Visual Impact Assessment – Revision 1

North Seneca Solar Project

Towns of Junius and Waterloo, Seneca County, New York

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Revision 1

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1.0 INTRODUCTION

1.1 Purpose of the Investigation

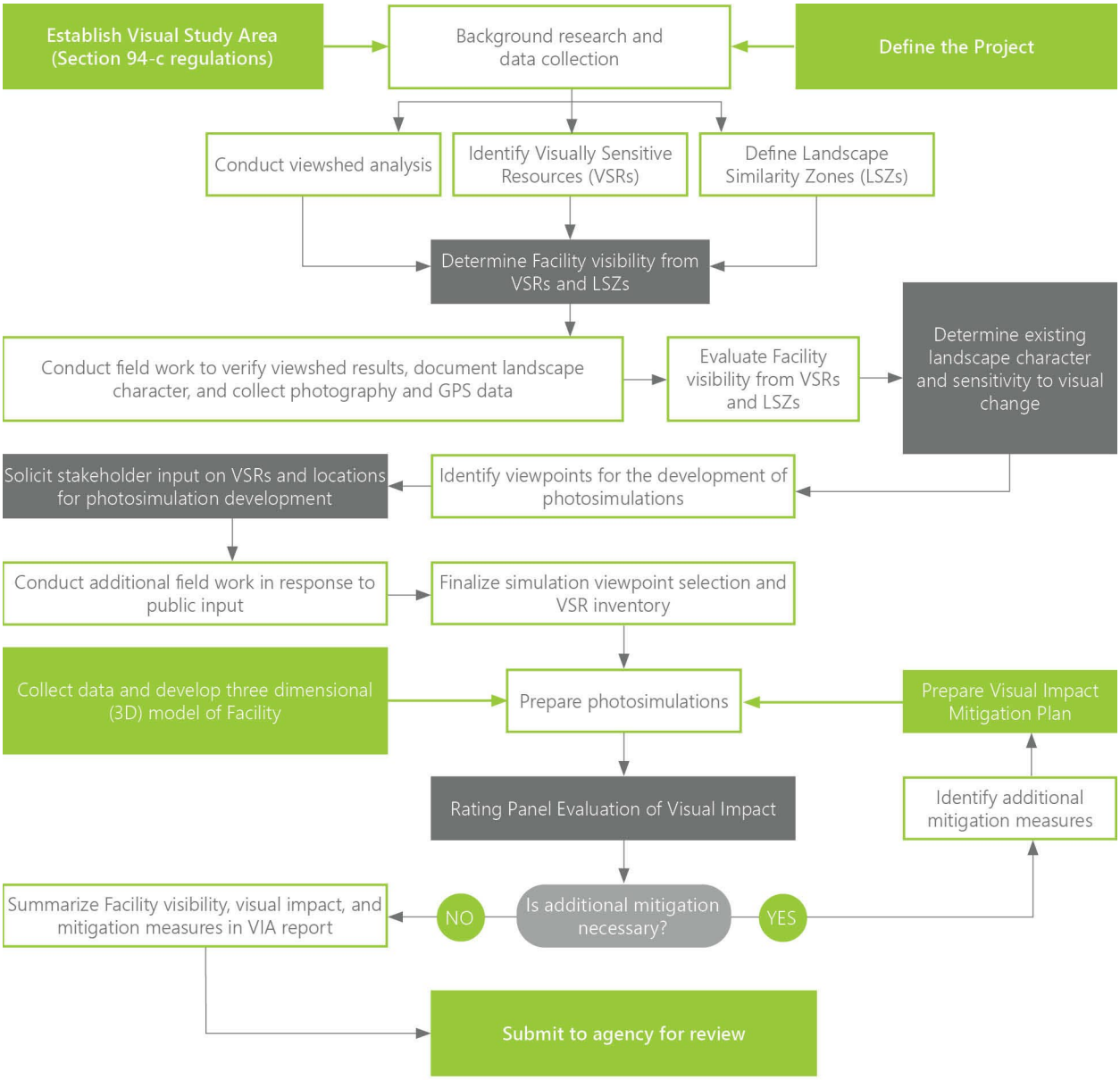
On behalf of North Seneca Solar Project, LLC (the Applicant), Environmental Design and Research, Landscape Architecture, Engineering & Environmental Services, D.P.C. (EDR) conducted a Visual Impact Assessment (VIA) for the proposed North Seneca Solar Project (the Facility), located in the Towns of Junius and Waterloo, Seneca County, New York (Figure 1.1-1). This VIA was prepared in support of the Facility's review under Chapter XVIII, Title 16 of New York Codes, Rules, and Regulations (NYCRR) Part 1100, Section 1100-2.9 and Article VIII of the New York State Executive Law (hereafter referred to as Article VIII). It is intended to assist the Office of Renewable Energy Siting and Electric Transmission (ORES), other state agencies, interested stakeholders, and the public in their review of the proposed Facility in accordance with the requirements of Article VIII. The purposes of this VIA are as follows:

- Describe the appearance of the visible components of the proposed Facility.
- Define the aesthetic character of the visual study area (VSA).
- Inventory and evaluate existing visual resources and viewer groups within the VSA.
- Evaluate potential Facility visibility within the VSA.
- Identify representative views for visual assessment.
- Assess the visual impacts associated with the proposed Facility.

Figure 1.1-1. Regional Facility Location

This VIA was prepared by environmental professionals with educational and career experience in the evaluation of visual impact. As described in more detail in subsequent sections, the VIA methodology and content are consistent with the policies, procedures, and guidelines contained in established visual impact assessment methodologies (see References in Section 7.0 of this report) and was prepared in accordance with the requirements of Article VIII. The VIA process followed by EDR is outlined in Figure 1.1-2.

Figure 1.1-2. Visual Impact Assessment Process



2.0 FACILITY DESCRIPTION

The proposed Facility is a utility-scale solar energy project with a generating capacity of up to 90 megawatts (MW) located in the Towns of Junius and Waterloo, Seneca County, New York. The proposed components of the Facility will include linear rows of photovoltaic (PV) panels, their racking/support systems, and inverters located within 12 separate PV array groups; fencing and gates around each PV array or PV array grouping; buried direct current collection lines; access roads; a collection substation and point of interconnection (POI) substation; a short length of overhead transmission line, supported by six transmission structures, connecting the POI substation to the existing National Grid 115-kilovolt (kV) transmission line; and a storage trailer.

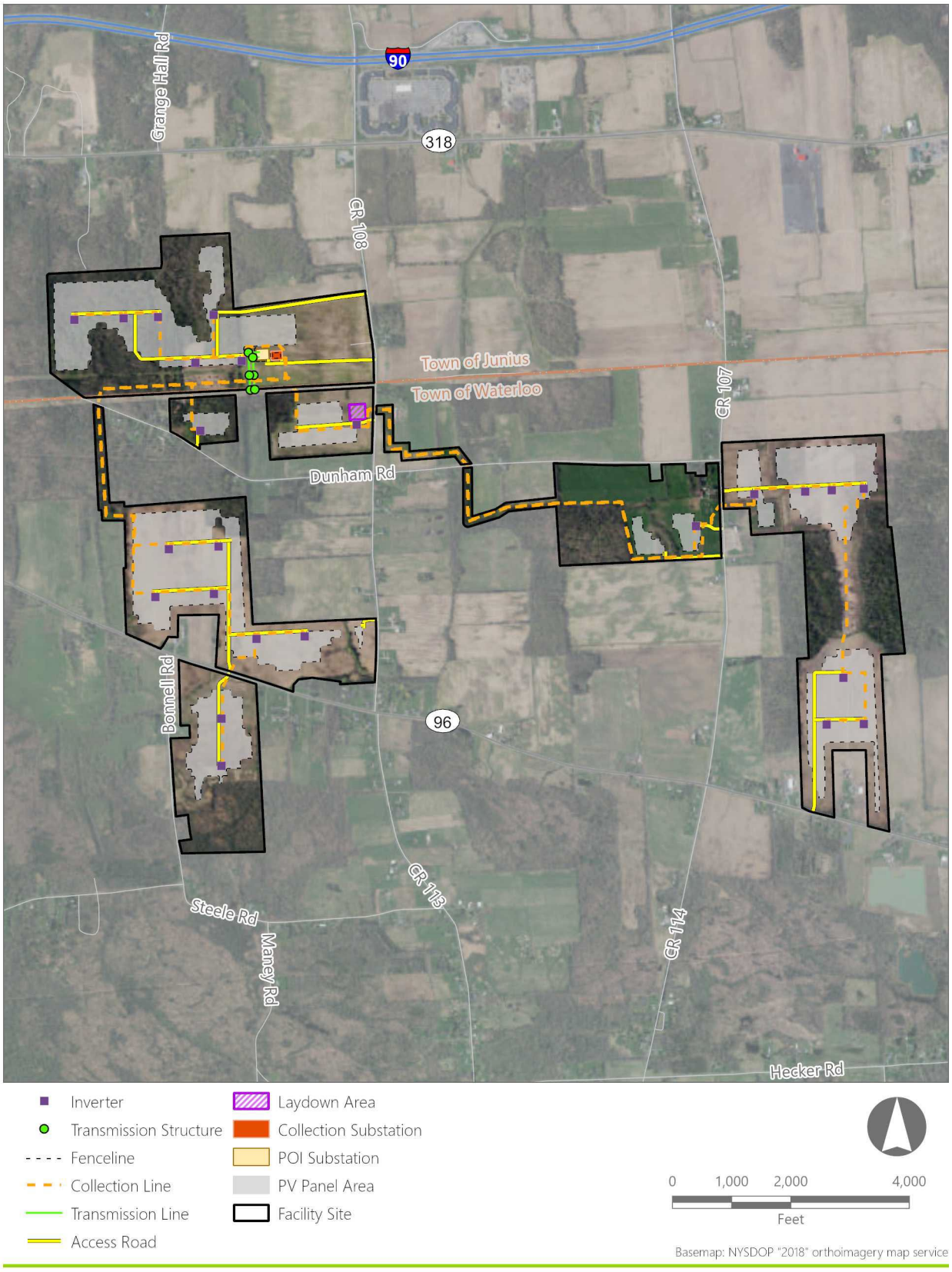
The proposed Facility Site and Facility components are described in greater detail in Sections 2.1 and 2.2.

2.1 Location of the Facility Site

The proposed Facility Site includes approximately 940 acres of leased private land in the Towns of Junius and Waterloo. The site is roughly bounded by State Route 318 to the north, Mills Road to the east, Steel Road to the south, and Blue Sky Road to the west (see Figure 2.1-2). The Facility Site is characterized by relatively level terrain, with elevations ranging from about 470 feet to 550 feet above mean sea level. Land use is a mix of active agricultural land and forest (see Figure 2.1-1). In addition, a farm complex is located within the boundaries of the Facility Site along Whiskey Hill Road. The actual "footprint" of the Facility, as defined by the Facility's limit of construction activity, will be about 478 acres. The Facility Site is located roughly 0.9 miles northwest of the Village of Waterloo and 2.8 miles northeast of the City of Geneva as measured from their closest points.

Figure 2.1-1. View of the Facility Site from Ninefoot Road Illustrating a Typical Mix of Land Uses

Figure 2.1-2. Facility Site and Layout



2.2 Proposed Facility

The following subsections describe the visible operational components of the proposed Facility. Additional information on the Facility components and layout can be found in Appendices 5-A – Revision 1 and 5-B – Revision 1 of the Article VIII Application.

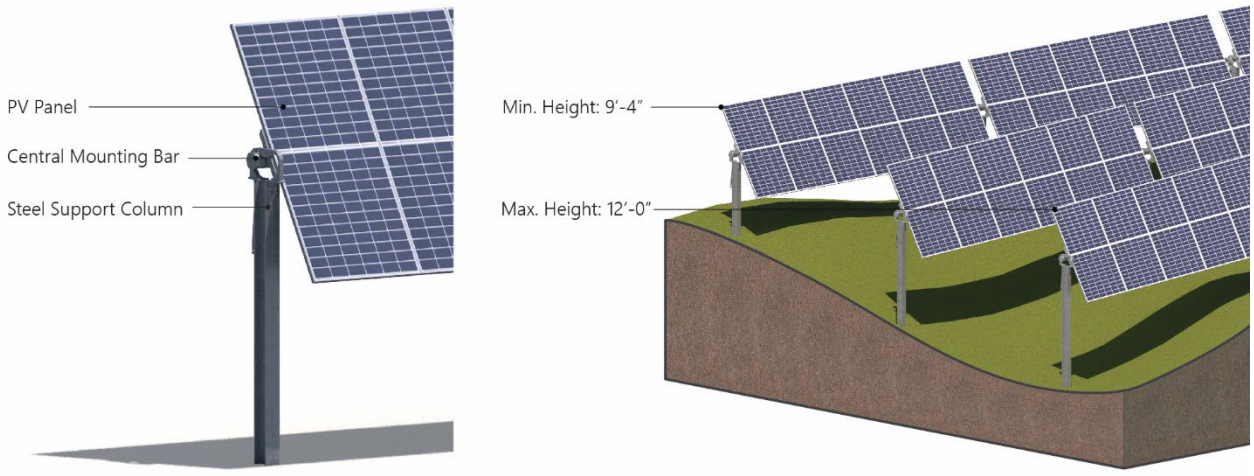
2.2.1 PV Arrays

The Facility includes 12 PV panel array groups (i.e., separate groups of PV panels) that range in size from approximately 1 to 97 acres. Each PV array consists of PV panels mounted on racking systems and arranged in parallel rows. The design specifies that the rows of PV panels will be spaced approximately 18 feet on-center. In total, the PV arrays will occupy approximately 343 acres within the 940-acre Facility Site.

The Facility will utilize a single axis tracker racking system. This type of racking system consists of a central mounting bar that acts as a pivot point that is fixed on top of steel support columns that are driven into the ground. The panels are fastened together on the central mounting bar in a "one in portrait" configuration to create individual rows of PV panels ranging from 134 to 376 feet in length. The rows will be aligned north to south, with the PV panels tracking the sun angle from east to west throughout the day. The individual components of the PV arrays are illustrated in Figure 2.2.1.

Based upon the PV panel and racking system specifications provided by the Applicant, the maximum height of the panels when in their most upright positions (i.e., at their maximum orientation to the east or west) will range from 12 feet to 9-feet 4-inches depending upon the steepness of the terrain (see Figure 2.2-1). To provide a conservative analysis of potential visibility, a maximum height of 12 feet above grade was used in the viewshed analysis and photosimulations (see Sections 4.1.1 and 4.2.2, respectively). The PV panels are the major above-ground component of the proposed Facility and, therefore, are the focus of this VIA.

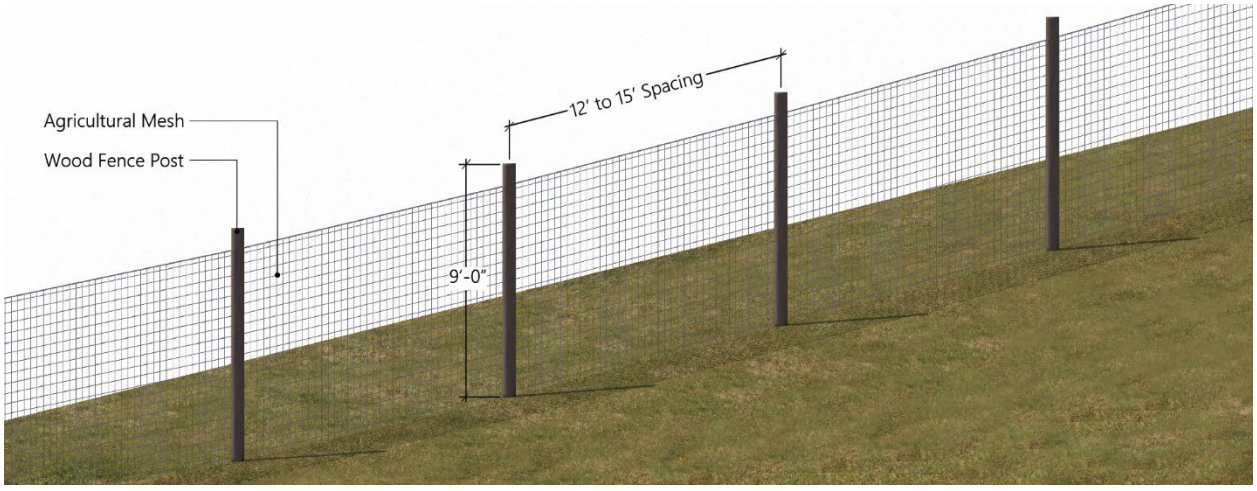
Figure 2.2-1. PV Array Components and Range of Upright Position Heights



2.2.2 Security Fencing

Because it is a high-voltage electric generating facility, the above-ground components of the Facility need to be fenced for safety and security. Fencing surrounding the PV arrays will consist of 9-foot-tall, treated wood fence posts spaced 12 to 15 feet apart supporting 8-foot-tall agricultural mesh (see Figure 2.2-2). The fencing surrounding the collection substation and point of interconnection substation will consist of 7-foot-tall, galvanized steel fence posts spaced about 10 feet apart and supporting galvanized chain-link mesh. The chain link fence will be topped with 1-foot-tall angle arms strung with three strands of barbed wire. Entrance gates are present where access roads enter the fenced areas. All proposed fencing is illustrated in the photosimulations included in this VIA. To further protect the public, appropriate warning signs will be posted on the gates and/or fences that enclose the PV arrays. Such signs are not considered in the VIA due to their small size and because their design and placement are unknown at this time.

Figure 2.2-2. Security Fencing



2.2.3 Electrical System

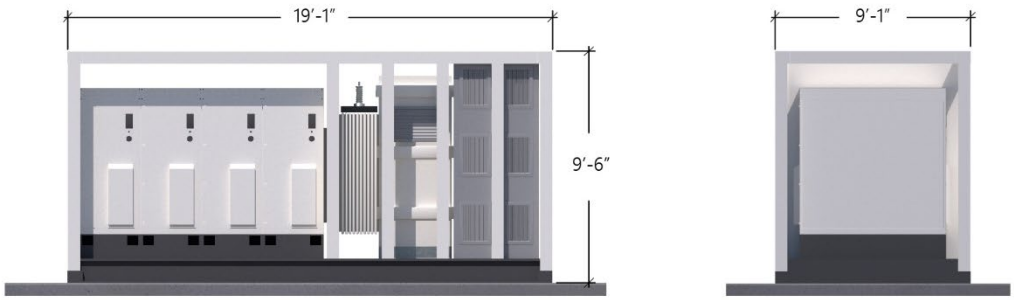
Two distinct components make up the Facility's electrical system: the collection system and the interconnection facility. The collection system includes underground collection lines which direct the energy generated by the PV panels to inverters which convert the electricity from direct current (DC) to alternating current (AC). Energy is then transferred to the interconnection facility, which consists of a collection substation, where the voltage is transformed (stepped up) and then transferred to the POI substation. From the POI substation, the high-voltage energy is transferred via underground transmission cables to the proposed transmission structures where they transition to above ground and connect to the electric grid. The components that comprise each system are described in greater detail below.

Collection System

Underground Collection System: Within and between each PV array, a network of underground electric cables will collect power from the PV panels and transmit it to the inverters and then to the collection substation. Although no overhead collection lines are proposed, potential visual impacts could occur where forest or hedgerow clearing is necessary to accommodate installation of the underground cables. If present and visible, this clearing is illustrated in the photosimulations presented in this VIA.

Inverters: Twenty-four inverters are proposed within or along the perimeter of PV array groups and convert the DC power generated by the PV panels to AC power for the collection system. The inverters resemble off-white colored steel storage containers and will be installed on concrete equipment pads set on the ground surface (see Figure 2.2-3). The inverters are located within or on the perimeter of the PV arrays and are anticipated to have a maximum height of 9.5 feet. Because of their low profile and the limited number of inverters proposed, they will be mostly screened from view by the surrounding PV panels and will not significantly contribute to Facility visibility or visual impact. However, if present and visible, the inverters are illustrated in the photosimulations included in this VIA.

Figure 2.2-3. Inverters



Interconnection Facility

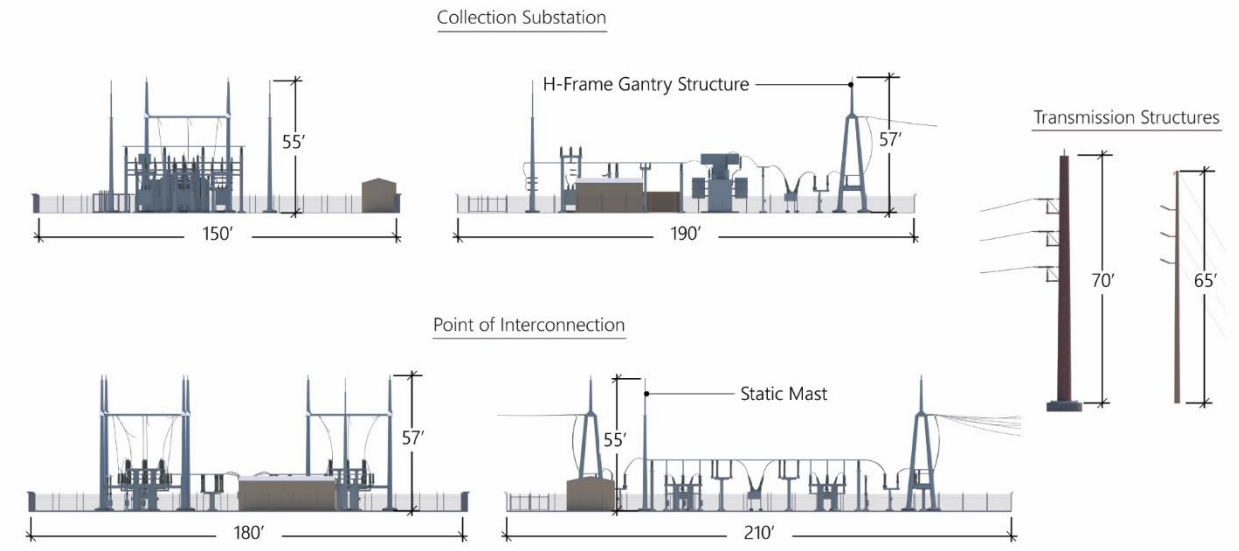
The interconnection facility consists of a collection substation, POI substation, six transmission structures, and a short transmission (generation tie) line.

The collection substation and POI substation will be located adjacent to each other on a 77.1-acre parcel of land on the west side of Ninefoot Road in the Town of Junius. The stations will be surrounded by chain link fencing as described in Section 2.2.2, surfaced with crushed stone, and will include transformers, breakers, towers, cable carriers, control buildings, and related structures. The collection substation will occupy an area measuring 190 feet long by 150 feet wide, and the POI substation will occupy an area measuring 210 feet long by 180 feet wide. The tallest components of the collection substation and POI substation are the gantry structures and static masts, which will be 57 feet 3 inches and 55 feet tall, respectively. The gantry structures and static masts will be galvanized metal. Two control buildings, each approximately 14 feet 6 inches in height and clad in beige standing seam metal siding, are proposed within the POI substation and collection

substation yards. The building in the collection substation will be 28 feet long by 14 feet wide, and the building in the POI substation will be 40 feet long by 20 feet wide. Other components of the stations will typically be gray in color and galvanized and will not exceed 22 feet in height. Energy will be transferred from the POI substation to the proposed transmission structures via two overhead transmission lines approximately 640 and 815 feet in length. The lines will be supported by six transmission structures; four 70-foot tall, dead-end transmission structures and two 65-foot-tall tangent transmission structures. As indicated in Appendix 5-B, sheets 902-01 and 903-01, self-weathering steel or wood may ultimately be selected as the materials for the transmission structures. For the purposes of the VIA, the dead-end transmission structures are depicted as self-weathering steel and the tangent structures are depicted as wood.

The diagram in Figure 2.2-4 is representative of the size and appearance of the collection substation, POI substation, and transmission structures evaluated in this VIA.

Figure 2.2-4. Interconnection Facility



2.2.4 Access Roads

The PV arrays will be served by a network of approximately 5.3 linear miles of new or improved access roads. These roads will allow for the delivery of Facility components during construction and access to the Facility for maintenance purposes during operation. The access roads are anticipated to be surfaced with crushed stone or gravel and will range from 16 to 20 feet in width. The proposed access roads represent relatively minor alterations to the landscape that are rarely visible due to their ground-level location, unpaved surface, and location primarily within or adjacent to the PV arrays. However, if present and visible, access roads are illustrated in the photosimulations included in this VIA. A typical access road is depicted in Figure 2.2-5.

Figure 2.2-5. Representative Photo of Access Road

2.2.5 Operations and Maintenance

An operation and maintenance (O&M) building is not proposed. However, a storage trailer for maintenance equipment will be located adjacent to the collection substation off Ninefoot Road in the Town of Junius. The storage trailer will be clad in metal siding that is painted beige and will be 52 feet long by 8 feet wide by 8.5 feet tall. Due to its low profile, the trailer will be partially screened from public view by the collection substation and/or POI substation, and will not significantly contribute to the Facility's visibility or visual impact. However, if present and visible, the trailer is illustrated in the photosimulations included in this VIA.

2.2.6 Vegetation Clearing and Grading

Potential visual impacts could occur where forest or hedgerow clearing is necessary to accommodate installation of the various Facility components. If present and visible, this clearing is illustrated in the photosimulations presented in this VIA and is considered in the viewshed analysis.

Site grading is proposed in areas with uneven or steep terrain to accommodate the construction of the PV arrays and other Facility components and permanent stormwater management features. Due to the flat or gently rolling terrain present in the Facility Site, the grading proposed to "smooth" out these areas is fairly minimal. No mass grading or major cut-and-fill operations are proposed. As such, site grading is not considered in the photosimulations presented in the VIA because the resulting topography would not vary substantially from the existing conditions.

For additional information on locations where site grading and vegetation clearing are proposed, see Appendix 5-A – Revision 1 of the Article VIII Application.

2.2.7 Temporary Laydown Areas

Construction of the Facility will require the development of a temporary laydown/staging area, which will accommodate construction trailers, storage containers, construction materials, and parking for construction workers. This area will be located in an open field located on the west side of Ninefoot Road and will be approximately 1.6 acres in size (see Figure 2.1-2). The laydown area is a temporary feature that will be

removed at the end of construction. No permanent fencing, permanent lighting, or future use of the laydown area is proposed. Temporary visual impacts associated with construction of the Facility, including the laydown area, are discussed in Section 5.2.4 of the VIA. Because of the temporary nature of the anticipated visual impacts associated with the laydown area, this component is not included in the photosimulations of the operational Facility.

2.2.8 Vegetative Screening

In accordance with local zoning requirements and Article VIII regulations, the Facility will include visual impact mitigation plantings to screen and/or soften the appearance of the Facility in views of from the surrounding area. Proposed mitigation plantings are depicted at installation and after five to seven years of growth during leaf-on and leaf-off conditions in all photosimulations where such plantings are proposed (see Attachment D). The planting plan has been updated to improve the effectiveness of the plantings in screening/softening views of Facility. These changes include shifting the locations of the proposed plantings closer to the perimeter fence line along Ninemile Road to increase the effectiveness of the mitigation plantings in views from the roadway and from Quaker Cemetery (VSR ID # 39). To illustrate these proposed changes, an updated photosimulation for Viewpoint 41 was prepared and is included in Attachment H (see sheets 25-36 of Attachment H). Additional plantings are also proposed along the perimeter of the Farmstead at 1067 Route 96 (VSR ID # 33), however these changes would not be visible from Viewpoint 13, therefore updated photosimulations from this viewpoint were not prepared. For more information on the Facility's mitigation planting plan, see the Visual Impact Minimization and Mitigation Plan (VIMMP) in Appendix 8-B – Revision 1 of the Article VIII Application.

3.0 EXISTING VISUAL CHARACTER

3.1 Definition of Visual Study Area

Article VIII (Section 1100-2.9 Exhibit 8: Visual Impacts) references a "VIA study area" and "viewshed study area" but does not specifically define the required extent of the study area. However, the Article VIII regulations include the following requirement:

> *"Viewshed maps depicting areas of facility visibility within two (2) miles of a solar facility and five (5) miles of a wind facility, as well as any potential visibility from specific significant visual resources beyond the specified study area, shall be prepared…"*

As viewshed maps define a project's geographic area of potential visibility, the viewshed radius essentially defines the extent of the VSA. Consequently, the North Seneca Solar Project's VSA has been defined as the area within 2 miles of the Facility Site (see Figure 3.1-1), consistent with the viewshed mapping required by Article VIII regulations. This VSA was used for all the visual analyses presented herein (i.e., viewshed analysis, line-of-sight analysis cross sections, field review, and photosimulations). In addition, Article VIII regulations require that potential Facility visibility be considered "*from specific significant visual resources beyond the specified study area.*" Therefore, a secondary 5-mile radius study area was defined to identify significant visual resources beyond the specified VSA. The 2-mile radius VSA includes an approximately 32.9 square

mile area within Seneca and Ontario Counties. The towns, cities, and villages that fall within the VSA are identified in Table 3.1-1.

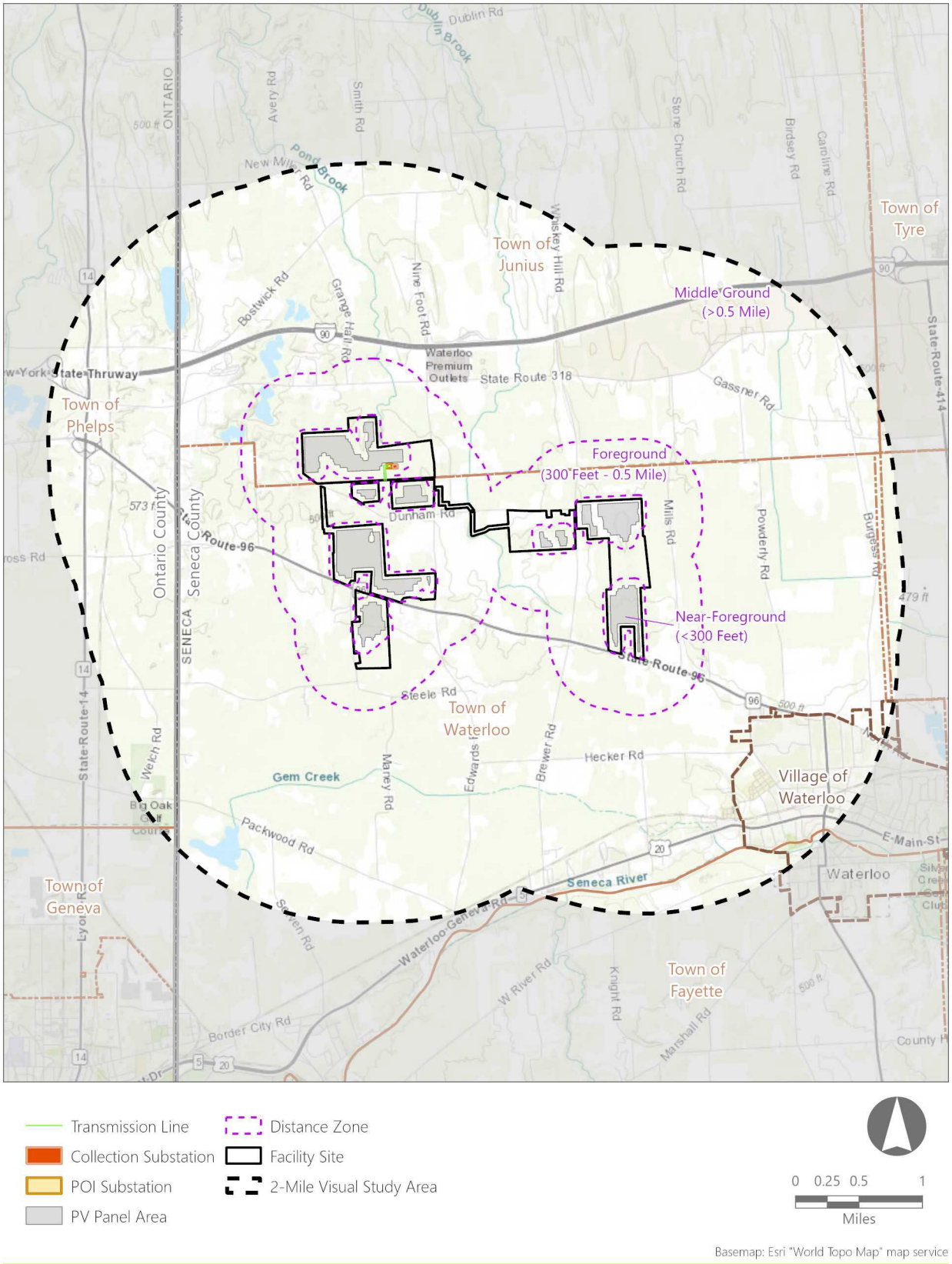
Table 3.1-1. Municipalities that Fall within the Visual Study Area

Town or City	Total Area of Town within VSA[1] (square miles)	Percent of Total Area of Town	Percent of VSA[2]
Town of Waterloo	17.3	85.4%	52.5%
Town of Junius	10.5	39.2%	32.0%
Town of Phelps	3.4	5.3%	10.5%
Village of Waterloo	1.0	46.8%	3.1%
Town of Fayette	0.4	0.6%	1.3%
Town of Seneca Falls	0.2	0.7%	0.6%
Town of Tyre	<0.1	<0.1%	<0.1%
Town of Geneva	<0.1	0.1%	<0.1%

[1] The calculations used to generate this table were based on unrounded numbers. The rounded results in the table may not add up precisely.

[2] The VSA includes approximately 32.9 square miles, or approximately 21,065 acres.

Figure 3.1-1. Visual Study Area



3.1.1 Distance Zones

Distance zones are typically defined in visual studies to divide the VSA into distinct sub-areas based on the various levels of landscape and Facility detail available to a viewer. To define these zones, EDR consulted several well-established agency protocols, including those published by the U.S. Forest Service (USFS), United States Department of the Interior Bureau of Land Management (BLM), and U.S. Department of Transportation (USDOT), to determine the appropriate boundary of each distance zone. The distance zones recommended by each agency's protocol were considered in the context of the landscape being addressed in this VSA. For example, the BLM (1999) 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 northeastern landscapes where views are often contained within a mile or less of the viewer. Conversely, the USDOT (2015) suggests the foreground be defined as an area within 0.25 to 0.5 miles from the viewer. Due to the characteristics of the landscape and project being evaluated in this VIA, EDR defined the following four distance zones (as measured from the perimeter of the proposed PV panels and interconnection facility) based largely on the USFS Scenery Management System (USFS, 1995):

- *Near-Foreground: 0 to 300 feet*. At this distance, a viewer can perceive details of parts of objects, such as the leaves of trees, or stones in a gravel road, with clarity. Surface textures, small features, and the full intensity of color values can be seen on near-foreground objects.
- *Foreground: 300 feet to 0.5 miles*. The foreground is the predominant distance zone at which landscapes are viewed in the study area considering the relatively flat terrain of the VSA. Within the foreground, a viewer can perceive parts of objects, such as the boughs and trunks of large trees or the windows of a house, but can no longer perceive the details with great clarity. Trees lining a field begin to merge into a hedgerow, wildflowers begin to merge into a field.
- *Middle ground: 0.5 to 4.0 miles*. At this distance, individual objects in the landscape merge together; individual hills become a range, individual trees merge into a forest, and buildings appear as simple geometric forms. Colors will be distinguishable but characterized by a bluish cast and softer tone than those in the foreground. Contrast in texture between landscape elements is also 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. While the background distance zone occurs outside the VSA, the background is still a relevant component in views of the landscape.

These distance zones will be referenced throughout this report (and indicated in various figures) when evaluating the Facility's viewshed and its viewing distance from various receptors. The percentage of the 2-mile radius VSA that is occupied by each distance zone is identified in Table 3.1-2.

Table 3.1-2. Distance Zones within the Visual Study Area

Distance Zone	Total Area of Distance Zone within VSA[1] (square miles)	Percent of VSA[2]
Near Foreground (0–300 feet)	1.3	4.0%
Foreground (300 feet–0.5 mile)	5.7	17.2%
Middle Ground (0.5–4.0 miles)	25.9	78.8%
Background (4.0+ miles)	-	-

[1] The calculations used to generate this table were based on unrounded numbers. The rounded results in the table may not add up precisely.

[2] The VSA includes approximately 32.9 square miles, or approximately 21,065 acres.

It is important to note the difference between the terminology used to define distance zones at which features of the landscape may be viewed and the composition of a photograph. When viewing photographs, the compositional elements of the image may define distinct zones within the photograph. These elements often layer in a manner that also includes a near-foreground, foreground, middle ground, and background, which equates to their relative distance from the location where the photograph was taken. When these terms are used to describe the composition of a photograph, they do not necessarily correlate with the viewing distance zones for the Facility as described above. Therefore, near-foreground, foreground, middle ground, and background compositional zones referenced in regard to selected viewpoint photos and simulations in Section 5.2.1 and Appendix D of this report may not be the same as the distance zones defined in this section of the VIA (see examples presented in Figures 3.1-2 and 3.1-3).

Figure 3.1-2. Distance Zones as Defined in this Study

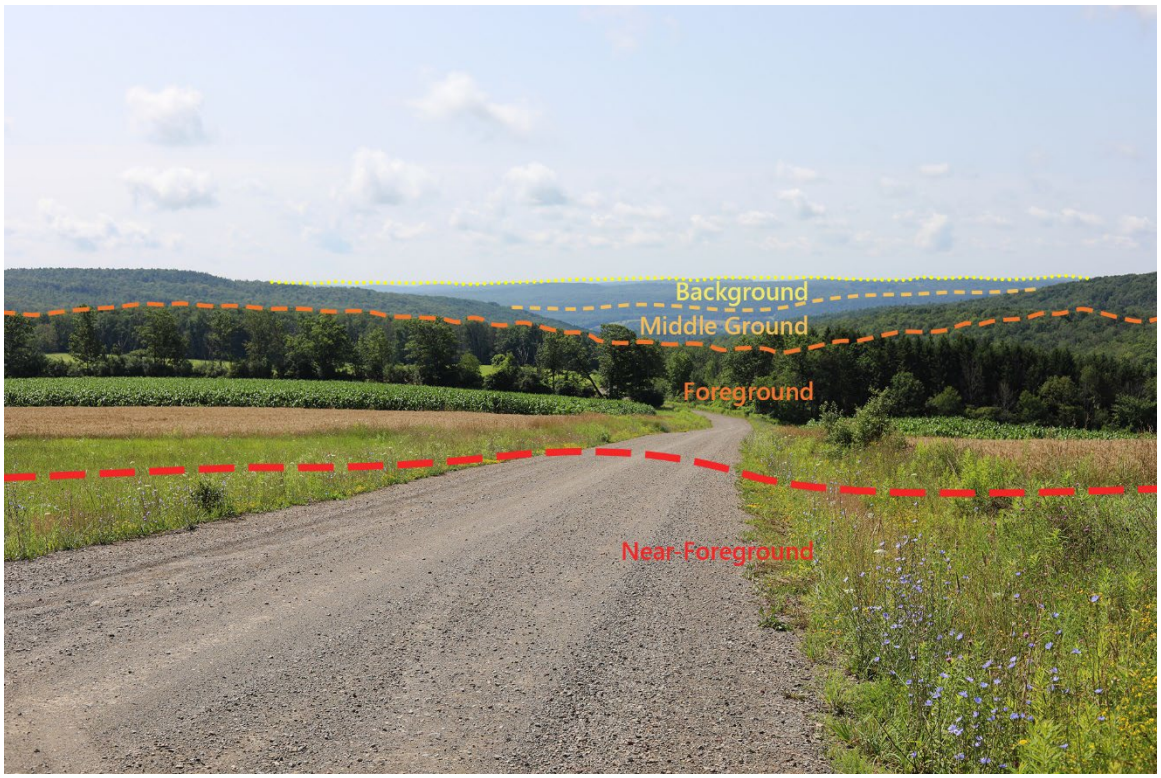


Figure 3.1-3. Distance Zones that Describe Photographic Composition

3.2 Physiographic/Visual Setting

3.2.1 Landform and Land Use

The VSA is located within the Eastern Great Lakes Lowlands Ecoregion (Bryce et al., 2010) that extends across northern New York and surrounds Lake Ontario. This ecoregion consists of flat lake plains that have been shaped by glacial lakes and episodic glacial flooding. More specifically, the VSA falls within the Ontario Lowlands subregion, which is characterized by its relative proximity to Lake Ontario which tempers the climate and contributes to cloudy and foggy conditions and considerable amounts of snow in winter. Due to the presence of productive, loamy soils, much of the region was cleared for agriculture or development and mostly small, scattered woodlots remain today. Although dairy and livestock farming are most common, the soils and climate of the Ontario Lowlands are also suitable for growing fruit, vegetables, and other specialty crops.

3.2.2 Water Features

Water features within the VSA consist primarily of creeks, small ponds and lakes, and wetlands. Creeks in the VSA are characterized by narrow creek beds lined with dense forest vegetation, or broader, less well-defined channels surrounded by wetland vegetation. Multiple small, unnamed ponds and wetlands are also scattered throughout the VSA. Natural ponds generally occur in densely forested areas whereas man-made ponds tend to be located in agricultural fields or near residences. Wetlands are generally dominated by emergent herbaceous vegetation, with the exception of a large, wooded wetland north of Interstate 90 in the northeast corner of the study area. These water features are components of the landscape that contribute to the rural character of the VSA in certain views. However, due to their small size and/or the minimal opportunity for public access and recreational activities, they are a relatively minor component of the landscape.

The most significant water feature is the Cayuga and Seneca Canal, which angles southwest through the Village of Waterloo and forested land in the southern portion of the VSA, and Junius Ponds, which are located in the northwest portion of the VSA. The Cayuga and Seneca Canal is a broad, open water channel with a width of approximately 150 feet that receives recreational use in the form of boating and fishing. It also serves as a character defining feature in views from several nearby public recreation areas, including Oak Island Park, Waterloo Memorial Youth and Community Center, and the Seneca-Cayuga Canal Trail. Junius Ponds are a chain of kettle-hole ponds and their associated wetlands that are located within the Junius Ponds Unique Area and in proximity to the Junius Ponds Cabins and Campgrounds. The ponds are associated with a variety of unique wetlands referred to as fens.

3.2.3 Future Land Use

Article VIII requires that future land uses be considered as part of the VIA. To define future land use areas within the VSA, EDR consulted the following town comprehensive plans and zoning ordinances:

- The Town of Fayette and Varick Comprehensive Plan (Fayette-Varick Comprehensive Plan Commission, 2006) defines future land uses for the Town of Fayette in the future land use map. However, the land use regulation map adopted in 2018 (Town of Fayette, 2018) supersedes the

comprehensive plan. Therefore, zoning districts were assumed to reflect the most current desired land uses within the town and were used for the purposes of this study.

- The Town of Geneva Comprehensive Plan (Town of Geneva, 2015) defines future land uses in a future land use map. However, the zoning map adopted in 2022 (Ontario County Planning Department, 2022) supersedes the comprehensive plan. Therefore, zoning districts were assumed to reflect the most current desired land uses within the town and were used for the purposes of this study.
- The Town of Junius Comprehensive Plan (Town of Junius, 2016) defines desired future land uses in the Future Land Use Map that is based on the Route 96 and 318 Rural Corridor Study (Ontario County Planning and Research Department, 2009).
- No comprehensive plan was identified for the Town of Phelps. Therefore, the current zoning map (Town of Phelps, 2012) was used to define future land use areas within the town.
- The Town of Seneca Falls Draft Comprehensive Plan (Town of Seneca Falls, 2023) was used to define future land use areas based upon the future land use area map. The comprehensive plan supersedes the current zoning map, which was adopted in 2013 (Town of Seneca Falls, 2013).
- No comprehensive plan was identified for the Town of Tyre. Therefore, the current zoning map (Town of Tyre, 2023a) was used to define future land use areas within the town.
- The Town of Waterloo Comprehensive Plan (Town of Waterloo, 2017) defines future land use areas in a potential future land use options map. However, the zoning district map adopted in 2020 (Town of Waterloo, 2020) supersedes the comprehensive plan. Therefore, zoning districts were assumed to reflect the most current desired land uses within the town and were used for the purposes of this study.
- The Village of Waterloo Comprehensive Plan (Village of Waterloo, 2017) does not describe or define future land use areas. Therefore, zoning districts were used to define future land use areas within the village.

The future land use areas in the VSA are summarized in Table 3.2-1 and depicted in Figure 3.2-1. As indicated in Table 3.2-1, agriculture and low-density residential development are the predominant future land uses anticipated within the Facility Site and the VSA. As described in the plans listed above, these lands are desired to remain in active agricultural production, low density rural residential development, and/or open space use. A portion of the Facility Site falls within the Sensitive Environmental Area future land use area within the Town of Junius, which is described in the Route 96 and 318 Rural Corridor Study as an area "intended to protect valuable environmental features from potentially harmful development impacts." However, no additional information was available for this area in the planning documents. It is worth noting that the descriptions of desired future land uses in comprehensive planning documents are brief and do not contain detailed information related to compatible land uses that typically occur in zoning ordinances.

Exhibit 24 of the Article VIII Application provides a detailed description of local laws and ordinances and Exhibit 3 provides additional information on land use surrounding the Facility Site.

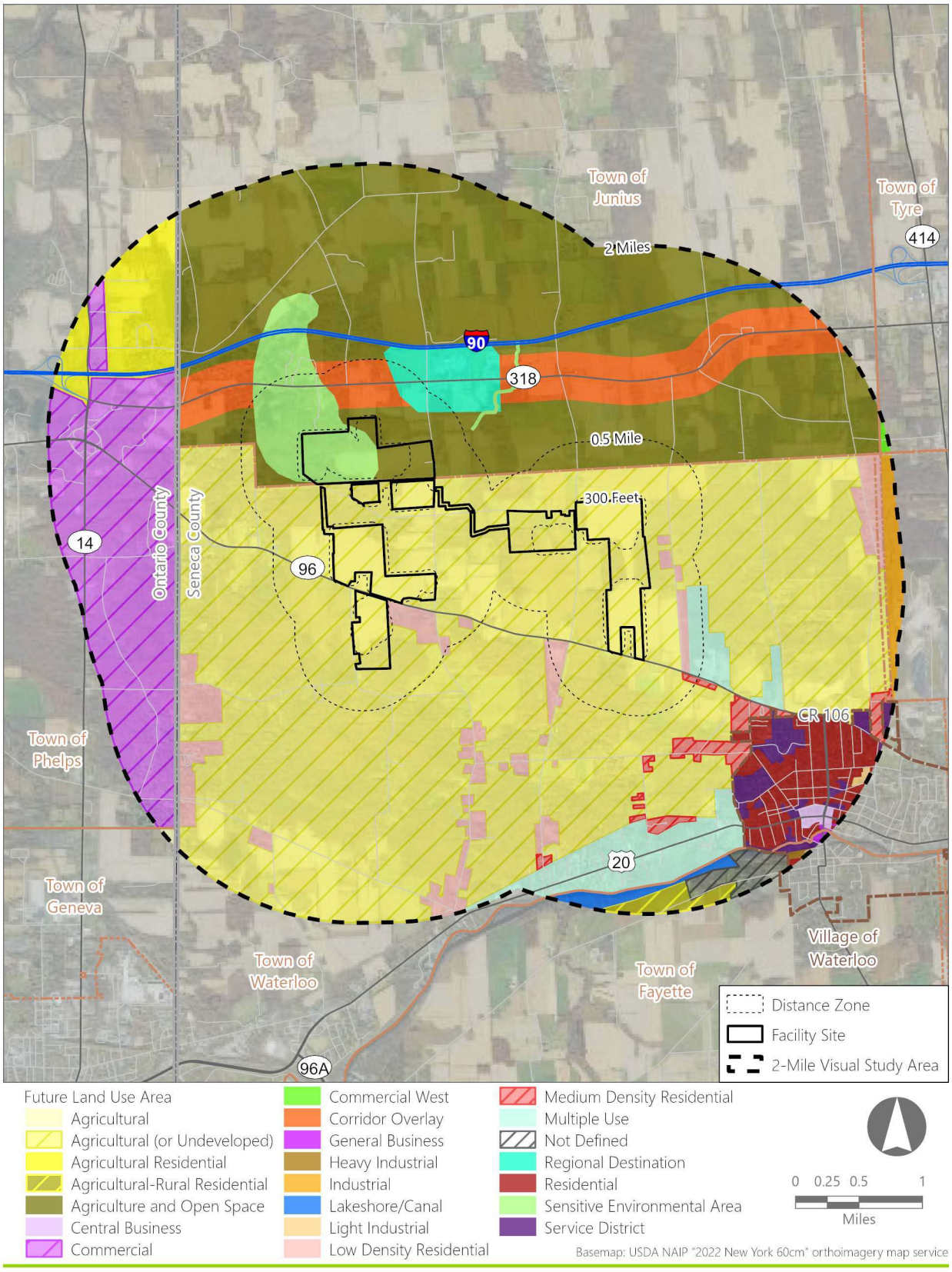
Table 3.2-1. Anticipated Future Land Uses within the Visual Study Area

Future Land Use Area	Municipality	Area within the VSA (square miles)[1]	Percentage of Area within the VSA[2]
Agricultural (or Undeveloped)	Town of Waterloo	15.1	45.9%
Agriculture and Open Space	Town of Junius	7.8	23.6%
Commercial	Town of Phelps	2.7	8.1%
Corridor Overlay	Town of Junius	1.5	4.4%
Low Density Residential	Town of Waterloo	1.0	2.9%
Multiple Use	Town of Waterloo	0.9	2.8%
Sensitive Environmental Area	Town of Junius	0.9	2.7%
Agricultural Residential	Town of Phelps	0.8	2.4%
Residential	Village of Waterloo	0.7	2.0%
Regional Destination	Town of Junius	0.4	1.3%
Service District	Village of Waterloo	0.3	0.8%
Medium Density Residential	Town of Waterloo	0.3	0.8%
Industrial	Town of Seneca Falls	0.2	0.6%
Not Defined	Town of Fayette	0.2	0.5%
Agricultural-Rural Residential	Town of Fayette	0.1	0.4%
Lakeshore/Canal	Town of Fayette	0.1	0.4%
Central Business	Village of Waterloo	<0.1	0.1%
Commercial West	Town of Tyre	<0.1	<0.1%
General Business	Village of Waterloo	<0.1	<0.1%
Agricultural	Town of Geneva	<0.1	<0.1%
Light Industrial	Village of Waterloo	<0.1	<0.1%
Heavy Industrial	Village of Waterloo	<0.1	<0.1%

[1] The calculations used to generate this table were based on unrounded numbers. The rounded results in the table may not add up precisely.

[2] The VSA includes approximately 32.9 square miles, or approximately 21,065 acres.

Figure 3.2-1. Future Land Use Areas



3.3 Landscape Similarity Zones

In accordance with the requirements set forth in 16 NYCRR Section 1100.8(b)(1), Landscape Similarity Zones (LSZs) were defined and mapped within the VSA. Defining distinct landscape types within a given study area provides a useful framework for the analysis of a project's potential visual effects. LSZs within the VSA were defined based on the similarity of various landscape characteristics including landform, vegetation, water, and land use patterns, in accordance with established visual assessment methods (notably, USFS, 1995; Smardon et al., 1988; USDOT, 1981; BLM, 1999). The following six LSZs were identified within the VSA:

- Agricultural/Rural Residential
- Forest
- Village
- Open Water
- Transportation
- Commercial

LSZs were mapped using a Geographic Information System (GIS) classification exercise. The LSZ classifications are based on aerial imagery, mapped land cover, and proximity to various landscape or land use features. The mapping of LSZs is a generalization exercise intended for viewing at the macroscopic scale of the entire study area. Therefore, it is possible that field review at a given location would change the initial GIS-derived LSZ classification based on observed landscape characteristics that are beyond the scale of the GIS analysis. The classification analysis is subtractive, meaning that a given criterion is used to classify a portion of the VSA as a particular LSZ, and then the next criterion is applied to classify portions of the remaining land, and so forth until the entire area is mapped. The classification and mapping of LSZs within the VSA were classified in the following order:

- The Open Water LSZ was classified using lands identified as the water cover type in the Environmental Systems Research Institute (ESRI) Land Use/Land (LULC) Cover Dataset (ESRI, 2020) and the United States Geological Survey (USGS) National Hydrography Dataset (USGS, 2020). Small water bodies were removed from the results to exclude minor water features that lack the visual characteristics of large ponds and rivers. The remaining water bodies were then buffered 15 feet to include the surrounding pond shorelines and riverbanks.
- The Commercial LSZ was classified using New York State Office of Information Technology Services (NYS ITS) Tax Parcels Public dataset (NYS ITS, 2022) and aerial imagery.
- The Transportation Corridor LSZ was classified using NYS ITS Streets data (NYS ITS, 2023) and aerial imagery to identify and include the highway rest station.
- The Village LSZ was classified primarily using lands identified as the Built Area cover type in the ESRI 2020 LULC dataset within and surrounding the Village of Waterloo. Aerial imagery was then used to add areas of residential development beyond the Built Area cover type boundary.

- The Forest LSZ was classified using lands identified as Tree and Scrub/Shrub cover types in the ESRI 2020 LULC Dataset. The boundaries of this LSZ were then refined using aerial imagery to exclude areas that are sparsely vegetated and lack the visual characteristics of densely forested areas.
- Finally, the Agricultural/Rural Residential LSZ is comprised of all remaining lands. These areas are mostly identified as Crop and Grass cover types in the ESRI 2020 LULC database.

The extent of each LSZ within the VSA is summarized in Table 3.3-1 and depicted in Figure 3.1-1. As indicated in Table 3.3-1 and shown in Figure 3.1-1, the Agricultural/Rural Residential and Forest LSZs are the dominant LSZs within the VSA.

Table 3.3-1. Landscape Similarity Zones

Landscape Similarity Zone	Total Area of LSZ[1] within the VSA (square miles)	Percentage of VSA[2]
Agricultural/Rural Residential	16.2	49.3%
Forest	14.1	43.0%
Village	1.7	5.2%
Open Water	0.4	1.2%
Transportation	0.3	1.0%
Commercial	0.1	0.3%

[1] The calculations used to generate this table were based on unrounded numbers. The rounded results in the table may not add up precisely.

[2] The VSA includes approximately 32.9 square miles, or approximately 21,065 acres.

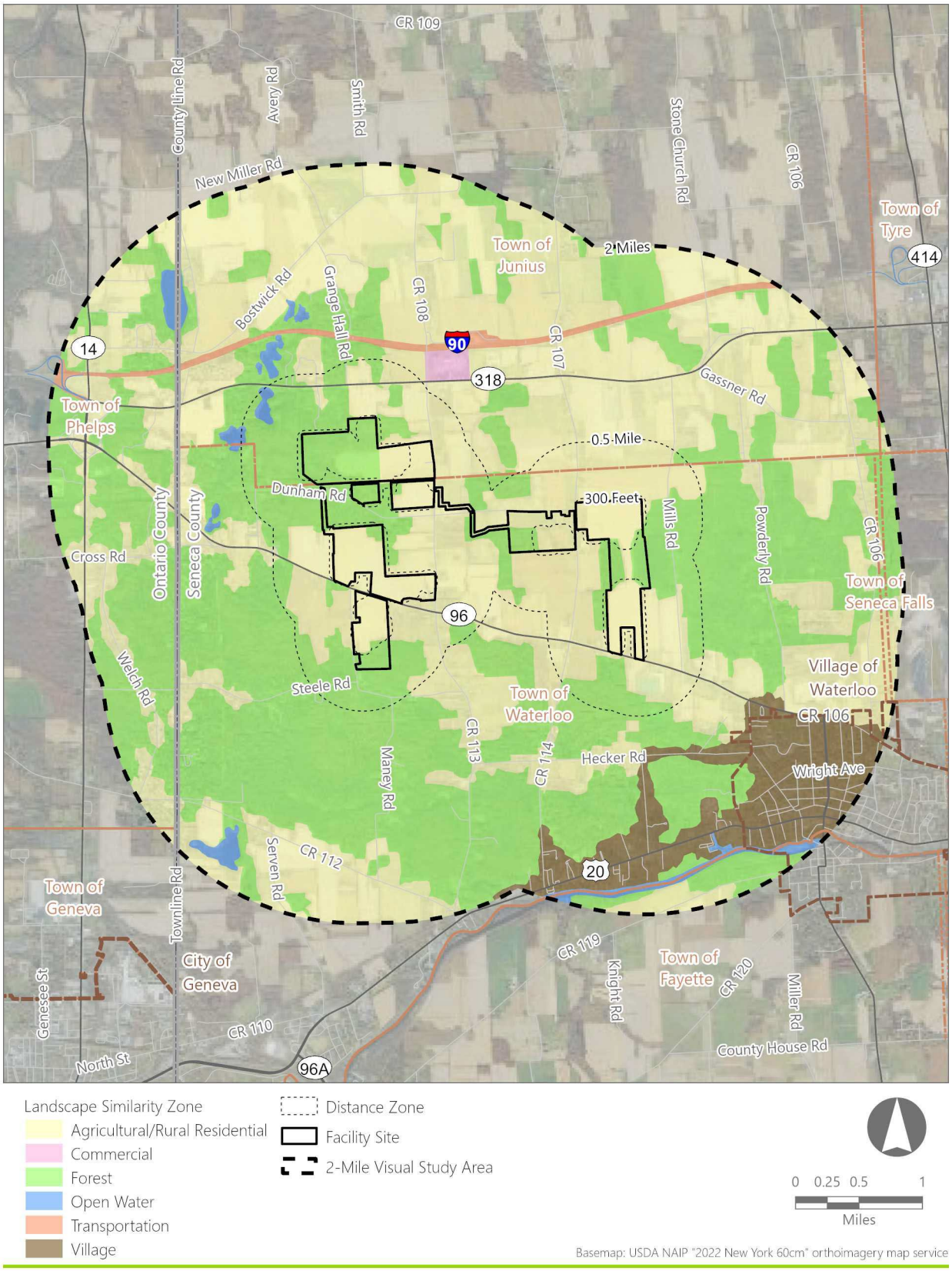
The area of each LSZ falling within the various distance zones in the VSA is summarized in Table 3.3-2. As indicated in this table, the Forest and Agricultural/Rural Residential LSZ are distributed fairly evenly in the foreground and middle ground distance zones. However, a higher proportion of the near-foreground distance zone consists of Agricultural/Rural Residential LSZ due to the location of the Facility on mostly agricultural land. Due to the limited amount of development within the VSA, the Village, Open Water, Transportation, and Commercial LSZs occur almost entirely within the middle ground distance zone and comprise a small portion of the distance zone area. Descriptions of the visual characteristics of each LSZ, along with representative photographs, are provided in Sections 3.3.1 through 3.3.6.

Table 3.3-2 Distance Zones by Landscape Similarity Zone

Landscape Similarity Zone	Total Area[1] (square miles) and Percentage of LSZ in each Distance Zone		
	Near-Foreground (0–300 feet)	Foreground (300 feet–0.5 mile)	Middle Ground (0.5–2.0 miles)
Agricultural/Rural Residential	0.9 (70.6%)	3.2 (57.1%)	12.1 (46.5%)
Forest	0.4 (29.4%)	2.4 (42.3%)	11.4 (43.8%)
Village	0.0 (0.0%)	0.0 (0.0%)	1.7 (6.6%)
Open Water	0.0 (0.0%)	<0.1 (0.5%)	0.4 (1.4%)
Transportation	0.0 (0.0%)	0.0 (0.0%)	0.3 (1.2%)
Commercial	0.0 (0.0%)	0.0 (0.0%)	0.1 (0.3%)
Total Distance Zone Area within VSA	**2.1**	**5.7**	**25.9**

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

Figure 3.3-1. Landscape Similarity Zones



3.3.1 Agricultural/Rural Residential

Figure 3.3-2. Representative Photographs of the Agricultural/Rural Residential Landscape Similarity Zone

Top left: State Route 96 in the Town of Waterloo, Viewpoint 13. Top Right: Whiskey Hill Road in the Town of Waterloo, Viewpoint 46. Bottom Left: State Route 96 in the Town of Waterloo, Viewpoint 16. Bottom Right: Dunham Road in the Town of Waterloo, Viewpoint 28.

The Agricultural/Rural Residential LSZ covers 49.3% of the VSA and is characterized by open agricultural land mixed with farm complexes, small woodlots, and low-density residential development that is dissected by a network of local roads and state routes. Residential development is generally widely dispersed along roadways throughout this LSZ. However, small residential communities with some shops, churches, or farmers markets are also clustered at the intersection of local roads and state routes. Examples include the intersections of Ninefoot Road and Mill Road with State Route 96 in the Town of Waterloo. Building styles in the LSZ range from newer single-family homes to well-established farm complexes with farmhouses, barns, and silos. Views available in this LSZ typically feature a relatively level and open foreground of agricultural fields with scattered homes and agricultural structures that are backed or bordered by forested areas. However, hedgerows, woodlots, adjacent forested areas, and roadside vegetation or structures often frame or limit views in a particular direction from certain vantage points. In some conditions, such as before harvest, views may be very short-range due to screening provided by roadside cornfields. User groups within this LSZ are primarily local residents or those engaged in local travel. However, due to the presence of state highways, through-travelers are also likely to be present in this LSZ.

3.3.2 Forest


Figure 3.3-3. Representative Photographs of the Forest Landscape Similarity Zone.

Left and Right: Views from trails in forested areas of Oak Island Park, Town of Waterloo.

The Forest LSZ covers approximately 43.0% of the VSA and is characterized by large, contiguous areas of mixed deciduous and coniferous tree species. While this zone occurs throughout the VSA, larger areas of contiguous forest occur in the southern portion of the VSA. In the northern portion of the VSA, forest areas are generally smaller and more dispersed due to the abundance of agricultural land as well as development occurring along highways. Typical views within this LSZ are short range and include substantial foreground screening. Where open views are available, they are often tightly enclosed by trees and other vegetation, such as views along roadway corridors or in small clearings. Open views are also occasionally available in areas with little or no understory vegetation near the forest edge, particularly during leaf-off conditions. Due to the limited extent of publicly accessible forested areas in the VSA, users of this LSZ are primarily local residents engaged in various outdoor activities on their properties or travelers driving through wooded areas on local roadways. To a lesser extent, recreational users may also be present in the publicly accessible forested areas in the VSA, which include portions of the Seneca-Cayuga Canal Trail and Oak Island Park.

3.3.3 Village


Figure 3.3-4. Representative Photographs of the Village Landscape Similarity Zone.

Left: Intersection of State Route 96 and Williams Street, Village of Waterloo, Right: State Route 96 near Wright Avenue, Village of Waterloo.

The Village LSZ covers approximately 5.2% of the VSA and includes the Village of Waterloo and surrounding residential areas. This zone is characterized by moderate to high density residential and commercial development, and public open space situated on an organized street network. Small-scale commercial, cultural, and municipal development and community open spaces are concentrated in the village center, which occurs near the intersection of US Route 20 and State Route 96 (North Virginia Street). The village center includes Lafayette and Oak Island Parks, Waterloo Library and Historical Society, Waterloo Memorial Youth and Community Center, and several shops and restaurants. Residential development is characterized by neighborhoods of homes with landscaped yards organized on roadways. Houses and other structures reflect a mix of traditional and modern architectural styles and are predominantly single-family residences, with the exception of multi-family houses and apartment buildings in the village center. Views within this LSZ are generally short-range and include streetscape features, residences and associated yard vegetation, or commercial buildings backed by trees and other vegetation. More open views are occasionally available down street corridors but are typically tightly framed by street trees or buildings. Open views are also available near the edges of the Village LSZ where development is less dense, particularly along the southern border which is adjacent to the Seneca and Cayuga Canal.

3.3.4 Open Water

Figure 3.3-5. Representative Photographs of the Open Water Landscape Similarity Zone.

Left: Junius Ponds from State Route 318 in the Town of Junius, Right: Cayuga and Seneca Canal from near Canal Corporation Lock 4 in the Enlarged Erie Canal National Historic Landmark, Village of Waterloo.

The Open Water LSZ covers approximately 1.2% of the VSA and is characterized by broad expanses of open water that provide open views of the surrounding landscape. This zone includes the Seneca and Cayuga Canal and its embankments, which angles southwest through the Village of Waterloo and forested areas in the southern portion of the VSA. This broad, open water channel receives significant water-based recreational uses due to adjacent public lands with water access, including Oak Island Park and Waterloo Memorial Youth and Community Center, and private residences that adjoin the canal. Views from boats on the water surface and from adjacent shoreline vantage points typically include open water in the foreground backed by a mix of trees and man-made structures. The remainder of this LSZ is comprised of small lakes and ponds and their surrounding shores, including Junius Ponds, Burnett Pond, and Gem Pond. These water features are located on private or conserved land and recreational use is limited to a small number of adjoining residences. Views available from portions of State Route 318 that are adjacent to Junius Ponds feature roadside vegetation and open water in the foreground that is backed and bordered by herbaceous wetland vegetation and forested areas.

3.3.5 Transportation Corridor


Figure 3.3-6. Representative Photographs of the Transportation Corridor Landscape Similarity Zone.

Left and Right: Interstate 90 in the Town of Junius, Viewpoint 9.

The Transportation Corridor LSZ covers approximately 5.3% of the VSA and includes the Interstate 90 corridor (New York State Thruway), which is a divided, multi-lane highway with limited access, and the Junius Ponds Travel Plaza building and parking area. This zone crosses the northern portion of the VSA. Travelers within this LSZ are likely to be focused on the view in the direction of travel which will be dominated by pavement, moving vehicles, guardrails, and roadway signage in the foreground backed by forested and agricultural lands. Travelers are likely to be focused on roadway conditions and moving at high speeds, and therefore the duration of any given view is relatively brief and constantly changing. However, they will occasionally have the opportunity to observe roadside scenery when adjacent to broad areas of open, agricultural land and while at the travel plaza.

3.3.6 Commercial


Figure 3.3-7. Representative Photographs of the Commercial Landscape Similarity Zone.

Left and Right: Waterloo Premium Outlets, Town of Junius.

The Commercial LSZ covers approximately 0.3% of the VSA and includes the Waterloo Premium Outlets mall, an area characterized by a broad, expansive parking area interspersed with planted islands, light poles,

and other similar landscape features that is bordered by sidewalks and commercial buildings. The buildings are generally very long and surrounded by wide sidewalks with landscaped planting beds. Buildings in the plaza share a fairly uniform architectural style which include facades of glass panels and light beige siding, teal trim and columns, and flat roofs. The buildings are punctuated by taller corner pavilions featuring pyramidal red metal roofs. Due to the arrangement of the buildings on the periphery of the parking area, views are typically short-range and feature landscape elements, planting beds and islands, and shops.

3.4 Viewer/User Groups

Three categories of viewer/user groups were identified within the VSA based on their activity, duration of views/exposure to the Facility, and likely sensitivity to visual change. The three categories of viewer/user groups include the following:

3.4.1 Local Residents

Local residents include those who live and work within the VSA. These individuals generally view the landscape from their yards, homes, local roads, schools, and places of employment. Residents are mostly concentrated in residential areas in the Village of Waterloo. However, due to the dispersed nature of settlement in this region, local residents occur throughout the VSA. Except when involved in local travel, residents are likely to be stationary, and have frequent and prolonged views of the landscape. Residents may view the landscape from ground level or elevated vantage points (typically upper floors/stories of homes). Residents' sensitivity to visual quality is variable. However, it is assumed that residents will likely be sensitive to visual changes that can be seen from their homes, yards, and local communities.

To determine which areas are likely to have the highest number of residential viewers and a higher degree of visual exposure, EDR conducted a structure density analysis based upon publicly available national building footprint data (Microsoft, 2021) to determine the density of buildings per quarter mile of the VSA. As illustrated in Figure 3.4-1, density of buildings within the VSA ranges from 1 to 117 buildings per square quarter mile, with many areas where there are no buildings. The highest density areas occur within and near the Village of Waterloo in the southeastern portion of the VSA. However, other smaller, less dense clusters of residential development occur along US Route 20 and other roadways scattered throughout the VSA.

3.4.2 Through-Travelers

Through-travelers passing through the VSA view the landscape from motor vehicles on their way to work or other destinations. These viewers are typically moving, have a narrow field of view, and are destination oriented. Drivers on major roads in the area (e.g., Interstate 90, US Route 20, State Route 14) will generally be focused on the road and traffic conditions but do have the opportunity to observe roadside scenery. Passengers in moving vehicles will have greater opportunities for prolonged off-road views than will drivers and, accordingly, may have greater perception of changes in the visual environment. However, because they are moving, the duration of any given view is relatively brief and constantly changing. Travelers' sensitivity to visual quality is variable. However, it is assumed that local commuters may be sensitive to changes in

views of areas that they travel through on a regular basis, while those traveling to and from more distant locations will generally be less aware and less concerned with visible changes to the landscape.

To determine which roads are likely to have the highest number of travelers and experience a higher degree of visual exposure, EDR reviewed traffic count data available from the New York State Department of Transportation (NYSDOT, 2019). As indicated in Table 3.4-1 and Figure 3.4-2, the most heavily trafficked roads include Interstate 90, US Route 20, and several state routes, which occur throughout the VSA.

Table 3.4-1. Traffic Count for Heavily Trafficked Roadways in Visual Study Area

Road	Total Length within the VSA (linear miles) [1]	Average Annual Daily Traffic Count on Road Segments within the VSA [2]
Interstate 90	5.8	18,562 – 41,721
State Route 14	2.6	1,931 – 15,102
US Route 20	2.5	4,731 – 9,887
State Route 96	7.6	1,682 – 7,124
State Route 318	6.0	2,755 – 6,638
North Road	0.5	2,804 – 6,532

[1] Calculated based upon roadway centerline.

[2] Based upon New York State Department of Transportation 2019 traffic count data for segments of these roadways that fall within the VSA.

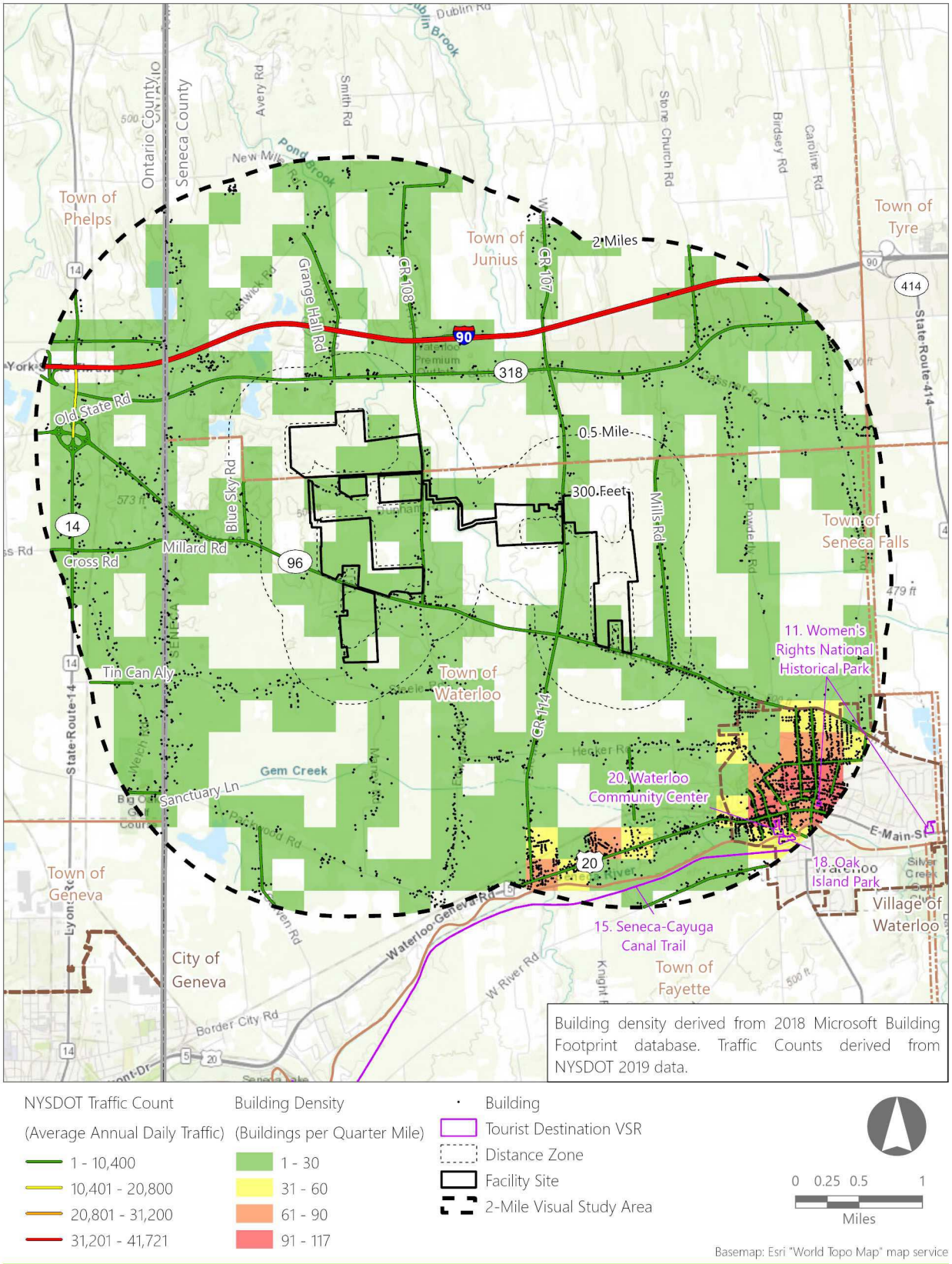
3.4.3 Tourists/Recreational Users

Tourists and recreational users include residents as well as out-of-town visitors involved in recreational activities at locations such as Oak Island Park, Women's Rights National Historic Park, the Seneca-Cayuga Canal Trail, and, to a lesser extent, undeveloped natural portions of the VSA. These individuals will view the landscape from specific recreational sites within the VSA, as well as from area highways while on their way to these destinations. This group includes history buffs, nature enthusiasts, active recreationalists such as bicyclists, hikers, and campers, and those involved in more passive recreational activities such as picnicking, sightseeing, and walking. Tourists and recreational users are typically focused on the activities in which they are engaged but, may have continuous but changing views of landscape features over relatively long periods of time. Visual quality may or may not be an important part of the recreational activities for these viewers. However, for many, scenery will serve to enhance their recreational experience.

Tourists and recreational users are assumed to generally be viewing the landscape from publicly accessible recreation areas and tourist destinations, which are identified as visually sensitive resources (see Section 3.5). Visitor count information available on the National Park Service website (National Park Service, 2023) suggests that the Women's Rights National Historic Park (VSR ID # 11) receives significant visitation (34,294 visitors in 2022) by locals and out-of-town tourists. The likely travel routes to this site by out-of-town visitors include State Route 318 and Interstate 90, among others (see additional discussion in section 5.2.2). Visitor counts for all other publicly accessible resources in the VSA are not readily available through publicly accessible data sources. However, parks, trails, and resources that accommodate recreational activities are assumed to receive the highest visitation. Beyond the Women's Rights National Historic Park (VSR ID # 11), these VSRs include the Seneca-Cayuga Canal Trail (VSR ID # 15), Oak Island Park (VSR ID # 18), and Waterloo

Community Center (VSR ID # 20), which are concentrated in or near the Village of Waterloo. Tourists and recreational users may also occasionally visit other VSRs in the study area, but visitation at these sites would likely be significantly lower. Examples of these resources include rural cemeteries throughout the study area and resources that lack trail networks, recreational amenities, or are not accessible to the public, such as the Junius Pond Unique Area (VSR ID # 17), North Seneca Sportsmen and Rifle Club (VSR ID # 44), private historic resources (such as the Bowdish-Dean Residence (VSR ID #45) and the ponds and lake in the study area.

Figure 3.4-1. Viewer Exposure



3.5 Visually Sensitive Resources

A variety of publicly available geospatial databases were consulted to identify visually Sensitive Resources (VSRs) within the 2-mile radius VSA. Identification of VSRs was based on guidance provided by New York State Department of Environmental Conservation (NYSDEC) Program Policy DEP-00-2 *Assessing and Mitigating Visual and Aesthetic Impacts* (NYSDEC, 2019) and the requirements of Article VIII. In addition, EDR conducted a search for other resources that could be considered visually sensitive based on the type or intensity of use they receive. A complete listing of the resources used in the identification of VSRs is included in the References section of this report (see Section 7.0). The categories of VSRs evaluated in this search included the following:

- **Properties of Historic Significance.** National Historic Landmarks; Properties/Districts Listed on the State or National Registers of Historic Places (S/NRHP); Resources Eligible for Listing on the S/NRHP; National or State Historic Sites.
- **Designated Scenic Resources.** Rivers Designated as National or State Wild, Scenic, or Recreational; Adirondack Park Scenic Vistas; Sites, Areas, Lakes, Highways or Overlooks Designated or Eligible for Designation as Scenic; Scenic Areas of Statewide Significance; 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 and Historic Preserve Areas; State Forest Preserve Land; Other State Lands; State Wildlife Management Areas and Game Refuges; State Forests; State Fishing/Waterway Access Sites; State and Federal Trails; Snowmobile/ATV Trails; Bike Trails/Routes; Other Trails; Palisades Park; 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, U.S., and Interstate Highways; Schools; Cities and Villages; Hamlets.
- **Native American Lands**.
- **Resources Identified during Visual Outreach.**

A total of 39 VSRs were identified in EDR's review of publicly available geospatial databases and the results of the Historic Architectural Resources Survey (see Exhibit 9 of the Article VIII application). Other sources of information used to identify VSRs are described below in Sections 3.5.1 and 3.5.3. Review of these data sources resulted in the identification of an additional 6 VSRs within the VSA (a total of 45). A list of all VSRs within the VSA is included in Attachment C – Revision 1.

3.5.1 Municipal Document Review

A review of local zoning and regional planning documents was undertaken to obtain any additional information on scenic resources within the VSA. Specifically, these planning documents were reviewed to catalog publicly accessible resources identified for their scenic, open space, aesthetic, and/or recreational value. However, resources identified in this review were either previously identified through EDR's geospatial database review or fell within the boundary of a previously identified resource.

3.5.2 Agency and Stakeholder Recommendations

Per the requirements set forth in Article VIII, the Applicant conducted outreach to agencies and stakeholders to assist in the identification of any additional VSRs and locations that would be suitable for the development of photosimulations. A response was received from ORES that identified several potential visually sensitive resources. Based upon a review of this request and additional research, the following resources were added to the inventory:

- **Locust Street Park (VSR ID # 40)** is a small municipal park that was identified during field review and is located near the intersection of Locust Street and Water Street in the Village of Waterloo. It appears to be publicly accessible and provides an informal access point to the Cayuga and Seneca Canal and therefore was added to the inventory in the Public Lands and Recreation Resources category (local parks and recreation areas sub-category).
- **Bowdish Cemetery (VSR ID # 41)** is a private cemetery which is not accessible and lacks visibility from public vantage points in the vicinity. The State Historic Preservation Office (SHPO) determined this resource to be eligible for listing on the S/NRHP. This resource is included in the Resources Eligible for Listing on S/NRHP category.
- **Junius Ponds Cabin and Campground (VSR ID # 42)** is a private campground located off State Route 318 in the Town of Junius and was delineated using the NYS ITS Tax Parcels Public dataset (NYS ITS, 2022). Because admission and access to the campground is fee-based and not readily accessible to the public at large, this resource was not categorized in the Public Lands and Recreational Resources category and was added to the VSR inventory in the Resources Identified During Visual Outreach category.
- **Newton Cemetery (VSR ID # 43)** was identified in the New York State Department of State Public Cemetery Locations geospatial database (NYSDOS, 2023) and was delineated using the NYS ITS Tax Parcels Public dataset (NYS ITS, 2022). This resource was added to the inventory in the Resources Identified during Visual Outreach category.
- **North Seneca Sportsmen and Rifle Club (VSR ID # 44)** is a private hunting club located off State Route 318 in the Town of Junius and was delineated using the NYS ITS Tax Parcels Public dataset (NYS ITS, 2022). Because admission and access to the campground is fee-based and not readily accessible to the public at large, this resource was not categorized in the Public Lands and Recreational Resources category and was added to the VSR inventory in the Resources Identified During Visual Outreach category.

A detailed summary of the actions taken in response to outreach, copies of correspondence sent by the Applicant as part of this outreach process, and the responses received from state agencies and municipal stakeholders are included as Attachment G of this VIA.

3.5.3 Visually Sensitive Resources Summary

A summary of all VSRs identified within the VSA based on database review, municipal document review, agency and stakeholder outreach, and the results of the Historic Resource Survey is presented in Table 3.5-

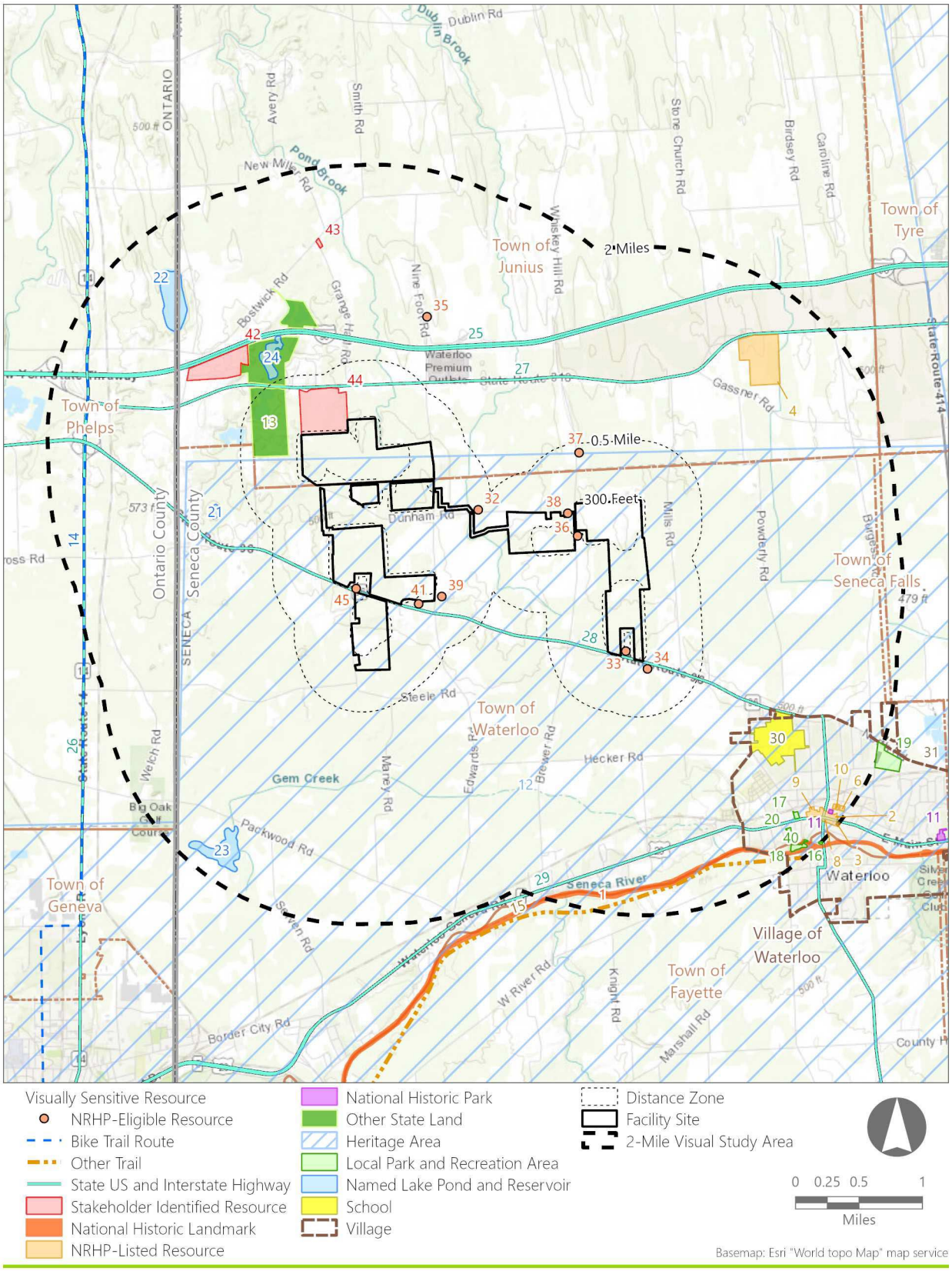
1. These data sources resulted in the identification of a total of 45 VSRs within the VSA. The location of these resources is illustrated in Figure 3.5-1.

Table 3.5-1. Summary of Visually Sensitive Resources Identified in the Visual Study Area

Visually Sensitive Resources	Number of Resources within each VSR category
Properties of Historic Significance	**Total: 20**
National Historic Landmarks (NHL)	1
Properties/Districts Listed on National or State Registers of Historic Places (S/NRHP)	9
Resources Eligible for Listing on S/NRHP	10
National or State Historic Sites	None identified
Designated Scenic Resources	**Total: 0**
Rivers Designated as National or State Wild, Scenic or Recreational	None identified
Adirondack Park Scenic Vistas (Adirondack Park Land Use and Development Map)	Not Applicable (N/A)
Sites, Areas, Lakes, Reservoirs or Highways Designated or Eligible for Designation as Scenic (ECL Article 49 Title 1 or equivalent)	None identified
Scenic Areas of Statewide Significance (Article 42 of Executive Law)	None identified
Other Designated Scenic Resources (Easements, Roads, Districts, and Overlooks)	None identified
Public Lands and Recreational Resources	**Total: 15**
National Parks, Recreation Areas, Seashores, and/or Forests (16 U.S.C. 1c)	1
National Natural Landmarks (36 CFR Part 62)	None identified
National Wildlife Refuges (16 U.S.C. 668dd)	None identified
Heritage Areas (formerly Urban Cultural Parks [Parks, Recreation and Historic Preservation Law Section 35.15])	1
State Parks (Parks, Recreation and Historic Preservation Law Section 3.09)	None identified
State Nature and Historic Preserve Areas (Section 4 of Article XIV of the State Constitution)	None identified
State Forest Preserve Land (NYS Constitution Article XIV)	N/A
Other State Lands	1
State Wildlife Management Areas and Game Refuges	None identified
State Forests	None identified
State Fishing/Waterway Access Sites	None identified
State and Federal Trails	None identified
Snowmobile/ATV Trails	None identified
Bike Trails/Routes	1
Other Trails	1
Palisades Park (Palisades Interstate Park Commission)	N/A
Local Parks and Recreation Areas	6
Publicly Accessible Conservation Lands/Easements	None identified
Rivers and Streams with Public Fishing Rights Easements	None identified
Named Lakes, Ponds, and Reservoirs	4
High-Use Public Areas	**Total: 7**

Visually Sensitive Resources	Number of Resources within each VSR category
State, US, and Interstate Highways	5
Schools	1
Cities and Villages	1
Hamlets	None identified
Native American Lands	**None identified**
Resources Identified during Stakeholder Outreach	**3**
Total Number of VSRs in the VSA	**Total: 45**

Figure 3.5-1. Visually Sensitive Resources



3.5.4 Significant Visual Resources Beyond the Visual Study Area

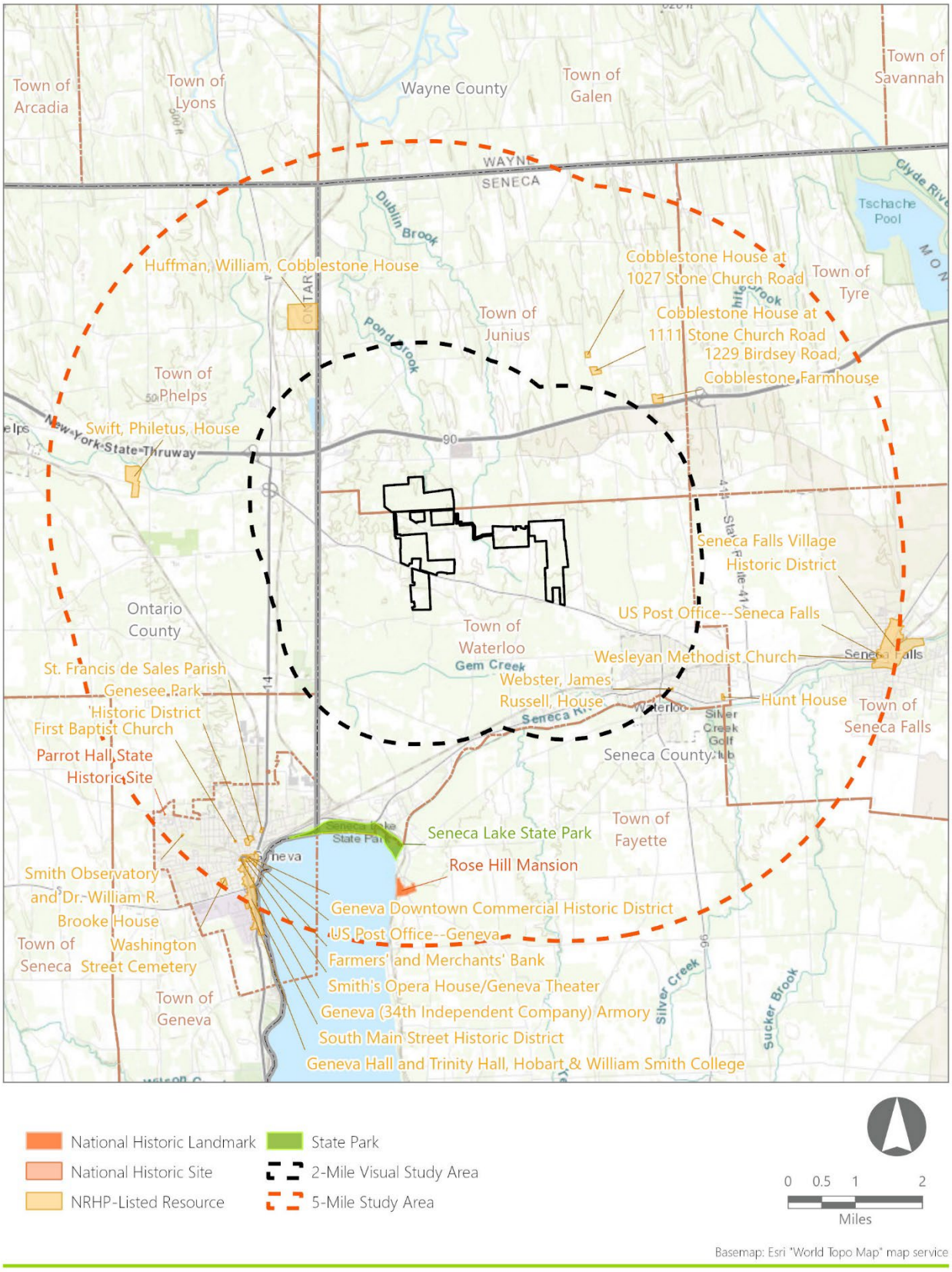
Article VIII regulations require that potential Facility visibility be considered "*from specific significant visual resources beyond the specified study area.*" As described in Section 3.1, a 5-mile radius study area was defined to identify significant visual resources located outside the 2-mile VSA. The criteria used to identify significant visual resources was based on the NYSDEC definition of aesthetic resources of statewide significance (NYSDEC, 2019). Based on these criteria, the following categories of VSRs were considered in this review: National Historic Landmarks; Properties/Districts Listed on the S/NRHP; National or State Historic Sites; National Parks, Recreation Areas, Seashores, and/or Forests; National Natural Landmarks; National Wildlife Refuges; State Parks; State Forest Preserves; State Wildlife Management Areas and Game Refuges; Rivers Designated as National or State Wild, Scenic, or Recreational; Adirondack Park Scenic Vistas; Designated Scenic Areas of Statewide Significance; and Palisades Park.

Based on EDR's database review, 25 significant visual resources are located within 5 miles of the Facility Site:

- Rose Hill Mansion (National Historic Landmarks);
- Parrott Hall State Historic Site (National or State Historic Sites);
- Seneca Lake State Park (State Parks);
- The following 22 Properties/Districts Listed on the S/NRHP: 1229 Birdsey Road, Cobblestone House at 1027 Stone Church Road, Cobblestone House at 1111 Stone Church Road, Farmers' and Merchants' Bank, First Baptist Church, Genessee Park Historic District, Geneva (34th Independent Company) Armory, Geneva Downtown Commercial Historic District, Geneva Hall and Trinity Hall (Hobart & William Smith College), Huffman William Cobblestone House, Hunt House, Seneca Falls Village Historic District, Smith's Opera House/Geneva Theater, Smith Observatory and Dr. William R. Brooke House, South Main Street Historic District, St. Francis de Sales Parish, Swift Philetus House, US Post Office-Geneva, US Post Office-Seneca Falls, Washington Street Cemetery, Webster James Russell House, Wesleyan Methodist Church.

The locations of these resources are shown in Figure 3.5-2.

Figure 3.5-2. Significant Visually Sensitive Resources Beyond Visual Study Area



4.0 VISUAL IMPACT ASSESSMENT METHODOLOGY

The visual impact assessment procedures used for this study are consistent with methodologies developed by the BLM (1999), USFS (1995), USDOT (1981 and 2015), U.S. Army Corps of Engineers (Smardon, et al., 1988), and the NYSDEC (2019). These procedures also comply with the requirements of Article VIII and are widely accepted as standard visual impact assessment methodology for renewable energy projects. The specific techniques used to assess potential Facility visibility and visual impacts are described in the following section.

4.1 Facility Visibility

An analysis of Facility visibility was undertaken to identify locations within the VSA where there is potential for the proposed PV arrays and interconnection facility to be seen from ground-level vantage points. This analysis included identifying potentially visible areas on viewshed maps and verifying potential Facility visibility in the field. In addition, line-of-sight cross sections were completed to demonstrate potential visibility from VSRs within the VSA as required by the Article VIII regulations. The methodology employed for each of these assessment techniques is described below.

4.1.1 Viewshed Analysis

PV Panel Viewshed Analysis

To identify areas where the proposed PV panels may be visible, a digital surface model (DSM) viewshed analysis was conducted. The DSM is a representation of topography as well as natural and built features on the land (e.g., structures, trees, powerlines). By comparison, a digital elevation model (DEM) is a representation of a bare earth topographic surface only. Because it is based on bare earth topography only, DEM viewshed analysis does not accurately represent areas of potential Facility visibility because it would not consider the screening effects of existing vegetation or structures. Therefore, a DSM viewshed analysis, which considers the height and location of all surface features (including ground surface topography, structures, and vegetation), was conducted. The DSM viewshed analysis for the proposed PV panels was prepared using the following data and parameters:

- A 1-meter resolution DSM derived from the FEMA lidar[1] dataset for Ontario County (FEMA, 2019) and the NYS ITS lidar dataset for the Central Finger Lakes (NYS ITS, 2020);
- Five-hundred sixty-five sample points representing PV panels, spaced approximately 200 feet apart in a grid pattern throughout all proposed PV array areas;
- A maximum PV panel height of 12 feet applied to each sample point;
- An assumed eye-level viewer height of 6 feet;
- ESRI ArcGIS Pro® software with the Spatial Analyst extension.

[1] Lidar, or light detection and ranging, is a remote sensing system that is used to determine height ranges of landscape features across large areas and is used to make 3D representations of areas on Earth's surface.

To avoid misleading results, some modifications to the DSM were made prior to conducting the viewshed analysis. Existing overhead transmission lines and roadside utility lines are generally misrepresented in the DSM as solid structures that extend from the top of these lines to the ground surface and therefore will be incorrectly interpreted as solid features with the potential to screen views. In order to correct this inaccuracy, all above-ground surface features within transmission line and road corridors (defined as areas within 50 feet of transmission line and county, state, US, and interstate highway centerlines, and areas within 30 feet of local road centerlines) were removed by replacing them with bare earth (DEM) elevation values. It is important to note that this removal of surface features within road and transmission corridors may also eliminate legitimate screening features such as vegetation and structures, which may occur in these areas. This has the potential to result in an overstatement of PV panel visibility within and adjacent to road and transmission line corridors. Vegetation clearing and structure removal that has occurred since the date of lidar collection near the intersection of Whiskey Hill Road and Dunham Road were also observed to lead to minor inaccuracies in the analysis. Therefore, vegetation and structures in this area were removed and replaced with bare earth elevation values. All surface features (vegetation) within the Facility's limit of construction activity were also removed and replaced with bare earth elevation values.

Once the viewshed analysis was complete, PV panel visibility was set to zero in locations where existing surface features exceed the bare earth elevation value by 6 feet or more, indicating the presence of vegetation or structures that exceed the assumed viewer height. This was done for two reasons: 1) in locations where trees or structures are present in the DSM, the viewshed results would reflect visibility from treetops or building roofs, which is not the intent of this analysis, and 2) to reflect the fact that the PV panels will generally be screened from view at ground-level vantage points within buildings or areas of vegetation that exceed viewer height.

Because it accounts for screening provided by topography, vegetation, and structures, the DSM viewshed analysis is the best available representation of potential visibility of the proposed PV panels. However, because certain characteristics of the Facility and the VSA that may serve to limit visibility (e.g., color, atmospheric/weather conditions, distance from the viewer) are not taken into consideration in the analysis, being located in an area indicated to have potential PV panel visibility does not necessarily equate to actual Facility visibility, nor does it indicate that adverse visual impacts will occur within these geographic locations. There is also the possibility of the DSM overstating screening, and therefore underestimating actual visibility, in locations where views are available through trees during the dormant season. However, such views will typically be significantly screened by bare tree branches and trunks.

Interconnection Facility Viewshed Analysis

An additional DSM viewshed analysis was completed to determine visibility of the interconnection facility (collection substation, POI substation, and transmission line structures). This DSM viewshed analysis was prepared using three sample points representing the proposed lightning masts (assigned heights of 55 feet), eight sample points representing collection substation and POI substation gantry structures (assigned heights of 57 feet), seven sample points at the locations of other proposed station components (assigned heights of 22 feet), and six sample points representing the transmission structures (assigned heights of 65

and 70 feet). All other data sources and assumptions used in this viewshed analysis are as described above for the PV panel viewshed analysis.

4.1.2 Line-of-Sight Cross Section Analysis

Per the requirements set forth in of Article VIII (§900-2.9 Exhibit 8: Visual Impacts), cross sections were prepared to illustrate potential Facility visibility and sources of screening from inventoried VSRs along a single line-of-sight "cut" through the landscape. To prepare the line-of-sight cross sections, the viewshed analysis results were used to determine areas where potential PV panel visibility is likely to occur from a particular VSR. Next, several lines were drawn from this location to different portions of the PV arrays to determine the most open, unobstructed line-of-sight available. Once this line-of-sight was identified, GIS software was used to sample elevations from the DSM and DEM along the entire line. The results, which include a bare earth profile line based on the DEM and a separate profile line with vegetation and structures based on the DSM, were exported. The graphic was then assembled and edited in Adobe Illustrator® in order to illustrate the line-of-sight from the viewer position and depict the Facility components. The line-of-sight cross sections prepared for VSRs with potential Facility visibility are included in Attachment E and discussed in Section 5.2.2.

4.1.3 Field Review

EDR personnel conducted field review within the VSA on April 13, 2023, July 20, 2023, and September 2, 2023. During field review, EDR staff members traveled public roads and visited public vantage points throughout the VSA to confirm the results of the viewshed analysis and obtain photographs to document existing views/visual character for subsequent development of photosimulations. The determination of potential Facility visibility was based on the proposed location and dimensions of Facility components, viewshed analysis results, and existing prominent landscape features near the Facility Site that served as location and scale references. To assist with viewer orientation and determination of potential Facility visibility in the field, global positioning system (GPS) units were combined with live mapping in ESRI Collector®. The data contained in the Collector unit included the Facility components, VSR locations, viewshed analysis results, a topographic and aerial base map, and the current viewer location. At each viewpoint, the GPS unit was used to document the location, time, and observations regarding potential Facility visibility and anticipated visual effect.

Field review resulted in documentation of potential Facility visibility from 50 representative viewpoints within the VSA. At each viewpoint, multiple photographs were taken to capture the full extent of the Facility and the surrounding landscape context. These photographs were taken using digital SLR cameras with a minimum resolution of 24 megapixels. Single-frame photographs included in the photolog were obtained at lens settings (focal lengths) between around 24 millimeters (mm) to 34 mm (equivalent to 34- and 50-mm focal lengths on a digital SLR camera with a full-frame [35 mm] camera sensor). A 50 mm focal length (35 mm camera sensor equivalent) is typically used in visual studies because it is generally agreed amongst visual professionals that it provides accurate scale and perspective between close and distant elements in a view. However, a slightly wider angle lens setting (34 mm focal length [35 mm camera sensor equivalent]) is also appropriate for certain viewing conditions in order to include a greater extent of the landscape within a single-frame photograph. The location of viewpoints documented during field review, overlaid over the

viewshed analysis results and VSR locations, is illustrated in Attachment A – Revision 1. Representative photographs from each viewpoint are included in Attachment B. The photographs for each viewpoint include a panorama composition illustrating the view context and a single-frame photograph illustrating the most open, unobstructed view available towards the proposed Facility.

4.2 Facility Visual Impact

Beyond evaluating potential Facility visibility, the VIA also examined the potential visual impact associated with the proposed Facility from identified LSZs, VSRs, and viewer/user groups within the VSA. This assessment involved preparing photographic simulations of the proposed Facility from representative viewpoints. These photosimulations illustrate the appearance of the operational Facility and were evaluated by a rating panel consisting of three registered landscape architects (two in-house staff with no other direct involvement in the Project and one outside consultant) to determine the type and extent of visual contrast resulting from operation of the proposed Facility. Further information on rating panel personnel and procedures can be found in Attachment F. Visual impact assessment procedures are summarized in the following subsections.

4.2.1 Viewpoint Selection

The Article VIII regulations require that *"In developing the application, the applicant shall confer with municipal planning representatives, the Office (ORES), and where appropriate, OPRHP and/or APA in its selection of important or representative viewpoints*."[2] As discussed in Section 3.5, in addition to consultation with the required agencies, municipal representatives and local stakeholders were also asked to help identify VSRs and determine an appropriate set of viewpoints for the development of photosimulations. Copies of correspondence sent to agencies and stakeholders as part of this process, as well as the responses received, are included as Attachment F.

Based on the outcome of EDR's VSR research and field verification, along with agency/stakeholder input, a total of 11 viewpoints were ultimately selected for the development of photosimulations. Views from these locations were selected based upon one or more of the following criteria:

- They provide open views of the proposed PV panels and/or interconnection facility.
- They illustrate different amounts of PV panel visibility from a variety of viewing distances and geographic locations to represent the range of visual change that will occur with the Facility in place.
- They illustrate views from significant locations including:
    - VSRs and LSZs where open views will be available,
    - Locations with a high degree of visual exposure for representative viewer/user groups, such as densely populated areas or highly trafficked roadways, and

[2] The Adirondack Park Agency (APA) is not applicable in this instance due to the Project's location outside the Adirondack Park.

    - Locations recommended by state agencies, municipal representatives, and/or local stakeholders.
- They illustrate views of the Facility from locations representative of existing and future land uses within the VSA.
- They illustrate views where there is potential for cumulative impacts with other existing or proposed renewable energy facilities.

It is worth noting that all of the selected viewpoints occur within the Agricultural/Rural Residential LSZ and 10 of the 11 viewpoints occur within the agriculture (or undeveloped) future land use area and within the near-foreground or foreground distance zones. This reflects the geographic distribution of potential visibility and availability of open views of the Facility, which are concentrated in these areas, as indicated by the viewshed analysis and field review. The availability of views from other LSZs and future land use areas were either non-existent or substantially screened. Four of the viewpoints are representative of views available to through-travelers, two are representative of views from locations that are likely to receive low visitation from tourists/recreational users (rural cemeteries that are publicly accessible), and seven of the viewpoints are located within areas of low residential viewer exposure (e.g., low building density). This also reflects the distribution of potential visibility within the VSA, which is concentrated in undeveloped areas, along local roadways, and lower density residential areas. Areas of high use by residents, through-travelers, and tourists/recreational users are generally not included in the Facility viewshed. This is demonstrated in Figure 4.2-1, which includes the viewshed analysis results overlaid with the building density analysis, traffic count results, and higher use VSRs.

Location details of each photosimulation viewpoint are summarized in Table 4.2-1 and in the context sheet for each photosimulation included in Attachment D. Attachment A – Revision 1 includes figures with the selected viewpoint locations overlaid with the viewshed results, LSZs, and VSRs.

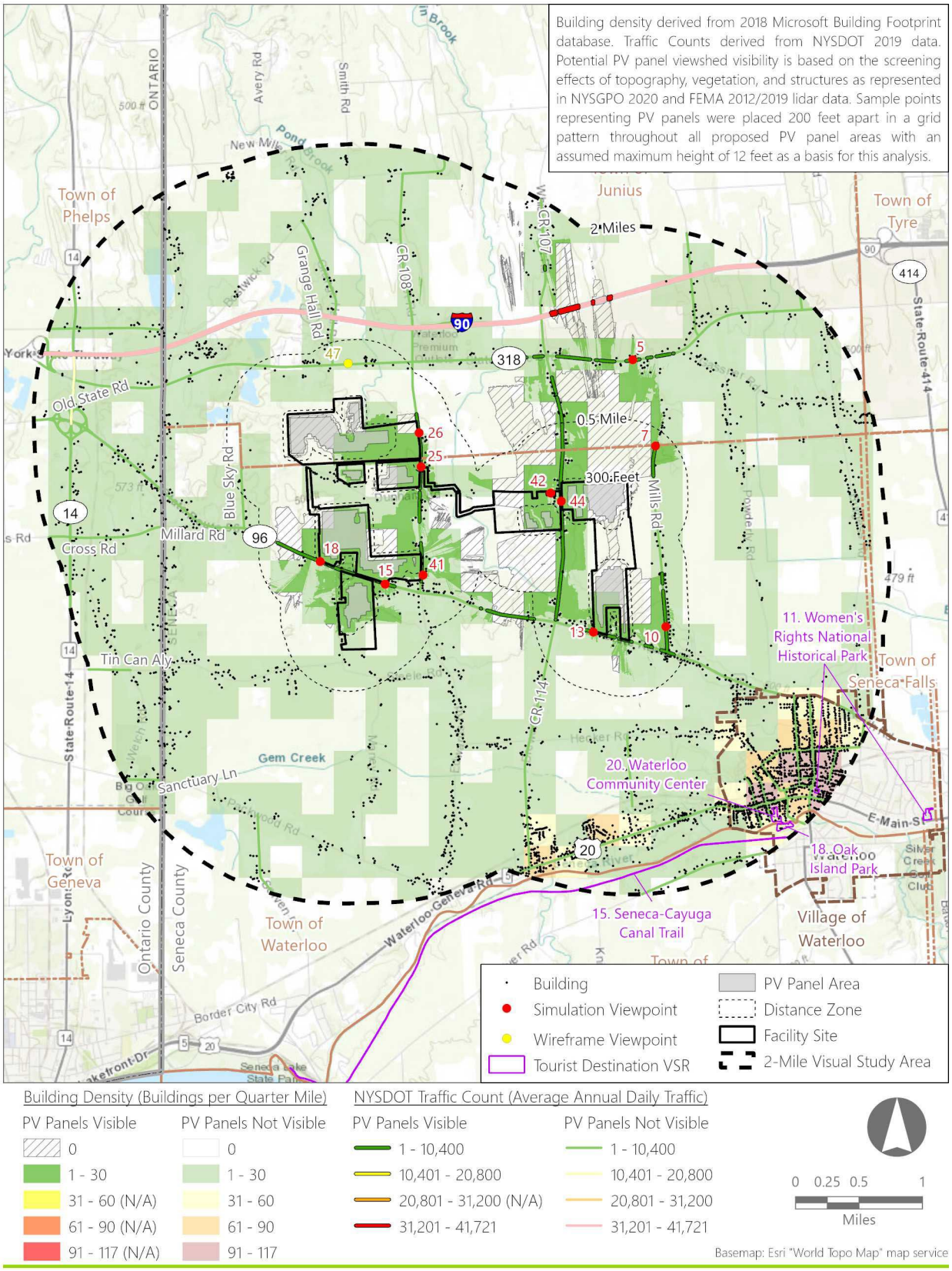
Table 4.2-1. Viewpoints Selected for Photosimulation

Viewpoint Number	Location and/or VSR Represented	Town	Distance Zone Represented in View	Landscape Similarity Zone	Future Land Use	Viewer/User Group Represented	View Orientation[1]
VP 5	**State Route 318** VSR ID # 27 – NYS Route 318	Junius	Middle ground	Agricultural/Rural Residential	Corridor Overlay	Local Residents, Through-Travelers	S
VP 7	**Mills Road** VSR ID # 12 - Erie Canalway National Heritage Corridor	Junius	Foreground	Agricultural/Rural Residential	Agricultural (or Undeveloped)	Local Residents	SW
VP 10	**Mills Road** VSR ID # 12 - Erie Canalway National Heritage Corridor	Waterloo	Foreground	Agricultural/Rural Residential	Agricultural (or Undeveloped)	Local Residents,	NW
VP 13	**State Route 96** VSR ID # 12 - Erie Canalway National Heritage Corridor VSR ID # 28 - NYS Route 96 VSR ID # 33 - Farmstead at 1067 State Route 96	Waterloo	Foreground	Agricultural/Rural Residential	Agricultural (or Undeveloped)	Local Residents, Through-Travelers	NE
VP 15	**State Route 96 and Hidden Spring Lane** VSR ID # 12 - Erie Canalway National Heritage Corridor VSR ID # 28 - NYS Route 96 VSR ID # 41 – Bowdish Cemetery	Waterloo	Foreground	Agricultural/Rural Residential	Agricultural (or Undeveloped)	Local Residents, Through-Travelers	NW
VP 18	**State Route 96** VSR ID # 12 - Erie Canalway National Heritage Corridor VSR ID # 28 - NYS Route 96	Waterloo	Near-Foreground	Agricultural/Rural Residential	Agricultural (or Undeveloped)	Local Residents, Through-Travelers	NE
VP 25	**Ninefoot Road** VSR ID # 12 - Erie Canalway National Heritage Corridor	Waterloo	Foreground	Agricultural/Rural Residential	Agricultural (or Undeveloped)	Local Residents	W
VP 26	**Ninefoot Road** VSR ID # 12 - Erie Canalway National Heritage Corridor	Junius	Foreground	Agricultural/Rural Residential	Agriculture and Open Space	Local Residents	W
VP 41	**Quaker Cemetery** VSR ID # 12 – Erie Canalway National Heritage Corridor	Waterloo	Foreground	Agricultural/Rural Residential	Agricultural (or Undeveloped)	Local Residents, Tourists/Recreational User	W

Viewpoint Number	Location and/or VSR Represented	Town	Distance Zone Represented in View	Landscape Similarity Zone	Future Land Use	Viewer/User Group Represented	View Orientation[1]
	VSR ID # 39 – Quaker Cemetery						
VP 42	**Hubbard Cemetery** VSR ID # 12 - Erie Canalway National Heritage Corridor VSR ID # 38 - Hubbard Cemetery	Waterloo	Foreground	Agricultural/Rural Residential	Agricultural (or Undeveloped)	Local Residents, Tourists/Recreational User	E
VP 44	**Whiskey Hill Road** VSR ID # 12 - Erie Canalway National Heritage Corridor	Waterloo	Near-Foreground	Agricultural/Rural Residential	Agricultural (or Undeveloped)	Local Residents	E

[1] N = North, S = South, E = East, W = West.

Figure 4.2-1. Viewer Exposure and PV Panel Visibility



4.2.2 Photosimulations

To show anticipated visual changes associated with the proposed Facility, three-dimensional (3D) modeling software was used to create realistic photographic simulations of the proposed Facility from each of the 11 selected views. The photosimulations were developed by using Autodesk 3ds Max Design® to create a simulated perspective (3D camera view) to match the location, bearing, and focal length of each existing conditions photograph. A 3D model of the lidar data (point cloud) used to generate the DSM was then created to represent existing landscape features, such as roads, buildings, terrain, and vegetation. The 3D camera's orientation, location, roll, and focal length were then adjusted to match the modeled landscape features in the lidar data with the corresponding landscape features in the photograph. This assures that any elements introduced to the model space (e.g., the PV panels) will be shown in proper proportion, perspective, and relation to the existing landscape features in the view. Consequently, the alignment, elevations, dimensions, and locations of the proposed Facility structures in the simulations will be accurate.

Computer models of the proposed PV panels, racking, fencing, inverters, collection substation, POI substation, transmission structures and lines, and access roads were prepared based on layout information and specifications provided by the Applicant (see Section 2.2 for a description of the dimensions, materials, and color of the various Facility components). The modeled Facility components were imported into the landscape model space described above and set at the proper geographic location. The PV panels were then rotated to accurately represent their orientation as it would be on the date and time of the photograph for each view. With the proposed Facility in place, a daylight system was created based on the date, time, and location of each photograph in order to accurately represent light reflection, highlights, color casting, and shadows. The Facility was then rendered and superimposed over the existing photograph in Adobe Photoshop®. Using lidar data and the proposed limit of disturbance as guides, portions of the Facility that would fall behind vegetation, structures, or topography were then masked out and any vegetation that is proposed to be cleared was removed from the photograph. Finally, any shadows cast on the ground by the proposed structures were rendering a separate "shadow pass" and placed over the terrain with the proper fall-off and transparency using Photoshop®. A graphic illustration of the simulation process is included in Figure 4.2-2.

Proposed mitigation plantings were also incorporated into the simulations where they would be visible based on the Planting Plan included in Appendix 8-B – Revision 1 of the Article VIII Application. To accomplish this, 3D plant models representing each of the species proposed during both leaf-on and leaf-off conditions were placed into the simulations at the locations specified in the planting plan, rendered, and superimposed using the same process described above. The models were sized to reflect their size at the time of installation, and at five to seven years of growth based on region-specific species growth rates. The five-to-seven-year growth photosimulation was completed in order to illustrate the plantings at their established size and intended screening effectiveness.

"Wireframe" Renderings

During the viewpoint selection process, a total of 12 views were identified as candidates for the development of photosimulations. However, Facility components were determined to be substantially

screened in one of the views. For this view (Viewpoint 47 from State Route 318), a wireframe rendering was prepared to illustrate the degree of screening provided by existing landscape features within the photograph. This viewpoint is located in front of a residence on State Route 318 approximately 700 feet east of the intersection with Grange Hall Road, which was recommended by ORES for consideration in the viewpoint selection process (see correspondence with ORES in Attachment G). In this wireframe rendering, the 3D computer model of the proposed PV panels (shown in bright green for illustrative purposes), is overlayed on top of the photograph that illustrates the most open, unobstructed view of the Facility that could be available from this location.

Figure 4.2-2. Photosimulation Methodology

1 | PHOTO SELECTION

Photographs are selected to represent the most open, unobstructed line-of-sight toward the Facility from the viewpoints selected for the development of photosimulations.

2 | CAMERA POSITIONING AND ALIGNMENT

A georeferenced model is created using GPS data collected in the field and lidar data. These data are used to accurately align a camera view to the existing topography, vegetation, and structures that are visible in the photograph using 3D modeling software.

3 | FACILITY MODEL CREATION

A model of the Facility is created based on plans and specifications for the various Facility components. The proposed exterior color/finish of the Facility components is then added, and the components are placed in the correct geographic position within the georeferenced model.

4 | ENVIRONMENT SYSTEM

An environmental system is set up with the appropriate sun angle based upon the specific date, time, and location (latitude and longitude) at which each photo was taken.

5 | MITIGATION MODEL CREATION

Mitigation plantings are modeled and placed at the locations specified in the landscape mitigation plan. Plants are sized based upon anticipated installation size and following 5-7 years of growth post installation.

6 | SIMULATION RENDERING AND PHOTO EDITING

The 3D model of the Facility and renderings are then rendered and superimposed over the photograph in Adobe Photoshop. Portions of the Facility that fall behind vegetation, structures, and topography are masked out.

4.2.3 Visual Contrast Rating

To evaluate anticipated visual change associated with the proposed Facility, photosimulations of the operational Facility were compared to photos of existing conditions from the 11 selected viewpoints. These "before" and "after" photographs, identical in every respect except for the Facility components shown in the simulated views, were provided to a rating panel, who were then asked to determine the effect of the proposed Facility in terms of its contrast with existing components of the landscape (landform, vegetation, land use, water, sky, and viewer activity). The methodology utilized in this evaluation was developed by EDR in 1999 (and subsequently updated) based on agency-approved/recommended methodologies (e.g., Smardon et al., 1988; BLM, 1999). It involves using a short evaluation form and a simple numerical rating process to assign visual contrast ratings on a scale of 0 (insignificant) to 4 (appreciable/strong). This methodology has proven to be accurate in predicting public reaction to renewable energy facilities. Additionally, this methodology 1) documents the basis for conclusions regarding visual impact, 2) allows for independent review and replication of the evaluation, and 3) allows a large number of viewpoints to be evaluated in a reasonable amount of time. Landscape, viewer, and Facility-related factors considered by the rating panel in their evaluation included the following:

- **Form, Line, Color, and Texture.** These are the four major compositional elements that define the perceived visual character of a landscape, as well as a project. Form refers to the shape of an object that appears unified; often defined by edge, outline, and surrounding space. Line refers to the path the eye follows when perceiving abrupt changes in form, color, or texture and is usually evident as the edges of shapes or masses in the landscape. Texture in this context refers to the visual surface characteristics of an object. The extent to which form, line, color, and texture of a project are similar to, or contrast with, these same elements in the existing landscape is a primary determinant of visual impact.
- **Landscape Composition.** The arrangement of objects and voids in the landscape that can be categorized by their spatial arrangement. Basic landscape components include vegetation, landform, water and sky. Some landscape compositions, especially those that are distinctly focal, enclosed, detailed, or feature-oriented, are more vulnerable to modification than panoramic, canopied, or ephemeral landscapes.
- **Focal Point.** Certain natural or man-made landscape features stand out and are particularly noticeable as a result of their physical characteristics. Focal points often contrast with their surroundings in color, form, line, scale, or texture, and therefore tend to draw a viewer's attention. Examples include prominent trees, mountains, and water features. Cultural features, such as a distinctive barn or steeple can also be focal points. If possible, a proposed project should not be sited so that it obscures or competes with important existing focal points in the landscape.
- **Order.** Natural landscapes have an underlying order determined by natural processes. Cultural landscapes exhibit order by displaying traditional or logical patterns of land use/development. Elements in the landscape that are inconsistent with this natural order may detract from scenic quality. When a new project is introduced to the landscape, intactness and order are maintained through the repetition of the forms, lines, colors, and textures existing in the surrounding built or natural environment.

- **Scenic or Recreational Value.** Designation as a scenic or recreational resource is an indication that there is broad public consensus on the value of that resource. The particular characteristics of the resource that contribute to its scenic or recreational value provide guidance in evaluating a project's visual impact on that resource.
- **Duration and Extent of View.** Some views are seen as quick glimpses while driving along a roadway or hiking a trail, while others are seen for a more prolonged period. Longer duration views of a project, especially from significant scenic resources, have the greatest potential for visual impact. Similarly, some views are partially screened by existing landscape features, while others may offer full views of a project. In general, increased screening tends to reduce the visual contrast and prominence of a project.
- **Atmospheric Conditions.** Clouds, precipitation, haze, and other ambient air-related conditions, which affect the visibility of an object or objects. These conditions can temporarily impact the visibility and contrast of landscape and project components, and the design elements of form, line, color, texture, and scale.
- **Lighting Direction.** Backlighting refers to a viewing situation in which sunlight is coming toward the observer from behind a feature or elements in a scene. Front lighting refers to a situation where the light source is coming from behind the observer and falling directly upon the area being viewed. Side lighting refers to a viewing situation in which sunlight is coming from the side of the observer to a feature or elements in a scene. Lighting direction will affect the perceived color and reflectivity of the PV panels and other Facility components, and can have a significant effect on the visibility and contrast with the landscape.
- **Project Scale.** The apparent size of a proposed project in relation to its surroundings can define the compatibility of its scale within the existing landscape. Perception of project scale is likely to vary depending on the distance from which it is seen and other contextual factors.
- **Spatial Dominance.** The degree to which an object or landscape element occupies space in a landscape, and thus dominates landscape composition from a particular viewpoint.
- **Visual Clutter.** Numerous unrelated built elements occurring within a view can create visual clutter, which adversely impacts scenic quality.
- **Movement.** Noticeable movement of project components can make them more noticeable. Although the PV panels move as they follow the sun using a single access tracker system, this movement occurs slowly throughout the day, and at any given point in time is imperceptible to the viewer.

To conduct their evaluation, rating panel members were provided instructions for the completion of the rating forms, along with the following VSA and viewpoint-specific information (see Attachment F for a copy of the instructions and rating forms):

- General information for the VSA:
    - LSZ definitions and map
    - Description of viewer/user groups

    - VSR map
    - Contrast rating forms
- Specific information for each viewpoint including a Google Earth File (KMZ), indicating:
    - Viewpoint location
    - Direction of view/field of view
    - Location of Facility components
    - Viewer distance from the viewpoint to the nearest PV panels or interconnection facility component
    - Applicable LSZ, user/viewer groups, and VSRs
    - The selected viewpoint photograph (Existing View) and photosimulation (Proposed View)
    - Panorama composition showing views adjacent to the simulated view.

4.2.4 Local Laws and Ordinances

As required by Article VIII regulations, relevant local laws and ordinances of host communities were reviewed to identify any potential requirements pertaining to the assessment of visual impacts that are applicable to the proposed Facility. Chapter 134 of the Town of Waterloo Town Code (Solar Energy Systems) includes the following requirement for site plan review:

> *"All Large-Scale Solar Energy Systems shall be adequately screened, as determined by the Planning Board, to avoid adverse aesthetic impacts."* - **§134.6.B(4)(k)**

The viewshed analysis and visual contrast evaluation conducted as part of this VIA provides an analysis of the potential visibility and visual effects associated with proposed Facility from all areas within the VSA, which includes the majority of the Town of Waterloo. Mitigation plantings are proposed to screen and/or soften the appearance of the Facility where unscreened views are possible, and their effectiveness is considered during the visual contrast rating process. The results of these analyses are discussed in Section 5 of the VIA. This information allows any potential concerns from the Town of Waterloo regarding screening of the Facility to be taken into consideration during the Article VIII review process.

5.0 VISUAL IMPACT ASSESSMENT RESULTS

5.1 Facility Visibility

An analysis of visibility was undertaken to identify locations within the VSA where there is potential for the proposed PV panels and other Facility components to be seen from ground-level vantage points. This analysis included the identification of potential areas of visibility based on the results of viewshed analysis and field verification.

5.1.1 PV Panel Viewshed Analysis Results

The PV panel viewshed analysis was used to determine "conservative case" visibility based on the maximum height of the panels while in their most upright position (see Table 5.1-1). The viewshed analysis indicates that PV panels could be visible from approximately 11.6% (3.8 square miles) of the VSA (i.e., the PV panels would be entirely screened from approximately 88.4% of the VSA). The position of the PV panels on generally flat topography and the presence of abundant vegetative screening in the surrounding areas generally limits visibility to within 0.5 miles of the Facility Site. As indicated in Figure 5.1.1 and Attachment A, potential visibility occurs primarily in areas with limited or no vegetation, such as open agricultural fields, residential yards, and roadway corridors. Potential PV panel visibility beyond 0.5 miles is concentrated in agricultural lands surrounding Whiskey Hill Road in the northeast portion of the VSA. As discussed in Section 5.1.3, actual visibility in these areas may be more limited than indicated by the viewshed analysis due to the removal of existing roadside screening features in the viewshed analysis and the effects of distance. The presence of mature corn crops in agricultural fields throughout the area will also reduce Facility visibility during the later portions of the growing season. However, it is also possible that visibility is understated from some more wooded portions of the VSA depending on the density of vegetation and the time of year (i.e., leaf-on vs. leaf-off).

PV Panel Viewshed Analysis Results by Distance Zone

Potential visibility of the PV panels within each distance zone is summarized in Table 5.1-1 and illustrated in Figure 5.1-1. The greatest potential for PV panel visibility in terms of percentage of distance zone area is the near-foreground distance zone (84.7% of this zone). However, the majority of PV panel visibility within this distance zone (i.e., within 300 feet of the panels) occurs within the Facility Site itself. When the Facility Site is excluded from the results, potential for PV panel visibility within the near foreground is reduced from 84.7% (1.1 square miles) to 10.1% (0.1 square miles) of the distance zone area. Therefore, when on-site visibility is excluded, the near-foreground distance zone has the least potential for PV panel visibility in terms of geographic area, and the foreground distance zone (i.e., 300 feet to 0.5 miles) has the greatest potential for PV panel visibility in terms of both geographic extent and percentage of distance zone area (1.9 square miles and 32.7% of this distance zone). The least potential for PV panel visibility in terms of percentage of distance zone area occurs in the middle ground distance zone (3.3% of this zone, 0.9 square miles).

Table 5.1-1. PV Panel Viewshed Results by Distance Zone

Distance Zones	PV Panel Visibility[1]			
	Total Visibility		Total Screened	
	Square Miles	% of Distance Zone Area	Square Miles	% of Distance Zone Area
Near Foreground 0-300 Feet	1.1	84.7%	0.2	15.3%
Foreground 300 Feet-0.5 Mile	1.9	32.7%	3.8	67.3%
Middle Ground 0.5-2.0 Miles	0.9	3.3%	25.1	96.7%
Total Visibility within the VSA[2]	**3.8**	**11.6% of VSA**	**29.1**	**88.4% of VSA**

[1] The calculations used to generate this table were based on unrounded numbers. The rounded results in the table may not add up precisely.
[2] The VSA includes approximately 32.9 square miles, or approximately 21,065 acres.

PV Panel Viewshed Analysis Results by Landscape Similarity Zone

Potential visibility of the PV panels within each landscape similarity zone is summarized in Table 5.1-3 and illustrated in Figure 5.1-2. The greatest potential for visibility of the proposed PV panels, in terms of both geographic area and percent of the LSZ's total area, occurs within the Agricultural/Rural Residential LSZ due to the location of the Facility on agricultural land, the limited amount of large, forested areas and other significant features that serve to screen views, and the fact that this LSZ makes up almost half of the VSA. Potential PV panel visibility is very limited from the Forest LSZ, and primarily occurs within the Facility Site where vegetation clearing is proposed. Potential visibility is also limited from the Transportation LSZ where it occurs as a tightly grouped series of narrow visibility corridors. The results of the viewshed analysis indicate that there is no potential for visibility of the PV panels within the Village, Open Water, and Commercial LSZs.

Table 5.1-2. PV Panel Viewshed Results by Landscape Similarity Zone

Landscape Similarity Zone	PV Panel Visibility[1]			
	Total Visibility		Total Screened	
	Square Miles	% of LSZ Area	Square Miles	% of LSZ Area
Agricultural/Rural Residential	3.6	22.0%	13.9	98.2%
Forest	0.2	1.8%	12.7	78.0%
Village	0	0%	1.7	100%
Open Water	0	0%	0.4	100%
Transportation	<0.1	2.8%	0.3	97.1%

Commercial	0	0%	0.1	100%
Total Visibility within the VSA[2]	**3.8**	**11.6% of VSA**	**29.1**	**88.4% of VSA**

[1] The calculations used to generate this table were based on unrounded numbers. The rounded results in the table may not add up precisely.
[2] The VSA includes approximately 32.9 square miles, or approximately 21,065 acres.

PV Panel Viewshed Analysis Results by Future Land Use Area

The potential visibility of the PV panels for each future land use area is presented in Table 5.1-3 and illustrated in Figure 5.1-3. Due to the number of future land use areas within the VSA, Table 5.1-3 includes only future land use areas where potential PV panel visibility is indicated by the viewshed analysis. As indicated in this table, potential visibility of the PV panels is concentrated to future land use areas where agriculture is the primary anticipated future use (of the 3.8 square miles areas with potential PV panel visibility, 3.5 square miles occur within the Agricultural [or Undeveloped] and Agricultural and Open Space future land use areas). A limited amount of potential visibility also occurs in portions of the Sensitive Environmental Area and Corridor Overlay future land use areas in the Town of Junius. Very small areas of potential visibility occur in the Low Density Residential, Medium Density Residential, and Multiple Use future land use areas in the Town of Waterloo.

Table 5.1-3. PV Panel Viewshed Results by Future Land Use Area

Future Land Use Area[1]	PV Panel Visibility[2]			
	Total Visibility		Total Screened	
	Square Miles	% of Future Land Use Area	Square Miles	% of Future Land Use Area
Agricultural (or Undeveloped)	2.5	16.6%	12.6	83.4%
Agriculture and Open Space	1.0	12.4%	6.8	87.6%
Corridor Overlay	0.2	10.9%	1.3	89.1%
Low Density Residential	<0.1	2.8%	0.9	97.2%
Medium Density Residential	<0.1	0.2%	0.3	99.8%
Multiple Use	<0.1	<0.1%	0.9	>99.9%
Sensitive Environmental Area	0.2	18.0%	0.7	82.0%

[1] Only future land use areas with potential PV panel visibility are included in this table.
[2] The calculations used to generate this table were based on unrounded numbers. The rounded results in the table may not add up precisely.

5.1.2 Interconnection Facility Viewshed Analysis Results

The potential visibility of proposed interconnection facility components is illustrated in Figure 5.1-4. Viewshed analysis results indicate that some portion of interconnection facility (collection substation, POI substation, and transmission structures) could be visible from approximately 2.3% (0.8 square miles) of the VSA (i.e., the interconnection facility would be entirely screened from approximately 97.7% of the VSA).

Potential visibility of the interconnection facility outside of the Facility Site is concentrated in open agricultural fields and portions of roadway corridors (Ninefoot Road, Dunham Road, and Whiskey Hill Road) to the north and south, and an existing transmission corridor that angles north-south through the center of the VSA. As discussed in Section 5.1.3, actual visibility in these areas may be more limited than indicated by the viewshed analysis due to the removal of existing screening features within transmission line and roadside corridors in the viewshed analysis and screening by intervening vegetation which will limit visibility to the narrow, upper portions of the interconnection facility components.

Figure 5.1-1. PV Panel DSM Viewshed Analysis

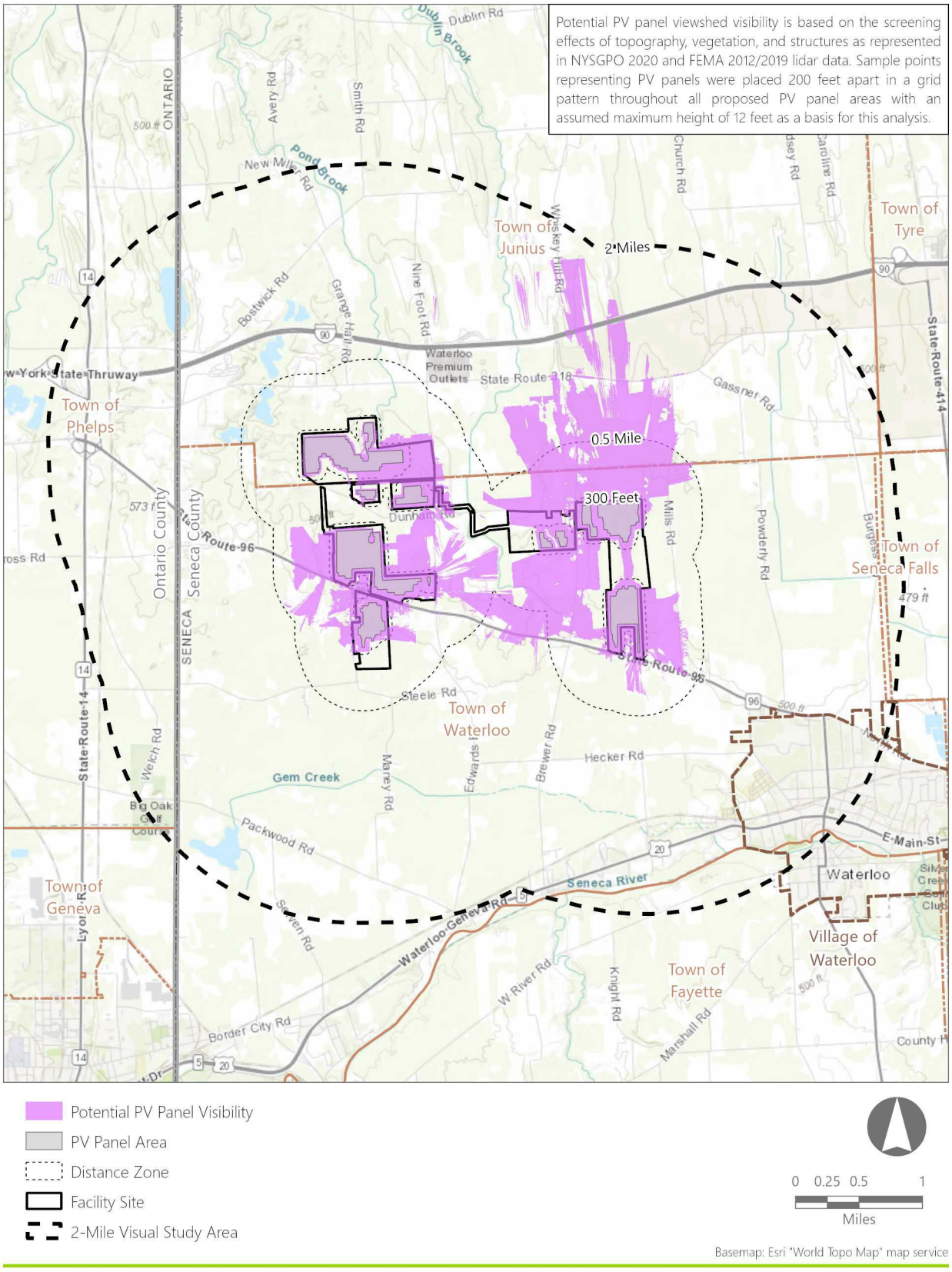


Figure 5.1-2. PV Panel DSM Viewshed Analysis and Landscape Similarity Zones

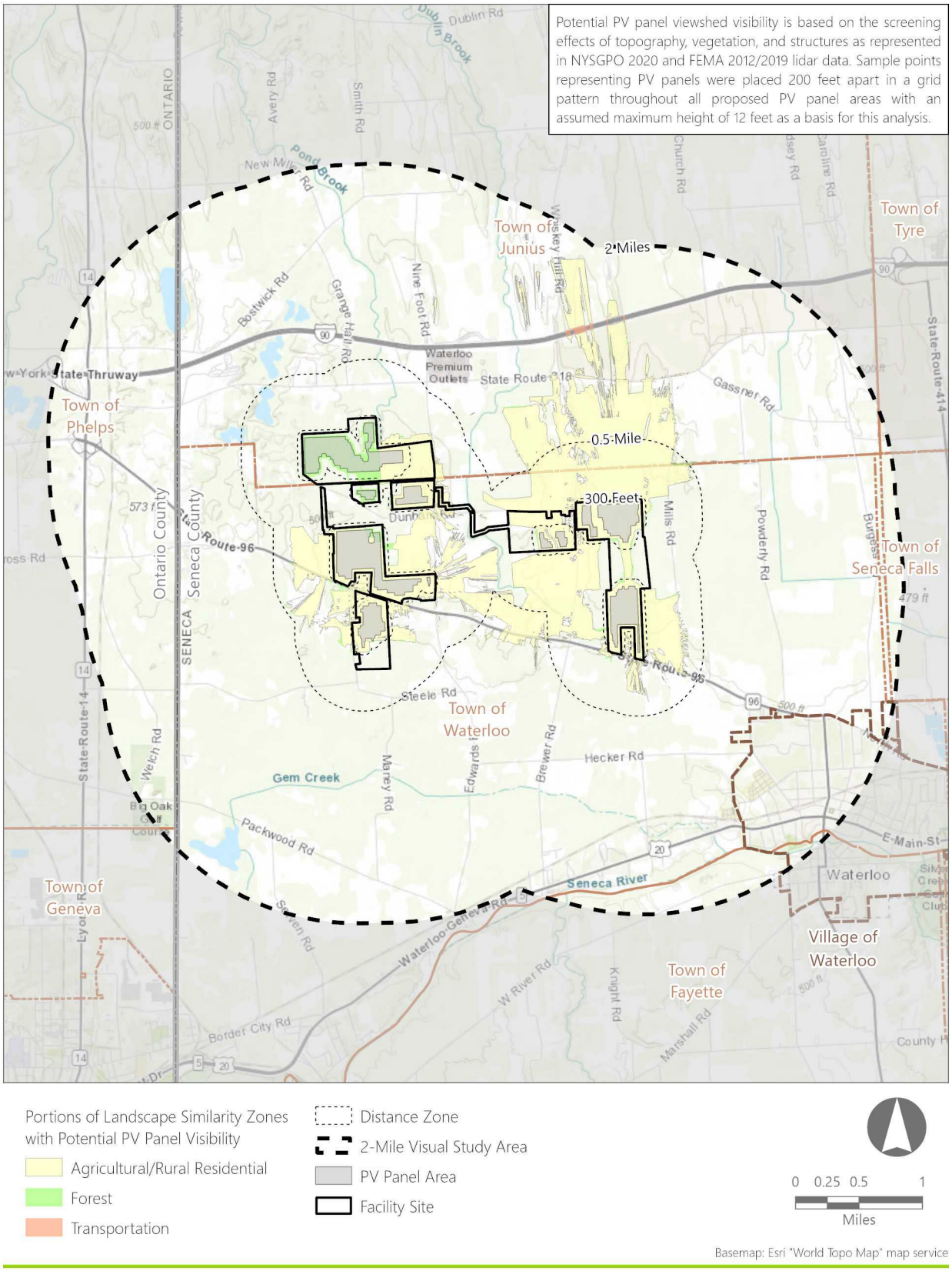


Figure 5.1-3. PV Panel DSM Viewshed Analysis and Future Land Use Areas

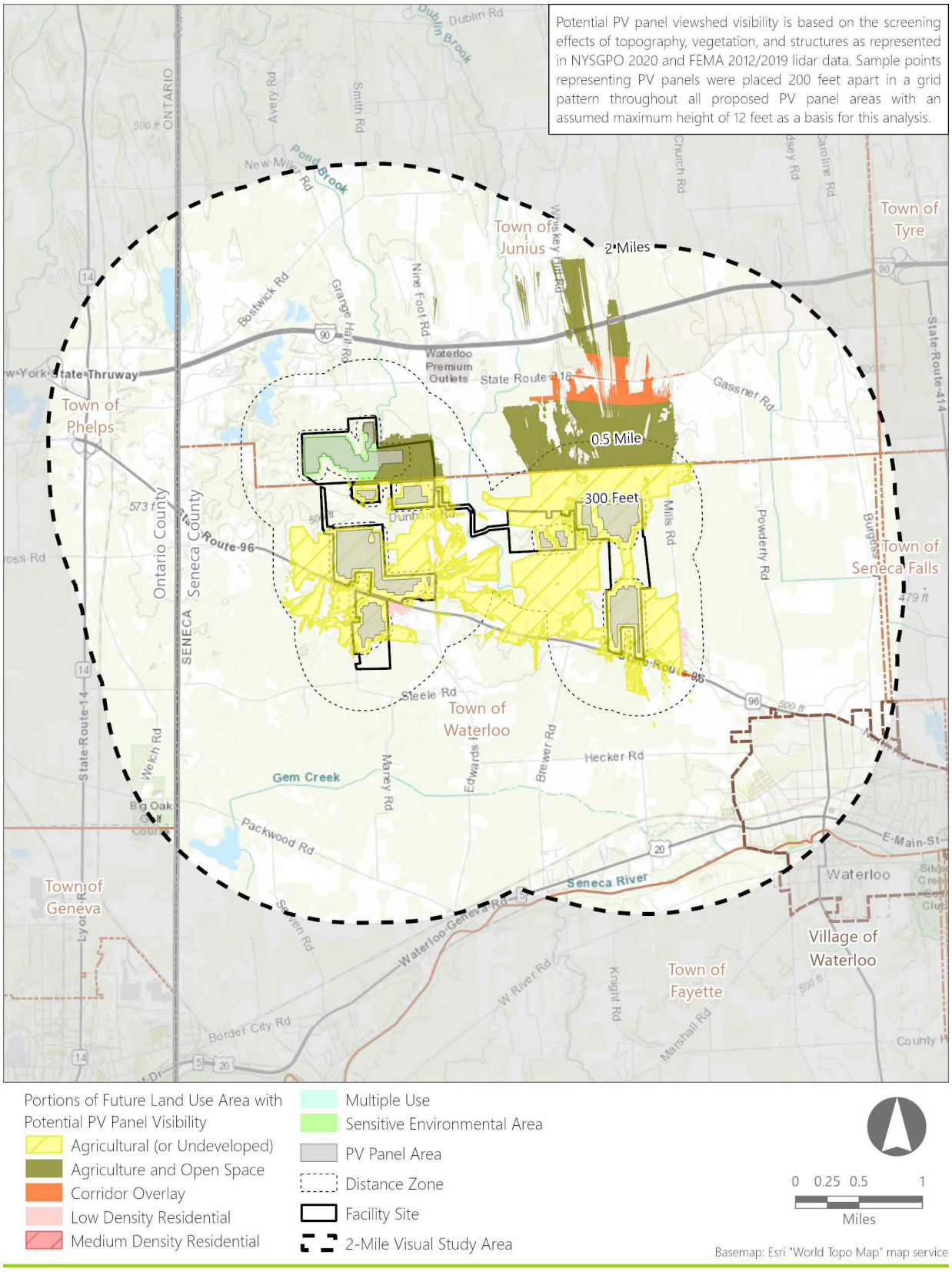
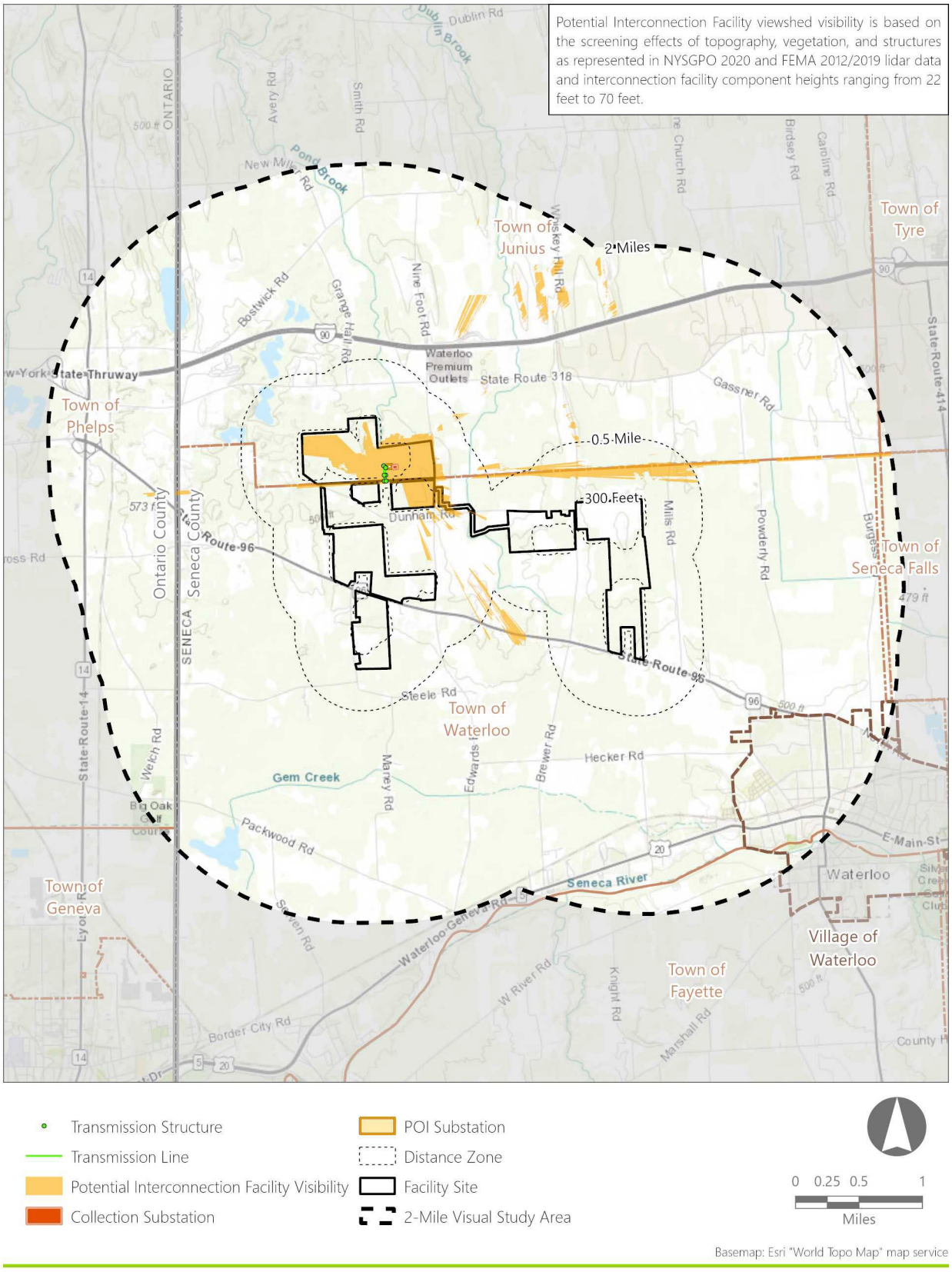


Figure 5.1-4. Interconnection Facility DSM Viewshed Analysis



5.1.3 Field Review Results

As discussed in Section 4.1.3, field verification of potential Facility visibility was determined by experienced field teams that were provided with digital mapping indicating their position relative to the Facility and geographic areas of potential Facility visibility (as determined by the viewshed analysis). All photographs referenced in this summary can be found in the Viewpoint Photolog (Attachment B).

During field review it was observed that large contiguous areas of open fields in the near-foreground and foreground distance zones generally provided the most open and uninterrupted views towards the Facility Site, verifying the results of the viewshed analysis. It was observed that slight topographic changes and viewer superior positions would often provide more extensive views of large portions of adjacent PV arrays. This viewing condition was documented along portions of State Route 95 (Viewpoints 15 to 17), Bonnell Road (Viewpoints 20 to 22), Ninefoot Road (Viewpoints 25 and 26), and Whiskey Hill Road (Viewpoints 34 to 36A and 38). However, slight topographic changes, along with roadside vegetation, hedgerows, woodlots, and structures, were observed to interrupt views toward the Facility Site and limit visibility to smaller portions of the proposed PV arrays. This viewing condition was documented along portions of Mills Road (Viewpoints 7 to 10), State Route 96 (Viewpoints 11, 12, and 40), and Dunham Road (Viewpoints 29 to 31). From more heavily wooded areas only small pockets and narrow corridors of visibility were documented. From more distant vantage points, it was observed that open views toward the Facility Site were generally tightly framed and fleeting in nature or would include only a very small portion of the Facility. This viewing condition was documented from Interstate 90 (Viewpoint 2), State Route 318 (Viewpoints 3 to 5), portions of State Route 96 (Viewpoint 14), and portions of Whiskey Hill Road (Viewpoint 39).

It was also observed that open, uninterrupted views of the interconnection facility from locations outside of the Facility Site would be limited to a small portion of Ninefoot Road (Viewpoint 25 to 27). From vantage points located greater than 0.25 miles from this Facility component, the surrounding vegetation would substantially screen lower components, and visibility would be limited to the narrow, upper portions of the gantry structures and static masts associated with the substations or the upper portions of the transmission structures, which would be difficult for viewers to discern at these distances.

Field observations largely confirmed the accuracy of the viewshed results. However, it was observed that visibility of the PV panels and/or interconnection facility was overstated in views down roadway corridors due to the removal of roadside screening features during the viewshed analysis process. As described in Section 4.1.1, the removal of features within roadway corridors is necessary to avoid inaccuracies in the viewshed results, but also removes legitimate screening features such as roadside vegetation and structures. This viewing condition was documented at Viewpoint 38 from Whiskey Hill Road. Conversely, visibility was understated in some wooded locations where it was observed that views would be available during the dormant season due to the sparseness of intervening vegetation. This viewing condition was observed at Viewpoint 47 from State Route 318. As indicated in the wireframe renderings from this viewpoint (see Appendix D), the Facility will be visible but significantly screened by bare tree branches and trunks.

It was also observed that potential visibility of the Facility may be more limited during the growing season, when corn or other crops in the foreground of views would often screen portions of the Facility in open field settings. This condition was observed at Viewpoint 24 from Ninefoot Road and Viewpoint 28 from Dunham Road.

5.1.4 Potential Visibility from Visually Sensitive Resources

A total of 45 VSRs were identified within the VSA, and the viewshed results indicate that 14 of these resources could have potential visibility of the PV panels or the interconnection facility, as summarized in Table 5.1-4. As this table indicates, the category of VSRs with the greatest extent of potential visibility are properties of historic significance (10 of 14 resources with potential visibility are resources eligible for listing on the S/NRHP). A list of all VSRs within the VSA with additional information on potential Facility visibility is included in Attachment C. Attachment A – Revision 1 includes figures with the VSRs overlaid with the viewshed results and viewpoint locations. Potential visual effects associated with the proposed Facility based upon the viewshed results, field review, line-of-sight cross section analysis, and photosimulation evaluation for each resource are discussed in Section 5.2.2.

Table 5.1-4. Visually Sensitive Resources with Potential Facility Visibility

Visually Sensitive Resources	Total Number of Resources within the VSA	Total Number of Resources with Potential Facility Visibility[1]
Properties of Historic Significance	**Total: 20**	**Total: 10**
National Historic Landmarks (NHL)	1	0
Properties/Districts Listed on National or State Registers of Historic Places (S/NRHP)	9	0
Resources Eligible for Listing on S/NRHP	10	10
National or State Historic Sites	None identified	None identified
Designated Scenic Resources	**Total: 0**	**Total: 0**
Rivers Designated as National or State Wild, Scenic or Recreational	None identified	None identified
Adirondack Park Scenic Vistas (Adirondack Park Land Use and Development Map)	None identified	None identified
Sites, Areas, Lakes, Reservoirs or Highways Designated or Eligible for Designation as Scenic (ECL Article 49 Title 1 or equivalent)	None identified	None identified
Scenic Areas of Statewide Significance (Article 42 of Executive Law)	None identified	None identified
Other Designated Scenic Resources (Easements, Roads, Districts, and Overlooks)	None identified	None identified
Public Lands and Recreational Resources	**Total: 15**	**Total: 1**
National Parks, Recreation Areas, Seashores, and/or Forests (16 U.S.C. 1c)	1	0
National Natural Landmarks (36 CFR Part 62)	None identified	None identified

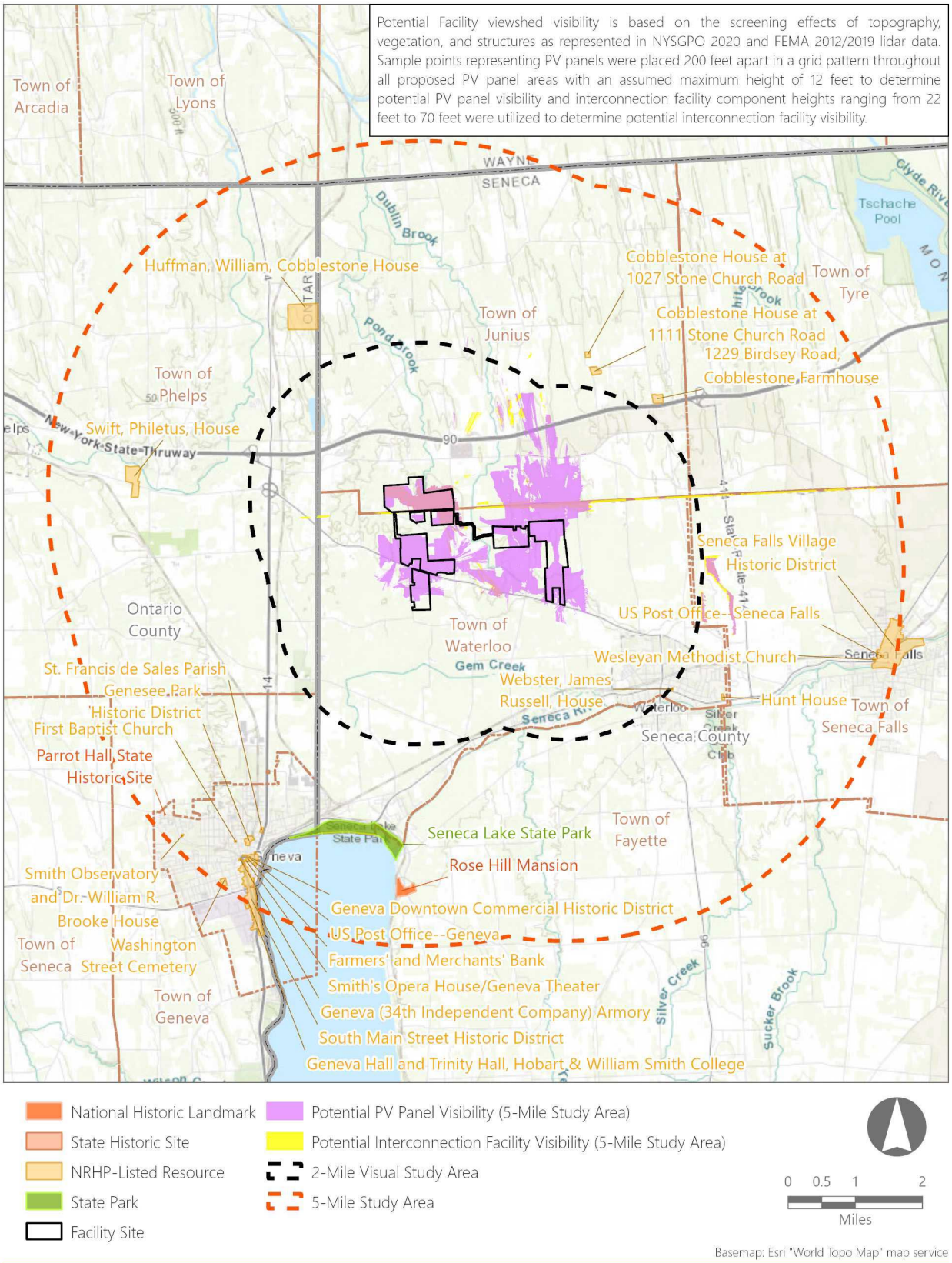
Visually Sensitive Resources	Total Number of Resources within the VSA	Total Number of Resources with Potential Facility Visibility[1]
National Wildlife Refuges (16 U.S.C. 668dd)	None identified	None identified
Heritage Areas (formerly Urban Cultural Parks [Parks, Recreation and Historic Preservation Law Section 35.15])	1	1
State Parks (Parks, Recreation and Historic Preservation Law Section 3.09)	None identified	None identified
State Nature and Historic Preserve Areas (Section 4 of Article XIV of the State Constitution)	None identified	None identified
State Forest Preserves (NYS Constitution Article XIV)	None identified	None identified
Other State Lands	1	0
State Wildlife Management Areas and Game Refuges	None identified	None identified
State Forests	None identified	None identified
State Fishing/Waterway Access Sites	None identified	None identified
State and Federal Trails	None identified	None identified
Snowmobile Trails	None identified	None identified
Bike Trails/Routes	1	0
Other Trails	1	0
Palisades Park (Palisades Interstate Park Commission)	None identified	None identified
Local Parks and Recreation Areas	6	0
Publicly Accessible Conservation Lands/Easements	None identified	None identified
Rivers and Streams with public fishing rights easements	None identified	None identified
Named Lakes, Ponds, and Reservoirs	4	0
High-Use Public Areas	**Total: 7**	**Total: 3**
State, US, and Interstate Highways	5	3
Schools	1	0
Cities and Villages	1	0
Hamlets	None identified	None identified
Native American Lands	**None identified**	**None identified**
Resources Identified during Visual Outreach	**3**	**0**
Total Number of VSRs	**Total: 45**	**Total: 14**

[1] Potential Facility visibility indicated in this table is based on the PV panel and interconnection facility DSM viewshed analysis results.

5.1.5 Significant Visual Resources Beyond the Visual Study Area

A total of 25 significant visual resources beyond the VSA (i.e., outside of the 2-mile VSA but within 5 miles of the Facility Site) were identified. Based on the results of a viewshed analysis, views of the Facility will be entirely screened from all of these resources (see Figure 5.1-5).

Figure 5.1-5. DSM Viewshed Analysis and Significant Visually Sensitive Resources Beyond Study Area



5.2 Project Visual Impact

To evaluate anticipated visual change associated with the proposed Facility, photographic simulations of the proposed Facility were compared to photographs of existing conditions at each of 11 selected viewpoints and evaluated by a panel of visual professionals. The results of this evaluation are presented below.

5.2.1 Photosimulation Rating and Assessment of Visual Impact

As described in Section 4.2.3, the rating panel evaluated the contrast and compatibility of the Facility with various components of the landscape (landform, vegetation, land use, water, sky, and viewer activity) and assigned quantitative visual contrast ratings on a scale of 0 (insignificant) to 4 (strong). The average contrast score assigned by each rating panel member was calculated for each viewpoint, and a composite average score, which averages the ratings assigned by all rating panel members, was determined. Attachment D provides a description of the existing and proposed view at each of the selected viewpoints, and results of the panel's contrast rating for each of the photosimulations. Copies of each panel member's completed rating forms are included in Attachment F. The results of the visual contrast evaluation are summarized in Table 5.2-1 and the discussion that follows. For Viewpoint 47, it was determined that the Facility would be almost completely screened from view, and therefore a wireframe rendering was prepared. The wireframe rendering is included in Attachment D but was not included in the rating panel evaluation.

Table 5.2-1. Summary of Rating Panel Results

Viewpoint Number	Location	Viewer Distance[1]	Distance Zone Represented in View	Viewer Groups			Contrast Rating Scores[2]				
				Local Residents	Through-Travelers	Tourists/ Recreation	#1	#2	#3	Average	Contrast Rating Result
Photosimulations depicting Facility immediately following installation with mitigation											
VP 5	State Route 318	1.0 miles (5,145 feet)	Middle ground	•	•		0.8	0.3	0.9	0.7	Insignificant/Minimal
VP 7	Mills Road	0.4 miles (2,025 feet)	Foreground	•			1.0	1.1	2.1	1.4	Minimal/Moderate
VP 10	Mills Road	0.3 miles (1,685 feet)	Foreground	•			1.1	0.8	1.4	1.1	Minimal
VP 13	State Route 96	0.1 miles (375 feet)	Foreground	•	•		2.6	3.0	3.2	2.9	Appreciable
VP 15	Intersection of State Route 96 and Hidden Spring Lane	0.1 miles (365 feet)	Foreground	•	•		2.2	2.3	2.7	2.4	Moderate/Appreciable
VP 18	State Route 96	0.1 miles (280 feet)	Near-Foreground	•	•		2.3	3.5	3.4	3.1	Appreciable
VP 25	Ninefoot Road	0.1 miles (500 feet)	Foreground	•			3.0	1.6	2.7	2.4	Moderate/Appreciable
VP 26	Ninefoot Road	0.2 miles (1,275 feet)	Foreground	•			2.0	1.7	2.9	2.2	Moderate
VP 41	Quaker Cemetery	0.2 miles (870 feet)	Foreground	•		•	1.5	1.5	2.7	1.9	Moderate
VP 42	Hubbard Cemetery	0.1 miles (700 feet)	Foreground	•		•	2.1	2.6	2.3	2.3	Moderate/Appreciable
VP 44	Whiskey Hill Road	<0.1 mile (260 feet)	Near-Foreground	•			2.1	2.3	2.1	2.2	Moderate
Total average rating										**2.1**	**Moderate**

Viewpoint Number	Location	Viewer Distance[1]	Distance Zone Represented in View	Viewer Groups			Contrast Rating Scores[2]				
				Local Residents	Through-Travelers	Tourists/ Recreation	#1	#2	#3	Average	Contrast Rating Result
Photosimulations that depict Facility at 5-7 years post-installation											
VP 5	State Route 318	1.0 miles (5,145 feet)	Middle ground	•	•		0.8	0.3	0.8	0.6	Insignificant/Minimal
VP 7	Mills Road	0.4 miles (2,025 feet)	Foreground	•			1.0	1.1	1.7	1.3	Minimal/Moderate
VP 10	Mills Road	0.3 miles (1,685 feet)	Foreground	•			1.0	0.8	1.0	0.9	Minimal
VP 13	State Route 96	0.1 miles (375 feet)	Foreground	•	•		2.7	2.9	2.4	2.7	Moderate/Appreciable
VP 15	Intersection of State Route 96 and Hidden Spring Lane	0.1 miles (365 feet)	Foreground	•	•		1.9	2.3	2.0	2.1	Moderate
VP 18	State Route 96	0.1 miles (280 feet)	Near-Foreground	•	•		2.0	3.5	2.9	2.8	Appreciable
VP 25	Ninefoot Road	0.1 miles (500 feet)	Foreground	•			2.4	1.6	2.4	2.1	Moderate
VP 26	Ninefoot Road	0.2 miles (1,275 feet)	Foreground	•			2.0	1.7	2.6	2.1	Moderate
VP 41	Quaker Cemetery	0.2 miles (870 feet)	Foreground	•		•	1.5	1.5	2.4	1.8	Moderate
VP 42	Hubbard Cemetery	0.1 miles (700 feet)	Foreground	•		•	2.0	2.6	1.7	2.1	Moderate
VP 44	Whiskey Hill Road	<0.1 mile (260 feet)	Near-Foreground	•			1.9	2.3	1.4	1.9	Moderate
Total average rating										**1.9**	**Moderate**

[1] Distance from viewpoint to nearest major Facility component (PV panel area or interconnection facility component).

[2] Contrast Rating Scale: 0.0–0.2 (Insignificant), 0.3–0.7 (Insignificant/Minimal), 0.8–1.2 (Minimal), 1.3–1.7 (Minimal/Moderate), 1.8–2.2 (Moderate), 2.3–2.7 (Moderate/Appreciable), 2.8–3.2 (Appreciable) 3.3–3.7 (Appreciable/Strong), 3.8–4.0 (Strong).

Rating Panel Results Immediately Following Installation

Rating panel results suggest that, following installation, the Facility will result in moderate visual contrast with the existing landscape, as indicated by the overall average contrast score of 2.1. However, as indicated by the average contrast rating scores for each viewpoint (the combined average of each panel members scores), there is a high degree of variability between views (ranging from 0.9 [insignificant/minimal] to 3.1 [appreciable]).

Rating panel results indicate that distance of the viewer from the Facility and the expansiveness of PV panel visibility are strongly correlated with visual contrast. The five viewpoints that received the highest average contrast rating scores were Viewpoints 14, 15, 18, 25, and 42, which received scores indicating moderate/appreciable or greater visual contrast. Viewpoints 13, 15, and 18 are distinguished by their proximity to the PV panels, which are located less than 375 feet away in an adjacent open field and are almost entirely unscreened by roadside vegetation and other obstructions. Due to their distance from the viewer, the PV panels present appreciable contrast with existing landscape features in terms of line, form, and scale. Viewpoint 42 is distinguished by the expansiveness of the PV panel visibility. Due to the slightly elevated viewer perspective, multiple PV array areas cover the adjacent agricultural field and are almost entirely unscreened by intervening vegetation due to the leaf-off conditions illustrated in the photograph. In the views discussed above, the PV panels become the dominant character-defining features of the landscape and the focus of the view, shifting the character of the landscape from a working agricultural landscape to one of solar energy generation. Viewpoint 25 is distinguished due to the relatively unscreened view of the interconnection facility. Therefore, this viewpoint is also described in the interconnection facility results section below.

It is worth noting that these viewpoints are very close to the PV panels (10 of the 11 viewpoints occur in the foreground or near-foreground distance zones), have little or no foreground vegetation screening, and represent the most open, unobstructed views that will be available within the VSA. As suggested by the average contrast rating scores for Viewpoint 26 from Ninefoot Road, Viewpoint 41 from Quaker Cemetery, and Viewpoint 44 from Whiskey Hill Road, less visual contrast is likely to occur in the foreground distance zone where the PV panels are set back further from the viewer and/or existing topography and vegetation provide more substantial screening.

The three viewpoints that received the lowest average contrast rating scores were Viewpoints 5, 7, and 10. Average visual contrast rating scores for these viewpoints range from insignificant to minimal/moderate. These views were selected for photosimulation development because they represented the most open, unobstructed views that are anticipated to be available from more distant vantage points in the foreground distance zone and from the middle ground distance zone. Despite this, screening by terrain and vegetation still limits visibility to a relatively small portion of the PV arrays. Consequently, at these greater distances the PV panels will be difficult to perceive and/or will not substantially alter the agricultural character or scenic quality of these views.

Rating Panel Results with Mitigation Planting at 5-7 Years Growth

With the established mitigation plantings in place and following five to seven years of growth, composite contrast scores were reduced at all of the selected viewpoints. The total average contrast score across all viewpoints dropped from 2.1 to 1.9, which still indicates moderate visual contrast with the existing landscape. This suggests that the proposed mitigation will have a limited effect on the overall visual contrast presented by the Facility. However, like views of the Facility itself, the effectiveness of the mitigation was variable.

Average contrast rating scores indicate that the proposed mitigation was most effective in reducing visual contrast from Viewpoints 15 (average contrast was reduced from 2.4 [moderate/appreciable] to 2.1 [moderate]), Viewpoint 18 (average contrast was reduced from 3.1 [appreciable] to 2.8 [appreciable]), and Viewpoint 25 (average contrast was reduced from 2.4 [moderate/appreciable] to 2.1 [moderate]). In these instances, the plant material provided effective screening of large portions of the Facility and successfully integrated it into the existing landscape (Viewpoint 15 and 25) or introduced a new aesthetic feature to the view (Viewpoint 13) that results in less visual contrast than the Facility (and plantings) presented at the time of installation.

In some instances, environmental constraints limited the selection of plant material to grasses and other herbaceous plants to limit soil disturbance in certain areas, which minimized the effectiveness of the mitigation and resulted in little reduction to the visual contrast presented by the Facility. This is demonstrated in Viewpoints 18 and 26. In other instances where the PV arrays are visible from long distances, such as Viewpoints 5 and 7, or at an elevated position relative to the viewer, such as Viewpoint 41, the plants provide little to no reduction to the visual contrast presented by the Facility. However, it is important to note that the mitigation plantings were not proposed or intended to screen visibility in these long-distance views. It is also important to note that for many views where little or no reduction in score occurred, the rating panel noted that the plantings will more fully screen and integrate the Facility into the landscape with additional growth, increasing their effectiveness over time.

Interconnection Facility Results

The proposed interconnection facility is located on a parcel off Ninefoot Road, and the photosimulation from Viewpoint 25 represents the most open, unobstructed views that are anticipated to be available. As illustrated in this photosimulation, the interconnection facility occupies a former active agricultural field, and due to viewer proximity and lack of screening, the substation components are clearly visible, although they are partially screened by the PV array in the foreground of the view. The facility introduces additional electric utility structures into the view that are now distinctive focal points that change the character of the view. However, the setback from the roadway retains some of the view's open rural character. Additionally, after five to seven years of growth, the proposed mitigation plantings would provide reasonably effective screening of the Facility which reduces the visual contrast of the Facility with the existing landscape (the average contrast rating score was reduced from 2.4 [moderate/appreciable] to 2.1 [moderate]). As discussed in Section 4.1.1 and 4.1.3, open views of this nature outside of the Facility Site are anticipated to be limited to a very small geographic area along Ninefoot Road. From most vantage points where visibility of the

interconnection facility is possible, views will include only the upper portions of the facility, which will be minor features the landscape and/or difficult to discern for most viewers, and therefore are anticipated to result in negligible to minimal visual effects.

Updated Photosimulations

Following completion of the VIA and rating panel evaluation, the photosimulations were updated where layout changes are proposed or where the mitigation planting plan was revised to provide increased screening/softening views of the Facility from sensitive areas. Updated photosimulations were completed for Viewpoints 25 and 26, which include the interconnection facility and revised PV panel layout near Ninefoot Road, and Viewpoint 41, which includes the revised mitigation plantings along the perimeter PV array located on Ninefoot Road near Quaker Cemetery (VSR ID # 39). These photosimulations are included in Attachment H.

Viewpoint 25: All three panel members suggested that the interconnection facility contributed to the visual contrast presented by the Facility in their contrast ratings. However, the PV arrays were the primary source of visual contrast. One panel member noted that the contrast presented by the interconnection facility was offset by the presence of the existing high voltage transmission line. With the proposed layout changes in the place, the interconnection facility is no longer visible in this view, which would somewhat reduce the visual contrast of the Facility. However, the relocation of the interconnection facility is not expected to result in significantly lower contrast rating results.

Viewpoint 26: With the proposed layout changes in the place, the interconnection facility is now visible from Viewpoint 26 in the simulated photograph. It is anticipated that the contrast will increase minimally due to the introduction of the collection and POI substations. However, similar to Viewpoint 25, the presence of the existing transmission line minimizes the degree of additional visual contrast.

Therefore, while the visual contrast at Viewpoint 25 may be somewhat lower without the substation, a commensurate increase can be anticipated resulting from the addition of the substation in Viewpoint 26.

5.2.2 Potential Effect on Visually Sensitive Resources

An evaluation of the potential visual effect of the Facility on VSRs within the VSA is presented below. This evaluation is based upon 1) viewshed analysis, which was used to determine the geographic area of potential Facility visibility within each resource and the distance zone(s) in which these views will occur, 2) the photosimulation visual contrast evaluation results[3], 3) line-of-sight cross section analysis, which was used to determine the source and extent of PV panel visibility that is likely to occur in views from VSRs where no photosimulation was produced, and 4) field review results. Other factors considered in this evaluation include viewer sensitivity to changes in the visual environment at each VSR based upon the amount and type of use it receives. Table 5.2.2 identifies VSRs with potential visibility by resource name and identification number, the distance zones within the VSR where potential visibility occurs, the geographic

[3] Average contrast rating scores referenced in the discussion of visual effects in the section are based on scores received with the established mitigation plantings in place and following five to seven years of growth.

extent of potential Facility visibility within each VSR as a percentage of its total area within the VSA, and whether a photosimulation, wireframe rendering, or line-of-sight analysis was prepared.

Table 5.2-2. Summary of Visually Sensitive Resource Visual Effects Analysis

Visually Sensitive Resource	VSR ID #	% of VSR Area with Visibility[1]	Distance Zone(s)[2]	Type of Analysis		
				Photosimulation (Attachment D)	Wireframe Rendering (Attachment D)	Line-of-Sight (Attachment E)
Properties of Historic Significance						
Dunham Cemetery	32	35.7%	Foreground	-	-	Sheet 3 and 4
Farmstead at 1067 Route 96	33	68.3%	Near-foreground, Foreground	Viewpoint 13	-	-
Farmstead at 1130 Route 96	34	10.2%	Foreground	-	-	Sheet 5
Farmstead at 1329 Ninefoot Road	35	45.5%	Middle ground	-	-	Sheet 6 and 7
Farmstead at 1831 Whiskey Hill Road	36	80.3%	Near-foreground, Foreground	-	-	Sheet 8
Federal-style Residence (1641 Whiskey Hill Road)	37	65.9%	Foreground, Middle ground	-	-	Sheet 9
Hubbard Cemetery	38	94.2%	Foreground	Viewpoint 42	-	-
Quaker Cemetery	39	95.7%	Foreground	Viewpoint 41	-	-
Bowdish Cemetery[3]	41	15.8%	Near-foreground, Foreground	-	-	-
Bowdish-Dean Residence	45	89.7%	Near-foreground, Foreground	Viewpoint 18	-	-
Public Lands and Recreational Resources						
Women's Rights National Historical Park	11	0%	Middle ground	-	-	-
Erie Canalway National Heritage Corridor	12	15.6%	Near-foreground, Foreground, and Middle ground	Viewpoints 7, 10, 13, 15, 18, 25, 26, 41, 42, 44	Viewpoint 48	-
High Use Public Areas						
Interstate 90	25	6.9%	Middle ground	-	-	Sheet 1
NYS Route 318	27	14.4%	Middle ground	Viewpoint 5	Viewpoint 48	-
NYS Route 96	28	22.3%	Near-foreground, Foreground, Middle ground	Viewpoints 13, 15, and 18	-	Sheet 2

[1] Percent of VSR area with visibility is based upon the geographic extent or linear miles of potential PV panel and/or interconnection facility within the total area each resource that falls within the VSA. For point-based resources (resources eligible for listing on the S/NRHP), the parcel data was used to define the resource boundary, consistent with the methodology used for the Historic Resource Survey and Effects Assessment completed for the Facility (see Appendix 9-D of the 94-c Application).

[2] Distance zone is based upon where potential PV panel or interconnection visibility occurs within the VSR boundary.

[3] Field review and viewshed analysis alone were used to determine visual effects from this resource due to the lack of representative, publicly accessible vantage points and limited visibility.

VSR ID # 11: Women's Rights National Historical Park

The Women's Rights National Historical Park (VSR ID #11) is located within the Village of Waterloo, approximately 1.9 miles away from the Facility. Viewshed analysis results indicate that views of the Facility are not possible from the Village of Waterloo or this resource. This park commemorates the location of the first Women's Rights Convention, and receives significant visitation from tourist/recreational users (as discussed in Section 3.4.3).

At the request of ORES, an analysis was completed using Google Maps to determine the routes that will most frequently be taken by travelers when visiting this resource and others that are located in the Village of Waterloo. Travelers from the east or west will generally travel along Interstate 90, east along State Route 318, then south along Black Brook Road in the Town of Seneca Falls (outside of the VSA) until they reach the Village and their destination (see discussion of visibility from Interstate 90 and State Route 318 below). Travelers from the east may also travel along portions of US Route 20 (outside of the VSA) instead of Interstate 90 depending upon traffic conditions and their particular departure location. Travel routes for locations to the south of the historical park are more variable. Travelers will mostly travel along U.S. Route 20 when departing from locations to the southwest, State Route 414 when departing from locations to south, and State Route 20 and 90 from locations to the southeast of the historical park. Travel routes will be more variable for those who live nearby and may include other less frequently traveled highways (such as State Route 96) and local roads.

As discussed in Section 3.4.2, travelers will generally be focused on the road and traffic conditions but do have the opportunity to observe roadside scenery. Travelers from outside the area (including tourists and recreational users) will generally be less aware of and less concerned with visible changes to the landscape. Due to the relatively small geographic extent of potential Facility visibility, particularly from the roadways described above, views of the Facility will be available for only a brief period during their travels, if they are available at all, and are unlikely to alter their impression of rural/agricultural landscape or detract from their enjoyment of the scenery on the way to the historical park.

Local visitors to the historical park may be more sensitive to changes in views of areas that they travel through on a regular basis. Given the relatively small extent of potential Facility visibility, potential Facility visibility and visual effects will be negligible for the majority of these travelers. However, for some local visitors to the park whose route includes one or several roadways that have a high degree of potential Facility visibility (such as State Route 96, Ninefoot Road, and Whiskey Hill Road), the increased presence of renewable energy infrastructure in views may reduce their enjoyment of the scenery during their travels. However, such views are unlikely to affect their enjoyment of the Women's Rights National Historical Park since views of the Facility from the Historical Park and the surrounding village area will not be possible, and therefore will not affect the experience of tourist/recreational users of this resource.

VSR ID # 12: Erie Canalway National Heritage Corridor

The Erie Canalway National Heritage Corridor (VSR ID # 12) covers approximately 4,834 square miles and is within 200 towns in the State of New York. Approximately 19.4 square miles (0.4% of the resource area) falls

within this VSA. Viewer/users include local residents who live or work within the resource boundary, through-travelers driving on highways, and tourist/recreational users engaged in various recreational activities. Viewshed analysis results indicated that potential Facility visibility is limited to 3.0 square miles of the Heritage Corridor (less than 0.1% of the total resource area and 15.6% of the resource area in the VSA) and is concentrated to the foreground distance zone. The viewshed analysis results, overlaid with the Heritage Corridor boundary and viewpoint locations, are included in Attachment A, sheets 5 to 8. The visual contrast of the Facility in views will vary given the amount of area this resource covers in the VSA. Nine photosimulations within this resource (Viewpoints 7, 10, 13, 15, 18, 25, 41, 42, and 44) were produced and evaluated to determine the visual contrast of the Facility with the existing landscape. The rating panel results indicate that the visual contrast of the Facility in these views will range from minimal to appreciable (an overall average contrast score of moderate), consistent with the level of visual contrast indicated in the overall VSA. It is worth noting that these viewpoints are generally very close to the PV panels, have little or no foreground vegetation screening, and represent the most open, unobstructed views that will be available within the VSA. Views of the Facility will be more limited from most vantage points throughout the heritage area due to screening by intervening vegetation and/or topography. It is also worth noting that potential Facility visibility does not occur in the Enlarged Erie Canal Barge National Historic Landmark (VSR ID # 1) itself. Due to the expansiveness of the resource, the wide variety of modern land uses it includes, and the lack of Facility visibility from significant features directly related to the Erie Canal, visual effects associated with the Facility are expected to be negligible.

VSR ID # 25: Interstate 90

Interstate 90 (VSR ID # 25) is the most heavily trafficked highway in the VSA. Viewer/users are through-travelers who will generally be focused on roadway conditions and moving at high speeds, but will occasionally have the opportunity to observe roadside scenery. The viewshed analysis results indicate that potential Facility visibility is limited to 0.8 miles of the highway in the middle ground distance zone (6.9% of the 5.8 miles of highway in the VSA) and 0.2% of Interstate 90 in New York State. Potential views of the Facility occur as a series of visibility corridors through breaks in intervening vegetation and structures (see sheet 6 of Attachment A). To determine the source and extent of PV panel visibility, line-of-sight cross section analysis was conducted (see Attachment E, sheet 1), which indicates that views of only a small portion of the Facility would be visible along narrow visibility corridors. Due to the limited geographic extent of Facility visibility, the extent of screening by intervening topography and/or vegetation, viewing distance, limited duration of potential views, and low sensitivity to visual change for typical viewer/users, it is anticipated that the Facility will not be discernable to most travelers or alter the character or the composition of views from this VSR. Therefore, visual effects associated with the Facility are expected to be negligible.

Figure 5.2-1. View South from Interstate 90 (Viewpoint 2)

VSR ID # 27: NYS Route 318

State Route 318 (VSR ID # 27) is a heavily trafficked state highway in the VSA. Typical viewer/users are through-travelers who will generally be focused on roadway conditions but will occasionally have the opportunity to observe roadside scenery. The viewshed analysis results indicate that potential Facility visibility is limited to 0.9 miles of the highway in the middle ground distance zone (14.4% of the 6.0 miles of highway in the VSA) and occurs as a series of visibility corridors through breaks in intervening vegetation and structures (see sheets 5 and 6 of Attachment A). A photosimulation from Viewpoint 5 was prepared and evaluated to determine the visual contrast of the Facility in views from this resource (see Attachment D, sheets 1 to 8). The rating panel results indicate the Facility would result in insignificant/minimal visual contrast with the existing landscape from this viewpoint/VSR. Due to the limited geographic extent of Facility visibility, the extent of screening by intervening topography and/or vegetation, viewing distance, and low sensitivity to visual change for typical viewer/users, it is anticipated that the Facility will not alter the character or the composition of views or be discernable to most travelers from this VSR. Therefore, visual effects associated with the Facility are expected to be negligible.

VSR ID # 28: NYS Route 96

State Route 96 (VSR ID # 28) is one of the most heavily trafficked roadways in the VSA. Typical viewer/users are through-travelers who will generally be focused on roadway conditions but will occasionally have the opportunity to observe roadside scenery. Viewshed analysis results indicate that potential Facility visibility occurs from 1.8 miles of the highway (22.3% of the 8.1 miles of highway in the VSA) and is mostly concentrated to portions of the highway that fall within the near-foreground and foreground distance zones. Photosimulations from Viewpoints 13, 15, and 18 were prepared and evaluated to determine the visual contrast of the Facility in views from the near-foreground and foreground distance zone along this highway. The rating panel results indicate that the visual contrast of the Facility in these views will range from moderate to appreciable, and the PV arrays add significant built features to the views that will shift the character of the surrounding landscape from a working agricultural landscape to one of solar energy generation and reduce scenic quality. While the proposed landscape mitigation is expected to effectively screen the Facility from view after 5-7 years of growth, it will also tend to further shorten and enclose the view. It is worth noting that these viewpoints are located at viewing distances of 375 feet or closer to the PV arrays and represent the most open views of the Facility that are expected to be available. Views of the Facility will be more limited or fully screened from more distant vantage points along this highway due to screening provided by intervening vegetation and/or topography. Due to the geographic extent of visibility and the availability of open, close proximity views of the PV arrays from multiple locations, travelers who frequently drive through this area are likely to notice the change to the existing landscape which may diminish their enjoyment of roadside scenery. Therefore, visual effects associated with the Facility are expected to be moderate.

Viewshed analysis results also indicate that potential views of the interconnection facility may be available from portions of the highway in the middle ground distance zone. A line-of-sight cross section analysis was performed, which indicates that visibility would be limited to the narrow upper portions of the transmission, gantry, and lightning mast structures due to screening by intervening vegetation (see sheet 2 of Attachment E). Due to screening by intervening vegetation and viewing distance, the interconnection facility will be difficult for travelers to discern in views from Route 96. Therefore, the interconnection facility not expected to contribute to the visual effects of the Facility on this VSR.

VSR ID # 32: Dunham Cemetery

Dunham Cemetery (VSR ID # 32) is a small rural cemetery located in a wooded area off Durham Road in Town of Waterloo and is designated as eligible for listing on the S/NRHP. Viewer/users are expected to be limited to a relatively small number of local residents who are visiting the cemetery, along with Tourist/Recreational users interested in the history of the cemetery. Consistent with the methodology used for the Historic Resource Survey and Effects Assessment (see Appendix 9-D of the 94-c Application) potential Facility visibility was considered within the entire resource parcel boundary. Viewshed results indicate that no Facility visibility will occur from the cemetery itself, which was verified through a line-of-sight analysis cross section (see sheet 4 of Attachment E) and during field review (see Figure 5.2-2).

Figure 5.2-2. View to the East from Dunham Cemetery (Viewpoint 43)

Potential PV panel visibility is limited to active agricultural fields within the mapped resource boundary located approximately 450 feet east of the cemetery itself. To determine the extent and source of PV panel visibility from this area, a line-of-sight cross section analysis was performed. This analysis indicates that views of the PV array to the south will be possible through breaks in the intervening forested areas and hedgerows (see sheet 3 of Attachment E), which was verified during field review (see Figure 5.2-3). However, it is assumed that visitors will be concentrated in the cemetery and will not be concerned with the views from the field. Due to the lack of visibility from or near the cemetery itself, visual effects associated with the Facility are expected to be negligible.

Figure 5.2-3. View South from the Southeast Corner of the Dunham Cemetery Parcel (Viewpoint 29)

VSR ID # 33: Farmstead at 1067 Route 96

A Farmstead at 1067 Route 96 (VSR ID # 33) is a historic farm complex that is designated as eligible for listing on the S/NRHP. Viewer/users will be limited to current or future residents of the home, and their visitors. Consistent with the methodology used for the Historic Resource Survey and Effects Assessment (see Appendix 9-D of the 94-c Application) potential Facility visibility was considered within the resource parcel boundary, and several PV arrays are located in the agricultural fields within the parcel boundary that surround the farm complex. Viewshed analysis and field review results indicate that relatively open and close-proximity views of the PV arrays on the parcel will be available from most buildings within the farm complex (see sheet 8 of Attachment A and photos from Viewpoints 12, 13, and 40 in Attachment B). A photosimulation from Viewpoint 13, located near the southwest corner of the parcel on State Route 96, was prepared and evaluated to determine the visual contrast of the Facility with the existing landscape in views from this resource. The rating panel results indicate that the visual contrast of the Facility in this view will be moderate/appreciable, and the introduction of the PV arrays and associated Facility components will shift the character from a working agricultural landscape to one dominated by solar energy generation. While the proposed landscape mitigation is expected to effectively screen the Facility from this view after 5-7 years of growth, it will also tend to further shorten and enclose the view. While visual contrast of the Facility in views available from this resource is expected to range from moderate to appreciable, viewer

exposure is very low considering it is a private residence without public access. Therefore, moderate visual effects associated with the Facility are anticipated at this VSR. Following completion of the VIA and rating panel evaluation, the landscape mitigation planting plan was enhanced to provide increased screening and soften views of the Facility along the perimeter of the Farmstead at 1067 Route 96 (VSR ID # 33). Module 4 is proposed in this location to maintain the agricultural context of the resource, while screening/softening the view of the Facility. These plantings would not be visible from Viewpoint 13 and therefore updated photosimulations from this viewpoint were not prepared.

VSR ID # 34: Farmstead at 1130 Route 96

A Farmstead at 1130 Route 96 (VSR ID # 34) is a historic farm complex that has is designated as eligible for listing on the S/NRHP. Viewer/users will be limited to current or future residents of the home, and their visitors. Consistent with the methodology used for the Historic Resource Survey and Effects Assessment (see Appendix 9-D of the 94-c Application) potential Facility visibility was considered within the resource parcel boundary. Viewshed analysis results indicate that Facility visibility would be concentrated in the agricultural field located in the southwest portion of the parcel with small, more discrete areas of visibility near State Route 96 in the northeast portion of the parcel. To determine the extent and source of visibility, a line-of-sight cross section analysis was performed, which indicates that portions of the PV array to the northwest may be visible through breaks in the intervening hedgerow and vegetation along State Route 96. Visibility from locations near State Route 96 was confirmed during field review (see Figure 5.2-4). However, potential views of the PV arrays are likely to be substantially more screened from the residence and farm buildings on the property due to the presence of dense vegetation on the property itself. Due to the limited geographic area of visibility, substantial screening by intervening vegetation that will screen views from the residence and farm buildings, and low viewer exposure, visual effects associated with the Facility are expected to be minimal.

Figure 5.2-4. View to the northwest from Farmstead at 1130 Route 96 (Viewpoint 40)

VSR ID # 35: Farmstead at 1329 Ninefoot Road

A Farmstead at 1329 Ninefoot Road (VSR ID # 35) is a historic farm complex that is designated as eligible for listing on the S/NRHP. Viewer/users will be limited to current or future residents of the home, and their visitors. Consistent with the methodology used for the Historic Resource Survey and Effects Assessment (see Appendix 9-D of the 94-c Application) potential Facility visibility was considered within the resource parcel boundary. Viewshed analysis results indicate that potential PV panel visibility is limited to a narrow visibility corridor adjacent to the farm complex in the middle ground distance zone. Potential interconnection facility visibility is more extensive and occurs within larger corridors near the farm complex and within the agricultural fields located on the parcel. To determine the source and extent of visibility, line-of-sight cross section analysis were conducted. This analysis indicates that views of the PV arrays from this resource will be heavily screened, and visibility is limited to a portion of the PV array located approximately 2.1 miles to the south (see sheet 6 of Attachment E). Views of the interconnection facility will also be heavily screened, and visibility will be limited to the narrow upper portions of the transmission, gantry, and lightning mast structure (see sheet 7 of Attachment E) located approximately 1.3 miles to the south. Due to substantial screening by intervening vegetation, viewing distance, and low viewer exposure, visual effects associated with the Facility are expected to be negligible.

VSR ID # 36: Farmstead at 1831 Whiskey Hill Road

A Farmstead at 1831 Whiskey Hill Road (VSR ID # 36) is a historic farm complex that is designated as eligible for listing on the S/NRHP. Viewer/users will be limited to current or future residents of the home, and their visitors. Consistent with the methodology used for the Historic Resource Survey and Effects Assessment (see Appendix 9-D of the 94-c Application) potential Facility visibility was considered within the resource parcel boundary. Viewshed analysis and field review results indicate that relatively open and near by views of the PV arrays located in agricultural fields to the west and east will be available from most buildings within the farm complex (see sheet 8 of Attachment A and Viewpoints 36A, 36B, and 44 in Attachment B). A photosimulation was produced and evaluated from Viewpoint 44, which is located approximately 580 feet north of the residence and has a similar visual setting, view characteristics, and viewing distance (see Attachment D, sheets 81 to 88). The rating panel results indicate that the visual contrast of the Facility in this view will be moderate. The size of the array and proximity to the resource are likely to shift the existing agricultural character to one of solar energy production, and the array will become the dominant, character defining component of the landscape. Due to geographic extent of visibility and the availability of nearby views of the PV arrays in multiple directions, visual effects associated with the Facility are expected to be substantial at this resource. It is likely that the proposed perimeter plantings will help integrate the Facility into background vegetation in views from the resource over time. It is also worth noting that viewer exposure is low considering this resource is a private residence without public access.

VSR ID # 37: Federal-style Residence (1641 Whiskey Hill Road)

A historic Federal-style Residence at 1641 Whiskey Hill Road (VSR ID # 37) and is designated as eligible for listing on the S/NRHP. Viewer/users will be limited to current or future residents of the home, and their visitors. Consistent with the methodology used for the Historic Resource Survey and Effects Assessment (see Appendix 9-D of the 94-c Application) potential Facility visibility was considered within the resource parcel boundary. Viewshed analysis results indicates that Facility visibility would be concentrated in the agricultural field located in the northern portion of the parcel with small, more discrete areas of visibility near the residence and near-by farm buildings in the southern portion of the parcel. To determine the extent and source of PV panel visibility from the residence, a line-of-sight cross section analysis was performed. This analysis indicates that visibility of the PV arrays to the southwest would be visible through intervening forested areas and structures. However, the PV arrays to the southeast would be heavily screened by a mature evergreen hedgerow that borders the parcel. The extent of visibility was largely confirmed during fieldwork (see Figure 5.2-5). However, it was observed during field review that the PV array may be difficult to distinguish due to viewing distance (the PV array is located approximately 0.6 miles away) and the presence of visual clutter in views. Due to the small extent of PV panel visibility, viewing distance, and low viewer exposure, visual effects associated with the Facility are expected to be minimal.

Figure 5.2-5. View South from Federal-style Residence (1641 Whiskey Hill Road) (Viewpoint 46)

VSR ID # 38: Hubbard Cemetery

Hubbard Cemetery (VSR ID # 38) is a small rural cemetery that is designated as eligible for listing on the S/NRHP. Views from the cemetery are rural/agricultural in character, and viewer/users are expected to be limited to a fairly small number of local residents who visit the cemetery, along with Tourist/Recreational users interested in the history of the cemetery. Consistent with the methodology used for the Historic Resource Survey and Effects Assessment (see Appendix 9-D of the 94-c Application) potential Facility visibility was considered within the resource parcel boundary. Viewshed analysis results indicate that potential PV panel visibility will be possible from most of the cemetery at foreground distances. A photosimulation from Viewpoint 42 was prepared and evaluated to determine the visual contrast of the Facility in views from this VSR (see sheets 73 to 80 of Attachment D). The rating panel results indicate that the Facility would result in moderate visual contrast. With the proposed Facility in place, the former agricultural field to the east would be occupied by a large PV array. The presence of the PV array changes the character of the view from agricultural to one of solar energy generation. However, it is worth noting that during the growing season, trees along the edge of the cemetery will provide significant screening that will reduce the visual contrast presented by the Facility and enhance the cemetery's sense of enclosure. However, significant portions of the Facility would still be unscreened and will likely represent a distraction

to the cemetery visitors. Due to the extent of visibility and change in character anticipated in views from this resource, visual effects associated with the Facility are expected to be substantial.

VSR ID # 39: Quaker Cemetery

Quaker Cemetery (VSR ID # 39) is a small rural cemetery that is designated as eligible for listing on the S/NRHP. Views from the cemetery are rural/agricultural in character, and viewer/users are expected to be limited to a fairly small number of local residents who visit the cemetery, along with Tourist/Recreational users interested in the history of the cemetery. Consistent with the methodology used for the Historic Resource Survey and Effects Assessment (see Appendix 9-D of the 94-c Application) potential Facility visibility was considered within the resource parcel boundary. Viewshed analysis results indicate that potential PV panel visibility will be possible from most of the cemetery at foreground distances. A photosimulation from Viewpoint 41 was prepared and evaluated to determine the visual contrast of the Facility in views from this resource (see sheets 65 to 72 of Attachment D). The rating panel results indicate that the Facility would result in moderate visual contrast by introducing a large built feature to a formerly undeveloped landscape. However, the extent of existing vegetation screened will be substantially more complete during the growing season compared to Hubbard Cemetery. Once trees between the resource and PV arrays are fully leafed out, only a small portion of the PV arrays are likely to be visible. It is expected that the Facility would likely represent a distraction to some viewers, particularly during leaf-off season. However, for many, the Facility would not affect their experience/use of the cemetery. Therefore, visual effects associated with the Facility are expected to be moderate from this resource. Following completion of the VIA and rating panel evaluation, the photosimulation for Viewpoint 41 was updated to reflect an enhanced mitigation planting plan designed to provide increased screening/softening views of the Facility (see sheets 25-36 of Attachment H). After five to seven years of growth the enhanced plantings begin to integrate the Facility into the landscape, however, the Facility still dominates the view.

VSR ID # 41: Bowdish Cemetery

Bowdish Cemetery (VSR ID # 41) is located off State Route 96 in the Town of Waterloo on a heavily forested parcel of land and is designated as eligible for listing on the S/NRHP. This resource was also identified during the visual outreach process and added to the inventory as requested by ORES (see Attachment G). Viewer/users are expected to be limited to the property owner because the cemetery is located on private property with no indication that it is currently accessible to the public. Viewshed analysis results indicate that small discrete areas of potential PV panel visibility occur in the northern and western portion of the parcel. However, due to the dense vegetation, no potential visibility is indicated in the vicinity of the cemetery itself (see Figure 5.2-6).

Figure 5.2-6. Bowdish Cemetery Location and Viewshed Analysis Results

The density and potential screening effect of vegetation surrounding the cemetery was confirmed during field work from nearby portions of State Route 96 (see Figure 5.2-7). Due to the lack of visibility and low viewer exposure, visual effects of the Facility at this resource are expected to be negligible.

Figure 5.2-7. View towards the Bowdish Cemetery Parcel from Viewpoint 15 on State Route 96

VSR ID # 45: Bowdish-Dean Residence

The Bowdish-Dean Residence (VSR ID #45) is located off State Route 96 in the Town of Waterloo, and is designated as eligible for listing on the S/NRHP. Views from the residence are rural/agricultural in character, and viewer/users are expected to be limited primarily to the property owners and their guests. Viewshed analysis results indicate that potential PV panel visibility will be possible from most of the property within the near-foreground and foreground distance zones. A photosimulation was produced from Viewpoint 18, which is located approximately 860 feet west of this resource (see Attachment D, sheets 41 to 48) and depicts the PV panel array located north of the residence. Therefore, this view provides a reasonably close representation of views of the PV array that would be available to the north of this resource due to the similar visual setting, view characteristics and orientation, and viewing distance. With the proposed Facility in place, the character of the surrounding landscape as viewed from this viewpoint would change from rural/agricultural to solar energy generation. Following five to seven years of growth, the mitigation plantings partially screen the perimeter fence and soften the edge of the proposed PV array, but the majority of the PV array remains visible due to the proximity to the Facility. Based upon the rating panel results, the Facility would result in appreciable visual contrast with the existing landscape from this location.

It was observed during field review that views to the south from the Bowdish-Dean Residence feature open agricultural fields, intermittent shrub vegetation with a distant tree line in the background (see Attachment B, Viewpoint 17B, sheet 20). Viewpoint 17B is approximately 403 feet to the southeast of this resource and represents likely views south towards the Facility. During the growing season, vegetation in the hedgerows and/or crops in fields would likely partially screen the Facility. However, the presence of the Facility would change the overall character of views to the south. Based upon the proximity of the PV panels, the change in visual character and extent of visibility, visual effects associated with the Facility at this resource are expected to be substantial.

5.2.3 Nighttime Impacts

It is anticipated that the only permanent lighting required for the Facility are safety/security lights at the collection substation and POI substation. These Facility components will utilize full cut-off light fixtures with no drop-down optical elements. In these areas, lighting will be kept to the minimum intensity required to assure safety and security. Additionally, all lighting will be operated manually or placed on an auto-off switch to further minimize the impacts of off-site light trespass. Temporary lighting associated with Facility maintenance will only be switched on for the duration of scheduled and unanticipated maintenance activities. Any potential visual impacts associated with maintenance lighting will be of short duration and intermittent in nature. Additional details on Facility lighting are provided in the VIMPP (Appendix 8-B – Revision 1) and Appendix 5-B – Revision 1 of the Article VIII Application.

5.2.4 Visual Impacts During Construction

Visual impacts during construction are short term and associated with the presence of construction personnel and equipment, and temporary disturbance within the Facility Site. These impacts are anticipated to include the following:

- Truck traffic will temporarily increase on area roadways. Construction vehicles for the Facility will include pickup trucks, dump trucks, and 18-wheeled delivery trucks.
- During construction, fenced gravel-surfaced temporary laydown areas will be developed throughout the Facility Site. The temporary laydown yards will be occupied by vehicles, equipment, construction trailers, and/or stockpiled materials, for the duration of construction. At the end of construction, the gravel yards will be removed, and the sites restored to pre-construction conditions.
- Temporary erosion control measures will be installed during the construction process. These will consist of low black silt fencing, staked haybales and other such measures. All erosion control materials will be removed once all disturbed soils are revegetated.
- Construction equipment, including concrete trucks, excavators, pile driving equipment, and other construction vehicles will actively operate on the Facility Site.
- The underground collection lines are typically installed with the use of a cable plow to minimize soil disturbance, although open trenching may be used in places. In certain areas where cable plowing

and open trenching is not possible due to environmental or construction constraints, horizontal direct drilling (HDD) will be used. HDD utilizes a direct boring rig which drills a hole beneath the surface on a wide arc and requires temporary staging areas near the surfacing sites. Stripping and stockpiling of topsoil and subsoil during installation of buried collection lines may be visible during construction, although such work will typically occur in the middle of fields, relatively far from view. All areas disturbed in this manner will be restored and revegetated following installation.

- PV racking assembly will involve a series of steel piles (I-beams), or screw anchors being driven into the ground, without the need for concrete foundations. With the piles in place, the racking equipment used to mount the PV panels is installed on the piles, followed by attachment of the panels to each rack. This process is accomplished using light equipment, and completed in sections, thus limiting the extent and duration of visual impact in any one location during the construction period.
- Restoration of all temporarily disturbed areas within and adjacent to PV arrays and other Facility components will be achieved by seeding with a native seed mix to reestablish vegetative cover in these areas. Restoration will eliminate visual impacts resulting from soil and vegetation disturbance during construction.

Representative photographs of the appearance of typical construction activities at solar facilities are included in Figure 5.2-8.

Figure 5.2-8. Representative Photographs of a Solar Facility During Construction.

Top Left: Vegetation clearing. Top Right: Access road and erosion control measures. Middle Left: PV racking piles and construction vehicles. Middle Right: Racking system installation. Bottom Right: Open trench underground collection line installation. Bottom Left: Soil restoration and solar facility post-installation.

5.2.5 Cumulative Visual Impacts

Per the requirements set forth in 16 NYCRR Section 1100-2.9(a) the potential cumulative visual effect of the North Seneca Solar Project along with other renewable energy projects currently operating or proposed in the surrounding region must be considered. Cumulative impacts are two or more individual visual effects which, when taken together, compound or increase the visual effects of each project. To evaluate potential cumulative visual effects, currently operating and proposed renewable energy projects within a 10-mile radius area of the Facility Site were identified. Sources of information used to identify projects include the ORES permit application website (ORES, 2024), United States Large-Scale Solar Photovoltaic database (USGS, 2023a), United States Wind Turbine database (USGS, 2023b), NYSDEC Renewable Energy Projects database (NYSDEC, 2021), Seneca County Industrial Development Agency project website (SCIDA, 2024), and information available on the Town of Tyre website (Town of Tyre, 2021 and 2023b).

Ten currently operating solar and wind energy generation projects were identified within 10 miles of the North Seneca Solar Project. These include the following:

- Donati Solar, a currently operating 2 MW solar energy generation facility located off Gravel Road in the Town of Seneca Falls, approximately 4.9 miles east of the North Seneca Solar Project;
- Geneva Solar Farm, a currently operating 2 MW solar energy generation facility located off Sutton Road in the Town of Seneca, approximately 6.3 miles southwest of the North Seneca Solar Project;
- Hobart and William Smith Colleges Solar, a currently operating solar energy generation facility (of unknown generating capacity) located off Gates Road in the Town of Seneca, approximately 6.9 miles southwest of the North Seneca Solar Project;
- Sangolqui Solar, a currently operating 2 MW solar energy generation facility located off Gravel Road and State Route 318 in the Town of Seneca Falls, approximately 4.9 miles east of the North Seneca Solar Project;
- Seneca Solar, a currently operating 5.2 MW solar energy generation facility located off State Route 14A in the Town of Seneca, approximately 8.8 miles southwest of the North Seneca Solar Project;
- Strauss Solar, LLC, a currently operating 2 MW solar energy generation facility located off Carter Road in the Town of Geneva, approximately 3.3 miles southwest of the North Seneca Solar Project;
- Sulphur Creek Solar, LLC, a currently operating 5 MW solar energy generation facility located off State Route 96 in the Town of Phelps, approximately 9.2 miles west of the North Seneca Solar Project;
- Village of Clifton Springs Solar, a currently operating 352 kW solar energy generation facility located off Ladue Avenue in the Town of Phelps, approximately 9.5 miles west of the North Seneca Solar Project;
- Wallace Farms Solar Project, a currently operating 1.5 MW solar energy generation facility located off Wallace Farms Road in the Town of Geneva, approximately 3.9 miles southwest of the North Seneca Solar Project;

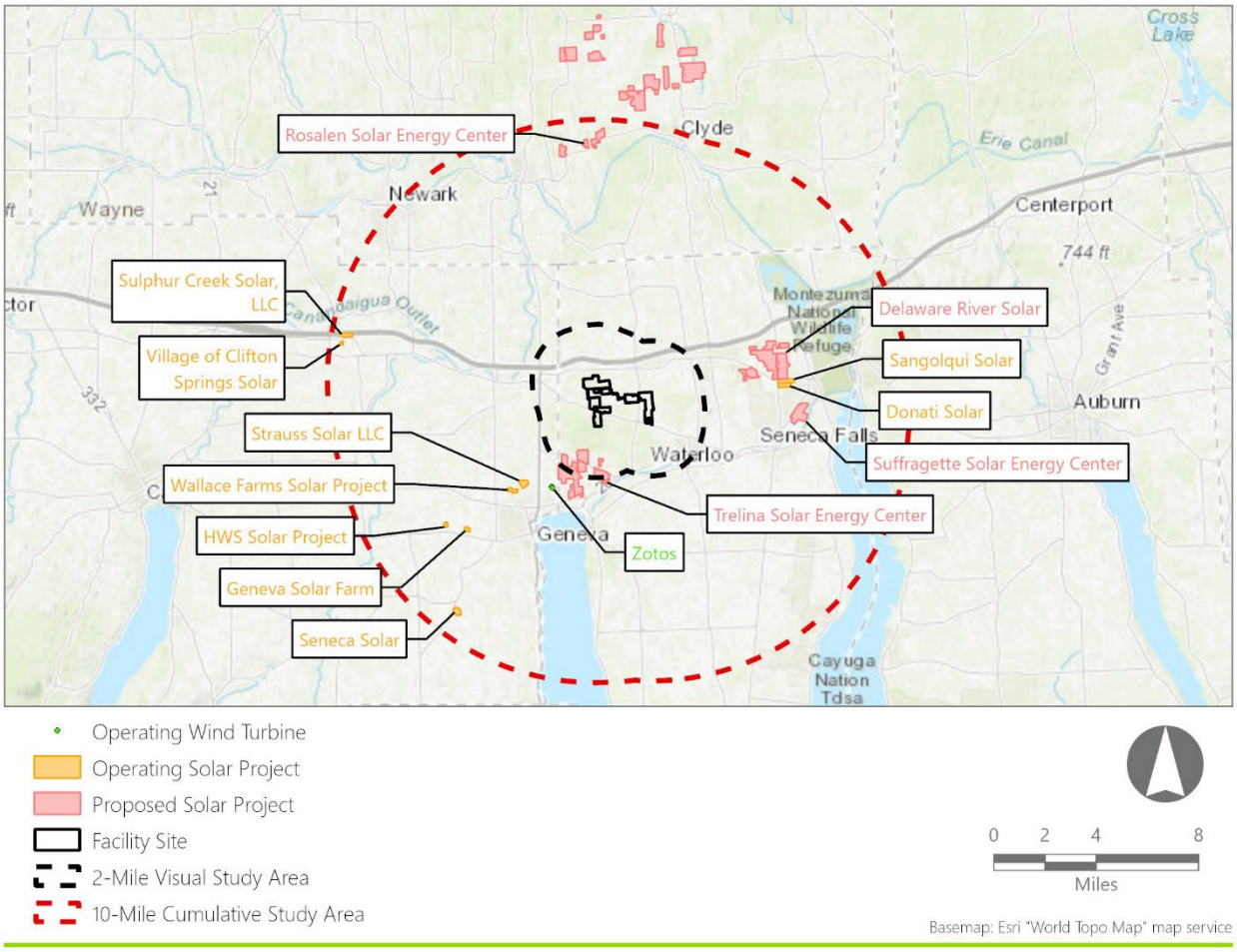
- Zotos Wind Farm, a currently operating 3.3 MW wind energy facility located off Forge Avenue in the Town of Geneva, approximately 2.9 miles southwest of the North Seneca Solar Project.

In addition, four proposed solar energy generation projects were identified:

- Delaware River Solar, LLC Solar Project, a proposed 128 MW solar energy generation facility located off State Route 318 in the Town of Tyre, approximately 3.5 miles east of the North Seneca Solar Project;
- Rosalen Solar Energy Center, a proposed 200 MW solar energy generation facility located off State Route 31 and State Route 414 in the Towns of Galen and Rose, approximately 8.6 miles north of the North Seneca Solar Project;
- Suffragette Solar Energy Center, a proposed 20 MW solar energy generation facility located off United States Route 20 in the Town of Seneca Falls, approximately 5.3 miles east of the North Seneca Solar Project;
- Trelina Solar Energy Center, a proposed 80 MW solar energy generation facility located off Packwood Road in the Town of Waterloo, approximately 0.9 miles southwest of the North Seneca Solar Project.

The location of these projects is shown in Figure 5.2-9.

Figure 5.2-9. Renewable Energy Projects Proximate to the Facility



No visibility of currently operating renewable energy facilities was observed from locations indicated as having potential Facility visibility (based on viewshed analysis) during field review. This suggests that no cumulative visual effects will occur within the VSA as a result of the proposed Facility and currently operating renewable energy projects.

As discussed in Section 5.1 and 5.2, potential visibility and visual effects associated with the North Seneca Solar Project are largely limited to locations within 0.5 miles of the Facility due to the flat topography and presence of abundant vegetative screening in the surrounding area. From locations greater than 0.5 miles, the Facility is either not visible or results in minimal or negligible visual contrast with the existing landscape based on the rating panel results. Localized visibility and visual effects are also anticipated for the other existing and proposed solar energy generation facilities identified within 10 miles of the Facility due to these same visibility limiting factors. Trelina Solar Energy Center is located approximately 0.9 miles south of the Facility and is most likely to result in cumulative visual effects due to its distance from the Facility. However, potential views of the Facility to the south are exceptionally limited due to the presence of large, contiguous forested areas and that serve to limit the opportunity for cumulative views of both projects. Due to localized

visibility and visual effects that are anticipated, the opportunity for views of the North Seneca Solar Project and proposed solar projects in the surrounding area are not likely to occur.

Another form of cumulative visual impact may occur as a result of sequential viewing of multiple energy generation projects while travelling through the region. Depending on the specific travel route, opportunities for sequential views of multiple projects would likely be limited to one or two small solar projects plus the proposed Facility as drivers pass through the 10-mile survey area. This frequency of views is unlikely to alter the character of the existing rural/agricultural character of the landscape in this area. However, if multiple large scale solar and/or wind power projects are proposed and ultimately built in the future, the opportunity for sequential viewings could increase. Under this scenario, the overall effect of sequentially passing through or near multiple renewable energy projects while travelling through the VSA will likely be the perceptions of a transition from an agricultural landscape to one dominated by a mix of agriculture and energy generation uses. However, given the limited viewshed of solar projects such effects would generally only be experienced if one were traveling within the foreground distance zone (up to 0.5 miles) around each project.

6.0 CONCLUSIONS

6.1 Summary of the Visual Impact Assessment

The results of the VIA for the North Seneca Solar Project are summarized as follows:

1. Viewshed analysis based on existing topography, vegetation and, structures indicates that the proposed PV panels will be screened from approximately 88.4% of the VSA (i.e., 11.6% of the VSA is indicated as having potential visibility of some portion of the PV panels). The limited visibility from the surrounding area is primarily attributable to the position of the PV panels on generally flat topography and the presence of abundant vegetative screening in the surrounding area.
2. Within the near-foreground distance zone (i.e., within 300 feet of the panels), the majority of potential PV panel visibility occurs within the boundary of the Facility Site itself. When the Facility Site is excluded from the viewshed analysis results, potential visibility is reduced from 84.7% to 10.0% of the distance zone's area (0.1 square miles). Therefore, when the on-site visibility is excluded, the foreground distance zone (i.e., 300 feet to 0.5 miles) has the greatest potential for PV panel visibility (32.7% of the distance zone area, 1.9 square miles). The least potential for PV panel visibility in terms of percentage of distance zone area occurs in the middle ground distance zone (3.3% of the distance zone area, 0.9 square miles).
3. The greatest potential for visibility of the proposed PV panels occurs within the Agricultural/Rural Residential LSZ, in terms of both geographic area and percent of the LSZ's total area. This is due to the location of the Facility on agricultural land and the fact that this LSZ makes up almost half of the VSA. Potential PV panel visibility is very limited from the Forest LSZ, and primarily occurs within the Facility Site where vegetation clearing is proposed. Potential visibility is also limited from the Transportation LSZ where it occurs as a series of narrow visibility corridors along Interstate 90. The results of the viewshed analysis indicate that there is no potential for visibility of the PV panels within the Village, Open Water, and Commercial LSZs.
4. Viewshed analysis indicates that the proposed interconnection facility will be screened from approximately 97.7% of the VSA (i.e., 2.3% of the VSA is indicated as having potential visibility of some portion of the interconnection facility). Potential visibility of the interconnection facility outside of the Facility Site is concentrated in open agricultural fields and portions of roadway corridors to the north and south (Ninefoot Road, Dunham Road, and Whiskey Hill Road), and an existing transmission corridor that angles north-south through the center of the VSA.
5. Field review largely confirmed the accuracy of the viewshed results. It was observed during field review that areas where viewshed analysis suggested large contiguous areas of visibility in the near-foreground and foreground distance zones generally provided the most open and uninterrupted views towards the Facility Site. However, slight topographic changes along with roadside vegetation, hedgerows, woodlots, and structures were observed to interrupt views towards the Facility Site and limit visibility to smaller portions of the proposed PV arrays from most locations. From heavily wooded areas, and more distant vantage points, it was observed that open views toward the Facility Site were generally tightly framed and fleeting in nature or would include only a small portion of the Facility. It was also observed that potential visibility of the Facility may be

more limited during the growing season when corn and other crops in the foreground of views will likely screen portions of PV arrays.

6. Field review indicated that open, uninterrupted views of the interconnection facility from locations outside of the Facility Site would be limited to a small portion of Ninefoot Road. From vantage points located greater than 0.25 miles from this Facility component, the surrounding vegetation would substantially screen lower components, and visibility would be limited to the narrow, upper portions of the gantry structures and static masts associated with the substations or the upper portions of the transmission structures, which would be minor additions to the landscape and/or be difficult for viewers to discern at these distances.

7. Photosimulations of the proposed Facility indicate that the visual impact associated with the proposed PV panels will be variable and strongly related to distance of the viewer and the expansiveness of PV panel visibility. Evaluation by a rating panel of visual professionals indicated that the Facility will generally result in moderate contrast with the existing landscape. Based on the contrast rating scores and comments, greater levels of contrast can be anticipated where open views of PV panels are available from close distance, which tended to heighten the Facility's contrast with existing elements of the landscape in terms of line, form, and color. Conversely, contrast is reduced when the PV panels are partially screened or viewed at greater distances. At viewing distances greater than 0.3 miles from the Facility, insignificant to minimal/moderate visual contrast is anticipated.

8. The rating panel results suggest that the proposed mitigation was most effective in reducing visual contrast when the plant material provided effective screening of large portions of the Facility without screening/blocking distant landscape features, or when they introduced a new aesthetic feature into the view that provided additional interest. The plantings were least effective in locations where environmental constraints prevented the installation of taller growing species and in long distance views where only a small portion of the PV arrays are screened. It is likely that the benefits of these plantings will increase over time from most viewpoints as plant height and density increases. The PV arrays become more integrated into the surrounding environment from Quaker Cemetery (VSR ID # 39) due to the revised planting plan which added mitigation closer to the Facility. The views also become partially screened/softened from the Farmstead at 1067 Route 96 (VSR ID # 33) with the revised planting plan in place.

9. Viewshed analysis results indicate that 14 of the 45 VSRs identified within the VSA have potential visibility of the PV panels and/or the interconnection facility. However, based on the results of the line-of-sight cross section analysis, field review, and photosimulation evaluation, the Facility is anticipated to result in negligible to minimal visual effects in views from most of these resources due primarily to the limited geographic extent of visibility, duration of view distance from the VSR, and/or screening by existing topography/vegetation. Resources where more substantial visual effects associated with the Facility are anticipated include a Farmstead at 1831 Whiskey Hill Road (VSR ID # 36), Hubbard Cemetery (VSR ID # 38), and Bowdish-Dean Residence (VSR ID #45). More moderate visual effects associated with the Facility are anticipated to occur from NYS Route 96 (VSR ID # 28) and the Farmstead at 1067 Route 96 (VSR ID # 33).

10. Minimal cumulative visibility and visual effects are also anticipated as a result of the other solar energy generation facilities identified within 10 miles of the Facility due to their separation from the North Seneca Solar Project and the flat topography and abundant vegetative screening that is present in the area. The opportunity for simultaneous or sequential views of the North Seneca Solar Project and other currently operating or proposed renewable energy projects in the surrounding area is not likely to occur.
11. It is anticipated that the only permanent lighting required for the Facility will include safety/security lighting associated with the interconnection facility. These Facility components will utilize light fixtures with no drop-down optical elements and will minimize off-site light trespass and sky glow. In these areas, lighting will be kept to the minimum intensity and duration necessary to assure safety and security.
12. Construction has the potential to result in short-term, intermittent, and transitory adverse visual impacts due to the presence of construction personnel and vehicles, transportation of Facility components, the presence of large construction equipment, and ground disturbance at access roads, lay-down areas, the interconnection facility, and the PV panel arrays. However, these impacts are temporary, and will last only for the duration of construction.

6.2 Mitigation of Visual Impacts

The minimization and mitigation of visual impacts is an important consideration when siting and designing solar facilities. Article VIII regulations require development of a VIMMP that evaluates potential mitigation options such as landscape plantings, relocation, use of alternative technologies, non-specular material, lighting, and screening. The VIMMP for the North Seneca Solar Project is included in Appendix 8-B – Revision 1 of the Article VIII Application.

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