north-northwest from Rolfe Road in the Township of Buckskin, Ross County. Located in the N/A VSR, 269.8 feet from the nearest proposed PV panel, in the near-foreground distance zone.



39.31979781° N, 83.34171404° W

VP 20 | View looking west-northwest from Irwin Lane in the Township of Buckskin, Ross County. Located in the N/A VSR, 0.3 miles from the nearest proposed PV panel, in the near-foreground distance zone.



39.33045171° N, 83.35430507° W

VP 21 | View looking northwest from State Route 41 in the Township of Buckskin, Ross County. Located in the State Rte 41 VSR, 327.7 feet from the nearest proposed PV panel, in the near-foreground distance zone.

Ross County Solar Project

Buckskin and Paint Townships, Ross County, Ohio

Appendix B - Viewpoint Photolog

Sheet 4 of 4



Appendix C

Landscape Mitigation Plan

ROSS COUNTY SOLAR | LANDSCAPE MITIGATION PLAN



TABLE OF CONTENTS

INTRODUCTION.....	3
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PLANT MATERIAL SELECTION & MAINTENANCE	5
PLANTING MODULES	8
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SECTION 1: INTRODUCTION

For the successful siting of solar facilities, consideration for the relationship between the proposed Facility and the adjacent landscape is the key component. The approach developed by Ross County Solar (RCS) in consultation with Environmental Design and Research, Landscape Architecture, Engineering & Environmental Services, D.P.C (EDR) for minimizing and mitigating the potential for visual impacts employs a design methodology utilizing interventions in the form of plant material. This plant material will provide both a visual buffer between the proposed facility and the existing landscape while also providing ecological benefit. This approach of utilizing Plant material has shown to be successful and has become the preferred methodology for solar facility mitigation.

Another key component to developing a successful mitigation plan is to retain existing plant material wherever possible. Not only does this provide immediate screening for facility components but also has the added benefit allowing new vegetation to blend more seamlessly with existing vegetation, increasing the likeliness for successful integration of the facility. Without the retention of existing plant material, facility components and even new vegetation would have a much stronger visual contrast, producing a less successful result. Wherever feasible, retention of this plant material, particularly near sensitive areas such as property lines and roadside location, will help to preserve and enhance the character of the surrounding context.

Taking these two key components into consideration, the landscape mitigation plan included herein responds visually, climatically, and ecologically to the specific site conditions found around the RCS facility. It is important to note however, the approach outlined within this report is not to develop fully buffered hedgerows or completely conceal facility components, rather the approach developed will break direct views of the facility down into smaller more obscure views to minimize the facility's visual impact.

SECTION 2: DESIGN METHODOLOGY

The design methodology created for RCS was developed around the use of different screening module typologies. These modules are broadly repeatable while still retaining the ability to respond to the unique site conditions found throughout the facility. The (4) Module types outlined in Section III utilize native plant material, along with pollinator-friendly plant species to minimize and mitigate views of the proposed facility. This design methodology was developed utilizing the following guidelines

- Review of local zoning guidelines
- Documentation of landscape character and vegetation within the Facility area
- Take inspiration from the surrounding landscape in development of the design
- Maintain existing viewsheds where possible
- Maintain existing vegetation where feasible
- Integrate the Facility into the surrounding context by softening Facility appearance and visual contrast
- Utilize native plant material to provide wildlife habitat and other ecological benefits

NATIVE PLANT MATERIAL

Native plant material is a critical component to the success of a Solar mitigation plan. The use of plant material found within the facility area and the surrounding context provides obvious ecological benefit to local wildlife with refuse, food and habitat while simultaneously providing a gentle transition between existing plant material and newly installed plant material.

POLLINATOR HABITAT

Unmown field edges and open vistas are defining characteristics of the agrarian landscape found at the facility, making the use of grasses and wildflowers a fitting component to the existing character. This plant material also has the added benefit of providing habitat for various species while contributing to the mitigation of the facility.

OTHER METHODS

While researching other methods for screening, barriers and berms we identified as a methodology used by others to screen solar facilities but were deemed not appropriate for this landscape. Barriers such as opaque fences as well as berms are not characteristic of an agrarian landscape and would hinder, rather than assist in the mitigation and minimization of views of the facility. These other methods would introduce a new material to an otherwise limited palate of visual textures and character that would greatly contrast what viewer would expect to see in this type of landscape.

SECTION 3: PLANT MATERIAL SELECTION & MAINTENANCE

As outlined in Section I, the context of the facility plays a key role in plant selection. The use of native plant material found in facility and surrounding context will improve the success of the mitigation strategy and plant establishment. With a mix of full hedgerows, intermittent hedgerows as well as more forested areas found around the facility, the different module types will help to mimic this variation while mitigating views of the facility. To develop this list of native plant material a number of sources were used, including but not limited to: on-site observation, the U.S. Department of Agriculture (USDA) Plants Database, the USDA Forest Atlas, the Ohio Department of Agriculture's Prohibited Invasive Plant list, and the Selected Ohio Native Plants for Landscape and Restoration Use guides provided by the Ohio Department of Natural Resources (DNR).

PLANT MATERIAL MAINTENANCE

While the plant material outlined in this report has been selected for its ability to blend into the existing landscape and eliminate the need for prolonged maintenance, RCS has still developed a strategy to review the plant material after initial installation to ensure the functions outlined in this report are met moving forward.

For woody plant material, RCS will retain a qualified landscape architect to inspect visual mitigation planting after one year from completed installation to identify plant material that did not survive, appears unhealthy and/or otherwise needs to be replaced. Ross County will remove and replace plantings that fail in materials, workmanship or growth within one-year following the completed installation of plantings. Following the first year of inspections, Ross County will retain a qualified landscape architect to review the planting on an annual basis for the next four years to identify and necessary measures and schedule implementation if necessary.

If dieback occurs after the five-year period outlined above, a qualified landscape architect or representative of RCS will evaluate and determine if the mitigation planting is still accomplishing the goals outlined in this report. If the remaining vegetation accomplishes these goals, no further action will be taken. If deemed insufficient, new planting or others means of screening will be recommended for installation.

For herbaceous plant material, RCS will conduct periodic mowing to assist in the establishment of said material and promote re-propagation. Areas of dieback will be reviewed by a qualified landscape architect or representative of Ross County to evaluate if further action will be needed to meet the visual impact goals outlined in this report.

POTENTIAL PLANT MATERIAL SELECTION FOR THE ROSS COUNTY SOLAR FACILITY



POTENTIAL PLANT MATERIAL INSTALLATION SIZE AND 5-7 SIZE

Northern
Bayberry



Mapleleaf
Viburnum



Buttonbush



Elderberry



Common
Winterberry



Botanical Name	Common Name	Install Size (Height)	5-7 Year Size (Height)	Max. Mature Size (Height)	Use in Module 1	Use in Module 2	Use in Module 3	Use in Module 4
Aesculus glabra	Ohio Buckeye	10'	18'	40'		X		
Carpinus caroliniana	American Hornbeam	10'	16'	35'			X	
Cephalanthus occidentalis	Buttonbush	3'	6'	12'			X	X
Cercis canadensis	Eastern Redbud	6'	12'	30'				X
Cornus florida	Flowering Dogwood	6'	12'	30'		X		
Ilex verticillata	Winterberry	6'	8'	12'		X	X	X
Juniperus virginiana	Eastern Red Cedar	4'	14'	65'			X	X
Liquidambar styraciflua	American Sweetgum	12'	24'	70'			X	
Morella pensylvanica	Northern Bayberry	3'	8'	10'			X	
Ostrya virginiana	Eastern Hophornbeam	10'	16'	40'		X	X	X
Oxydendrum arboreum	Sourwood	11'	18'	50'				X
Pinus strobus	Eastern White Pine	6'-7'	22'	80'			X	
Quercus coccinea	Scarlet Oak	14'	23'	70'			X	
Sambucus canadensis	Elderberry	2'	9'	12'				X
Viburnum acerifolium	Mapleleaf Viburnum	2'	4.5'	6'			X	X
-	Pollinator Mix	Seed	3'	5'	X	X	X	X

SECTION 4: PLANTING MODULES

MODULES TYPE 1: POLLINATOR MIX



Pollinator Seed Mix

POLLINATOR SEED MIX TYPE 1 ARRAY SEED MIX	
BOTANICAL NAME	COMMON NAME
<i>Bouteloua curtipendula</i>	Sideoats grama
<i>Carex brevior</i>	Short beak sedge
<i>Elymus trachycaulus</i>	Slender wheat grass
<i>Festuca rubra ssp. rubra</i>	Red fescue
<i>Festuca subverticillata</i>	Nodding fescue
<i>Juncus tenuis</i>	Path rush
<i>Poa compressa</i>	Canada bluegrass
<i>Schizachyrium scoparium</i>	Little bluestem
<i>Achillea millefolium</i>	Yarrow
<i>Chamaecrista fasciculata</i>	Partridge pea
<i>Geum canadense</i>	White avens
<i>Monarda fistulosa</i>	Wild bergamot
<i>Oligoneuron rigidum</i>	Stiff goldenrod
<i>Rudbeckia hirta</i>	Black-eyed Susan
<i>Solidago nemoralis</i>	Old-field goldenrod
<i>Symphyotrichum ericoides</i>	Heath aster
<i>Zizia aurea</i>	Golden alexanders

POLLINATOR SEED MIX TYPE 2 WET SEED MIX	
BOTANICAL NAME	COMMON NAME
<i>Carex hystericina</i>	Bottlebrush sedge
<i>Carex lurida</i>	Shallow sedge
<i>Carex vulpinoidea</i>	Fox sedge
<i>Elymus virginicus</i>	Virginia wild rye
<i>Leersia oryzoides</i>	Rice cut grass
<i>Muhlenbergia mexicana</i>	Leafy satin grass
<i>Poa palustris</i>	Fowl bluegrass
<i>Schizachyrium scoparium</i>	Little bluestem
<i>Scirpus atrovirens</i>	Green bulrush
<i>Anemone canadensis</i>	Canada anemone
<i>Euthamia graminifolia</i>	Common grass-leaved goldenrod
<i>Mimulus ringens</i>	Allegheny monkeyflower
<i>Verbena hastata</i>	Blue vervain

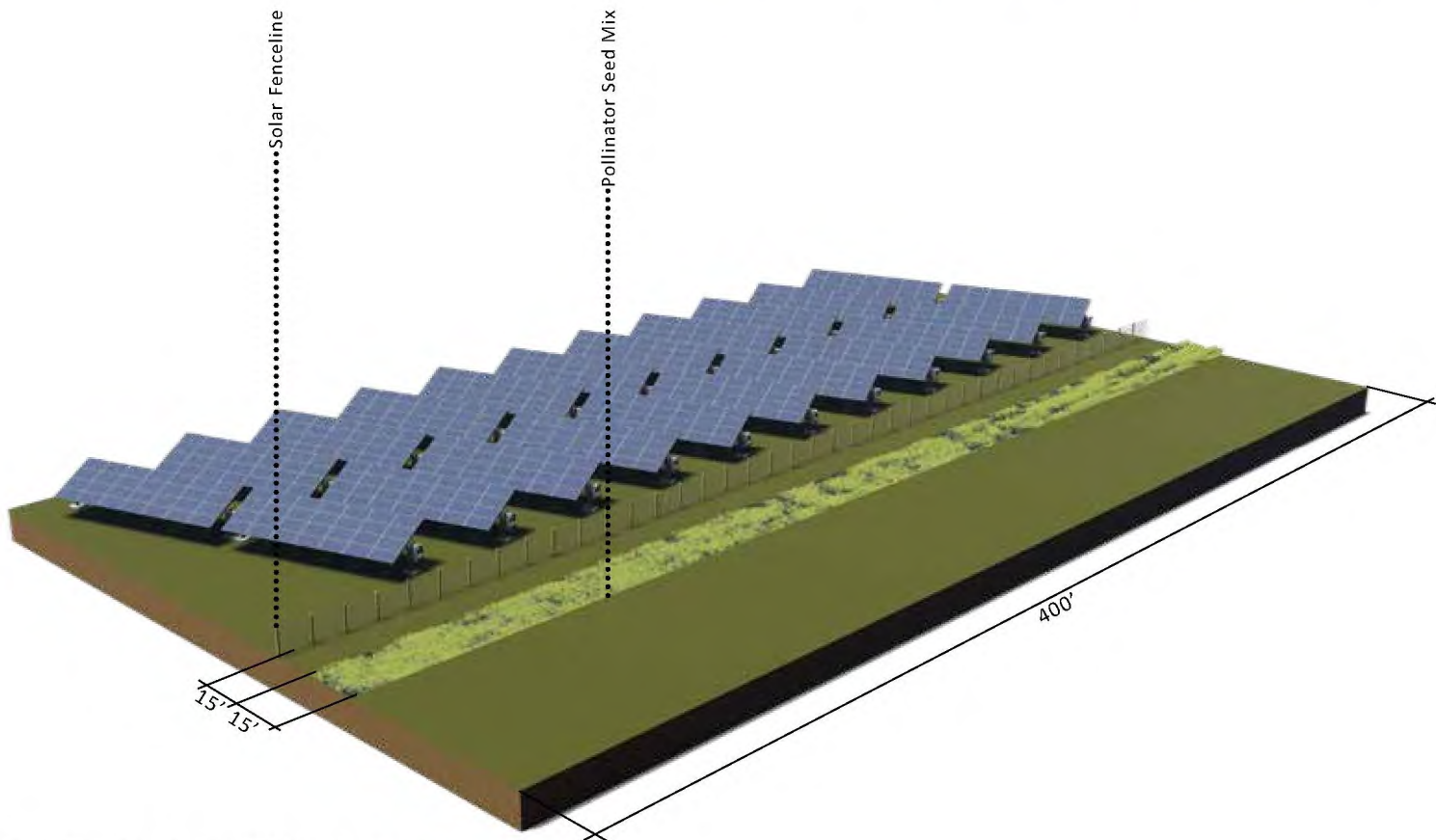
SECTION 4: PLANTING MODULES

MODULES TYPE 1: POLLINATOR HABITAT

Module type 1 is intended to blend the edges of agricultural fields or other low visibility areas with the existing herbaceous material presently found throughout the facility with the use of a pollinator seed mix. With seasonal color and interest and well as habitat for local pollinators, the introduction of this material can provide multiple benefits. Additionally, with two different seed mixes based on the expected soil moisture found in the planting area, the module is adaptable to the unique site conditions found throughout the Facility. For information regarding the vegetation management plan for the pollinator habitat, refer to the Vegetation Management Plan, Ross County Solar Energy Facility developed by Applied Ecological Services.



Sample Simulation | Module Type 1



Sample Simulation | Module Type 1

SECTION 4: PLANTING MODULES

MODULE TYPE 2: VERTICAL SOFTENING

Eastern
Hophornbeam



Ohio
Buckeye



Flowering
Dogwood



Common
Winterberry



Pollinator
Seed Mix

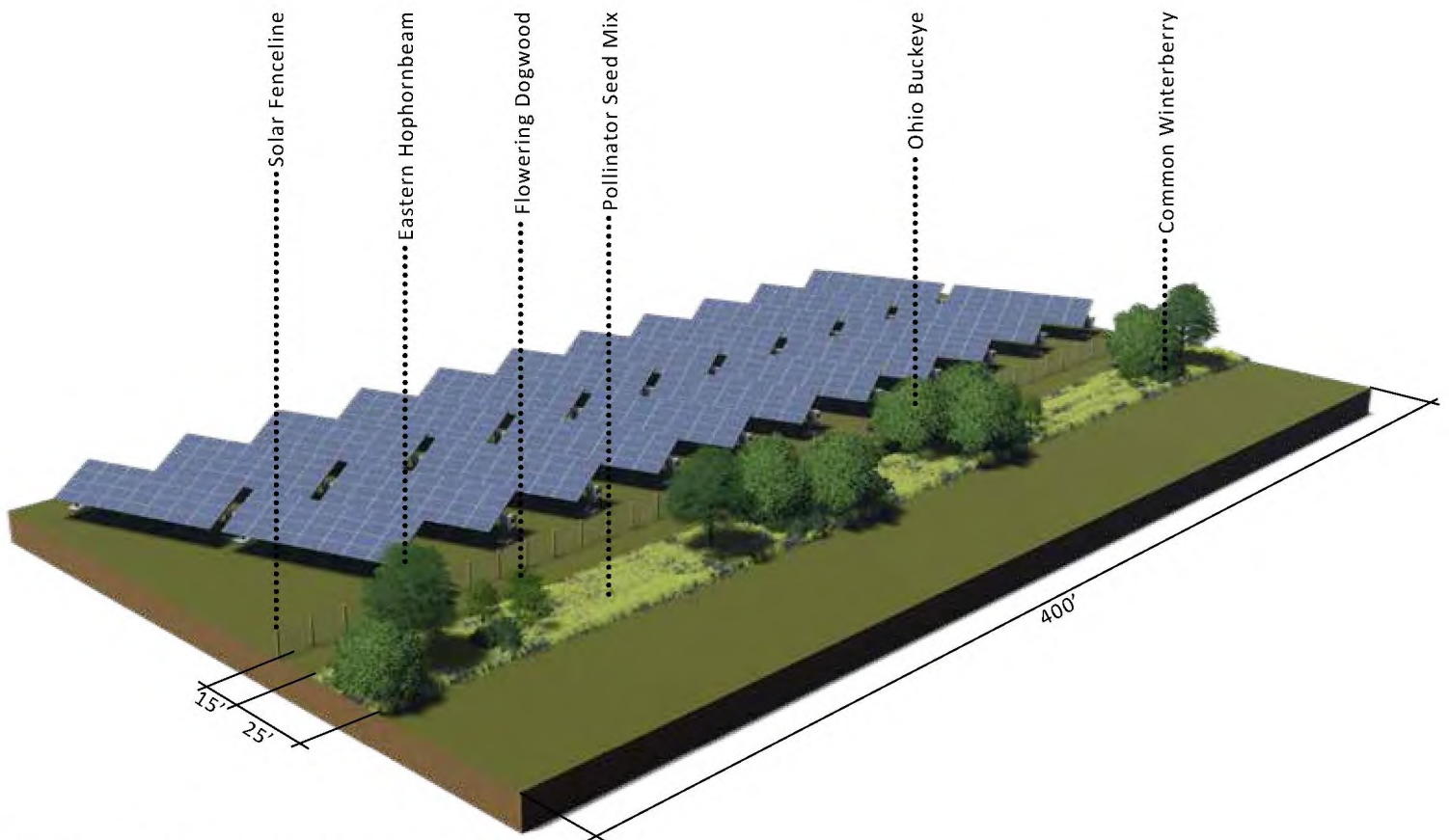


MODULE TYPE 2: VERTICAL SOFTENING

Module Type 2 is intended for use in areas of potentially high viewership and visibility, but where prolonged viewership is uncommon. For example, areas adjacent to major roadways have high viewership but the likelihood of a prolonged stationary activity is very low. The goal of the module is to break up the horizontality of the facility components allowing the foreground and background vegetation to more easily blend together.



Sample Location | Module Type 2



Sample Simulation | Module Type 2

SECTION 4: PLANTING MODULES

MODULE TYPE 3: ADJACENT RESOURCE

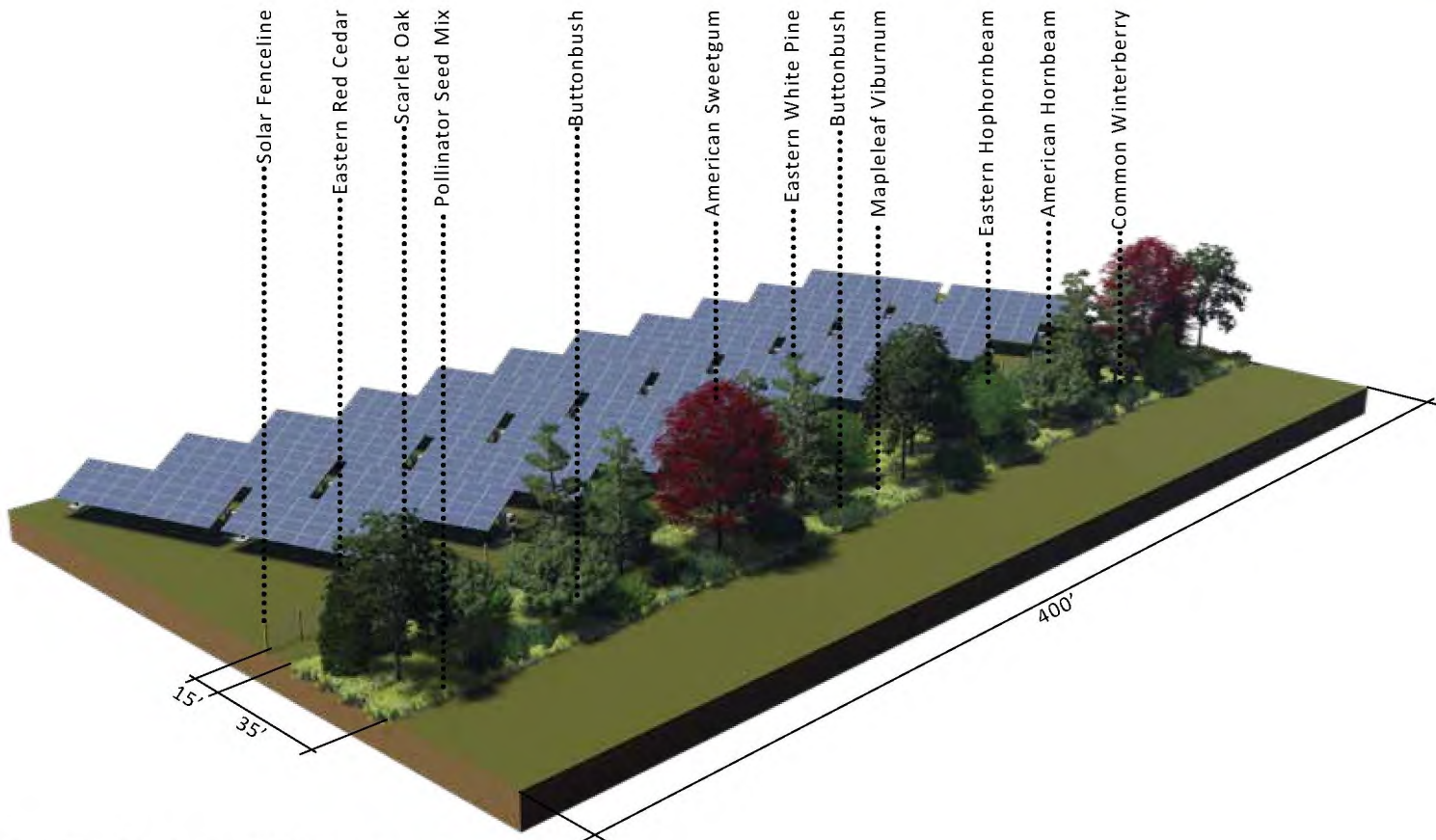
American Hornbeam	American Sweetgum	Scarlet Oak	Eastern White Pine	Eastern Hophornbeam
				
				
Eastern Red Cedar	Northern Bayberry	Mapleleaf Viburnum	Buttonbush	Common Winterberry
				
				

MODULE TYPE 3: ADJACENT RESOURCE

Module Type 3 is designed for the facility’s most sensitive areas where a high level of screening is desired. Locations adjacent to residential or recreational areas that could be impacted by the installation of facility components are the most appropriate for this module type. The use of large shade trees, more evergreen plant material and a additional under-story shrubs will provide significant screening in both summer and winter conditions. It is important to note however, the intent of this module type is not a 100% screening, but rather an effective vegetative buffer that feels appropriate in the exiting contextual landscape.



Sample Location | Module Type 3



Sample Simulation | Module Type 3

SECTION 4: PLANTING MODULES

MODULE TYPE 4: ADJACENT RESOURCE (LOW PLANTING)

Eastern
Red Cedar



Eastern
Redbud



Sourwood



Eastern
Hophornbeam



Mapleleaf
Viburnum



Buttonbush



Elderberry



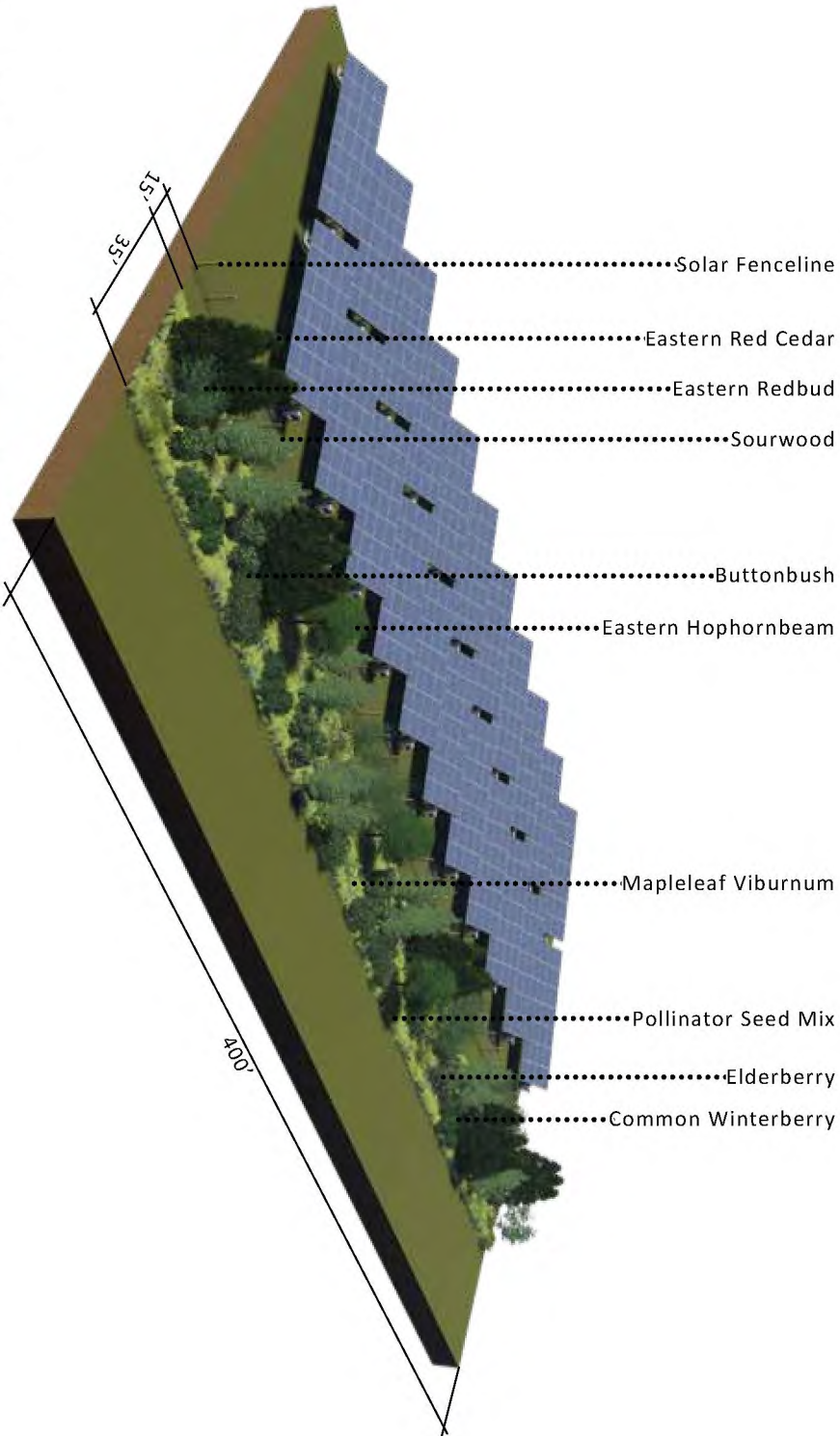
Common
Winterberry



MODULE TYPE 4: ADJACENT RESOURCE
(LOW PLANTING)

Module 4 specifically addresses location in which large plant material (selected for module 3) would shade facility components. Using smaller deciduous trees and evergreens, the module has the ability to provide the same screening benefits as module 3 while reducing the risk of shading facility components or interfering with existing overhead utilities.

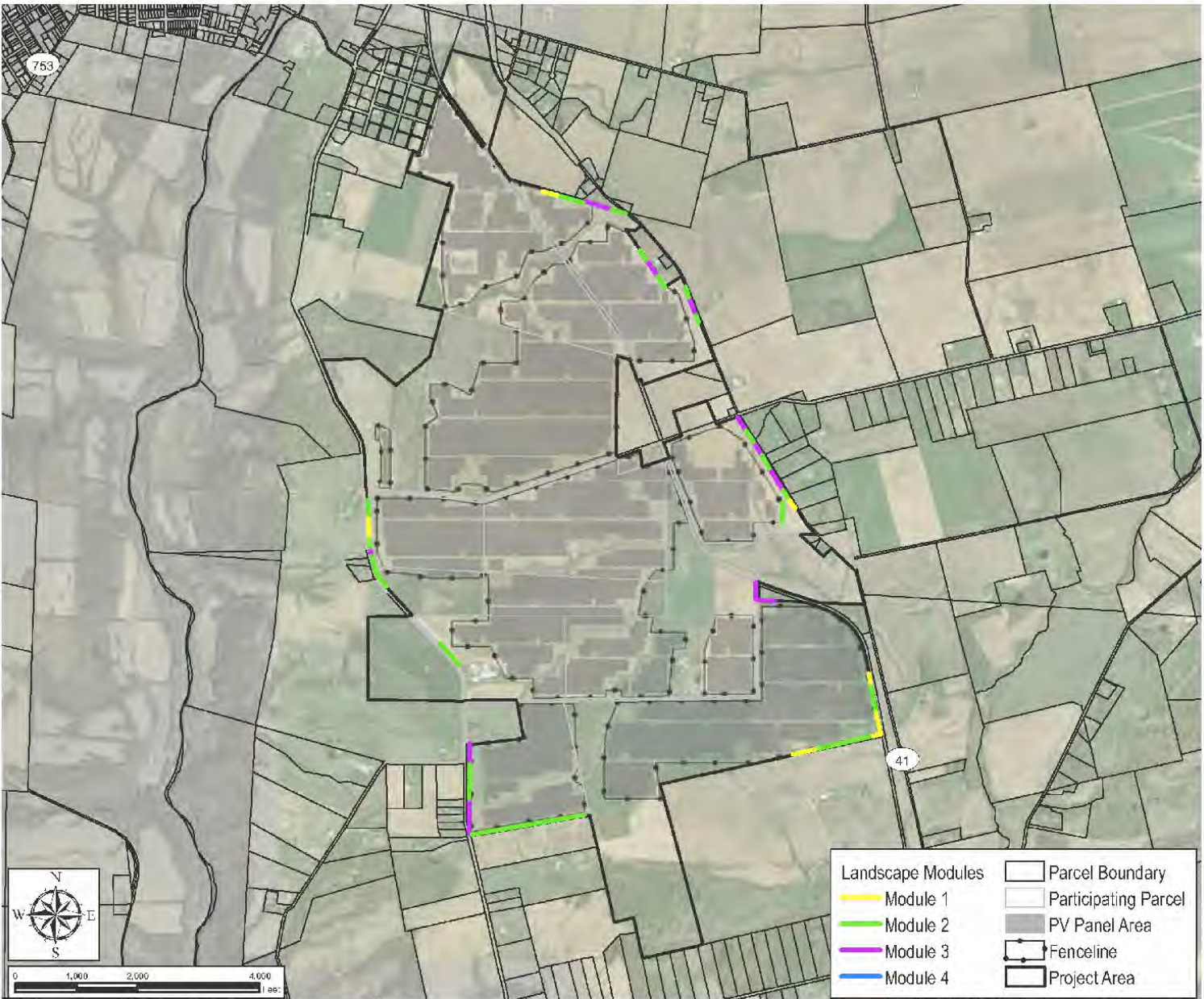
Sample Location | Module Type 4



Sample Simulation | Module Type 4

SECTION 5: LOCATION OF PLANTING MODULES

Landscape Architects at EDR used desktop analysis and information gathered from on-site visits to propose locations of the various modules outlined in Section 4. Locations were selected to match the proposed module with the anticipated degree of Facility visibility and viewer circumstances. This review determined which module type will be most fitting for specific portions of the Facility, including seldom seen areas, areas adjacent to roadsides, hedgerows abutting neighbouring residences, and areas adjacent to residences that have little or no existing screening.



SECTION 6: CONCLUSION

The methods outlined within this report will provide a visual buffer between the proposed facility and the surrounding context. Blending facility components into the surrounding landscape will divert viewer attention from the facility and provide a more successful outcomes when compared to other mitigations strategies. Increased integration of the Facility into the surrounding landscape context, coupled with the introduction of additional habitat benefits, meets project goals for minimization and mitigation of adverse visual and ecological impacts, and is in keeping with the existing conditions typical of the surrounding landscape.

Appendix D

Visual Simulations

Viewpoint 14

Viewpoint Information

County: Ross
Town: Buckskin
Location: County Road 54 (Lower Twin Road)
Latitude, Longitude: 39.32192° N, 83.36997° W
Direction of View: Northeast
Distance to Project: 101.3 feet
Distance Zone: Near-Foreground

Visual Resources

User Group: Local Residents
Aesthetic Resource: N/A

Environmental Data

Date Taken: 9/3/2020
Time: 2:58 PM
Temperature: 77 °F
Humidity: 78%
Visibility: >10 miles
Conditions Observed: Cloudy

Camera Information

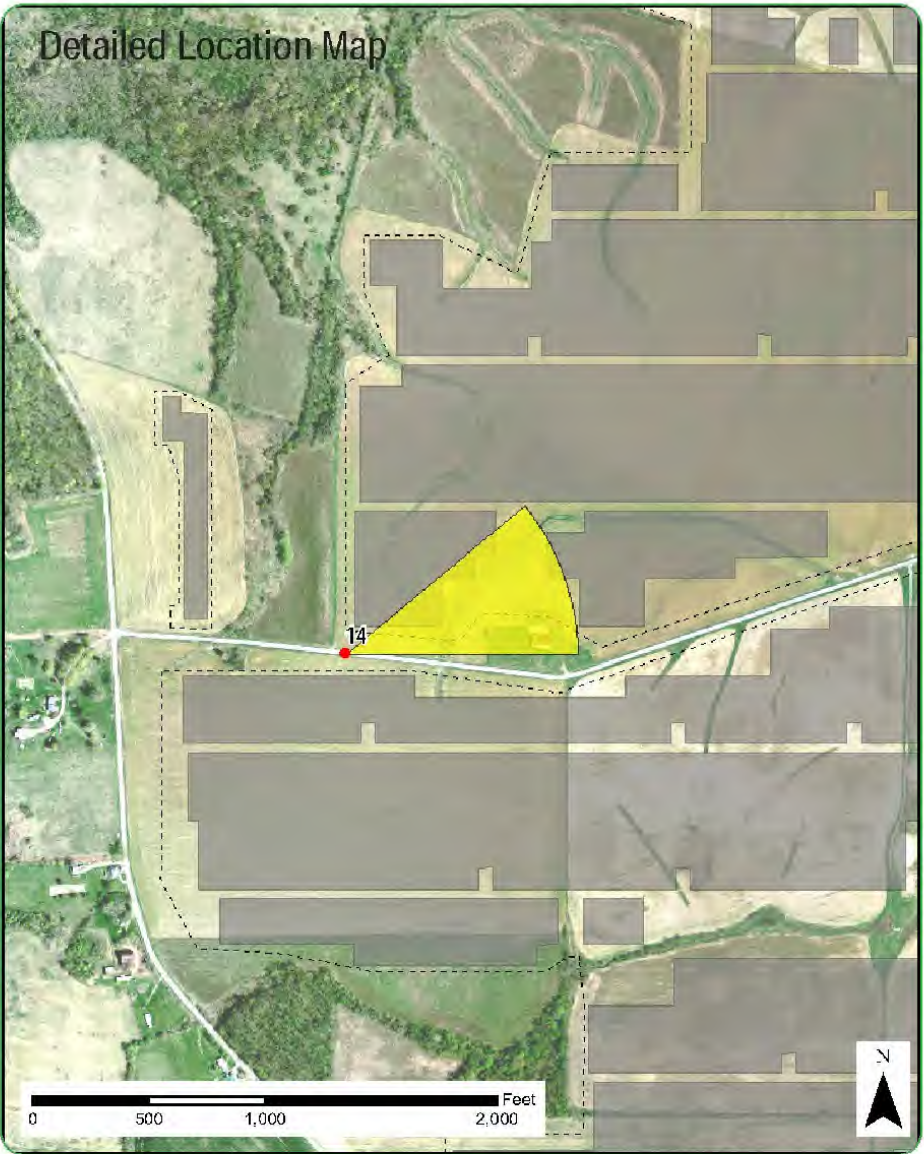
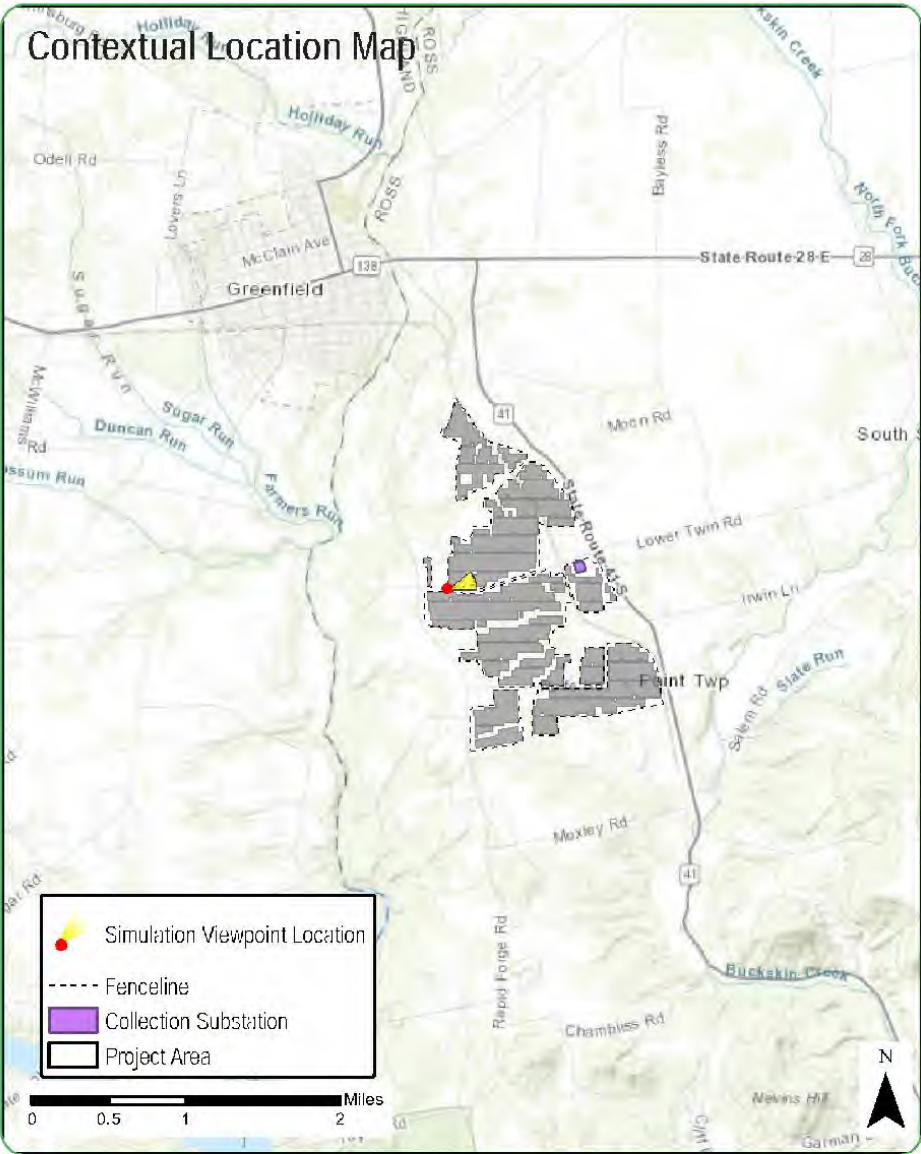
Camera: NIKON D7200
Resolution: 300dpi
Lens Focal Length: 32 mm
Camera Elevation: 938.1 feet

Project Information:

Racking Type: Single-Axis "Tracking"
Max Panel Height From Ground: 14.5 feet
Project Site: 661 acres

Viewing Instructions:

Printed at 100% the resulting simulation size is 15 inches wide by 10 inches high. At this size and focal length, the simulation should be viewed from a distance 23 inches.



Context Photo: View to the North-Northwest



Context Photo: View to the North-Northeast



Simulation Photo: View to the Northeast



Context Photo: View to the Southeast

Ross County Solar Project

Buckskin and Paint Townships, Ross County, Ohio

Viewpoint 14 - County Road 54 (Lower Twin Road) in the Town of Buckskin, Ross County

Appendix D: Sheet 1 of 14



Existing Conditions



Simulation



Viewpoint 17

Viewpoint Information

County: Ross
Town: Paint
Location: Rolfe Road
Latitude, Longitude: 39.31275° N, 83.36157° W
Direction of View: East
Distance to Project: 86.9 feet
Distance Zone: Near-Foreground

Visual Resources

User Group: Local Residents
Aesthetic Resource: N/A

Environmental Data

Date Taken: 9/3/2020
Time: 3:23 PM
Temperature: 77 °F
Humidity: 78%
Visibility: >10 miles
Conditions Observed: Cloudy

Camera Information

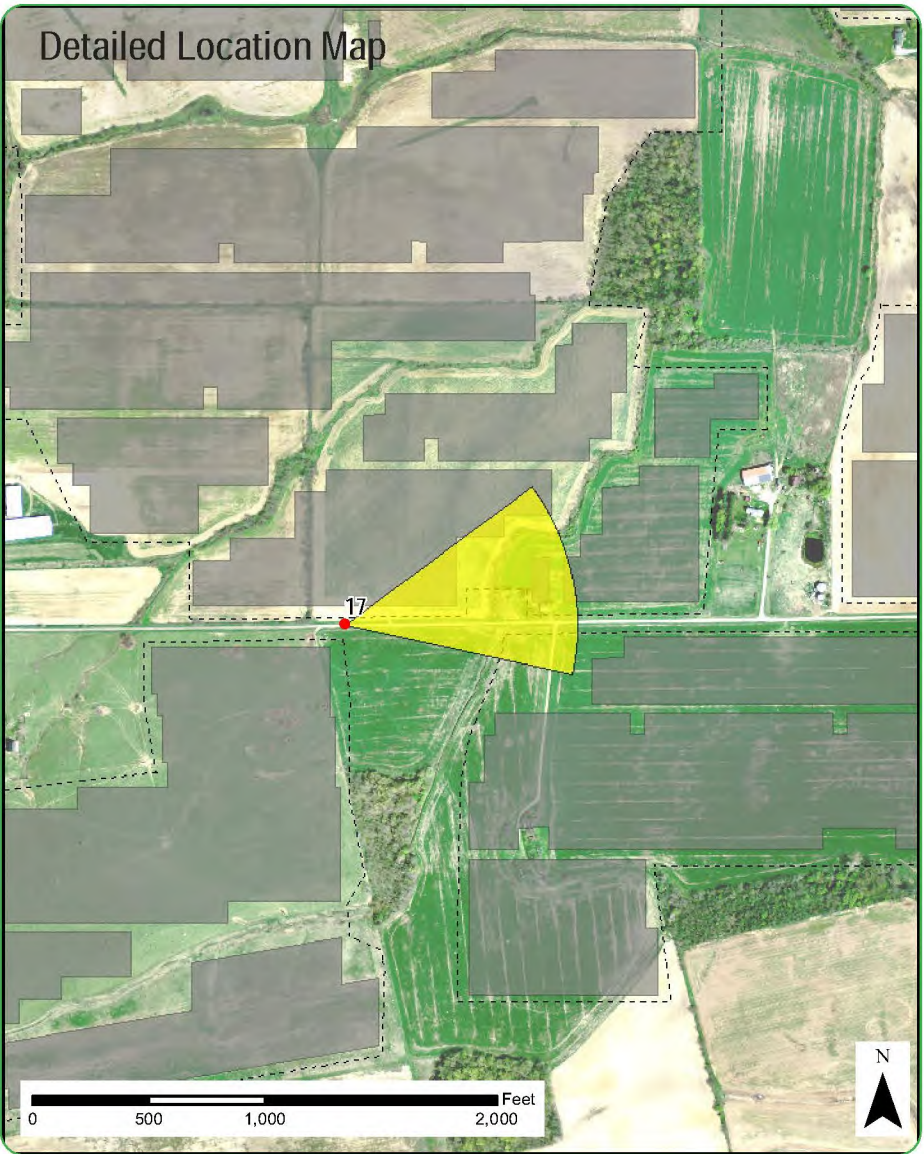
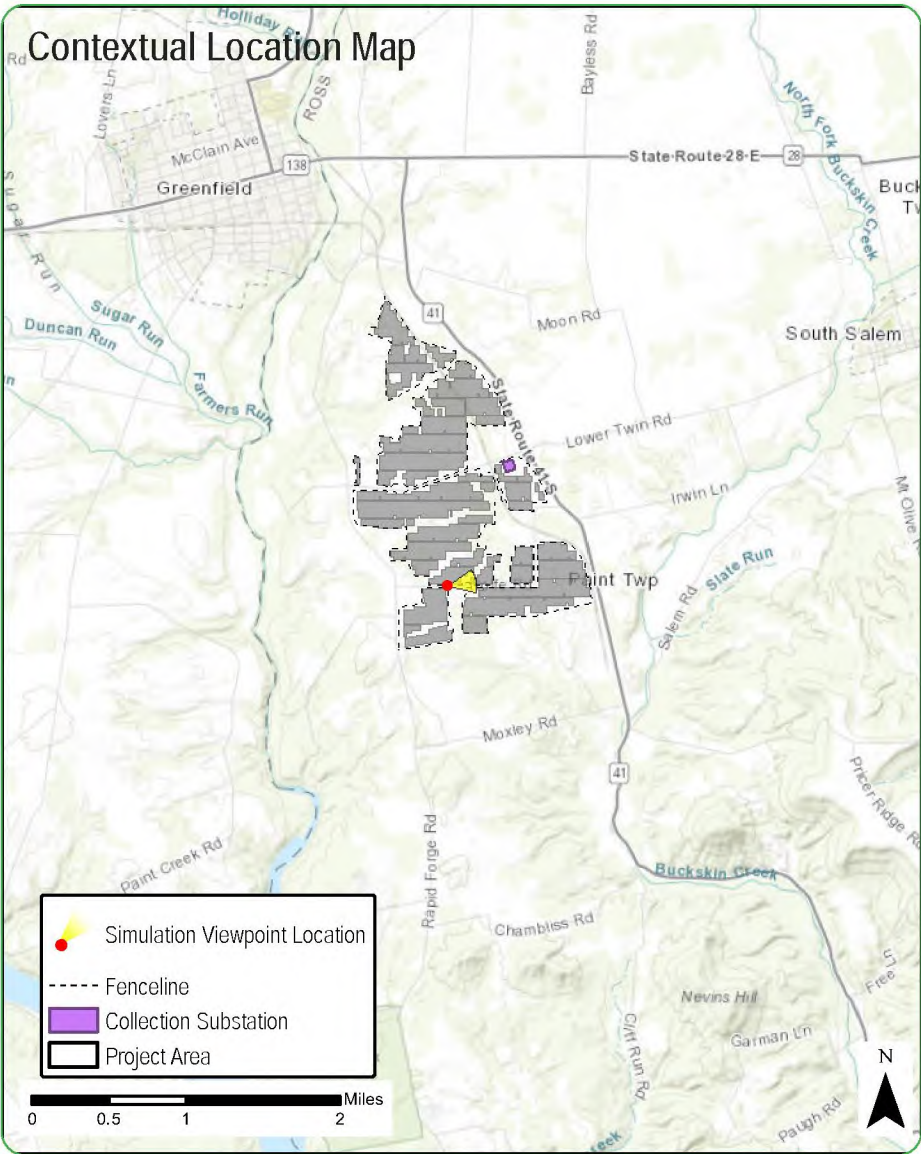
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Resolution: 300dpi
Lens Focal Length: 26 mm
Camera Elevation: feet

Project Information:

Racking Type: Single-Axis "Tracking"
Max Panel Height From Ground: 14.5 feet
Project Site: 661 acres

Viewing Instructions:

Printed at 100% the resulting simulation size is 15 inches wide by 10 inches high. At this size and focal length, the simulation should be viewed from a distance 23 inches.



Context Photo: View to the Northeast



Simulation Photo: View to the East



Context Photo: View to the Southeast



Context Photo: View to the South

Ross County Solar Project

Buckskin and Paint Townships, Ross County, Ohio

Viewpoint 17 - Rolfe Road in the Town of Paint, Ross County

Appendix D: Sheet 4 of 14



Existing Conditions

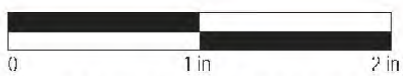


Ross County Solar Project

Buckskin and Paint Townships, Ross County, Ohio

Viewpoint 17 - Rolfe Road in the Town of Paint, Ross County

Appendix D: Sheet 5 of 14



This scale is designed to insure the simulation images are printed at the intended size.





Ross County Solar Project

Buckskin and Paint Townships, Ross County, Ohio

Viewpoint 17 - Rolfe Road in the Town of Paint, Ross County

Appendix D: Sheet 6 of 14



This scale is designed to insure the simulation images are printed at the intended size.



Viewpoint 19

Viewpoint Information

County: Ross
Town: Buckskin
Location: Rolfe Road
Latitude, Longitude: 39.32026° N, 83.35013° W
Direction of View: North-Northwest
Distance to Project: 269.8 feet
Distance Zone: Near-Foreground

Visual Resources

User Group: Local Residents
Aesthetic Resource: N/A

Environmental Data

Date Taken: 9/3/2020
Time: 3:50 PM
Temperature: 78 °F
Humidity: 74%
Visibility: >10 miles
Conditions Observed: Cloudy

Camera Information

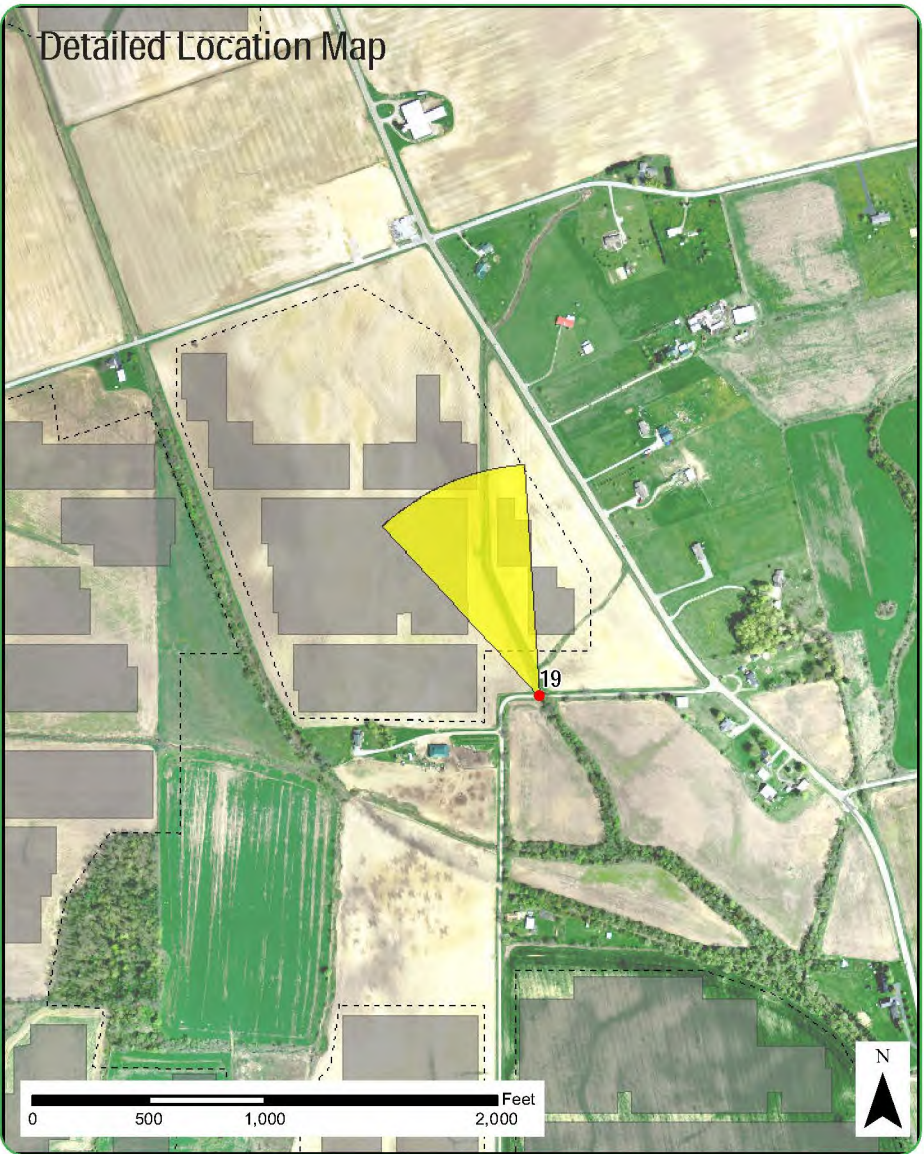
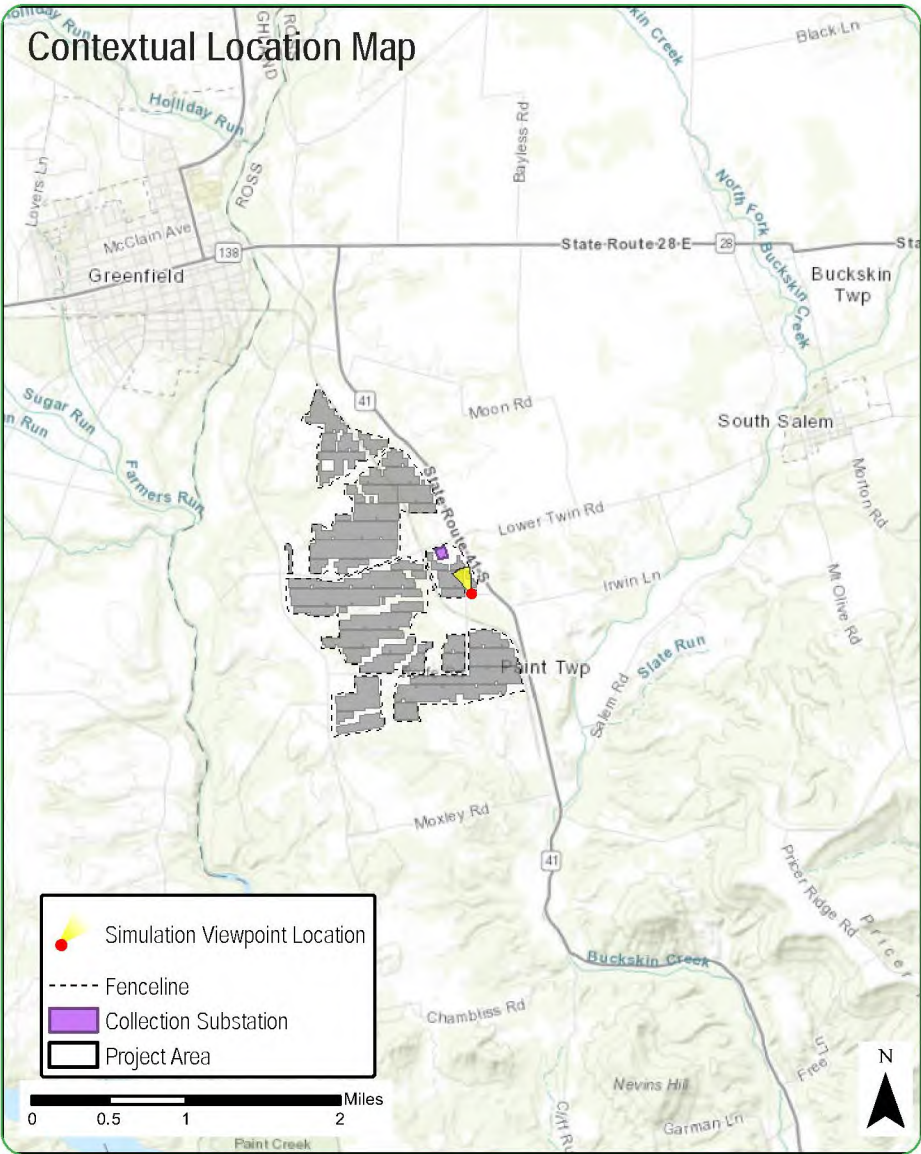
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Resolution: 300dpi
Lens Focal Length: 34 mm
Camera Elevation: feet

Project Information:

Racking Type: Single-Axis "Tracking"
Max Panel Height From Ground: 14.5 feet
Project Site: 661 acres

Viewing Instructions:

Printed at 100% the resulting simulation size is 15 inches wide by 10 inches high. At this size and focal length, the simulation should be viewed from a distance 23 inches.



Context Photo: View to the Northwest



Simulation Photo: View to the North-Northwest



Context Photo: View to the North-Northeast



Context Photo: View to the Northeast

Ross County Solar Project

Buckskin and Paint Townships, Ross County, Ohio

Viewpoint 19 - Rolfe Road in the Town of Buckskin, Ross County

Appendix D: Sheet 7 of 14



Existing Conditions

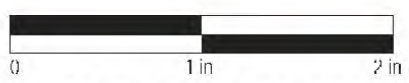


Ross County Solar Project

Buckskin and Paint Townships, Ross County, Ohio

Viewpoint 19 - Rolfe Road in the Town of Buckskin, Ross County

Appendix D: Sheet 8 of 14



This scale is designed to insure the simulation images are printed at the intended size.





Ross County Solar Project

Buckskin and Paint Townships, Ross County, Ohio

Viewpoint 19 - Rolfe Road in the Town of Buckskin, Ross County

Appendix D: Sheet 9 of 14



This scale is designed to insure the simulation images are printed at the intended size.





Ross County Solar Project

Buckskin and Paint Townships, Ross County, Ohio

Viewpoint 19 - Rolfe Road in the Town of Buckskin, Ross County

Appendix D: Sheet 10 of 14



This scale is designed to insure the simulation images are printed at the intended size.



Viewpoint 21

Viewpoint Information

County: Ross
Town: Buckskin
Location: State Route 41
Latitude, Longitude: 39.33045° N, 83.35430° W
Direction of View: Northwest
Distance to Project: 327.7 feet
Distance Zone: Near-Foreground

Visual Resources

User Group: Local Residents, Through Travelers/
Commuters
Aesthetic Resource: State Route 41

Environmental Data

Date Taken: 9/3/2020
Time: 4:20 PM
Temperature: 78 °F
Humidity: 74%
Visibility: >10 miles
Conditions Observed: Cloudy

Camera Information

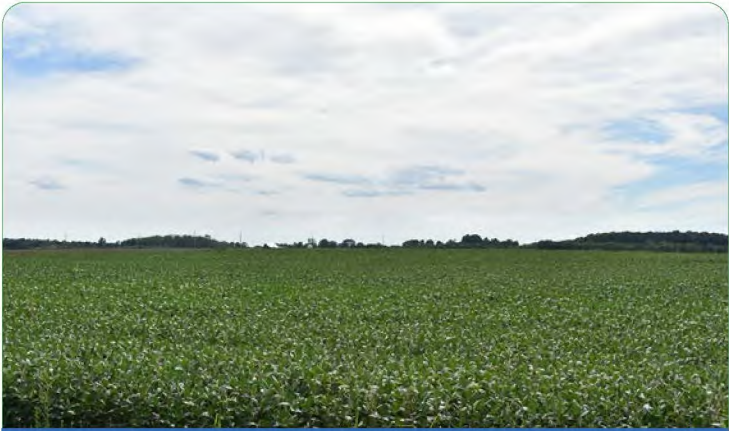
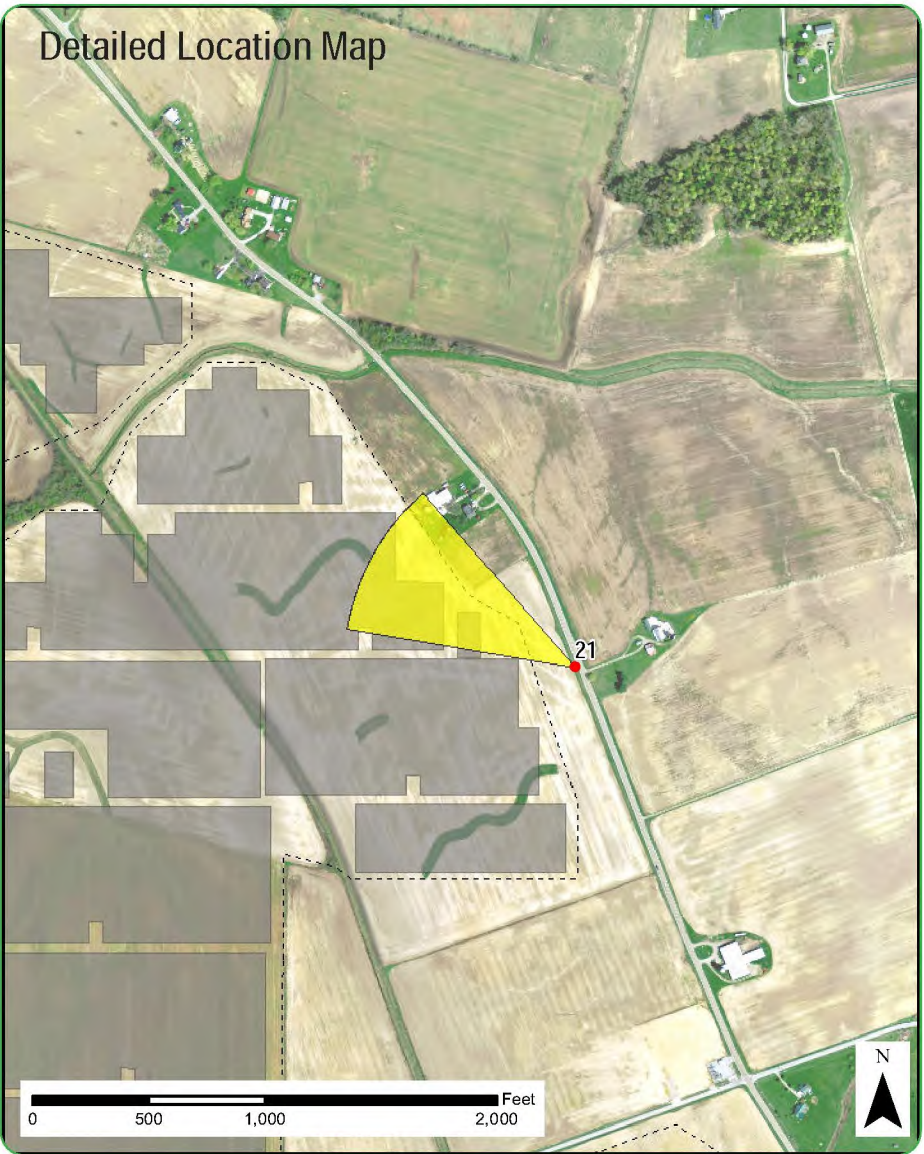
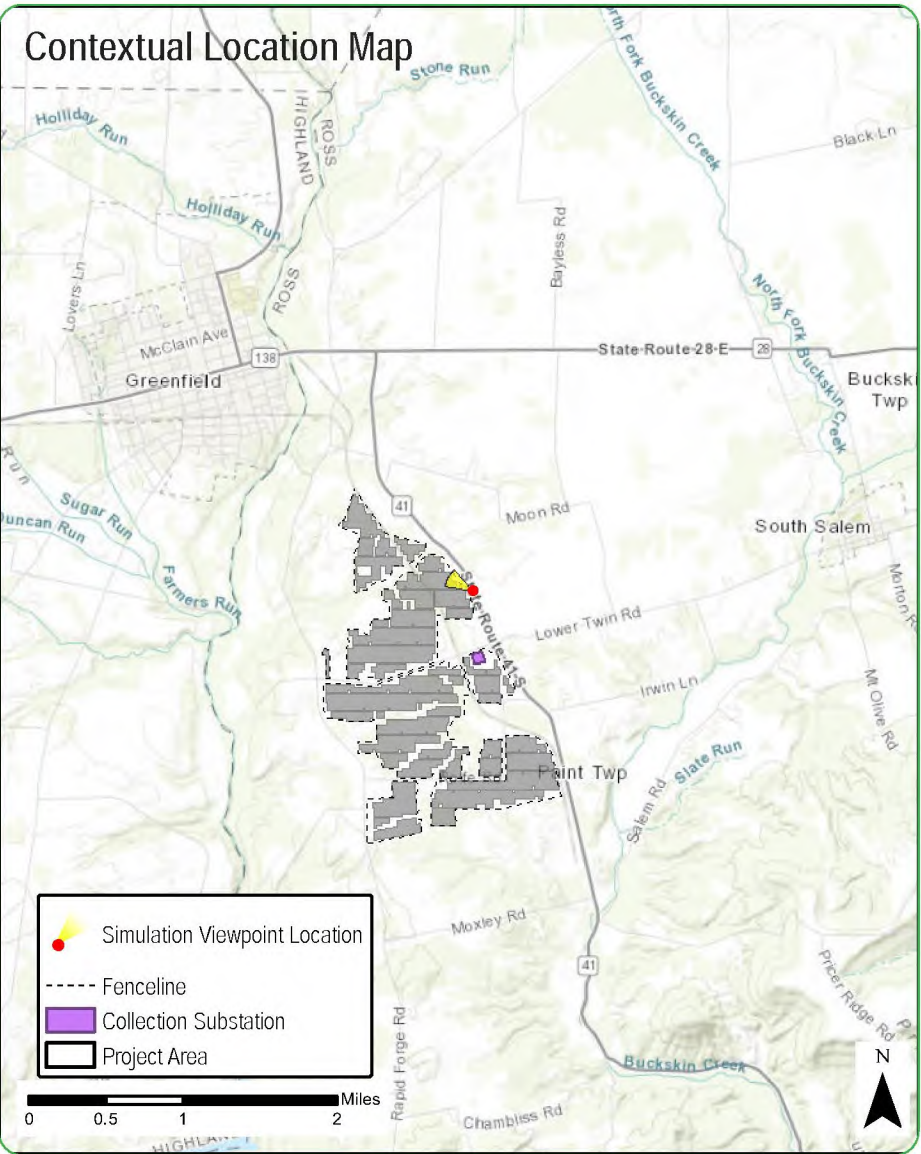
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Resolution: 300dpi
Lens Focal Length: 34 mm
Camera Elevation: feet

Project Information:

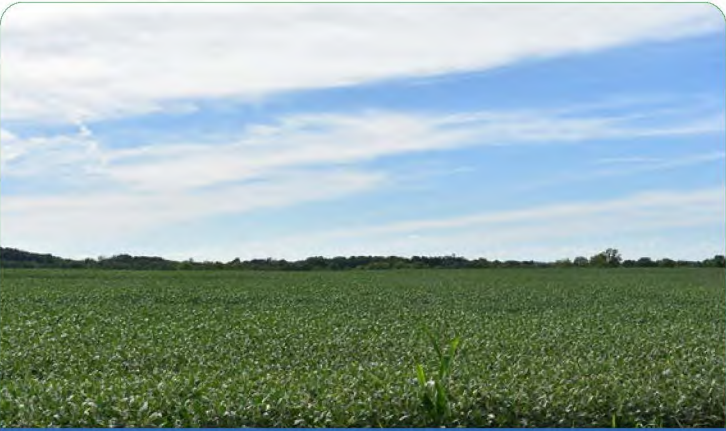
Racking Type: Single-Axis "Tracking"
Max Panel Height From Ground: 14.5 feet
Project Site: 661 acres

Viewing Instructions:

Printed at 100% the resulting simulation size is 15 inches wide by 10 inches high. At this size and focal length, the simulation should be viewed from a distance 23 inches.



Context Photo: View to the West-Southwest



Context Photo: View to the West-Northwest



Simulation Photo: View to the Northwest



Context Photo: View to the North-Northwest

Ross County Solar Project

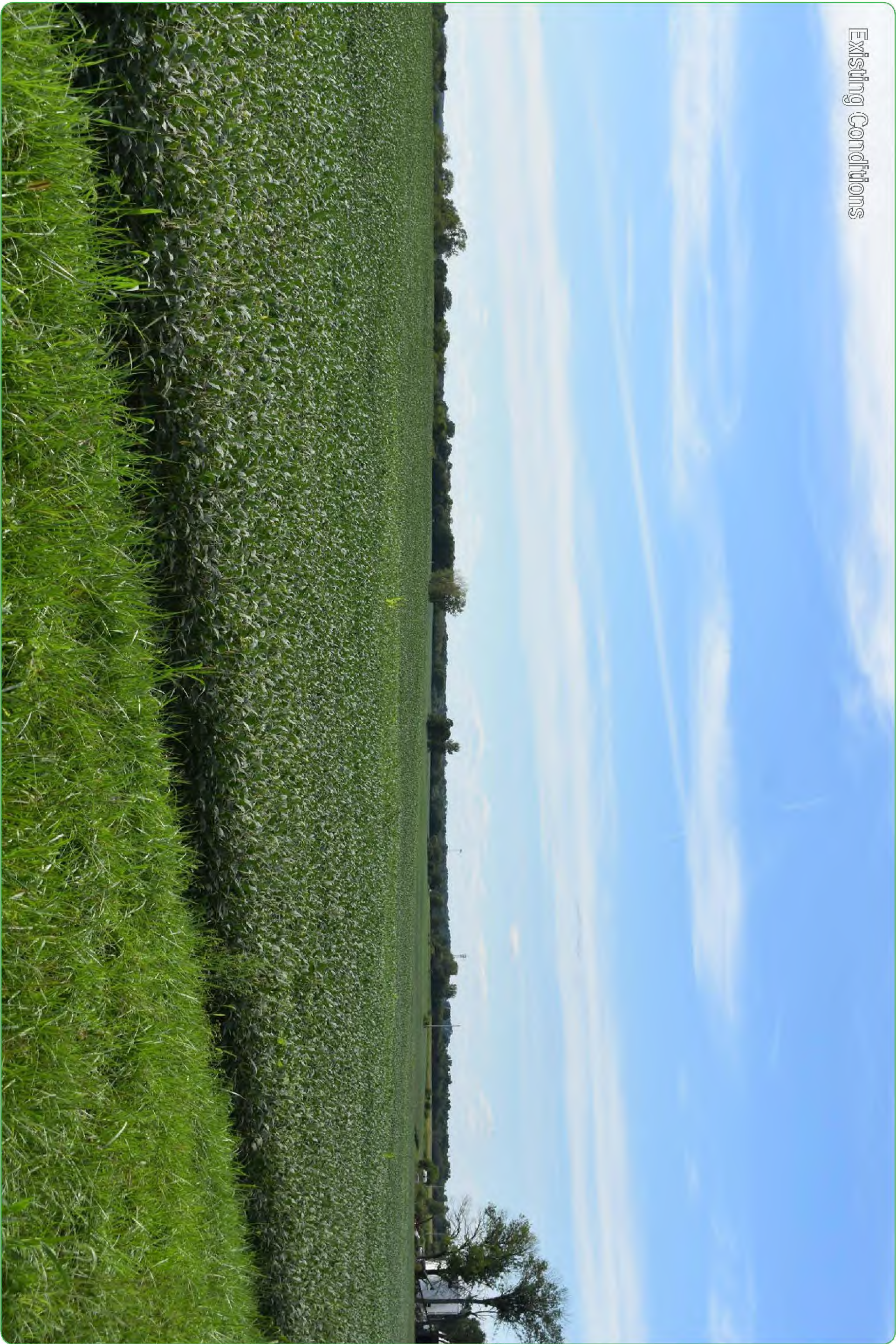
Buckskin and Paint Townships, Ross County, Ohio

Viewpoint 21 - State Route 41 in the Town of Buckskin, Ross County

Appendix D: Sheet 11 of 14



Existing Conditions

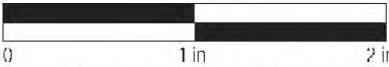


Ross County Solar Project

Buckskin and Paint Townships, Ross County, Ohio

Viewpoint 21 - State Route 41 in the Town of Buckskin, Ross County

Appendix D: Sheet 12 of 14



This scale is designed to insure the simulation images are printed at the intended size.



Simulation



5-7 Year Mitigation



Appendix E

Visually Sensitive Resources Analysis

Visually Sensitive Resource	Location		VP Number ¹	Distance ²		Distance Zone	Project Visibility (Viewshed Results)		
	Town	County		Miles from Nearest PV Panel Area	Substation/ Energy Storage Facility	● Near-Foreground ● Foreground ● Midground ■ Background	+Visible	- Not Visible	+/- Partially Visible
							PV Panel DSM Viewshed (Topography, Structures, and Vegetation)	Substation DSM Viewshed (Topography, Structures, and Vegetation)	
Properties of Historic Significance									
National/State Historic Landmarks									
None in Study Area									
National/State Historic Sites									
None in Study Area									
Sites Listed on National or State Registers of Historic Places (NRHP/SRHP)									
Travellers' Rest Inn	Madison	Highland		0.9	2.2	●	-	-	
Smith, Samuel, House And Tannery	Madison	Highland		1.0	2.3	●	-	-	
South Salem Covered Bridge	Buckskin	Ross		2.1	2.2	●	-	-	
South Salem Academy	Buckskin	Ross		2.3	2.4	●	-	-	
Sites Eligible for Listing on NRHP or SRHP									
Rehab: 158 Jefferson	Madison	Highland		1.0	2.3	●	-	-	
Rehab: 244 Jefferson	Madison	Highland		1.1	2.4	●	-	-	
Rehab: 248 Jefferson	Madison	Highland		1.1	2.4	●	-	-	
The Bell Clyburn Bldg. - 250	Madison	Highland		1.1	2.4	●	-	-	
Rehab: 251 Jefferson	Madison	Highland		1.1	2.4	●	-	-	
Rehab: 247 Jefferson	Madison	Highland		1.1	2.4	●	-	-	
Rehab: 355 Jefferson	Madison	Highland		1.1	2.4	●	-	-	
OHI Historic Structures									
Waddell House	Madison	Highland		0.6	1.9	●	-	-	
Paul Cameron House	Madison	Highland		0.7	2.0	●	-	-	
Hyer House	Madison	Highland		0.8	2.1	●	-	-	
Rotary Forms Warehouse	Madison	Highland		0.9	2.2	●	-	-	
Old Burying Ground	Madison	Highland		0.9	2.2	●	-	-	
George L Gregg House	Madison	Highland		0.9	2.2	●	+/-	-	
Traveller's Rest Inn	Madison	Highland		1.0	2.3	●	-	-	
Fruitdale RR Bridge	Paint	Ross		1.0	2.2	●	-	-	
Century House	Madison	Highland		1.1	2.3	●	-	-	
Detroit Toledo & Ironton RR 5	Madison	Highland		1.1	2.4	●	-	-	
US Post Office	Madison	Highland		1.1	2.4	●	-	-	
Town Hall	Madison	Highland		1.1	2.4	●	+/-	-	
Welfare Finance Corp	Madison	Highland		1.1	2.4	●	+/-	-	
Gossett's	Madison	Highland		1.1	2.4	●	+/-	-	
Dr GB Doan Office	Madison	Highland		1.1	2.4	●	+/-	-	

Visually Sensitive Resource	Location		VP Number ¹	Distance ²		Distance Zone	Project Visibility (Viewshed Results)		
	Town	County		Miles from Nearest PV Panel Area	Substation/ Energy Storage Facility	Near-Foreground ● Foreground ● Midground ■ Background	+ Visible	- Not Visible	+/- Partially Visible
							PV Panel DSM Viewshed (Topography, Structures, and Vegetation)	Substation DSM Viewshed (Topography, Structures, and Vegetation)	
Dennis Jewelers	Madison	Highland		1.1	2.4	●	-	-	
United Dept Store	Madison	Highland		1.1	2.4	●	-	-	
Model Cleaners	Madison	Highland		1.1	2.4	●	-	-	
Chatterbox Restaurant	Madison	Highland		1.1	2.4	●	-	-	
Greenfield Sundry	Madison	Highland		1.1	2.4	●	-	-	
George & Patti Smith House	Madison	Highland		1.1	2.4	●	-	-	
Helen Taylor House	Madison	Highland		1.2	2.4	●	-	-	
Greenfield Municipal Hosp	Madison	Highland		1.2	2.4	●	-	+/-	
Anderson Funeral Home	Madison	Highland		1.2	2.5	●	-	-	
1st Presbyterian Church	Madison	Highland		1.2	2.5	●	-	-	
Greenfield Elem School	Madison	Highland		1.2	2.5	●	-	-	
Judge Alfred Dickey House	Madison	Highland		1.2	2.5	●	-	-	
Ed Lee McClain High School	Madison	Highland		1.3	2.6	●	-	-	
Jim Douglass Daniles House	Madison	Highland		1.5	2.5	●	-	-	
Mausoleum	Madison	Highland		1.6	2.9	●	-	-	
Fout House	Madison	Highland		2.0	3.2	●	+/-	-	
Caldwell Farm	Buckskin	Ross		2.0	2.1	●	+/-	+/-	
Rannels House	Madison	Highland		2.1	3.1	●	+/-	+/-	
Buckskin Covered Bridge	Buckskin	Ross		2.1	2.2	●	-	-	
Emolt Holdren House	Buckskin	Ross		2.2	2.4	●	-	-	
Charles Hiles Farm	Buckskin	Ross		2.2	2.4	●	+/-	-	
Ruth Hughley House	Buckskin	Ross		2.3	2.4	●	+/-	-	
South Salem Academy	Buckskin	Ross		2.3	2.4	●	-	-	
South Salem Presbyterian Church	Buckskin	Ross		2.3	2.5	●	-	-	
Streitenberger Residence	Buckskin	Ross		2.5	2.7	●	-	-	
Mess Residence	Buckskin	Ross		2.8	3.0	●	-	-	
Dean Cemetery	Buckskin	Ross		3.1	3.2	●	-	-	
Sheep Pen Cemetery	Madison	Highland		3.9	5.2	●	-	-	
Gail Finch House	Buckskin	Ross		4.4	5.0	•	+/-	-	
Kline Property	Buckskin	Ross		4.9	5.0	•	-	-	
Historic Bridges									

Visually Sensitive Resource	Location		VP Number ¹	Distance ²		Distance Zone	Project Visibility (Viewshed Results)		
	Town	County		Miles from Nearest PV Panel Area	Substation/ Energy Storage Facility	<div><div>●</div>Near-Foreground</div> <div><div>●</div>Foreground</div> <div><div>●</div>Midground</div> <div><div>■</div>Background</div>	+Visible	- Not Visible	+/- Partially Visible
							PV Panel DSM Viewshed (Topography, Structures, and Vegetation)	Substation DSM Viewshed (Topography, Structures, and Vegetation)	
None in Study Area									
OGS Cemeteries									
Milligan-Hop Run-Old Stone Cemetery	Buckskin	Ross		0.2	1.4	●	-		-
Waggoner Cemetery	Buckskin	Ross		0.5	1.4	●	-		-
Old Burying Ground Cemetery	Madison	Highland		0.9	2.2	●	-		-
Saint Joseph Cemetery	Madison	Highland		1.3	2.7	●	-		-
Lunbeck Cemetery	Madison	Highland		1.4	2.6	●	-		-
Nuckols Cemetery	Paint	Ross		1.5	2.6	●	-		-
Greenfield Cemetery	Madison	Highland		1.6	2.8	●	-		-
Murray Farm Cemetery	Buckskin	Ross		1.9	2.3	●	+		+
Nixon Cemetery	Paint	Ross		1.9	3.3	●	-		-
Ziegler Cemetery	Paint	Ross		2.1	2.8	●	-		-
Pricer-Old Pricer Cemetery	Paint	Ross		2.3	3.0	●	-		-
South Salem Cemetery	Buckskin	Ross		2.3	2.4	●	-		-
Satchell Cemetery	Buckskin	Ross		2.3	2.4	●	-		-
Wesley Chapel Cemetery	Paint	Ross		2.4	3.2	●	+/-		+/-
Gray-Nevins-(Grey) Cemetery	Paint	Ross		2.6	3.6	●	-		-
Dwyer Cemetery	Paint	Ross		2.8	3.9	●	-		-
Morton Cemetery	Buckskin	Ross		2.8	2.8	●	+/-		-
Hixon-Sutton Cemetery	Buckskin	Ross		2.8	3.5	●	+/-		+/-
Pricer Cemetery	Paint	Ross		2.9	3.8	●	-		-
Old Benner Cemetery	Paint	Ross		3.1	4.0	●	-		-
Hymiller/Himiller-Middleton Cemetery	Paint	Ross		3.1	4.3	●	-		-
Depoy-Wright Cemetery	Buckskin	Ross		3.1	3.5	●	+/-		-
Rocky Spring Cemetery	Madison	Highland		3.3	4.3	●	-		-
Hamilton Cemetery	Paint	Ross		3.3	4.5	●	-		-
Snyder Cemetery	Paint	Ross		3.3	4.2	●	-		-
Dean-Old Presbyterian Cemetery	Buckskin	Ross		3.5	3.4	●	-		-
Garman-Weller/Waller Cemetery	Paint	Ross		3.6	4.6	●	-		-
Warnock Cemetery	Paint	Ross		3.8	4.9	●	-		-
Edmiston-Ziegler Cemetery	Paint	Ross		3.8	4.7	●	-		-

Visually Sensitive Resource	Location		VP Number ¹	Distance ²		Distance Zone	Project Visibility (Viewshed Results)		
	Town	County		Miles from Nearest PV Panel Area	Substation/ Energy Storage Facility	<div><div>●</div>Near-Foreground</div> <div><div>●</div>Foreground</div> <div><div>●</div>Midground</div> <div><div>●</div>Background</div>	+Visible	- Not Visible	+/- Partially Visible
							PV Panel DSM Viewshed (Topography, Structures, and Vegetation)	Substation DSM Viewshed (Topography, Structures, and Vegetation)	
Unnamed Cemetery	Paint	Ross		3.9	4.7	<div><div>●</div></div>	-	-	-
Gustin-Limes-Sheep Pen Cemetery	Madison	Highland		3.9	5.2	<div><div>●</div></div>	-	-	-
Unnamed Cemetery	Buckskin	Ross		3.9	4.2	<div><div>●</div></div>	+/-	-	-
Smith Cemetery	Paint	Highland		3.9	5.2	<div><div>●</div></div>	-	-	-
Robbins Cemetery	Buckskin	Ross		4.2	4.4	<div><div>●</div></div>	-	-	-
Tyler Cemetery	Madison	Highland		4.2	5.4	<div><div>●</div></div>	-	-	-
Howry Cemetery	Paint	Ross		4.3	5.0	<div><div>●</div></div>	-	-	-
Hulitt Cemetery	Paint	Highland		4.4	5.8	<div><div>●</div></div>	-	-	-
Black Cemetery	Buckskin	Ross		4.5	4.6	<div><div>●</div></div>	-	-	-
Holby-Walley Cemetery	Paint	Ross		4.7	5.4	<div><div>●</div></div>	-	-	-
Rockhold Cemetery	Paint	Ross		4.7	5.7	<div><div>●</div></div>	-	-	-
Pepple Cemetery	Paint	Ross		4.7	5.9	<div><div>●</div></div>	-	-	-
Buttermilk-Caldwell-Cope Cemetery	Madison	Highland		4.9	5.7	<div><div>●</div></div>	-	-	-
Brake Cemetery	Paint	Ross		4.9	5.6	<div><div>●</div></div>	-	-	-
Pope-Santee Cemetery	Madison	Highland		5.1	6.0	<div><div>●</div></div>	-	-	-
Finch Cemetery	Buckskin	Ross		5.1	5.7	<div><div>●</div></div>	+/-	-	-
Ohio Historic State Marker									
None in Study Area									
Designated Scenic Resources									
Rivers Designated as National or State Wild, Scenic or Recreational									
None in Study Area									
Sites, Areas, Lakes, Reservoirs or Highways Designated or Eligible for Designation as Scenic									
None in Study Area									
Other Designated Scenic Resources (Easements, Roads, Districts, and Overlooks)									
Paint Creek Lake Scenic Overlook	Paint	Highland		4.0	5.3	<div><div>●</div></div>	-	-	-
Public Lands and Recreational Resources									
National Parks, Recreation Areas, Seashores, and Forests									
None in Study Area									
National Natural Landmarks									
None in Study Area									
National Wildlife Refuges									
None in Study Area									
Heritage Areas									
None in Study Area									
State Parks									
Paint Creek State Park	Madison, Paint	Highland, Ross		1.4	2.6	<div><div>●</div></div>	-	-	-
State Nature Preserves									

Ross County Solar Project

Buckskin and Paint Townships, Ross County, Ohio

Appendix E - Visually Sensitive Resource Analysis



Visually Sensitive Resource	Location		VP Number ¹	Distance ²		Distance Zone	Project Visibility (Viewshed Results)		
	Town	County		Miles from Nearest PV Panel Area	Substation/ Energy Storage Facility	<div><div></div> Near-Foreground</div> <div><div></div> Foreground</div> <div><div></div> Midground</div> <div><div></div> Background</div>	<div>+ Visible</div>	<div>- Not Visible</div>	<div>+/- Partially Visible</div>
							PV Panel DSM Viewshed (Topography, Structures, and Vegetation)	Substation DSM Viewshed (Topography, Structures, and Vegetation)	
Rocky Fork Gorge Nature Preserve Wildlife Areas	Paint	Highland		5.3	6.4	<div><div></div></div>	<div>-</div>	<div>-</div>	
Paint Creek Lake Wildlife Area	Fairfield, Madison, Paint, Buckskin	Highland, Ross		0.1	0.8	<div><div></div></div>	<div>+/-</div>	<div>+/-</div>	
Wildlife Production Area 48	Buckskin	Ross		1.4	2.3	<div><div></div></div>	<div>+/-</div>	<div>+/-</div>	
State Forests									
None in Study Area									
State Fishing/Waterway Access									
Paint Creek (Main Branch) Canoe Launch 3	Madison, Buckskin	Highland, Ross		0.7	2.0	<div><div></div></div>	<div>-</div>	<div>-</div>	
Paint Creek (Main Branch) Canoe Launch 2	Perry	Fayette		2.8	3.9	<div><div></div></div>	<div>-</div>	<div>-</div>	
Paint Creek State Park Boat Ramp 2	Paint	Ross		3.0	4.3	<div><div></div></div>	<div>-</div>	<div>-</div>	
Paint Creek State Park Canoe Launch 1	Paint	Ross		3.0	4.3	<div><div></div></div>	<div>-</div>	<div>-</div>	
Paint Creek State Park Fishing Access 2	Paint	Ross		3.1	4.4	<div><div></div></div>	<div>-</div>	<div>-</div>	
Paint Creek State Park Fishing Access 1	Paint	Ross		3.1	4.4	<div><div></div></div>	<div>-</div>	<div>-</div>	
Paint Creek State Park Boat Ramp 1	Paint	Highland		3.3	4.6	<div><div></div></div>	<div>-</div>	<div>-</div>	
Paint Creek State Park Canoe Launch 2	Paint	Highland, Ross		3.9	4.9	<div><div></div></div>	<div>-</div>	<div>-</div>	
Paint Creek State Park Fishing Access 4	Paint	Highland, Ross		3.9	4.9	<div><div></div></div>	<div>-</div>	<div>-</div>	
Paint Creek State Park Fishing Access 3	Paint	Ross		4.0	5.1	<div><div></div></div>	<div>-</div>	<div>-</div>	
Paint Creek State Park Fishing Pier	Paint	Highland		4.2	5.3	<div><div></div></div>	<div>-</div>	<div>-</div>	
Paint Creek State Park Canoe Launch 3	Paint	Highland		4.4	5.5	<div><div></div></div>	<div>-</div>	<div>-</div>	
Paint Creek State Park Boat Ramp 3	Paint	Highland		4.4	5.5	<div><div></div></div>	<div>-</div>	<div>-</div>	
Paint Creek State Park Courtesy Boat Dock	Paint	Highland		4.5	5.6	<div><div></div></div>	<div>-</div>	<div>-</div>	
Paint Creek State Park Boat/Swim Area	Paint	Highland		4.8	6.0	<div><div></div></div>	<div>-</div>	<div>-</div>	
Paint Creek (Main Branch) Canoe Launch 1	Perry, Wayne	Fayette		4.9	6.0	<div><div></div></div>	<div>-</div>	<div>-</div>	
Rocky Fork Creek Canoe Launch	Paint	Highland		5.3	6.4	<div><div></div></div>	<div>-</div>	<div>-</div>	
Other State Lands									
None in Study Area									
Designated Trails									
State and Federal Trails									
No stand-alone state/federal trails were identified. However, state trails occur within (and are evaluated as part of) state lands identified elsewhere in this table.									
Snowmobile/ATV Trails									
None in Study Area									
Bike Trails/Routes									
None in Study Area									
Other Trails									

Visually Sensitive Resource	Location		VP Number ¹	Distance ²		Distance Zone	Project Visibility (Viewshed Results)		
	Town	County		Miles from Nearest PV Panel Area	Substation/ Energy Storage Facility	<div><div></div><div></div><div></div><div></div></div> <div>Near-Foreground Foreground Midground Background</div>	+Visible	- Not Visible	+/- Partially Visible
							PV Panel DSM Viewshed (Topography, Structures, and Vegetation)	Substation DSM Viewshed (Topography, Structures, and Vegetation)	
None in Study Area									
Local Parks and Recreation Areas									
Mitchell Park	Madison	Highland		0.9	2.0	<div><div></div><div></div><div></div><div></div></div>	+/-	-	
Christian Union Campgrounds	Madison	Highland		1.8	3.1	<div><div></div><div></div><div></div><div></div></div>	+/-	-	
Publicly Accessible Conservation Lands/Easements									
None in Study Area									
Rivers and Streams with Public Fishing Access									
Paint Creek	Perry, Wayne, Madison, Paint, Buckskin, Paxton	Fayette, Highland, Ross		0.5	1.5	<div><div></div><div></div><div></div><div></div></div>	+/-	-	
Cliff Creek	Paint	Highland, Ross		2.3	3.2	<div><div></div><div></div><div></div><div></div></div>	-	-	
Rattlesnake Creek	Perry, Fairfield, Madison, Paint	Fayette, Highland		4.2	5.3	<div><div></div><div></div><div></div><div></div></div>	-	-	
Named Lakes, Ponds, and Reservoirs									
Paint Creek Lake	Madison, Paint	Highland, Ross		1.1	2.4	<div><div></div><div></div><div></div><div></div></div>	-	-	
High-Use Public Areas									
State, US, and Interstate Highways									
State Rte 41	Perry, Madison, Buckskin, Paint, Paxton	Fayette, Highland, Ross	21	0.0	0.1	<div><div></div><div></div><div></div><div></div></div>	+/-	+/-	
State Rte 28	Fairfield, Madison, Buckskin	Highland, Ross		0.9	1.9	<div><div></div><div></div><div></div><div></div></div>	+/-	+/-	
State Rte 138	Madison, Paint, Buckskin	Highland, Ross	6	0.9	2.2	<div><div></div><div></div><div></div><div></div></div>	+/-	+/-	
State Rte 753	Perry, Wayne, Madison, Paint	Fayette, Highland		1.1	2.3	<div><div></div><div></div><div></div><div></div></div>	+/-	+/-	
US Hwy 50	Paint, Paxton	Highland, Ross		5.3	6.4	<div><div></div><div></div><div></div><div></div></div>	-	-	
US Hwy 50 W	Paint, Paxton	Highland, Ross		5.3	6.4	<div><div></div><div></div><div></div><div></div></div>	-	-	
US Rte 50	Paint, Paxton	Highland, Ross		5.4	6.4	<div><div></div><div></div><div></div><div></div></div>	-	-	
Schools									
Greenfield Elementary and Middle School, McClain High School	Madison	Highland		1.2	2.5	<div><div></div><div></div><div></div><div></div></div>	+/-	+/-	
Buckskin Elementary School	Buckskin	Ross		2.3	2.4	<div><div></div><div></div><div></div><div></div></div>	-	-	
Cities, Villages									
Cities and Villages									
Village of Greenfield	Madison, Buckskin	Highland, Ross	10	0.5	1.7	<div><div></div><div></div><div></div><div></div></div>	+/-	+/-	
Village of South Salem	Buckskin	Ross	2	2.2	2.3	<div><div></div><div></div><div></div><div></div></div>	+/-	+/-	
Hamlets									
Hamlets									
None in Study Area									

¹ If no viewpoint (VP) number is indicated, no photo was obtained during fieldwork.

² For large areas and linear sites, approximate distance to the PV Panel Area and Substation was measured from the respective area's closest point.

Ross County Solar Project

Buckskin and Paint Townships, Ross County, Ohio

Appendix E - Visually Sensitive Resource Analysis



This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

10/30/2020 5:11:32 PM

in

Case No(s). 20-1380-EL-BGN

Summary: Application Application Exhibit V (VRA and Landscape Mitigation) electronically filed by Mr. Michael J. Settineri on behalf of Ross County Solar, LLC