Attachment K

Revised Exhibit 8. Visual Impacts

RIVERSIDE SOLAR, LLC

Matter No. 21-00752

900-2.9 Exhibit 8

Visual Impacts

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Acronym List

3D	three-dimensional
AC	Alternating Current
AES	The AES Corporation, Inc.
APA	Adirondack Park Agency
ASL	above sea level
BLM	Bureau of Land Management
CAD	Autodesk Civil 3D 2020
FEMA	Federal Emergency Management Agency
GIS	Geographic Information Systems
GPS	global positioning system
HDD	Horizontal Directional Drilling
IFP	Issued for Permit
LiDAR	Light Detection and Ranging
LOS	Line-of-Sight
LSZ	Landscape Similarity Zones
MAX	Autodesk 3DS Max 2020
NESC	National Electrical Safety Code
NLCD	National Land Cover Dataset
NPS	National Park Service
NRHP	National Register of Historic Places
NRT	National Recreation Trails
NYNHP	New York Natural Heritage Program
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSDOT	New York Department of Transportation
NYSGPO	New York State GIS Program Office
OPRHP	Office of Parks, Recreation and Historic Preservation
ORES	Office of Renewable Energy Siting
OSHA	Occupational Safety and Health Administration
Seaway Trail	NYS Route 12E / Great Lakes Seaway Trail
SHPO	State Historic Preservation Office

USCs	Uniform Standards and Conditions
USDA	United States Department of Agriculture
USDOI	United States Department of the Interior
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VIA	Visual Impact Assessment
Village	Village of Chaumont
VP	viewpoints
VSA	visual study area

Glossary Terms

Applicant	Riverside Solar, LLC, a subsidiary of The AES Corporation, Inc. (AES), the entity seeking a siting permit for the Facility from the Office of Renewable Energy Siting (ORES) under Section 94-c of the New York State Executive Law.
Facility	The proposed components to be constructed for the collection and distribution of energy for the Riverside Solar Project, which includes solar arrays, inverters, electric collection lines, and the collection substation.
Facility Site	The parcels encompassing Facility components which totals 1,168 acres in the Towns of Lyme and Brownville, Jefferson County, New York (Figure 2-1).
Towns	The Towns of Lyme and Brownville, Jefferson County, New York.

Exhibit 8: Visual Impacts

8(a) Visual Impact Assessment

In order to determine the extent and assess the significance of the visibility of the Facility, a Visual Impact Assessment (VIA) has been prepared to comply with the requirements of 19 NYCRR §900.2.9 in support of this Section 94-c Application. The VIA includes both quantitative and qualitative identification of visually sensitive resources, viewshed mapping, confirmatory visual assessment fieldwork, photographic simulations, cumulative visual impact analysis, and proposed visual mitigation. In completing the VIA, local municipalities and State agencies were consulted; applicable guidance and information was incorporated into the assessment.

Exhibit 8 provides an abbreviated version of the VIA and addresses the issues presented herein. Please refer to the full VIA in Appendix 8-1 for greater detail.

(1) The Character and Visual Quality of the Existing Landscape

The visual study area (VSA) for the VIA extends to two miles around the fence line of the proposed Facility. Characteristics of the existing landscape may be broken into four basic features including landform, vegetation, water, and land use and development. Understanding the characteristics of the landscape is imperative to understand how a proposed development may affect or change it.

The VSA is rural in nature and primarily consists of forested lands, wooded wetlands, open land that also includes agricultural uses, transportation uses, as well as rural residential land.

Landform

The Facility is proposed in the Towns of Lyme and Brownville, Jefferson County, New York (Towns) and is within the Ontario Lowland physiographic region, which can be characterized as having highly variable terrain comprised of glacial tills typical of the eastern shore of Lake Ontario. However, the landscape within the VSA appears to be relatively flat or gently sloping. Elevations range from approximately 250 feet above sea level (ASL) along Chaumont Bay upwards to approximately 415 feet ASL in the northeast section near the vicinity of Depauville Road.

Vegetation

Forest vegetation within this region of New York State is dominated by beech, sugar maples and smaller amounts of white oak, basswood, hemlock, pine, elm, and white ash. Although forests once covered the entire region, agricultural uses and land development have resulted in a significant amount of vegetation removal; only scattered second growth woodlots remain. These species are also visible within hedgerows, fallow fields, and lands generally not suitable for development or agricultural uses (e.g., ravines, wetlands). Additional information regarding vegetative cover types in the Facility Site and surrounding VSA can be found in Exhibit 11 (Terrestrial Ecology).

Water

Water is an integral part of the landscape, specifically within the western edge of the VSA. Chaumont Bay (including Sawmill and Guffin Bays) provides a gateway to Lake Ontario and the St. Lawrence River (Thousand Islands Region); offering individuals with a variety of passive and active recreational opportunities. Other than the Chaumont River, supplemental water resources within the VSA are less dominant due to their size (e.g., ponds found on agricultural lands) and lack potential visibility to the public.

Land Use and Development

The VSA is rural in nature and as such dominated by forest and agriculture. In this setting, development is generally seen along transportation corridors and within community settings (e.g., cities, villages, hamlets).

Transportation

Although limited in number, there are different types of transportation corridors, or roadways, within the VSA. These roadways range from the two-lane paved state route that sees a higher number of users to the narrower one-lane gravel road accommodating a limited number of users.

The primary roadway is New York State (NYS) Route 12E, which is a two-lane asphalt rural highway that travels in a north-south direction. This roadway is identified as a minor arterial by New York Department of Transportation (NYSDOT)[1] therefore providing higher travel speeds

[1] Existing roadways fall into three functional classifications (arterial, collector, and local) as defined by NYSDOT Office of Technical Services. https://gis.dot.ny.gov/html5viewer/?viewer=FC

and minimal disruptions to traveling vehicles. In addition, this roadway is also part of the 518-mile Great Lakes Seaway[2].

In addition to NYS Route 12E, a small segment of NYS Route 180 as well as numerous county and local roads traverse the area in a variety of directions. These roadways are generally lightly traveled and include, but are not limited to: Case Road, Depauville Road, Moffatt Road, Morris Tract Road, Old Town Springs Road, Pillar Point Road, Smith Road, Walrath Road, Weaver Road, County Route 59 (North Shore Road), County Route 125, and County Route 179. These account for the largest percentage of total roadway miles within the VSA. They tend to be shorter in length (relative to region) and primarily facilitate direct access to property owners with many driveways and access points. Roads are typically two-lane (striped or not) with asphalt pavement, and some being narrow gravel surfaced (seasonal) roads with limited shoulder and roadside treatments.

Additional information regarding the transportation analysis performed on existing conditions in the vicinity of the Facility Site, including an evaluation of construction and operation of the Facility, can be found in Exhibit 16 (Transportation Effects).

Community/Residential

The highest amount of concentrated development within the VSA is located within the waterfront community of the Village of Chaumont (Village). This small village is characterized by a well-defined downtown area where most commercial uses are found along NYS Route 12E, with residential neighborhoods located to the south. Uses within the Village consist of residential (permanent and seasonal), religious, educational, recreational, and commercial. The density of development within the Village is moderate and drops significantly outside the municipal boundary as it quickly transitions to agricultural land, including to the southeast in the vicinity of the Facility Site. No portion of the Facility is proposed within the Village boundary.

Outside the Village, development (i.e., residential and commercial) within the Towns of Lyme and Brownville is scarce and generally found to be along roadways. Both Towns contain a significant amount of agricultural and forested land (over 93% of these land types are identified

[2] https://www.fhwa.dot.gov/byways/byways/2488

within the VSA as illustrated by the Landscape Similarity Zones) thus resulting in a generally low population (2,303 and 6,213, respectively).

Existing Energy Infrastructure

Infrastructure of varying heights, materials and configurations may be seen within the VSA. These may consist of the following:

- Existing transmission structures vary from single wooden poles (as seen along roadsides) carrying electricity to local customers to large structures carrying high voltage lines. Adjacent to the Facility is National Grid's Lyme Tap Line off the Thousand Islands – Coffeen St. 115 kV transmission line #4 utilizing wooden H-frame structures of varying heights. The associated substation, which is 1.65 miles west of the proposed substation, is approximately 1.4 acres in size and located along County Route 179.
- Convergent Energy + Power Project – This existing 35.03 MWdc solar development is located on approximately 139 acres of a 236.5-acre parcel of land located along County Route 179. The project consists of a ground mounted photovoltaic system, battery storage, and needed infrastructure to connect to the existing electrical grid.

Based, in part, of the characteristics identified above, a series of Landscape Similarity Zones (LSZ) were established. The LSZs provide additional context for evaluating viewer circumstances where relationships between viewer groups and visual experience can be made. For example, a viewer's experience will be different in a forested area compared to open water. Viewer groups, as well as potential viewer frequency and duration of view can also be related to the specific LSZ they are within.

Geographic Information Systems (GIS) land cover classification datasets from the 2016 United States Geological Survey (USGS) National Land Cover Dataset (NLCD) were used for an initial establishment of LSZs as they provide distinct and usable landscape categories. These NLCD land cover groupings were then refined based on aerial photo interpretation and general field review. This effort resulted in the definition of five LSZs within the VSA including the following:

Agricultural Landscape Similarity Zone – This LSZ is characteristic of open land, including that which is used for row crops, hay or pasture, or left fallow. These lands are relatively flat to rolling and may contain small, wooded areas, and hedgerows. Development is limited and sparsely

located; single family homes and farmsteads (including barns and silos) make up the majority of built structures and are likely found along the County Routes or local roads that bisect this LSZ. Where available, structures, hedgerows, vegetated lined waterways/ravines, and woodlots can screen views, whether short or long distant, toward to the proposed Facility.

Agricultural lands are most often privately owned and while they may be abundant in a particular area the numbers of the viewing public is likely low.

Forested Landscape Similarity Zone – This LSZ includes mature deciduous and coniferous woodlands in uplands, wetlands, or other undevelopable parcels of land. Forested areas are typically large tracts of land likely owned by private entities or the State. Those forested lands owned by public entities (e.g., NYS Department of Environmental Conservation [NYSDEC]) may offer the public with recreational activities such as hunting, nature viewing, hiking, camping, etc. Development is limited and likely found along roadways. Views from within this LSZ may be very limited as opportunities for outward viewing of the surrounding landscape will be minimized by the tree canopy or large tree groupings. It should be noted that views through the vegetation may be available during leaf-off conditions but is likely to be confined to areas along the edge of this LSZ.

Village Landscape Similarity Zone – This LSZ solely consists of the Village of Chaumont, which is the primary residential and commercial center in the VSA. The Village is characterized by built structures and streets. The structures and vegetation (e.g., street trees, site landscaping) that are seen within the community generally results in views that are short in distance. Views (open or partially screened) of the surrounding landscape are more readily available the closer one gets to the municipal boundary; this may occur through foreground vegetation or as a result fewer structures. An open view to the Chaumont Bay is seen where Route 12E crosses the Chaumont River.

Transportation Corridor Landscape Similarity Zone – This LSZ includes NYS Route 12E (and the immediately adjacent land), which is the major thoroughfare through the western portion of the VSA. As the most heavily traveled road, it will receive a high number of transient users experiencing a variety of views. In addition to a higher rate of speed, those using Route 12E will encounter an increased number of vehicles, thus the focus of the driver will be on navigating the roadway. The view along the corridor will include pavement, wide shoulders, vehicles, and

roadside structures and vegetation (where available). There will also be views of the surrounding landscape, however it will be fleeting or short in duration.

Open Water Landscape Similarity Zone – This LSZ includes the Chaumont Bay and Chaumont River. Large water bodies are by nature very open and may afford views to the nearby landscape. A variety of recreational opportunities may be found that includes boating and (ice) fishing; the potential duration of a particular view may be contingent on the user activity.

View's inland are limited by waterfront vegetation, development, and topography. Outside the shoreline development contributed by that within the Village, residential structures of varying scale and density are also visible. Generally, all of the shoreline structures are located in a manner to take advantage of water views.

(2) The Visibility of the Facility

A series of viewshed maps, contained in Appendix 8-1 Attachment 2, were completed to depict areas of Facility visibility within the two-mile VSA. Areas of visibility are identified within the VIA and are further discussed below. Upon completion of the viewshed mapping, site visits on September 18, 2020, March 19, 2021, and May 24, 2021 were conducted in order to verify visibility and collect photographs to document such views.

A screened viewshed map and associated analysis was completed illustrating the potential screening caused by the existing topography, vegetation, and structures (e.g., residential and commercial). It shows that Facility visibility is expected to be limited, with most occurring within one-half mile (Foreground distance zone). To quantify the amount of land with visibility, the analysis identified that only 14.05% of the VSA will have a possibility of either a full or partial view of the Facility. Of this amount, 30.1% of visibility occurs on properties owned by participating landowners.

Visibility is most likely to occur within the Foreground distance zone due to the open agricultural land surrounding the Facility, resulting in views along adjacent roadways (Case Road, Weaver Road, Morris Tract Road, NYS Route 12E, etc.) and properties (residential or other).

Many outward views beyond one-half mile from the Facility are screened by forested areas (including hedgerows) and natural changes in topography. This is evident as the possibility for visibility abruptly drops in the Middleground distance zone where it is anticipated that 2.51% of

the land will have views of the Facility – this equates to approximately 0.8 square miles of the VSA. The majority of visibility can be expected within agricultural fields or other types of open land, with a minimal amount seen along roadways such as NYS Route 12E, Guffin Bay Estate Road, Walrath Road, Ransom Road, and Weaver Road.

Table 8-1. Percent Visibility (Screened) of Panels within Each Distance Zone

Distance Zone	Total Area Comprising Distance Zone Square Miles	Visibility Within Distance Zone Square Miles	Percent of Square Miles With Visibility in Each Distance Zone	Percent of Visibility Within the Two Mile VSA
Foreground (0-0.5 Miles)	7.63	3.77	49.41%	**11.54%**
Middleground (0.5-2.0 Miles)	25.03	0.82	3.28%	**2.51%**
Total	**32.66**	**4.59**	**N/A**	**14.05%**

To further understand how much of an influence that the existing vegetation has on limiting views to the Facility, a secondary analysis was completed in order to determine the potential screening affect caused by the existing topography. This supplemental, topography only, viewshed and analysis shows that 79.24% of the land will have visibility of some solar panels, thus 65.19% of the screening is solely the result of existing vegetation.

While the topography only (or “bare-earth”) viewshed should not be perceived as a realistic representation of visibility, it is still useful tool in understanding the influence of the fairly level land within most of the VSA; thus, it is not varied enough to many screen views. However, there are areas that are expected to be screened and these generally include: the Chaumont River corridor (including Old Town Springs Road, and portions of the Village of Chaumont and Historic District), lowlands in the vicinity of NYS Route 180, the intersection of Depauville and Van Alstyne Roads, and within Chaumont Bay in close proximity to the shorelines.

The glint and glare analysis conducted for the Facility by the Capitol Airspace Group is discussed below in Section 8(a)(6).

(3) The Visibility of Above-Ground Interconnections and Roadways to be Constructed within the Facility

A viewshed map for the tallest components of the collection substation and the interconnect was completed and is included in Appendix 8-1 Attachment 2. The results of the screened analysis shows that most visibility will occur within the Foreground distance zone, along portions of the C5J snowmobile trail (the existing transmission corridor)[3], within the Facility Site that is already occupied by the panels, and within privately owned fields. Upon review of the viewshed map, it can be seen that these structures are visible in a similar geographic area as to the panels, yet to a lesser extent. When visible, it likely will also be seen in the context of the existing transmission structures. Most views of these structures occur to the east and south of the Facility; there will be visibility along Case Road, Weaver Road, and even less visibility along roadways such as Morris Tract Road, County Route 125, and NYS Route 12E. The limited visibility seen within the Foreground is further reduced in the Middleground distance zone, where it is anticipated that these structures will only be visible within 0.44 square miles, or 1.76% of this zone.

(4) Appearance of the Facility Upon Completion

To create the photographic simulations of the Facility, TRC utilized Autodesk Civil 3D 2020 (CAD) to extract the proposed Facility specifications that was prepared by TRC Engineering, the design engineers for the Facility. This data was interfaced with Autodesk 3DS Max 2020 (MAX) visualization software to construct a three-dimensional (3D) model of the proposed Facility at the precise, coordinate (x, y, z) location at which the Facility is physically proposed. The proposed panels were built as bifacial single-portrait trackers with a height of eight feet-eleven inches (8.9') above ground surface with the axis oriented east-west.

To appropriately position the Facility on terrain or the ground surface, a 3D topographic surface was generated in GIS from publicly available LiDAR data and a final 3D surface was compiled to incorporate proposed grading. Facility components were then assigned to the ground surface in MAX with elevational attributes, respectively.

The 3D model was further developed to position a 3D camera at coordinates of each simulated viewpoint location, extracted from global positioning system (GPS) data recorded during the site

[3] The snowmobile trail is located adjacent to the proposed Facility Site and coincides with a portion of the existing transmission line right-of-way.

visit, and the inclusion of a 3D environment is constructed from existing conditions using LiDAR data. Each 3D camera is then adjusted to match the identical settings of the DSLR camera used during the field effort, which results in the 3D environment mirroring the photograph. The recorded date and time of the photograph is recorded into MAX so that accurate shadows, materials and highlights casted from the Facility is true to the lighting conditions seen in the photograph.

A rendering of the 3D model is superimposed within the photograph using Adobe Photoshop, where any final editing is completed to demonstrate applicable removal of vegetation or any portion of Facility components that fall behind existing features. Details on the appearance of the Facility upon completion, including size, design, colors, texture, and lighting of Facility components are included in appendices to Exhibit 5 and discussed relative to the visual impacts of the Facility below in Section 8(c).

The photographic simulations of the Facility are provided in the VIA (Appendix 8-1) along with a description of the visual impacts and appearance for each of the viewpoints.

(5) The Lighting and Similar Features

Lighting is proposed at the Facility substation and gates. These lights are only intended for security, safety, and maintenance purposes. Details regarding the Facility's Lighting Plan, such as the type, number, location, elevation of exterior fixtures is included in the Issued for Permit (IFP) Design Drawings contained in Appendix 5-1. This plan was developed to minimize fugitive light while meeting lighting standards established by the National Electrical Safety Code (NESC).

Lights are located on such structures as the takeoff, control house, CT metering, and three pole mounted locations - two of which are located near entries to the substation. All lighting will be capable of manual activation/shut-off with most facing downward to minimize potential impacts to the surrounding public. Lighting has been designed to provide an average of two foot-candles[4], to eliminate unnecessary light trespass beyond the substation. Light fixtures will be mounted at a height not to exceed 15 feet above finished grade and will not be illuminated

[4] Two foot candles is equivalent to 22 lux where one lux is one lumen per square meter - two foot candles are 22 lumens per square meter.

during unoccupied periods. Full cut-off fixtures and task lighting will be used wherever feasible, as specified in the Lighting Plan.

Lights will also be placed at all entry gates. All lighting will be capable of manual activation/shut-off and installed facing downward to minimize potential impacts to the surrounding public. Lighting at these locations have been designed to provide an average of 2 foot-candles, to eliminate unnecessary light trespass. Light fixtures will be mounted on poles at a height not to exceed 15 feet above finished grade. Full cut-off fixtures and task lighting will be used wherever feasible, as specified in the Lighting Plan.

(6) Representative Views (Photographic Overlays) of the Facility

Integrating the results of the resource inventory, landscape character, view angles, distance zones, the completed site visits, and the viewshed analysis a series of locations were identified for simulation. As visibility is predominantly within close proximity to the Facility, the majority of the representative locations are found along local roadways (e.g., Weaver and Case Roads), as well as NYS Route 12E and the G. Spence Donaldson Memorial Field. It is important to note that not all locations with visibility are to be simulated, rather representative locations were identified.

Representative views of the Facility include relevant front, side, and rear views of Facility components, and indicate approximate elevations. Selected viewpoints chosen for simulations are listed and discussed below in Section 8(b)(4).

In determining the final selections for the simulation process, TRC reached out to local municipalities and State agencies (together referred to as “agencies”) in order to provide an opportunity to suggest additional and reasonable candidate locations for the completion of photographic simulations. Based on this effort, a series of vantage points were identified for consideration. As a result of all the available data and correspondence with agencies, a total of 12 viewpoint locations, contained in Appendix 8-1, were chosen for the development of simulations.

(7) The Nature and Degree of Visual Change from Construction of the Facility and Above-Ground Interconnects

Potential visibility of construction activities is anticipated to be temporary in nature. Construction of a typical solar facility normally involves the following major undertakings: building/upgrading roads; constructing laydown areas; removing necessary vegetation from areas of construction; transporting components and other materials and equipment to the Facility Site; assembling the solar panels; constructing ancillary structures (e.g., collection substation, fences); and installing power-conducting cables (typically buried). During this time there will be an increase in vehicular traffic, equipment, and workers seen within the Facility Site and the immediate surrounding area. All of this is typical of major construction projects.

Construction activities will vary in frequency and duration. There may be periods of intense activity followed by periods with less activity and associated visibility will vary in accordance with construction activity levels.

(8) The Nature and Degree of Visual Changes from Operation of the Facility and Above-Ground Interconnects

The information contained in the VIA can provide a more complete understanding of the particular issues involved in the visual relationship between the Facility and its surrounding context. The viewshed analysis contained in Appendix 8-1 makes it clear that there is minimal expected visibility within the VSA but there would be limited areas from which the Facility would be visible and, in contrast, a multitude of areas from which it would not be seen. The existing topography and vegetation surrounding the Facility will block such views.

The panels will be located on parcels of land currently used for agricultural purposes or lands which are forested. The general visual appearance of the low-profile panels as a group contributes to a homogenous form at distance which consists of a strong new horizontal pattern similar to the background forested areas and field edges found in many views. The horizontal shapes en masse in many instances provide a visual flow that is repeated or similar to what is in the landscape as the panels follow the existing contours. Color differences between the Facility and the landscape may provide contrast but will vary throughout the seasons. Overall contrast and visual effect will vary depending on the extent of panel visibility (partial or full), distance

from the viewer, and if the panels are seen in the context of other existing noticeable modifications to the local natural landscape.

The Applicant is proposing to install landscaping along portions of the Facility to provide nearby residences with screened views towards the Facility. Landscaping will consist of a variety of evergreen and deciduous trees and shrubs that will provide year-round screening. Visual contrast from solar panels is anticipated to be avoided or minimized in areas where landscaping is proposed. The Landscape Plan for the Facility is contained in Appendix 8-1 and within the IFP Design Drawings included as Appendix 5-1 to Exhibit 5 (IFP Design Drawings).

Other factors informing the degree of visual change resulting from Facility operation include:

- The Facility is set back from property lines and/or behind forested areas resulting in reduced visibility and less disturbance to surrounding agricultural activities on adjacent parcels.
- Through the use of efficient solar panels, the Applicant is able to limit the amount of land required to achieve its objective of 100 MW generating capacity. Additionally, solar facilities typically result in a minimal amount of ground disturbance for the installation of racking and mounting posts thereby preserving the ability to use the land for agricultural purposes in the future following decommissioning.
- The Alternating Current (AC) collection lines will be placed underground for the entirety of their length and installed primarily via direct burial or trenching with some portions to be proposed via Horizontal Directional Drilling (HDD) in order to avoid wetland resources and roadways.
- While the area surrounding the Facility may consist of many pastoral views, the characteristic of the landscape seen within the VSA is typical of what may be found in other areas of New York. Overall, the Facility will not impair regional landscape characteristics.
- The panels will not always be in an upright position as they are meant to track the sun. Therefore, during certain times of the day, the panels may appear in, or near a horizontal configuration, thus resulting in an even lower profile.
- The Facility will not always appear as a dominant feature in a view contained within the VSA. This may be, in part, a result of the surrounding landscape (e.g., when the Facility

is seen against large stands of vegetation), or the effect of the increasing distance between the Facility and viewer (e.g., as distance increases, the Facility may be seen as a smaller component in the overall view).

- There will be no interference with the general enjoyment of many of the identified recreational resources, as views of the Facility are not anticipated or will be limited. Three views along the NYS Route 12E/Seaway Trail were simulated and show that overall visibility will be minimal and are expected to be short in duration. Visibility will be minimized from NYS Route 12E due in part to an existing hedgerow and by maintaining the agricultural/vacant land between the roadway and Facility. However, the snowmobile trail running through the area will have views a variety of views of the Facility but will also be seen within the context of the existing transmission line. There is limited to no long-range visibility overall in the VSA.
- The Applicant has utilized reasonable mitigation measures to the maximum extent practicable with respect to the overall design and layout of the Facility. This includes the proposed vegetative plantings that screens views to nearby residents.
- The vertical scale of solar panels is typically not an issue in relation to surrounding land features such as trees, residential structures, and barns.
- Visual clutter often is adversely perceived and commonly results from the combination of human-made elements that have differing shapes, colors, forms, patterns, or scales. Generally, solar facilities appear to offer a simple and uniform pattern that may be more visually consistent, as compared to a development consisting of mixed types and sizes of objects. However, this is not to diminish that these are man-made structures within agricultural fields.
- Aside from the low local road traffic, the public areas in the vicinity to the Facility are not exceedingly high-use destination areas. This results in a lower number of individuals that could potentially view the Facility. One exception is the Chaumont Bay, while this may draw tourists, etc., visibility of the Facility is not anticipated from this resource
- The Facility does not have an adverse effect on a known listed scenic vista and does not impact or degrade existing scenic resources.
- The Facility substation does not create a new source of substantial light that would adversely affect nighttime views in the area.

- Visibility of the Facility will be experienced from a number of local roadways, but it is important to realize that views will likely be reasonably short in duration, thus the time available for an occupant to encounter this view and focus on individual elements within the landscape may be limited.

Contrast Rating

In order to evaluate potential contrast, TRC used a visual impact rating form for use in comparing Facility photo simulations. This form is a simplified version of various federal agency visual impact rating systems. It includes concepts and applications sourced from:

- U.S. Bureau of Land Management (BLM), Handbook H-8431: Visual Contrast Rating, January 1986 (USDOI, 1986).
- Visual Resources Assessment Procedure for U.S. Army Corps of Engineers, March 1988 (Smardon, et al., 1988).
- National Park Service (NPS) Visual Resources Inventory View Importance Rating Guide, 2016 (NPS, 2016c).
- United States Department of Agriculture (USDA) Forest Service, Landscape Aesthetics: A Handbook for Scenery Management. USDA Forest Service Agriculture Handbook No. 701, 1995 (USDA, 1995).

TRC developed this form for efficient and streamlined use with projects that undergo state environmental permitting processes; it is to be used as a numerical rating system for selected viewpoint locations where photo simulations were completed and is meant to accompany the VIA.

For evaluating visual change, there are three parts to the form. Part 1 is the *Visual Contrast Rating,* which compares the Facility's contrasts against compositional visual elements of within the existing view from a selected vantagepoint. This includes compositional contrasts against the existing and natural environment such as vegetation, water, sky, landform, or structures. The higher the rating total the higher the contrast. Part 2 is the *Viewpoint Sensitivity Rating*. It rates the sensitivity of the viewpoint location which inherently considers the importance of the viewpoint (if it falls within a visual resource area), viewer groups, duration of view, if it is a high use area, or if there is the presence of water. The higher the rating total, the more sensitive the viewpoint is. Part 3 does not rate change but is an overall *General Scenic Quality of the View* which rates the view of existing conditions only, without the influence of the Facility.

Please refer to the VIA, Appendix 8-1 Attachment 6, for more comprehensive guidelines on how the contrast ratings were assessed and applied within each category.

The rating scale is as follows:

Rating Scale	
0	None
0.5	
1	Weak
1.5	
2	Moderate
2.5	
3	Strong

Based on the rating scale a degree of contrast was defined as:

None The element contrast is not visible or perceived.

Weak The element contrast can be seen but does not attract attention.

Moderate The element contrast begins to attract attention and begins to dominate the characteristic landscape.

Strong The element contrast demands attention, will not be overlooked, and is dominant in the landscape.

Identification and discussion of ratings for each completed simulation may be found in Section 8(c)(3).

(9) The Related Operation Effects of the Facility

A glint and glare analysis was completed by the Capitol Airspace Group. Their study found that the Facility will not result in glare along seven roadways identified for evaluation, 120 discrete observation points (residential structures), and at the Watertown International Airport. For further information, including the methodology used in completing this study, please see Appendix 8-2.

(10) Visual Resources Affected by the Facility

An inventory of publicly available and accessible local, county, state, and federally recognized visual resources were identified within the two-mile VSA. These resources were collected using various sources including local and state websites, town, county and agency reports, mapping,

GIS data, and site visits. Table 8-2 includes an inventory of all visual resources identified within the two-mile VSA and whether visibility is anticipated.

The Comprehensive Land Use Plans for the Village of Chaumont (2010) and Town of Lyme (2010) were reviewed to specifically identify potential sensitive areas or applicable scenic (aesthetic) resources. Based on the review of these documents, a common theme presented itself in that select local roads, water views, and open views of the countryside were of importance. However, specific views of significance are not readily identified in the existing landscape to the casual observer, and as noted protection of such vistas must be balanced with development (employment opportunities, revenue, etc.) and environmental needs.

In addition to the research undertaken by TRC, an information request was sent out to representative from the Towns, Jefferson County, the State Historic Preservation Office (SHPO), and the Office of Renewable Energy Siting (ORES). These agencies were contacted via email on April 26, 2021 and/or May 5, 2021 and provided a preliminary visual report that included the extent and findings of the preliminary visibility study, at that point in time. As part of this outreach, it offered an opportunity for the agencies to append additional visual resources of concern and suggest those locations of interest for the development of simulations. Two of the agencies provided feedback, the Town of Lyme on May 13, 2021, and ORES on May 21, 2021. In addition, the Applicant and TRC met with representatives from the Town of Lyme on May 24, 2021 and subsequent correspondence occurred on June 2, 2021 and June 30, 2021. Additional resources and areas of concern was identified and included in Table 8-2, below.

Per the regulations, the following categories have been reviewed for their appearance within the VSA:

1. Landmark landscapes,
2. Wild, scenic or recreational rivers administered by NYSDEC, Adirondack Park Agency (APA) or United States Department of the Interior (USDOI),
3. Forest preserve lands,
4. Scenic vistas specifically identified in the Adirondack Park State Land Master Plan,
5. Conservation easement lands,
6. Scenic byways designated by the federal or state governments,

7. Scenic districts and scenic roads, designated by the Commissioner of Environmental Conservation,
8. Scenic Areas of Statewide Significance,
9. State parks,
10. Historic sites listed or eligible on the National/State Registers of Historic Places,
11. Areas covered by scenic easements, public parks or recreation areas,
12. Locally designated historic or scenic districts and scenic overlooks, and
13. High-use public areas.

It should be noted that TRC was provided listed and eligible historic sites by the SHPO; these sites were identified by SHPO and the National Register of Historic Places (NRHP).

(11) Cumulative Visual Impact Analysis

The Applicant reviewed publicly available information to identify other renewable energy facilities proposed or constructed by others within the VSA. One project, the Convergent Energy + Power Project (CEPP) was identified within the two-mile VSA. The CEPP fronts County Route 179/Evans Street, with its closest fence line located approximately 1,600 feet west of the Facility.

Based on the completed Facility screened viewsheds, it does not appear that the Facility will be visible immediately adjacent to the CEPP, on the property hosting the CEPP, nor along or west of County Route 179/Evans Street. As a result of the vegetation surrounding the CEPP property, and as witnessed in the field, it is anticipated that visibility will be limited. Views of the CEPP is likely for a limited number of adjacent residents, travelers along a short segment of County Route 179/Evans Street, and from within Memorial Park which is adjacent to the parcel of land host to the Facility. In addition, there may be filtered views of the CEPP along a short section of NYS Route 12E where there is a lack of commercial/residential structures, and the vegetation along the south end of the CEPP host property is thin. Specifically, this will result in sporadic views between Memorial Park and County Route 179/Evans Street. Should views of the CEPP be noticed while navigating NYS Route 12E, they will be transient in nature and of limited duration, should it be noticed or comprehended at all.

Due to the limited nature of potential visibility for either project independently, these in theory will likely be visible as separate developments and will not have a cumulative impact within the same view. It is anticipated that should both the CEPP and Facility be visible at separate locations while traveling along a public roadway (i.e., Route 12E), they will be seen separately, and a cumulative visual impact will not occur.

Overall, it appears that due to the siting of the Facility and CEPP, visibility is restricted as both projects take advantage of existing vegetation, such as the surrounding woodlands and hedgerows, as visual barriers as much as possible. In combination of the siting and Facility mitigation, it would appear that cumulative impacts are avoided and minimized to the extent practicable.

8(b) Viewshed Analysis

(1) Viewshed Mapping and Line-of-Sight Profiles

Typically, the first step in identifying the possibility for Facility visibility within the identified VSA is to complete viewshed maps[5]. A viewshed analysis is a computerized GIS analytical technique that illustrates the predicted visibility expected for a project and allows one to determine if and where a project can geographically be seen. The results of the viewshed analysis can be combined with other sensitive location information such as historic places, national forests, or state parks, etc. in order to understand potential Facility visibility at sensitive receptors. The viewshed maps were prepared and are presented on a recent edition 1:24,000 scale maps.

The series of maps contained in Appendix 8-1 depict visibility within two miles of the Facility Site, existing topography, LSZs, visually sensitive resources including public vantage points and cultural and historical resources, existing vegetation and associated screening effects, and representative viewpoints that were used in the simulation process.

Three line-of-Sight (LOS) profiles were completed for the collection substation from Case Road, the Snowmobile Trail, and the Chaumont Historic District/NYS Route 12. Each profile was selected to illustrate how the landscape setting affects visibility and the relationship of Facility components may have to one another in that specific instance. In addition, these profiles assist in confirming visibility, or lack thereof.

[5] Sometimes this has been referenced as a “zone of visual influence” or “ZVI”.

(2) Viewshed Mapping and Line-of-Sight Profiles Methodology

Light Detection and Ranging (LiDAR) point cloud data from the New York State GIS Program Office (NYSGPO) Jefferson Black River 2010, and Federal Emergency Management Agency (FEMA) Great Lakes Area 2014 LiDAR datasets and obtained from the New York State GIS Program website was used in completing the necessary viewshed maps. LiDAR data is the best available elevation data as it contains high resolution accurate ground elevations in addition to building and tree heights that offer realistic physical visual impediments as they occur in the landscape.

Control points, at a height of eight feet 11 inches (representing the panel height), were placed in a 200-foot grid pattern throughout the area where the panels are being proposed. For each of the specified control points, ArcGIS software (Esri Spatial and 3D Analyst) identified where there would be an unobstructed line of site, or view, between that point and an observer at six feet tall. This process was run twice, once for topography only, and once to include vegetation and structures; all of which are contained in the LiDar dataset. The final resulting output identified those areas from which viewers would potentially see all or some part of the proposed solar panels.

Two viewshed analyses were completed in order to account for predicted visibility of the solar panels within the VSA, including:

- Screened Viewshed: This is the primary visibility analysis performed for the VIA, as it incorporates screening caused by topography, vegetation, and the buildings. The results provide the reader of this VIA with the most reasonable and realistic depiction of Facility visibility.
- Topography-Only Viewshed: As part of the viewshed process, a topography-only, or bare earth, viewshed was completed. This analysis is not recognized as being a realistic interpretation of the existing landscape and potential Facility visibility, as it does not take into account structures and vegetation. Despite this limitation, it can be a useful tool in identifying how much of the Facility is screened solely by terrain. In addition, it should be recognized that even during leaf-off conditions, screening will still occur from evergreen and deciduous trees (sight lines to objects may be fully or partially screened). This is not

to ignore that there may be visibility through bare-branched trees; specifically, when in close proximity to the Facility and there is sparsely located vegetation between the two.

One additional viewshed analysis was completed for the collection substation.

- Collection Substation: A screened viewshed was produced using the same methodology as that of the solar panels. This analysis accounted for the tallest components of the substation including: a 63-foot one inch interconnection takeoff (together with lightning masts mounted to the top of the structure), one 45-foot-tall lightening mast, and a three pole 45-foot-tall dead-end structure that is located on the north side of the existing transmission line.

Certain assumptions, or factors, in the interpretation of results need to be considered:

1. The analysis, because of its computerized aspect, assumes that the observer has perfect vision at all distances. Therefore, it is important to be cognizant of the fact that there may be limitations of human vision at greater distances; atmospheric/meteorological conditions, such as haze or other inclement weather conditions, may impair visibility. Additionally, an object will appear smaller and less detailed with increased distance, thus having less visual impact in most instances.
2. Because an area, or specific point, may be identified as having visibility, it is important to understand that the entire Facility will not be seen. To assist the reader in understanding this, the viewshed map was completed using a color gradient - the yellow-colored areas represent more visibility, while the purple color represents less visibility.
3. The viewshed map does not illustrate how much of each panel is visible (panel top versus the entire panel). For example, visibility may only be a result of glimpsing a portion of the Facility over treetops or between gaps of trees.
4. A viewer would not see the panels if standing amongst trees in forested areas as the tree canopy would preclude outward-looking views.

LOS profiles were created using elevation data obtained for the Facility as prepared by Thew Associates PLLC, based on an instrument survey, and supplemented with available LiDAR/Digital Elevation Models from the USGS. Autodesk Civil 3D 2018 was used to produce

linear elevation profiles sampled across select sight lines for bare earth topography and for vegetation.

(3) Visual Resources

Forty-four visual resources were identified as they pertained to the categories identified in Section 8(a)(10). These resources were identified through the use of GIS mapping, on-line research, site visits, and correspondences with agencies. These locations were confirmed through formal feedback.

Table 8-2. Inventory of Aesthetic Resources within the Two-Mile Visual Study Area

Map ID	Resource Name	Municipality	Resource Type (Federal, State, or Local)	Distance to Facility Site (miles)	LSZ[1]	Potential Visibility [2]
Scenic Byways						
1	NYS Route 12E / Great Lakes Seaway Trail[3]	Towns of Brownville and Lyme, Village of Chaumont	State	0.15 mi (792 ft)	T	Yes
Historic Sites						
	Historic Districts – Listed[4]					
2	Chaumont Historic District (USN 04548.000116)	Town of Lyme	State	0.5 (2,640 ft)	V	No
	Historic Sites – Listed (outside of the listed district)					
3	Chaumont House (USN 04548.000003)	Village of Chaumont	State	0.87 (4,594 ft)	V	No
4	George House (USN 04548.000037)	Village of Chaumont	State	0.64 (3,379 ft)	V	No
5	George Brothers Building (USN 04548.000038)	Village of Chaumont	State	0.4 (2,112 ft)	V	No
6	Grange Hall and Dairymen's League (USN 04548.000039)	Village of Chaumont	State	0.37 (1,954 ft)	V	No
7	Leray-Clark House/Evans-Gaige/Dillenback (USN 04548.000001)	Village of Chaumont	State	0.76 (4,013 ft)	V	No
8	Cedar Grove Cemetery (NR90PR04351)	Village of Chaumont	State	0.60 (3,168 ft)	V	No

Table 8-2. Inventory of Aesthetic Resources within the Two-Mile Visual Study Area

Map ID	Resource Name	Municipality	Resource Type (Federal, State, or Local)	Distance to Facility Site (miles)	LSZ[1]	Potential Visibility [2]
	Historic Sites - Eligible					
9	27375 Washington St. (USN 04548.000071)	Village of Chaumont	State	0.66 (3,485 ft)	A	No
10	St. Paul's ME Church (USN 04548.000034)	Village of Chaumont	State	0.59 (3,115 ft)	V	No
11	11792 NYS Route 12E (USN 04548.000100)	Village of Chaumont	State	0.73 (3,854 ft)	V	No
12	27587 Water St. (USN 04548.000124)	Village of Chaumont	State	0.93 (4,910 ft)	V	No
13	27605 Water St. (USN 04548.000123)	Village of Chaumont	State	0.91 (4,805 ft)	V	No
14	Barnes Bay Cemetery (USN 04548.000123)	Village of Chaumont	State	1.17 (6,178 ft)	A	No
15	27707 Water St. (USN 04513.000122)	Town of Lyme	State	0.85 (4,488 ft)	V	No
16	New Cedar Grove Cemetery (USN 04548.000196)	Village of Chaumont	State	1.99 (10,057 ft)	A	No
17	Freeman Cemetery	Town of Brownville	Federal / State	0.07 (370 ft)	A	No
44	27490 Washington Street (USN 04548.000119)	Village of Chaumont	State	0.62 (3,274 ft)	V	No
Public Parks or Recreation Areas						
18	Veterans Memorial Public Park (under construction)	Village of Chaumont	Local	0.34 (1,795 ft)	A	No
19	Lyme Central School and Playing Fields	Village of Chaumont	Local	0.78 (4,118 ft)	V	No
20	NYS Chaumont Boat Launch	Village of Chaumont	State	1.38 (7,286 ft)	W	No
21	Village of Chaumont Public Beach	Village of Chaumont	Local	1.24 (6,547 ft)	A	No
22	Local Park	Village of Chaumont	Local	1.16 (6,125 ft)	V	No
23	G. Spence Donaldson Memorial Field	Town of Lyme	Local	0.04 (211 ft)	A	Yes

Table 8-2. Inventory of Aesthetic Resources within the Two-Mile Visual Study Area

Map ID	Resource Name	Municipality	Resource Type (Federal, State, or Local)	Distance to Facility Site (miles)	LSZ[1]	Potential Visibility [2]
24	Walt Putnam Memorial Field	Town of Lyme	Local	1.83 (9,662 ft)	A	No
25	Memorial Park	Village of Chaumont	Local	0.42 (2,218 ft)	V	No
26	Chaumont Barrens Preserve	Towns of Clayton and Lyme	Local	0.4 (2,112 ft)	F	No
27	Limerick Cedars Preserve	Town of Brownville	Local	1.1 (5,808 ft)	F	No
28	Snowmobile Trails (trail C5J)	Towns of Brownville, Clayton and Lyme, Village of Chaumont	State	0.0	All	Yes
32	Bay Breeze Golf Links	Town of Lyme	Local	1.68 (8,870 ft)	A	No
38	Lyme Lane	Village of Chaumont	Local	0.78 (4,118 ft)	A	No
39	Chaumont Bay	Town of Lyme	Local	1.54 (8,131 ft)	W	No
High-Use Public Areas						
29	Village of Chaumont	Village of Chaumont	Local	0.00	V	Yes
30	Bearup Marine / Crescent Yacht Club	Village of Chaumont	Local	0.69 (3,643 ft)	A	No
31	Chaumont Bay Marina	Village of Chaumont	Local	0.99 (5,227 ft)	V	No
33	Chaumont River RV Park & Campground	Town of Lyme	Local	1.13 (5,966 ft)	F	No
34	Sportsman Hideaway Campground	Town of Lyme	Local	1.86 (9,821 ft)	F	No
35	Chaumont Yacht Club	Village of Chaumont	Local	0.44 (2,323 ft)	A	No
36	Lyme Rod and Gun Club	Town of Lyme	Local	0.59 (3,115 ft)	A	Yes
37	Chez Heron[5]	Village of Chaumont	Local	0.48 (2,534 ft)	V	No

Table 8-2. Inventory of Aesthetic Resources within the Two-Mile Visual Study Area

Map ID	Resource Name	Municipality	Resource Type (Federal, State, or Local)	Distance to Facility Site (miles)	LSZ[1]	Potential Visibility [2]
Other						
40	Independence Point	Town of Lyme	Local	1.37 (7,234 ft)	A	No
41	Morris Tract Road[6]	Village of Chaumont, Towns of Lyme, Brownville, and Clayton	Local	0.00	A	Yes
42	County Route125	Village of Chaumont and Town of Lyme	Local	0.22 (1,162 ft)	A	Yes
43	Hart Road / Park Drive	Village of Chaumont, Town of Lyme	Local	0.77 (4,065 ft)	F	No

[1] *A = Agricultural, F = Forested, V = Village, T = Transportation Corridor, W = Open Water*

[2] *Expected visibility is based on LiDAR-based viewshed analysis results that include topography, trees, and buildings per §900-2.9 (b)(1), as it is the most reasonable and accurate depiction of landscape conditions.*

[3] *Route 12E is also a designated bikeway.*

[4] *The Chaumont Historic District is comprised of, and represents, a grouping of historic sites. These sites include, but are not limited to the Copley House, and the McPhearson House. Both of which were identified by the Town of Lyme, as well as the Chez Heron facility (its appearance is that of a limestone castle), and the Lyme Rod and Gun Club.*

[5] *The Chez Huron is found within the Historic Copley House, which is located and represented within the Chaumont Historic District. The Chez Huron, like the Lyme Rod and Gun Club, is highlighted separately as it was identified by the Town of Lyme as of local importance.*[6] *Morris Tract Road, and County Route 125 and the Hart Road/Park Drive corridors are local roads of scenic quality based on the Village of Chaumont and Town of Lyme Comprehensive Land Use Plans, respectively.*

Of the identified visual resources, only seven (two of which are to be considered as a statewide concern) will have the potential to view the proposed Facility and are further discussed in the completed VIA. Resources that were found as not having visibility based on the viewshed mapping were removed from further analysis. Also, of note, the status of Freeman Cemetery is yet to be determined as a State and/or National historic resource.

Given that the character of the VSA is mostly rural in nature, it is important to recognize that visibility of the Facility may be possible from locations that do not meet the threshold of

aesthetic resources and are therefore not represented in Table 8-2. Additional locations of visibility have been identified along roadways adjacent to the Facility. These representative roadways may be of interest to the local residents, and include Weaver Road and Case Road.

Viewer Group Overview

Visual sensitivity is dependent upon user or viewer attitudes, the amount of use and the types of activities in which people are engaged when viewing an object. Overall, higher degrees of visual sensitivity are correlated with areas where people live and with people who are engaged in certain outdoor recreational activities or participating in scenic driving. Conversely, areas of industrial or commercial use are considered to have low to moderate visual sensitivity because the activities conducted are not significantly affected by the quality of the environment.

The following concepts are applied when evaluating the visual landscape and assessing the importance of a viewpoint location if it falls in an area of visibility.

Viewer group – The type of viewers will vary within the VSA and will view the landscape differently. Viewer groups include:

- *Local Constituency*: People living in the local area and/or surrounding communities who interpret the significance of where they live and interact with others. These people may include local residents, workers, travelers, and members of groups to which the local area is important in different ways. These individuals, apart from local travelers, may have a longer duration of views.
- *Commuter Constituency*: People who use or are generally restricted to travel corridors (i.e., NYS Route 12E) that are destination oriented, or traveling through the VSA. These people generally have transient short duration views.
- *Visitor or Recreational Constituency*: Individuals who visit the area to experience its natural appearance, cultural landscape qualities, or recreational opportunities. Visitors may be of local, regional, or national origin. Duration of views may be contingent on the activity.

Context of viewer – The viewer group and associated viewer sensitivity are distinguished among viewers in residential, recreational/open space, tourist, commercial establishments, and workplace areas, with the first two having relative high sensitivity.

Number of viewers – The number of viewers is established by the amount of people estimated to be exposed to the view. In comparing viewing locations to each other, one can consider if the

area is a high public use area or if it is a location that is less frequently visited or more inaccessible where the public is not expected to be present (such as marshes or swamps).

Duration of view – Duration of view is the amount of time a viewer would actually be looking at a particular site. Use areas are locations that receive concentrated public-use viewing with views of long duration such as residential back yards. Recreational long duration views include picnic areas, favorite fishing spots, campsites, or day use in smaller local parks. Comparatively, automobile drivers and snowmobilers will likely encounter a shorter, more rapid transient experience as a person transitions from one linear segment to the next but will encounter more visually varied experiences.

Viewer activities – Activities can either encourage a viewer to observe the surrounding area more closely (hiking) or discourage close observation (commuting in traffic).

(4) Important and Representative Viewpoints

As stated in the 94-c policy "The applicant shall confer with municipal planning representatives, the Office, and where appropriate, Office of Parks, Recreation and Historic Preservation (OPRHP) and/or APA in its selection of important or representative viewpoints." This requirement was fulfilled as a preliminary visual report was sent to specific agencies that contained the extent and findings of visibility studies at that point in time. This provided an opportunity to suggest additional and reasonable locations for simulations or append additional visual resources of concern to the inventory. Subsequent follow-ups were undertaken as necessary. Additional information is contained in Section 8(a)(10) and/or the VIA.

In undertaking the completion of the VIA, a list of 12 representative locations were chosen for simulation[6]. These locations are identified in Table 8-3 and the simulations are contained in Appendix 8-1, Attachment 5. Although the selection process of the simulations is further explained in Appendix 8-1, locations were selected to address the following parameters:

- Representative views from unobstructed or direct LOS views;
- The significance of viewpoints, designated scenic resources, areas, or features;
- The level of viewer exposure;
- Any proposed land uses;

[6] The Town of Lyme and ORES provided feedback on locations to be selected for simulation.

- Input from the Town of Lyme and ORES; and
- The requirements of adopted local laws or ordinances (A review of Local Law and Ordinances is provide in Exhibit 24. The Facility complies with the Towns' substantive standards regarding visual impacts and minimizes visual impacts).

Table 8-3. Photographic Simulation Locations

Photo Viewpoint ID	Location (Aesthetic Resource ID, as applicable)	Municipality	Approximate Distance to Facility	Landscape Similarity Zone	User Group	Orientation to the Facility
6	Morris Tract Road (Aesthetic Resource Number 41)	Lyme	0.66 miles	Agricultural	Local, commuter	South-southeast
11	Case Road	Lyme	212 feet	Agricultural	Local, commuter	North-northeast
13	Case Road	Lyme	356 feet	Agricultural	Local, commuter	West
16	Case Road	Lyme	274 feet	Agricultural	Local, commuter	Northeast
29	NYS Route 12E / Great Lakes Seaway Trail (Aesthetic Resource Number 1)	Lyme, Chaumont	959 feet	Transportation Corridor	Local, commuter, recreationalist	Northeast
30	NYS Route 12E / Great Lakes Seaway Trail (Aesthetic Resource Number 1)	Lyme	0.19 miles	Transportation Corridor	Local, commuter, recreationalist	North-northeast
37	Weaver Road	Brownville	596 feet	Agricultural	Local, commuter	East-southeast
40	Morris Tract Road (Aesthetic Resource Number 41)	Lyme	0.36 miles	Agricultural	Local, commuter	Southwest
42	County Route 125 (Aesthetic Resource Number 42)	Lyme	0.69 miles	Agricultural	Local, commuter	East-northeast
44	County Route 59	Brownville	1.37 miles	Agricultural	Local, commuter	Northwest
45	NYS Route 12E / Great Lakes Seaway Trail (Aesthetic Resource Number 1)	Lyme	0.65 miles	Transportation Corridor	Local, commuter, recreationalist	Northwest
49	G. Spence Donaldson Memorial Field	Lyme	342 feet	Agricultural	Local, commuter, recreationalist	Southeast

Table 8-3. Photographic Simulation Locations

Photo Viewpoint ID	Location (Aesthetic Resource ID, as applicable)	Municipality	Approximate Distance to Facility	Landscape Similarity Zone	User Group	Orientation to the Facility
	(Aesthetic Resource Number 23)					

8(c) Visual Contrast Evaluation

(1) Photographic Simulations and (2) Mitigation Simulations

The following is a summary of the potential visibility to viewers at the completed simulation locations. Complete descriptions are contained in the VIA.

Viewpoint 6: Morris Tract Road

This view contains a series of agricultural/open fields separated by hedgerows. Colors are dominated by natural browns and blue, seen in the vegetation and fields, and sky, respectively. The fields, hedgerows, and distant vegetation form individual horizontal lines; singular trees (or small groupings) within the hedgerows and the H-frame structures from the National Grid's Lyme Tap Line off the Thousand Islands – Coffeen St. 115 kV transmission line #4 provide vertical elements throughout the image.

From this location, visibility of the panels and modifications to the existing tree line are noticeable but are not a prominent change and does not result in the screening of distant landscape or cresting of the distant horizon. As the Facility is not highly noticeable, it does little to change the character of the landscape.

Viewpoint 11: Case Road

This view is located adjacent to a cluster of residential dwellings and contains a lawn and gravel driveway in the immediate foreground, followed by agricultural/open fields. Case Road and the driveway introduce gray asphalt pavement and gravel, respectively, against the natural gray and brown colors of the field and trees, and blue sky. The fields, driveway, and distant vegetation form individual horizontal lines; the existing H-frame transmission structures and the road marker provide vertical elements.

From this viewpoint, the open land is now occupied by solar panels surrounded by galvanized fencing. The placement of the Facility mimics the existing horizontal line that was previously seen in the field, yet it creates a series of vertical and angular lines due to the proposed fencing, panels, and substation (including the interconnect). The rural character of the view has been altered as the clearly man-made facility introduces new materials, textures, and colors to the existing field character. The Facility is consistent in scale with the surrounding landscape due to its low-profile, which does not extend above the roadside marker and limits screening of the background forested land and transmission line. Although the southern edge of the Facility appears gray in appearance, similar to that of the roadway and driveway, its remaining darker appearance caused by shading makes it appear as a dominant feature in view.

Mitigation plantings are planned along the residential property; however, the proposed panels and fencing will be visible where they are lacking adjacent to Case Road. As a result of the vegetation, they will add new natural colors and textures into the landscape while softening and minimizing the horizontal expanse of the Facility. As a result, potential contrasts will be reduced.

Viewpoint 13: Case Road

This view is located adjacent to a residential dwelling. This image contains a portion of a lawn, a dirt haul road, and an unkept land buffer in the immediate foreground, followed by agricultural/open fields. Colors within the view are dominated by natural browns. The field edges, utility lines, and a portion of the distant vegetation form individual horizontal lines; the utility pole, the foreground trees and the distant communications tower provide vertical elements within the landscape.

From this viewpoint, the open land is now occupied by solar panels and fencing that conforms to the underlying contours. The Facility screens distant views from the observer, however they do mimic the existing horizontal lines that were once evident in the field; a series of new vertical lines are introduced due to the fencing. The rural character of the view has been altered as the darker, clearly man-made facility is visible and introduces different materials, textures, and colors to the existing field character. With the facility extending length wise it appears as a prominent, or co-dominant, element within view; however, this is lessened due to its low-profile being seen with the large trees visible within the image.

Mitigation plantings are planned along a section of the proposed fencing, which will ultimately provide screening from the roadway and area residents. As these plantings mature, their screening value will increase. The vegetation will add new natural colors and textures, the Facility will be softened, and the horizontal expanse of the Facility is minimized.

Viewpoint 16: Case Road

This view is adjacent to a farm and garden center and contains an agricultural/open field bordered by vegetation in the distance. Colors consist of natural browns and greens of the field and trees. The fields and distant vegetation form individual horizontal lines; the existing H-frame transmission structures and individual trees provide vertical elements (some more noticeable than others).

From this viewpoint, the open land is now occupied by solar panels surrounded by fencing. The placement of the Facility mimics the existing horizontal line that was previously seen in the field yet creates a series of vertical and angled lines due to the proposed fencing and panels. Although the Facility is set back from the road edge allowing the retention of an increased amount of open land, the rural character of the view has been altered. The clearly man-made facility introduces different materials, textures, and colors into the existing field character. As the Facility extends length wise and deep into the field, it appears as a prominent, or co-dominant, element within view; however, due to its low-profile it does not extend above the tree line leaving the existing transmission towers and vegetation visible.

Mitigation plantings will provide screening of the Facility; as they mature, their screening value will continue to increase. The plantings will add interest to the view adding new natural colors and textures softening the panels and fencing, thus the expanse of the Facility is minimized.

Viewpoint 29: NYS Route 12E

This view is located adjacent to the Village of Chaumont municipal boundary. Although those who use this highway are likely to be concentrating on the road conditions and focusing down road, there are views to the surrounding landscape. This view contains an open field in the immediate foreground with a mixture of scrub/shrub material visible against a backdrop of trees that screens distant views. Colors within the landscape consist of grays, browns, and blues. The roadway, field, scrub/shrub material and trees all form individual horizontal lines bisecting the of the image; vertical elements include wooden fence posts and individual trees seen throughout.

From this viewpoint, the Facility is largely screened by the dense scrub/shrub hedgerow that is seen bordering the foreground field. The most notable change within the landscape is that of the required tree removal. Although a horizontal tree line still exists, it is lower on the horizon. A portion of the take-off structure is visible in the distance, and although faint in appearance, the

light color of the structure may be seen against the forested land in the background. This occupies a very small portion of the Facility and scene and are similar in appearance and style to the existing transmission structures. Overall, the Facility does little to change the character of the landscape.

Although it is not anticipated that there will be significant visibility of the Facility, mitigation plantings are being proposed and will be instrumental in screening the Facility, should the existing scrub/shrub hedgerow be compromised, or additional views are evident once the Facility is in place. The plantings may be seen against the tree stand in the background adding new colors and textures within the view.

Viewpoint 30: NYS Route 12E

This view allows those using the highway an open view to the surrounding landscape. This view contains agricultural/open fields separated by a hedgerow. Colors in this view are dominated by natural browns and blues. The roads edge, fields and distant vegetation all form individual horizontal lines; distinct vertical elements appear to be lacking.

From this viewpoint, the Facility is mostly screened by the dense scrub/shrub hedgerow that is seen bordering the foreground field. The Facility will be visible were the scrub/shrub falls below the height of the proposed panels as witnessed on the left side of the image. A new horizontal line may be introduced into the landscape as a result of the panels; although faint, vertical lines may be seen from the substation. Overall, the Facility does little to change the character of the landscape.

Although it is not anticipated that there will be significant visibility of the Facility, mitigation plantings are proposed and will be instrumental in screening the Facility, should the existing scrub/shrub hedgerow be compromised, or additional views are evident once the Facility is in place. Those panels that are visible above the scrub/shrub will begin to disappear as the screening value of the plantings are noticed. As the plantings mature, they will screen the majority of the Facility in view, including the substation; however, the dead-end structure and conductors will still likely be visible. The proposed evergreens will add new natural colors and textures within the view but will likely be seen as part of the existing vegetation.

Viewpoint 37: Weaver Road

This view is located adjacent to a residential dwelling and contains a lawn, play structure and shed within the immediate foreground, followed by agricultural/open fields; there are noticeable hedgerows and distant vegetation. In addition, there is a mound of tires intermixed with the hedgerow that is clearly visible. Colors are dominated by a light blue and natural browns. The field edges, and distant horizon form horizontal lines; individual trees and structures within the foreground provide vertical elements within the landscape.

From this viewpoint, the open land is now occupied by solar panels surrounded by fencing. The placement of the Facility mimics the existing horizontal line that was previously seen; new vertical lines due to the proposed fencing and panels are present, but faint in appearance. The rural character has been altered as the darker, clearly man-made facility is visible rising above the distant tree line introducing different materials, textures, and colors. It is also observed that the Facility does crest a portion of the horizon. The color of the Facility, while in contrast with the sky, does appear to be similar to that of the hedgerows, tire mound, and other individual vegetation. The Facility does not appear as a highly dominating element within this view; it is consistent in scale with the visible structures or vegetation being taller than the Facility's low-profile.

Viewpoint 40: Morris Tract Road

This view is located adjacent to a farm operation and residential dwelling and contains an open field bordered by a deciduous tree line. The field, transmission line conductors, and the tree line provide defined individual horizontal lines; the existing H-frame transmission structure and communication tower provide vertical elements. Colors within the view are dominated by natural browns and blues, but there is an introduction of gray.

From this viewpoint, a portion of the panels and modifications to the existing tree line are noticeable. The panels are seen toward the center of the view where they are lighter in color (similar to that of the sky's horizon), when compared to the foreground field and distant tree line. Assisting in its lack of visibility is the Facility's being positioned behind vegetation, and its low-profile that does not allow for the screening of the distant landscape or cresting of the distant horizon. While the Facility does introduce a horizontal line, it does imitate that of the field edges. The rural character of the view has been altered as the clearly man-made facility is visible and

introduces different materials, textures, and colors, however these changes do not significantly alter the landscape setting.

Viewpoint 42: County Route 125

This view is located in close proximity to the Lyme Rod and Gun Club and contains an area of scrub/shrub that separates the edge of the roadway and an agricultural field. Trees are mostly seen as a mass, with a few noticeable individuals, in the distance. Colors are dominated by a light-colored blue sky and the browns seen within in the fields; scattered light-colored structures are at the far edge of the field. The field and distant vegetation form individual horizontal lines; vertical elements are not strongly represented. Dwellings and accessory structures seen in the distance tend merge into the surrounding landscape.

From this Viewpoint, the Facility will be difficult to distinguish, including the panels and modifications to the existing tree line. Assisting in its lack of visibility is the distance between the observer and the Facility, its low-profile, and placement behind existing vegetation. The panels also take on a grayish hue, consistent with the landscape seen at that distance. The Facility appears as a minor element and could be considered as one small element within the overall landscape. As the Facility is not highly noticeable, it does little to change the rural character.

Although it is not anticipated that there will be significant visibility of the Facility, mitigation plantings are being proposed in association with NYS Route 12E and may be visible from this vantage point. It is anticipated that the plantings will screen the majority of the Facility in view within 10 years, this includes the substation. However, the take-off and dead-end structures and conductors may still be visible. The proposed evergreens, providing year-round screening, will blend into the existing landscape and will add a new color and texture within the view, if noticeable.

Viewpoint 44: County Route 59

This view is located adjacent to a cluster of residential dwellings and contains a lawn and hedgerow in the immediate foreground, an agricultural/open field in the middle, and a distant landform and vegetation. Colors are dominated by natural browns and sky blues. The field, distant vegetation, and the roofline of the dwelling in the immediate foreground form individual horizontal lines; with the exception of the foreground dwelling, vertical elements are not strongly represented.

From this viewpoint, it will be difficult to distinguish the panels and modifications to the existing tree line. Located just to the right of the foreground structure, a small portion of the panels are faintly seen just below the background ridgeline. Under these conditions, the panels take on a grayish hue, blending into the adjacent colors. The Facility appears as a minor element and is seen as one small element within the overall landscape, and it blends in with the visible development. As the Facility is not highly noticeable, it does little to change the character of the landscape.

Although it is not anticipated that there will be significant visibility of the Facility, mitigation plantings are proposed in association with NYS Route 12E and may be visible from this area. As the plantings mature, they will screen portions of the Facility in view. Although the evergreen vegetation appears to blend into the existing landscape, they will add a new natural color and texture if observed by viewers.

Viewpoint 45: NYS Route 12E

This view of the surrounding landscape contains agricultural/open fields in immediate foreground that are separated by a hedgerow; in the further distance is another field. Colors are dominated by natural browns. The fence, fields and distant vegetation all form individual horizontal lines; the road edge, individual trees, utility poles along Case Road, and the numerous fence posts provide a series of vertical elements located throughout the view.

From this viewpoint, The Facility is partially screened by the dense scrub/shrub hedgerow that is seen bordering the far field. With the panels in place a new horizontal line is introduced into the landscape and may provide a contrast with the surrounding colors. However, it is important to note that the sky makes up a large portion of this view and that the coloration of the panels may blend in with the sky under certain conditions.

Although it is not anticipated that there will be significant visibility of the Facility, mitigation plantings are proposed and evident. The plantings from this view are evident in the mitigation simulation, and aided by the distance between the observer and Facility the plantings blend with the existing deciduous vegetation.

Viewpoint 49: G. Spence Donaldson Memorial Field

This view from behind the field backstop where benches and a bleacher have been placed for spectators and shows an open field with mature trees outlining it in the distance. The field and trees provide defined horizontal lines, while there is a vertical definition at either side caused by vegetation or a built structure.

From this viewpoint, the open land and a portion of the existing vegetation seen in the distance is now occupied by the solar panels. The panels and fence conform to the underlying contours mimicking the existing horizontal line that were once evident in the field. The rural character of the view has been altered as the clearly man-made facility is visible, crests a portion of the horizon, and introduces different materials, textures, and colors, changing the appearance of the rural character. As the Facility extends length wise it appears as a prominent element within view; however, it is consistent in scale with the existing features. In addition, the proposed access road draws attention to the viewer due to its curvilinear form and contrasting color with the panels.

Mitigation plantings will provide screening of the Facility from this view; as the plantings mature, their screening value will increase. The proposed vegetation will add new colors and textures as the panels and fencing will softened, and the horizontal expanse of the Facility is minimized. As a result of the proposed mitigation, contrasts of the Facility will be reduced.

In addition to the above simulation descriptions, three LOS profiles were completed, including:

LOS 1 – Case Road and Snowmobile Trail (C5J)

The collection substation and interconnection facilities will be located on land adjacent to the National Grid's Lyme Tap Line off the Thousand Islands – Coffeen St. 115 kV transmission line #4 right-of-way. The height of the existing H-Frame transmission structures adjacent to the interconnection are approximately 78 and 66 feet in height, east and west respectively. This compares to the tallest proposed structures within the substation, namely the takeoff at 63 feet one inch and lightning mast at 60 feet; many of the substation components are at a height of (approximately) 25 feet or less.

While there are four simulations that show potential views of the substation, the LOS profile was completed to illustrate its relationship with the proposed solar panels, existing transmission line,

and the existing vegetation, as applicable from this particular location along Case Road. The profile demonstrates that the vegetation will likely provide screening of the substation during leaf-on seasons. Should visibility occur, particularly during leaf-off months, much of the substation will be screened by the panels themselves, thus it will be seen as a small component of the overall Facility. Although the panels will be seen at an angle, those panels beyond the first several rows will begin to be screened, by the panels themselves.

In addition, the seasonal Snowmobile Trail may also be found on this LOS profile. As highlighted on the LOS, the Trail coincides with the transmission corridor and will have a view of the existing transmission infrastructure and the Facility. The profile demonstrates that the substation will be unobscured, as well as the first several rows of panels. Although the panels will be seen at an angle, those panels beyond the first several rows will begin to be screened, by the panels themselves.

LOS 2 – Chaumont Historic District and NYS Route 12E

This LOS profile was completed to demonstrate the available screening from within the Chaumont Historic District, originating from NYS Route 12E. As illustrated in this particular profile, existing vegetation within the vicinity of NYS Route 12E and along Horse Creek will provide screening of the Facility during leaf-on seasons, and likely during leaf-off conditions due to the thickness along the Creek and the general layering of the vegetation. Should visibility exist, the proposed mitigation plantings will also provide a layer of screening, one which contains evergreen trees. This LOS is a very discreet profile between structures located in the Village of Chaumont, one which is unlikely to be comprehendible by travelers and others within the Village setting.

LOS 3 – Snowmobile Trail (C5J)

A supplemental LOS profile was undertaken for the seasonal Snowmobile Trail, due to its unique location where it bisected two sets of panels. This Trail is located within an existing transmission corridor and will have views of the existing H-frame structures and the proposed Facility in both directions. As illustrated on the LOS, the fence and panels will be visible. The panels will be seen at an angle, and it is illustrated that after the couple sets of panels, they will begin screening those located further away from the user.

(2) Contrast Ratings

The VIA (Appendix 8-1) describes the concepts and methodology applied to rating the potential visual change incurred by the proposed Facility. Simulations of the Facility without mitigation were rated to evaluate contrasts under worst-case conditions, with the understanding that proposed vegetative mitigation will moderate or mitigate perceived impacts.

Descriptions of the vegetative screening is discussed in Appendix 8-1 while simulations illustrating the proposed landscape plan is presented in Appendix 8-1, Attachment 5. Table 8-4 below summarizes the final score and averages for Part 1 Visual Contrast, Part 2 Viewpoint Sensitivity, and Part 3 Existing Scenic Quality. Here trends of contrast ratings where those simulated locations are considered to have the highest or lowest visual change in relation to each other can be obtained.

Descriptions of each contrast rating panelist's qualifications are included within Attachment 7 of the VIA, included as Appendix 8-1.

Table 8-4. Visual Impact Rating Results

VP	Location	Contrast Rating Panelist 1			Contrast Rating Panelist 2			Contrast Rating Panelist 3			Avg Part 1	Mean Dev* Part 1	Avg Part 2	Mean Dev* Part 2	Avg Part 3	Mean Dev* Part 3
		Part 1	Part 2	Part 3	Part 1	Part 2	Part 3	Part 1	Part 2	Part 3						
6	Morris Tract Road	4	10	1	3.5	12.5	2.5	5.5	10.5	2	**4.3 VW****	0.8	**11.0 WM**	1.0	**1.8 M**	0.6
11	Case Road	14	6.5	1	18.5	5.5	2	18	4.4	1.5	**16.8 M**	1.9	**5.5 W**	0.7	**1.5 WM-M**	0.3
13	Case Road	17	6	1	19.5	4	1	18	4	1.5	**18.2 MS**	0.9	**4.7 W**	0.9	**1.2 WM**	0.2
16	Case Road	15.5	5	1	21	4.5	2.5	17.5	4.5	2	**18.0 MS**	2.0	**4.7 W**	0.2	**1.8 M**	0.6
29	NYS Route 12E	3	14	1	10.5	14.5	2	5.5	11	2	**6.3 W**	2.8	**13.2 M**	1.4	**1.7 M**	0.4
30	NYS Route 12E	7.5	14.5	1	8.5	11	1.5	4.5	11.5	2	**6.8 W**	1.6	**12.3 M**	1.4	**1.5 WM-M**	0.3
37	Weaver Road	15	5	1	15.5	3.5	2	13.5	4	0.5	**14.7 M**	0.8	**4.2 W**	0.6	**1.2 WM**	0.6
40	Morris Tract Road	10	13	1	12.5	9.5	1	14.5	10	1	**12.3 WM**	1.6	**10.8 WM**	1.4	**1.0 W-WM**	0.0
42	County Route 125	4	14.5	1	1.5	12	1.5	3.5	14.5	1	**3.0 VW**	1.0	**13.7 M**	1.1	**1.2 WM**	0.2
44	County Route 59	11	10	1	4	9	1.5	4	8.5	1	**6.3 W**	3.1	**9.2 WM**	0.6	**1.2 WM**	0.2
45	NYS Route 12E	3.5	11	1	4.5	10.5	1.5	4	11	2	**4.0 VW**	0.3	**10.8 WM**	0.2	**1.5 WM-M**	0.3
49	G. Spence Donaldson Memorial Field	18.5	11	1	18.5	9	1.5	19.5	7.5	1.5	**18.8 MS**	0.4	**9.2 WM**	1.2	**1.3 WM**	0.2

*Mean Dev = mean deviation

**VW-very weak, W=weak, WM= weakly moderate, M=moderate, MS=moderately strong, S=strong

Part 1 Facility Contrast Rating

Part 1 Contrast Rating, described in Attachment 7, rates the proposed visual change against existing conditions with respect to compositional elements such as newly introduced lines, shapes, colors, Facility scale, and broken horizon lines. Under Part 1, there are nine categories to rate, where the total rating ranges from 0 to 27. When the rating contrast scale outlined in Section 8(a)(2) is rescaled to account for the averages found in Table 8-4, with respect to the nine categories, the scale is as follows:

Contrast Rating Scale	
0	None
0 - 4.5	Very Weak
4.5 - 9	Weak
9 - 13.5	Weakly Moderate
13.5 - 18	Moderate
18 - 22.5	Moderately Strong
22.5 - 27	Strong

Three simulations, viewpoints (VP) 13 and 16 on Case Road and VP49 at G. Spence Donaldson Memorial Field, were identified as having a moderately strong Part 1 Contrast Rating. These locations achieved rating averages of 18.2, 18.0, and 18.8, respectively. Each have clear unobstructed views of the Facility and range from 274 to 356 feet from the fence line. Proximity and high visual acuity in addition to new color, shape, and line that contrasts with the existing landscape contribute to the high ratings for these simulations. Broken horizon lines are observed at VPs 13 and 49 which also increases their contrast results.

The next set of simulations with lower contrast results, rating weakly moderate to moderate, include VP11 at Case Road, VP37 at Weaver Road, and VP40 at Morris Tract Road with rating averages of 16.8, 14.7, and 12.3, respectively. Distance to the fence line is more varied as VP11 is 212 feet away, VP37 is 596 feet away, and VP40 is 1,901 feet away. These three simulations show that new Facility components are introduced into view. VP11 is proximal but the panels do not interrupt the horizon line. VP37 is farther away but is partially screened by existing vegetation while panel colors are also visually absorbed due to similar adjacent leaf-off vegetative hues. VP40 is distant and the panels do not provide high Facility contrast. However, tree clearing that changes the horizon line is observed, as well as a partial view to the Facility.

The remaining six simulations have rating averages that are considered to be weak (VPs 29, 30, and 44) and very weak (VPs 6, 42, and 45). These viewpoint locations range in distances of 948

feet to 7,339 feet (1.4 miles) from the Facility fence line. Longer distant partial views to the panels, as well as existing intervening vegetation along sight lines help explain the weak and very weak rating results for this set of simulations. Facility siting and large road offsets influence the diminished visibility, which is particularly important for viewers along the nearby NYS Route 12E / Great Lakes Seaway Trail (Seaway Trail). VPs 29, 30, and 45 are from the Seaway Trail and were determined to have weak and very weak contrasts. Facility offsets minimize the perceived size and scale of the panels while its siting is such that intervening vegetation seen along the Seaway Trail will screen much of the view.

Mean deviations were calculated to observe the level of variance between the panelists within each simulation evaluation. Mean deviations ranged between 0.3 and 3.1, thus there is general agreement between the panelists. However, the greatest difference of opinion occurred with the simulation completed for VP44; the Part 1 Project Contrast for this location rated as weak yet resulted in the highest mean deviation of 3.1. Review of the completed evaluation forms indicate that one panelist consistently rated the contrasts within this simulation at least one point higher for most of the Part 1 categories as compared to the other panelists. It appears panelist opinion also varied the most regarding contrast changes when assessing VPs 16 and 29. VP29 has a mean deviation of 2.8. While the Facility is barely discernible at this location because of existing intervening vegetation, differences of opinion appear to occur in assessing the level of contrast that the proposed tree clearing provides. VP16 has a mean deviation of 2.0; in reviewing the evaluation forms one panelist consistently rated most Part 1 categories a half point lower as compared to the other two panelists.

Part 2 Viewer Sensitivity

There are eight categories under Part 2 to rate where the total rating ranges from 0 to 24. When the rating contrast scale outlined in Section 8(a)(2) is rescaled to account for the averages found in Table 8-4, with respect to the nine categories, the scale is as follows:

Contrast Rating Scale	
0	None
0 - 4	Very Weak
4 - 8	Weak
8 - 12	Weakly Moderate
12 - 16	Moderate
16 - 20	Moderately Strong
20 - 24	Strong

Part 2 of the contrast evaluation form considers viewer sensitivity, particularly if the viewpoint falls within or has a view of an existing visual resource. It also accounts for the character of viewer groups such as number of viewers, duration of view, presence of existing development, etc.

Table 8-2 indicates that there will be few views of the Facility from listed visual receptors. Therefore, most of the simulated locations emphasize viewer groups related to community roadway travelers or residences. Included with roadway travelers was a focus to provide simulations of representative views along NYS Route 12E / Great Lakes Seaway Trail, County Route 125, and Morris Tract Road, the two latter roadways are recognized as local roads of scenic interest. Rating averages range from 4.2 to 13.7 and thus weak to moderate. Viewpoints 29 and 30 (both along the Seaway Trail), and VP 42 County Route 125 are the exceptions that had a moderate average rating. The higher ratings (10.8 to 13.7) of all the locations simulated are attributed to locations along a designated scenic roadway. VP49 at G. Spence Donaldson Memorial Field, a local recreational resource listed in Table 8-2 has a rating of 9.2. Remaining viewpoints are on local roads near residences.

Mean deviations for Part 2 Viewer Sensitivity show variance ranging between 0.2 and 1.4., and results show common agreement as these ratings are generally less subjective. Review of the evaluation forms suggest that in some instances there were slight differences of opinion on how panelists rated existing development, the duration of view, or the numbers of viewers based the location of the viewpoint and abundance of residences in the area.

Part 3 Scenic Quality

Part 3 Scenic Quality is a standalone single rating that assesses the overall scenic quality of the existing conditions each simulated location in order to establish a baseline condition. For this rating, there is no evaluation of visual change, only a simple appraisal of the scenic quality of the view - a rating of 1 is weak, 2 is moderate, and 3 is strong.

Scenic quality for the simulated viewpoints was generally rated as weak/weakly moderate to moderate with averages ranging from 1.0 to 1.8. However, weak or moderate rating averages do not fully imply that views are not attractive, restful, or important to the community. Although there are rural, restful, unchaotic and harmonious pastoral views of open fields with little development, panelists felt that they were average, typical of the region, and did not offer a high

degree of visual interest such as landscape diversity, show distinct focal points that enhance scenic quality or offer other types of outstanding views according to criteria in Appendix 8-1, Attachment 7. Most simulations have a similar large horizontal shape in each view consisting of level foreground-midground fields in the bottom third of the image, a band of background trees in the middle, and the upper third of the photos showing sky. However, the intent was to provide simulations of the Facility from some visual resources and present representative views of what the community would experience from residences and roadways.

Mean deviations for Part 3 are comparatively very low, ranging between 0.0 and 0.6. This suggests the panelist's opinions on scenic quality regarding each simulation are very similar with little difference of opinion.

8(d) Visual Impacts Minimization and Mitigation Plan

A Visual Impacts Minimization and Mitigation Plan is discussed in the VIA, which includes proposed minimization and mitigation alternatives based on an assessment of mitigation strategies, including the consideration of screening (landscaping), architectural design, visual offsets, relocation or rearranging facility components, reduction of facility component profiles, alternative technologies, facility color and design, and lighting options for work areas and safety requirements, as applicable.

The VIA further discusses mitigation measures that may be implemented in order to reduce or minimize, potential visibility and generally consists of proper siting and design, and vegetative plantings.

- **Mitigation and Minimization Measures**
    - ***Screening***

The primary mitigation measure to soften and screen the Facility is through the use of a thoroughly developed landscape plan. The Applicant has provided such a plan as part of Appendix 5-1 of Exhibit 5 of the Application and landscape screening measures are further discussed in Section 8(d)(8) herein.

- ***Architectural Design***

Due to the nature of the Facility (e.g., panels, racking system, fencing, substation), architectural design options as a visual mitigation technique are minimal. Facility components are standard to a commercial scale solar project. The Facility will not have an operations and maintenance (O&M) building; therefore, visibility of such a structure is not included in part of the analysis. However, in order to minimize visibility of the Facility's collection substation and interconnect, these components have been sited at least 1,480 feet from Case Road, which is the nearest year-round publicly accessible area, and much of these elements are also screened by the panels themselves, from this corridor. The substation will contain a steel control building that will be painted a light gray, appearing to be coordinated with other components (e.g., bussing) within the substation. Visibility of these features will be minimized.

- ***Visual Offsets***

A visual offset would require the improvement to an existing "eye-sore", or similar, not associated with the Facility. For instance, the removal of a dilapidated barn. There are no proposed visual offsets being proposed in addition to the other measures being offered.

- ***Relocation or Rearranging Facility Components***

The siting of the Facility has been done in such a manner that relocation, or rearranging components, will not effectively reduce visibility. The Facility layout is restricted to available land, on leased or purchased parcels, after consideration of environmental and engineering restrictions. In addition, the Facility has been sited to meet or exceed setback requirements identified by ORES, and the Towns of Lyme and Brownville. Exhibit 5 (Design Drawings) provides additional detail regarding setbacks and the distances used for this Facility. These setbacks are applicable to proposed components such as solar panels, inverters, and the collection substation.

When evaluating the location of the Facility, the following should also be recognized:

- The Facility has been located at least 800 feet from the NYS Route 12E. This allows for 1) an increased setback distance between the corridor and Facility, and 2) the Facility is sited in a manner that takes advantage of screening provided by existing vegetation, as seen from the corridor.

- The Facility is generally sited far from many of the listed visual resources.
- The Facility is sited in a manner that will take advantage of existing screening so that visibility will be minimized or eliminated from the core downtown area of the Village of Chaumont; thus, reducing potential visibility by a relatively larger number of viewers.
- The collection substation is located adjacent to the existing transmission line to minimize the distance between the two features, and consolidate like structures and land uses. The collection substation is located approximately 3,8500 feet and 1,480 feet away from Morris Tract Road and Case Road, respectively.

    - ***Reduction of Facility Component Profiles***

The Facility has been sited on contiguous parcels to the maximum extent practicable, while reducing the footprint of the Facility to the minimum amount required. A further reduction in size will jeopardize the power generation needed to meet the goals of the Facility, which is in response to New York State renewable initiatives. The proposed panels, at their maximum tilt angle will result in a height of eight feet-eleven inches, which less than is allowed by the Town of Lyme (16 feet) and Town of Brownville (20 feet).

    - ***Alternative Technologies***

As described in the Section 94-c Application, the Applicant intends to use a solar module similar to the Jinko Solar Tiger Pro 72HC-TV 530W Bifacial Module with 3.2 mm Anti-Reflection Coating on a tracker racking system similar to the ArrayTech DuraTrack® HZ v3 system. The maximum height of the solar array panels is anticipated to be 8 feet, 11 inches from finished grade, inclusive of the racking system. No alternative technologies are available to significantly reduce visibility of the proposed Facility.

    - ***Facility Color and Design***

There is limited opportunity to change the color of the Facility, as there is a lack of options for the panels, racking system, and collection substation, as is typical for this type of facility.

In addition, in designing the Facility, the following techniques were implemented: low profile equipment, taking advantage of natural topographic and vegetative screening due to limited

grading, increasing road setbacks, siting against tree lines, and avoiding the use of overhead interconnection lines where possible (e.g., for collection). Specifically:

- The Facility minimizes the amount of vegetation clearing and uses existing vegetation, such as the surrounding woodlands and hedgerows, as visual barriers as much as possible[7]. For additional information on clearing, please refer to Exhibit 11.
- In most instances, the panels are proposed against background trees to reduce visual contrasts, as color contrasts are absorbed and moderated by the background trees.
- Vegetation clearing outside of the panels is kept to a minimum in order to preserve existing trees and other vegetation for Facility screening to the maximum extent practicable.
- In order for the substation to appear cohesive, the steel control building will be painted a light gray, appearing similar to other components (e.g., bussing) within the substation.
    - ***Lighting Options***

The only permanent sources of lights will be at the substation and gates, which will assist in the safety and security if the Facility. Light emitted from the fixtures will not result in light trespass or glow in an upright manner that is associated with light/sky pollution. For more details regarding proposed lighting at the Facility, see Appendix 8-1 of the Exhibit 8, Attachment 4, and Exhibit 5 Appendix 1.

- ***FAA Aviation Lighting Hazards***

Due to the low profile of the Facility, FAA hazard lighting is not required.

(1) Advertisements, Conspicuous Lettering, or Logos

Other than warning and safety signs, no advertisements, conspicuous lettering, or logos will be permitted on Facility components.

[7] The Applicant complies with the Town of Lyme local law on the amount of tree clearing.

(2) Electrical Collection System

The collection system will be placed underground. However, should subsequent unforeseen engineering, construction, or environmental constraints dictate the need for overhead infrastructure, such apparatus will be utilized for the shortest distance possible.

(3) Electrical Collection and Transmission Facilities

Electric collection and transmission structures shall have a non-glare finish. Use of a dark brown or green weathered steel dead-end structure shall be considered in the development of final engineered design.

(4) Non-Specular Conductors

Non-specular conductors shall be used for any portion of the transmission line and electric collection system.

(5) FAA Wind Turbine Color Requirements

This section is not applicable to the Facility because it is a solar project.

(6) Shadow Flicker for Wind Facilities

This section is not applicable to the Facility because it is a solar project.

(7) Glare for Solar Facilities

A glint and glare study was completed and contained as Appendix 8-2 of the Exhibit 8 Application. This analysis was performed using the Solar Glare Hazard Analysis Tool (SGHAT). Although the solar panels will have anti-reflective coatings the study evaluated whether glare would occur at the Watertown International Airport, and nearby residences and roadways. Based on this completed effort, it is not anticipated that glare will be evident at any of these locations.

(8) Planting Plan

As discussed within Exhibit 5, a planting plan, referred to as the Landscaping Plan, was prepared for all applicable Facility components and is included in Appendices 5-1 and 8-1.

Vegetative mitigation, or screening, can be effective in further minimizing views. In order to provide additional screening, a landscape plan was developed that contains sustainable, hearty and resilient plantings that primarily consist of native/indigenous species. The landscape plan has been coordinated with and approved by Town of Lyme officials.

The planting scheme has an emphasis on evergreens which will help minimize year-round views into the Facility Site. Additionally, ornamental, pollinator-friendly, small trees and shrubs have been incorporated into the plan to provide a more natural look, as well as being more aesthetically pleasing and complimentary to the surrounding area.

The following items and concepts were applied to the Landscaping Plan:

- The Towns Zoning Laws were reviewed, and the visual screening efforts meet the stated intent and spirit of the requirements to the best extent possible.
- Native/indigenous evergreen trees and pollinator-friendly deciduous shrubs and small ornamental tree species were selected for inclusion into the plan. The species chosen will need to reach an adequate height and width to provide the appropriate visual screening, while also maintaining minimum mature heights that will not produce shade over the Facility in later years. Deciduous and evergreen tree species include: balsam fir (*Abies balsamea*), northern white cedar (*Thuja occidentalis*), eastern white cedar (*Juniperus virginiana*), white spruce (*Picea glauca*), flowering dogwood (*Cornius florida*), and downy shadbush (*Amelanchier arborea*). Shrub species include: red chokeberry (*Aronia arbutifolia*), red twig dogwood (*Cornus sericea*), common witch hazel (*Hamamelis virginiana*), common winterberry (*Ilex verticillata*), and highbush blueberry (*Vaccinium corymbosum*).
- The plantings are proposed along the outside fence line or at property boundaries in locations noted on the Landscaping Plan. Two planting types (or modules) are proposed along portions of the south and west Facility boundary:
    - Mitigation Planting Template Type 1: This planting scheme provides a density of plantings that will be considered a typical visual screening effort for this Facility. Approximately 32 deciduous and evergreen trees per 300 feet of linear planting are proposed; 21 shrubs are also included within this template. White spruce and eastern red cedar make up the majority of the trees being suggested within this grouping.

- Mitigation Planting Template Type 2: This planting scheme provides a higher density of plantings to screen views. Approximately 39 deciduous and evergreen trees per 300 feet of linear planting are being proposed; 28 shrubs are also included within this template. Eastern red and northern white cedars make up the majority of the trees being suggested within this grouping

- Expected growth heights (depending on the specific tree or shrub species) are between five to 15 feet at five years. However, fully mature heights of the evergreen tree species may reach 40 to 60 feet high.
- A grass seed mix using native/indigenous warm and cool season grasses was developed especially for the areas under and around the solar panels and is considered favorable for wildlife habitat and sustainable growth. The seed mix will provide a groundcover that minimizes erosion concerns, does not pose any shading issues, and is manageable year-round.
- A native pollinator seed mix is intended to be sown in a designated 10-foot-wide area located outside of the panels, and around the perimeter of the proposed landscape mitigation buffer. Native flowers in the mix will provide an attractive display of colors during the growing season.
- It is important to note that an annual maintenance program will be provided to ensure that proper care and attention is given to the proposed plantings once they have been installed. Maintenance will include, but may not be limited to, selective pruning, mowing, and monitoring of invasive species.
- Due to the siting of the collection substation, vegetative mitigation was not deemed necessary.

(9) Lighting Plan

A lighting plan has been prepared for security and maintenance need within the proposed substation. A plan and profile is presented in Appendices 8-1 and 5-1. Light fixtures will be mounted at a height not to exceed 15 feet above finished grade and will not be illuminated during unoccupied periods. Full cut-off fixtures and task lighting will be used wherever feasible, as specified in the Lighting Plan. The lighting plan addresses the following, as applicable:

- Security lighting needs at the substation;

- Plan and profile figures to demonstrate the lighting area needs and proposed lighting arrangement and illumination levels to provide safe working conditions at the collection substation site;
- Exterior lighting design will be limited to lighting required for health, safety, security, emergencies, and operational purposes and will be specified to avoid off-site lighting effects as follows:
    - Using task lighting as appropriate to perform specific tasks; limiting the maximum total outdoor lighting output; task lighting fixtures will be designed to be placed at the lowest practical height and directed to the ground and/or work areas to avoid being cast skyward or over long distances, incorporate shields and/or louvers where practicable, and capable of manual or auto-shut off switch activation rather than motion detection; and
    - Requiring full cutoff fixtures, with no drop-down optical elements (that can spread illumination and create glare) for permanent exterior lighting. Manufacturer's cutsheets of all proposed lighting fixtures will be provided.

      The proposed lighting complies with OSHA requirements, as proper illumination will be provided for all working spaces around the electrical equipment. All of which has been designed so that control points or persons making repairs will not be endangered by "live parts" or other equipment.

8(e) Conclusion

The VIA determined that visual impacts from the Facility are minimal to the local community, residents, and protected or aesthetically valuable resources. There would be areas from which the Facility would be visible, but there are a multitude of areas from which it would not be visible. The Applicant is proposing to install landscaping along portions of the Facility to provide nearby residences with screened views. The Facility has been designed to comply with local laws relevant to visual minimization, 19 NYCRR § 900-2.9 and the Uniform Standards and Conditions (USCs) and visual impacts have been avoided and minimized to the maximum extent practicable.

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