Visual Impact Assessment

Agricola Wind Project

Towns of Venice and Scipio, Cayuga County, New York

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ATTACHMENTS

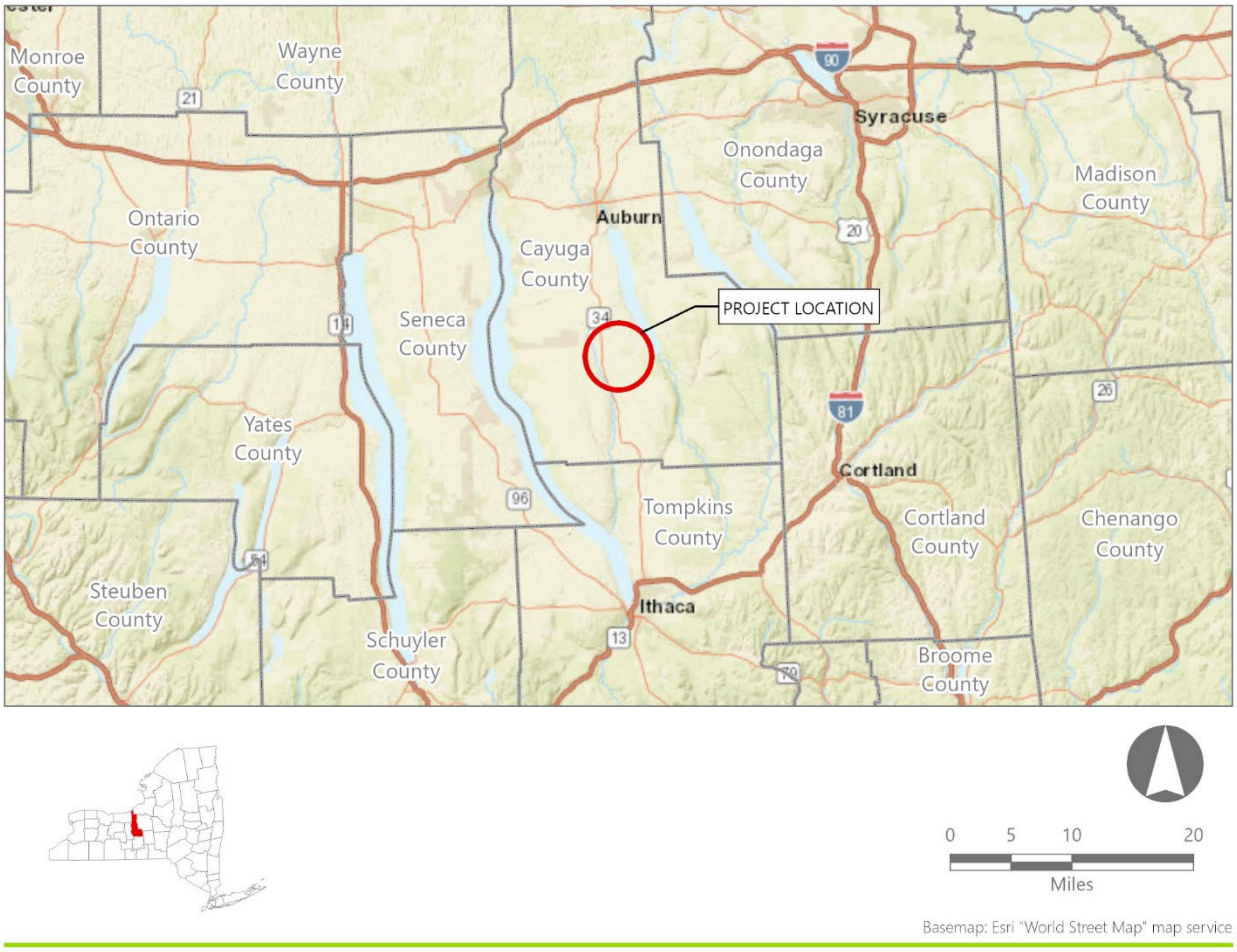
1.0 INTRODUCTION

1.1 Purpose of the Investigation

On behalf of Agricola Wind LLC (the Applicant), a wholly owned subsidiary of Liberty Renewables Inc., Environmental Design and Research, Landscape Architecture, Engineering & Environmental Services, D.P.C. (EDR) conducted a Visual Impact Assessment (VIA) for the proposed Agricola Wind Project (the Facility), located in the Towns of Venice and Scipio in Cayuga County, New York (Figure 1.1-1). This VIA was prepared in support of the Facility's review under Chapter XI, Title 16 of New York Codes, Rules, and Regulations (NYCRR), Section 1100-2.9 and Article VIII of the New York State Public Service Law (hereafter referred to as Article VIII). It is intended to assist the New York State 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:

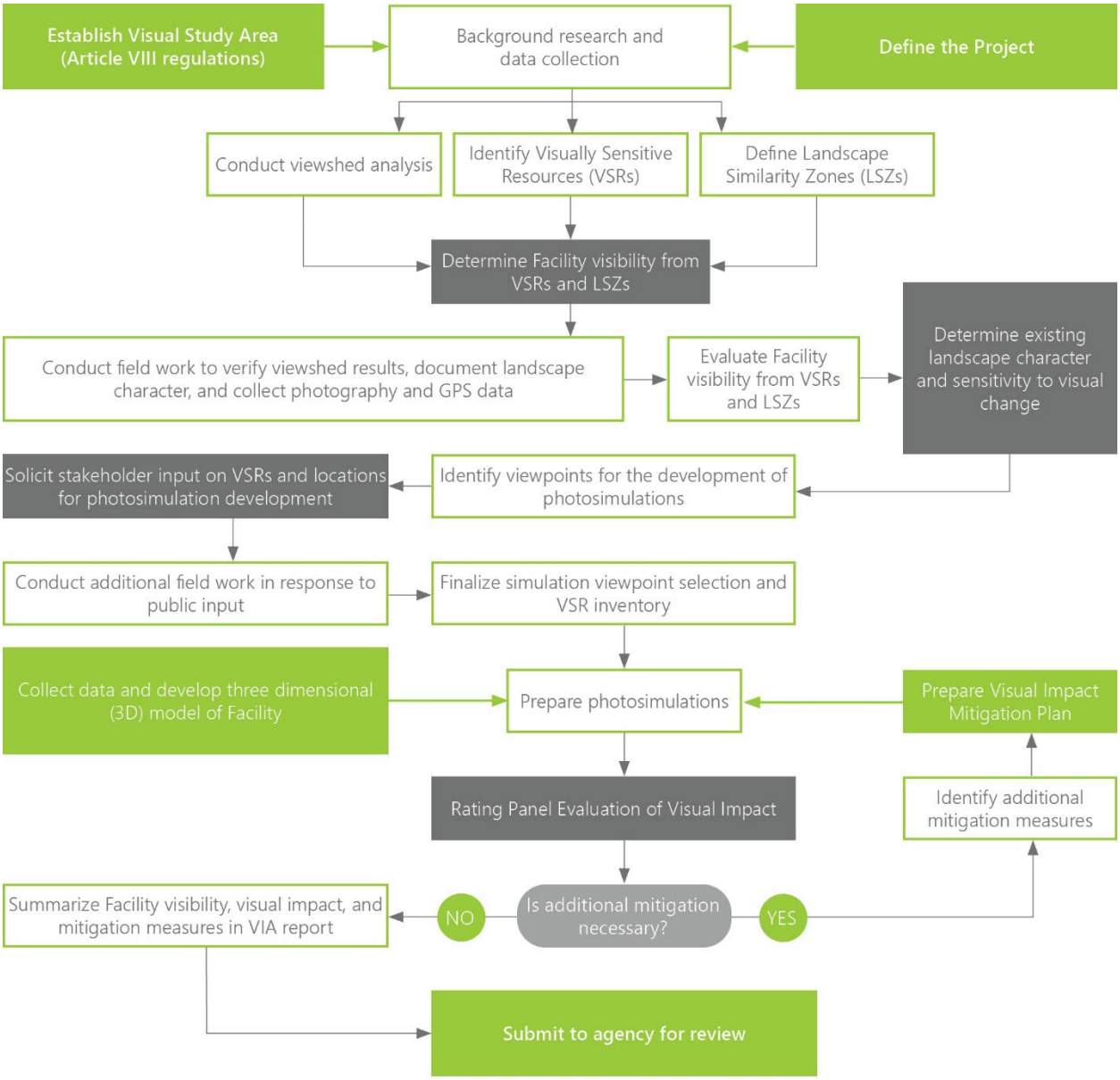
- Describe the appearance of the visible components of the proposed Facility.
- Define the aesthetic character of the visual study area (VSA).
- Inventory and evaluate existing visual resources and viewer groups within the VSA.
- Evaluate potential Facility visibility within the VSA.
- Identify representative views for visual assessment.
- Assess 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 the report 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 wind energy project with a generating capacity of up to 99 megawatts (MW), located in the Towns of Venice and Scipio in Cayuga County, New York. The proposed Facility will include:

- Up to 24 wind turbines.
- An electrical collection system that will transfer the energy generated by the wind turbines.
- A collection substation and point of interconnection (POI) switchyard where the Facility's electrical output voltage will be combined and increased to the transmission line voltage.
- A short length of overhead transmission line and transmission structures to transfer the energy to the designated POI at the existing New York State Electric & Gas Corporation (NYSEG) Wright Avenue to Milliken 115 kilovolt (kV) transmission line.
- Two permanent meteorological (MET) towers to collect wind data and support performance testing of the wind turbines.
- An aircraft detection lighting system (ADLS) to limit the activation time of Federal Aviation Administration (FAA) aviation obstruction warning lights (FAA lights);
- An ADLS tower included as part of the ADLS;
- An operations and maintenance (O&M) facility.
- Gravel-surfaced access roads and temporary construction laydown yards.

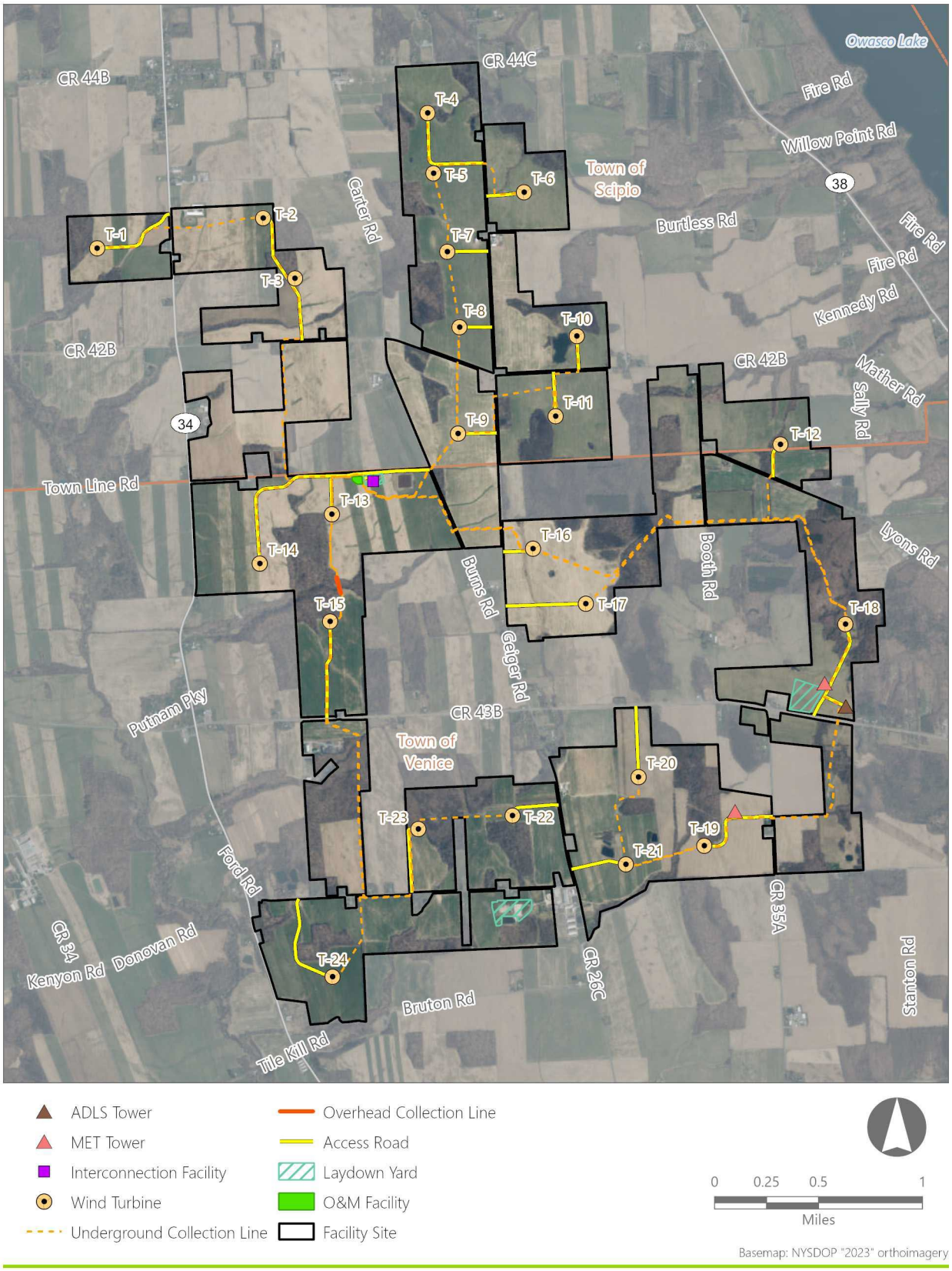
The proposed Facility Site and the appearance of the Facility components are described in greater detail in Sections 2.1 and 2.2.

2.1 Location of the Facility Site

The proposed Facility Site includes approximately 6.3 square miles of land currently controlled under lease or easement by the Applicant. The Facility Site is characterized by rolling terrain, with elevations ranging from about 950 feet to 1,400 feet above mean sea level. Land use is a mix of forested areas and active/inactive agricultural land interspersed with agricultural structures such as barns and silos (Figure 2.1-1). The actual "footprint" of the Facility, as defined by the Facility's limit of disturbance, will be about 0.6 square miles. At its closest point, the Facility Site is located approximately 2.9 miles northwest of the Village of Moravia.

Figure 2.1-1. View of the Facility Site from Poplar Ridge 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. The appearance of temporary construction-related components and activities are described in Section 5.2.4 of this report. Additional information on the Facility components and layout can be found in Appendix 5-A and 5-B of the Article VIII Application.

2.2.1 Wind Turbines

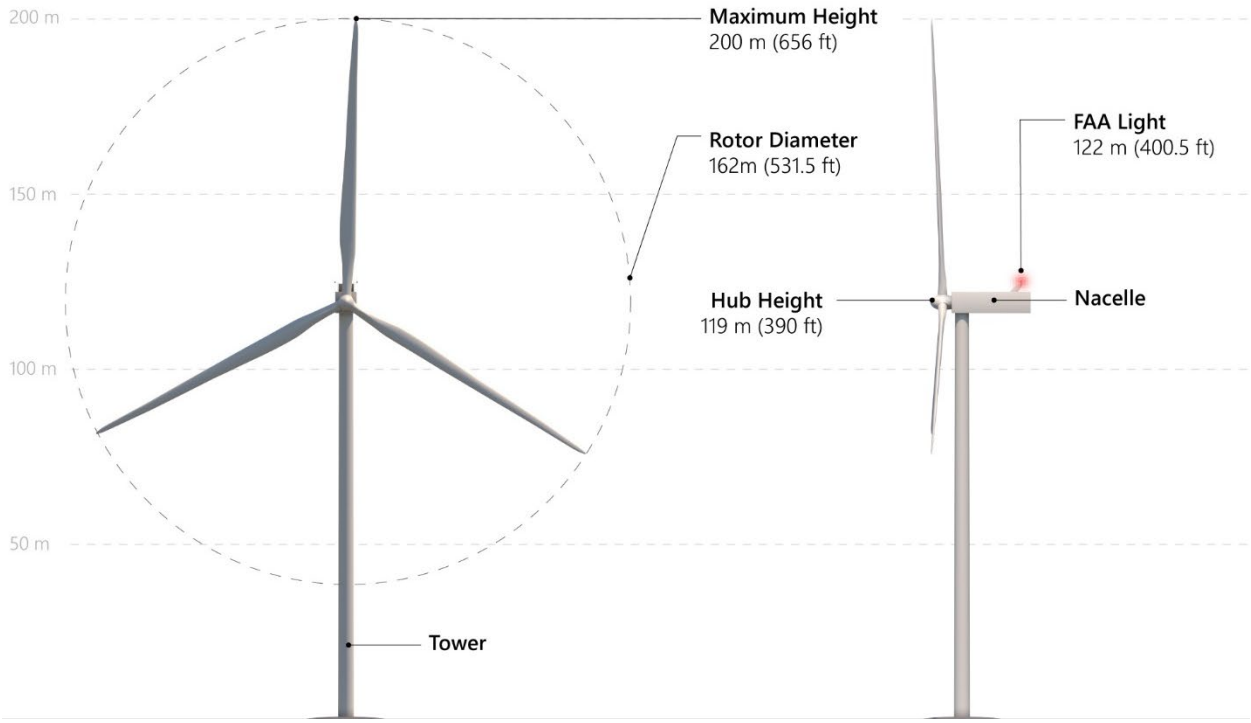
The proposed Facility will include up to 24 utility-scale wind turbine generators. As described in Exhibit 5 of the Article VIII application, the specific wind turbine model for the Facility has not yet been determined, with three wind turbine models currently under consideration. To evaluate the greatest potential visibility and visual impact, the VIA assumes that all 24 potential turbine positions will be occupied by the turbine with the greatest height and largest rotor diameter; the Vestas V162 model. However, it is important to note that fewer than 24 positions would be utilized if this wind turbine model is ultimately selected because it has the highest generating capacity. Conversely, if a turbine with a lower generating capacity and lower height is selected, up to/all 24 positions would be utilized.

Each wind turbine consists of a tubular steel tower, a three-bladed rotor, and a nacelle. A description of these components is as follows:

- Tower – The tubular steel towers are manufactured in multiple sections and assembled on site. The towers have a base diameter of approximately 14.8 feet and a top diameter of approximately 13.2 feet and are installed on a concrete pedestal that connects to a buried concrete foundation. The turbine pedestal will be surrounded by a permanent 30-foot radius gravel surface. Each tower will be equipped with an access door, internal lighting, and an internal ladder to access the nacelle. The towers are painted white and include no exterior ladders or catwalks.
- Nacelle – The tower is topped by the nacelle, which is 20.5 feet wide by 20.5 feet tall by 73.8 feet long and connects to the rotor hub. The center of the nacelle will be approximately 390 feet above ground level. The nacelle houses all of the turbine's mechanical components, including the generator, gearbox, power train, and transformers. The nacelle will be white in color, and will include no obvious lettering, logo, or other exterior marking. Each of the turbine nacelles will be equipped with two FAA lights, which are described in greater detail in Section 2.2.2.
- Rotor – The turbine rotor is 531.5 feet in diameter and consists of three composite blades, each approximately 255.5 feet long. The blades are pitched, or rotated along their axis, to operate with the greatest efficiency in varying wind conditions. The blades are white in color and connect to the nacelle at the rotor hub.

The appearance and dimensions of the individual wind turbine components are illustrated in Figure 2.2-1. Based upon the wind turbine specifications provided by the Applicant, each wind turbine is assumed to have a maximum height of approximately 656 feet above ground level with the rotor blade oriented in its most upright position. Due to their height and size, the proposed wind turbines are the Facility component that will be most visible and have the greatest potential to result in visual impacts. Therefore, the wind turbines are the primary focus of this VIA.

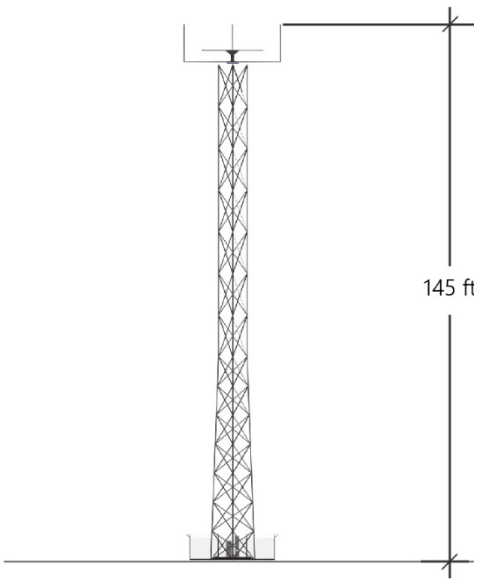
Figure 2.2-1. Wind Turbine Model



2.2.2 Aircraft Detection Lighting System

To comply with FAA standards for aviation safety, it is assumed that each of the turbine nacelles will be equipped with two medium intensity flashing red (FAA-L-864) aviation obstruction warning lights (FAA lights). If approved by the FAA and determined feasible for the Facility, an ADLS will be employed to minimize nighttime visual impacts associated with the FAA lights. The ADLS will detect aircraft within the 3-nautical mile (3.5-mile) airspace surrounding the wind turbines that extends vertically from 200 to 1,000 feet above the highest point of the wind turbines. Once an aircraft is detected within this airspace, the FAA lights will synchronously activate. The lights will remain active for 30 minutes or until the aircraft has exited the airspace, at which time the lights will switch off. The system can also be remotely activated for planned aerial operations within the region.

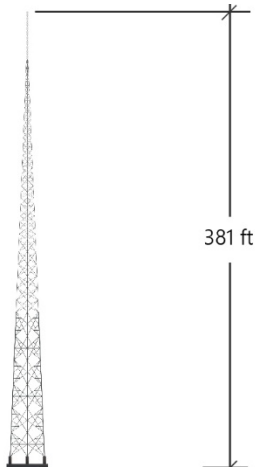
Figure 2.2-2. Aircraft Detection Lighting System Tower



It is anticipated that one permanent 145-foot tall, steel lattice tower will be installed as part of the ADLS system. The tower will

support the ADLS radar system, lightning protection assembly, and communication antennas, and will be mounted on a concrete slab foundation within a fenced, gravel-surfaced enclosure measuring 40 feet by 25 feet. A backup generator, server rack, and electrical enclosure will also be located inside the fence. The appearance of the ADLS tower is illustrated in Figure 2.2-2.

Figure 2.2-3. Meteorological Towers



2.2.3 Meteorological Towers

Two permanent 381-foot tall MET towers will be installed to collect wind data and support performance testing of the wind turbines. Each MET tower will be a steel lattice structure equipped with wind velocity meters, directional measuring instruments, and temperature and humidity monitors. The MET towers will also be equipped with two red L-864 FAA lights, one located at the maximum tower height and the second at the approximate mid-tower height, which will flash in unison with the turbines at night. The appearance of the MET towers is illustrated in Figure 2.2-3.

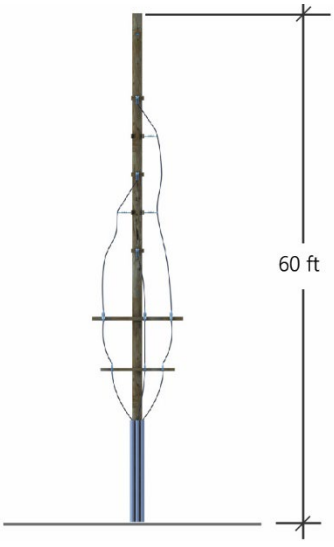
2.2.4 Electrical System

Two distinct components make up the Facility's electrical system: the collection system, which includes the underground and overhead collection system, and the interconnection facility, which includes the collection substation, POI switchyard, and transmission line.

Collection System

The collection system includes a network of underground electric cables that will collect power from the wind turbines and transmit it to the interconnection facility. Potential visual impacts could occur where forest or hedgerow clearing is necessary to accommodate installation of the electric cables, as discussed in Section 2.2.7. In addition, an approximately 420-foot-long overhead collection line is proposed west of Burns Road in the Town of Venice where environmental constraints prevent the use of underground cabling. The overhead collection line will be supported by two approximately 60-foot tall, wood poles. Due to its short length, small size, low height, and similarity in appearance to distribution lines in the area, the overhead collection line is not considered in the viewshed analysis. However, if present and visible, overhead collection line is illustrated in the photograph simulations (photosimulations) included in this VIA. The appearance of the overhead collection poles is illustrated in Figure 2.2-4.

Figure 2.2-4. Overhead Collection Pole



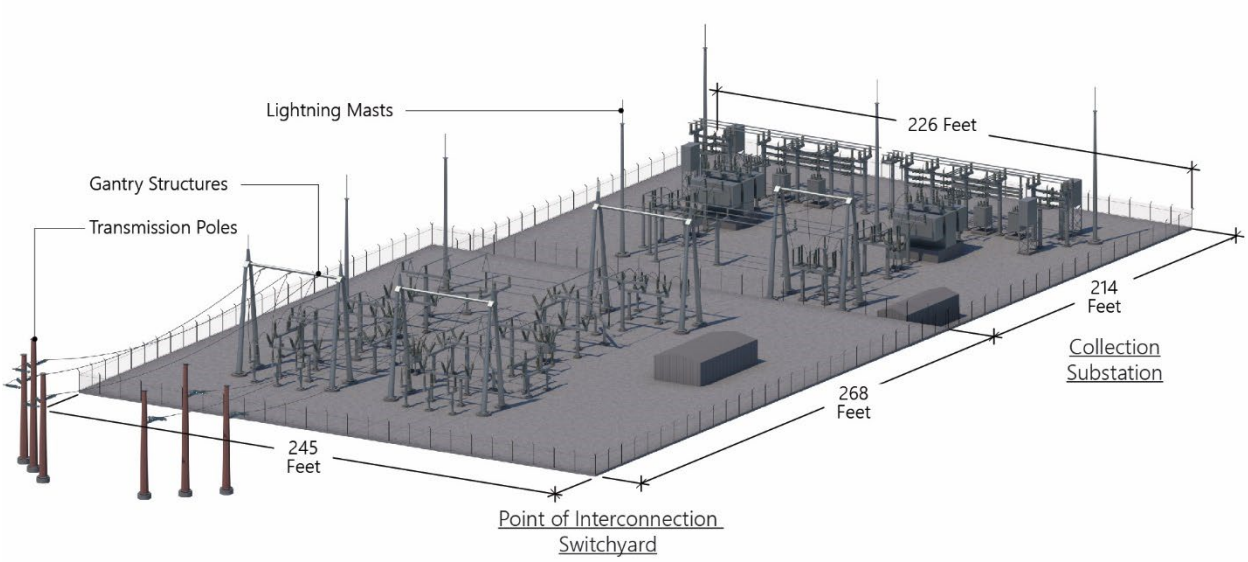
Interconnection Facility

The collection substation and POI switchyard will be located adjacent to each other west of Burns Road in the Town of Venice. The collection substation will occupy an area measuring 214 feet long by 226 feet wide, and the POI switchyard will occupy an area measuring 245 feet long by 268 feet wide (collectively, 2.6-acres). These stations will be surrounded by chain link fencing, surfaced with crushed stone, and will include transformers, breakers, towers, cable carriers, and related electrical structures. The tallest components of the stations are the shielding masts, which are 67 feet tall, and the gantry structures, which range in height from approximately 55 to 65 feet. These structures will be galvanized steel and silver/gray in color. Control enclosures measuring 40 feet long by 14 feet wide and 12 feet 10 inches tall are also proposed within each of the stations. These structures will be clad in gray, standing seam metal siding. Other electrical components of the stations will not exceed 30 feet in height and will be gray in color (painted or galvanized).

The proposed transmission line that will connect the POI switchyard to the electrical grid will include six overhead conductors, each approximately 200 feet in length, that will run from the gantry take-off structure within the POI switchyard to approximately 55-foot tall, self-weathering steel transmission poles located at the POI with the NYSEG Wright Avenue to Milliken 115 kilovolt (kV) transmission line.

The appearance of the interconnection facility components is illustrated in Figure 2.2-5.

Figure 2.2-5. Interconnection Facility

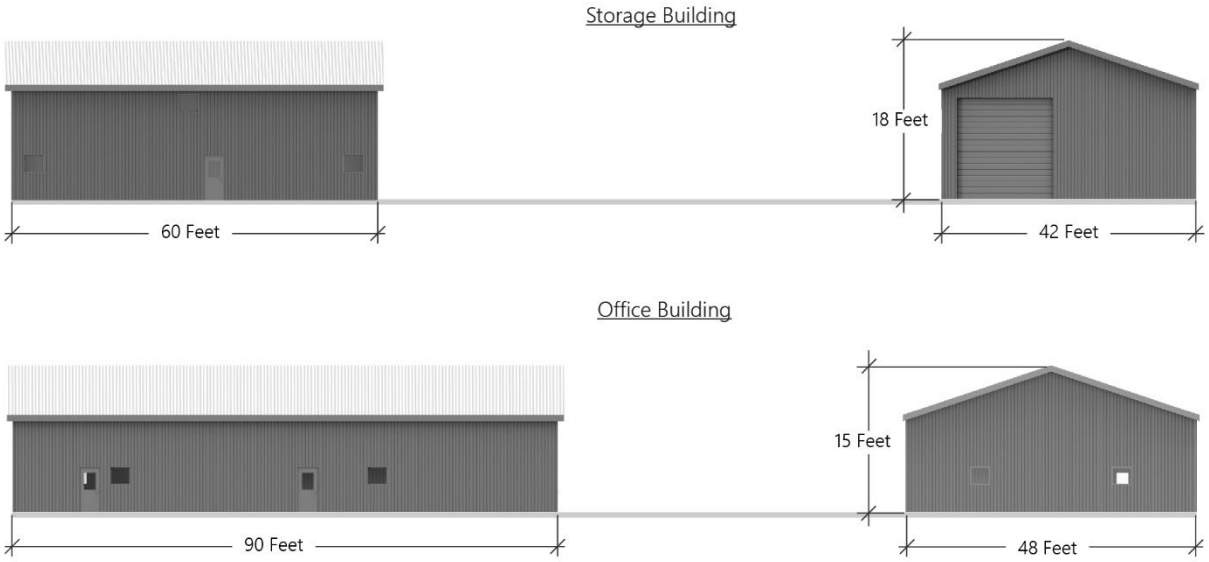


2.2.5 Operations and Maintenance Facility

An operations and maintenance (O&M) facility that will house the permanent operations staff and maintenance equipment is proposed near the interconnection facility. The O&M facility will occupy approximately 1.0-acre and will include a parking area and two buildings. The office building will be 90 feet long by 48 feet wide by 15 feet tall, and the storage building will be 60 feet long by 42 wide by 18 feet tall.

Both buildings will be clad in ash grey, standing seam metal siding. Due to their relatively small size, low height, and similarity in appearance to other agricultural structures in the area, the O&M buildings are not considered in the viewshed analysis. However, if present and visible, the O&M facility is illustrated in the photosimulations included in this VIA. The appearance and dimensions of the O&M buildings is illustrated in Figure 2.2-6.

Figure 2.2-6. Operations and Maintenance Facility



2.2.6 Access Roads

The wind turbines will be served by a network of approximately 8.3 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 typically be 20 feet in width. The proposed access roads represent relatively minor alterations to the landscape that are rarely visible at distance due to their ground-level location, narrow width, and unpaved surface. However, if present and visible, access roads are illustrated in the photosimulations included in this VIA. A typical access road is depicted in Figure 2.2-7.

Figure 2.2-7. Representative Photo of Access Road

2.2.7 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 visible, this clearing (based on the limit of construction activity) 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 wind turbines and other Facility components, as well as permanent stormwater management features. Due to the flat or gently rolling terrain present on most of the Facility Site, the grading is primarily designed to "smooth" out turbine pads and access road corridors and 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 of the Article VIII Application.

3.0 EXISTING VISUAL CHARACTER

3.1 Definition of Visual Study Area

Article VIII (§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 Facility's VSA has been defined as the area within 5 miles of the Facility Site (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 cross section analysis, field review, and photosimulations). In addition, the Article VIII regulations require that potential Facility visibility be considered "*from specific significant visual resources beyond the specified study area.*" Therefore, a secondary 10-mile radius study area was defined to identify significant visual resources beyond the specified VSA. The 5-mile radius VSA includes approximately 158.8 square miles within Cayuga County. The municipalities that fall within the VSA are identified in Table 3.1-1.

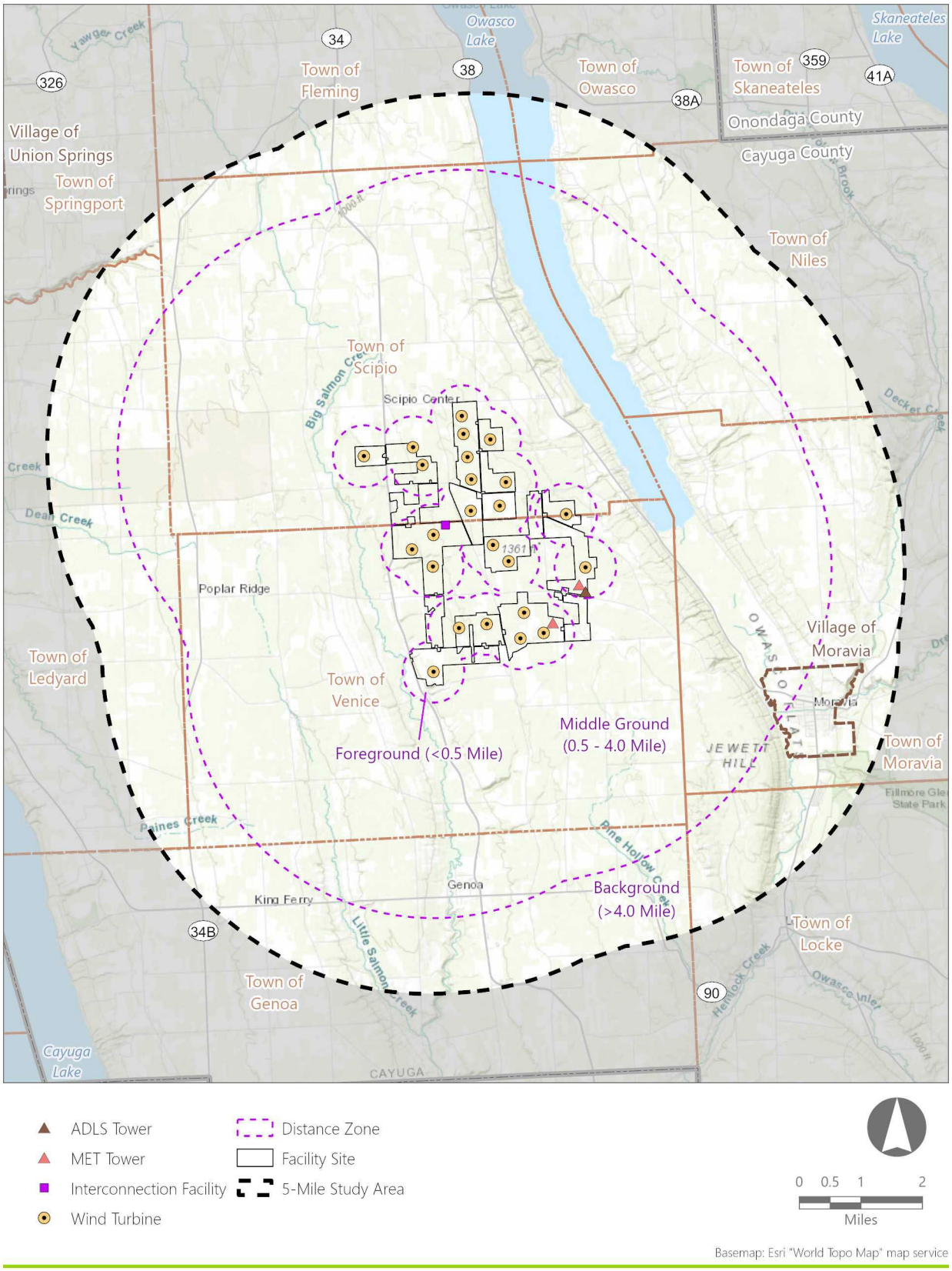
Table 3.1-1. Municipalities that Fall within the Visual Study Area

Town, City, or Village	Total Area of Town within VSA[1] (square miles)	Percent of Total Area of Town	Percent of VSA[2]
Town of Ledyard	48.5	29.2%	8.9%
Town of Niles	43.3	36%	9.8%
Town of Genoa	43.2	39.5%	10.7%
Town of Venice	41.2	100%	26%
Town of Scipio	39.2	99.6%	24.6%
Town of Moravia	28	71.3%	12.6%
Town of Springport	27.1	1.3%	0.2%
Town of Locke	24.4	16.6%	2.6%
Town of Fleming	24.3	16.7%	2.6%
Town of Owasco	23.5	6.7%	1.0%
Village of Moravia	1.7	100%	1.1%

[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 158.8 square miles.

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 that can be perceived by a viewer. 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 three distance zones (as measured from the proposed location of the wind turbines and interconnection facility) based largely on the USFS Scenery Management System (USFS, 1995):

- *Foreground: 0 feet to 0.5 miles*. The foreground is the predominant distance zone in which landscapes are viewed in the study area considering the gently rolling 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. Trees lining a field begin to merge into a hedgerow, wildflowers begin to merge into a field. For most landscape features, viewers cannot perceive the details of parts of objects, such as leaves of trees, with clarity. However, individual components, surface textures, and the full intensity of color values of the wind turbines can often be seen with clarity.
- *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 only covers a small portion of the VSA, background features outside of the VIA are 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]
Foreground (0 feet–0.5 mile)	11.8	7.4%
Middle Ground (0.5–4.0 miles)	94.2	59.3%
Background (4.0+ miles)	52.8	33.3%

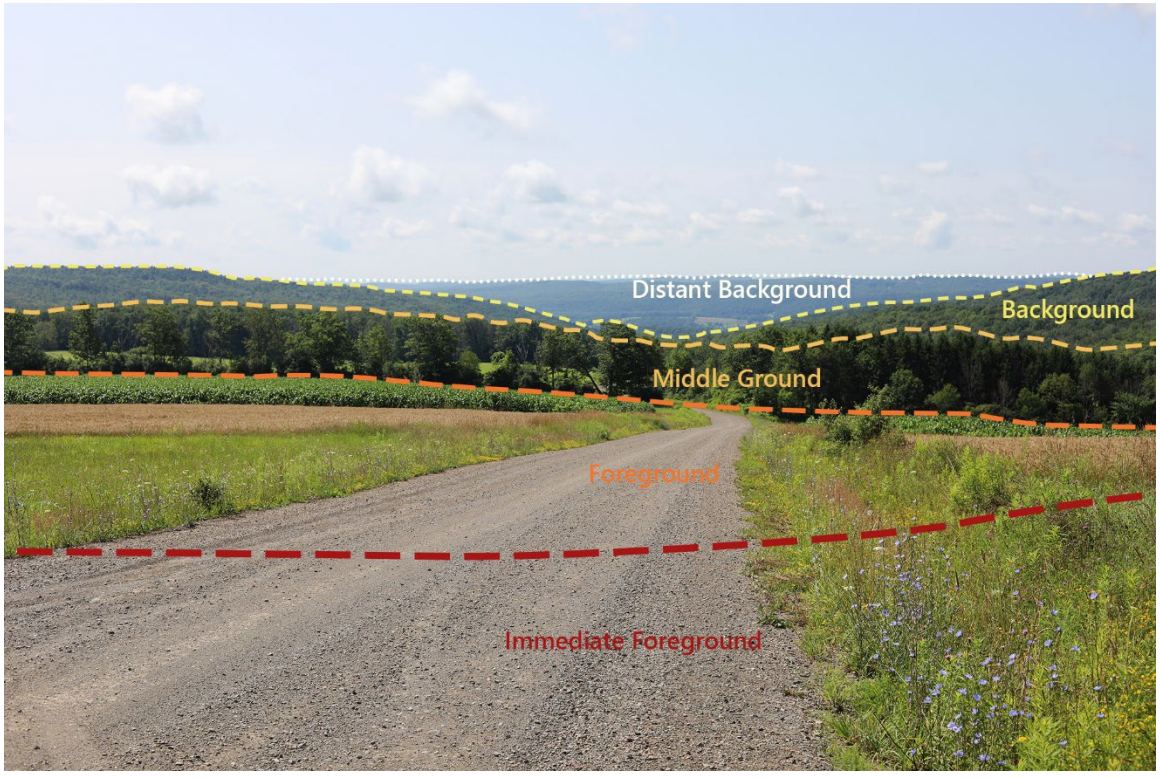
[1] The calculations used to generate this table were based on unrounded numbers. The rounded results in the table may not add up precisely.

[2] The VSA includes approximately 158.8 square miles.

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 an immediate-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, immediate foreground, foreground, middle ground, and background compositional zones referenced in regard to selected viewpoint photographs and photosimulations 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 primarily within the Northern Alleghany Plateau ecoregion, which extends across southern New York and into northeast Pennsylvania and consists of rolling hills, low mountains, and open valleys. More specifically, the VSA falls within the Finger Lakes Uplands and Gorges subregion, which encompasses the northern edge of the Northern Allegheny Plateau where it meets the Ontario Lowlands (Bryce et al., 2010). This subregion is defined by the north-south oriented u-shaped valleys surrounding the finger lakes that were formed through glacial action.

Land use in the VSA consists primarily of active/inactive agriculture and undeveloped forest land. Development mostly occurs as widely scattered rural homes and farm complexes, with more concentrated settlement along the shoreline of Owasco Lake, in hamlets at the intersections of major roads, and in the Village of Moravia. Agriculture consists of fields managed to produce cultivated row crops, hay, or nursery stock. Forest land occurs primarily as a mix of small, discrete woodlots dispersed between agricultural land. However, large contiguous areas of forest occur on steep hillsides in the southeastern portion of the VSA.

3.2.2 Water Features

Water features within the VSA consist of Owasco Lake, the Owasco Lake Flats and Inlet, as well as other small creeks, unnamed ponds, and wetlands.

The most significant water feature is Owasco Lake, which is the sixth largest of the 11 fingers lakes. This north-south oriented lake is characterized by a steep wooded shoreline interspersed with occasional fields and residences, particularly along the waters edge. The lakes receive significant recreational use by boaters, swimmers, and fisherman, and is a character defining feature for adjoining residential areas and roadways where open views are available. Owasco Flats is also a significant water feature within the VSA, and occurs at the southernmost end of the Owasco Lake, where the lake's floodplain extends and creates a large wetland area. The Owasco Inlet, one of the Owasco Lake's major tributaries, flows north from Tompkins County, through the Owasco Flats, and into the southernmost end of the Owasco Lake.

Several creeks, including Little Salmon Creek, Big Salmon Creek, Decker Creek, Little Creek, and Mill Creek, cut through primarily agricultural portions of the VSA. These creeks have relatively narrow channels and vegetated edges that expand into small woodlots in portions of the VSA. 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 at the edges of agricultural fields or near residences. Wetlands are generally dominated by emergent herbaceous vegetation. These water features 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.

3.2.3 Future Land Use

Article VIII requires that future land uses be considered as part of the viewpoint selection process. To define future land use areas within the VSA, EDR reviewed available local zoning ordinance and maps, which together establish goals for the current and future allowable land uses within various towns and villages. The following zoning maps were reviewed to define future land use areas:

- The Town of Fleming zoning map (Town of Fleming, 2008b);
- The Town of Ledyard zoning map (Town of Ledyard, 2001);
- The Village of Moravia zoning map (Village of Moravia, 2023);
- The Town of Owasco zoning map (Town of Owasco, 2004);
- The Town of Scipio zoning map (Town of Scipio, 2022);
- The Town of Springport zoning map (Springport NY, 2023);

Following review of these documents, 11 future land use areas were defined based upon similarities in allowable land uses. As indicated in Table 3.2-1 and depicted in Figure 3.2-1, agricultural and agricultural/rural residential are the predominant desired future land uses defined by local zoning regulations within the Facility Site and the VSA. As described in the plans and zoning ordinances listed above, these lands are desired to remain in active agricultural production, low density rural residential development, and/or open space use. However, it is worth noting that the comprehensive plans provide only a brief description of each future land use area, and do not contain detailed information related to compatible land uses.

The Towns of Genoa, Locke, Niles, and Venice (which comprise approximately half of VSA) have not adopted zoning regulations, and therefore no future land uses are defined by zoning districts. It is assumed that current land uses, which are predominately agricultural production and rural residential development, are the desired future land use in these areas. Future land use areas are also undefined for Owasco Lake, where land use is limited to water-based recreation.

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

Future Land Use Area	Municipalities	Area within the VSA (square miles)[1]	Percentage of Area within the VSA[2]
Agricultural/Rural Residential	Towns of Scipio, and Ledyard, Village of Moravia	47.6	30.0%
Agricultural	Towns of Fleming, Moravia, and Springport, Village of Moravia	23.5	14.8%
Waterfront District	Town of Scipio	2.0	1.3%
Residential	Town of Owasco, Village of Moravia	1.5	0.9%
Hamlet District	Town of Scipio	1.3	0.8%
Lakeshore	Towns of Fleming, and Owasco	0.8	0.5%
High Density District	Town of Moravia	0.2	0.1%
Planned Development	Town of Fleming	0.2	0.1%

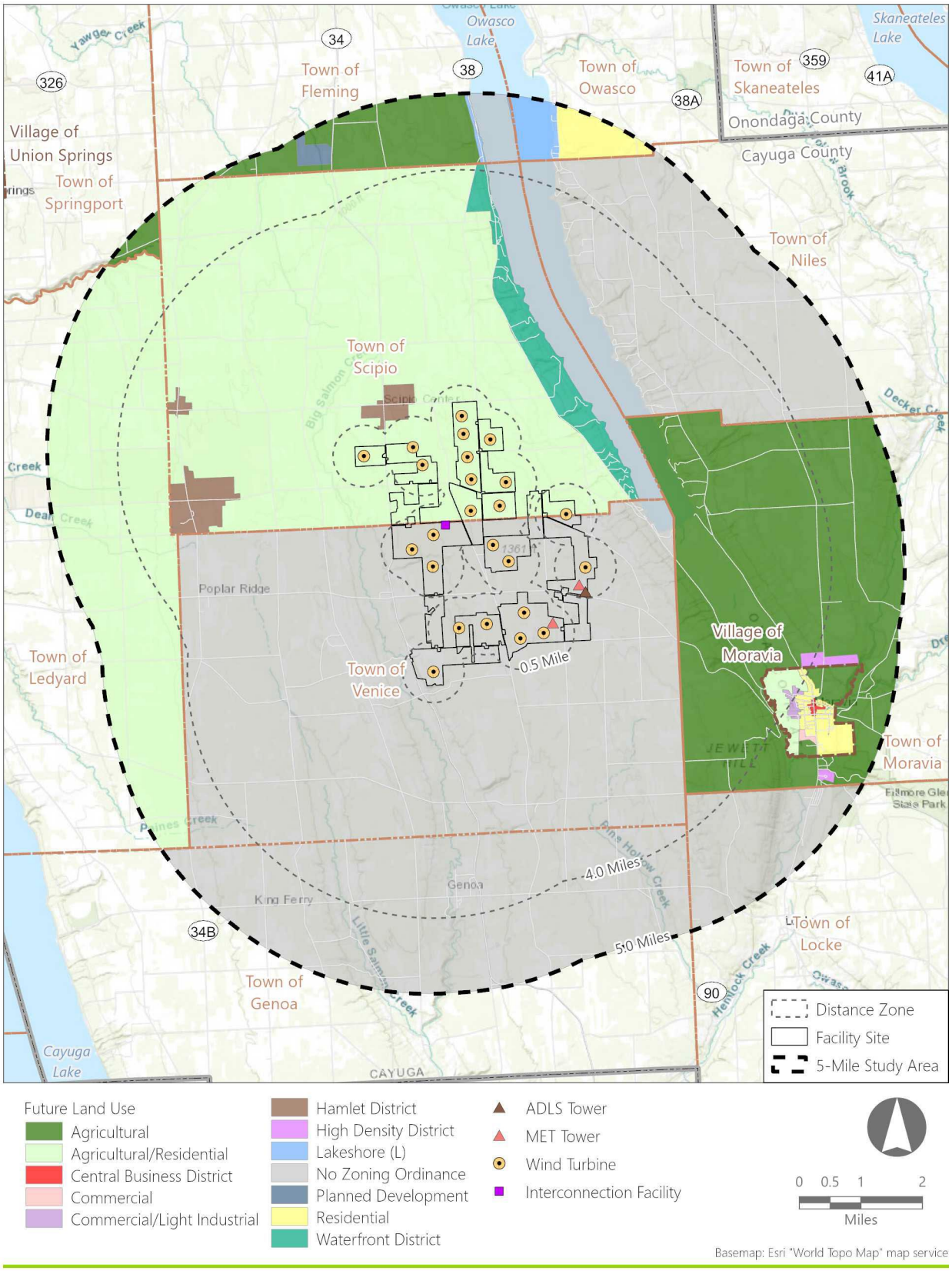
Future Land Use Area	Municipalities	Area within the VSA (square miles)[1]	Percentage of Area within the VSA[2]
Central Business District	Village of Moravia	<0.1	<0.1%
Commercial	Village of Moravia	<0.1	<0.1%
Commercial/Light Industrial	Village of Moravia	0.1	<0.1%
Undefined (No Zoning Ordinance)[2]	Towns of Genoa, Locke, Niles, and Venice	81.2	51.1%

[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 158.8 square miles.

[3] The Towns of Genoa, Locke, Niles, and Venice have not adopted zoning regulations. Therefore, no future land uses are defined.

Figure 3.2-1. Future Land Use Areas



3.3 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:

3.3.1 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. Concentrated settlements include the Village of Moravia and hamlets scattered throughout the study area, as well as shoreline homes around Owasco Lake. 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 from ground level or elevated vantage points (typically upper floors/stories of homes) within their homes and yards. 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, particularly those residences that are sited specifically to take advantage of a scenic view (e.g., along the shore of Owasco Lake).

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 shown in Figure 3.3-1, density of buildings within the VSA ranges from 1 to 98 buildings per square quarter mile, with many areas where there are no buildings. The highest density area occurs within the Village of Moravia. Additional areas of higher density also occur in the Hamlets of Genoa, Scipio Center, Montville, Cascade, and Indian Cove, and in a few locations along the shoreline of Owasco Lake. However, small, less dense clusters of buildings occur along roadways scattered throughout the VSA.

3.3.2 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 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 3.3-1 and Figure 3.3-1, the most heavily trafficked roads include State Routes 34, 34B, 38, and 34A, with traffic counts generally in the range of 1,000 to 3,000

vehicles per day. The segment of State Route 38 within the Village of Moravia is the most heavily travelled road in the VSA, with an average traffic count of 6,663 vehicles per day. State Route 90, which is a designated scenic byway (VSR ID # 24), experiences a lower volume of traffic than other state routes within the VSA. However, travelers along this route may include sight-seers that are more sensitive to visual changes in the landscape. This study assumes that these sight-seers are Tourists/Recreational users, as discussed below.

Table 3.3-1. 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]
State Route 34	15.0	2,503 – 3,026
State Route 34B	12.4	1,427 – 2,459
State Route 38	14.9	1,843 – 6,663
State Route 38A	3.5	1,047 – 3,337
State Route 90	7.9	461 - 918

[1] Calculated based upon roadway centerline.

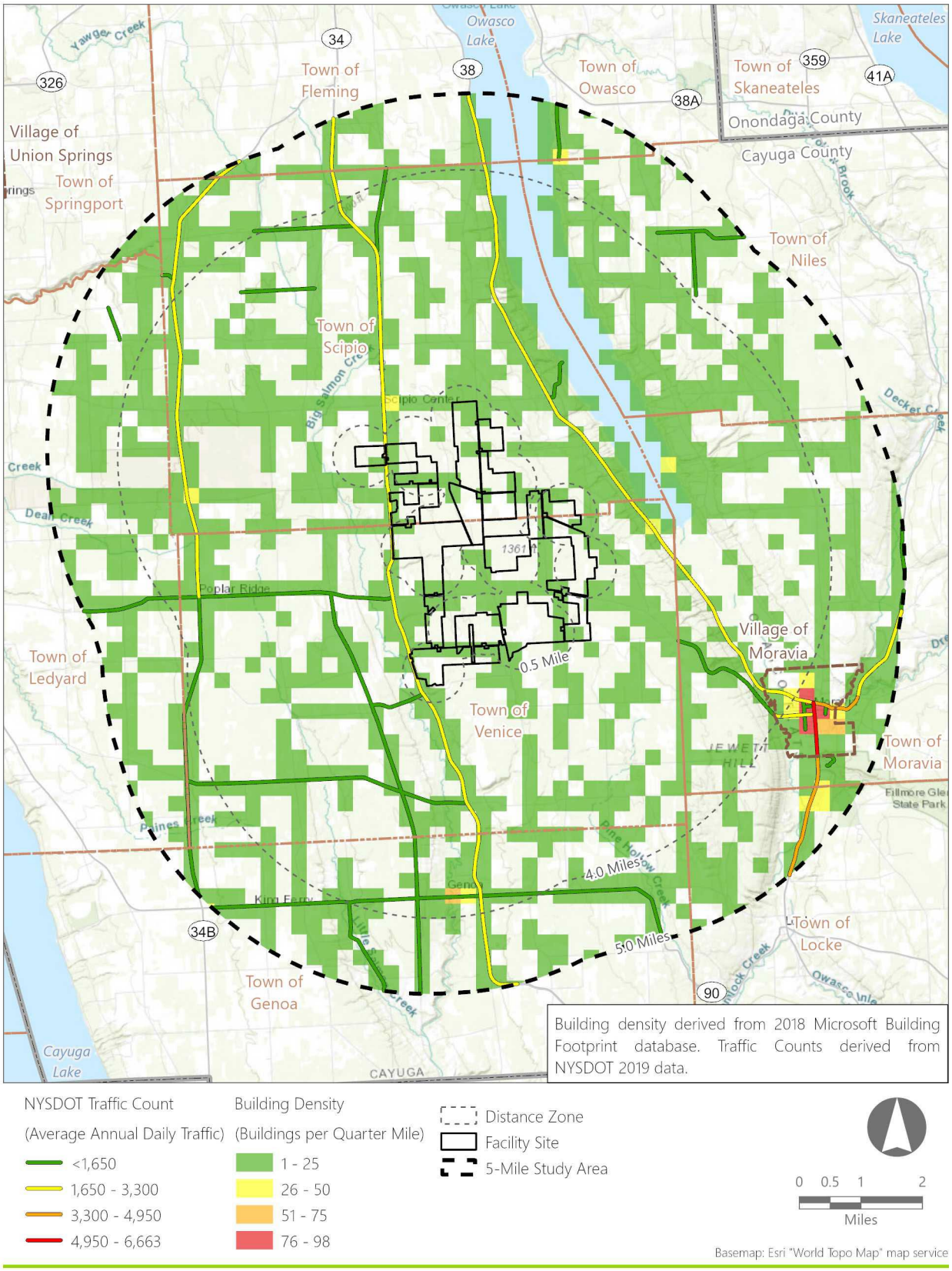
[2] Based upon New York State Department of Transportation 2019 traffic count data for segments of these roadways that fall within the VSA.

3.3.3 Tourists/Recreational Users

Tourists and recreational users include residents as well as out-of-town visitors involved in recreational activities at locations such as the Owasco Lake, Owasco Flats Nature Preserve, Fillmore Glen State Park, and, to a lesser extent, undeveloped natural portions of the VSA. These individuals will generally view the landscape from specific recreational or tourist sites within the VSA. This group includes hikers, bicyclists, boaters, and those involved in more passive recreational activities such as swimming, fishing, 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 primarily from publicly accessible recreation areas and tourist destinations, which are identified as VSRs (Section 3.5). Visitor count information published by New York State Office for Parks, Recreation and Historic Preservation (NYSOPRHP, 2024) suggests that Fillmore Glen State Park (VSR ID # 33), which is located in the southeastern portion of the VSA, receives significant visitation (104,083 visitors in 2023). Visitor count information for other VSRs is not readily available through publicly accessible data sources. However, parks, trails, Owasco Lake, and resources that accommodate recreational activities are assumed to receive the highest visitation. Tourists and recreational users may also occasionally visit other VSRs in the study area, such as rural cemeteries or private historic homes. Visitation at these sites would likely be significantly lower due to limited or lack of accessibility to the public or recreational amenities. To a lesser extent, tourists also include sight-seers driving in vehicles whose primary purpose is enjoying scenery in the Finger Lakes region rather than traveling to a single destination. Sight-seers will generally driving along heavily travelled roadways in the VSA as identified in Table 3.3-1.

Figure 3.3-1. Viewer Exposure



3.4 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
- Owasco Flats
- Owasco Lake
- Village
- Hamlet

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 Village LSZ was classified using the village layer within the New York State Civil Boundaries Dataset (NYSITS, 2022).
- The Hamlet LSZ was classified using hamlets within the New York State Place Points data (NYSITS, 2020), Cayuga County Parcel Data (Cayuga County Real, 2024), and aerial imagery.
- The Owasco Lake LSZ was classified using the boundary of Owasco Lake in the United States Geological Survey (USGS) National Hydrography Dataset (USGS, 2020). The lake boundary was then buffered 150 feet to include surrounding shoreline areas where open water views would be possible.
- The Owasco Flats LSZ was classified using elevation data to roughly match the boundary of the flats as described and depicted in the Owasco Flats Conservation Planning and Stakeholder Survey Project (Whitmore, 2007).
- The Forest LSZ was classified using the digital surface model and digital elevation model (described in Section 4.1) to identify large, contiguous areas of trees. Areas of less than 5 acres were then removed to exclude small woodlots and hedgerows that lack the visual characteristics of densely forested areas.

- Finally, the Agricultural/Rural Residential LSZ is comprised of all remaining land area. These areas are mostly comprised of Grassland/Herbaceous, Pasture/Hay, Scrub/Shrub, or Cultivated Crop cover types as identified in the USGS National Land Cover Database (USGS, 2021).

The extent of each LSZ within the VSA is summarized in Table 3.4-1 and depicted in Figure 3.4-1. As indicated in this table and figure, Agricultural/Rural Residential is the dominant LSZ within the VSA.

Table 3.4-1. Landscape Similarity Zones

Landscape Similarity Zone	Total Area of LSZ[1] within the VSA (square miles)	Percentage of VSA[2]
Agricultural/Rural Residential	108.6	68.4%
Forest	37.9	23.9%
Owasco Lake	7.2	4.5%
Owasco Flats	2.1	1.3%
Village	1.7	1.1%
Hamlet	1.2	0.8%

[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 158.8 square miles.

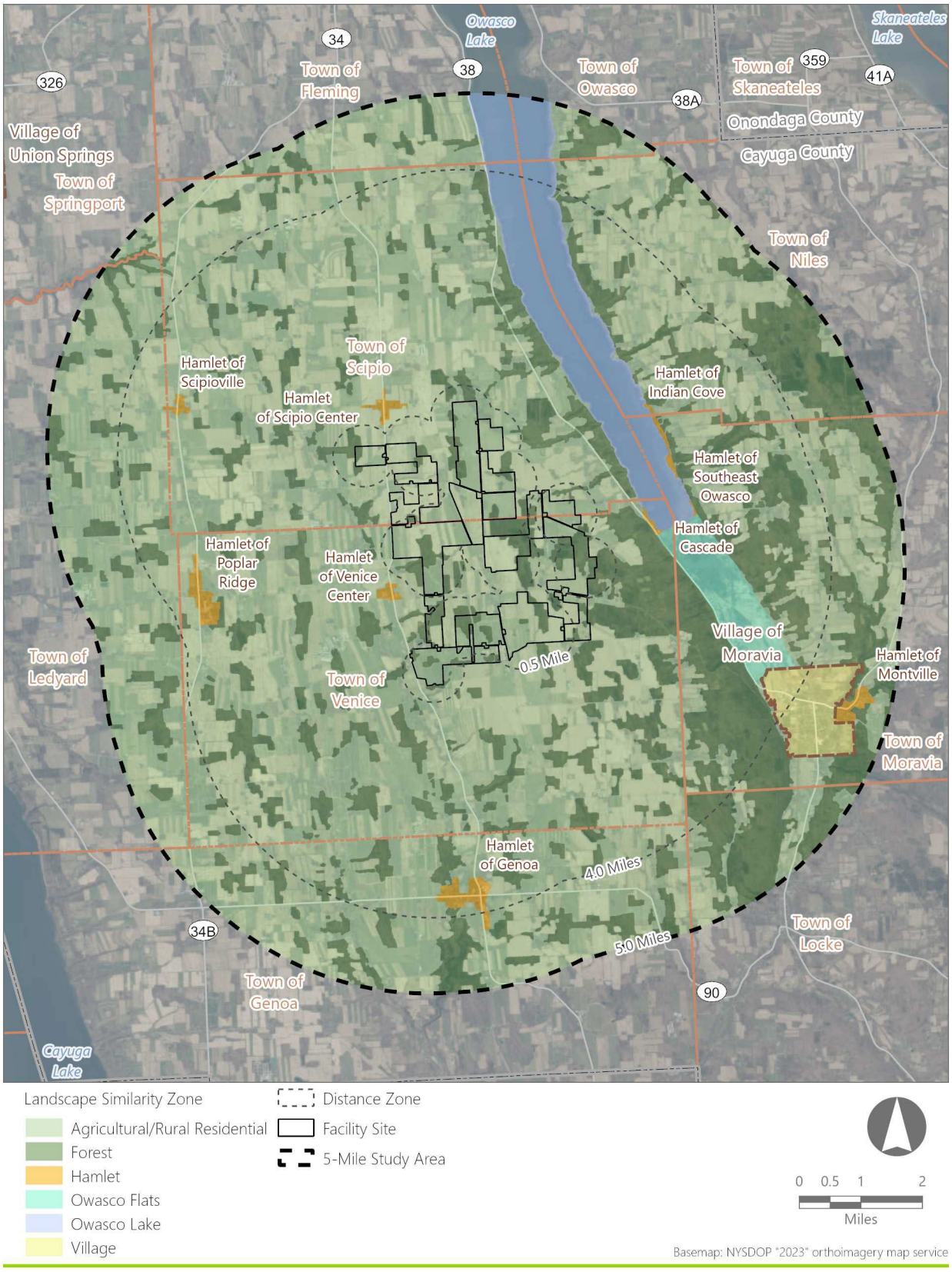
The area of each LSZ falling within the various distance zones in the VSA is summarized in Table 3.4-2. As indicated in this table, the Agricultural/Rural Residential and Forest LSZs are distributed fairly evenly throughout the distance zones. Due to the low density of development near the Facility Site and distance from Owasco Lake, all other LSZs are located entirely within the middle ground and/or background distance zones and comprise only a small portion of those zones. Descriptions of the visual characteristics of each LSZ, along with representative photographs, are provided in Sections 3.4.1 through 3.4.6.

Table 3.4-2. Distance Zones by Landscape Similarity Zone

Landscape Similarity Zone	Total Area[1] (square miles) and Percentage of LSZ in each Distance Zone		
	Foreground (0–0.5 mile)	Middle Ground (0.5 mile-4.0 miles)	Background (4.0 + miles)
Agricultural/Rural Residential	9.2 (78.0%)	63.9 (67.8%)	35.5 (67.2%)
Forest	2.5 (21.2%)	21.3 (22.6%)	14.1 (26.7%)
Owasco Lake	0.0 (0.0%)	5.6 (5.9%)	1.6 (3.0%)
Owasco Flats	0.0 (0.0%)	2.1 (2.2%)	0.0 (0.0%)
Village	0.0 (0.0%)	0.4 (0.4%)	1.4 (2.7%)
Hamlet	0.0 (0.0%)	1.0 (1.1%)	0.2 (0.4%)
Total Distance Zone Area within VSA	**11.8**	**94.2**	**52.8**

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

Figure 3.4-1. Landscape Similarity Zones



3.4.1 Agricultural/Rural Residential

Figure 3.4-2. Representative Photographs of the Agricultural/Rural Residential Landscape Similarity Zone

Top Left: View from State Route 34 in the Town of Venice, Viewpoint 5. Top Right: View from Center Road in the Town of Genoa, Viewpoint 81. Bottom Left: View from State Route 34 in the Town of Scipio, Viewpoint 97. Bottom Right: View from Long Hill Road in the Town of Venice, Viewpoint 104.

The Agricultural/Rural Residential LSZ covers approximately 68.4% of the VSA and is primarily comprised of broad areas of agricultural land on rolling terrain mixed with farm complexes and low-density residential development. A variety of rural buildings and structures occur along the roadsides throughout this LSZ, often in small clusters surrounded by maintained yards. Building styles range from single-family homes to large farm complexes with farmhouses, garages, barns, and silos. From elevated viewing positions, expansive, and at times panoramic, open views are available from many areas within this LSZ. These views typically include open agricultural fields in the foreground backed or bordered by trees and distant hills. However, hedgerows, woodlots, adjacent forested areas, and roadside vegetation or structures often frame or limit views in a particular direction. Viewer/user groups within this LSZ are primarily local residents. However, through-travelers are also likely to be present in this LSZ on state highways that cut through this zone.

3.4.2 Forest


Figure 3.4-3. Representative Photographs of the Forest Landscape Similarity Zone

Left: View from Fillmore Glen State Park in the Town of Moravia. Right: View from Quarry Road in the Town of Moravia.

The Forest LSZ covers approximately 23.9% of the VSA and is characterized by large, contiguous areas of mixed deciduous and coniferous tree species interspersed with residential development along roadways. While this zone occurs throughout the VSA, larger areas of contiguous forest occur in the eastern portion of the VSA on the hillsides surrounding the Owasco Flats and Village of Moravia and in/surrounding the Frozen Ocean State Forest. 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. Vantage points near the forest edge and where terrain is steep may also occasionally offer more long-range, outward views to adjacent hillsides and the surrounding landscape, particularly during leaf-off conditions. Due to the limited extent of publicly accessible forested areas in the VSA, users of this primary LSZ are local residents engaged in various outdoor activities on their properties or through driving through wooded areas on local roadways and state highways (particularly, State Route 38, which cuts through a heavily wooded portion of the VSA). To a lesser extent, recreational users may also be present in the publicly accessible recreational resources that are heavily forested, which include Fillmore Glen State Park (VSR ID # 33), Frozen Ocean State Forest (VSR ID # 35), the Weedsport Winter Wanderers Snowmobile Trail (VSR ID # 40), and the Great Gully Preserve (VSR ID # 44).

3.4.3 Owasco Lake


Figure 3.4-4. Representative Photographs of the Owasco Lake Landscape Similarity Zone

Left: View from Owasco Lake in the Town of Niles, Viewpoint 84. Right: View from Owasco Lake in the Town of Niles, Viewpoint 87.

The Owasco Lake LSZ covers approximately 4.5% of the VSA and is characterized by broad expanses of water that provide open views of the surrounding landscape. This zone angle southeast through the eastern portion of the VSA, and includes Owasco Lake, the sixth largest of the 11 Finger Lakes, and the surrounding shoreline. Land adjacent to the lake mostly includes seasonal and year-round residential development clustered along the shoreline. Some commercial and recreational land uses, such as marinas, private campgrounds, and nature preserves, are also present in this zone. Views from the water surface and from adjacent shoreline vantage points typically include open water in the foreground backed by a steep wooded shoreline with residences and associated structures along the water's edge. Due to the orientation of the lake, expansive views that feature distant hills are often available in views to the north and south. Because the majority of shoreline areas are private land, use of these areas will be largely limited to local residents (full-time and seasonal) who own property within this zone. However, tourists renting properties along the shoreline or enjoying recreational opportunities on the lake itself are also important viewers in this LSZ. Tourist/recreational use in this LSZ include water-based recreational activities such as boating, fishing, and swimming, as well as sight-seeing and other more passive recreational activities from shoreline areas. Publicly accessible recreational areas in this zone include Owasco Bluffs Nature Preserve (VSR ID # 45) and Owasco Flats Nature Preserve (VSR ID # 46). However, boaters may also access the lake from more distant public access points outside of the VSA, such as Emerson and Island Parks in the Town of Owasco.

3.4.4 Owasco Flats

Figure 3.4-5. Representative Photographs of the Owasco Flats Landscape Similarity Zone

Left: View from Rockefeller Road in the Town of Moravia, Viewpoint 108. Right: View of the Owasco Inlet from the Owasco Flats Nature Preserve in the Town of Moravia.

The Owasco Flats LSZ covers approximately 1.3% of the VSA and consist of a broad, flat floodplain located at the southern end of the Owasco Lake. This zone is characterized by a patchwork of swamps, emergent marsh, cropland, fallow fields, and rural residential development in a valley setting. In addition, rural residential development along State Route 38 and Rockefeller Road is also present. The Owasco Inlet, which is Owasco Lake's largest tributary, meanders through the flats and empties into the lake at the northern end of the zone. The flats provide habitat for diverse wildlife species, host a variety of ecological communities, and the expansive wetlands play an important role in the hydrology of the surrounding area (Whitmore, 2007). Views available in this zone will typically include a fairly open foreground of shrubby vegetation backed by steep hillsides. However, views from more heavily forested areas will include substantial foreground screening and/or be tightly enclosed by trees or other vegetation. Viewer/users primarily include local residents who reside within this zone and tourists/recreational users engaged in outdoor activities, such as birdwatching, kayaking, and hiking, in the Owasco Flats Nature Preserve (VSR ID # 46). To a lesser extent, through-travelers may also be present along State Route 38.

3.4.5 Village

Figure 3.4-6. Representative Photographs of the Village Landscape Similarity Zone

Left: Views from South Main Street in the Village of Moravia. Right: View from Walnut Street in the Village of Moravia.

The Village LSZ covers approximately 1.1% of the VSA and includes the Village of Moravia. This zone is characterized by moderate to high density residential and commercial development, and public open space situated along 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 North Main Street and State Routes 38 and 38A. The character of buildings and structures in the village center are highly variable in design, age, and condition, but are typically one to three stories tall and, in combination with other man-made features, are the dominant character defining features in this zone. Outside of the village center, residential development is characterized by neighborhoods of homes with landscaped yards closely fronting on local roadways. Due to the density of buildings and their organization along streets, views within this LSZ are generally short-range and include buildings, streetscape features, residences, and street trees or yard vegetation. However, open street corridors and the edges of this zone where there is often less dense development, offer more unobstructed outward views to the surrounding landscape. Viewer/users are primarily local residents and through-travelers who are driving along state highways that cut through this zone.

3.4.6 Hamlet

Figure 3.4-7. Representative Photographs of the Hamlet Landscape Similarity Zone

Left: View from State Route 34 in the Hamlet of Hamlet of Scipio Center, Town of Scipio, Viewpoint 1. Right: View from Poplar Ridge Road in the Hamlet of Poplar Ridge, Town of Venice, Viewpoint 102.

The Hamlet LSZ covers approximately 0.8% of the VSA and reflects a traditional development pattern of the 19th and early 20th century that is characterized by a small cluster of residential development often associated with the intersection of two or more county or state highways. Hamlets within the VSA include Cascade, Genoa, Indian Cove, Montville, Poplar Ridge, Scipio Center, Scipioville, Southeast Owasco, and Venice Center. These hamlets often include small-scale commercial or municipal resources of importance to the local community, such as post offices, town halls, churches, gas stations, farm-product sales, or restaurants. However, the dominant land use is residential, with a mix of small lot agriculture. In general, residential lots are larger than those found in the Village LSZ, yet smaller than those within the Agricultural/Rural Residential or Forest LSZs. Views are typically short-range and feature residences and associated yard vegetation backed by trees and other vegetation. More open, outward views are occasionally available when adjacent to agricultural lands near the perimeter of the hamlets or in areas with fewer trees, buildings, and other screening features. Open views are also occasionally available down roadway corridors, but such views are typically tightly framed by street trees or buildings. Open views across Owasco Lake are also available from shoreline locations in the Hamlets of Indian Cove, Southeast Owasco, and Cascade. User groups of this LSZ are primarily local residents and through-travelers driving on state highways.

3.5 Visually Sensitive Resources

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 review of local and regional planning documents, publicly available geospatial databases, and the results of the Historic Architectural Resources Survey[1] resulted in the identification of 198 VSRs within the VSA. A complete listing of the resources used in the identification of VSRs is included in the References section of this report (Section 7.0). In addition, 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 of the proposed Facility per the requirements set forth in Article VIII. Three responses were received from municipal planning representatives that included recommendations for the locations of photosimulations. These responses resulted in the identification of two additional resources (a total of 200 VSRs): Ensenore Park (VSR ID # 199) located in the Town of Scipio, which was added to the local parks and recreation category, and the Venice Baptist Church (VSR ID # 200) located in the Town of Venice, which was added to the resources identified during stakeholder outreach category.

A detailed summary of the actions taken in response to outreach, copies of correspondence sent by EDR and the Applicant as part of this outreach process, and the responses received from municipal planning representatives are included as Attachment F.

The categories of resources considered in this study and number of resources identified in each category are summarized in Table 3.5-1. A list of all VSRs identified within the VSA with additional location information and identification numbers is included in Attachment C. The location of these resources is illustrated in Figure 3.5-1 and in greater detail in the viewshed map included as Attachment A.

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: 154**
National Historic Landmarks (NHL)	1
National or State Historic Sites	None identified
Properties/Districts Listed on National or State Registers of Historic Places (S/NRHP)	23
Resources Eligible for Listing on S/NRHP	130
Designated Scenic Resources	**Total: 8**
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
Sites, Areas, Lakes, Reservoirs or Highways Designated or Eligible for Designation as Scenic	1
Scenic Areas of Statewide Significance	None identified
Other Designated Scenic Resources	7
Public Lands and Recreational Resources	**Total: 20**

[1] S/NRHP-Eligible resources are derived from the Historic Resources Survey Report (EDR, 2024) and subsequent New York State Office of Parks, Recreation, and Historic Preservation (NYSHPO) determination. For additional information on S/NRHP-eligible resources, see Exhibit 9 of the Article VIII Application.

Visually Sensitive Resources	Number of Resources within each VSR category
National Parks, Recreation Areas, Seashores, and/or Forests	None identified
National Natural Landmarks	None identified
National Wildlife Refuges	None identified
Heritage Areas (formerly Urban Cultural Parks)	1
State Parks	1
State Nature and Historic Preserve Areas	None identified
State Forest Preserve Land	None identified
Other State Lands	None identified
State Wildlife Management Areas and Game Refuges	1
State Forests	1
State Fishing/Waterway Access Sites	1
State and Federal Trails	None identified
Snowmobile/ATV Trails	4
Bike Trails/Routes	None identified
Other Trails	None identified
Palisades Park (Palisades Interstate Park Commission)	Not Applicable
Local Parks and Recreation Areas	4
Publicly Accessible Conservation Lands/Easements	3
Rivers and Streams with Public Fishing Rights Easements	3
Named Lakes, Ponds, and Reservoirs	1
High-Use Public Areas	**Total: 17**
State, US, and Interstate Highways	4
Schools	3
Cities and Villages	1
Hamlets	9
Indigenous Nation Lands	**None identified**
Resources Identified during Stakeholder Outreach	**1**
Total Number of VSRs in the VSA	**Total: 200**

Figure 3.5-1. Visually Sensitive Resources

3.5.1 Significant Visual Resources Beyond the Visual Study Area

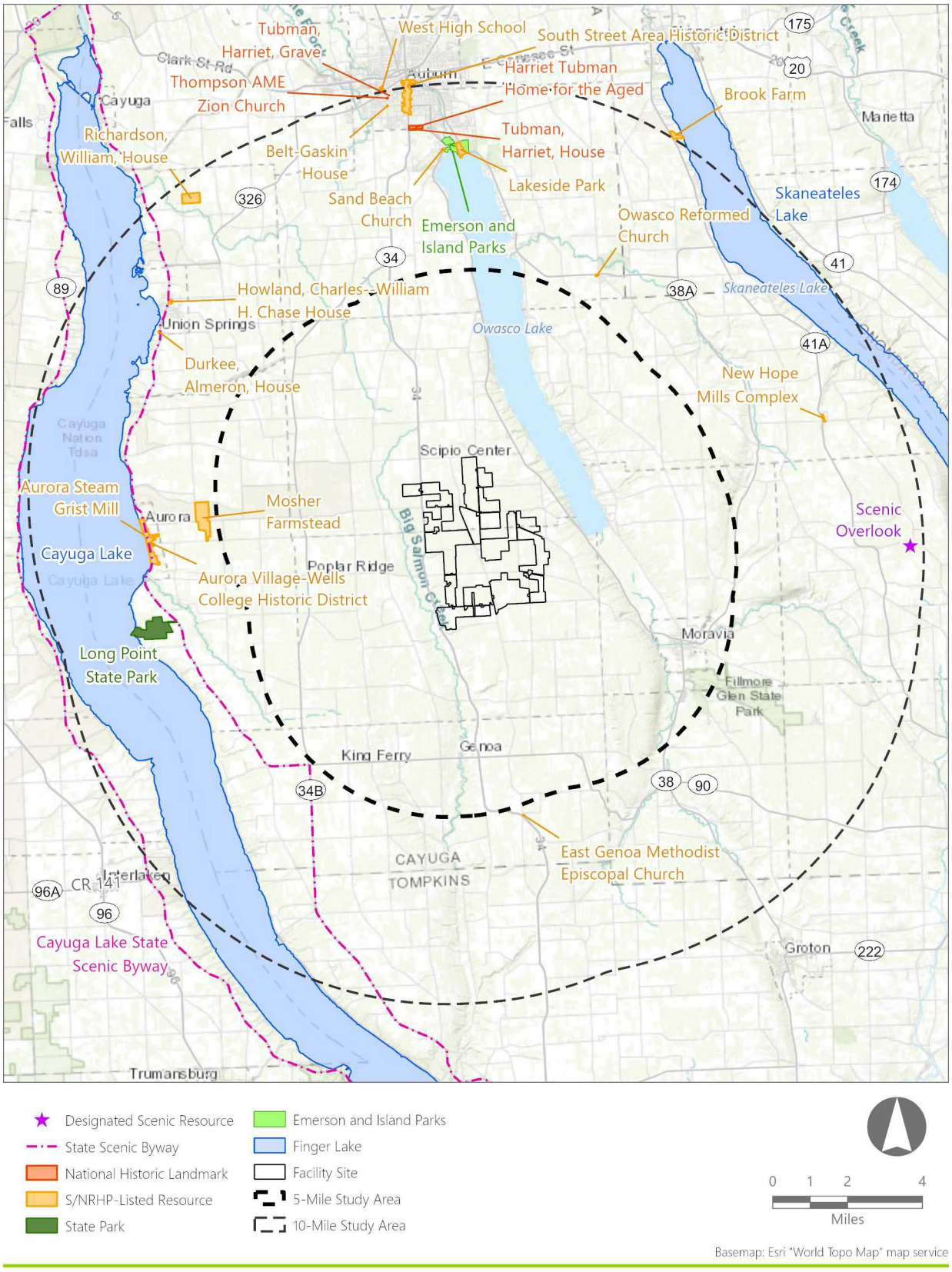
Article VIII regulations require that potential Facility visibility be considered "*from specific significant visual resources beyond the specified study area.*" As described in Section 3.1, a 10-mile radius study area was defined to identify significant visual resources located outside the 5-mile VSA. The criteria used to identify significant visual resources was based on the NYSDEC definition of aesthetic resources of statewide significance (NYSDEC, 2019). 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; and Designated Scenic Areas of Statewide Significance; Sites, Areas, Lakes, Reservoirs or Highways Designated or Eligible for Designation as Scenic. In addition, Emerson and Island Parks, located on the shoreline of Lake Owasco, and two Finger Lakes were identified as potential significant visual resources.

Based on EDR's review, the following 26 significant visual resources are located within 10 miles of the Facility Site:

- Four National Historic Landmarks: Harriet Tubman Home for the Aged; Tubman, Harriet, House; Thompson AME Zion Church; and Tubman, Harriet, Grave.
- Fifteen S/NRHP-listed Resources: Aurora Steam Grist Mill; Aurora Village-Wells College Historic District; Belt-Gaskin House; Brook Farm; Burkee, Almeron, House; East Genoa Methodist Episcopal Church; Howland, Charles-William H. Chase House; Lakeside Park; Mosher Farmstead; New Hope Mills Complex; Owasco Reformed Church; Richardson, William, House; Snad Beach Church; South Street Area Historic District; West High School.
- One NYSDEC Scenic Overlook.
- One State Park: Long Point State Park.
- One Scenic Byway: Cayuga Lake State Scenic Byway.
- Two Finger Lakes: Cayuga and Skaneateles.
- Two Local Parks: Island and Emerson Parks.

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 VIA methodologies used in this study are consistent with the policies, procedures, and guidelines contained in established visual impact assessment methodologies developed by the BLM (1999), USFS (1995), USDOT (1981 and 2015), U.S. Army Corps of Engineers (Smardon, et al., 1988), the NYSDEC (2019), and National Park Service (Sullivan, et al., 2021), and comply with the requirements of Article VIII. 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 wind turbines and other Facility components 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 and significant VSRs beyond 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

Wind Turbine Viewshed Analyses

Two digital surface model (DSM) viewshed analyses were conducted to identify areas where the proposed wind turbines may be visible; a "blade tip" viewshed analysis based on the maximum height of the rotor blade in its most upright position to identify the maximum extent of wind turbine visibility and a FAA light viewshed analysis to identify the maximum extent of nighttime visibility.

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, a DEM viewshed analysis does not accurately represent areas of potential Facility visibility because it does not consider the screening effects of existing vegetation or structures. Therefore, only DSM viewshed analyses, which consider the height and location of all surface features (including ground surface topography, structures, and vegetation), were conducted. The DSM viewshed analyses for the proposed wind turbines were prepared using the following data and parameters:

- A 1-meter resolution DSM derived from Federal Emergency Management Agency (FEMA) lidar[2] datasets for the Seneca Watershed (FEMA, 2012) and New York State (FEMA, 2019), and NYSITS lidar datasets for Cayuga/Oswego Counties (NYSITS, 2018) and Central Finger Lakes (NYSITS, 2020);
- Twenty-four sample points representing the proposed wind turbines;,

[2] 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.

- A maximum blade tip height of 656 feet (200 meters) and a FAA light height of 400.5 feet (122 meters) applied to each of the 24 wind turbine sample points;
- A visibility limit of 15 miles applied to each wind turbine location[3];
- An assumed eye-level viewer height of 6 feet;
- ESRI ArcGIS Pro® software with the Spatial Analyst extension.

To avoid misleading results, some modifications to the DSM were made prior to conducting the viewshed analyses. 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 (such as vegetation and structures) within road and transmission corridors may also eliminate legitimate screening features which occur in these areas. This has the potential to result in an overstatement of wind turbine visibility within and adjacent to road and transmission line corridors. All surface features (vegetation) within the Facility's limit of construction activity were also removed and replaced with bare earth elevation values to account for proposed clearing.

Once the viewshed analyses were complete, wind turbine 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 wind turbines 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, DSM viewshed analysis is the best available representation of potential visibility of the proposed wind turbines. 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 wind turbine 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.

[3] Although wind turbine visibility could extend beyond 15 miles, the turbines would be almost impossible to discern for viewers at these distances, resulting in no visual impact.

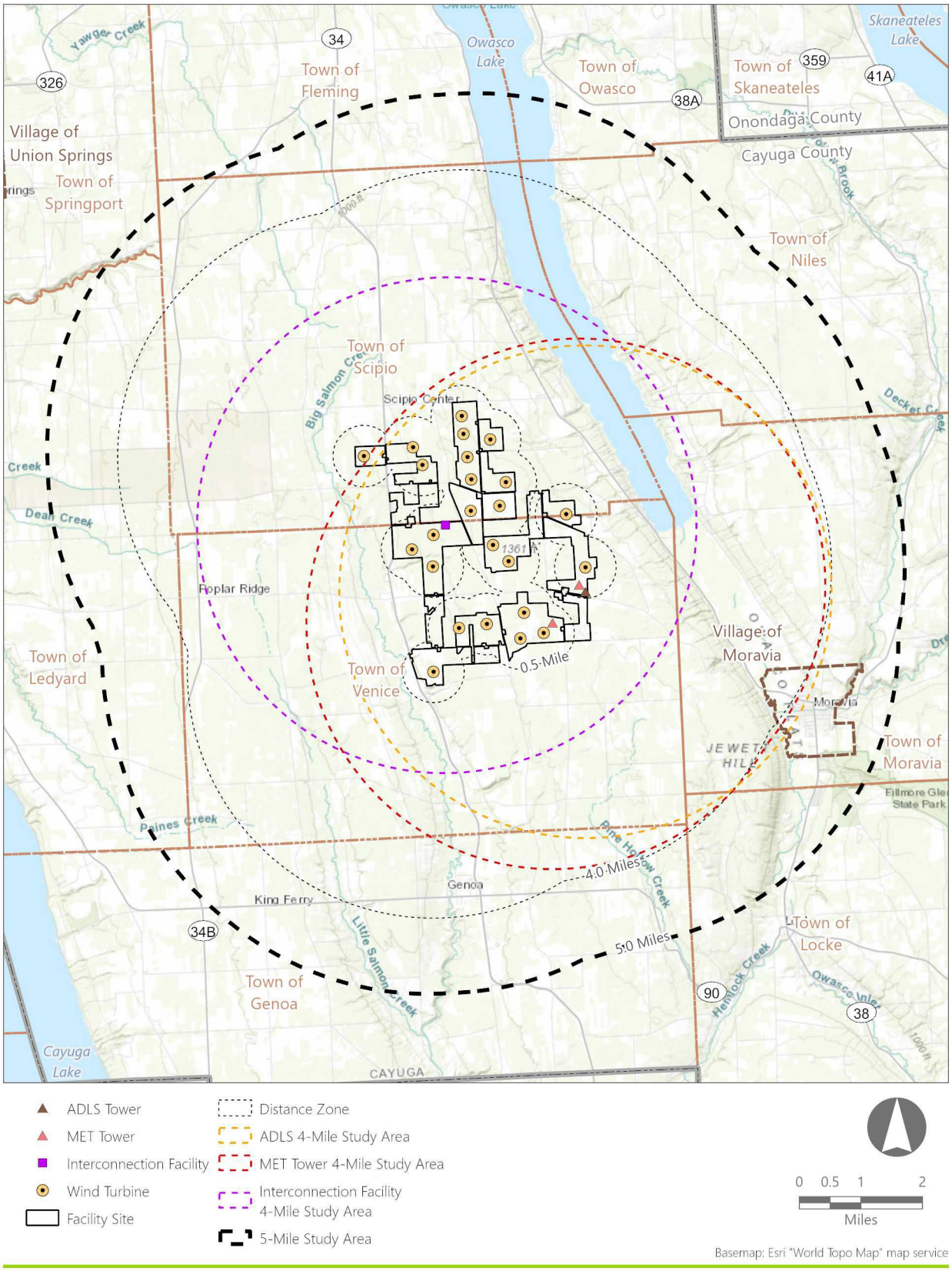
Once the viewshed results were complete, a wind turbine count analysis was performed to determine locations where a high or low number of wind turbines may be visible from locations within the wind turbine viewshed. The results of this analysis were then broken into categories based on the number of wind turbines potentially visible; 1 to 5, 6 to 10, 11 to 15, 16 to 20, and 21 to 24 wind turbines. This analysis provides an indication of the potential visual magnitude of the turbines when considered with other contextual and visibility-related factors, such as distance from viewer, the extent of screening by intervening vegetation and topography, existing scenic quality and viewer expectations.

An additional viewshed-based analysis was conducted to identify specific turbines that may be visible from each VSR within the wind turbine viewshed. To accomplish this, the viewshed analysis results for each individual turbine were used to calculate the distance from the turbine to the nearest portion of the VSR where visibility could occur, thereby providing a count of all turbines that could be visible from each resource and which distance zone (foreground, middle ground, background) potential views could occur. This information is presented in Attachment C and considered in the discussion of potential effects on VSRs (Section 5.2.2).

Ancillary Facility Component Viewshed Analyses

Additional DSM viewshed analyses were conducted to identify areas where the interconnection facility (collection substation, POI switchyard, and transmission line), MET towers, and ADLS tower may be visible. These viewshed analyses were prepared using 20 sample points representing the tallest components of the interconnection facility (the gantry structures, shielding masts, and transmission poles, with assigned heights ranging from 55 to 67 feet as described in Section 2.2.4), two sample point representing the MET towers (assigned heights of 381 feet), and one sample point representing the ADLS tower (assigned a height of 145 feet). Due to the narrow profile and/or low height of these Facility components, 4-mile radius study areas (which corresponds to the extent of the middle ground distance zone defined in this VIA) were defined for each of these viewshed analyses (Figure 4.1-1). All other data sources and assumptions used in these viewshed analyses are as described above for the wind turbine viewshed analysis.

Figure 4.1-1. Ancillary Facility Component Viewshed Analysis Study Areas



4.1.2 Line-of-Sight Cross Section Analysis

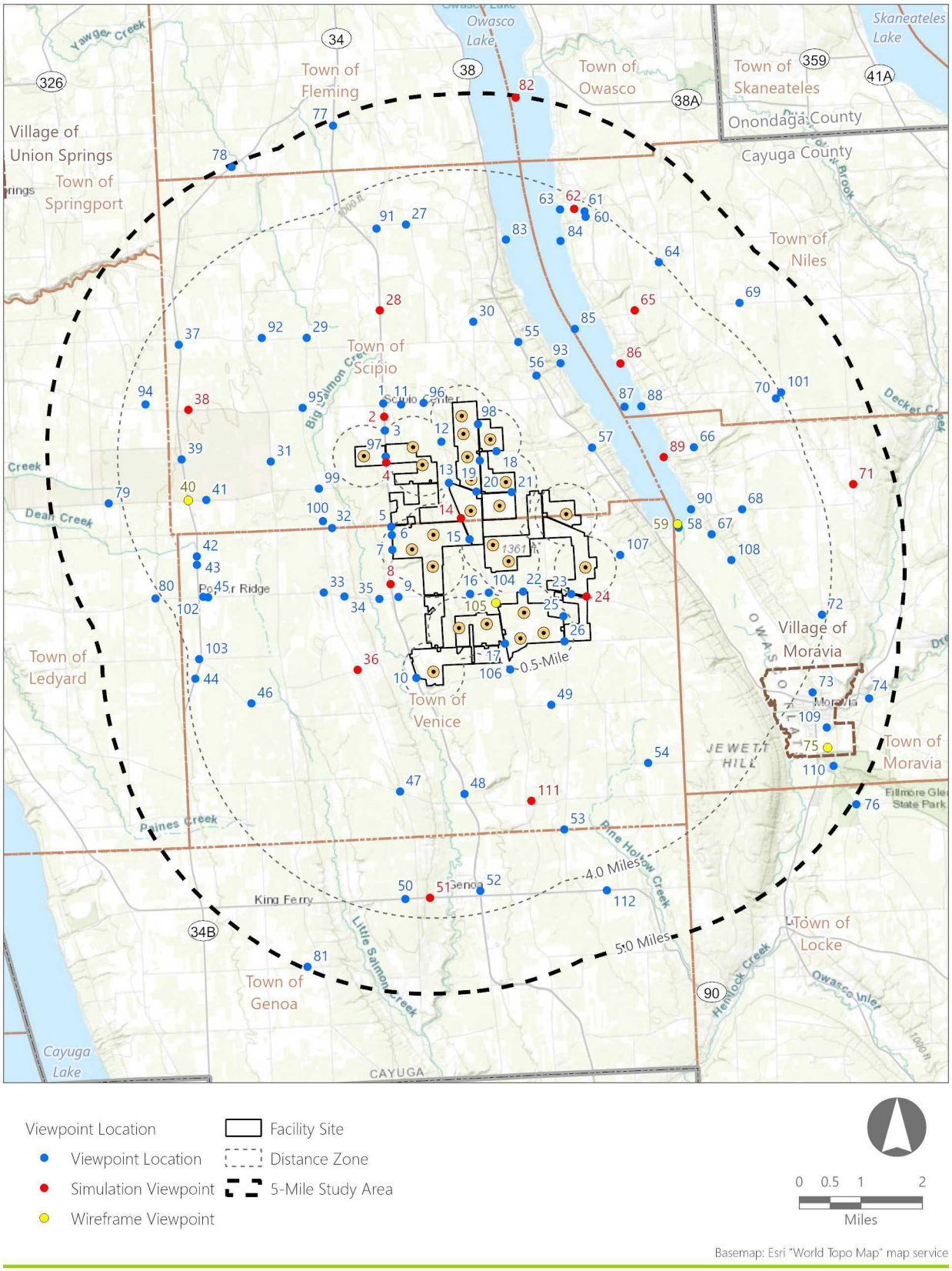
Per the requirements set forth in of Article VIII, cross sections were prepared for all VSRs with potential wind turbine visibility to illustrate the degree of visibility and sources of screening likely to occur along a single line-of-sight "cut" through the landscape. To prepare the line-of-sight cross sections, the blade tip viewshed analysis results were used to determine the nearest visible turbine and the location within the VSR where this visibility could occur. Next, a cross-section line was drawn from the location of potential visibility to the nearest turbine. GIS software was used to sample elevations from the DSM and DEM along the entire cross section. The results, which include a bare earth profile line based on the DEM, a separate profile line with vegetation and structures based on the DSM, and a line-of-sight demonstrating the extent of visibility, were then prepared as a single graphic. The line-of-sight cross sections, along with additional VSR location and Facility visibility information, are included in Attachment C and discussed in Section 5.2.2.

4.1.3 Field Review

EDR personnel conducted field review within the VSA and surrounding area on March 12, May 16, and August 14, 2024. 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 visual character and representative views 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 within or 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 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.

Field review resulted in documentation of potential Facility visibility from 112 representative viewpoints within the VSA and one viewpoint outside of the study area (Viewpoint 113). 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 resolution of 30 megapixels. Single-frame photographs included in the photolog and used for photosimulations were obtained with a lens setting (focal length) of 50 millimeters (mm) 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. The location of viewpoints documented during field review are illustrated in Figure 4.1-2 and overlaid over the viewshed analysis results and VSR locations in Attachment A. Representative photographs from each viewpoint are included in Attachment B. The photographs for each viewpoint include a panorama composition illustrating the view context and single-frame photographs illustrating the most open, unobstructed view available toward the proposed Facility.

Figure 4.1-2. Viewpoint Locations



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 E. Visual impact assessment procedures are summarized in subsections 4.2.1 and 4.2.3, below.

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*."[4] As discussed in Section 3.5, in addition to consultation with the required agencies, municipal representatives and other 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 review, along with agency/stakeholder input, a total of 18 views from 17 viewpoints were ultimately selected for the development of photosimulations (two separate views were selected from Viewpoint 14). Views from these locations were selected based upon one or more of the following criteria:

- They provide open views of the wind turbines or ancillary Facility components (the interconnection facility, ADLS tower, or MET towers).
- They illustrate different amounts of wind turbine visibility from a variety of viewing distances and geographic locations to represent the range of visual change that will occur within the VSA 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, such as densely populated areas, more highly trafficked roadways, or high-use recreation areas, for viewer/user groups where open views will be available, and
    - Locations recommended by state agencies, municipal representatives, and/or local stakeholders.

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

- 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.

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 includes figures with the selected viewpoint locations overlaid with the viewshed results, LSZs, and VSRs.

It is worth noting that 11 of the 17 selected viewpoints occur within the Agricultural/Rural Residential LSZ and 14 of the 18 viewpoints occur within the agriculture future land use area or areas without zoning ordinances. This reflects the abundance of agricultural areas within the VSA and the geographic distribution of potential visibility open views toward the Facility Site, 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 more limited. Six of the viewpoints are representative of views available to through-travelers, 10 are representative of views from locations that are likely to receive some level of visitation from tourists/recreational users, and two of the viewpoints are located within areas likely to receive a high degree of residential viewer exposure. The distribution of selected viewpoints 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, and through-travelers are generally not included in the Facility viewshed or the Facility components were determined to be substantially screened from view (and therefore wireframe renderings were prepared, as described in Section 4.2.2). This is demonstrated in Figure 4.2-1, which includes the viewshed analysis results overlaid with the viewpoint locations where photosimulations or wireframe renderings were prepared, building density analysis, and traffic count results.

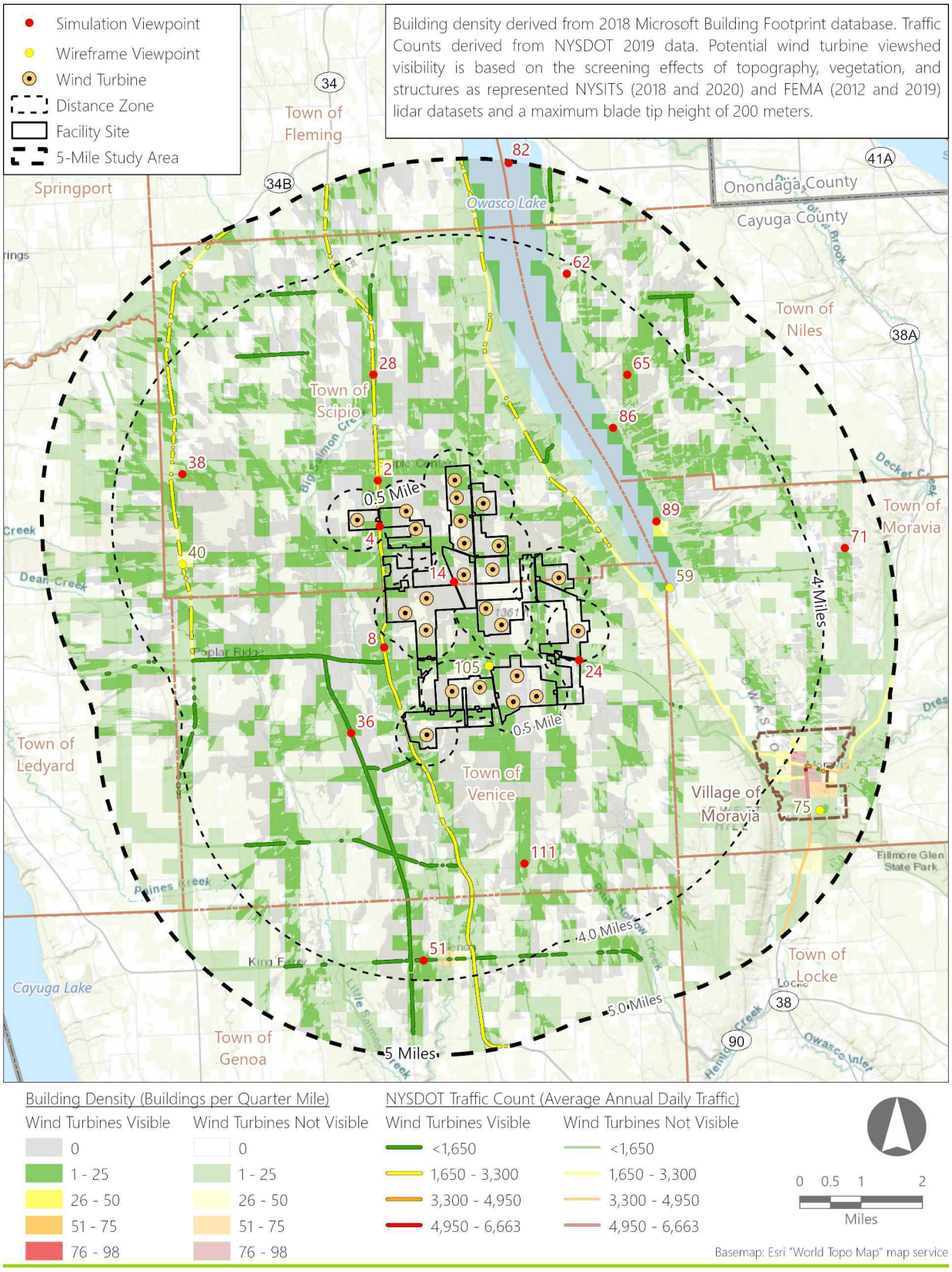
Table 4.2-1. Viewpoints Selected for Photosimulation

Viewpoint Number	Location and/or VSR(s) Represented	Municipality	Distance Zone Represented in View	Landscape Similarity Zone	Future Land Use	Viewer/User Group Represented	View Orientation[1]
VP 2	**State Route 34** VSR ID # 51 – NYS Route 34 VSR ID # 64 – Hamlet of Scipio Center	Town of Scipio	Middle ground	Hamlet	Hamlet District	Local Residents, Through-Travelers, Tourists/Recreational Users	E to S
VP 4	**State Route 34** VSR ID # 37 – Finger lakes Trailblazers Snowmobile Trail VSR ID # 51 – NYS Route 34	Town of Scipio	Foreground	Agricultural/Rural Residential	Agricultural/ Residential	Local Residents, Through-Travelers, Tourists/Recreational Users	NE to SE
VP 8	**State Route 34** VSR ID # 51 – NYS Route 34 VSR ID # 67 – Hamlet of Venice Center VSR ID # 191 – Venice Center Pavilion	Town of Venice	Middle ground	Hamlet	No Zoning Ordinance	Local Residents, Through-Travelers, Tourists/Recreational Users	N-NW to E-NE
VP 14A	**Burns Road** No VSRs Identified	Town of Scipio	Foreground	Agricultural/ Rural Residential	Agricultural/ Residential	Local Residents	N to E-NE
VP 14B	**Burns Road** No VSRs Identified	Town of Scipio	Foreground	Agricultural/ Rural Residential	Agricultural/ Residential	Local Residents	SW
VP 24	**Long Hill Road** No VSRs Identified	Town of Venice	Foreground	Agricultural/ Rural Residential	No Zoning Ordinance	Local Residents,	W to N
VP 28	**State Route 34** VSR ID # 51 – NYS Route 34	Town of Scipio	Middle ground	Agricultural/ Rural Residential	Agricultural/ Residential	Local Residents, Through-Travelers, Tourists/Recreational Users	SE to S-SW
VP 36	**Indian Field Road** VSR ID # 38 – Finger Lakes Trailrunners Snowmobile Trail	Town of Venice	Middle ground	Agricultural/ Rural Residential	No Zoning Ordinance	Local Residents, Tourists/Recreational Users	N to E
VP 38	**Center Road** VSR ID # 65 – Hamlet of Scipioville	Town of Scipio	Middle ground	Hamlet	Hamlet District	Local Residents	E
VP 51	**State Route 90** VSR ID # 24 – Scenic Route 90 State Scenic Byway VSR ID # 32 – Erie Canalway National Heritage Corridor	Town of Genoa	Middle ground	Agricultural/ Rural Residential	No Zoning Ordinance	Local Residents, Through-Travelers Tourists/Recreational Users	NE
VP 62	**Owasco Bluffs Nature Preserve** VSR ID # 45 – Owasco Bluffs Nature Preserve	Town of Niles	Middle ground	Agricultural/ Rural Residential	No Zoning Ordinance	Local Residents, Tourists/Recreational Users	S-SW

Viewpoint Number	Location and/or VSR(s) Represented	Municipality	Distance Zone Represented in View	Landscape Similarity Zone	Future Land Use	Viewer/User Group Represented	View Orientation[1]
VP 65	**Rockefeller Road** None Identified	Town of Niles	Middle ground	Agricultural/ Rural Residential	No Zoning Ordinance	Local Residents	S to W-SW
VP 71	**Jugg Street** VSR ID # 114 – Hall Cemetery	Town of Moravia	Background	Agricultural/ Rural Residential	Agricultural	Local Residents	W
VP 82	**Owasco Lake** VSR ID # 50 – Owasco Lake	Town of Owasco	Background	Owasco Lake	Lakeshore	Local Residents, Tourists/Recreational Users	S
VP 86	**Owasco Lake** VSR ID # 50 – Owasco Lake	Town of Niles	Middle ground	Owasco Lake	No Zoning Ordinance	Local Residents, Tourists/Recreational Users	S to W
VP 89	**Owasco Lake** VSR ID # 50 – Owasco Lake	Town of Moravia	Middle ground	Owasco Lake	Agricultural	Local Residents, Tourists/Recreational Users	W
VP 111	**East Venice Cemetery** VSR ID # 94 – East Venice Cemetery	Town of Venice	Middle ground	Agricultural/ Rural Residential	No Zoning Ordinance	Local Residents	N
VP 113	**Island Park** VSR ID # 50 – Owasco Lake	Town of Owasco	Background	Owasco Lake	Not Identified[2]	Local Residents, Tourists/Recreational Users	S

[1] N = North, S = South, E = East, W = West.
[2] This viewpoint is outside of the 5-mile VSA and, therefore, future land use is not identified.

Figure 4.2-1. Viewer Exposure and Wind Turbine 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 18 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 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 wind turbines) 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 wind turbines, MET towers, ADLS tower, substations, transmission structure and conductors, 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 wind turbines were oriented directly south (in the direction of prevailing wind) and the rotors were assigned different rotation angles so they do not appear uniform and unrealistic in the simulations. 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 limits 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.

"Wireframe" Renderings

During the viewpoint selection process, a total of 21 viewpoints were identified as candidates for the development of photosimulations. However, Facility components were determined to be substantially screened from view from four of the viewpoints. For these viewpoints (Viewpoint 40 from the Intersection of State Route 34B and Sherwood Road in the Town of Scipio, Viewpoint 59 from the Owasco Flats Nature Preserve in the Town of Moravia, Viewpoint 75 from the Moravia Central School in the Village of Moravia, and Viewpoint 105 from Stewarts Corner Road in the Town of Venice), wireframe renderings were prepared to illustrate the degree of screening provided by existing landscape features. In these wireframe renderings, the 3D computer model of the proposed Facility components (shown in bright green for illustrative purposes) is overlaid on top of the photograph(s) that are oriented toward the proposed Facility. Wireframe renderings are included in Attachment D.

Figure 4.2-2. Photosimulation Methodology

1 | PHOTO SELECTION

Photographs are selected to represent views of the proposed Facility that will be available to representative viewer/user groups from landscape similarity zones and visually sensitive resources within the visual study area.

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 3D 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 AND PHOTO EDITING

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. The 3D model of the Facility is 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 photographs of the 18 selected existing views. These "before" and "after" photograph(s), 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 primary compositional elements that define landscape character. Form refers to the mass or 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. Lines are usually evident at the edges of shapes or masses in the landscape. Color refers to the property of reflecting light and is the major visual property of surfaces. Texture in this context refers to the visual surface characteristics of an object. Although all four elements are present in every landscape, they exert varying degrees of influence. The stronger the influence exerted by these elements, the more visual variety there will be in a landscape, which will generally result in a higher degree of scenic quality. However, variety without order (particularly in terms of cultural modifications) can result in visual clutter and may detract from the quality of a view. The extent to which form, line, color, and texture of the introduced Facility are similar to, or contrast with, these same elements in the existing landscape is a primary determinant of visual contrast.
- *Landscape Features*: To properly assess the contrast between an existing and proposed view in terms of form, line, color, and texture, it is necessary to break down the landscape into basic features. This study identifies six different landscape features: landform, vegetation, land use, water, sky, and viewer activity.
- *Order*: Natural landscapes have an underlying order determined by natural processes, and cultural landscapes exhibit order by displaying traditional or logical patterns of land use and development. The introduction of unrelated built elements that are inconsistent with the traditional development pattern of a cultural landscape or the natural order of a natural landscape can create visual contrast with existing landscape features and adversely impact visual character and scenic quality. When a new object is introduced to the landscape, intactness and order are maintained through the repetition of the forms, lines, colors, and textures that exist in the surrounding built or natural environment.
- *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. To the extent possible, the proposed Facility should not obscure or compete with important existing scenic focal points in the landscape.
- *Landscape Composition*: Composition is the arrangement of objects and voids in the landscape that can be categorized by their spatial arrangement. Different landscape compositions are described below. Some landscape compositions, especially those that are distinctly focal, enclosed, or feature-oriented, are more vulnerable to modifications than others, depending on how strongly the spatial configuration draws the eye to certain locations.

- *Panoramic*: A broad, horizontal composition that may include open agricultural fields, expanses of open water, and distant hills or mountain ranges.
- *Feature*: A composition dominated by a distinct object or cluster of objects, such as a waterfall, prominent landform, or cluster of buildings.
- *Focal*: A composition where the converging lines in a landscape or a progression of aligned objects focus viewer attention and lead the eye to a specific area in the view.
- *Enclosed*: A view within or at the edge of a forest, where branches and foliage around the viewer frame the view and result in a sense of enclosure. Enclosed views also can occur in the built environment, such as a view between buildings or down a narrow road corridor.

- *Atmospheric Conditions*: Clouds, precipitation, haze, and other ambient air-related conditions can affect the visibility of an object or objects in the landscape. These conditions can temporarily impact the visibility and contrast of Facility components with features of the landscape in terms of their form, line, color, and texture.
- *Project Scale*: The apparent size of the Facility in relation to its surroundings can define the compatibility of its scale within the existing landscape. Perception of Facility 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.
- *Lighting Direction*: Lighting direction will affect the perceived color of the Facility's components and their visibility and contrast with the existing landscape.
  - *Back lighting*: The light source comes from behind a viewed object. The visible face of the object is generally in shadow and dark edges are highlighted.
  - *Front lighting*: The light source comes from in front of a viewed object, resulting in full illumination and color clarity with little shadow effect.
  - *Side lighting*: The light source comes from one side of a viewed object, resulting in a mix of indirect illuminated surfaces and more subtle shadows. This lighting condition is generally considered most effective for evaluating visual contrast.
- *Movement*: Movement of wind turbine blades can attract and hold viewer attention, particularly in static landscapes (Sullivan, 2021). However, this movement may also be preferred to static or non-functioning wind turbines and may, in some cases, contribute to the visual appeal of wind turbines (Vissering, 2002).
- *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.

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 E for a copy of the instructions and rating forms):

- General information for the VSA:
    - LSZ and viewer/user group descriptions, and
    - A Google Earth File (KMZ) that included the VSA boundary, the location of simulated viewpoints, and Facility components.
- Specific information for each viewpoint (Attachment D):
    - Viewpoint location,
    - Panorama composition showing views adjacent to the simulated view,
    - Direction of view and field of view of simulated photograph(s),
    - Location of Facility components,
    - Distance from the viewpoint to the nearest wind turbine visible in view,
    - Applicable LSZ, viewer/user groups, and VSRs, and
    - Single-frame viewpoint photographs and panorama compositions illustrating the existing view and proposed view (photosimulations).

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. Provisions identified in the Local Law 2 of 2024, Wind Energy Facilities Law of the Town of Venice and the Town of Scipio Zoning Ordinance, as amended by Local Law No. 1 of 2024 that relate to the assessment of visual impacts and apply to the Facility are discussed below.

> *"A visual impact study assessing the visibility of the project from key viewpoints relative to such project, existing tree lines, and proposed elevations. This study shall be digitally enhanced to simulate the appearance of the as-built project as such completed project would appear from distances specified by the Town Board within a five (5) mile radius of the location of such project, or any portion thereof. Additional pictures from specific locations may be required by the Town Board, and all such pictures shall be in color and no smaller than 8" x 10"* **– Section Six – Applications for Wind Energy Conversion Systems Special Use Permits; Town of Venice**

As described in Section 4.2, to evaluate anticipated visual change associated with the proposed Facility, photosimulations of the operational Facility were compared to photographs of the 18 selected existing views by a panel of visual professionals. 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. Wireframes renderings for viewpoints meeting a majority of the viewpoint selection criteria but located where turbines were determined to be substantially screened from view, are also provided in Attachment D. As described in Section 4.2.1, Field review resulted in documentation of potential Facility visibility from 113 representative viewpoints. The location of viewpoints documented during field

review are illustrated in Figure 4.1-2 and overlaid over the viewshed analysis results and VSR locations in Attachment A. Representative photographs from each viewpoint are included in Attachment B. The photographs for each viewpoint include a panorama composition illustrating the view context and single-frame photographs illustrating the most open, unobstructed view available toward the proposed Facility.

> *"The Applicant shall provide a shadow flicker and blade glint study for the area within the boundaries of the parcel upon which the project, or any portion thereof, is to be sited and for any additional area located within a radius of one mile beyond the boundaries of each wind turbine. Such information shall include a shadow flicker zone map and documentation of the non-reflective coating for the blades. Accompanying such information shall be the proposed schedule with which the non-reflective coating for the blades shall be reapplied as based on the manufacturer's suggested life of the coating product. The study will:*
>
> *a. designate and describe the zones within the project where shadow flicker and/or blade glint is likely to affect existing residential structures, roadways and other similar areas of public or private use. The study shall represent the most probable scenarios of wind constancy, sunshine constancy, and wind direction and speed;*
>
> *b. Identify the most likely locations of shadow flicker and blade glint, estimate the expected duration of such shadow flicker and blade glint at these locations per day, and calculate the potential total number of hours per year at each location such shadow flickers and blade glint may occur; (iii) Identify potential problem zones where shadow flicker and blade glint may interfere with existing residences and roadways, and describe proposed measures to mitigate these problems- including but not limited to a change in siting of the unit, a change in operation of the unit, or grading or landscaping mitigation measures; and (iv) Provide tax identification numbers for all properties within the potential shadow flicker and blade glint zones."* **– Section Six – Applications for Wind Energy Conversion Systems Special Use Permits; Town of Venice**
>
> *"Shadow Flicker/Glint. The Wind Energy Conversion System shall be designed such that shadow flicker and / or glint from an individual Wind Energy Conversion Unit will not fall on any portion of a non-participating residential or commercial structure in excess of thirty (30) hours per year. If a nonparticipating residence or commercial structure is being impacted by multiple Wind Energy Conversion Units, the cumulative effect of said impact shall not exceed thirty (30) hours per year, subject to verification using shadow prediction and operational controls at appropriate wind turbines. If shadow flicker and/or glint exceeds these conditions, the applicant/owner/operator of the project must submit within 90 days, a mutually agreeable plan to remedy the issue to the affected property owner and Town Board."* **– Section Eight – Standards; Town of Venice**
>
> *"Waiver. In the event the noise levels resulting from a WECS exceed the criteria established for participating properties in this Local Law, shadow flicker, or glint or set back requirements are not met for participating properties, a waiver may be granted from such requirements*

where the property adjacent to that hosting the Wind Energy Conversion Unit is also part of the WECS site due to hosting a Wind Energy Conversion Unit or other ancillary components. **– Section Nine – Noise and Setback Easements - Variances; Town of Venice**

"Written consent from the affected property owners shall be obtained stating that they are aware of the WECS and the noise, shadow flicker, glint and/or setback limitations imposed by this law, and that they wish to be a part of the Site as defined herein, and that consent is granted to (1) allow noise, shadow flicker, or glint levels to exceed the maximum limits otherwise allowed, or (2) allow distance setbacks less than required." **– Section Nine – Noise and Setback Easements - Variances; Town of Venice**

A shadow flicker analysis, including a full year of hourly potential receptor-specific predicted shadow flicker based on sunshine probabilities, site-specific wind speed and direction data, and Facility design, is included as Attachment A of the VIMMP (Appendix 8-B of the Article VIII application). As discussed in the VIMMP, shadow flicker analysis report, and Exhibit 24 of the Article VIII application, the Applicant intends to implement curtailment measures and/or execute good neighbor agreements with the owners of any nonparticipating residences that could receive over 30 hours of shadow flicker per year to ensure compliance with the Article VIII regulations.

The design, dimensions, and materials of the visible operational components of the proposed Facility evaluated in this VIA are described in Section 2.2. Additional information regarding Facility component material specifications is included in Exhibit 5 of the Article VIII application.

"Proposed mitigation measures for visual impacts of any and all components, structures, and materials related to the Wind Energy Conversion Project including, but not limited to Wind Energy Conversion Units, substation(s), meteorological (MET) towers, battery storage facilities, support structures and access roads" **– Section Six – Applications for Wind Energy Conversion Systems Special Use Permits; Town of Venice**

"Wherever agricultural uses and other uses unrelated to the agricultural operations abut, the Applicant for the nonagricultural use shall provide buffers to reduce the exposure of these abutting uses to odors, noise, and other potential activities that some might find objectionable associated with the agricultural operation. Such buffers may consist of vegetative screening, woodlands, vegetated berms, fences, or natural topographic features, at the discretion of the reviewing board." **– Article VII Section 7.05 – Protection of Agriculture; Town of Scipio**

"The visual appearance of Wind Energy Facilities shall at a minimum: (1) Be a non-obtrusive color such as white, off-white or gray; (2) Not be artificially lighted, except to the extent required by the Federal Aviation Administration or other applicable authority that regulates air safety; and, (3) Not display advertising (including flags, streamers or decorative items), except for identification of the turbine manufacturer. Facility Owner and Operator. **- Article XI Section 11.07 – Installation and Design; Town of Scipio**

Visual impact minimization and mitigation measures proposed or considered for the Facility, including options such as relocation, use of alternative technology, non-specular materials, signage, and landscape screening, are discussed in the VIMMP (Exhibit 8-B of the Article VIII application).

> *"Accessory Structures/Facilities. Transmission facilities and/or buildings shall be located along roadways, below ridgelines or behind vegetation to screen such facilities and/or buildings from visibility. If such a facility or building is to be located in or along the side of an open field, the facility or building shall be landscaped in such a way as to blend such facility or building in with the surrounding environment. This landscaping shall be reviewed and approved to the complete satisfaction of the Town Board."* **– Section Eight – Standards; Town of Venice**

Potential visibility and visual impacts of the proposed interconnection facility are evaluated through viewshed analysis, field review, and photosimulation visual contrast evaluation as part of this VIA and described in Sections 4.1 and 4.2.

> *"The Town finds that large and highly visible parking areas represent one of the most objectionable aspects of commercial development. Such parking lots damage the historic layout and architectural fabric of Hamlet areas, harm the natural environment and visual character of the community, interfere with pedestrian safety and accessibility, and reduce the quality of life in developed areas. However, the Town also recognizes that inadequate parking can diminish quality of life by creating traffic congestion, safety hazards, and inconvenience. The Town therefore seeks to balance the need for adequate parking with the need to minimize harm resulting from the provision of parking and to avoid the negative impacts of excessive parking lot construction."*

The only proposed permanent parking Facility is located within the O&M facility, as described in Section 2.2.5 and in the design drawings in Appendix 5-A of the Article VIII application. The visibility and appearance of the O&M facility is illustrated in the photosimulation prepared for Viewpoint 14B (Attachment D). Temporary visual impacts associated with construction activity, including parking at staging areas, are discussed in Section 5.2.4.

5.0 VISUAL IMPACT ASSESSMENT RESULTS

5.1 Facility Visibility

An analysis of Facility visibility was undertaken to identify locations within the VSA where there is potential for the proposed Facility 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, field verification, and line-of-sight cross section analysis.

5.1.1 Wind Turbine Viewshed Analysis Results

The wind turbine "blade tip" DSM viewshed analysis based on the maximum height of the rotor blade in its most upright position was used to determine the maximum extent of potential wind turbine visibility. This viewshed analysis indicates that one or more wind turbines could potentially be visible from approximately 40.2% (63.8 square miles) of the VSA (i.e., the wind turbines would be entirely screened from approximately 59.8% [94.9 square miles) of the VSA). The extent of wind turbine visibility is due to the height of the turbines and the abundance of open, relatively flat agricultural land and open water that occur throughout the study area. As indicated in Figure 5.1-1 and Attachment A, potential visibility is concentrated to agricultural fields, rural residential areas, and roadway corridors where there is little or no forest vegetation or other obstructions to screen views. Potential wind turbine visibility is more limited from the southeastern portion of the VSA due to the presence of large, contiguous areas of forest and steep hillsides surrounding the Owasco Flats, as well as the southwestern portion of the VSA, where elevations are lower.

It is also worth noting that portions of the wind turbines will be substantially screened from many areas of potential visibility. In some areas, views would be limited to the wind turbine blades which have a narrow profile and are intermittently visible when in rotation. By subtracting the FAA light viewshed analysis (which is representative of the degree of visibility of the wind turbine nacelles due to the similarity in height) from the blade tip viewshed analysis results, the remaining area indicates where the blades (but not the turbine towers or the nacelle) could be visible. This subtraction process indicates that potential wind turbine visibility will be limited to the turbine blades for approximately 10.0% (14.3 square miles) of the VSA (i.e., approximately a quarter of all areas where visibility of the turbines is possible).

As discussed in Section 5.1.3, actual turbine visibility 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. 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).

Wind Turbine Blade Tip Viewshed Results by Landscape Similarity Zone

Potential visibility of the wind turbines within each LSZ is summarized in Table 5.1-2 and illustrated in Figure 5.1-2. The greatest potential for wind turbine visibility in terms of geographic area occurs within the Agricultural/Rural Residential LSZ due to the limited presence of forested areas and other landscape features that serve to screen views in this zone and the abundance of open land within the VSA (this LSZ covers 66.8% [108.6 square miles] of the VSA). The greatest potential for wind turbine visibility in terms of percentage of LSZ area occurs within the Owasco Lake LSZ. Potential wind turbine visibility within the

Hamlet LSZ is concentrated to the Hamlets of Scipio Center and Venice Center due to their proximity to the Facility Site and is more limited from more distant hamlets in the VSA. Potential visibility in this zone mostly occurs on roadway corridors oriented toward the Facility Site and in open areas (such as yards or agricultural fields) near the hamlet outskirts. Potential wind turbine visibility is fairly limited within the Village and Owasco Flats LSZs due to distance from the Facility Site, their valley location, and the density of buildings or contiguous forested areas, respectively, that screen views towards the Facility Site in these zones. Potential for wind turbine visibility is limited within the Forest LSZ and occurs primarily on the edge of forested areas and within the Facility Site where vegetation clearing is proposed in this zone.

Table 5.1-1. Wind Turbine Blade Tip Viewshed Results by Landscape Similarity Zone

Landscape Similarity Zone	Wind Turbine Blade Tip Visibility[1]			
	Total Visibility		Total Screened	
	Square Miles	% of LSZ Area	Square Miles	% of LSZ Area
Agricultural/Rural Residential	56.7	52.2%	51.9	47.8%
Forest	0.3	0.9%	37.6	99.1%
Owasco Lake	6.1	83.7%	1.2	16.3%
Owasco Flats	0.3	13.2%	1.8	86.8%
Village	0.2	9.9%	1.6	90.1%
Hamlet	0.2	20.2%	0.9	79.7%
Total Visibility within the VSA[2]	**63.8**	**40.2% of VSA**	**94.9**	**59.8% 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 158.8 square miles.

Wind Turbine Blade Tip Viewshed Results by Distance Zone

Potential visibility of the wind turbines within each distance zone is summarized in Table 5.1-2 and illustrated in Figure 5.1-1. The greatest potential for wind turbine visibility in terms of percentage of distance zone area is the foreground distance zone (73.8% of this zone). However, approximately half of the wind turbine visibility within this distance zone (i.e., within 0.5 mile of a proposed wind turbine) occurs within the Facility Site itself. When the Facility Site is excluded from the results, the potential for wind turbine visibility within the foreground is reduced from 73.8% (8.7 square miles) to 36.2% (4.2 square miles) of the distance zone area.

Therefore, when on-site visibility is excluded, the foreground distance zone has the least potential visibility of all the zones in terms of geographic area, and a similar amount of visibility in terms of percentage of the distance zone area when compared to the middle ground distance zone (36.2% and 46.4%, respectively). However, the middle ground (i.e., 0.5 mile to 4.0 miles from a proposed wind turbine) covers a much larger area within the VSA, and therefore has a much greater extent of visibility in terms of geographic area (43.7 square miles). The foreground and background distance zones have fairly similar amounts of visibility in

terms of geographic area (8.7 and 11.4 square miles, respectively). However, the background distance zone (i.e., beyond 4.0 miles from a proposed turbine) has the least potential for wind turbine visibility in terms of percentage of distance zone area (21.7% of this zone).

Table 5.1-2. Wind Turbine Blade Tip Viewshed Results by Distance Zone

Distance Zones	Wind Turbine Blade Tip Visibility[1]			
	Total Visibility		Total Screened	
	Square Miles	% of Distance Zone Area	Square Miles	% of Distance Zone Area
Foreground <0.5 Mile	8.7	73.8%	3.1	26.2%
Middle Ground 0.5-4.0 Miles	43.7	46.4%	50.5	53.6%
Background >4.0 Miles	11.4	21.7%	41.4	78.3%
Total Visibility within the VSA[2]	**63.8**	**40.2% of VSA**	**94.9**	**59.8% 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 158.8 square miles.

Wind Turbine Blade Tip Viewshed Results by Count

As described in Section 4.1.1, a wind turbine count analysis was performed to provide specific information on the number of wind turbines that are potentially visible from within the viewshed. Potential visibility of the wind turbines broken into categories based on the number of wind turbines that could be visible is summarized in Table 5.1-3 and illustrated in Figure 5.1-3. This analysis indicates a higher number of wind turbines (greater than 15) would be visible from fairly large, contiguous areas of agricultural land located in the middle ground distance zone west of the Facility Site, in the background distance zone in northeastern portion of VSA, and near the center of the Facility Site itself. However, a lower number of wind turbines would be visible from the majority of the areas with potential visibility (visibility of 15 or fewer wind turbines would be possible from 44.2 square miles, which represents 27.9% of the VSA and 69.7% of areas with potential wind turbine visibility). Areas where lower numbers of wind turbines would be visible occur throughout agricultural lands, but are particularly concentrated to Owasco Lake, where most areas have potential visibility of 15 or less wind turbines, and Owasco Flats within/near the Village of Moravia, where most areas have potential visibility of 10 or less wind turbines.

Table 5.1-3. Wind Turbine Blade Tip Viewshed Results by Count

Number of Turbines Potentially Visible	Wind Turbine Blade Tip Visibility[1]	
	Square Miles	% of VSA
0	94.9	59.8%
1-5	21.4	13.5%
6-10	12.3	7.8%
11-15	10.5	6.6%
16-20	9.4	5.9%
21-24	10.2	6.4%
Total Visibility within the VSA[2]	**63.8**	**40.2% 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 158.8 square miles.

Wind Turbine FAA Light Viewshed Results

The wind turbine "FAA light" DSM viewshed analysis based on the height of FAA lights was used to determine the maximum extent of potential nighttime wind turbine visibility. This viewshed analysis indicates that one or more FAA lights could potentially be visible from approximately 31.2% (49.5 square miles) of the VSA (i.e., the FAA lights would be entirely screened from approximately 68.8% [109.3 square miles) of the VSA). This represents a 10.0% (14.3 square miles) reduction in visibility compared to the blade tip viewshed analysis results. As indicated in Figure 5.1-4, the distribution of potential FAA light visibility throughout the VSA is similar to the blade tip viewshed analysis results. Potential visibility is concentrated in agricultural fields, rural residential areas, along roadway corridors, and on Owasco Lake where there is little or no forest vegetation or other obstructions to screen views. Potential nighttime visibility is more limited in areas of large, contiguous forest and steep hillsides surrounding the Owasco Flats. The most noticeable reduction in potential visibility when compared to the blade tip viewshed occurs in the background distance zone in the northwestern portion of the VSA.

Potential visibility of the FAA lights broken into categories based on the number of wind turbines that could be visible is summarized in Table 5.1-4 and illustrated in Figure 5.1-4. Due to the lower heights of the FAA lights compared to the wind turbine blades, the geographic area where a high number of FAA lights (greater than 15) would potentially be visibility is reduced when compared to the blade tip analysis. Potential visibility of greater than 15 FAA lights would be possible from 9.9 square miles (6.2% of the VSA, 20.0% of areas with potential FAA light visibility), which represents a 9.7 square mile (6.1% of the VSA) reduction. The most noticeable reduction in number of FAA lights visible when compared to the blade analysis occurs on Owasco Lake, where most areas have potential visibility of 10 or less FAA lights.

Table 5.1-4. Wind Turbine FAA Warning Light Viewshed Results by Count

Number of Turbine FAA Lights Potentially Visible	Wind Turbine FAA Light Visibility[1]	
	Square Miles	% of VSA
0	109.3	68.8%
1-5	20.2	12.8%
6-10	10.7	6.7%
11-15	8.6	5.4%
16-20	6.1	3.8%
21-24	3.8	2.4%
Total Visibility within the VSA[2]	**49.5**	**31.2% 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 158.8 square miles.

Figure 5.1-1. Wind Turbine Blade Tip DSM Viewshed Analysis

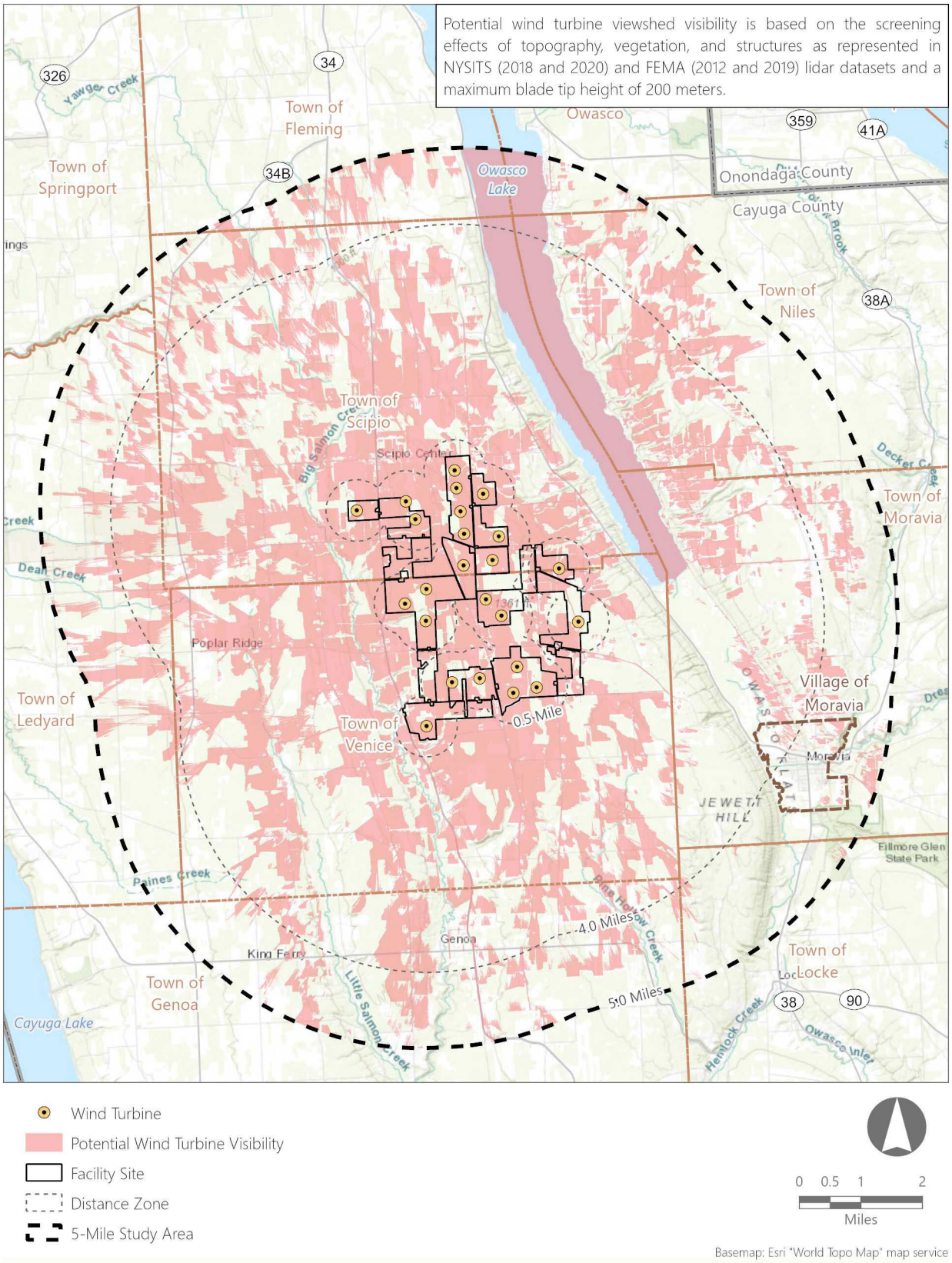


Figure 5.1-2. Wind Turbine Blade Tip DSM Viewshed Analysis and Landscape Similarity Zones

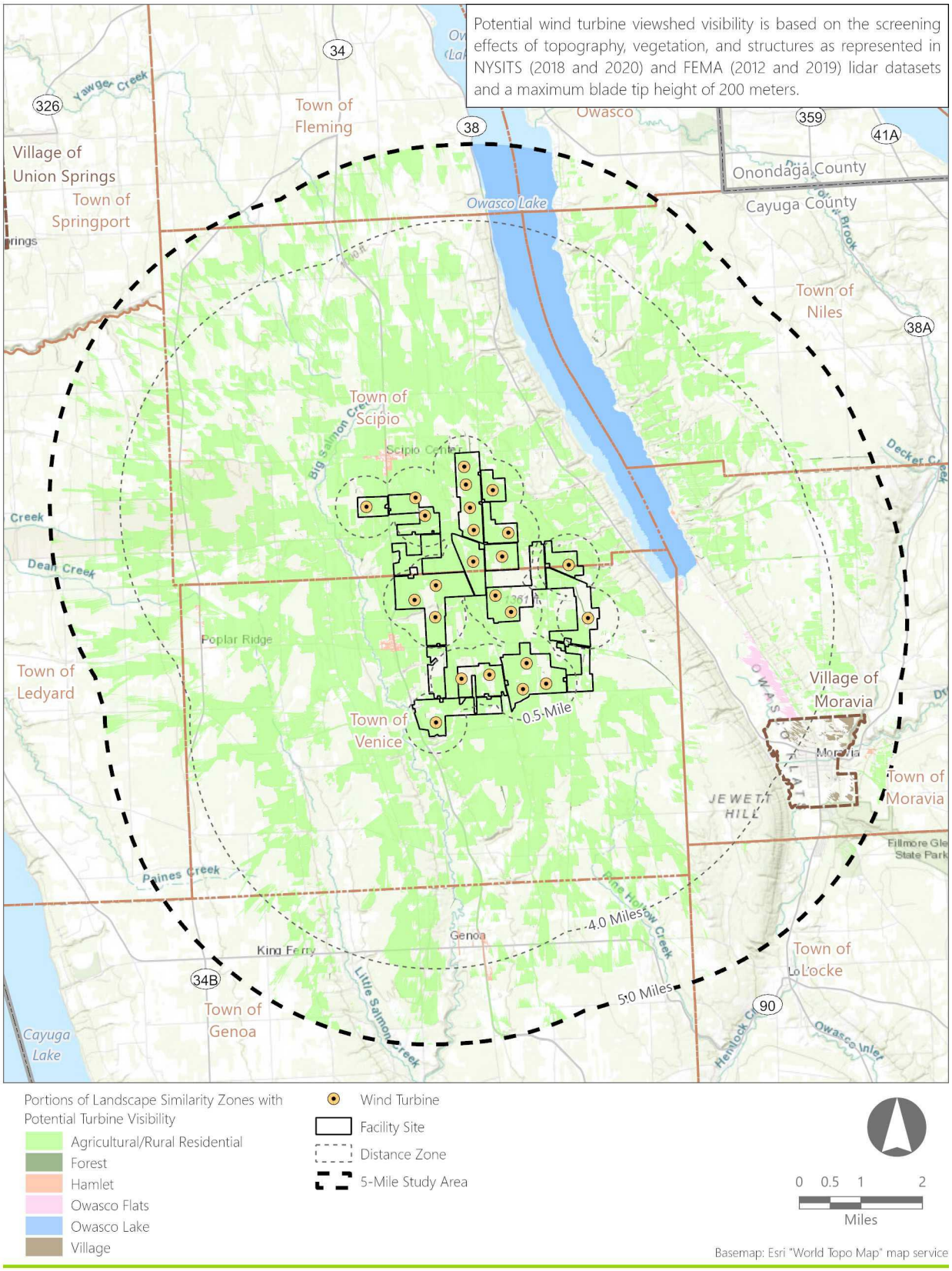


Figure 5.1-3. Wind Turbine Blade Tip DSM Count Viewshed Analysis

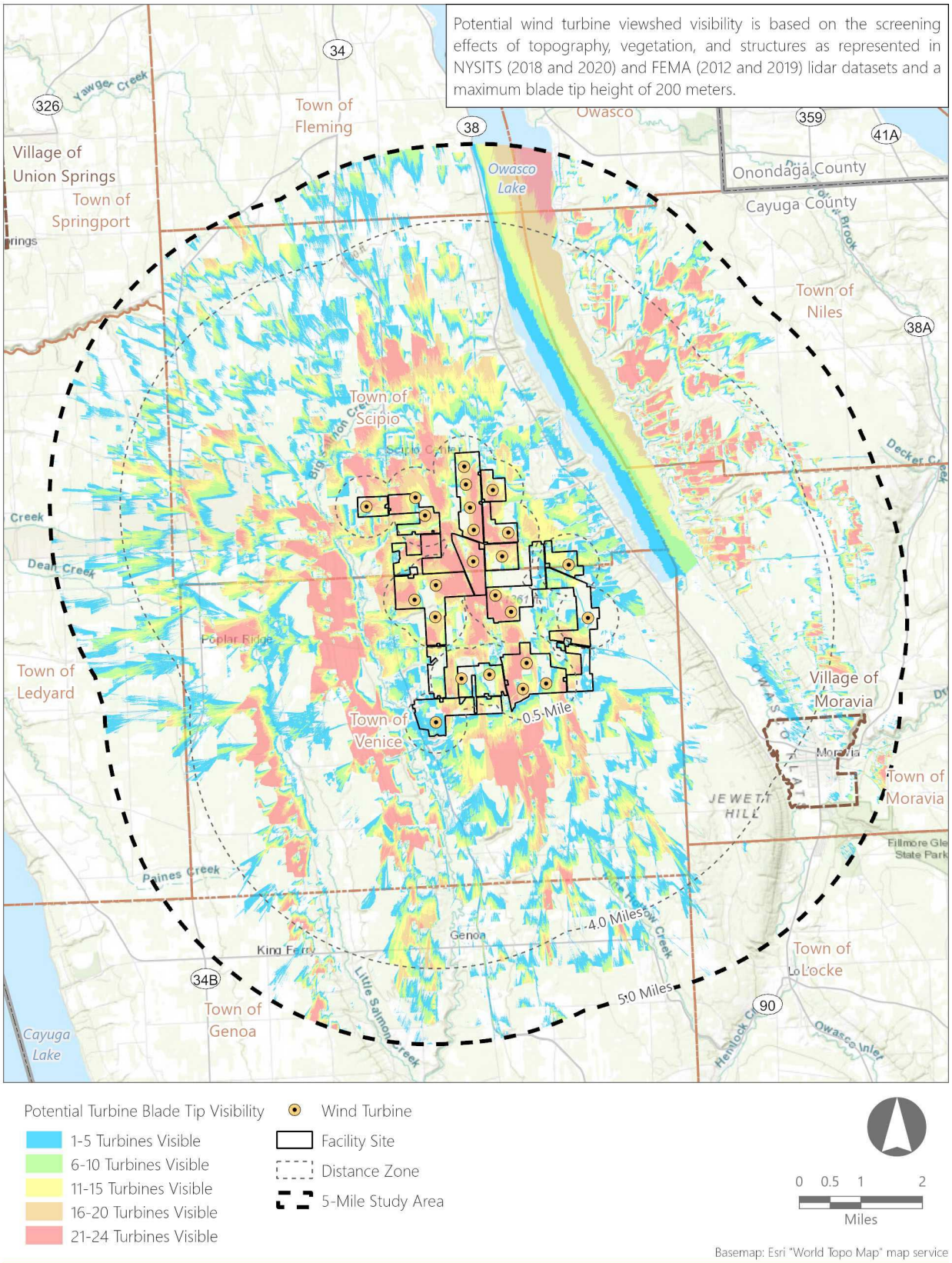
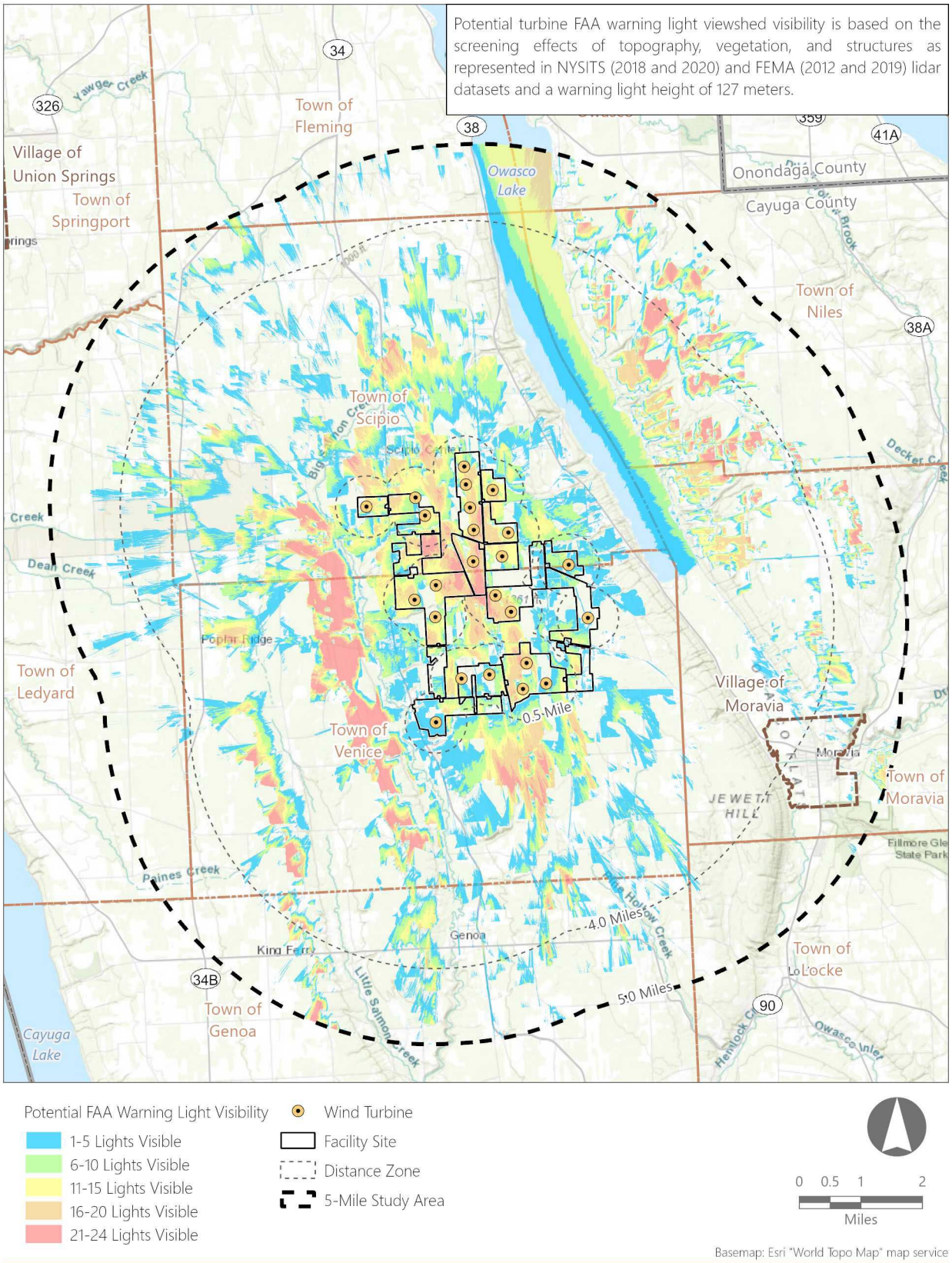


Figure 5.1-4. Wind Turbine FAA Warning Light DSM Viewshed Analysis



5.1.2 Ancillary Facility Component Viewshed Analysis Results

As described in Section 4.1.1, separate DSM viewshed analyses were conducted to determine the geographic extent of visibility of the proposed ADLS tower, MET towers, and interconnection facility within a 4-mile radius study area (which corresponds to the extent of the middle ground distance zone defined in this VIA). As discussed in Section 5.2.2, actual visibility may be more limited than indicated by the viewshed analysis due to viewing distance, screening by intervening vegetation or topography, as well as the narrow profile, neutral color, relatively low height, and/or lattice tower construction of these Facility components. Attachment A includes figures with the ancillary Facility component viewshed analysis results overlaid with viewpoint locations, LSZs, and VSRs.

Interconnection Facility Viewshed Results

Potential visibility of proposed interconnection facility is illustrated in Figure 5.1-5. Viewshed analysis results indicate that some portion of the substation, transmission line, and/or transmission structure could be visible from approximately 7.3% (3.7 square miles) of the 4-mile radius study area (i.e., the interconnection facility would be entirely screened from approximately 92.7% of the study area, which covers 51.5 square miles). The limited extent of interconnection facility visibility is primarily due to the relatively flat terrain and woodlots in the surrounding area. Potential visibility is concentrated in open agricultural land surrounding the facility along Burns Road within approximately 1 mile and in elevated agricultural lands along Indian Field Road approximately 2 miles west of the interconnection facility.

ADLS Tower Viewshed Results

Potential visibility of the proposed ADLS tower is illustrated in Figure 5.1-6. Viewshed analysis results indicate that the ADLS tower could be visible from approximately 2.5% (1.2 square miles) of the 4-mile radius study area (i.e., the ADLS tower would be entirely screened from approximately 97.5% of the study area, which covers 50.3 square miles). The very limited extent of potential visibility is due to the relatively low height of the tower and screening provided by dense forested areas east of the tower. Potential visibility is concentrated in open agricultural lands along Long Hill Road within approximately 1 mile of the tower and elevated agricultural lands in the eastern portion of the study area.

MET Tower Viewshed Results

Potential visibility of the proposed MET towers is illustrated in Figure 5.1-6. Viewshed analysis results indicate that portions of one or both MET towers could be visible from approximately 22.6% (12.7 square miles) of the 4-mile radius study area (i.e., the MET towers would be entirely screened from approximately 77.5% of the study area, which covers 56.3 square miles). Potential MET tower visibility occurs in open agricultural areas scattered throughout the study area and within the eastern portions of Owasco Lake.

Figure 5.1-5. Interconnection Facility DSM Viewshed Analysis

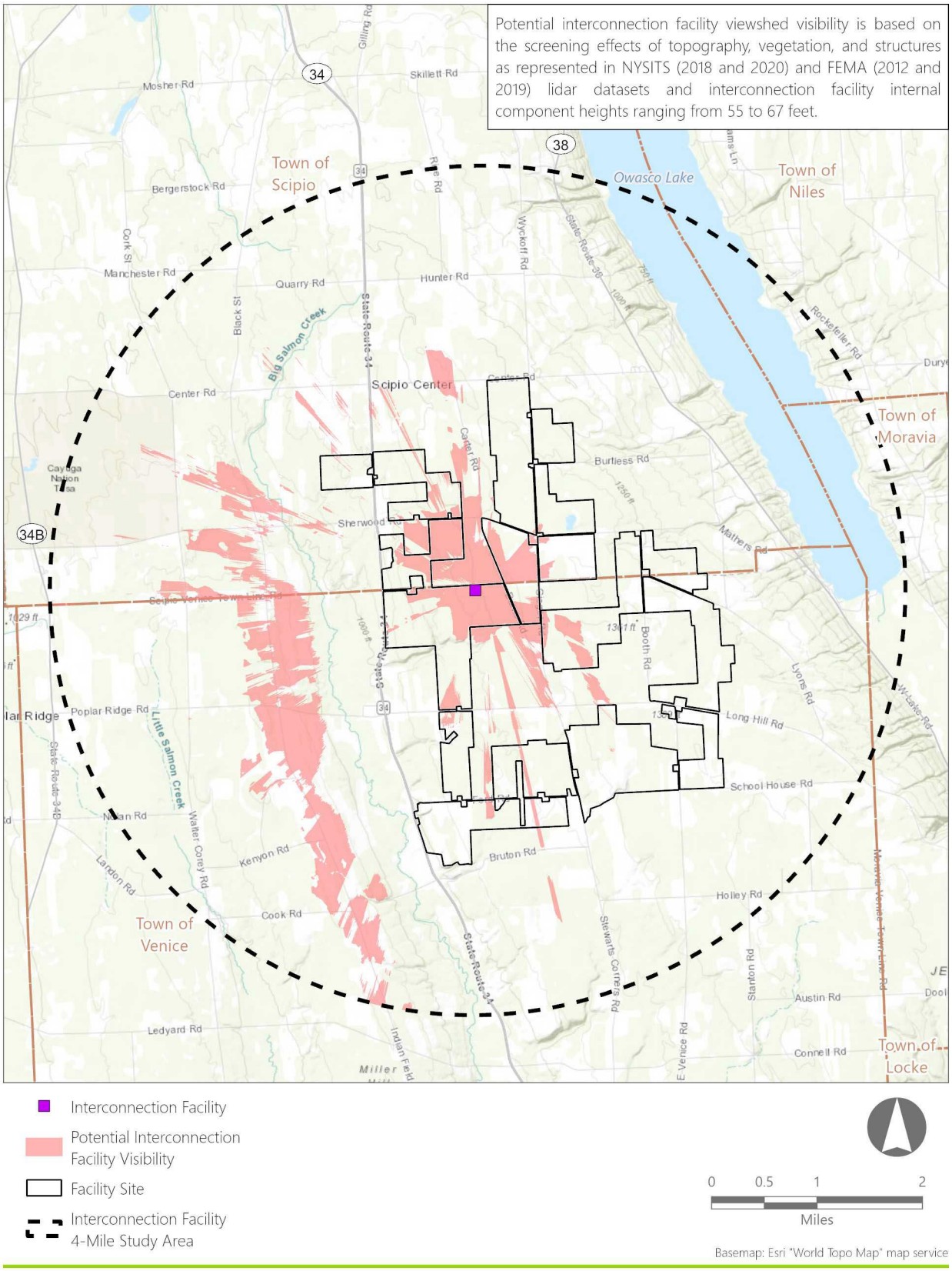


Figure 5.1-6. ADLS Tower DSM Viewshed Analysis

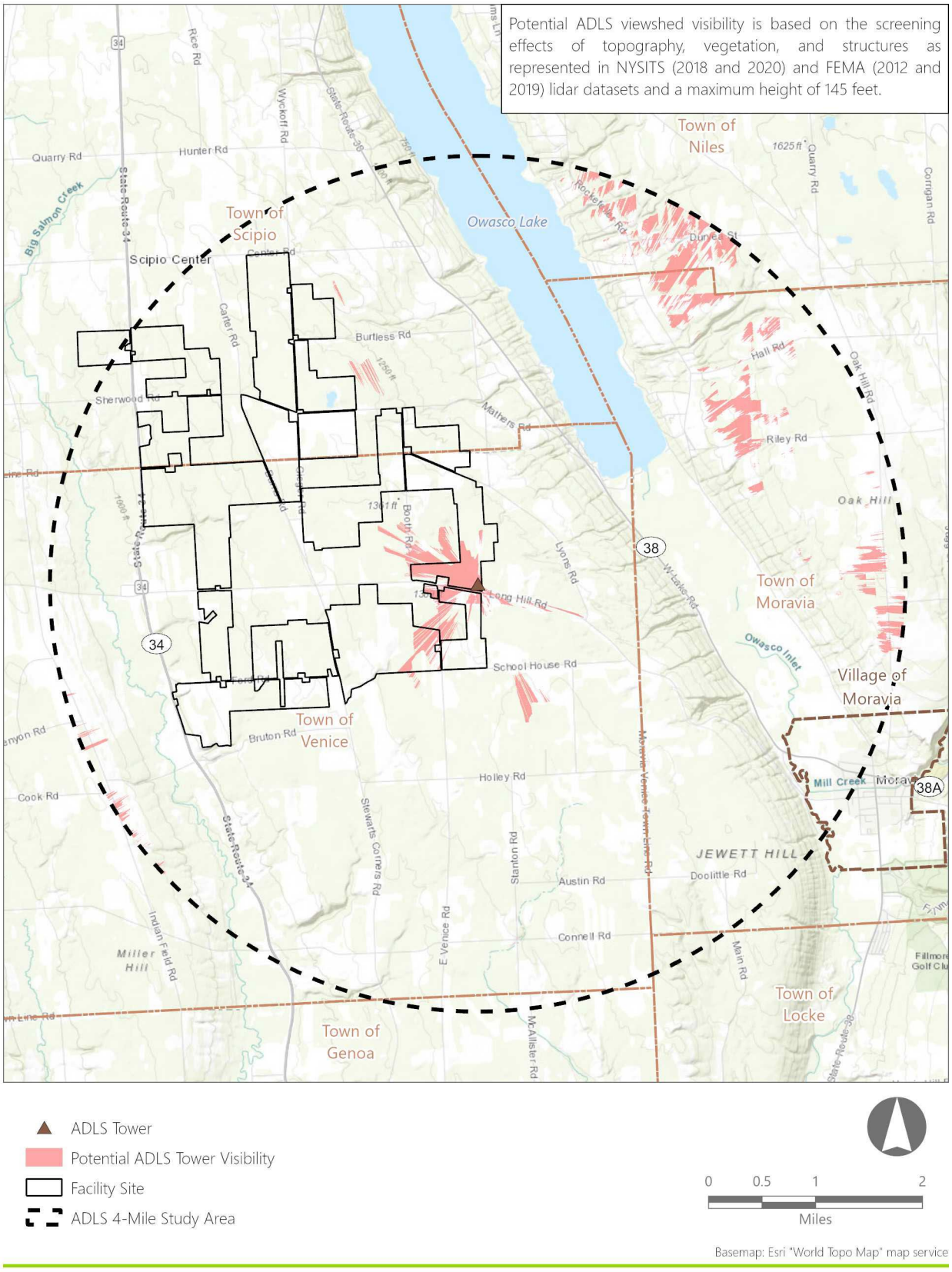
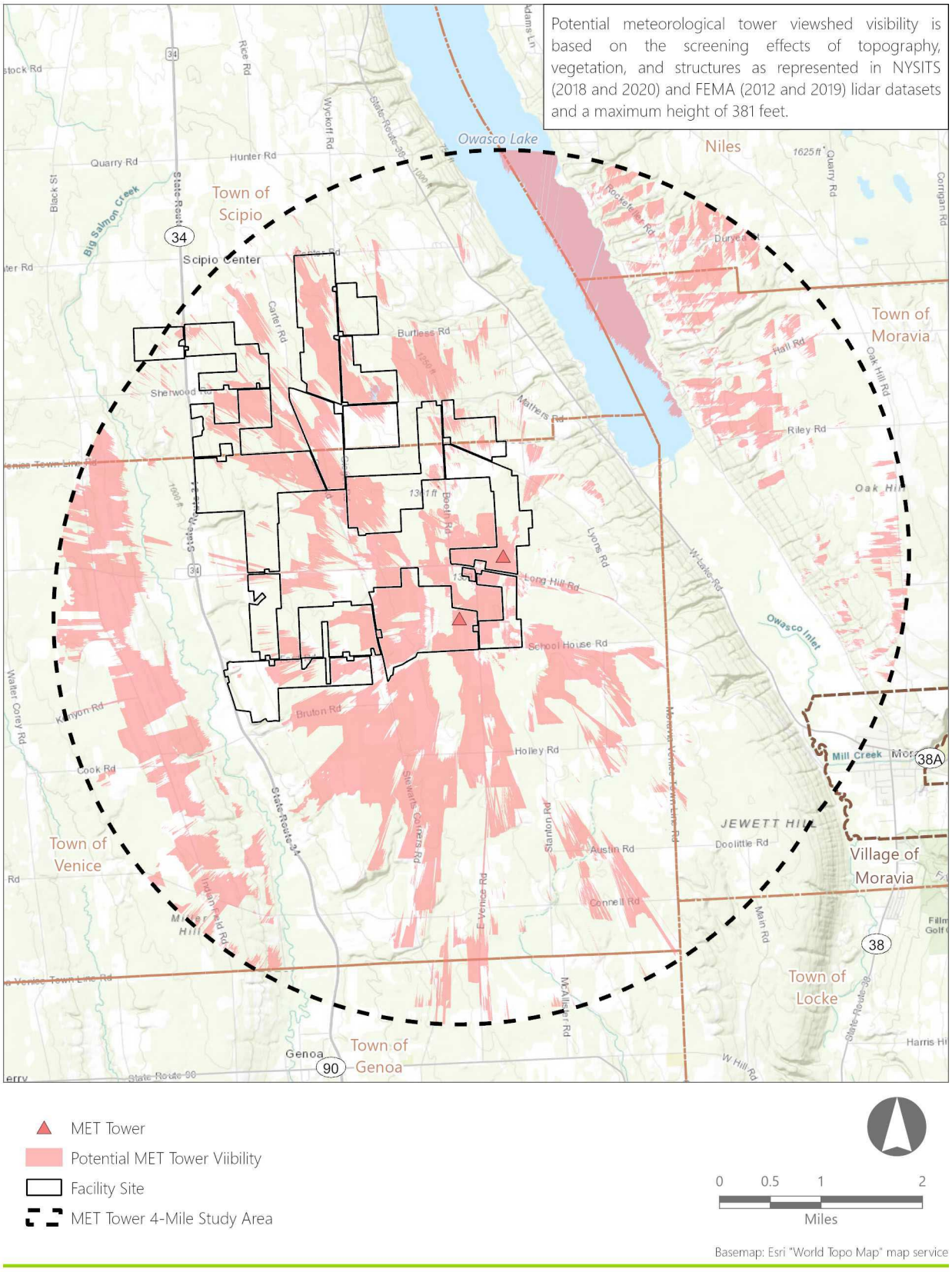


Figure 5.1-7. MET Tower DSM Viewshed Analysis



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 Site and geographic areas of potential Facility visibility (as determined by the viewshed analysis). Field review was conducted during leaf-on conditions in May and August 2024 and during leaf-off conditions in March 2024, when existing vegetation was dormant, and screening was at its most limited. All photographs referenced in this summary can be found in the Viewpoint Photolog (Attachment B), and the viewpoint locations overlaid with the viewshed analysis results are presented in Attachment A.

During field review it was observed that large contiguous areas of potential Facility visibility throughout agricultural areas in the foreground distance zone, as shown on the viewshed maps, generally provided more unobstructed views towards the Facility Site, confirming the results of the viewshed analysis. This viewing condition was documented from Viewpoints 2, 12, 14, 15, and 17. The abundance of open agricultural land and gently rolling topography also contributed to the availability of open views towards the Facility Site in the middle ground distance zone, particularly from elevated areas west of the Facility Site, as documented from Viewpoints 33, 36, and 100. However, views towards the Facility Site were observed to be more limited to east of the Facility Site along and near State Route 38, as documented from Viewpoints 55 to 57. Field review also confirmed that views of the Facility Site were available from elevated agricultural areas in the northeast portion of the VSA where little to no foreground screening features exist. This viewing condition was documented from Viewpoints 64 to 66, and 68. However, due to the greater presence of contiguous forested areas in this portion of the VSA and distance from the Facility Site, open views were more limited than observed in areas proximate to Facility Site.

Throughout agricultural areas within the VSA, it was observed that slight topographic changes, along with roadside vegetation, woodlots, hedgerows, and structures often interrupt views towards the Facility Site, particularly during leaf-on conditions, throughout all these areas. This viewing condition was documented from Viewpoints 95 and 105. Additionally, views from small pockets and narrow corridors of visibility were generally tightly framed and fleeting in nature or included only a small portion of the Facility. This viewing condition was noted to be prevalent in the southern portion of the VSA, as documented from Viewpoints 47, 48, 54, and 112.

The greater presence of buildings, streetscape elements, roadside and yard vegetation were observed to result in greater screening in views towards the Facility Site from hamlets and areas with a high density of residential development when compared to the agricultural areas. This viewing condition is documented from Viewpoints 1 and 11 in the Hamlet of Scipio Center, Viewpoint 38 from the Hamlet of Scipioville, Viewpoint 40 from the Sherwood Equal Rights Historic District (VSR ID # 17) in the Town of Scipio, and Viewpoint 45 from the Hamlet of Poplar Ridge. Views towards the Facility Site were particularly limited from the Village of Moravia and Hamlet of Montville due to higher density of buildings and/or the steep hillsides to the west, as documented from Viewpoints 73, 74, and 109.

Field review confirmed that visibility within the Owasco Flats and heavily forested areas were very limited. In both leaf-on and leaf-off conditions, the density of forest vegetation in large forest stands, as well as

small woodlots and surrounding hillsides that enclose the flats, effectively screened most outward views toward the Facility Site. This viewing condition was documented from Viewpoints 58, 59, and 67, and 108 within the flats, and Viewpoint 110 from Fillmore Glen State Park (VSR ID # 33).

Field review within the Owasco Lake LSZ indicates that views towards the Facility Site were available from most eastern locations on the water and shoreline, as documented from Viewpoints 86 to 89. However, from locations near the western shoreline, the proximity to steep hillsides surrounding the lake would result in a greater degree of screening towards the Facility Site, as documented from Viewpoint 83.

Field observations largely confirmed the accuracy of the viewshed results. However, it was observed that visibility of the Facility was generally overstated in views down roadway corridors in the middle ground and background distance zones 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 from Viewpoint 93, 102, 105, and 108. It was also observed that potential visibility of the Facility may be more limited during the growing season, when corn crops in the foreground of views could screen portions of the Facility in open field settings. This viewing condition was document from Viewpoint 96B and 98A.

5.1.4 Potential Visibility from Visually Sensitive Resources

A total of 200 VSRs were identified within the 5-mile radius VSA, and the viewshed results indicate that 159 of these resources could have potential visibility of the wind turbines, as summarized in Table 5.1-5. A list of all VSRs within the VSA, with additional information on potential wind turbine and ancillary Facility component visibility is included in Attachment C. Attachment A includes figures with the identified VSRs overlaid with the viewshed results and viewpoint locations. Potential visual effects associated with the proposed wind turbines based upon the viewshed results, field review, line-of-sight cross section analysis, and photosimulation evaluation are discussed in Section 5.2.2.

Table 5.1-5. Identified 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: 154**	**Total: 123**
National Historic Landmarks (NHL)	1	1
Properties/Districts Listed on National or State Registers of Historic Places (S/NRHP)	23	9
Resources Eligible for Listing on S/NRHP	130	113
Designated Scenic Resources	**Total: 8**	**Total: 6**
Sites, Areas, Lakes, Reservoirs or Highways Designated or Eligible for Designation as Scenic	1	1
Other Designated Scenic Resources (Easements, Roads, Districts, and Overlooks)	7	5

Visually Sensitive Resources	Total Number of Resources within the VSA	Total Number of Resources with Potential Facility Visibility[1]
Public Lands and Recreational Resources	**Total: 20**	**Total: 13**
Heritage Areas (formerly Urban Cultural Parks)	1	1
State Parks	1	1
State Wildlife Management Areas and Game Refuges	1	1
State Forests	1	1
State Fishing/Waterway Access Sites	1	0
Snowmobile/ATV Trails	4	4
Local Parks and Recreation Areas	4	2
Publicly Accessible Conservation Land/Easements	3	2
Rivers and Streams with Public Fishing Rights Easements	3	0
Named Lakes, Ponds, and Reservoirs	1	1
High-Use Public Areas	**Total: 17**	**Total: 16**
State, US, and Interstate Highways	4	4
Schools	3	3
Cities and Villages	1	1
Hamlets	9	8
Resources Identified during Stakeholder Outreach	**Total: 1**	**Total: 1**
Total Number of VSRs	**Total: 200**	**Total: 159**

[1] Potential visibility indicated in this table is based on the Wind Turbine blade tip DSM viewshed analysis results.

5.1.5 Significant Visual Resources Beyond the Visual Study Area

A total of 26 significant visual resources located outside of the 5-mile VSA but within 10 miles of the Facility Site were identified. Based on the results of a viewshed analysis, views of the proposed wind turbines will be entirely screened from 16 of these resources (Figure 5.1-8).

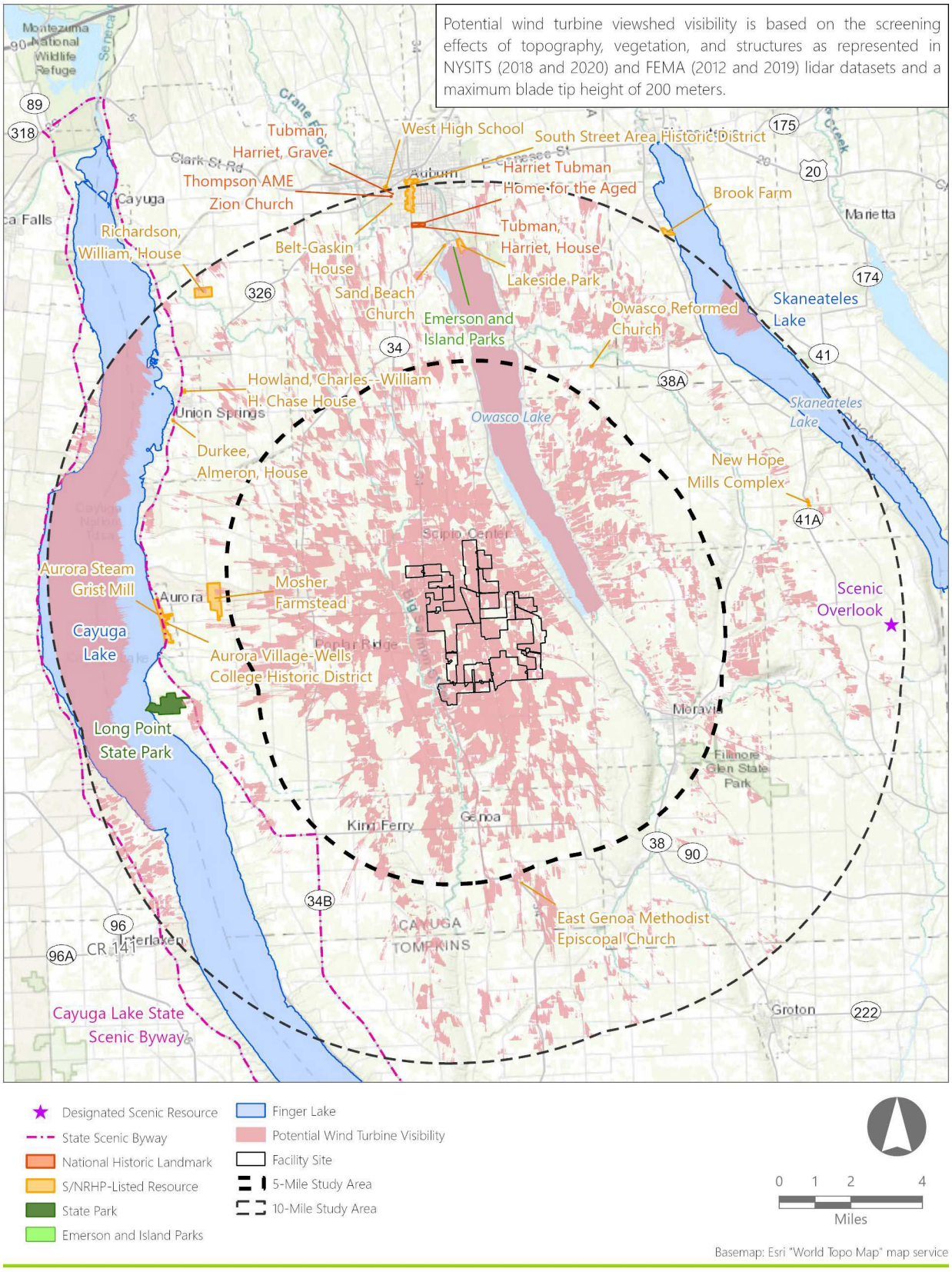
Potential visibility is possible from the following 10 resources:

- Two Local Parks: Emerson Park and Island Park
- Two Finger Lakes: Cayuga Lake and Skaneateles Lake
- Five S/NRHP Listed Resources: East Genoa Methodist Episcopal Church, Lakeside Park, Mosher Farmstead, Richardson William House, and South Street Area Historic District
- One State Park: Long Point State Park
- One State Scenic Byway: Cayuga Lake State Scenic Byway

A photosimulation was prepared for Viewpoint 113 to illustrate views of the Facility that will be available from the shoreline vantage points within Island and Emerson Parks. Attachment D provides a description of

the existing and proposed view from this viewpoint, and results of the panel's contrast rating for each of the photosimulations are presented in Section 5.2.1.

Figure 5.1-8. 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, photosimulations of the operational Facility were compared to photographs of the 18 selected existing views 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 view, and a composite 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. Wireframes renderings for viewpoints meeting a majority of the viewpoint selection criteria but located where turbines were determined to be substantially screened from view, are also provided in Attachment D. However, wireframe renderings were not included in the rating panel evaluation.

Copies of each panel member's completed rating forms are included in Attachment E. The results of the visual contrast evaluation are summarized in Table 5.2-1 and the discussion that follows.

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	Composite	Contrast Rating Result
VP 2	State Route 34	0.7 miles	Middle ground	•	•	•	3.0	1.4	1.7	2.0	Moderate
VP 4	State Route 34	0.5 miles	Foreground	•	•	•	3.1	2.1	1.6	2.3	Moderate/Appreciable
VP 8	State Route 34	0.7 miles	Middle ground	•	•	•	2.6	1.5	1.5	1.9	Moderate
VP 14A	Burns Road	0.2 miles	Foreground	•			3.0	1.5	2.4	2.3	Moderate/Appreciable
VP 14B	Burns Road	0.5 miles	Foreground	•			2.5	2.3	2.5	2.4	Moderate/Appreciable
VP 24	Long Hill Road	0.5 miles	Foreground	•			2.0	2.1	2.4	2.2	Moderate
VP 28	State Route 34	2.2 miles	Middle ground	•	•	•	1.8	1.3	1.7	1.6	Minimal/Moderate
VP 36	Indian Field Road	1.2 miles	Middle ground	•		•	1.7	2.1	2.1	2.0	Moderate
VP 38	Center Road	3.0 miles	Middle ground	•			1.7	1.6	1.7	1.7	Minimal/Moderate
VP 51	State Route 90	3.7 miles	Middle ground	•	•	•	0.8	0.8	1.0	0.9	Minimal
VP 62	Owasco Bluffs Nature Preserve	3.8 miles	Middle ground	•		•	0.7	1.0	1.0	0.9	Minimal
VP 65	Rockefeller Road	3.2 miles	Middle ground	•			2.8	2.8	1.4	2.3	Moderate/Appreciable
VP 71	Jugg Street	4.6 miles	Background	•			1.5	3.0	1.1	1.9	Moderate
VP 82	Owasco Lake	5.2 miles	Background	•		•	2.2	2.0	1.3	1.8	Moderate
VP 86	Owasco Lake	2.5 miles	Middle ground	•		•	2.3	1.8	1.2	1.8	Moderate
VP 89	Owasco Lake	1.8 miles	Middle ground	•		•	2.4	1.6	1.8	1.9	Moderate
VP 111	East Venice Cemetery	2.6 miles	Middle ground	•			2.1	1.4	1.8	1.8	Minimal/Moderate
VP 113	Island Park	8.4 miles	Background	•		•	1.4	1.5	1.0	1.3	Minimal/Moderate
Total average rating										**1.8**	**Moderate**

[1] Distance from the viewpoint to the nearest wind turbine within the simulated photograph(s)'s field of view.

[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 suggest that, following installation, the Facility will result in moderate visual contrast with the existing landscape, as indicated by the overall composite contrast score of 1.8. However, the composite contrast rating scores for each viewpoint (the combined average of each panel member's scores) indicate that there is variability between views (ranging from 0.9 [minimal] to 2.4 [moderate/appreciable]). The individual average scores for each rating panel member showed a somewhat higher degree of variability between views, with individual scores ranging from 0.7 (insignificant/minimal) to 3.1 (appreciable).

Rating panel results indicated that distance from the viewer, degree of scale contrast and the number of visible wind turbines (i.e., expansiveness of turbine visibility), and perceived change in land use and viewer activity were the primary sources of visual contrast with the existing landscape. Viewpoints that received some of the highest composite contrast rating scores included Viewpoints 2, 4, 8, 14A, 14B, and 24B, which received scores indicating moderate to moderate/appreciable visual contrast. These viewpoints are located within or near the foreground distance zone and are distinguished by their proximity to multiple turbines and the availability of open, expansive views of the surrounding agricultural landscape. Due to the limited presence of screening by existing landscape features in the foreground of these views, open views of multiple turbines are available from close distance, which heightened the Facility's contrast with existing landscape features in terms of color, form, and especially line and scale. Rating panel comments indicate the turbine scale and the angular lines of the towers and blades, particularly when in motion, will contrast with the smooth, undulating lines of the existing landform or alter perceived land use in the view. Under these conditions, the turbines introduce new built features into the view that compete with existing focal points, shifting the character from a working agricultural landscape to one that also includes renewable energy generation.

Reduced visual contrast can generally be anticipated when views of the multiple wind turbines are available from greater distances (within the middle ground and background distance zones). This viewing condition is demonstrated in Viewpoints 28, 36, 38, and 71, which received composite contrast rating scores indicating minimal/moderate to moderate visual contrast. Due to distance from the viewer, the rating panel indicated somewhat lower contrast primarily relating to the perceived scale of the wind turbines when compared to foreground views, resulting in greater compatibility with the working agricultural landscape. Viewpoint 65 has similar viewing conditions but is distinguished by the availability of open views of Owasco Lake and surrounding hillsides, resulting in higher baseline scenic quality and composite visual contrast score (moderate/appreciable).

Viewpoints 51 and 62 received the lowest composite contrast rating scores (minimal). Screening provided by intervening vegetation or hillsides limited the number of turbines that could be visible and/or screened significant portions of those turbines that were visible. Rating panel results indicate that the turbines are clearly noticeable from these viewpoints, but the proposed Facility would not present significant scale, land use, or viewer activity contrast or significantly reduce scenic quality. Viewpoint 111 has similar viewing conditions, but is located in a rural cemetery. Consequently, the rating results indicate that the turbines would result in higher visual contrast with existing land use and viewer activity compared to Viewpoints 51 and 62, resulting in a minimal/moderate composite contrast rating score.

Moderate visual contrast rating scores were received for Viewpoints 82, 86, and 89, which are located on Owasco Lake and view the turbines from the middle ground or background distance zone. Rating panel results indicate that these views have high baseline scenic quality and the wind turbine presented greater contrast with water, which defines the character and composition of the views, and viewer activity, which is limited to recreational activities on the lake, compared to viewpoints in agricultural/rural residential areas. Viewpoint 113, which is located on the Owasco Lake shoreline approximately 8.6 miles from the turbines, received a lower composite contrast rating score of minimal/moderate. At such a distance from the viewer, atmospheric effects cause the turbines to appear slightly subdued and hazy on the distant hills. Screening provided by intervening vegetation and hillsides, which screen portions of the turbines, further reduces the contrast presented by the Facility at this viewpoint.

As discussed in Section 4.2.1, views selected for photosimulation development are located in the Agricultural/Rural Residential, Hamlet, and Owasco Lake LSZs, which reflects the geographic distribution of potential visibility and availability of open views of the Facility. However, it is worth noting that views of the wind turbines will be substantially more screened from view in many locations within these LSZs. This is demonstrated by the wireframe renderings for Viewpoints 40 and 105, which are located in the Agricultural/Rural Residential LSZ. Views of the wind turbines were determined to be substantially screened from view from the Village LSZ, as demonstrated by the wireframe rendering for Viewpoint 75, and from the Owasco Flats LSZ, as represented by the wireframe rendering for Viewpoint 59, which is located along the edge of this LSZ.

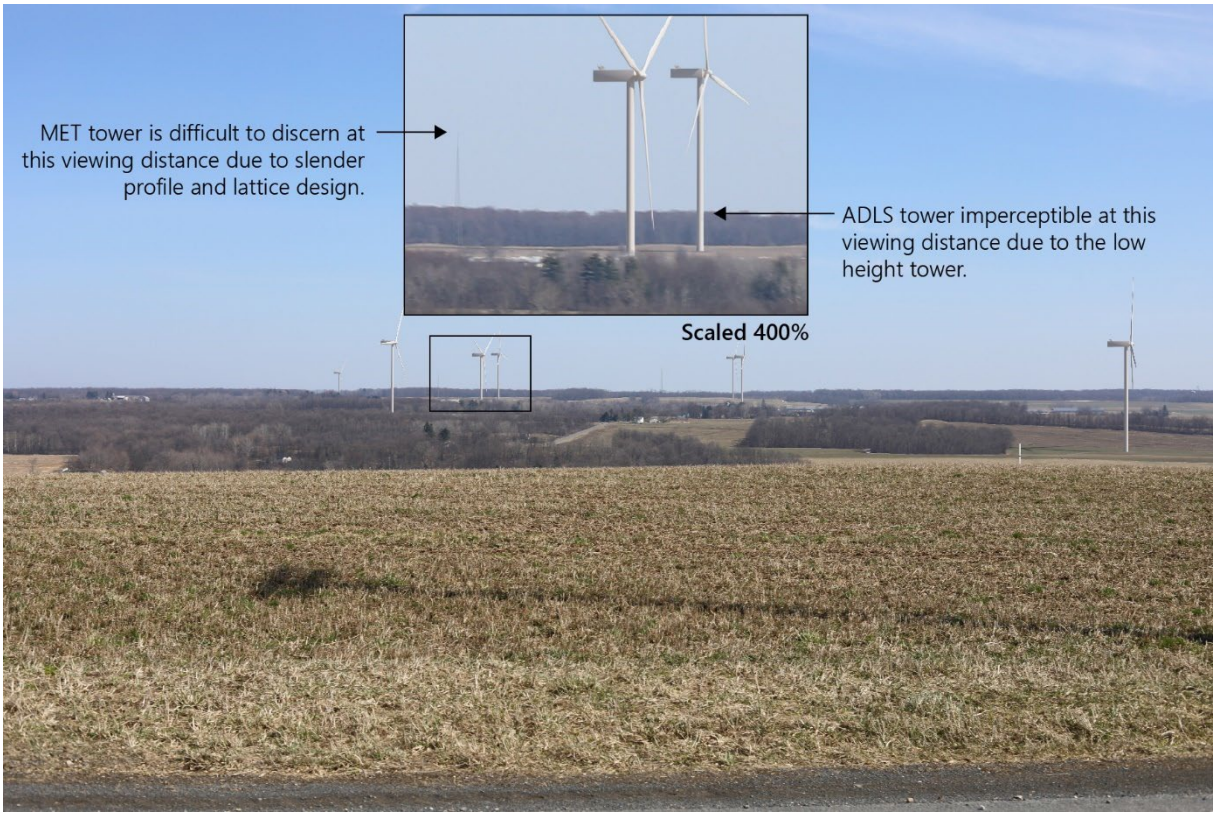
Although at times offering strong contrast with existing elements of the landscape, the proposed wind turbines will not necessarily be perceived by viewers as having an adverse visual impact. Even in views that received moderate to moderate/appreciable contrast rating scores, rating panel members also discussed compatibility with the agricultural character of the view and potential for increased visual interest in views that lack interesting or strong focal points (Viewpoints 2, 28, and 65). These results are consistent with how wind turbines are viewed by the general public. Wind turbines are unlike most other energy and infrastructure facilities, such as transmission lines, substations, or conventional power plants, which are almost universally viewed as aesthetic liabilities. The National Survey of Attitudes of Wind Power Project Neighbors conducted by the U.S. Department of Energy (Firestone et al. 2017) is the largest survey of its kind regarding neighbors' attitudes toward wind power projects. This survey included 1,705 homeowners living within 5 miles of one of 250 wind farms throughout the United States. Results from this study suggest that overall attitudes regarding wind turbines are generally positive, even amongst individuals living as close as 0.5 mile from turbines. Only about 8% of the respondents had negative attitudes toward wind turbines within 5 miles of their home, while 75% of respondents living within 0.5 mile of one or more turbines had either a neutral or positive attitude toward them. When asked, "Do you like the way the wind project looks?", 14% of respondents indicated "no", while 17% were neutral, and 69% said "yes". When asked, "To what extent do you feel annoyed by the change to the landscape of the local wind power project?", 73% of respondents indicated "not at all", and only 12% indicated that they were moderately or very annoyed by the change.

Ancillary Facility Component Results

The photosimulation for Viewpoint 14B from Burns Road in the Town of Scipio represents the most open, unobstructed views that are anticipated to be available of the proposed interconnection facility (the collection substation, POI switchyard, and transmission line) and the O&M facility. The components of these facilities are set back far enough from the viewer that their structures remain below the background ridgeline and do not extend into the sky, thereby minimizing their prominence and somewhat reducing visual clutter presented by these facilities. The photosimulation for Viewpoint 24 from Long Hill Road in the Town of Venice represents the most open, unobstructed views that are anticipated to be available of the proposed MET towers and ADLS tower. The towers are also close enough that details of their construction (including an access road across the field and chain link fencing at their base) are clearly visible, but the lattice tower construction reduces their color, sky, and vegetation contrast. However, their line, form, and especially their height, present strong contrast with the existing largely horizontal agricultural landscape.

Although less prominent than the wind turbines, the utility infrastructure adds visual clutter and contributes to the overall visual contrast of the Facility, as suggested by the composite visual contrast rating score and comments received for these views. However, open views of this nature are expected to be limited to within approximately 0.5 mile of these facilities, where viewer exposure is exceptionally limited due to the lack of residential development, visually sensitive resources, and limited number of travelers along surrounding roads, including Burns Road, Long Hill Road, East Venice Road, and Booth Road. From more distant locations, intervening vegetation or topography, as well as the narrow profile, neutral color, relatively low height, and/or lattice tower construction, will significantly reduce the visual contrast presented by these Facility components where views are possible (Figures 5.2-1).

Figure 5.2-1. Views of the Ancillary Facility Components from Viewpoint 36



5.2.2 Potential Effect on Visually Sensitive Resources

This subsection presents an evaluation of the Facility's potential visual effect of the Facility on each of the 159 VSRs with potential wind turbine visibility within the VSA. This evaluation is based on the results of the viewshed analysis, field review, line-of-sight cross section analysis, and the photosimulation visual contrast evaluation conducted for the Facility. Specific visibility information for each VSR with potential wind turbine visibility is provided in Attachment C:

- A line-of-sight cross section to the nearest visible wind turbine, as described in Section 4.1.2.
- A wind turbine visibility map representing the results of the VSR viewshed analysis described in Section 4.1-1. This map, located on the left side of the sheet, illustrates the VSR location, LOS cross section centerline, blade tip viewshed analysis results, and potentially visible wind turbine locations. The wind turbines are categorized based on whether they would fall in the VSR's near-foreground, foreground, middle ground, or background distance zone. Within the legend, the number of wind turbines that fall within the VSR's respective distance zone is noted.
- A context map, located on the right side of the sheet, is centered on the VSR boundary and illustrates the blade tip viewshed analysis results overlaid on aerial imagery. This map is provided to illustrate the locations where potential visibility of the turbines is indicated within the boundary of each VSR and the location of the LOS cross section.
- A bar graph representing the number of turbines that could potentially be visible within each VSR's near foreground, foreground, middle ground, and background distance zone.
- Information on the percentage of potential wind turbine visibility within the VSR boundary.

Other factors that were considered in this evaluation include the viewer's likely sensitivity to changes in the visual environment at each resource and the amount and type of use it receives.

VSRs with a high percentage of visibility and open, unscreened views of multiple turbines in the foreground and middle ground distance are anticipated to have more significant visual effects. The potential for visual effects are anticipated to be greatest for the Finger Lakes Trailblazers Snowmobile Trail (VSR # 37), Port Byron Snow Panthers Snowmobile Trail (VSR ID # 36), Owasco Lake (VSR ID # 50), NYS State Route 34 (VSR ID # 51), Hamlet of Scipioville Center (VSR ID # 64), and Hamlet of Venice Center (VSR ID # 67). These resources accommodate recreational activities that are likely to attract tourist/recreational users (water-based recreation, sight-seeing, snowmobiling), receive high visitation, or have a relatively high density of residential development. Due to the extensive visibility of the wind turbines from multiple locations within their boundaries, the turbines are likely to shift the character from a working agricultural landscape to one that also includes renewable energy generation in many views from these resources.

Although other VSRs have similar visibility conditions as the resources mentioned above, visual effects are anticipated to be more limited due to significantly lower visitation, limited public access or awareness, and/or lack of recreational amenities. These VSRs include two scenic views identified in the Town of Scipio comprehensive plan, the Scenic View from Center Road (VSR ID #25) and Scenic View from Sherwood Road (VSR ID # 28), Arnold Farmhouse (VSR ID # 75), Canon Family Cemetery (VSR ID # 82), Cornwall Cemetery (VSR ID # 86), Gould-Atkin Cemetery (VSR ID # 109), J. Atkin Farmstead (VSR ID # 135), Scipio Rural Cemetery

(VSR ID # 178), a Shingle Style Cottage (VSR ID # 183), Thompson Farmstead (VSR ID # 187), and Venice Depot Center (VSR ID # 190).

For the majority of VSRs, potential visual effects of the Facility are unlikely to significantly reduce scenic quality or adversely affect viewer/user activity due to a lower percentage of turbine visibility, visibility of a low number of turbines that are limited to the middle ground or background distance zones, and/or intervening vegetation or topography will screen significant portions of turbines (as indicated by the line-of-sight cross section analysis). Examples of VSRs where visual effects will be very limited or non-existent include Jethro Wood House (VSR ID # 1), Augustus Howland House (VSR ID # 9), Fillmore Glen State Park (VSR ID # 33), Fillmore Golf Club (VSR ID # 43), Owasco Flats Nature Preserve (VSR ID # 46), the Hamlet of Genoa (VSR ID # 60), Camp Y-Owasco (VSR ID # 81), Girl Scout Camp Yiewano (VSR ID # 107), Poplar Ridge Historic District (VSR ID # 167), and Venice Baptist Church (VSR ID # 200).

As discussed in Section 5.1.1, the turbines may present contrast with existing elements of the landscape in certain views from VSRs. However, they will not necessarily be perceived by viewers as having an adverse visual impact. For many viewers, the turbines could add an element of visual interest, particularly for views that lack interesting or strong focal points.

5.2.3 Nighttime Impacts

The potential visibility of FAA lights on the proposed turbines is described in Section 5.1.1 of this VIA (Table 5.1-4 and Figure 5.1-4). Nighttime photos from the Fenner Wind Farm (Figure 5.2-3) are included to illustrate the type of nighttime visual impacts that could occur from locations where multiple FAA lights are visible. However, static images do not fully convey the dynamic nature of the FAA lights since they flash in unison. This flashing can attract viewer attention, resulting in appreciable contrast with the night sky, and appear out of place in the agricultural/rural residential setting which characterizes the majority of the VSA. Viewer attention is typically drawn by the flashing of the lights, and any positive reaction that wind turbines engender (due to their graceful form, association with clean energy, etc.) is lost at night. While generally not an issue from roads or public resources visited almost exclusively during the day (parks, trails, historic sites, etc.), wind turbine lighting could be perceived negatively by local residents who may be able to view these lights from their homes and yards. However, as discussed in Section 5.1.1, the FAA lights will be screened by vegetation, structures, and/or topography from 68.8% of the VSA. Additionally, in areas of more concentrated human settlement within the VSA, existing light sources will limit the visibility and contrast presented by the FAA lights. Despite the mitigating factors described above, the Applicant recognizes the potential adverse visual impact of the FAA warning lights, and is proposing the use of an ADLS. As discussed in Section 2.2.2, ADLS, if approved by the FAA and feasible for the Facility, would significantly reduce the frequency of FAA light activation (which would only occur when aircraft are passing the Facility) and nighttime impacts.

The only permanent lighting required for other Facility components are safety/security lights at the collection substation and POI switchyard. 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, and nighttime visual impacts associated with these facilities will be minimal. Additional details on lighting at the substations are provided in the VIMPP, and photometric plans are included as Appendix 5-B of the Article VIII application.

Figure 5.2-2. Representative Evening/Nighttime Photos

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 of vegetation and soils in certain locations. Representative photographs of construction activities are included in Figures 5.2-3 to 5.2-7. As shown in these photographs, anticipated impacts during construction include the following:

- Truck traffic will temporarily increase on area roadways. Construction vehicles for the Project will include pick-up trucks, dump trucks, crane transporters, concrete trucks, and oversized semi-trailers. The transportation of wind turbine components and associated construction material involves numerous conventional and specialized transportation vehicles. For instance, wind turbine blades are transported on trailers with one blade per vehicle. Blade lengths typically control the length of the vehicle, and transport vehicles are designed with articulating (manual or self-steering) rear axles to allow maneuverability through curves. Towers are typically transported in three to six sections depending on the supplier (one section per truck). Towers generally control the height and width of the transportation vehicle.
- It is anticipated that temporary widening of public roads with an aggregate roadway surface will be required to accommodate the turning movements of delivery vehicles in some locations, including some road intersections. This activity could involve selective tree removal or trimming. The temporary expansions of the pavement surface will generally be removed at the completion of construction and the roads restored to their pre-construction condition. Areas of cleared vegetation will be allowed to regrow. Construction activity could also result in damage to the surface of some public roads. However, after completion of construction activities, damage caused by heavy construction vehicle traffic (especially on any roads that had temporary repairs made during construction activities) will be repaired, and the roads restored to their pre-construction condition.
- 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.
- Access road construction within the Facility will involve vegetation clearing, topsoil stripping, grubbing of stumps, and grading as necessary. Stripped topsoil will be stockpiled along the road corridor for use in site restoration. Following removal of topsoil, subsoil will be graded, compacted, and surfaced with gravel or crushed stone. During construction, access roads with a travel surface of approximately 20 feet wide will be built to provide access to the turbine sites. In a few locations, roads could be up to 40 feet wide to accommodate temporary turning areas and driveway entrances. All road widths will be narrowed to 20 feet following completion of construction.
- Once the roads are complete for a particular group of wind turbine sites, wind turbine foundation construction will commence. At each wind turbine site, topsoil will be stripped from the excavation area and stockpiled for future site restoration. Following topsoil removal, heavy equipment will be used to excavate the foundation hole. Subsoil and rock will be segregated from topsoil and

stockpiled for reuse as backfill. However, because the turbine pads are well removed from public vantage points, this excavation activity and the stockpiles will generally be well screened from view. Once the concrete foundation is poured and sufficiently cured, the excavation area will be backfilled with the excavated on-site material. The base of each tower will be surrounded by an approximately 30-foot-wide gravel skirt.

- 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. If open trenching is required, stripping and stockpiling of topsoil and subsoil during installation of buried collection lines may be visible during construction. However, such work will typically occur in the middle of fields, relatively far from public view. All areas disturbed in this manner will be restored and revegetated following cable installation. In certain areas where cable plowing or 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 avoids impacts associated with soil disturbance and vegetation removal. However, HDD does require temporary staging areas near the surfacing sites.
- Wind turbine assembly and erection involves the use of large track mounted cranes, smaller rough terrain cranes, boom trucks, and rough terrain fork-lifts for loading and off-loading materials. The tower sections, rotor components, and nacelle for each turbine will be delivered to each site by flatbed trucks and unloaded by crane. A large erection crane will set the tower segments on the foundation, place the nacelle on top of the tower, and install the rotor either by individual blade installation or, following ground assembly, placement of the complete rotor onto the nacelle. The visibility of these cranes will be comparable to the visibility of the proposed turbines (in terms of height). However, the presence of crane equipment at each wind turbine site will be temporary and limited to the time necessary to complete wind turbine erection. Additionally, the FAA requires that each turbine be temporarily lit with a low intensity (FAA-L810 steady burning fixture) light once a height of 200 feet above ground level has been reached and until the operation of the permanent light fixtures has been achieved.
- Following construction activities, all temporarily disturbed areas will be restored to original grades (where feasible) and seeded to reestablish vegetative cover. Other than in active agricultural fields (which will be returned to crop production), native species will be allowed to revegetate these areas. This will avoid long-term visual impacts associated with soil and vegetation disturbance during construction.
- 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 construction is complete and all disturbed soils are revegetated.

Figure 5.2-3. Transportation of Wind Turbine Components

Figure 5.2-4. Construction Staging and Laydown Areas and Access Road Construction

Figure 5.2-5. Turbine Foundation Construction

Figure 5.2-6. Turbine Laydown and Assembly

Figure 5.2-7. Stabilization and Restoration of Temporary Disturbed Areas

5.2.5 Cumulative Visual Impacts

As required by Article VIII regulations, the potential cumulative visual effect of the Agricola Wind Project along with other existing or proposed renewable energy projects 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, existing and proposed renewable energy projects within a 10-mile radius 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), and various aerial imagery services. It should be noted that that proposed projects identified in these databases generally include those that have received permitting approval. Therefore, many of these projects may not ultimately be built due to various considerations.

A total of three existing and 19 proposed renewable energy projects were identified within a 10-mile radius of the Facility Site as summarized in Table 5.2-2. The location of these projects is shown in Figure 5.2-8.

Table 5.2-2. Existing or Proposed Renewable Energy Projects

Project Name	Status	Distance from Facility Site (Miles)	Capacity	Municipality
Scipio Solar Facility	Proposed	0.0	18 MW	Town of Scipio
Van Pelt Lane Solar Farm	Proposed	3.9	Unknown	Town of Moravia
Aurora Ridge LLC Renewable Energy (Renewable Gas Project)	Proposed	4.0	Unknown	Town of Ledyard
Chestnut Ridge Solar	Proposed	4.9	3.6 MW	Town of Moravia
Dog Corners Solar Project	Proposed	5.0	20 MW	Town of Ledyard
Omni Navitas Solar Fields	Existing	5.3	Unknown	Town of Niles
Musgrave East Solar Farm	Existing	5.4	2 MW	Town of Ledyard
Delight Farm Solar Project	Proposed	6.1	Unknown	Town of Springport
WL2 Solar Array	Proposed	6.8	Unknown	Town of Ledyard
Hidden Meadows Acres Solar	Proposed	7.1	<0.1 MW	Town of Springport
Spring Street Road III Solar	Proposed	7.2	5 MW	Town of Springport
Spring Street Road I Solar	Proposed	7.4	5 MW	Town of Springport
Cayuga Solar Facility	Proposed	7.5	60 MW	Town of Lansing
Spring Street Road II Solar	Proposed	7.6	5 MW	Town of Springport
US1 Solar Array	Proposed	7.9	Unknown	Town of Springport
Lansing Renewables, LLC	Existing	8.6	5 MW	Town of Lansing
Lansingville Community Solar	Proposed	8.6	Unknown	Town of Lansing
Sevior Solar	Proposed	8.8	5 MW	Town of Aurelius
Melrose Solar	Proposed	9.3	7.4 MW	Town of Owasco

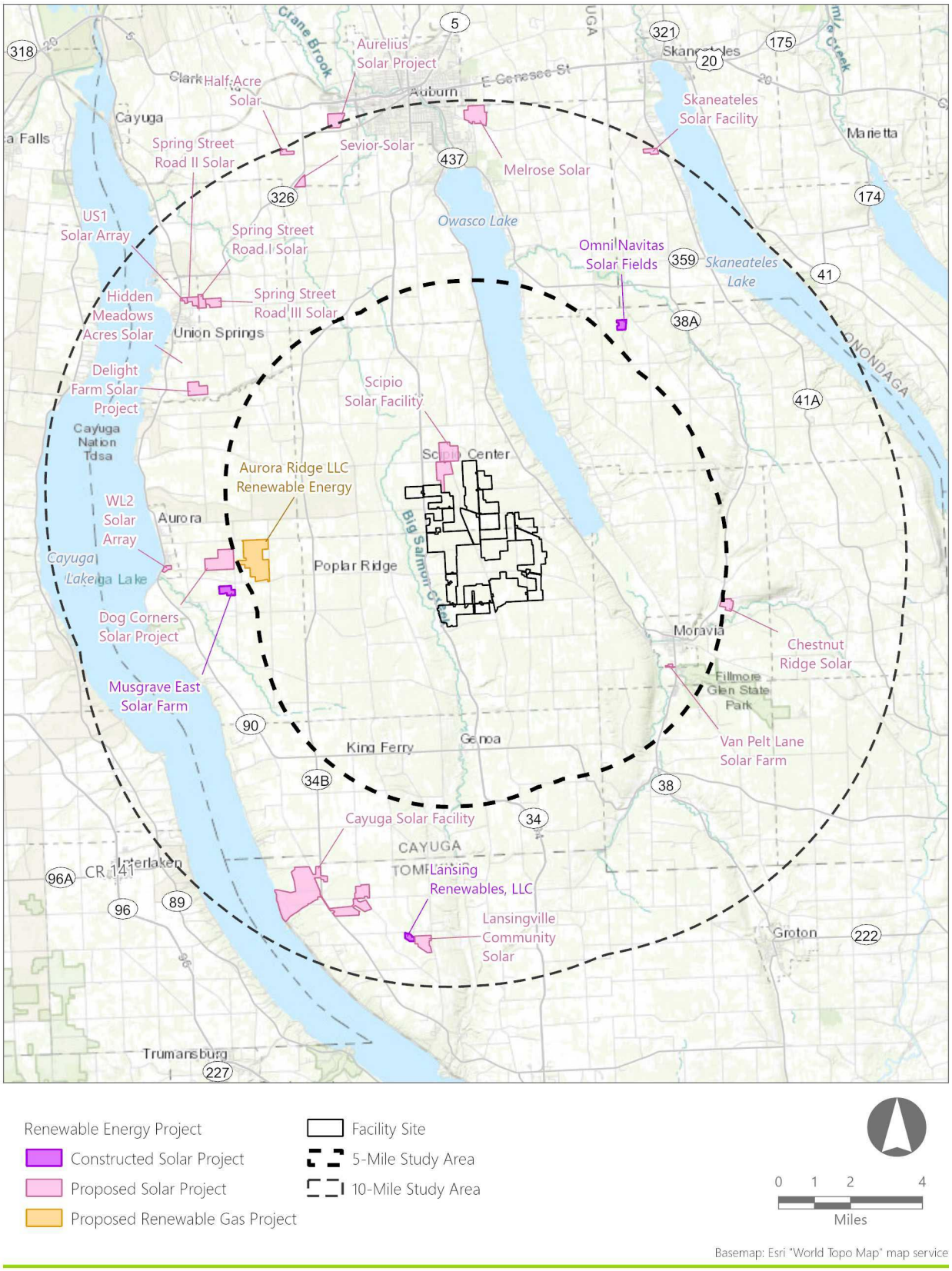
Project Name	Status	Distance from Facility Site (Miles)	Capacity	Municipality
Skaneateles Solar Facility	Proposed	9.7	7 MW	Town of Skaneateles
Half Acre Solar	Proposed	9.7	5 MW	Town of Aurelius
Aurelius Solar Project	Proposed	9.9	20 MW	Town of Aurelius

Cumulative impacts can be divided into three separate viewing conditions: combined visibility, successional visibility, and sequential visibility. Combined visibility occurs when a viewer is able to see two or more projects simultaneously from a single viewing location. Successional visibility occurs when a viewer is able to see two or more projects from a single vantage point, but they cannot be viewed simultaneously and require the viewer to actively turn their gaze to view each project. Sequential visibility occurs when views of multiple projects are available while traveling through a region or area, but combined and successional views are not possible (NatureScot, 2020).

During field review (described in Section 5.1.3), no combined or successional views of the three existing renewable projects were observed from any of the viewpoint locations identified within the viewshed of the Agricola Wind Project. Due to the limited geographic area where visibility of these existing projects is likely to occur and their distance from the Agricola Wind Project (the nearest project is located 5.3 miles away), combined or successional views are not anticipated. If the Scipio Solar Facility is ultimately built in the future, combined and/or successional viewing would be possible along State Route 34 and agricultural land surrounding this project. 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 rather broad-scale transition from an agricultural landscape to one dominated by a mix of agriculture and energy generation uses. However, this effect would be limited to a fairly small geographic area. Due to their distance from the Agricola Wind Project (only two other proposed renewable projects, the Aurora Ridge LLC Renewable Energy Facility and Musgrave East Solar Farm, are located within or near the 5-mile VSA), as well as their small size, other proposed projects are not anticipated to result in significant combined or successional cumulative views.

Sequential viewing of multiple projects would only occur along very specific routes of different major thoroughfares in the region. 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. 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, based on the renewable energy facilities that are constructed or currently proposed, sequential viewing of these projects will not significantly contribute to the visual effect anticipated for the Agricola Wind Project.

Figure 5.2-8. Renewable Energy Projects Proximate to the Facility



6.0 CONCLUSIONS

6.1 Summary of the Visual Impact Assessment

The results of the VIA for the Agricola Wind Project are summarized as follows:

1. Wind turbine blade tip viewshed analysis based on existing topography, vegetation and, structures indicates that one or more wind turbines could potentially be visible from approximately 40.2% (63.8 square miles) of the VSA (i.e., the wind turbines would be entirely screened from approximately 59.8% [94.9 square miles) of the VSA). The extent of wind turbine visibility is due to the height of the turbines and the abundance of open, relatively flat agricultural land and open water that occur throughout the study area. However, Portions of the wind turbines will be substantially screened from many areas of potential visibility. In some areas, views would be limited to the wind turbine blades which have a narrow profile and are intermittently visible when in rotation. In addition, actual turbine visibility 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.
2. The greatest potential for wind turbine visibility in terms of geographic area occurs within the Agricultural/Rural Residential LSZ due to the limited presence of forested areas and other landscape features that serve to screen views in this zone and the abundance of open land within the VSA. The greatest potential for wind turbine visibility in terms of percentage of LSZ area occurs within the Owasco Lake LSZ. Potential wind turbine visibility within the Hamlet LSZ is concentrated to the Hamlets of Scipio Center and Venice Center due to their proximity to the Facility Site and is more limited from more distant hamlets in the VSA. Potential wind turbine visibility is fairly limited within the Village and Owasco Flats LSZs due to distance from the Facility Site, their valley location, and the density of buildings or contiguous forested areas, respectively, that screen views towards the Facility Site in these zones.
3. When on-site visibility is excluded, the foreground distance zone (i.e., within 0.5 mile of a proposed wind turbine) has the least potential wind turbine visibility of all the zones in terms of geographic area, and a similar amount of visibility in terms of percentage of the distance zone area when compared to the middle ground distance zone (i.e., 0.5 mile to 4.0 miles from a proposed wind turbine). However, the middle ground covers a much larger area within the VSA, and therefore has a much greater extent of visibility in terms of geographic area. The foreground and background distance zones have fairly similar amounts of visibility in terms of geographic area. However, the background distance zone (i.e., beyond 4.0 miles from a proposed turbine) has the least potential for wind turbine visibility in terms of percentage of distance zone area.
4. Wind turbine count analysis indicates a higher number of wind turbines (greater than 15) would be visible from fairly large, contiguous areas of agricultural land located in the middle ground distance zone west of the Facility Site, in the background distance zone in northeastern portion of VSA, and near the center of the Facility Site itself. However, a lower number of wind turbines would be visible from the majority of the areas with potential visibility. Areas where lower numbers of wind turbines would be visible occur throughout agricultural lands, but are particularly concentrated to Owasco Lake, Owasco Flats, and within/near the Village of Moravia.

5. Separate DSM viewshed analyses were conducted to determine the geographic extent of visibility of the proposed ADLS tower, MET towers, and interconnection facility within a 4-mile radius study area. Viewshed analysis results indicate that some portion of interconnection facility could be visible from approximately 7.3% (3.7 square miles) of the 4-mile radius study area, the ADLS tower could be visible from approximately 2.5% (1.2 square miles) of the 4-mile radius study area, and portions of one or both MET towers could be visible from approximately 22.6% (12.7 square miles) of the 4-mile radius study area. Actual visibility may be more limited than indicated by the viewshed analysis due to viewing distance, screening by intervening vegetation or topography, as well as the narrow profile, neutral color, relatively low height, and/or lattice tower construction of these Facility components.

6. Based on the outcome of EDR's VSR research and field review, along with agency/stakeholder input, a total of 18 views from 17 viewpoints were ultimately selected for the development of photosimulations (two separate views were selected from Viewpoint 14). Six of the viewpoints selected for photosimulation development and subsequent rating panel evaluation are representative of views available to through-travelers, 10 are representative of views from locations that are likely to receive some level of visitation from tourists/recreational users, and two of the viewpoints are located within areas likely to receive a high degree of residential viewer exposure. The distribution of selected viewpoints 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 and through-travelers are generally not included in the Facility viewshed or the Facility components were determined to be substantially screened from view.

7. To evaluate anticipated visual change associated with the proposed Facility, photosimulations of the operational Facility were compared to photographs of the 18 selected existing views. The methodology utilized in this evaluation was developed by EDR, 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.

    a. Rating panel results indicated that distance from the viewer, degree of scale contrast and the number of visible wind turbines (i.e., expansiveness of turbine visibility), and perceived change in land use and viewer activity were the primary sources of visual contrast with the existing landscape. Viewpoints that received some of the highest composite contrast rating scores included Viewpoints 2, 4, 8, 14A, 14B, and 24B, which received scores indicating moderate to moderate/appreciable visual contrast. These viewpoints are located within or near the foreground distance zone and are distinguished by their proximity to multiple turbines and the availability of open, expansive views of the surrounding agricultural landscape. Under these conditions, the turbines introduce new built features into the view that compete with existing focal points, shifting the character from a working agricultural landscape to one that also includes renewable energy generation.

b. Reduced visual contrast can generally be anticipated when views of the multiple wind turbines are available from greater distances (within the middle ground and background distance zones). This viewing condition is demonstrated in Viewpoints 28, 36, 38, and 71. Due to distance from the viewer, the rating panel indicated somewhat lower contrast primarily relating to the perceived scale of the wind turbines when compared to foreground views, resulting in greater compatibility with the working agricultural landscape.

c. Viewpoints 51 and 62 received the lowest composite contrast rating scores (minimal). Screening provided by intervening vegetation or hillsides limited the number of turbines that could be visible and/or screened significant portions of those turbines that were visible. Rating panel results indicate that the turbines are clearly noticeable from these viewpoints, but the proposed Facility would not present significant scale, land use, or viewer activity contrast or significantly reduce scenic quality.

d. Moderate visual contrast rating scores were received for Viewpoints 82, 86, and 89, which are located on Owasco Lake and view the turbines from the middle ground or background distance zone. Rating panel results indicate that these views have high baseline scenic quality and the wind turbine presented greater contrast with water, which defines the character and composition of the views, and viewer activity, which is limited to recreational activities on the lake, compared to viewpoints in agricultural/rural residential areas.

e. Although at times offering strong contrast with existing elements of the landscape, the proposed wind turbines will not necessarily be perceived by viewers as having an adverse visual impact. Even in views that received moderate/appreciable composite contrast rating scores, rating panel members discussed compatibility with the agricultural character of the view and potential for increased visual interest in views that lack interesting or strong focal points. These results are consistent with how wind turbines are viewed by the general public. Wind turbines are unlike most other energy and infrastructure facilities, such as transmission lines, substations, or conventional power plants, which are almost universally viewed as aesthetic liabilities.

8. Potential visual effects associated with the Facility are anticipated to be greatest for the Finger Lakes Trailblazers Snowmobile Trail (VSR # 37), Port Byron Snow Panthers Snowmobile Trail (VSR ID # 36), Owasco Lake (VSR ID # 50), NYS State Route 34 (VSR ID # 51), Hamlet of Scipioville Center (VSR ID # 64), and Hamlet of Venice Center (VSR ID # 67). These resources accommodate recreational activities that are likely to attract tourist/recreational users (water-based recreation, sight-seeing, snowmobiling), receive high visitation, or have a fairly high density of residential development. Due to the extensive visibility of the wind turbines from multiple locations within their boundaries, the turbines are likely to shift the character from a working agricultural landscape to one that also includes renewable energy generation in many views from these resources. However, for the majority of VSRs, potential visual effects of the Facility are unlikely to significantly reduce scenic quality or adversely affect viewer/user activity due to a lower percentage of turbine visibility, visibility of a low number of turbines that are limited to the middle ground or background distance zones, and/or intervening vegetation or topography will screen significant portions of turbines.

9. Wind turbine FAA light viewshed analysis indicates that one or more FAA lights could potentially be visible from approximately 31.2% (49.5 square miles) of the VSA (i.e., the FAA lights would be entirely screened from approximately 68.8% [109.3 square miles) of the VSA). Flashing FAA lights can attract viewer attention, resulting in appreciable contrast with the night sky, and appear out of place in the agricultural/rural residential setting which characterizes the majority of the VSA. While generally not an issue from roads or public resources visited almost exclusively during the day (parks, trails, historic sites, etc.), wind turbine lighting could be perceived negatively by local residents who may be able to view these lights from their homes and yards. In areas of more concentrated human settlement within the VSA, existing light sources will limit the visibility and contrast presented by the FAA lights. The Applicant recognizes the potential adverse visual impact of the FAA warning lights and is proposing the use of an ADLS. ADLS, if approved by the FAA and feasible for the Facility, would significantly reduce the frequency of FAA light activation (which would only occur when aircraft are passing the Facility) and nighttime impacts.
10. Construction has the potential to result in short-term, intermittent, and transitory adverse visual impacts due to the transportation of Facility components, the presence of large construction equipment, and significant ground disturbance at access roads and turbine positions. However, these impacts are short term/temporary impacts that will last only for the duration of construction. In addition, because the turbines are generally well removed from adjacent public roads and residences, most on-site construction activities will be screened from the majority of viewers. Upon completion of construction, construction vehicles and equipment will depart, and disturbed portions of the site will be restored.

6.2 Mitigation of Visual Impacts

The minimization and mitigation of visual impacts is an important consideration when siting and designing wind energy facilities. Article VIII regulations require the development of a VIMMP that evaluates potential mitigation options such as relocation, use of alternative technologies, non-specular material, lighting, and screening. The VIMMP for the Agricola Wind Project is included in Appendix 8-B of the Article VIII Application.

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