



**Fort Covington Solar, LLC**

**Fort Covington Solar**

**Matter Number: 23-00052**

**§ 900-2.9 Exhibit 8**

**Visual Impacts**

**Revised December 2024**

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## Acronym List

3D	three-dimensional
AMSL	above mean sea level
CAD	Autodesk Civil 3D 2023
CDP	Census Designated Place
GIS	Geographic Information System
GNIS	Geographic Names Information System
LiDAR	Light Detection and Ranging
LOS	Line-of-Sight
LSZ	Landscape Similarity Zones
MAX	Autodesk 3DS Max 2022
NESC	National Electrical Safety Code
NRHP	National Register of Historic Places
NYCRR	New York Codes, Rules and Regulations
NYPA	New York Power Authority
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSDOT	New York State Department of Transportation
ORES	Office of Renewable Energy Siting
PEJA	Potential Environmental Justice Area
POI	Point of Interconnection
SGHAT	Solar Glare Hazard Analysis Tool
SHPO	State Historic Preservation Office
USGS	United States Geological Survey
VIA	Visual Impact Assessment (see Appendix 8-1)
VIMMP	Visual Impacts Minimization and Mitigation Plan
VP	Viewpoint
VSA	Visual Study Area
ZVI	Zone of Visual Influence

## Glossary of Terms

<b>Applicant:</b>	Fort Covington Solar, LLC, a wholly owned subsidiary of Boralex US Development LLC, the entity seeking a siting permit for the Facility from the Office of Renewable Energy Siting (ORES) under Article VIII of the New York State Public Service Law.
<b>Facility:</b>	Refers to the proposed 250-megawatt utility scale solar generating Facility. The proposed Facility components to be constructed for the generation, collection, and distribution of energy for the Fort Covington Solar Facility include solar panel modules, electrical collection system, collection substation, point of interconnection (POI) switchyard, access roads, laydown/staging areas, and other ancillary facilities. There is no Operations and Maintenance (O&M) building proposed.
<b>Facility Site:</b>	A boundary area encompassing all Facility components and all participating parcels (58 total parcels) within the Town of Fort Covington, Franklin County, NY, totaling approximately 5,362.9 acres.
<b>Visual Study Area (VSA):</b>	Refers to the geographic area evaluated for the study of visual impacts. In accordance with Part 900, the VSA for the Facility includes a 2-mile radius around the proposed fence perimeter of the Facility. The total area encompassing the VSA is 54.60 square miles.
<b>Limits of Disturbance (LOD):</b>	The portion of the Facility Site where the potential for construction impacts and site disturbance occurs, totaling approximately 1,759.8 acres.
<b>Fenced Area:</b>	Refers to entire area located within the Facility fencing, totaling approximately 1,507.4 acres.

## **Exhibit 8: Visual Impacts**

This Exhibit provides information required in accordance with § 900-2.9 of the Section 94-c Regulations.

A Visual Impact Assessment (VIA) presented in Appendix 8-1 was conducted for the Facility to determine the extent and assess the significance of Facility visibility. The Visual Study Area (VSA) for this VIA extends 2 miles around the proposed fence perimeter of the Facility which encompasses 54.6 square miles. The VIA is a more comprehensive and detailed report of potential Facility visibility and should be partnered with Exhibit 8 upon review. Exhibit 8 herein provides an abbreviated version of results and findings. Please refer to the VIA if further discussion is needed.

### ***Executive Summary***

Fort Covington Solar is proposed to be located in the Town of Fort Covington, Franklin County, New York.

At no location is the Facility anticipated to be in full visibility. While partial visibility of the mitigated Facility from various locations will occur, it is also concluded based on supporting data and analyses that Fort Covington Solar has achieved the performance criteria of minimizing visual impacts to the extent practicable and also will not have significant impacts to aesthetic resources within the VSA. Nor will the Facility diminish enjoyment of recreational areas or the integrity of historic sites.

The Landscape Plan design and Facility simulations demonstrate that proposed vegetative mitigation is soundly placed along Facility fence lines facing nearby residences and at areas facing high use activity such as roadways when there are open direct line of sight views. The proposed plantings are integrated with existing trees and hedgerows in the area to provide in time, ample screening, moderating and mitigating views to viewers in either public or private locations. As anticipated, there is expected to be greater vegetative screening in future years. The Facility is effectively screened with moderated views at five years. Visibility or associated impact in the early years is temporary in nature and does not reflect conditions that would be obtained during the majority of the life of the Facility that is estimated to be 30 years. Overall, the arrays are also sited on fairly flat topography. Panels are not placed on steep slopes that would be highly visible or cause landscape mitigation to be less effective if placed at lower fence line elevations.

The viewshed analysis results objectively show that there is low and minimal expected visibility of solar arrays (16.4%) within the VSA that is predicted to experience partial, proximal, intermittent, or distant views of the Facility. There are limited areas from which the Facility would be visible but, in contrast, a multitude of areas from which it would not be seen. There will not be far-reaching views. The majority of this visibility occurs within 0.5 mile. Furthermore, 9.5% of the total 16.4% visibility of solar arrays occurs within participating landowner property within the Facility Site. In other words, more than half of the visibility experienced will occur on privately-owned parcels under option to lease, purchase, easement, or other real property interests with the Applicant. The remaining 6.9% of Facility visibility within the VSA will occur on non-participating landowners.

Due to the general isolated location, visibility analysis shows only 2.9% of the VSA will experience visibility of the collection substation, switchyard, and point of interconnection (POI) structures. Results shows that most visibility occurs within 0.5 mile and is generally restricted to the ROW and open land already occupied by the arrays. A subsequent calculation shows that 1.7% of the total 2.9% of substation and switchyard visibility within the VSA occurs on participating landowner property, that which is defined as privately-owned parcels under option to lease, purchase, easement, or other real property interests with the Applicant. The remaining 1.2% with Facility visibility within the VSA will occur on non-participating landowner parcels.

## **8(a) VIA - Visual Impact Assessment**

A VIA (Appendix 8-1) was conducted for the Facility to determine the extent and assess the significance of Facility visibility. The VIA includes both quantitative and qualitative identification of visually sensitive resources, viewshed mapping, confirmatory visual assessment fieldwork, photographic simulations, and proposed visual mitigation. In completing the VIA, local municipalities and state agencies were consulted and applicable guidance and information was incorporated into the assessment. This exhibit provides an abbreviated version of the VIA and addresses the issues presented herein.

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

While the solar panels are in the Town of Fort Covington, the 2-mile VSA also includes the Towns of Bombay, Bangor, and Westville, New York. The northern section of the VSA is in Canada. Canadian territory is not included in Appendix 8-1 VIA as it is outside of the New York jurisdictional limits. The nearest larger towns to the Facility are Malone, the county seat of Franklin County,

approximately 5 miles to the southeast and the Town of Massena, which is 8.5 miles to the west. The VSA is rural and primarily consists of large contiguous locations of mixed forest interspersed with open, agricultural land parcels, as well as rural residential land that is located along roadways. Agricultural District #1 is prevalent within the VSA.

### **Physiography and Land Use**

The study is within the St. Lawrence Lowlands physiographic province and shares the border with Canada. Topography within the 2-mile VSA trends from low to high with an elevation difference rising from north near the Canadian border to the southeastern VSA extents. Topography in the VSA range from approximately 153 to 375 feet above mean sea level (AMSL) with only an elevation difference of 223 feet. The northern portion between Drum Street Road and County Route 4 is the most level as it is close to St. Lawrence River. Terrain starts to slightly increase south of County Route 4. Higher elevations are found to the southeast near Buell Road in southeast Fort Covington and Jewett Road in Westville.

Local relief at the solar arrays are relatively flat and range from 158 to 282 feet AMSL resulting in a 124-foot difference over the site.

### **Water**

Because of forest groups, wooded riparian zones, and in some cases varying terrain, open water bodies are not a highly visible component of the visual landscape for the Facility. However, most prominently recognized streams within the study area include Pikes Creek, Salmon and Little Salmon River, and the East and West Branches of Deer River and their associated tributaries.

### **Transportation**

There are 73 roadways in the VSA. There is one state highway, New York State (NYS) Route 37 which is also designated as the Military Trail Scenic Byway and Bikeway. There are 14 county routes and 58 local roads.

### **Community/Residential**

Overall, the VSA contains a limited number of residents as reflected in Table 8-1. The communities within the VSA along with population estimates sourced from The U.S. Census Bureau, 2022 (5-year estimates) population numbers are provided below in Table 8-1.

**Table 8-1. Population of VSA Communities**

Town/Village/CDP*	Population (2020 Estimates)
Town of Bangor	2,231
Town of Bombay	1,254
Town of Fort Covington	1,531
Town of Westville	1,757
St. Regis Mohawk Reservation	3,663
Akwesasne <sup>1</sup>	4,527
Fort Covington <sup>1</sup>	1,127
Fort Covington Center <sup>2</sup>	395
Westville Center <sup>2</sup>	51
<sup>1</sup> CDP=Census Designated Place <sup>2</sup> Unincorporated Place, population estimates taken from 2020 census block groups	

Other non-incorporated recognized populated census designated places and minor unincorporated places within the VSA, as recognized by the United States Geological Survey (USGS) Geographic Names Information System (GNIS) database are also included in Table 8-1.

Various views of the rural character and the nature of the area within the VSA can be obtained in the Facility Photolog in the Appendix 8-1 VIA. Higher density of development occurs in the Fort Covington Census Designated Place (CDP) located in the northern part of the Town of Fort Covington closer to the Canadian border in the vicinity of NYS Route 37. Other densely clustered residential development occurs within the St. Regis Mohawk Tribe along NYS Route 37 near the western edge of the 2-mile VSA, at Westville Center in the vicinity of Route 37 and Route 21 at the eastern edge of the VSA, and in the Town of Bombay at the crossroads of Route 95 and Route 1 at the western edge of the VSA. Most of the residential development in the VSA consists of rural residential houses along roadways.

Larger population centers are found in Malone, the county seat, approximately 8.5 miles to the southeast and in Massena, 18.6 miles to the west where each have villages that are densely developed. To convey distances of each community to the proposed Facility, each community was assigned to a distance zone.

Communities and municipalities that fall within 0.5 miles of the Facility (Distance Zone 1):  
Towns of Fort Covington (including Fort Covington Center) and Westville.

Communities and municipalities that fall between 0.5 and 2.0 miles of the Facility (Distance Zone 2): Towns of Bangor, Bombay, Fort Covington, and Westville, St. Regis Mohawk Tribe, CDP Akwesasne, and unincorporated place Westville Center.

### **Existing Energy Infrastructure**

Aboveground transmission and distribution infrastructure of varying heights, materials, and configurations may be seen within the VSA. The Facility will interconnect to the existing New York Power Authority (NYPA) 345 kV line HW1 from Haverstock substation to Willis E substation to deliver power to the NYS electricity grid.

The Office of Renewable Energy Siting (ORES) responded to initial outreach consultation and on December 19, 2023, responded by stating that upon their review of current publicly filed applications, they are not aware of any other renewable energy developments within a 5-mile radius of the Facility Site.

### **Publicly Known Proposed Land Uses**

The Applicant has reviewed general publicly available information to understand other facilities that might be proposed in the area. As part of the visual outreach per § 900-2.9 (b)(4), each municipality was also requested to provide any additional information regarding other known proposed non-facility land uses. None of the towns responded with any identification of proposed development.

Two Rivers Solar is a potential solar development in the area however, the site is approximately six miles beyond the Facility VSA to the west.

### **Distance Zones**

Distance zones were established within the VSA for assessing and determining visual effects over discrete distances and are required as cited in § 900-2.9 (b)(1). Distance zones also provide information about each zone's influence on the level of detail and acuity of objects in the landscape over various distances. Consequentially, two distance zones have been incorporated within the 2-mile VSA:

Distance Zone 1: Foreground (up to 0.5 mile from the viewer to the Facility). This zone is the closest to the Facility and therefore contains the nearest observational points to the Facility. Individual forms and shapes of the Facility are typically dominant where individual panel strings and racking system detail may be seen. Facility components, structures, and landscaping depict more complexities and intricacies of detail. The concentration of predicted visible areas typically lies within this zone. In this zone, viewers are expected to contain a higher level of viewing sensitivity.

Distance Zone 2: Middle ground to Background (0.5 to 2 miles from the viewer to the Facility). At this distance, individual tree forms and building detail can still be distinguished at, for example, 1 mile. The outer boundary of this distance zone is defined as the point where the texture and form of individual plants or trees are no longer visibly acute in the landscape. Solar panels lose their level of detail and a reduction in contrast occurs. At this distance, solar panels are seen as a continuous mass of form and/or color. Typically, the concentration of predicted visibility decreases in this zone as a result of the screening effects of existing trees, buildings, and topography between a viewer and the Facility. Additionally, as distance increases from an observer to a focal point, more of the visible landscape enters a viewer's periphery, which contributes to an overall reduction of the focal point's impression within the environment. Viewers in this zone typically experience a lessened viewer sensitivity compared to Distance Zone 1.

In conformity with § 900-2.9, the Appendix 8-1 VIA is conducted within the limits of the 2-mile VSA, however, § 900-2.9 (b)(1) also states that any potential visibility from specific significant visual resources beyond the specified study area should also be examined. There are no such areas that are in a reasonable vicinity of the VSA extents nor have any been any called out or emphasized by the municipalities.

### **LSZ - Landscape Similarity Zones**

Discrete landscape features sharing a commonality in appearance are defined as Landscape Similarity Zones (LSZs). These zones may contribute to similar landscape character based on patterns of landform, vegetation, water resources, land uses, and user activity. Distinguishing LSZs provide additional context for evaluating viewer circumstances where relationships between viewer groups and visual experience can be made, as well as understanding the influence that the LSZs have on visibility.

This effort resulted in the definition of five LSZs within the VSA, as follows:

- Zone 1: Agricultural – This LSZ is characteristic of open land that is flat or rolling, and is primarily used for row crops, hay, or pasture, or left fallow. These lands typically are cleared of trees, although they may contain isolated wooded areas, and tree or shrub hedgerows. Lesser development, such as dwellings or structures are limited and sparsely located; single family homes and farmsteads (including barns and silos) account for most of the buildings and structures on the land. These sparsely located buildings and structures are usually near or setback from the local roadways that intersect this LSZ. Agricultural lands are most often privately owned and while they may be abundant in a particular area, the numbers of the viewing public, as well as the frequency and duration of viewers, is likely low.
- Zone 2: Forested – This zone represents lands comprised of mostly mature deciduous and coniferous species, as well as mixed tree groups. Forested areas can encompass large swaths of land or be an isolated grouping of trees. Typically, forested lands are owned by private entities, or they may be protected and stewarded by a government agency. Those forested lands owned by public entities or organizations (e.g., New York State Department of Environmental Conservation [NYSDEC]) tend to offer the public with recreational activities such as hunting, nature viewing, hiking, or camping.
- Zone 3: Developed – This zone includes areas with concentrated development or population, such as villages, towns, cities, hamlets, minor civil divisions, rural residential abutting roadways, and transportation corridors. This zone is expected to contain the highest number of observers whether rural, urban, or if viewers are static, or transient. These places with more condensed development may experience limited or confined views because of closely located foreground objects, such as buildings or street trees that may impede distant views.
- Zone 4: Open – This zone includes all other land exhibiting limited visual obstructions and may contain minor development. This zone may also provide the capability to view farther distances with minor precluding features such as minor expanses of barren land, land with short scrub-shrub vegetation, cemeteries, golf courses, paved lots, parks with greenspace, and small emergent wetlands. These lands often are owned either privately or publicly, of which the publicly owned lands are anticipated to contain the largest volume of users.

- Zone 5: Water – This zone is generally characterized by the presence of large waterbodies that have the propensity to offer unobstructed distant views of the landscape. There are no large major lakes or ponds within the VSA. However, this zone has been included to recognize linear waterways such as the Salmon and Little Salmon Rivers. Other waterways within the VSA include the West Branch Deer Creek and Pikes Creek.

LSZ 2 Forested is the most dominant LSZ comprising 56.1% of the land area within the VSA, followed by Agricultural LSZ 1 at 33.4%. These two zones also occur as the highest percentages throughout each Distance Zone as well. The occurrence of LSZ 3 Developed and LSZ 4 Open drops significantly and comprises 5.1% each of the land area in the VSA. Zone 5 Water includes very small ponds or open water emergent wetlands at less than 0.4%.

## ***(2) The Visibility of the Facility***

The Applicant prepared a Glint and Glare Analysis in May 2024 (Plan 7C in Attachment 7 of Appendix 8-1 VIA); see also Section 8(a)(9)) to identify any potential glint/glare impacts on nearby residences and roadways. Other pertinent operational effects of the Facility such as visible plumes, shading, and shadow flicker are inapplicable to the characteristics of the Facility (solar arrays).

The visibility of the Facility is objectively evaluated, documented, and discussed throughout the VIA. A series of viewshed maps presented in Appendix 8-1, Attachment 2 of the VIA were completed to depict areas of Facility visibility within the two-mile VSA. To accurately assess the visibility of the Facility, two distinct viewshed analyses were completed: one to assess predicted visibility of the solar arrays, and one to assess predicted visibility of the collection substation, switchyard, and POI structures. Predicted visibility of the collection substation, switchyard, and POI structures are discussed in Section 8(a)(3).

Line-of-sight (LOS) elevation profiles were completed to address state resources of concern (i.e. those that are interpreted to fall under state jurisdiction), fulfilling § 900.2.9 (b)(1) (refer to Section 8(b)(1) of this exhibit and Section 7.2 of the VIA).

Facility simulations depicting Existing and Proposed Conditions showing leaf-on and leaf-off mitigation where proposed were produced for representative locations and can be found in Attachment 4 of the VIA. Section 8(b)(4) discusses public outreach and justification for simulation Viewpoint (VP) selection. Discussion of the simulations is in Section 8(c)(1).

## **Viewshed Results for Solar Arrays**

This analysis, per § 900.2.9 (b)(1), incorporates trees and buildings in the study area in addition to topography and gives the most reasonable and realistic depiction of the surrounding landscape. The viewshed analysis results presented in Appendix 8-1 VIA Attachment 2 Figures and demonstrates limited visibility within the VSA is expected. Extensive discussion and percentage visibility calculations for LSZs, Distance Zones, Local High Use Resources as well as for the collection substation and switchyard is provided in Section 7.1 of the VIA.

In conclusion for the arrays, there is 16.4% of visibility within the VSA that is predicted to experience partial, marginal, proximal, or distant views of the Facility. When considering visibility between Distance Zones, the highest amount of visibility occurs within the 0.5-mile radius of Zone 1, comprising 15.2% of just the Zone 1 land area. This is because there is a concentrated amount of visibility in proximity to the Facility within the 0.5-mile radius, much of it within the solar array parcels themselves in open land as well as open adjacent parcels to the Facility and several roadways. There is an abrupt difference once outside of the 0.5-mile radius. Visibility within Distance Zone 2 drops to 1.2%.

Importantly, a subsequent calculation shows that 9.5% of the total 16.4% of visibility within the VSA occurs on land within the Facility Site belongs to participating landowners. In other words, more than half of the visibility experienced will occur on privately-owned parcels under option to lease, purchase, easement, or other real property interests with the Applicant. The remaining 6.9% of Facility visibility within the VSA will occur on non-participating landowners.

Even without proposed landscaping, no areas within the VSA are predicted to have full visibility of the Facility's solar arrays. Full visibility is defined as an unobstructed view to the full extent of the Facility. Most views from roadways, nearby residences, and aesthetic resources will be of the mitigated Facility.

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

Visibility of above-ground interconnections and roadways to be constructed within the Facility have been reviewed and analyzed within the Appendix 8-1 VIA.

In conclusion for the collection substation, switchyard, and POI, 2.9% of the land area within the VSA is predicted to have a partial view of the substation, switchyard, or POI structures. Most

visibility occurs within 0.5 mile and is generally restricted to the existing transmission line ROW and open land between County Route 4 to the north, Howard Road to the south, County Route 3 to the east, and Donovan Road to west, locations that are within land already occupied by the arrays. The substation and switchyard have mitigation proposed at the fence line to screen views to abutters residing to the east on County Route 3.

A subsequent calculation shows that 1.7% of the total 2.9% of visibility within the VSA occurs on participating landowner property, that which is defined as privately-owned parcels under option to lease, purchase, easement, or other real property interests with the Applicant. The remaining 1.2% with Facility visibility within the VSA will occur on non-participating landowner parcels.

There is no O&M building proposed.

#### ***(4) Appearance of the Facility Upon Completion***

To create the Facility simulations, Autodesk 3DS MAX 2022 (MAX) visualization software was used to correctly dimension the Facility three-dimensional (3D) models onto a single digital photograph from each VP location. A 3D model of the solar layout was created by using engineering specifications obtained from the design engineers for the Facility. The terrain elevation data (z value) needed to place the panels correctly on the surface of the earth was derived from the Light Detection and Ranging (LiDAR) sources noted in Section 7.1.1 of the VIA (Appendix 8-1). Proposed grading elevations were incorporated into the model. Using the engineering site plan and LiDAR terrain surface data in Geographic Information System (GIS), each x, y, z coordinate location of each proposed solar array was obtained and imported into Autodesk 3DS MAX visualization software, including the terrain surface itself. A 3D model of every proposed individual solar array was then physically constructed according to the proposed panel specifications, tilt angle, and proposed racking system. The proposed arrays were built as bifacial, two modules in portrait with a tracking racking system at a height of 15 feet above finished grade with the array axis oriented north-south. The simulation model was further developed to position the viewer at the selected vantage point. For example, at a given vantage point the visualization software is capable of providing and adjusting a camera view that matches that of the actual photograph. From the field effort, the documented camera coordinate (x, y, z) positions were entered into the model along with other camera information. The model was further refined to precisely match the existing photograph by referencing LiDAR point cloud data against the landscape features identified within the photo.

In a similar manner, the above methodology was implemented to build the components of the collection substation and POI switchyard, using the specified dimensions outlined in the engineering plan.

Simulations with landscaping were also produced from the proposed landscaping plan, obtained directly from the Facility Landscape Architect, and was imported into the MAX modeling environment. Each proposed tree and shrub species was then translated and built into 3D. Projected growth rates and heights of each species were then assigned upon consultation with the Landscape Architect.

Photographs were embedded with electronic information such as geographic position, time, and date. This information was used to calculate the sun angle in the simulation software to represent lighting conditions for the time of day and year that exists in a given photograph. Autodesk 3DS MAX is capable of calculating physically accurate shadows and highlights on the surface of a model.

The photo-simulations of the Facility are provided in Attachment 4 of the VIA.

#### ***(5) Lighting and Similar Features***

The Facility's Lighting Plan along with the collection substation plan and profile drawing and lighting fixture cut sheets is included in Appendix 8-1 VIA Attachment 7. The illumination levels within the substation were analyzed to meet the requirements set forth in the latest edition of the National Electrical Safety Code (NESC). The Facility will not be lit during normal daytime operations. Motion-controlled lighting will be installed at the substation to aid site security during darkness. Additional motion-controlled lights may be added to vulnerable areas within the Facility, if deemed necessary.

In the rare case when Facility maintenance must occur during nighttime hours, temporary work lighting will be installed. Temporary nighttime work lighting will be limited to those areas undergoing maintenance and will be directed away from off-site facilities and residences as much as possible. Temporary work lighting will be shut down when not in use, unless required for safety and/or security purposes.

Eighteen area full cut off lights will be placed at a height of 35 feet. Six cut off lights at the control buildings will be placed at a height of nine feet.

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

Photo-simulations have been developed from representative vantage points at varying distances and cardinal directions around the Facility to the degree there is visibility. Per § 900.2.9 (b)(4)(i), simulation locations are based on representative or typical views showing proposed site conditions from areas predicted to have direct line-of-sight visibility to the Facility. Each photo-simulation underwent a thorough selection process to conform with the regulations with additional input from ORES. Please see Appendix 8-1 Attachment 4 of the VIA to access the final photo-simulations that were prepared. The § 900-2.9(b)(4) VP selection criteria, and the prepared photo-simulations that conform to these criteria are elaborated on in Section 8(b)(4).

## **(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 and typically involves the following major undertakings: building/upgrading/repairing roads (if applicable); 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 other Facility components (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; construction may result in the temporary increase of dust and emissions.

Per Exhibit 16 of the Application, conventional trucks will be used to transport materials to the project site. Panels are transported on 53-foot flatbed trucks (WB-67). As currently proposed, there will be approximately 730 truck deliveries for solar panels. Other components needed include racking, piles, and power and communication conductor. The remaining equipment would be estimated to add approximately 500 truck deliveries using similar or smaller vehicles. Approximately 4,977 other trips will be required for delivery which includes aggregate dump trucks, concrete trucks, structural fill dump truck, and other miscellaneous deliveries. New permanent traffic control devices (such as signs or lights) are not expected to be required.

Construction visual contrasts would vary in frequency and duration throughout the course of construction. There may be periods of intense activity followed by periods with less activity and associated visibility would vary in accordance with construction activity levels.

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

While partial visibility of the mitigated Facility from various locations will occur, it is also concluded based on supporting data and analyses that Fort Covington Solar has achieved the performance standard of minimizing visual impacts to the extent practicable and also will not have significant impacts to aesthetic resources within the VSA.

In support of the above statements, Appendix 8-1 VIA concludes that:

1. Mitigation is soundly and fairly placed at fence lines facing abutters and at areas facing high use activity such as roadways when there are open direct line of sight views.
  - The arrays are located on fairly flat topography. Panels are not placed on slopes that would be highly visible or cause landscape mitigation to be less effective if placed at lower fence line elevations.
  - A robust landscape planting module that incorporates plant spacing for maximum screening in later years is provided.
  - Other screening is integrated such existing building development and forested areas and tree rows.
2. In quantifying land area in the entire VSA that may have potential visibility:
  - The viewshed analysis results objectively show that there is low and minimal expected visibility of solar arrays (16.4%) within the VSA that is predicted to experience partial, close, intermittent, or distant views of the Facility. There are limited areas from which the Facility would be visible but, in contrast, a multitude of areas from which it would not be seen. There will not be far-reaching views. The majority of this visibility occurs within 0.5 mile.
  - A subsequent calculation was made that resulted in 9.5% of the total 16.4% for the arrays occurring at participating landowner property within the Facility Site. In other words, more than half of the visibility experienced will occur on privately-owned parcels under option to lease, purchase, easement, or other real property

interests with the Applicant. The remaining 6.9% of Facility visibility within the VSA will occur on non-participating landowners.

The following provides a summary of other findings related to the Facility.

1. Due to the general isolated location, visibility analysis shows only 2.9% of the VSA will experience visibility of the collection substation, switchyard, and POI structures. Results shows that most visibility occurs within 0.5 mile and is generally restricted to the existing ROW and open land already occupied by the arrays. A subsequent calculation shows that 1.7% of the total 2.9% of substation and switchyard visibility within the VSA occurs on participating landowner property, that which is defined as privately-owned parcels under option to lease, purchase, easement, or other real property interests with the Applicant. The remaining 1.2% with Facility visibility within the VSA will occur on non-participating landowner parcels.
2. Listed aesthetic resources outlined in Table 8-2 that will have views of the Facility will be minimized to the extent practicable. Proposed landscape mitigation or existing tree or shrubs will provide screening at these locations. Furthermore, a 2023 Architectural Survey concludes that while some visibility may occur in the setting of select recommended historic properties, the presence of the components, including the solar arrays, a collection substation, and electrical interconnection facilities, will not diminish their identified architectural and historical significance and qualifying characteristics.
3. The local community will experience partial views of the Facility. Several segments of local roadways running through the interior of the Facility as well as perimeter roads may experience transient views from vehicular traffic as outlined in Appendix 8-1 VIA Section 7.1.5. The Applicant has proposed vegetative mitigation to screen views along roadways at locations with open lines of sight towards the Facility. Therefore, the majority of the views from roads will be of the mitigated arrays. Because of mitigation, these roadway views will be moderated and diminished to the extent practicable.

It is expected that the number of static (longer duration) viewers able to see the Facility is low due to the rural nature of the Facility location and lack of high density residential clusters and neighborhoods as compared to a suburban or urban area. Most residences are rural residential located intermittently along roadways. However, there will be house locations that may have partial long duration views. The Facility Landscape Plan was

**Revised Table 8-2. Inventory of Aesthetic Resources within the 2-Mile VSA**

Map ID	Fig. 4 Map No.	Resource Name	Town	Distance (miles)	Federal (F), State (S), or Local (L) Resource	Potential Visibility <sup>1</sup>
<b>Local Resource/Recreation</b>						
1	A2	Babbling Brook RV Park	Westville	1.2	L	No
2	A1, A2	Fort Covington Boat Launch	Fort Covington	0.25	L	No
3	A2	Rainbow Park	Fort Covington	0.1	L	Yes
4	A2	Old Fort Covington Cemetery	Fort Covington	0.04	L	Yes
5	A1	Salmon River High School	Fort Covington	0.6	L	Yes
7	B1	Hillside Rest Cemetery	Bombay	2.1	L	No
8	C1	Maple Hill Cemetery	Bangor	1.7	L	No
9	B2	Riverside Cemetery	Westville	1.3	L	No
10	A1	St. Mary's Cemetery	Fort Covington	0.18	L	Yes
<b>NYS Scenic Byway</b>						
N/A	A1, A2, B2	Military Trail Scenic Byway (and Bikeway)	Bombay, Fort Covington, Westville	0	S	Yes
<b>Autonomous Administrative Division</b>						
N/A	A1	St. Regis Mohawk Tribe	Bombay	1.0	F	No
<b>NY Potential Environmental Justice Area (PEJA)</b>						

Revised Table 8-2. Inventory of Aesthetic Resources within the 2-Mile VSA

Map ID	Fig. 4 Map No.	Resource Name	Town	Distance (miles)	Federal (F), State (S), or Local (L) Resource	Potential Visibility <sup>1</sup>
N/A	A2	360339502001	Westville	110 feet	F	Yes
N/A	ALL	360339502003	Fort Covington	0	F	Yes <sup>2</sup>
N/A	A1, B1	360339502004	Bombay	0.5	F	Yes
<b>NYS Snowmobile Trail (by Club)</b>						
N/A	A1, A2, B1, B2	Franklin Snowmobilers (trails C7E, S75)	Bombay, Fort Covington, Westville	Variable	S	Yes

Map ID	Fig. 4 Map No.	USN	Resource Name	Address	Town	Distance (Miles)	Potential Visibility <sup>1</sup>
<b>NHRP Listed Historic Site<sup>3</sup> (Federal Resource)</b>							
A	A1	03312.000012	Fort Covington Border Inspection Station	183 Dundee Rd	Fort Covington	0.43	No
<b>NRHP Eligible Historic Site<sup>3</sup> (Federal Resource)</b>							
B	A2	03312.000080, 03346.000096	Eagle Hall Block	7 Water St	Fort Covington	0.28	No
C	A2	03312.000086	A.M. Lincoln Store	26 Water Street	Fort Covington	0.28	No

Map ID	Fig. 4 Map No.	USN	Resource Name	Address	Town	Distance (Miles)	Potential Visibility <sup>1</sup>
D	A2	03346.000002	Cheney House	Main St	Fort Covington	0.32	No
E	A2	03346.000083	Konesky	2432 Chateaugay St	Fort Covington	0.13	No
6	A2	03312.000110	Elmwood Cemetery	602 Salmon Street	Fort Covington	0.10	Yes
<b>December 2023 Historic Architectural Survey Additional Recommended NRHP Eligible Sites<sup>4</sup></b>							
F	B2	03312.000107	Ellsworth Homestead	1160 Bombay-Westville Road	Fort Covington	0.2	Yes
G	A2	03312.000084	Farm	651 Frye Road	Fort Covington	0.1	Yes
H	A1	03312.000121	House	2192 NY Route 37	Fort Covington	0.25	Yes
<p><sup>1</sup> Potential visibility is obtained from the viewshed analysis using topography, trees, and buildings only, per § 900.2.9(b)(1).</p> <p><sup>2</sup> The entirety of Fort Covington south of NYS Route 37 is a Potential Environmental Justice Area (PEJA) that is called out as an aesthetic resource. Therefore, any visibility, viewpoint, or discussion within Fort Covington simultaneously addresses the PEJA aesthetic resource.</p> <p><sup>3</sup> Historic sites are based on New York's State Historic Preservation Office (SHPO) request for information dated October 31, 2023. All National Register of Historic Places (NRHP) sites are considered federally designated per Section 106 of the National Historic Preservation Act</p> <p><sup>4</sup> Information taken from December 2023 Historic Resources Survey Report. See Exhibit 9. Note that SHPO only requested a Historic Architectural Resources Survey within one mile of the solar array, which is less than that of the visual study area. Therefore, references to this Report only reflect historic resources out to one mile. Any other non-report related discussion and information greater than one mile uses data provided by SHPO per footnote 3.</p>							

designed to screen views of the Facility to the extent practicable for adjacent and nearby residences that would have direct views of the mitigated Facility. There are other residences that would have views blocked entirely by existing vegetation.

4. Photosimulations showing existing and proposed conditions including without mitigation and with proposed mitigation at 2 and 5 years have been produced. New shapes and colors incongruous to the existing environment are introduced. The general visual appearance of the low-profile panels as a group contribute to a homogenous form, which consists of new horizontal pattern often similar in shape, and size to the landscape features found in many views. Overall Facility contrast and the overall visual effect will vary depending on the extent of panel visibility (partial), distance of the arrays from the viewer, and if the panels are seen in the context of other existing noticeable modifications to the local natural landscape. In some instances, background vegetation seen behind the Facility moderates visual contrast because the arrays are perceived to be visually absorbed by similar color and color value expressed by the background trees. In other instances, depending on weather and seasonal conditions, contrasts appear greater. It is observed in several of the simulations that offset distances from a viewer or roadway are effective in moderating.

Facility contrast was rated for the Facility with no mitigation and the 2 and 5 year mitigation growth intervals upon evaluating the simulations. Contrasts were reduced for all simulations upon mitigation at 5 years where landscape plantings are proposed.

5. Results of the glare analysis predict the majority of arrays within the project exhibited no glare results for the modeled receptors, except for minor estimated glare from the second floor of a residence along Drum Street during the month of December for less than 10 minutes a day in the late morning (between 10:00 am to 11:00 am). This conclusion is based on the conservative Solar Glare Hazard Analysis Tool (SGHAT) assumptions and parameters of a bare-earth treeless environment. Under a real-world environment, it is observed that an existing line of trees would assist in screening the area.
6. There was no other development or wind and solar facilities within 5 miles that were identified by the Appendix 8-1 VIA, nor by ORES in a letter dated December 19, 2023 (Appendix 8-1 VIA Attachment 5). There will not be cumulative effects as a result of Fort Covington Solar.

Other factors assessing the degree of visual change from the Facility can be considered other than percentages of visibility or observations and results obtained from computer-based analyses, and include:

- Arrays are set back from property lines and/or often behind forested areas resulting in reduced visibility.
- Because a tracker racking system will be employed, panels will not appear at maximum tilt at all times. During the middle portion of the day the panels will lean towards a shorter more horizontal aspect.
- The Facility and mitigation will not always appear as a dominant feature in a view within the VSA.
- There will be no interference with the general enjoyment of recreational resources in the area due to the fact that most visual resources are at a distance from the Facility, or they are linear features (roads and snowmobile trails) running through the area and are expected to have intermittent and short-duration views. There is limited to no long-range visibility overall in the VSA.
- The vertical scale of solar arrays is typically not an issue in relation to surrounding features such as trees, hills, and barns. Lateral extent may be an issue if the arrays appear to overwhelm a ridgeline, scenic water body, or cultural feature that appears diminished in prominence. The Facility solar arrays, considering their layout, spacing and level topography in the area do not overwhelm such physical geographic areas.
- Visual clutter is reduced by as simple and uniform or geometrically patterned arrays or groupings are visually consistent than mixed types and sizes of objects. However, landscape mitigation proposed in views also assists in diminishing visual clutter and offering a naturalized consistency to the view.
- The Facility does not have an adverse effect on a known listed scenic vista.
- The Facility does not damage or degrade existing scenic resources.
- The Facility does not create a new source of substantial light that would adversely affect nighttime views in the area. Potential glare from the solar modules and associated

equipment would be negligible because they would consist of a non-reflective coating, when possible.

- There is no O&M building proposed.

### ***(9) The Related Operation Effects of the Facility***

The Applicant prepared a Glint and Glare Analysis, included in Attachment 7 of Appendix 8-1 to assesses the glare potential from the Facility at nearby non-participating residences, airports, and public roadways. However, this Facility is located over 7 miles from an airport based on the FAA's Circle Search for Airports Tool (FAA 2024). Because the Facility is located off-site and a significant distance from the airport property, evaluation is not necessary according to the FAA guidance. The analysis was prepared by TRC using the SGHAT.

A glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. When the analysis identifies glare, the associated ocular impact is quantified into three categories based on the retinal irradiance and subtended angle (size/distance) of the glare source. These three categories are Green – low potential for after-image, Yellow – potential for after-image, and Red – potential for retinal burn. Assumptions in SGHAT include:

- The modeling does not automatically consider obstacles (either natural or artificial, existing, or proposed) between the observation points and panel arrays. To view glare, there must be a clear line of site from the panels to the receptor location. Therefore, obstructions such as trees, hills, buildings, etc., may limit instances of glare.
- The ocular (visual) hazard predicted by the tool is also dependent on several environmental, optical, and human factors, which can be uncertain. This may minimize the true ocular (visual) impact for an individual.

In summary, results of this analysis predict the majority of arrays within the project exhibited no glare results for the modeled receptors. Arrays with potential glare effects was limited to minor estimated glare from the second floor of a residence along Drum Street. The modeled glare was categorized as “green glare” and estimated to generally be observed during the month of December for less than 10 minutes a day in the late morning (between 10:00 am to 11:00 am). It is noted that the SGHAT analysis is conservative and assumes clear, sunny days, all year round for the glare generation. It is unlikely that this would occur, particularly in the month of December.

This conclusion is also based on the SGHAT assumptions and parameters of a bare-earth treeless environment. However, between the residential receptor and array area there is an existing line of trees which would assist in screening the array area. The report results indicate that the estimated glare spot is relatively small and located along the northeastern corner/side of the array area. With the existing tree line along with the proposed vegetative screening along the northeastern corner of arrays, it is likely that this glare spot will be obstructed either fully or partially, further reducing the potential visual impact at the receptor location.

To avoid and minimize glare, the Facility will use a single axis tracking systems as they are more effective in minimizing potential glare from receptors close to the ground (residences and vehicular traffic from nearby roadways). This is because the system is designed for the panel to be perpendicular to the sun as it moves across the sky during the day. Therefore, a majority of unabsorbed light is reflected towards the sun, and not toward a receptor near the ground. As well, the Facility will utilize backtracking at the site to reduce the impacts from shading during the morning and evening hours of the day.

#### ***(10) Visual Resources Affected by the Facility***

A comprehensive inventory of aesthetic resources was established according to readily and publicly available data. These data are comprised of local, county, state, and federally recognized visual resource and/or sensitive sites within the full extents of the VSA and were compiled according to § 900-2.9 (b)(4)(ii).

Opportunity was provided to visual stakeholders, including local municipalities and state agencies, to append additional visual resources of concern to the inventory (outlined in Section 7.3.2 of the VIA in Appendix 8-1).

Table 8-2 contains the results of the investigatory findings for listed and recognized scenic resources in accordance with Part 900 aesthetic resource criteria provided in § 900-2.9 (b)(4)(ii). Figures 3, 4, and 5 in Appendix 8-1 Attachment 2 of the VIA depict the geographic location of each inventoried resource. The Facility Photolog (Attachment 3 of Appendix 8-1 VIA) illustrates photographs taken from VP locations throughout the VSA. Several of these photographs were documented from inventoried scenic and aesthetic resources identified below; these existing condition photographs depict the perspective from a VP facing toward the direction of the Facility Site.

## Visibility of Solar Arrays at Identified Resources with Predicted Visibility

Resources with predicted visibility of solar arrays are further described in Appendix 8-1, Section 7.1.5 of the VIA. In summary, the following resources may have the potential to view the proposed Facility.

### Federal Resources

One federal resource category, three Potential Environmental Justice Areas (PEJA), are likely to experience views. A minor amount of PEJA 360339502001 in Westville may have a partial view within open land several hundred feet east of McQueen Road. Visibility within PEJA 360339502004 (Town of Bombay) may have more distant views greater than 0.5 miles away in the vicinity of Jess Croke Road where numerous hedgerows will screen views. PEJA 15000US360339502003 extents include all of the Fort Covington town boundary south of NYS Route 37. As would be reasonably expected over such a large area, views obtained within the PEJAs will be highly variable depending upon location.

### State Resources

Two state resources are identified that will have views of the Facility.

- *Military Trail NYS Scenic Byway (and Bikeway)*. There is approximately 12 miles of NYS Route 37 Military Trail in the VSA where the roadway travels past various array locations. It travels from the western VSA extent in the northern section over to the east where it then turns south and continues to the southern VSA extents. Approximately 3.5 of the total 12 miles road may experience intermittent and partial visibility. Vehicular traffic views will have extremely short duration. The Applicant has proposed vegetative mitigation to screen arrays at all areas along the scenic byway where there is an open line of sight view to the Facility from the roadway.

*NYS Snowmobile Trails C7E, S75*). NYS Snowmobile Trail S75, maintained by the Franklin Snowmobilers Club, runs in the northwest quadrant of the VSA. This feature will not experience views except along 600 feet adjacent to Burns Holden Road where array views are 0.6 mile away. Views are not expected to be significant because of distance and existing intervening vegetation constraining view extents.

NYS Snowmobile Trail C7E travels from the Fort Covington Boat Launch on Drum Street south, routing in a southwesterly direction out to the Town of Bombay. The portion of the trail that will experience views of the Facility passes three array groups until the trail reaches the intersection of Smiddy Road and County Route 1. From that point southward there will be no views along the snowmobile trail. Most of the three array groups will have proposed vegetative landscape plantings. Therefore, views from the trail will mainly be of mitigated arrays.

The Applicant has spoken with the president of the local snowmobile club on multiple occasions to develop an alternate routing of the trail through the Facility Site that has been acceptable to the trail users. The president of the snowmobile club has agreed to discussing alternate routes before construction of the Facility begins.

### Historic

Upon initial review of SHPO data out to 2 miles, it was determined that no listed and eligible historic sites would have views of the Facility. Proposed solar facilities in New York have a separate and distinct conflict resolution process under Section 106 where there are Applicant consultations with SHPO that are outside of the regulations and scope of Exhibit 8. These consultations, however, are addressed in Exhibit 9. Under Exhibit 9, an additional architectural survey within a zone of visual influence (ZVI) must be performed. Within this report found in Appendix 9-4, there are three additional sites recommended for eligible historic status that may have views of the Facility; the Ellsworth Homestead on 1160 Bombay-Westville Road, a farm on 651 Frye Road, and an unnamed house on 2192 NYS Route 37, all in Fort Covington.

However, the report states that infrastructure will not require demolition or physical alteration of any of the surveyed historic properties within the ZVI. Therefore, no direct physical impacts on the historic properties are anticipated as a result of the Facility. The report also states that if a historic property's setting is less important to its significance than its architectural or historic qualities, then changes to setting may not adversely diminish the qualities or character defining elements that support a historic property's National Register of Historic Places (NRHP) eligibility. Therefore, the report concludes, the undertaking would have no adverse impact on a historic property.

## Local Resources

Local resources that are expected to have visibility of the Facility include:

- *Rainbow Park and Old Fort Covington Cemetery.* Rainbow Park is a local town park on NYS Route 37 with playing fields in a northern open section and playground equipment (swings, jungle gym) at the southern section surrounded by existing trees. Old Fort Covington Cemetery is adjacent to the park (entrance from County Route 42) where they share a parcel boundary. These two locations are similar in that they share a common view within 40 to 50 feet of each other as well as with viewshed results and are therefore grouped together. Views are not obtained at all parts of each property as each location is surrounded by trees. If strategically standing at gaps in vegetation near the property boundary, views to the Facility will be obtained. At each of the resources, views will be partial, consisting of several array strings and will be of short duration that lasts as long as a cemetery visit or activity at a playground. Mitigation is proposed at the fence line to screen views to these two locations.
- *Salmon River High School.* Very little of the high school grounds, in particular the higher use playing fields, is expected to obtain visibility of the panels. There is a small area in the northwestern portion of the parcel and minor areas to the east and south parcel boundaries near County Route 1 where views to the Facility will be obtained that are within the parking lots and pavement at the roadway frontage. Visibility is considered insignificant based on a distance of a half mile away from arrays in addition to adequate summertime roadside vegetation that would completely screen views for at least 6 months of the year. When winter conditions are present, views are still insignificant as the leaf-off conditions show a distant fragmented partial view through a dense myriad of bare-branched trees.
- *Elmwood Cemetery.* Viewshed results show a minor portion of the cemetery located on County Route 42 will experience views. Based on photo documentation presented as VP10 and VP11 in the Appendix 8-1 VIA Attachment 3 Facility Photolog, views would not be considered significant. Based on the Photolog photos, and even a simple examination with Google Street View, partial views through fragmented branches of surrounding tree rows may offer glimpses of several array strings during winter conditions. Landscape plantings are also proposed at the Facility fence line that faces the cemetery that would further diminish and moderate views towards the cemetery.

- *St. Mary's Cemetery*. St. Mary's Cemetery is located on NYS Route 37 near the center of town. The directional trends in the viewshed results clearly shows partial intermittent views of arrays would be towards arrays that are 0.25 mile away looking north. Furthermore, as documented in the Attachment 3 Facility Photolog and even with examination with Google Street View, that views would be obtained only between buildings that are across the street (north) and at distance with additional tall grasses present behind the development. Most of the view would be blocked by urban development such as gas stations, and other commercial properties in addition to any cars or objects that happen to be on the existing parking lots in view. Landscape plantings are also proposed at the Facility fence line that faces the cemetery.

### **(11) Cumulative Effects**

Per § 900-2.9 (a) a cumulative visual impact analysis should be performed as part of the VIA; however, the regulation does not provide specific direction on the preferred methodology to perform such analysis. However, there was no other development or wind and solar facilities within 5 miles that were identified by Appendix 8-1 VIA, nor by ORES in a letter dated December 19, 2023 (Appendix 8-1 Attachment 5 of VIA). Therefore, there will not be cumulative effects as a result of Fort Covington Solar.

### **8(b) Viewshed Analysis**

#### **(1) Viewshed Mapping and Light of Sight Profiles**

Typically, the first step in identifying the possibility for Facility visibility within the identified VSA is to complete viewshed maps. A viewshed analysis is a computerized GIS analytical technique that illustrates the predicted visibility expected for a facility and allows one to determine if and where a facility 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 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 map. A series of maps contained in the VIA (see Appendix 8-1 Attachment 2) depict visibility within two miles of the Facility Site, along with LSZs, visually sensitive resources, and simulation VPs locations.

The viewshed analysis results are shown in Figures 3, 4, and 5 of Appendix 8-1 Attachment 2 of the VIA. Please refer to Sections 7.1.2 through 7.1.8 of the Appendix 8-1 VIA for an extensive

detailed discussion of the viewshed analysis results as well as percent visibility tables. Summary results of the viewshed analyses are provided in Section 8(a)(8).

LOS elevation profile graphs were completed to address state aesthetic resources of concern (i.e., those that are interpretation to fall under state jurisdiction), fulfilling § 900-2.9 (b)(1). In lieu of LOS, several locations were addressed by producing simulations which is in effect, a type of line of sight view. Appendix 8-1 VIA Table 9 parses out visibility depiction by either LOS or simulation. Notwithstanding the state aspect of this requirement, several local resources have been included.

In summary, two LOS profile graphs were produced that provide elevation views for five resources. LOS L1 contains analysis for St. Mary's Cemetery, NYS Route 37 Military Trail Scenic Byway and Bikeway and NYS Snowmobile Trail C7E. Proposed mitigation will provide screening at the Facility fence line along this profile. LOS L2 provides an elevation profile for a recommend historic site located on 2192 NYS Route 37 and at a different location for NYS Snowmobile Trail C7E. Proposed mitigation is not encountered along this profile however there are two areas of existing hedge rows that will screen views.

It should be noted that although Line of Sight profile graphs (LOS) are a Part 900 requirement, they do not provide any new or different visibility results from the viewshed analyses, nor should they. LOS analysis uses the same LiDAR data as viewshed analyses and it is the same kind of line of sight pixel to pixel comparison across topography. Furthermore, line of sight type interpretation can be applied to direct views in simulations as well.

LOS profile graphs only show a different way to present information. LOS is restrictive and may in some circumstances be less accurate depending on scale and/or vertical exaggeration. They only show a single point A to point B representation and do not show the regional extent of visibility like a viewshed analysis does, nor the quality of a view provided by simulations. Typically, if there are important locations using viewshed visibility results that need to be examined further, it is standard practice not to provide LOS in these areas but to follow up with a Facility simulation if it is reasonably warranted.

LOS profiles are provided in Attachment 4 of the VIA in Appendix 8-1.

## **(2) Viewshed Analysis and Line of Sight Profile Methodology**

To accurately assess the visibility of the Facility, two distinct viewshed analyses were completed: one to assess predicted visibility of the solar arrays, and one to assess predicted visibility of the substation, switchyard, and POI components. These viewshed analyses have been produced to delineate predicted visibility within the VSA as follows:

1. Solar Array: This viewshed analyses for the solar panels incorporates topography, buildings, and trees and has been produced to illustrate predicted visibility within the VSA per § 900.2.9(b)(1), as it gives the most reasonable and realistic depiction of the surrounding Facility landscape. The results of this analysis provide the focus of visibility discussion in visual impact assessments because of the inherent aspects of reproducing realistic conditions when LiDAR datasets are used. To account for future procurement unknowns, the VIA utilized and evaluated a tracker racking system with solar array panel heights conservatively set to a value of 15 feet above finished grade at maximum tilt. Therefore, a height of 15 feet was used for the viewshed analysis. The final resulting output identifies geographic areas from which viewers would potentially see all or some part of the proposed solar panels.
2. Collection Substation, Switchyard, and POI Structures: One viewshed analyses was produced using the same LiDAR data and the same methodology as that of the solar arrays using trees and buildings only and with proposed grading and tree clearing addressed. This analysis accounted for the tallest substation and switchyard components such as 90-foot tall H frame structures, several 90-foot shield poles, and several 34 to 40 foot tall support structures. There will also be a control building that is 12 feet 10 inches tall. There will be two point of interconnection turning poles, no higher than 140-foot tall monopoles, embedded into the existing in-kind infrastructure that comprises the current 345 kV line ROW. The final resulting output identified those areas from which viewers would potentially see all or some part of the collection substation, switchyard, or POI structure. The proposed substation and switchyard components, POI structures as well as the section of overhead collection line will be a gray metallic color consisting of non-specular galvanized steel and is in compliance with 16 NYCRR § 1100-2.9(d)(4). The substation and switchyard control building material will be metal with a color of ash gray.

To develop the viewshed and model, ESRI Spatial and 3D Analyst GIS software were used. For the analysis, LiDAR point cloud data from the publicly available 2016-2017 Federal Emergency

Management Agency Lidar: Franklin and St. Lawrence Counties and Oneida Sub-basin, NY LiDAR dataset and obtained from the NYS GIS Program website was used. This LiDAR data was collected in winter/spring of 2016/2017 during leaf-off seasonal conditions representing fractional canopy cover, while no snow was on the ground and rivers were at or below normal levels. These data are preferentially acquired under leaf-off conditions, as the greater penetration of laser pulses through the canopy can improve the accuracy of the derived digital terrain models. The model was further developed by establishing an observer height of 6 feet and the assumption that the Facility would not be visible to a viewer who is standing amongst trees in a forested area. The final resulting output identified those areas from which viewers would potentially see all or some part of the proposed Facility components.

LOS methodology uses the same processed LiDAR terrain surface as the viewshed analysis. The same observer and target heights are used. ESRI Spatial 3D Analyst GIS software was used to run the elevation profiles. LOS elevation profile graphs can be found in VIA Attachment 4 in Appendix 8-1.

### ***(3) Viewer Group Overview***

Identifying the types of viewer groups and their associated frequency of exposure to visual change is important to understand levels of sensitivity. Viewers susceptible to visual change are dependent upon several factors, such as the amount of use, and the types of activities in which people are engaged in, and the scenic integrity of the landscape around them. Typically, higher levels of visual sensitivity are associated with places where people reside or spend most of their time or are a focal point on the landscape. Identified viewer groups within the VSA are discussed throughout the VIA in the context of aesthetic resources, viewshed visibility results, and photo-simulations of the Facility.

#### **Viewer Groups**

Types of viewers will vary by geographic region, as well as by travel route or use areas, such as a developed recreation site, urban area, or backyard. Viewer groups are categorized below and 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. This group includes local residents and members of groups that recognize the importance of local amenities.

- *Commuter Constituency*: People who use or are generally restricted to travel corridors that are destination oriented toward places of employment. These people generally experience transient short duration views when traveling to a location as compared to stationary 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.

Number of viewers – The degree of sensitivity is typically correlated to the number of viewers affected by a change. Information about precise number of viewers is not always readily available, however it can be reasonably assumed based on presence of development, recreational space, accessibility to public spaces, and roadways (local rural roads vs. state highways).

Generally, a village or city contains a more concentrated viewer density than suburban or rural places. One can also discern if a particular location 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 farm fields, marshes or swamps or places absent in amenities).

Duration of view – Each potential viewer or observer within the VSA will experience different sustained viewing times of the Facility, known as the duration of view. An individual's duration of view varies widely upon the objectives and activities conducted. Distinct viewing durations of the facility can be estimated by the types of viewer groups identified within a particular location. For example, fleeting views or those traveling by means of a vehicle are expected to have views endured for a lesser amount of time. Conversely, those who may be in a fixed position (e.g., fishing, camping, resting on a park bench) may experience a longer duration of view.

Viewer activities – Activities can influence a person's opportunity to observe their surrounding environment. For example, it is anticipated that fishing activities would occur in a static position where focused views of the landscape are obtainable, whereas an individual operating a motor vehicle tends to focus on a forward direction as they travel. Other examples include users participating in recreational sports where viewer attention is directed to conducting the activity, or to other individuals involved in the activity.

Context of Viewer – The characteristics and quality of an observer's visual environment may influence or diminish the impression of a visual change. Typically, a visual change may not be as compelling if the change is harmonious with the character of the existing environment. Whereas

existing man-made infrastructure or development within a landscape, or a lack thereof, has the propensity to absorb, or incrementally affect visual change.

#### ***(4) Important and Representative Viewpoints***

Viewpoint selection criteria are established in § 900-2.9(b)(4) under (i), (ii), (iii), (iv), and (v). TRC conducted three site visits in December 2022, September 2023 and November 2023 and documented representative viewpoint locations with applicability to the viewpoint selection criteria. Specialized field crew strategically obtained photographs from discrete locations in the VSA.

Potential visibility, as noted by the viewshed results in the Appendix 8-1 VIA viewshed mapping, guided the candidate locations for simulation viewpoints per § 900.2.9(b)(3). Results of the viewshed analysis shows the most prominent visibility is within Distance Zone 1 (0.5 mile) of the Facility, with minimal to no predicted visibility in Distance Zone 2. Several simulations include those from aesthetic resources listed in Table 8-2 that have predicted visibility as a result of the viewshed analysis. As well, much of the focus for viewpoint locations are closer to the Facility where visibility is predicted at cardinal directions around the Facility near residences.

On December 1, 2023, an information request was sent out to visual stakeholders. In this request, preliminary visual information was provided, indicating the extent and findings of visibility studies at that point in time, which consisted of identified visual resources as well as the result of a viewshed analysis, Facility mapping, and the Facility Photolog. As part of the in the outreach review materials, the Applicant suggested preliminary fair and worse case locations for simulations based proximity to residences, aesthetic resources or open views. Opportunity was provided for visual stakeholders, including local municipalities and the St. Regis Tribe, to confirm locations or provide additional and reasonable candidate locations for photosimulations or to append additional visual resources of concern to the inventory. This request to stakeholders was specific to locations that were publicly accessible.

In summary, there were no response requests from stakeholders except from ORES who provided concurrence, or a request of further checks of viewpoints and possible alternates. This correspondence is provided in VIA Attachment 5 (Appendix 8-1).

In addition to the visual, consultations performed throughout the design process for the Facility are summarized in Exhibit 2. Outreach efforts will continue to be documented and posted on the

Facility-specific webpage (<https://www.boralex.com/projects/fort-covington/>). The Applicant will be continuing public engagement throughout the remainder of the permitting process.

In conclusion, the Applicant has provided 9 simulations for the Facility summarized in Appendix 8-1 VIA Table 10. The simulation selection is representative of the Facility with respect to inventoried visual resources with predicted visibility, different distance zones as best as Facility views allowed, and views that offered as much of a clear, unobstructed sightline as possible in joint consideration with ORES.

## **8(c) Visual Contrast Evaluation**

### ***(1) Facility Simulations***

Photosimulations from representative vantage points that depict community views at varying distances and cardinal directions around the Facility have been developed to provide the quality of the view that will be obtained as a result of the Facility (what does it look like). Per § 900.2.9 (b)(4)(i), simulation locations are based on representative or typical views showing proposed site conditions from areas predicted to have direct line-of-sight visibility of Facility components. In addition, all viewer groups listed in Section 8(b)(3) are represented in the simulations. Please also see Revised Table 8-4.

There is no language in New York Codes, Rules and Regulations (NYCRR) Part 900 that states which growth stage must be used for mitigation simulations. Mitigation at two years is provided due to an ORES request. Five years future growth is also represented to depict mitigation as it is industry standard and a fair, conservative, and reasonable representation of what mitigation may look like over the life of the Facility. In all simulations, either the view will be of the mitigated Facility and/or existing vegetation is present to screen views.

Simulations are presented as sets of Existing and Proposed Conditions based on VP numbers and can be found in Appendix 8-1 VIA Attachment 4. Proposed mitigation vegetation at 2 year and 5-year growth intervals is depicted in the simulations where vegetative landscaping is proposed. Simulations showing the Facility with no mitigation are also presented in Attachment 16 (Revised Attachment 4).

Full descriptive summaries and effects of site mitigation for each simulation location is provided at length in VIA Section 7.3.4 (Appendix 8-1). Simulation contrast rating results are found in Section 9.0 of Appendix 8-1. In summary, as anticipated, there is expected to be greater

vegetative screening in future years. The Facility is effectively screened with moderated views at five years. Visibility or associated impact in the early years is temporary in nature and does not reflect conditions that would be obtained during the majority of the life of the Facility that is estimated to be 30 years.

Simulations show no full views of the Facility. In all location, partial views are obtained where typically several array strings will be in view. In addition to mitigation, front solar panels will block subsequent panels behind them so that views of immense array fields will generally not be experienced. In some locations such as VP15 Cushman Road and VP42 at NYS State Route 37 (Military Trail Scenic Byway and Bikeway), row crops are present and should they continue would block views to the Facility during the summer months and into the fall if not mowed. In other locations such as VP23 Bombay Fort Covington Road (Salmon River High School), VP35 County Route 43, and VP53 County Route 4 (Ellsworth Homestead), the Facility is sited within existing roadside vegetation or forest groups that already provides substantial screening in addition to the mitigation that is proposed. Simulation VP4 represents a view of the substation, switchyard, and POI structures at County Route 3. Here at the VP4 location there is abundant screening provided to block views from the roadway and nearby residences. The new electrical components are more visually absorbed at this location due to similar in-kind utility development that already exists.

Most simulations, save for VP42 NYS State Route 37 (Military Trail Scenic Byway and Bikeway) and VP4 County Route 3 (collection substation), show there is no interruption of the horizon line and that the Facility falls below the trees.

In several instances, siting and design has placed the Facility at distance. With distance, views are highly diminished with respect to size and scale as well as discernible detail. Examples of smaller perceived size can be found in simulation VP7 NYS Route 37 (Military Trail Scenic Byway and Bikeway), VP23 Bombay Fort Covington Road (Salmon River High School), and VP53 County Route 4 (Ellsworth Homestead).

## ***(2) Simulations Illustrating Mitigation***

As noted in Section 8(c)(1) simulations are presented as sets of Existing and Proposed Conditions and can be found in the Appendix 8-1 VIA within Attachment 4. Included in the suite of simulations are those illustrating proposed leaf-off and leaf-on vegetative mitigation at 2 year and 5 year growth intervals, where proposed, according to the Facility Landscape Plan presented in Appendix 8-1 VIA Attachment 7.

The Landscape Plan is integral to screening and moderating impacts and views of the Facility as illustrated in the simulations. Vegetative landscape plantings are proposed to minimize visual impacts to the extent practicable under § 900.2.9 (d). The regulations do not state that 100% screening must be achieved. There may be areas where views are not entirely blocked. However, the proposed landscaping has been placed to screen views to roadways passing by array groups and to residential abutters that may have direct line of sight views, thereby addressing and mitigating both short and long duration views.

Native/indigenous evergreen trees and pollinator-friendly deciduous shrubs were selected for the vegetative buffer. The species chosen noted in the Landscape Plan will need to reach an adequate height and width to provide the appropriate visual screening required while also maintaining minimum mature heights that will not produce shade over the Facility in later years. According to the Landscape Plan there is one Mitigation Planting Template (Type 1) planting scheme that provides a density of plantings that will be considered a typical visual screening effort for this Facility. Fully mature heights of the year-round coniferous species could possibly reach heights up to 40 feet in future years. Approximately 56,400 linear feet or 10.7 miles of vegetative mitigation is proposed for the Facility. Of the 56,400 linear feet, 3,950 linear feet of mitigation is proposed around the substation.

### **(3) *Simulation Contrast Ratings***

Per § 900.2.9 (c)(3) each set of existing and simulated views of the facility were compared and rated. All viewer groups listed in Section 8(b)(3) are represented in the simulations. Please also see Revised Tables 8-3 and 8-4. Results of the contrast ratings are provided in Table 8-3 and Table 8-4. Appendix 8-1 VIA Section 9.0 and Attachment 6 provides extensive discussion on the methodology that was undertaken to complete this task. A numerical visual impact rating form was used by three panelists to compare the existing vs. proposed conditions Facility photosimulations and has been accepted by ORES in previous Part 900 solar facility applications.

In summary, to evaluate visual change, there are two parts to the form. Part 1 is the Visual Contrast Rating, which rates the Facility as it contrasts against compositional visual elements of the viewpoint scene. 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. This section 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.

Three sets of Part 1 Contrast evaluations were performed:

- The first Facility contrast evaluation consists of evaluating existing conditions against the Facility with no mitigation. Note that the Facility with no mitigation would not occur as a post construction situation except for VP23 where mitigation is not proposed.
- The second Facility contrast evaluation consists of evaluating existing conditions against the 2-year mitigation growth interval, that which reflects true post construction.
- The third Facility contrast evaluation consists of evaluating the 5-year mitigation against the 2-year mitigation growth interval.

In this fashion, the effectiveness of mitigation with time can be assessed.

#### Average Part 1 Contrast Values for Facility with No Mitigation

The viewpoints with the highest Part 1 Contrast for the Facility with No Mitigation were rated as moderately strong. These are VP15 at Cushman Road, VP35 County Road 43, VP42 at NYS State Route 37 (Military Trail Scenic Byway and Bikeway), VP50 Frye Road (Old Fort Covington Cemetery and Rainbow Park) where average contrast ratings are 21.3, 18.3, 20.3, and 19.5, respectively,

VP4 on County Route 3 (substation and switchyard location) and VP32 NYS Route 37 (Military Trail Scenic Byway and Bikeway) were rated as moderate with values of 16.2 and 16.7, respectively.

VP7 NYS Route 37 (Military Trail Scenic Byway and Bikeway) was rated as weakly moderate with a contrast value of 9.5 while VP53 County Route 4 (Ellsworth Homestead) had weak contrast values of 5.8 and 7.0, respectively.

VP23 Bombay Fort Covington Road (Salmon River High School) is the only simulation that does not have proposed mitigation within the view. This simulation was rated as weak under the worst-case scenario leaf-off conditions with an average contrast value of 5.8. Existing vegetation along with distance is substantial enough to provide this low contrast rating.

### Average Part 1 Contrast Values for 2 Year Mitigation Growth Interval

There were no simulation contrast ratings that were rated higher than moderately strong. Refer to Table 8-3.

The viewpoints with the highest Part 1 Contrast at the 2-year growth interval were rated as moderately strong. These are VP15 at Cushman Road with an average value of 18.5 and VP42 at NYS State Route 37 (Military Trail Scenic Byway and Bikeway) with an average value of 18.2.

Three simulations were rated as having moderate contrast with average values ranging from 14.3 to 17.0. These include from highest to lowest, VP35 County Road 43, VP50 Frye Road. (Old Fort Covington Cemetery and Rainbow Park), and VP32 NYS Route 37 (Military Trail Scenic Byway and Bikeway).

One simulation, VP4 on County Route 3 (substation and switchyard location) was rated as weakly moderate with an average Part 1 contrast rating of 11.8.

The remaining simulations were rated as having weak contrast. These include VP7 NYS Route 37 (Military Trail Scenic Byway and Bikeway) and VP53 County Route 4 (Ellsworth Homestead).

VP23 Bombay Fort Covington Road (Salmon River High School) is the only simulation that does not have proposed mitigation within the view. This simulation was rated as weak under the worse-case scenario leaf-off conditions with an average contrast value of 5.8. Existing vegetation along with distance is substantial enough to provide this low contrast rating.

### Average Part 1 Contrast Values for 5 Year Mitigation Growth Interval

There were no simulation contrast ratings that were rated higher than moderate. Refer to Table 8-3.

The highest average Part 1 contrast values for the 5-year mitigation growth interval were rated as moderate and assigned to 4 simulations with values ranging from 13.7 to 16.5. From highest to lowest contrasts these include VP15 Cushman Road, VP42 NYS Route 37 (Military Trail Scenic Byway and Bikeway), VP35 County Route 43, and VP50 Frye Road. (Old Fort Covington Cemetery and Rainbow Park).

Two simulations were rated as weakly moderate and include VP4 County Route 3 (substation and switchyard) and VP32 NYS Route 37 (Military Trail Scenic Byway and Bikeway) with average ratings of 10.0 and 10.8 respectively.

Two simulations were rated as very weak and include VP7 NYS Route 37 (Military Trail Scenic Byway and Bikeway) at 2.8 and VP53 County Route 4 (Ellsworth Homestead) with an average contrast value of 2.0.

As noted earlier, these numeric values can show the trends in the data and illustrate which VP locations are considered to have the highest or lowest visual change. It may be more informative to assess the rating values in relation to each other rather than taken purely against the most maximum or minimum values that are possible.

As expected, in all cases the contrast values are reduced between the 2 year and 5 year mitigation growth intervals.

### Part 2 Viewer Sensitivity

The highest average Part 2 Viewer Sensitivity Values were mostly associated with those VPs that are at aesthetic resources listed in Table 8-2. These include the three simulations along the NYS Route 37 Military Trail Scenic Byway and Bikeway, the simulation at Old Fort Covington Cemetery and Rainbow Park, and the Salmon River High School. Although Ellsworth Homestead is listed as an aesthetic resource the associated simulation was rated as weak.

The remaining simulation average Part 2 ratings were rated as weak and are not at aesthetic resources and include the simulations at Cushman Road, County Route 3, and County Route 43. Refer to Table 8-4.

### Part 3 Scenic Quality

Part 3 Scenic Quality is a standalone single rating that assesses the overall scenic quality of the VP's existing conditions according to the listed criteria provided in Attachment 6. 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.

One simulation view, VP4 at the existing transmission line on County Route 3, was rated as weak for the Part 3 evaluation. All remaining simulation views were rated as weakly moderate. Refer to Table 8-4.

Revised Table 8-3. Visual Simulation Part 1 Contrast Rating Results

Note: Mitig=Mitigation

VP	Location	Contrast Rating Panelist 1			Contrast Rating Panelist 2			Contrast Rating Panelist 3			Avg Part 1 No Mitig <sup>1</sup>	Avg Part 1 Mitig 2 years <sup>1</sup>	Avg Part 1 Mitig 5 years <sup>1</sup>	Reduction of Contrast Rating Between No Mitig And 5 Yrs	Reduction of Contrast Rating Between Mitig 2 and 5 Yrs
		Part 1 No Mitig <sup>1</sup>	Part 1 Mitig 2 years	Part 1 Mitig 5 years	Part 1 No Mitig	Part 1 Mitig 2 years	Part 1 Mitig 5 years	Part 1 No Mitig	Part 1 Mitig 2 years	Part 1 Mitig 5 years					
VP4	County Route 3	16	12.5	10	19	15	14	13.5	8	6	16.2 M	11.8 WM	10.0 WM	-6.2	-1.8
VP7	NYS Route 37	10	8	2	11.5	9.5	3.5	7	5.5	3	9.5 WM	7.7 W	2.8 VW	-6.7	-4.8
VP15	Cushman Road	19	15	13	22.5	19	17	22.5	21.5	19.5	21.3 MS	18.5 MS	16.5 M	-4.8	-2.0
VP23	Bombay Fort Covington Rd	3	NA	NA	9	NA	NA	5.5	NA	NA	5.8 W	NA	NA	NA	NA
VP32	NYS Route 37	15	11.5	9.5	18.5	17	11	16.5	14.5	12	16.7 M	14.3 M	10.8 WM	-5.8	-3.5
VP35	County Route 43	17	16	13	19.5	18.5	15.5	18.5	16.5	14	18.3 MS	17.0 M	14.2 M	-4.2	-2.8
VP42	NYS Route 37	19	16.5	13	20	18.5	14.5	22	19.5	17	20.3 MS	18.2 MS	14.8 M	-5.5	-3.3
VP50	Frye Road	19.5	16	13.5	19	17	13.5	20	16	14	19.5 MS	16.3 M	13.7 M	-5.8	-2.7
VP53	County Route 4	5.5	4	0	10	8	3	5.5	4.5	3	7.0 W	5.5 W	2.0 VW	-5.0	-3.5

<sup>1</sup>VW-very weak, W=weak, WM= weakly moderate, M=moderate, MS=moderately strong, S=strong, NA=Mitigation Not Proposed in View

Revised Table 8-4. Visual Contrast Rating Results Part 2 and Part 3

VP	Viewer Group	Location	Contrast Rating Panelist 1		Contrast Rating Panelist 2		Contrast Rating Panelist 3		Avg Part 2 <sup>1</sup>	Avg Part 3 <sup>1</sup>
			Part 2	Part 3	Part 2	Part 3	Part 2	Part 3		
VP4	Local, Commuter	County Route 3	4.5	0.5	5	1	4.5	1	<b>4.7 W</b>	<b>0.8 W</b>
VP7	Local, Commuter, Recreational	NYS Route 37	7.5	0.5	8.5	1.5	8.5	1	<b>8.2 WM</b>	<b>1.0 WM</b>
VP15	Local	Cushman Road	5	1	5	1.5	5.5	1	<b>5.2 W</b>	<b>1.2 WM</b>
VP23	Local, Commuter, Visitor, Recreational	Bombay Fort Covington Rd	9	1	9.5	1.5	9.5	1.5	<b>9.3 WM</b>	<b>1.3 WM</b>
VP32	Local, Commuter, Recreational	NYS Route 37	9	1	9	1.5	9	1.5	<b>9.0 WM</b>	<b>1.3 WM</b>
VP35	Local	County Route 43	4	1	5.5	1.5	5	1	<b>4.8 W</b>	<b>1.2 WM</b>
VP42	Local, Commuter, Recreational	NYS Route 37	7	0.5	8.5	1.5	9	1	<b>8.2 WM</b>	<b>1.0 WM</b>

Revised Table 8-4. Visual Contrast Rating Results Part 2 and Part 3

VP	Viewer Group	Location	Contrast Rating Panelist 1		Contrast Rating Panelist 2		Contrast Rating Panelist 3		Avg Part 2 <sup>1</sup>	Avg Part 3 <sup>1</sup>
			Part 2	Part 3	Part 2	Part 3	Part 2	Part 3		
VP50	Local, Visitor	Frye Road	9	1	9.5	1.5	10	1.5	<b>9.5 WM</b>	<b>1.3 WM</b>
VP53	Local, Commuter, Visitor, Recreational	County Route 4	6.5	1	8	1.5	8.5	1.5	<b>7.7 W</b>	<b>1.3 WM</b>

<sup>1</sup>VW=very weak, W=weak, WM= weakly moderate, M=moderate, MS=moderately strong, S=strong,

### **8(d) Visual Impacts Minimization and Mitigation Plan (VIMMP)**

The Applicant has prepared a VIMMP provided in Appendix 8-1 Attachment 7 of the VIA. § 900-2.9 (d) requires a VIMMP that includes proposed minimization and mitigation alternatives to avoid and minimize visual impacts to the extent practicable. Included in the VIMMP is;

- Plan 7A - Landscape Plan. A Revised Landscape Plan was developed that contains sustainable, hearty and resilient plantings that primarily consist of native/indigenous species. 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 plantings are proposed along the outside fence line or at property boundaries in locations noted on the Landscaping Plan for an approximate total of 56,400 linear feet or 10.7 miles of vegetative mitigation for the Facility. Of the 56,400 linear feet, 3,950 linear feet of mitigation is proposed around the substation and switchyard.

Deciduous and evergreen tree species include Northern White Cedar (*Thuja occidentalis*), White Spruce (*Picea glauca*), Eastern Red Cedar (*Juniperus virginiana*), and Serviceberry (*Amelanchier arborea*). Install heights will be approximately 5-6 feet tall. Mature heights can range from 15 to 60 feet tall. Shrub species include Red Chokeberry (*Aronia arbutifolia*), Red Twig Dogwood (*Cornus sericea*), Common Witch Hazel (*Hamamelis virginiana*), and Blackhaw Viburnum (*Viburnum prunifolium*). Install heights will be approximately 24-30 inches tall. Mature heights are expected to reach 7-12 feet tall and possibly up to 25 feet tall for Witch Hazel.

- Plan 7B - Lighting Plan, with accompanying plan and profile drawings of the substation and switchyard. The illumination levels within the substation were analyzed to meet the requirements set forth in the latest edition of the NESC. Eighteen area full cut off lights will be placed at a height of 35 feet. Six control full cut off lights at the control buildings will be placed at a height of nine feet.
- Plan 7C - Glare Report. The full glare report can be found in Appendix 8-1 VIA Attachment 7. A summary of results and conclusions is in Section 8(a)(9).

Other appropriate and practicable measures to minimize visibility of solar development include approaches such as siting and design, downsizing and low profile, alternate technologies, facility

color, relocation underground electrical collection system, avoiding and minimizing glare, screening (landscaping plantings), lighting options for work areas and safety requirements architectural design, and visual offsets. These are itemized and discussed in VIA Section 10.0 and are also summarized in Section 8(a)(8).

#### Proposed Aboveground Components of Facility

The proposed substation and switchyard components, POI structures as well as the section of overhead collection line will be a gray metallic color consisting of non-specular galvanized steel and is in compliance with 16 NYCRR § 1100-2.9(d)(4). The substation and switchyard control building material will be metal with a color of ash gray.

Approximately 4,136 feet of collection line will be aboveground. However, the aboveground section of collection line is sited near the CSX Railroad within wooded areas and not near residences nor where the public is expected to be present. A portion of the overhead collection line will cross the CSX railroad. An overhead span over the rail line was the preferred option for this crossing due to the cost and environmental impacts associated with an underground trenching installation in this area. The overhead option will reduce soil disturbance and impacts to State-regulated Class III wetlands and adjacent areas. Additionally, this aboveground portion of collection line will be screened by the existing forested areas (see Attachment 18 for a LOS and wireframe schematic of the overhead collection line). Electric collection structures shall have a non-glare finish.

Because of the nature of the Facility (solar arrays), the following regulations are inapplicable and inappropriate for evaluating in the VIA.

#### FAA Wind Turbine Color Requirements

§ 900-2.9 (a)(9) is not applicable to the Facility because it is a solar facility.

#### Shadow Flicker for Wind Facilities

§ 900-2.9 (a)(2) is not applicable to the Facility because it is a solar facility.

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