Visual Impact Assessment

for

Greens Corners Solar

Jefferson County, New York

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Prepared for:

Greens Corners Solar LLC

TETRA TECH

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LIST OF ABBREVIATIONS AND ACRONYMS

Acronym/Abbreviation	Definition
94-c Exhibit regulations Part 900-2.9	Title 19 of the New York Codes, Rules, and Regulations
BLM	United States Bureau of Land Management
DEM	Digital Elevation Models
the Applicant	Boralex/Greens Corners LLC
the Facility	Greens Corners Solar Facility, including collection lines, transmission lines, interconnections, access roads and related infrastructure
the Facility	approximately 3,031 acres of land in Jefferson County, New York, on which the Greens Corners Solar Facility is proposed
GIS	geographic information system
kV	kilovolt
LWRP	Local Waterfront Revitalization Program
LSZ	Landscape Similarity Zones
MW	megawatt
NLCD	National Land Cover Database
NRI	Natural Resources Inventory
NYCRR	New York Codes, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOS	New York State Department of State
NYORES	New York State Office of Renewable Energy Siting
NYSDPS	New York State Department of Public Service
OPRHP	Office of Parks, Recreation, and Historic Preservation
PSS	Preliminary Scoping Statement
PV	photovoltaic
Resource Inventory Area	a 5-mile radius around the Facility, included in this assessment
SASS	Scenic Areas of Statewide Significance
SR	New York State Route
the Siting Board	New York State Board on Electric Generation Siting and the Environment
Tetra Tech	Tetra Tech, Inc.
U.S.	United States
USFS	United States Forest Service
VIA	Visual Impact Assessment
Visual Study Area	a 2-mile radius around the Facility, included in this assessment
VRM	Visual Resource Management

1.0 INTRODUCTION

Tetra Tech, Inc. (Tetra Tech) was contracted by Boralex, referred to as the Applicant, to prepare a Visual Impact Assessment (VIA) in support of the development of the New York Codes, Rules, and Regulations Chapter XVIII, Title 19 of NYCRR Part 900-2.9 (Implementing Section 94-c of the Executive Law) Application for the Greens Corners Solar Facility (the Facility). The Facility consists of a 120-megawatt (MW) photovoltaic (PV) solar farm to be sited on approximately 3,031 acres of privately-owned land with a fence acreage of approximately 1,074 acres located in the towns of Hounsfield and Watertown, Jefferson County, New York (the Facility; see Figure 1). The Facility is situated along Massey Street Road and Old Rome State Road, between New York (NY)-12F and Interstate 81.

The VIA includes a description of the Facility components that were evaluated (Section 2); a summary of the regulatory requirements and drivers behind the analysis conducted (Section 3); a detailed discussion of the methods used to identify the Facility's Visual Study Area, conducting viewshed mapping, and inventorying visual resources potentially affected by the construction and operation of the Facility (Section 4); a detailed discussion of the methods used to evaluate impacts and a summary of potential effects (Section 5); a discussion of cumulative impacts (Section 6); and an evaluation of potential mitigation measures and best management practices applicable to the Facility (Section 7).

For the purposes of this VIA, "Facility" refers to the locations within the Facility that are proposed for Facility components (i.e., solar panels, inverters, substation, other internal infrastructure). "Visual Study Area" refers to a 2-mile radius around the Facility, in accordance with the requirements specified in 94-c Exhibit regulations Part 900-2.9. The "Resource Inventory Area" refers to a 5-mile radius around the Facility which was used during the inventory process.

2.0 FACILITY DESCRIPTION

The Facility is proposed to have a nameplate capacity of approximately 120 MW (alternating current). The Facility components will consist of solar arrays and associated infrastructure that have been carefully sited within the Facility to avoid and minimize environmental and visual impacts to the maximum extent practicable. Panel areas, substation, and other Facility infrastructure footprints make up approximately 25 percent of the Facility (see Figure 2). The Facility will consist of the following components:

- The solar arrays will consist of PV panels producing direct current electricity mounted on single-axis tracking structures that will follow the sun throughout the day. The PV panels will be ground-mounted on a racking system that will be supported by I-beam posts driven into the ground; this will result in extremely small ground disturbance associated with the panels. Furthermore, the PV panels will generally follow the existing topography; therefore, minimal grading will be required.
- Inverters (with integrated transformers) within boxes on concrete pads will be located throughout the Facility (amongst the solar arrays) to convert direct current electricity to alternating current electricity.
- One on-site substation is proposed, where the electrical output voltage will be increased to the transmission line voltage of 115 kilovolts (kV) via step-up transformers. The substation will be located within the Facility, adjacent to the existing utility 115-kV transmission line located in the Facility.
- Emergency lights will be installed within the substation. These lights will only be activated in the event of an outage or other repair-related event during nighttime hours. The lights will only be turned on when Facility personnel are performing maintenance; the lights will be turned off after repairs are completed. Security lights will be installed above the door of the control building at the substation. These security lights will be manually operated and only on during nighttime hours as required. Light fixtures will be shielded and downward facing to minimize off-site lighting impacts. There may be security lighting installed at the substation and perhaps at on-site storage buildings.
- Internal infrastructure will be limited to permanent gravel access roads (approximately 15 to 25 ft wide), grassed access corridors, and security fencing around Facility equipment. Multiple access points will be available to the Facility due to the nature of the non-contiguous parcels. Public roads will be used for construction access and general access during Facility operation. It is not anticipated that any improvements to public road intersections or the addition of turnarounds will be required.
- Construction of the Facility will use a temporary construction lay down area to accommodate construction equipment, Facility components, trailers, and parking for construction workers. The construction laydown area is approximately 10 acres and will be located off Old Rome State Road. The construction staging areas will be temporary.
- Security fencing will consist of a 7-foot-high chain-link fence, subject to electrical and building code requirements.

3.0 REGULATORY SETTING

3.1 19 OF NYCRR PART 900-2.9

New York State has regulatory authority over new and modified development of major renewable energy facilities per 94-c Exhibit regulations Part 900-2.9. Title 19 provides for the siting review of new and modified major renewable energy facilities and stand-alone battery energy storage systems in New York State by the Office of Renewable Energy Siting (ORES) in a unified proceeding instead of requiring a developer or owner of such a facility to apply for numerous state and local permits (New York State Office of Renewable Energy Siting [ORES] 2020).

19 NYCRR § 900-2.9, Exhibit 8 requires a VIA to be completed to determine the extent and assess the significance of facility visibility and outlines specific components of the VIA including: identification of visually sensitive resources; viewshed mapping; confirmatory visual assessment fieldwork; visual simulations (photographic overlays); cumulative visual impact analysis; and proposed visual impact mitigation. Table 1 outlines the information needed to fulfill the requirements of 19 NYCRR § 900-2.9 and where these requirements are addressed in this VIA.

Table 1. 19 NYCRR § 900-2.9 Requirements

19 NYCRR § 900-2.9 Visual Impacts	Section
(a) A visual impact assessment (VIA) to determine the extent and assess the significance of facility visibility. The components of the VIA shall include identification of visually sensitive resources, viewshed mapping, confirmatory visual assessment fieldwork, visual simulations (photographic overlays), cumulative visual impact analysis, and proposed Visual Impacts Minimization and Mitigation Plan as outlined in subdivision (d) of this section. The VIA shall address the following issues:	
(1) the character and visual quality of the existing landscape;	4.3.1 4.3.1.1 4.3.1.2
(2) the visibility of the facility, including visibility of facility operational characteristics, such as wind turbine lighting, glare from solar panel arrays;	5.2.2 5.2.2.1 5.2.2.3
(3) the visibility of all above-ground interconnections and roadways to be constructed within the facility as determined by the viewshed analysis;	4.1.1 5.2.2.2
(4) the appearance of the facility upon completion, including building/structure size, architectural design, façade colors and texture, and site lighting;	5.2.2.1 5.2.2.3 Appendix G
(5) the proposed facility lighting (including lumens, location and direction of lights for facility site and/or task use, and safety including worker safety and tall structure marking requirements) and similar features;	5.2.2.4
(6) representative views (photographic overlays) of the facility, including relevant front, side, and rear views, indicating approximate elevations;	Appendix G
(7) the nature and degree of visual change resulting from construction of the facility and above-ground connections;	5.2.1

19 NYCRR § 900-2.9 Visual Impacts	Section
(8) the nature and degree of visual change resulting from operation of the facility and above-ground interconnections;	5.1.1 5.2.2 5.2.2.1 5.2.2.3 Appendix F
(9) an analysis and description of related operational effects of the facility such as visible plumes, shading, glare, and shadow flicker; and	5.2.2.4 5.2.2.5
(10) a description of all visual resources that would be affected by the facility.	4.2.2 4.3.3 Appendix B
(b) The viewshed analysis component of the VIA shall be conducted as follows:	
(1) Viewshed maps depicting areas of project visibility within two (2) miles of a solar facility and within five (5) miles of a wind facility, as well as any potential visibility from specific significant visual resources beyond the specified study area, shall be prepared and presented on a 1:24,000 scale recent edition topographic base map. A line of sight profile shall also be done for resources of statewide concern located within the VIA study area. The viewshed maps shall provide an indication of areas of potential visibility based on topography and vegetation and the highest elevation of facility structures and distance zone (foreground, midground and background areas). The potential screening effects of vegetation shall also be shown. Visually-sensitive sites, cultural and historical resources, representative viewpoints, photograph locations, and public vantage points within the viewshed study area shall be included on the map(s) or an overlay. An overlay indicating landscape similarity zones shall be included.	Figure 4 Appendix B
(2) The VIA shall include a description of the methodology used to develop the viewshed maps, including software, baseline information, and sources of data.	4.1.1 Appendix A
(3) The viewshed mapping shall be used to determine the potential visibility from viewpoints to be analyzed (as indicated in the following paragraph (4) of this subdivision) and locations of viewer groups in the vicinity of the facility, as determined pursuant to the pre-application meeting(s) held pursuant to section 900-1.3(z) of this Part. These shall include recreational areas, residential, business locations, historic properties (listed or eligible for listing on the State or National Register of Historic Places), and travelers (interstate and other highway users).	4.1.1 4.2.2 4.3.2 4.3.3
(4) The applicant shall confer with municipal planning representatives, the Office, and where appropriate, OPRHP and/or APA in its selection of important or representative viewpoints. Viewpoint selection is based upon the following criteria:	4.3.3
(i) representative or typical views from unobstructed or direct line-of-sight views;	Appendix D
(ii) significance of viewpoints, designated scenic resources, areas or features (which features typically include, but are not limited to: landmark landscapes; wild, scenic or recreational rivers administered respectively by either the NYSDEC or the APA pursuant to ECL Article 15 or Department of Interior pursuant to 16 USC Section 1271; forest preserve lands; scenic vistas specifically identified in the Adirondack Park State Land Master Plan; conservation easement lands; scenic byways designated by the Federal or State governments; scenic districts and scenic roads, designated by the Commissioner of Environmental Conservation pursuant to ECL Article 49; scenic districts; scenic areas of statewide significance (SASS);	3.2.1 4.3.3

19 NYCRR § 900-2.9 Visual Impacts	Section
State parks or historic sites; sites listed on National or State Registers of Historic Places; areas covered by scenic easements, public parks or recreation areas; locally designated historic or scenic districts and scenic overlooks; and high-use public areas;	
(iii) level of viewer exposure, i.e., frequency of viewers or relative numbers, including residential areas, or high-volume roadways;	4.3.2 4.3.3
(iv) proposed land uses;	3.2.3
(v) assessment of visual impacts pursuant to the requirement of adopted local laws or ordinances; and	3.2.3
(c) Visual Contrast Evaluation	
(1) Photographic simulations of the facility shall be prepared from the representative viewpoints to demonstrate the post-construction appearance of the facility. Where vegetation screening is relied on for facility mitigation, leaf-off and leaf-on simulation shall be provided.	4.3.3 5.1.2 Appendix G
(2) Additional revised simulations illustrating mitigation shall be prepared for those observation points for which mitigation is proposed in the application.	5.1.2, 5.2.2.3, Appendix G
(3) Each set of existing and simulated views of the facility shall be compared and rated and the results of the VIA shall be summarized. Documentation of the steps followed in the rating and assessment methodology shall be provided including results of rating impact panels and a description of the qualifications of the individuals serving on the panels. Where visual impacts from the facility are identified, contrast minimization and mitigation measures shall be identified, and the extent to which they effectively minimize such impact shall be discussed.	5.1.1 5.2.2.3 7.0 Appendix E Appendix F Appendix G
(d) Visual Impacts Minimization and Mitigation Plan. The Visual Impacts Minimization and Mitigation Plan shall include proposed minimization and mitigation alternatives based on an assessment of mitigation strategies, including screening (landscaping), architectural design, visual offsets, relocation or rearranging facility components, reduction of facility component profiles, alternative technologies, facility color and design, lighting options for work areas and safety requirements, and lighting options for FAA aviation hazard lighting. The facility design shall incorporate the following measures for the Visual Impacts Minimization and Mitigation Plan:	Appendix H
(1) Advertisements, conspicuous lettering, or logos identifying the facility owner, turbine manufacturer, solar module manufacturer, or any other supplier entity, other than warning and safety signs, shall not be allowed;	Appendix H
(2) The electrical collection system shall be located underground, to the extent practicable. Structures shall only be constructed overhead for portions where necessary based on engineering, construction, or environmental constraints;	Appendix H
(3) Electric collection and transmission facilities design shall specify use of either wood poles or steel pole structures; steel poles shall be self-weathering (such as Corten or equivalent) or other surface finish in dark brown or green color, non-glare finish;	Appendix H
(4) Non-specular conductors shall be used for any overhead portions of the transmission line and the electric collection system; and	Appendix H
(5) For wind facilities, wind turbines, towers and blades shall be Federal Aviation Administration (FAA) approved white or off-white colors to avoid the need for daytime aviation hazard lighting, unless otherwise mandated by FAA, and non-reflective finishes shall be used on wind turbines to minimize reflected glare.	Not Applicable

19 NYCRR § 900-2.9 Visual Impacts	Section
(6) Shadow Flicker for Wind Facilities. Shadow Flicker shall be limited to thirty (30) hours per year at any non-participating residence, subject to verification using shadow prediction and operational controls at appropriate wind turbines. The Visual Impacts Minimization and Mitigation Plan shall include items i-v.	Not Applicable
(7) Glare for Solar Facilities. Solar panels shall have anti-reflective coatings and the Visual Impacts Minimization and Mitigation Plan shall include an analysis using Sandia National Laboratories Solar Glare Hazard Analysis Tool (SGHAT) methodology or equivalent, that solar glare exposure at any non-participating residence, airport or public roadway will be avoided or minimized, and will not result in complaints, impede traffic movements or create safety hazards.	Appendix H
(8) Planting Plans which shall include the facility substation; energy storage structures; and the POI Switchyard; and for components of solar generating facilities as appropriate to facility setting.	Appendix H
(9) A lighting plan(s), which shall address: (i) Security lighting needs at substation and switchyard sites, and any exterior equipment storage yards; (ii) Plan and profile figures to demonstrate the lighting area needs and proposed lighting arrangement and illumination levels to provide safe working conditions at the collection substation site, and any exterior equipment storage yards or other locations;(iii) Exterior lighting design shall be limited to lighting required for health, safety, security, emergencies and operational purposes and shall be specified to avoid off-site lighting effects as follows: (a) Using task lighting as appropriate to perform specific tasks; limiting the maximum total outdoor lighting output based on the lowest allowable OSHA limits; task lighting fixtures shall be designed to be placed at the lowest practical height and directed to the ground and/or work areas to avoid being cast skyward or over long distances, incorporate shields and/or louvers where practicable, and capable of manual or auto-shut off switch activation rather than motion detection; (b) Requiring full cutoff fixtures, with no drop-down optical elements (that can spread illumination and create glare) for permanent exterior lighting, consistent with OSHA requirements and adopted local laws or ordinances, including development standards for exterior industrial lighting, manufacturer's cut sheets of all proposed lighting fixtures shall be provided; and (c) For wind facilities, lighting shall be installed on turbines for aviation hazard marking as specified by FAA. The applicant shall file a Notice for a Marking and Lighting Study of Aircraft Detection Lighting System(s) (ADLS) and dimmable lighting options with the FAA/Department of Defense (DOD) seeking a written determination approving the use of ADLS or other dimmable lighting option at the Project. If FAA/DOD determine that ADLS or dimmable lighting options are not appropriate for the project, or if the applicant determines installation of ADLS or dimmable lighting options are not technically feasible, the applicant shall consider other means of minimizing lighting effects, such as use of low-intensity lighting, and synchronization of lighting activation with adjoining wind farms.	Appendix H

3.2 STATE AND LOCAL LAND USE PLANS AND GUIDANCE

Regional and local planning documents were reviewed to identify local designated visually sensitive areas. Sources of data that were used to identify scenic resources within the Resource Inventory Area are included in Appendix A.

3.2.1 19 of NYCRR Part 900-2.9

Chapter XVIII, Title 19 of NYCRR Part 900-2.9 provides guidance for the evaluation of visual impacts of proposed projects. Per this regulation, scenic features may include the following categories:

- Landmark landscapes;
- Wild, scenic, or recreational rivers administered respectively by either the NYSDEC or the APA pursuant to ECL Article 15 or Department of Interior pursuant to 16 USC Section 1271;
- Forest preserve lands;
- Scenic vistas specifically identified in the Adirondack Park State Land Master Plan;
- Conservation easement lands;
- Scenic byways designated by the Federal or State governments;
- Scenic districts and scenic roads,
- Designated by the Commissioner of Environmental Conservation pursuant to ECL Article 49;
- Scenic districts;
- Scenic areas of statewide significance (SASS);
- State parks or historic sites;
- Sites listed on National or State Registers of Historic Places;
- Areas covered by scenic easements, public parks or recreation areas;
- Locally designated historic or scenic districts and scenic overlooks; and
- High-use public areas.

3.2.2 New York State Department of Environmental Conservation Policy DEP-00-2

New York State Department of Environmental Conservation (NYSDEC) Policy DEP-00-2: Assessing and Mitigating Visual Impacts provides guidance for the evaluation of visual impacts of proposed projects. Per this policy, scenic and aesthetic resources of statewide significance may be derived from one or more of the following categories:

- Properties on or eligible for inclusion in the National Register of Historic Places or State Register of Historic Places;
- State Parks;
- New York State Heritage Areas (formerly Urban Cultural Parks);
- State Forest Preserves;
- National Wildlife Refuges, State Game Refuges, and State Wildlife Management Areas;
- National Natural Landmarks;
- Sites on the National Park System, including Recreation Areas, Seashores, and Forests;
- National or State Wild, Scenic, or Recreational Rivers;
- Sites, areas, lakes, reservoirs, or highways designated or eligible for designation as scenic;

- Scenic Areas of Statewide Significance (SASS);
- State or federally-designated trails, or one proposed for designation;
- Adirondack Park Scenic Vistas;
- State Nature and Historic Preserve Areas;
- Palisades Park;
- Bond Act Properties purchased under Exceptional Scenic Beauty or Open Space Category; and
- National Heritage Areas.

3.2.3 New York State Protected Areas

NYS coastal areas, inland waterways, and local waterfront revitalization program area, groundwater management zones, flood-prone areas, critical environmental areas designated pursuant to Article 8 of the ECL, and coastal erosion hazard areas are not located within the Project Study Area. Therefore, no SASSs were identified. The Facility is not within the Coastal Management Program areas.

3.2.4 Jefferson County

3.2.5 Town of Watertown

The Facility is located partially within the Town of Watertown. The following plans and programs were reviewed to identify locally designated visually sensitive areas.

3.2.5.1 Town of Watertown Comprehensive Plan

The Town of Watertown Comprehensive Plan was adopted in 2014. The Comprehensive Plan provides guidance for development in a manner that encourages growth while minimizing impacts to natural resources and the town's rural character (Town of Watertown 2014). The Comprehensive Plan outlines five goals with supporting strategies. Three of the goals that relate to scenic resources and renewable energy include:

Open Space, Agriculture, and Rural Character – The culture of the Town of Watertown and the region as a whole is agriculturally oriented and the town recognizes agriculture as an important economic and cultural resource. The town will maintain the rural, open space character of the town through zoning and conservation easements.

Recreation and Historic Resources – The town will protect and promote its recreational and historic resources to preserve the character of the town and promote tourism.

Infrastructure and Utilities – Pursue funding for installation of renewable energy equipment at town facilities; educate residents on benefits of renewable energy and conservation measures; and evaluate and possibly amend zoning law to better promote, accommodate, and regulate renewable energy systems.

Actions outlined for each of these goals focused primarily on regulations and policies that should be implemented to preserve and maintain its cultural, historic, and recreational resources.

3.2.6 Town of Hounsfield

The Facility is primarily located within Town of Hounsfield. As noted under Section 3.2, the following plans and programs were reviewed to identify locally designated visually sensitive areas.

3.2.6.1 Town of Hounsfield Comprehensive Plan

The Town of Hounsfield Comprehensive Plan was developed in 2014. The comprehensive plan is a tool for local government to manage responsible development as Hounsfield continues to grow. The majority of the recommended actions pertaining to scenic resources are focused on improving the town's aesthetics and protecting and preserving historical sites. One of the recommendations relating to natural resources and scenic views includes: improving waterfront access. Since the Town of Hounsfield abuts Lake Ontario, many of the scenic views and water access are facing west, away from the Facility.

3.2.7 Town of Henderson Comprehensive Plan

The Facility is located approximately 4 miles northeast of the Town of Henderson. The town's Comprehensive Land Use Plan outlines the community's vision, goals, and recommended actions to provide guidance to community leaders for how the town would like to grow (Town of Henderson). Two goals that relate to scenic resources are:

Scenic Resources – Enhance and protect the priority character and scenic resource areas throughout the town. The town will ensure compatible development by mitigating potential visual impacts within priority character and scenic resource areas, as identified in the Comprehensive Land Use Plan (Town of Henderson).

Land Use and Structures – Foster development in suitable/appropriate areas that enhances town and community character, quality of life, and preserves property values. The town will protect waterfront businesses, agricultural areas, and farms to ensure the character and scenic qualities of the waterfront, scenic highways, and community corridor areas are preserved (Town of Henderson).

The Town of Henderson sits southwest of the Facility and one of the scenic views that the plan strives to preserve looks off a ridge to the northeast, towards the Facility.

3.2.8 City of Watertown

The Facility is located approximately 1.5 miles southwest of the City of Watertown. The following plans and programs were reviewed to identify locally designated visually sensitive areas.

3.2.8.1 City of Watertown Comprehensive Plan

The City of Watertown Comprehensive Plan was developed in 2019 and outlines policies and projects to help guide decision making and achieve the community's vision (City of Watertown 2019). Goals that relate to scenic resources include: Capitalize on the Black River as a key asset to drive social, recreational, educational, and economic opportunity; Preserve and enhance Watertown's natural, cultural, and scenic resources. The plan discusses the Black River as a key economic and social driver and outlines opportunities including redevelopment of the river's islands and open lands to expand opportunities for nature preservation and viewing areas (City of Watertown 2019). Recommendations for the Blank River include forming a Black River Alliance to protect, promote and enhance the Black River; improving public access; and creating a vegetation master plan. The Black River runs southeast to northwest through the City of Watertown, away from the Facility.

The plan also addresses the 574 acres of designated parks and playgrounds within the City of Watertown and the scenic views, trails, picnic areas, and water accesses these areas provide. Recommendations for

these parks and recreation areas include: identifying opportunities to expand and enhance the park system; expand year-round activities in public parks; and ensure funding for maintenance and operations.
When discussing recommendations for economic development, the plan touches on supporting the marketing of the Black River Scenic Byway to attract more tourists and visitors. The Black River Scenic Byway follows the Black River southeast to northwest through the City of Watertown, away from the Facility.

3.2.8.2 City of Watertown Local Waterfront Revitalization Plan

The City of Watertown Local Waterfront Revitalization Plan (LWRP) was drafted in 2010 and is pending completion and adoption by the city. The LWRP outlines the proposed land-use vision for the Waterfront Revitalization Area Boundary through policies and actions. The LWRP highlights the river's listing on the National Park Service's National Rivers Inventory due to its scenic, recreational, and fish resources, including the Black River Gorge, west of Watertown (City of Watertown 2010). One riverfront policy is to enhance the visual quality and protect scenic resources and aesthetic values of the Waterfront Revitalization Area Boundary. When discussing development, the LWRP advises that proposed uses not be sited to degrade or diminish scenic views. The Waterfront Revitalization Area Boundary is a 100-foot buffer on the north and south banks for the Black River.

3.2.8.3 City of Watertown Black River Trail Scenic Byway Corridor Management Plan

The City of Watertown Black River Trail Scenic Byway Corridor Management Plan was completed in 2009. The plan details opportunities for economic development to promote tourism while preserving the byway's resources and character (Adirondack 2009). The Black River Trail Scenic Byway goals that relate to scenic and historic resources include:
Economic & Community Development – Enhance the rural and historic character of byway communities to support the quality of life and desirability of place.
Stewardship – preserve historic, natural, recreational, and scenic resources along the byway corridor; preserve the rural and historic character of byway communities; raise awareness of the valuable contribution of resources along the corridor; and generate support for the preservation and ongoing stewardship of the historic, natural, cultural, recreational, and scenic sites.
The Black River Scenic Byway follows the Black River southeast to northwest through the City of Watertown, away from the Facility. Therefore, the Facility will not visually impact the scenic resources along the river that the plan works to protect.

3.2.9 Village of Dexter

The Village of Dexter is located approximately 3 miles northwest of the Facility.

3.2.9.1 Village of Dexter Local Waterfront Revitalization Program

The Village of Dexter's Local Waterfront Revitalization Program (LWRP) was adopted in 1984 and approved by the New York State Secretary in 1985 and subsequently by the U.S. Office of Ocean and Coastal Resource Management in 1985. The LWRP boundary is located on the southern side of the Village's boundaries along the Black River. The purpose of the LWRP is to assist with planning for land use and development along the waterfront by analyzing the waterfront's conditions and identifying

problems, issues, and opportunities regarding revitalization efforts (Village of Dexter 1984). When touching on the scenic resources along the waterfront, the LWRP describes views up- and downstream from the village from an elevated viewpoint north of the river. The LWRP outlines the following policy concerning scenic resources: protect, restore, or enhance natural and human-made resources which are not identified as being of statewide significance, but which contribute to the overall scenic quality of the coastal area (Village of Dexter 1984).

The Black River runs east to west through the Village of Dexter, away from the Facility. Therefore, the Facility will not visually impact the scenic resources along the river that the plan works to protect.

3.2.10 Village of Sackets Harbor

The Village of Sackets Harbor is located approximately 3.5 miles west of the Facility.

3.2.10.1 Village of Sackets Harbor Local Waterfront Revitalization Program

The Village of Sackets Harbor Local Waterfront Revitalization Program (LWRP) was adopted in 2007 with a purpose of guiding local, state, and federal actions that would affect the village (Village of Sackets Harbor 2007). The LWRP describes the important views and vistas in the village, focusing on the historic structures, harbor activity, and agricultural landscape. The LWRP advises that non-agricultural development should not block the visual corridors and should harmonize with the character of the site through selective placement of structures and architectural design (Village of Sackets Harbor 2007). It is also advised that development should be below or set back from bluffs, crests, and vista points and should maintain the scenic quality of the waterfront (Village of Sackets Harbor 2007).

4.0 RESOURCE INVENTORY

The methods used to inventory scenic resources and assess visual impacts in this VIA are consistent with methods used in the Bureau of Land Management's (BLM) Visual Resource Management (VRM) System and United States Forest Service (USFS) Scenery Management System. These are widely accepted, industry-standard federal agency methodologies and are consistent with the requirements of 19 NYCRR § 900-2.9. At a high level, the methodology applied includes inventorying potential visual resources by establishing a study area; identifying scenic resources and representative viewpoints; conducting fieldwork to assess the existing visual character of the landscape and to inventory scenic resources and representative viewpoints; creating visual simulations; and assessing impacts and mitigation.

4.1 VISUAL STUDY AREA

Consistent with 94-c Exhibit regulations Part 900-2.9, the Visual Study Area consists of a 2-mile radius around the Facility. The "Resource Inventory Area" refers to a 5-mile radius around the Facility which was used during the inventory process. The Visual Study Area and Resource Inventory Areas are depicted on Figure 3.

4.1.1 Viewshed Analysis

Topographic viewshed analyses were conducted to assess the potential visibility of the Facility. Due to differences in height in the Facility components, two separate viewshed analyses were conducted:

- One viewshed analysis focused on the location and height of the solar arrays. The solar arrays will occupy the largest area of land within the Facility and, therefore, represent the most extensive source of potential contrast introduced into the landscape. A height of 15 ft was used for the viewshed analysis, based on the maximum height of a representative single-axis tracker solar module when the module is fully titled.
- One viewshed analysis focused on the electrical-distribution infrastructure equipment: the one proposed on-site substation and four on-site 34.5-kV overhead collection lines that extend to the boundary of the Facility. The substation and overhead line were used because they are the tallest components proposed within the Facility. The viewshed analysis of the electrical-distribution infrastructure equipment was run using a point for each static mast within the substation (with a height of 65 ft), with two points for the substation, and the 34.5-kV pole structures that are 55 ft tall for the overhead distribution lines.

An assumed viewer height of 6 ft was used for both analyses. The topographic viewshed analyses assumed "bare-earth" conditions and were conducted using Environmental Systems Research Institute ArcGIS Geographic Information System (GIS) Desktop 10.6 software with the Spatial Analyst extension to process 10-meter Digital Elevation Models (DEM) of the terrain within the Visual Study Area. The ArcGIS software analyzes line-of-sight from the three-dimensional coordinates of Facility components to points on the terrain surface, thereby identifying locations from which the Facility will potentially be visible. The bare-earth modeling approach used in the viewshed analyses, based only on the effects of terrain on visibility, results in a very conservative assessment of potential visibility. A bare-earth analysis does not

take into account the visibility effects of vegetation or buildings, which in practice may screen or block certain views.

To supplement the topographic viewshed analyses, a vegetated viewshed was conducted using United States Geological Survey LANDFIRE existing vegetation land height data (USGS 2021) to identify areas within the Visual Study Area where potential screening may be provided by forest vegetation. This database provided height data for the Visual Study Area. The vegetated viewsheds for the solar panels and electrical-distribution infrastructure equipment were run as described above. Since the vegetation viewshed considers both terrain and the approximate tree height of forested areas, it more accurately reflects potential Facility visibility within the Visual Study Area. The resulting viewshed map conservatively shows areas with potential visibility based on topography and vegetative screening (Figure 4). It is conservative because "seen" areas identified in the viewshed analyses do not necessarily indicate that the Facility will be visible or noticeable to the casual observer.[1] "Seen" areas indicate that some portion of the Facility could be potentially visible from that point because there may be a direct, unobstructed line-of-sight between the Facility component and some location within the Visual Study Area. Factors such as distance, color, lighting and atmospheric conditions (such as weather) that can diminish visibility under actual field conditions were not accounted for in this viewshed analyses.

The viewshed analysis of the PV panels included determining the percentage of PV panels that will be potentially visible from areas identified as "seen," as determined by the viewshed analysis, within the Visual Study Area. The results of the PV panel viewshed analysis was then grouped by percentage of PV panels potentially visible. The results of the electrical-distribution infrastructure equipment viewsheds were characterized as visible or not visible. The results of the viewshed analysis for the PV panels and electrical-distribution infrastructure equipment are shown on Figure 4.

The map displaying the results of the viewshed analyses was used to determine the extent to which the Facility will potentially be visible from the scenic resources identified in Section 4.2.2.

4.1.2 Line-of-Sight Profiles

Line-of-sight profiles were prepared to demonstrate potential Facility visibility and sources of screening from various locations along two lines within the Visual Study Area as depicted on Figure 5. These profile lines were selected because they intersected scenic resources and portions of the Facility. Using ArcGIS software, data regarding the scenic resources, Facility components, and representative viewpoint locations were overlaid on the DEM and NLCD data. Next, lines were drawn through representative viewpoints and Facility. ArcGIS software then sampled elevations along the lines. The resulting output includes bare-earth profile lines and separate lines demonstrating additional screening provided by vegetation. Lines on the vertical axis were exaggerated in order to demonstrate topographic relief over a long distance. The line-of-sight profiles were then imported into Adobe Illustrator in order to add Facility components, vegetation or other sources of screening, and labels. Existing features located along the viewing paths were identified using recent aerial photography, as shown in Appendix D.

[1] The "casual observer" is considered an observer who is not actively looking or searching for the Facility but is engaged in activities at locations with potential views of the proposed Facility, such as hiking, driving on a scenic road, or relaxing on a beach. If the Facility is not noticeable to the casual observer, visual effects can be considered minor to negligible.

4.2 INVENTORY COMPONENTS

The inventory for visual resources considered the existing landscape and scenery and the scenic resources within the Resource Inventory Area. These visual components are described below.

4.2.1 Landscape and Scenery

Scenery is the aggregate of features that give character to the landscape (BLM 1984). Typically, every landscape comprises varying levels of landform, vegetation, existence of water, color, scarcity, adjacent scenery, and cultural modifications; all of which combine to exhibit landscape character (BLM 1986a). Existing conditions in the Resource Inventory Area were evaluated by means of aerial photography and field reconnaissance to determine where modifications have affected natural settings. Existing conditions observed during the inventory process are described in Section 4.3.3.

4.2.2 Scenic Resources

Scenic resources were identified in accordance with guidance provided by 94-c Exhibit regulations Part 900-2.9 and NYSDEC Program Policy DEP-00-2 *Assessing and Mitigating Visual Impacts* (NYSDEC 2000) which identifies categories from which aesthetic resources of statewide significance can be derived. The categories identified within the DEP-00-2 Policy are generally consistent with those scenic resources that are to be considered under 94-c Exhibit regulations Part 900-2.9. The categories reviewed to identify scenic resources included those outlined in 94-c Exhibit regulations Part 900-2.9 and NYSDEC Policy DEP-00-2, as noted in Sections 3.2 and 3.3, and the following additional categories:

- Local Parks and Recreation Areas;
- Lakes and Rivers;
- Major Transportation Corridors;
- Residential Areas; and
- Schools and Colleges.

Data sources reviewed to identify scenic resources were obtained through the New York State GIS Clearinghouse; Environmental Systems Research Institute; national, state, and local agency websites and local planning and zoning documents; and Google Earth. The scenic resources identified within the Resource Inventory Area are listed in Appendix B and are shown on Figure 3. Scenic resources identified within the Resource Inventory Area were combined with the viewshed maps (as described in Section 4.1.1) to identify where potentially visible areas intersected with scenic resources. Areas identified as being potentially visible on the viewshed maps were reviewed during the field visits (see Section 4.2.3) to review expected visibility of the Facility and assess potential visual impacts. Locations identified for field verification are referred to as representative viewpoints. A composite map showing scenic resources in relation to the viewshed analysis and representative viewpoints is also included in Appendix B.

4.2.3 Field Visit

A field visit to the Visual Study Area was conducted to properly assess the existing visual character of the landscape and to inventory scenic resources. The field inventory included three components: (1) identify and photo-document scenic resources/representative viewpoints; (2) classify visual sensitivity of scenic

resources; and (3) describe Facility visibility from representative viewpoint locations visited. The field visit was conducted on February 17 and March 15-18, 2021 to capture photography from representative viewpoints during "leaf-off" conditions.[2]

At each representative viewpoint, a panorama (overlapping series of photos) was captured to evaluate landscape context and potential visibility at each location. Photographs taken during the fields visit are included in Appendix C.

4.3 SUMMARY OF INVENTORY RESULTS

4.3.1 Landscape Character/Existing Conditions

The existing landscape character provides the context for assessing the effects of changes to the landscape. Landscape character is identified and described by the combination of the scenic attributes that make each landscape identifiable or unique. A region's landscape character creates a sense of place and describes the visual image of an area. To assess impacts to the landscape's visual character and quality, it is important to establish the context for the visual environment at both a regional level and at a project-specific level.

4.3.1.1 Regional Landscape Character

Ecoregions identified by Bryce (2010) were used to provide a frame of reference for describing the existing landscape character within the proposed Visual Study Area. Ecoregions provide a convenient foundation for describing visual character at the regional level because they are defined based on multiple physiographic elements such as landform, vegetation, water, and cultural modifications, defined as human-made modifications to the landscape. The Visual Study Area is within the Eastern Great Lakes Lowlands and Northeastern Highlands ecoregions of New York State (Bryce 2010). Landscape conditions within these ecoregions are discussed below.

Eastern Great Lakes Lowlands

The Eastern Great Lakes Lowlands ecoregion surrounds the highland ecoregions of northern New York State. Valleys and lowlands are underlain by imbedded limestone, shale, and sandstone rocks that are more erodible than the most resistant rocks comprising the adjacent mountainous areas. The terrain is mostly flat to gently rolling, but there are some glacial deposits and rock outcroppings (Wiken 2011). The topography and soils of the lowlands have also been shaped by glacial lakes and episodic glacial flooding. Limestone-derived soils are fine-textured, deep, and productive. As a result, much of the region was cleared for agriculture and urban development and less native forest remains than in surrounding ecoregions like the Northern Highlands (described below). Most agricultural activity is devoted to dairy operations, although orchards, vineyards, and vegetable farming are important locally, particularly near the Great Lakes. The Project Area and most of the 2-mile buffer of the Visual Study Area is within this ecoregion.

Northeastern Highlands

The Northeastern Highlands cover most of the northern and mountainous parts of New England as well as the Adirondacks and higher Catskills in New York. It is a relatively sparsely populated region characterized

[2] Leaf-on conditions are when foliage is on the trees and shrubs. Leaf-off conditions are when there is no foliage or a reduced amount of foliage on trees and shrubs.

by hills and mountains, a mostly forested land cover, nutrient-poor soils, and numerous high-gradient streams and glacial lakes. Forest vegetation is somewhat transitional between the boreal regions to the north in Canada and the broadleaf deciduous forests to the south. Typical forest types include northern hardwoods (maple-beech-birch), northern hardwoods/spruce, and northeastern spruce-fir forests. Recreation, tourism, and forestry are primary land uses. Farm-to-forest conversion began in the 19th century and continues today. In spite of this trend, alluvial valleys, glacial lake basins, and areas of limestone-derived soils are still farmed for dairy products, forage crops, apples, and potatoes. Many of the lakes and streams in this region have been acidified by sulfur depositions originating in industrialized areas upwind from the ecoregion to the west. The southeast portion of the Visual Study Area is in this ecoregion.

4.3.1.2 Landscape Similarity Zones

Landscape Similarity Zones (LSZs) consist of unified geographic areas that are within the broader regional landscape and have similar landscape characteristics (Smardon et al 1988). LSZs provide a more specific framework within which to evaluate changes within the landscape and potential visual effects of the Facility. LSZs were defined based on like physiographic characters such as landform, water, vegetation, and land use patterns. United States Geological Survey contour and NLCD land cover datasets were mapped using ArcGIS software and reviewed to identify areas within the Visual Study Area that had similar characteristics. Within the Visual Study Area, the following LSZs were identified:

- Lake Ontario/Open Water LSZ;
- Rural/Agricultural LSZ;
- Mixed Forest LSZ;
- Developed Area LSZ; and
- Transportation Corridor LSZ.

LSZs are described below and shown on Figure 6.

Lake Ontario/Open Water LSZ

This LSZ includes Lake Ontario's Black River Bay and Marsh and a portion of Black River starting just east of Dexter. The Black River is a 125-mile-long blackwater river that empties into the eastern end of Lake Ontario on the shore of Jefferson County. The river flows in a generally northwest direction, with its valley dividing the Adirondack Mountains on the east from the Tug Hill region to the west. The river ends at Lake Ontario in the village of Dexter, about 10 miles west of Watertown, where it empties into the Black River Bay and Marsh. This LSZ is characterized by broad expanses of water, wetlands, and freshwater marshes. Topography within the LSZ is primarily flat within the floodplain and wetland areas. The river and bay are bounded on both sides by relatively flat terrain and rolling hills. Vegetation varies and includes aquatic plants within the river, shrub/scrub and grasses along floodplains, and dense bushy and forested areas along the shoreline. Land uses within this LSZ include primarily recreational uses such as boating and fishing. The Dexter Marsh Wildlife Management Area (WMA) and Muskellunge Bay is a wetland area consisting of lands primarily underwater. This 1,350-acre marsh is a popular fish and waterfowl area. Northern pike, bass, and panfish are found in the shallow to deep water, and a variety of ducks, black terns, shore birds, and marsh waders utilize the sparse cattail marsh which characterizes this Lake Ontario bay. There are no designated trails, but hiking is allowed throughout the property. The area is popular with waterfowl hunters (NYSDEC 2021). Some residential development occurs along the river and bay and is

primarily concentrated in areas near communities such as the villages of Dexter and Sackets Harbor. Human-made features within this LSZ primarily include residences, marinas, and boat docks along the shoreline and boats within the river, except during the winter when ice fishing is more prevalent. Views within this LSZ include open views across the bay or down the river corridor. However, these views are framed by densely forested terrain that bounds the bay and river. The forested terrain also blocks outward views, including views towards the Facility.

Rural/Agricultural LSZ

This LSZ includes rows or fingers of rural/agricultural areas running northeast-southwest through the Visual Study Area, including the Facility. The Rural/Agricultural LSZ is characterized by relatively flat to gently rolling terrain covered by a patchwork of farmsteads, croplands, and pastures, with low forested hills interspersed throughout the landscape. Vegetation within the LSZ generally includes hedge rows around the perimeter of croplands and open fields and along local roads, and irregular patches of forested areas also found along streams. Crops consist primarily of forage crops, apples, and potatoes. Forested areas consist of mature stands of deciduous hardwood and conifer trees. Land uses within this LSZ consist of primarily agricultural uses with some commercial and industrial development located primarily along major thoroughfares (i.e., New York State Route 3) and include churches, country grocery store, real estate office, and veterinary office. Rural residential development, including some small clusters of homes, occurs along a network of state and local roads.[3] Human-made features within this LSZ include residences, barns, silos, and other ancillary structures associated with farming activities, distribution lines along roadways, and a high-voltage transmission line that runs through the Facility. Due to the relatively flat terrain and large tracts of open fields, there are more opportunities for expansive views within this LSZ. These views typically include open agricultural fields surrounded by hedge rows, woodlots, or mixed forest. Vegetation and terrain surrounding these fields typically limit views of more distant landscapes.

Mixed Forest LSZ

Similar to the Rural/Agriculture LSZ, this LSZ includes rows or fingers of forested areas running northeast-southwest through the Visual Study Area. It is characterized by rolling to moderately steep rolling hills that are covered by large contiguous tracts of mature mixed hardwood deciduous and conifer forests. Agricultural and open/pasture lands occur throughout this LSZ; however, they are not as dominant as the forested areas, nor are they as densely concentrated as they are in the Rural/Agricultural LSZ. Land uses within this LSZ consist of primarily forested areas with some commercial and industrial development located primarily along major thoroughfares (i.e., U.S. Route 11) and include car dealerships, medical centers, fast food restaurants, auto repair shops, and business and technology parks. Other land uses within this LSZ include rural residential development located along a network of local roads south near the Hamlet of Adams Center heading north towards the city of Watertown. Human-made features within this LSZ include residences, barns, and other ancillary structures associated with farming activities, roads, distribution lines along many roads, and a high-voltage transmission line that runs through the Facility. Views within this LSZ are typically limited by vegetation and varying topography along roadways and around residential development. Open, long--distance views are limited to areas adjacent to agricultural

[3] Some of the residential areas are classified as towns, villages, and hamlets and typically include a low population and lack a main street or designated downtown area/district.

fields and small clearings. Where these views occur, they are still restricted by the surrounding forested hills.

Developed Area LSZ

This LSZ includes the City of Watertown, Town of Brownville and areas within the Town of Watertown, villages of Dexter and Sackets Harbor, and the Watertown International Airport. This LSZ is characterized by small communities consisting of higher-density residential areas and small neighborhoods and commercial development typically centered along a main street or a near a major intersection. The City of Watertown is the largest community in this LSZ consisting of a larger downtown area surrounded by suburban development. Some of the downtown districts within these communities feature several historic buildings and structures. The downtown district of the village of Sackets Harbor is a designated NRHP-Listed Resource with a portion also designated as an Urban Heritage Area. In most instances, the downtown district is centered around a couple blocks and consist of residential and commercial buildings (typically ranging from 1 to 3 stories). The City of Watertown's downtown district is located south of the Black River and is larger in nature, consisting of several blocks of residential and commercial buildings (ranging from 1 to 7 stories). Vegetation consists of primarily trees and shrubs along streets and throughout surrounding residential development. Human-made features consist of residential and commercial structures; parks; golf courses; a boat harbor; streets and roads; and utility lines. Views within this LSZ are limited primarily by residential and commercial structures and vegetation along roadways and around development which screen views of the surrounding landscape. Views from along the edges of this LSZ are also primarily screened by large tracts of forested areas, although some agricultural lands allow for longer-distance views. Because agricultural fields are surrounded by forested areas and/or hilly terrain, views are still somewhat restricted.

Transportation Corridor LSZ

This LSZ includes Interstate 81, US 11, and New York State Routes (NY) 177, 232, 3, 180, and 12E. Interstate 81 is a major thoroughfare that traverses the eastern portion of the Visual Study Area. The divided interstate is multi-lane and trends north and south with access limited within the Visual Study Area. Access to the Visual Study Area improves as Interstate 81 passes through the City of Watertown. The interstate runs primarily through the Mixed Forest, Rural/Agricultural, and Developed LSZs. As such, views within this LSZ include open, long-distance views down the interstate where vehicles, roadway, signs and guardrails are dominant features. These views are framed by the forested terrain and agriculture areas that bound the majority of the interstate. The forested terrain also blocks outward views along the interstate. However, where the interstate parallels the Rural/Agricultural LSZ there are some gaps in the vegetation along the roadway where more open views can occur, primarily views looking west including towards the Facility. However, these gaps are relatively short and at the high speed of travel along the interstate, these views will be short-term.

NY 3 is a major throughfare that traverses the northern portion of the Visual Study Area. The two-lane state road trends east and west with frequent access to intersecting, perpendicular roadways and drives. The state route primarily runs through the Rural/Agricultural LSZ with some portions through Developed and Mixed Forest LSZs. Views within this LSZ include open, long distance views down the route where vehicles, roadway, and utility lines are dominant features. These views are framed by agriculture areas and occasional residents. These open views include views towards the Facility. Occasional residences and pockets of

vegetation partially restrict views. Open, long-distance views are limited to areas adjacent to agricultural fields and small clearings.

4.3.2 Viewer Types and Characteristics

This section provides a general description of the key viewer groups in the Visual Study Area who might have visibility of the proposed Facility. Distinctions among user groups and their expected sensitivity to landscape changes, based on activity types and viewing characteristics, are standard components of a VIA. Viewer reaction to visibility can vary depending on the characteristics and preferences of the viewer group. For example, residential viewers are typically expected to have high concern for changes in views from their residences. Motorists' concern generally depends on when and where travel occurs, and the type of travel involved (e.g., commuting vs. recreational travel).

Scenic views designated in land use plans adopted by federal, state, or local government entities typically formalize a widely recognized visual value of a resource and the public's desire to protect that value (e.g., a designated wilderness or scenic area). Where such official designations exist, the public expectation is that the view at the location or of the identified resource will be preserved, and the viewer concern is considered high.

In general, the types of viewers present within the Visual Study Area are classified as local residents; travelers; and tourists and recreational users. The following discussion summarizes the composition of these groups and their characteristics that are relevant to the visual assessment.

Local Residents

The local resident viewer group consists of people who live within the Visual Study Area. Concentrations of residences are found in the cities, towns, villages, and hamlets. The largest concentration of residences is found in the City of Watertown, with a population of 27,023 according to the 2021 census (Census Viewer 2012a) and the Village of Sackets Harbor, with a population of 1,450. Smaller concentrations of residences are found within villages and hamlets. Outside of these communities, low-density residential uses are scattered throughout the Visual Study Area. Generally, local residents view the landscape from their yards and homes, and often from places of employment while engaged in daily activities. Residents of primary interest for the analysis are located along Massey Street Road, NY 3, US 11, Old Rome Road, Fields Road, Lloyd Road, and Jericho Road that are close to the Facility.

Residents' sensitivity to visual quality can be variable and may be tempered by the visual character and setting of their neighborhoods. For example, residents with a view of existing commercial or industrial facilities may be less sensitive to landscape changes than those with a view of forested areas. It is assumed, however, that local residents are generally familiar with the local landscape and may be more sensitive to changes in particular views that are important to them.

Through-Travelers and Commuters

This viewer group consists of through-travelers and daily commuters traveling through the area on their way to work or those who are engaged in other types of business or personal travel. Travelers passing through an area typically view the landscape from motor vehicles. Through-travelers and commuters will typically be concentrated on major roads including Interstate 81, NY 3, and US 11. Furthermore, they do not tend to stop along their travel routes, have a relatively narrow field of view because they are focused on road and traffic conditions, and are destination-oriented. Passengers in through-travel and commuter

vehicles may have greater opportunities for prolonged off-road views toward landscape features and, accordingly, may have greater perception of changes in the visual environment. It is anticipated that the level of sensitivity of this user group will vary with less sensitivity to visual change experienced by through-travelers or commuters passing through the Visual Study Area and higher sensitivity to visual change experienced by local commuters who are traveling through the area on a daily basis.

Tourist and Recreational Users

This viewer group includes tourists and recreational users visiting from out of the local area, as well as local and seasonal residents engaged in recreational activities. These users can be involved in outdoor recreational activities at parks and other developed recreational facilities or in undeveloped natural settings such as forests, fields, and waterbodies. Tourists and recreational users come to the area to experience its cultural, scenic, and/or recreational resources. Some, such as weekend and seasonal homeowners, may spend additional time in the area. They may view the landscape while traveling to these destinations on local roads, or from the sites themselves.

The recreational user group includes those involved in active recreation (e.g., bicyclists, hikers, joggers, hunters, recreational boaters) and those involved in more passive recreational activities (e.g., picnicking, sightseeing, wildlife observation or walking). For some of these viewers, scenery is a very important part of their recreational experience, and recreational users often have continuous views of landscape features over relatively long periods of time. However, most recreational viewers will only view the surrounding landscape from ground-level or water-level vantage points. Recreational users' sensitivity to visual quality and landscape character will be variable, depending on their reason for visiting the area. For example, an off-highway vehicle recreation user is considered less sensitive to visual change than a wildlife viewer or a recreator looking for a cultural experience. However, recreators are generally considered to have relatively high sensitivity to scenic quality and landscape character.

Within the Visual Study Area, there are several opportunities for recreational activities including the Olympic Trail, the Black River Trail, a Wine Tour Trail, the Great Lakes Seaway Trail, a winery, picnicking, boating, fishing, hunting, swimming, wildlife watching, and recreating along the Black River.

As distinguished from recreational visitors, tourists may be just passing through the local area or staying for a period of varying duration to enjoy local attractions. Tourists typically come to the area for activities such as visiting historic sites, taking sightseeing tours, ice fishing in Lake Ontario, visiting friends and family, and attending festivals or events, but they may also engage in recreational activities while they are present. Consequently, there is a considerable degree of overlap among recreational and tourist visitors in terms of activity patterns and user characteristics.

4.3.3 Representative Viewpoints

Table 2 includes a description of representative viewpoints within the Visual Study Area that were visited during the field visit (see Section 4.2.3), their associated existing viewing conditions and identifies whether the Facility will be visible. Representative viewpoints are shown in Figure 5. Visibility of the Facility is predicted before any proposed mitigation, such as vegetative screening is applied. Mitigation is discussed in Section 7.0.

Table 2. Representative Viewpoint Characteristics[4]

Viewpoint No. [a/]	Representative Viewpoint Name	Resource Type	Approximate Distance to Nearest Facility Component (miles)[b/]	Viewing Direction	Existing Landscape Characteristics and Views [c/]	Views Toward Facility [d/ e/] ● *Not Visible* ○ *Visible*
1	Brownville WMA	State Wildlife Management Area	3.3	South/Southwest	The landscape is characterized by flat terrain in the foreground distance zone transitioning to gently rolling terrain to the south. This site is surrounded by forested areas and open fields to the northeast and southeast with forested plots and residential areas to the west. Human-made features include roads, residences structures associated with the Department of Environmental Conservation Region 6 office and distribution lines along Game Farm Road and Mullin Road which run along the western border of the site. Views toward the Facility are completely screened by existing vegetation to the south/southwest.	●
2	Vogt House, Arthur Walrath House, William Archer House, Stephen Simmons House, NYS Route 12E	Historic (NRHP), Travel way	2.12	Southwest	The landscape is characterized by relatively flat terrain and is within a suburban setting. The Black River is approximately 0.1 mile south of the sites. This site is surrounded by development associated with Brownville. Human-made features include roads, residential and commercial development, and distribution lines along NYS Route 190 which runs just south of the sites. Views are open towards the open space towards NYS Route 190. Views toward the Facility are screened by existing vegetation and topography.	●
3	East Hounsfield Christian Church, Olympic Trail, NYS Route 3, Residential 113	Historic (NRHP), Travel way, Residential	0.1	North	The landscape is characterized by flat to gently rolling terrain. Vegetation consists of trees along roadways and around residential and agricultural development. Human-made features include residential and commercial development, roads, and distribution lines. Views toward the Facility are partially screened by existing vegetation and intervening terrain in the foreground; however, Views towards the solar array, substation and electrical infrastructure are open with partial screening from existing vegetation along the road.	○

[4] Some representative viewpoint locations represent multiple scenic resources, therefore, the viewpoint number noted in the table may be noted for more than one representative viewpoint.

Viewpoint No. [a/]	Representative Viewpoint Name	Resource Type	Approximate Distance to Nearest Facility Component (miles)[b/]	Viewing Direction	Existing Landscape Characteristics and Views [c/]	Views Toward Facility [d/ e/] ● *Not Visible* ○ *Visible*
4	Olympic Trail, NYS Route 3	Travel way	0.6	East	The landscape characteristics include flat to gently rolling terrain surrounded by patches of forested areas. Vegetation consists of trees along the roadway and around residential development. The site is also surrounded by agricultural development. Human-made features include the roadway, residential development and distribution lines along the road. Views towards the solar array, substation and electrical infrastructure are possible.	●
5	Residential 114	Residential Area / Travel Way	0.04	South	The landscape is characterized by flat terrain with gradually rolling forested hills to the north that is within a suburban setting. Vegetation consists of trees along streets, and around residential and agricultural development, and pockets of forested areas to the north and south. Human-made features include residential development, roads, and distribution lines along the road. Views from the site are generally open obstructed by adjacent residential development and associated vegetation with extended views up and down the road. Views towards the solar array, substation and electrical infrastructure are open with partial screening from existing vegetation along property lines.	○
6	U.S. Highway 11	Travel Way	2.4	West/Southwest	The landscape is characterized by gently to moderately rolling terrain in a suburban setting. Vegetation consists of trees along streets and around residential and commercial development with denser forested areas to the southwest and northeast. Human-made features include the commercial development, including the C.A.N.I. Medical Complex, multi-family residential development, roads and distribution lines. Views to the west are partially obstructed by existing vegetation in the foreground. Views of the solar array are possible, but unlikely from this area and screened from this viewpoint. Views of the substation and electrical infrastructure are screened.	●
7	Elisha Camp House, Sackets Harbor (State-listed), Sackets Harbor Village Historic District	Historic (Historic District)	4.4	East	The landscape is characterized by flat terrain and is within a suburban setting. Vegetation consists of trees along streets and around residential development. Human-made features are limited primarily to the road, fences, streetlights, and residential and commercial development. Views towards the Facility are completely screened by vegetation along the roadway and residential development.	●

Viewpoint No. [a/]	Representative Viewpoint Name	Resource Type	Approximate Distance to Nearest Facility Component (miles)[b/]	Viewing Direction	Existing Landscape Characteristics and Views [c/]	Views Toward Facility [d/ e/] ● *Not Visible* ○ *Visible*
8	District School No. 19, St. Paul's Episcopal Church	Historic (NRHP)	2.35	Northeast	The landscape is characterized by relatively flat terrain. Vegetation consists of trees along streets and around residential development and dense forested areas to the northeast and southwest. Human-made features include residential development and distribution lines. Views from the site are primarily limited by adjacent existing vegetation and residential development with some extended views up and down the street. Views towards the Facility are completely screened by existing vegetation.	●
9	Simon Read Farm, Olympic Trail	Historic (NRHP), Travel way	1.05	Northeast	The landscape character is flat terrain within a rural setting. Vegetation consists of trees along streets and around residential and agricultural development. Human-made features include residential development, roads, and distribution lines. Views from this location are limited by exiting vegetation and residential development with open views up and down the street. Views towards the Facility are limited by the existing vegetation that is in the foreground, however views of the solar array, substation, and electrical infrastructure from the Olympic Trail are possible but unlikely.	●
10	Residential 115	Residential Area	1.6	Northwest	The landscape is characterized by gently to moderately rolling terrain. Interstate 81 is approximately 1.5 miles to the east. The landscape consists of suburban residential development along Route 11. Vegetation primarily includes lawns and trees surrounding residential structures and large dense forested areas to the east and west buffering the residential developments along Route 11. Human-made features include residential buildings, streets, signs and distribution lines. Views from the site are limited to the immediate foreground by adjacent development and vegetation. Views towards the Facility will be screened by development and vegetation.	●
11	Residential 116	Residential Area	3.8	North/Northeast	The landscape is characterized by gently rolling terrain with a large forested area to the southwest. Vegetation includes dense forested areas to the southwest and trees within residential lots. Human-made features include scattered residential development, roads, and distribution lines. Views from the site are generally open and consist primarily of agricultural development and the existing roadways. Views towards the solar array, substation, and electrical equipment will be partially screened by variations in terrain.	●

Viewpoint No. [a/]	Representative Viewpoint Name	Resource Type	Approximate Distance to Nearest Facility Component (miles)[b/]	Viewing Direction	Existing Landscape Characteristics and Views [c/]	Views Toward Facility [d/ e/] ● *Not Visible* ○ *Visible*
12	Honeyville (Cassler Marsh State) WMA; U.S. Highway 11	Wildlife Management Area Travel Way	3.2	Southwest	The landscape is characterized by relatively flat terrain that is within a suburban setting. Vegetation is limited to trees along streets and around residential development with denser forested areas to the east and west. Human-made features include residential development along U.S. Highway 11, streets, signs, and distribution lines. Views from the site are primarily limited by adjacent residential development with some extended views up and down the street. Views towards the Facility are partially screened by existing vegetation and development surrounding the site, however views of the solar array from U.S. Highway 11 are possible but unlikely.	●
13	Black River Bay Campgrounds	Locally Important Resource	3.2	South/Southeast	The landscape is characterized by flat terrain to the southeast and gently rolling terrain to the northwest. Vegetation consists of forested area within the campgrounds and along the Black River with open fields and scattered small woodlands to the southeast. NYS Route 180 is located 0.2 miles east of the site. Other Human-made features include structures associated with the campgrounds, residential developments, and a boat docking area. Views from the campgrounds are limited by the wooded areas in the foreground. Views southeast towards the Facility are screened by vegetation and residential development directly south of the site.	●
14	East Hounsfield Free Library	Locally Important Resource	0.2	Northwest	The landscape is characterized by gently rolling terrain just west of a commercial suburban area. Vegetation includes trees along the road and within commercial and residential lots. Human-made features include the road, commercial and residential developments, signs and distribution lines. Views are primarily limited by trees along the roadway and residential and commercial structures. Views towards the Facility will be partially screened by the forested plot northwest of the free library and by the nearby commercial development. However, views of the solar array, substation, and electrical infrastructure are possible but unlikely.	●

Viewpoint No. [a/]	Representative Viewpoint Name	Resource Type	Approximate Distance to Nearest Facility Component (miles)[b/]	Viewing Direction	Existing Landscape Characteristics and Views [c/]	Views Toward Facility [d/ e/] ● *Not Visible* ○ *Visible*
15	Watertown Sportsmen's Club, NYS Route 3, Residential 117	Locally Important Resource, Residential Area, Travel Way	1.63	North/Northwest	The landscape is characterized by gently to moderately rolling terrain. Vegetation includes dense forested areas to the east and west with trees along streets. Human-made features are limited to a distribution line, scattered residences, and the road. Views from this viewpoint are limited to the foreground by the rolling terrain and existing vegetation. Views towards the Facility are screened by vegetation and terrain, resulting in no views of the solar array, substation, and electrical infrastructure.	●
16	Watertown Town Clerk Basketball, Tennis Courts & Baseball Field	Locally Important Resource	2.6	Northwest	The landscape is characterized by moderate rolling terrain to the south and northeast within a suburban setting. Vegetation consists of large, wooded areas to the south and northwest with trees along roadways and within residential developments. Human-made features are limited to the road, residential and commercial development and distribution lines along the road. Views are primarily limited to the foreground distance zone by vegetation along the roads and residential and commercial structures. However, extended views occur looking down the roadway. The Facility is located to the northwest and views toward the Project will be screened by vegetation and development.	●
17	Madison Barracks	Historic (NRHP)	3.8	East/Southeast	The landscape is characterized by relatively flat to gently rolling in a suburban setting with the Black River Bay located 0.3-mile northwest. Vegetation includes open grassy fields and trees along roadways and within residential developments. Large dense forested areas are located to the northeast and east. Human-made features include the road, residential development and distribution lines along the road. From this viewpoint, views are more restricted by existing vegetation and residential developments. Views towards the Facility are completely screened by intervening terrain, vegetation, and development in the foreground distance zone.	●
18	Great Lakes Seaway Trail, Muskellunge Fishing Pier, Muskellunge Parking Lot, Muskellunge Boat Launch	Travel way Scenic resource	2.2	East	The landscape is characterized by flat to gently rolling terrain. Vegetation consists of dense forested areas to the east and west with open grass areas around residential developments. Muskellunge Bay is located approximately 0.5 mile west of the site. Human-made features include residential homes, the Muskellunge boat launch and parking lot, distribution lines and streets. Views from this location are limited due to the existing vegetation but extend up and down the street. Views towards the Project will be screened by vegetation in the foreground.	●

Viewpoint No. [a/]	Representative Viewpoint Name	Resource Type	Approximate Distance to Nearest Facility Component (miles)[b/]	Viewing Direction	Existing Landscape Characteristics and Views [c/]	Views Toward Facility [d/ e/] ● *Not Visible* ○ *Visible*
19	Interstate 81	Travel way	1.0	North/Northeast	The landscape is characterized by moderate rolling terrain in a suburban setting. Vegetation includes open grassy areas with trees along the roadway, pockets of forested areas and dense forested areas to the east and south. Human-made features are limited to I-81 and intersecting roads, commercial and residential development, and a distribution line along the road. Views from this viewpoint are somewhat open to the east, south, and west across grassy areas but are eventually screened by vegetation in the foreground distance zone. Views towards the Facility will be screened by vegetation in the foreground.	●
20	Massey Street Road/Residential 118	Travel way/Residential	0.1	West	This landscape is characterized by relatively flat to gently rolling terrain. Vegetation includes trees bordering open agricultural fields and open grass areas around residential homes. Dense forested areas are found to the southeast and west. Human-made features include Old Rome State Road, residential and agricultural development, and a distribution line along the road. Views from this viewpoint are open to the east, west, and north, with some vegetation screening views to the south. Views of the solar array, substation, and electrical equipment are possible as towards the Facility will be open.	○
21	Fields Road/Residential 119	Residential/ Travel Way	0.1	East	This landscape is characterized by gently rolling to flat terrain. Vegetation includes few trees bordering open agricultural fields and open grass areas around residential homes. Pockets of dense tree stands are found to the north and southwest. Human-made features include Fields Road and residential and agricultural development. Views from this viewpoint are open to the east, west, north and south. Views towards the Facility will be only partially screened by residential development and trees, with possible views of the solar array, substation, and electrical equipment.	○
22	Martin Road/Residential 120	Residential/ Travel Way	0.3	Southwest	This landscape is characterized by relatively flat terrain. Vegetation includes few trees bordering open agricultural fields and open grass areas around residential homes. Pockets of tree stands are found to the north. Human-made features include Martin Road and residential and agricultural development. Views from this viewpoint are open to the west, north and south, with some vegetation screening views to the east, resulting in possible views of the solar array, substation, and electrical equipment.	○

Viewpoint No. [a/]	Representative Viewpoint Name	Resource Type	Approximate Distance to Nearest Facility Component (miles)[b/]	Viewing Direction	Existing Landscape Characteristics and Views [c/]	Views Toward Facility [d/ e/] ● *Not Visible* ○ *Visible*
23	Old Rome State Road/Residential 121	Travel Way/Residential	0.1	East	This landscape is characterized by flat terrain. Vegetation includes tree stands bordering open agricultural fields and residential homes. Patches of dense forested areas are found to the west. Human-made features include Old Rome Road, residential and agricultural development, and a distribution line. Views from this viewpoint are open to the east with vegetation and terrain screening views to the south, west, and north, resulting in possible views of the solar array, substation, and electrical equipment.	○
24	Beutel Road/Residential 122	Travel Way/ Residential	0.01	East	This landscape is characterized by flat terrain to moderately rolling hills. Vegetation includes trees bordering open agricultural fields and within residential lots. Dense forested areas are found to the north, west, and northeast. Human-made features include roads, residential developments, and distribution lines. Views from this viewpoint are open to the east, south, and west, resulting in possible views of the solar array, substation, and electrical equipment.	○

Notes:

a/ Viewpoint No. corresponds to Figure 5. Bold number shows viewpoints that are also simulations.

b/ Distance noted is from the location visited during the field visits and the closest point along the nearest Facility components (perimeter fence).

c/ Distance zones are defined as foreground ground (0 to 0.5 mile), middleground (0.5 to 4 miles), and background (4 miles or more). The level of visual effect for each distance zone is described in Section 5.1.1.

d/ Visibility is based on conditions observed during the field reconnaissance noted in Section 4.2.3. Proposed mitigation such as vegetative screening is not applied for this table but is discussed in Section 5.2.2.3 and Section 7 below.

e/ Viewpoints were field verified. For items labeled as visible, only a portion of the Facility may be visible in the photograph.

The Applicant held virtual pre-application meetings with the Town of Hounsfield on December 16, 2020, the Town of Watertown on December 16, 2020, and Jefferson County on December 17, 2020 to share the preliminary viewpoint map pursuant to 94-c Exhibit regulations Part 900-1.3, Exhibit 2. A list including a total of 10 scenic resources were presented to the town. Responses were not received by the town. No additional scenic resources were identified during the pre-application meetings.

5.0 IMPACT ANALYSIS

5.1 IMPACT ANALYSIS METHODOLOGY

Public enjoyment of a scenic resource is subjective and highly dependent on the viewer's perception of beauty and scenery. The addition of the Facility into a view may be detrimental to one viewer's enjoyment of a location but may have a negligible effect or a positive effect for a different viewer. Therefore, a process using the concept of "contrast" based on the BLM VRM system is often used to objectively measure potential changes to landscape features of inventoried sensitive resources (BLM 1986a; BLM 1984). Concepts from the BLM VRM system are widely used for assessment of a variety of projects and, with some modifications, have been applied successfully to projects that do not occur on lands under the jurisdiction of the BLM. In the BLM VRM system, potential visual effects are assessed by considering the level of contrast the proposed Facility introduces to the existing landscape. The BLM's visual contrast rating process (Handbook 8431-1 Visual Resource Contrast Rating) was used as the basis for reviewing potential landscape changes resulting from the proposed Facility and is discussed below.

5.1.1 Visual Contrast Rating

The degree of visual contrast is a means to evaluate the level of modification to the existing landscape features. In the context of the Facility, existing landscape scenery is defined by the visual characteristics (form, line, color, and texture) associated with the landform (including water), vegetation, and existing facilities within and adjacent to the Facility. Descriptions of each visual character element are listed below:

- Form—The shape and mass of landforms or structures;
- Line—The edge of shapes or masses, silhouettes, or bands;
- Color—The property of reflecting light of a particular intensity of wavelength that the eye can see; and
- Texture—The nature of the surface of landforms, vegetation, or structures.

The level of visual contrast introduced by an action can be measured based on changes in form, line, color, and texture. The greater the difference between these character elements found within the landscape and the proposed Facility components, the level of visual contrast becomes more apparent, which typically increases perceived contrast.

The degree of contrast introduced to a particular viewpoint by the Facility, in combination with the sensitivity of viewers at that viewpoint, will determine the level of visual effect. The following general criteria are based upon the criteria used by the BLM (BLM 1986b) when rating the degree of contrast, and are utilized here to describe the visibility/noticeability of the Facility components:

- None—The element contrast is not visible or perceived;
- Weak—The element contrast can be seen but does not attract attention;
- Weak-Moderate—The element contrast begins to attract attention and is moderately subordinate in the landscape;
- Moderate—The element contrast begins to attract attention and begins to dominate the characteristic landscape;

- Moderate-Strong—The element contrast begins to demand attention and is moderately dominant in the landscape; and
- Strong—The element contrast demands attention, will not be overlooked, and is dominant in the landscape.

Contrast ratings were prepared for each of the representative viewpoints determined to have views toward the Facility using a form adapted from the BLM's Visual Contrast Rating Worksheet (Form 8400-4). Additional ratings of weak-moderate and moderate-strong were added to BLMs core ratings. Contrast rating worksheets were completed by a rating panel of three visual professionals with experience in conducting visual impact assessments. These individuals included Shaun Brooks, a Visual Resources Specialist at Tetra Tech; Mike Tynan, a Visualization Specialist at Tetra Tech; and Jennifer Chester, GIS and Visualization Lead at Tetra Tech (see rating panel qualifications in Appendix E).

To assist in the evaluation of changes associated with the implementation of the Facility, photographic simulations were compared to exiting photographs taken during the field visit. A detailed discussion of how the photographic simulations were created is included in Section 5.1.2. Criteria used to assist in completing the contrast rating worksheets were also based on the BLM's requirements for completing the contrast rating worksheets, as outlined in BLM Manual 8431 – Visual Resource Contrast Rating. The criteria used to complete the contrast rating worksheets along with the forms completed by the rating panel are included in Appendix F. Results of the rating impact panel are discussed in Section 5.2.2.3.

Distance Zones

Viewing distance is a key factor in determining the level of visual effect, with perceived contrast generally diminishing as distance between the viewer and the affected area increases (BLM 1986b). As part of the contrast rating process landscapes are subdivided into distance zones based on relative visibility from sensitive viewers. Three distance zones were defined for this assessment and are consistent with established protocols (e.g., USFS 1996). These distance zones provide a frame of reference for classifying the degree to which details of the viewed Facility will affect visual resources. The three distance zones are defined as follows:

- *Foreground (0 to 0.5 mile):* Within this distance zone, details of objects (such as texture and color) are visually clear. Furthermore, objects that are closer to a viewer's location will appear more dominant.
- *Middleground (0.5 mile to 4 miles):* Within this distance zone, viewers still have the potential to distinguish individual forms, and texture and color are still identifiable but become muted and less detailed.
- *Background (4 miles or more):* Within this distance zone, the form of an object is still apparent, but texture has disappeared, and color has flattened, making objects appear "washed out."

Other environmental factors that can influence the amount of visual contrast introduced by the components of a project include (BLM 1986b):

- Angle of Observation. The angle between the viewer's line-of-sight and a project's location. Angles of observation are typically described as inferior (in which viewers are situated at a lower elevation than the proposed project), level (as described above), and superior (in which viewers are situated at a higher elevation than the proposed project). Angle of observation influences the perception of visual contrast. Viewers at higher elevations (superior views) tend to see larger portions of a project.

- Length of Time the Facility is in View. If the viewer has only a brief glimpse of the project, the contrast may not be of great concern. If, however, the project is subject to view for a long period, as from an overlook, the contrast may be very significant.
- Relative Size or Scale. The level of visual contrast created by a project is directly related to its size and scale compared to the surrounding landscape in which it is located.
- Season of Use. The physical conditions that exist during the heaviest or most critical visitor use season, such as snow cover and tree defoliation during the winter, leaf color in the fall, and lush vegetation and flowering in the spring.
- Lighting Conditions. The direction and angle of the sun affects the color, intensity, shadow, reflection, form, and texture of visual aspects of proposed project components.
- Atmospheric Conditions. The visibility of projects due to atmospheric conditions such as air pollution, natural haze, fog, and precipitation, which could affect the visibility of an object.

5.1.2 Photographic Simulations

Photographic simulations were created to depict the appearance of the proposed Facility components and their potential changes to the existing landscape during leaf-off conditions which simulates worst-case scenarios. The simulations were used to determine the level of contrast between the existing landscape and the expected landscape after the proposed Facility is constructed. Furthermore, simulations were also created to illustrate proposed mitigation for those representative viewpoints where landscaping is proposed to help screen the Facility. Simulation locations are shown on Figure 5 and the simulations are included in Appendix G. Simulations depict actual weather conditions at the time photography was taken during the field visits on February 17 and March 15-18, 2021.

The simulations were created using ArcGIS software, Autodesk 3D Studio Max®, and rendering software, as well as Adobe Photoshop and InDesign. To create the simulations, the location data captured by the GPS device were transferred to ArcMap, where it was combined with GIS data of the preliminary Facility layout. A map showing the data was exported at true scale and imported into 3D Studio Max®. Using this scaled map as a base, 3D models of the Facility (i.e., solar panels, substations, fences, etc.) were created to scale. These 3D models of the proposed Facility, previously modeled to scale in 3D Studio Max®, were added in their appropriate locations and elevations. The views from the existing photographs were then matched in the 3D model using virtual cameras with the same focal length and field of view as the cameras used to capture photography during the field visits (see Section 4.2.3). After date- and time-specific lighting was added to the 3D model, renderings from the virtual cameras were created. These renderings were then blended into the existing conditions photographs in Adobe Photoshop software. Any necessary modifications to the existing landscape were completed in Photoshop as well. This process of creating a 3D model at true scale and rendering images using the same specifications used by the camera ensures that the spatial relationships of the landscape, Facility features, and viewer perspective are accurate and match the existing site photographs.

5.2 POTENTIAL EFFECTS TO VISUAL RESOURCES

Sections below describe potential visual effects anticipated from the construction and operation of the Facility. At the end of the Facility's operational life, it will be decommissioned in accordance with a detailed Facility Decommissioning Plan that will be developed in compliance with applicable laws, regulations, and best management practices at that time. Decommissioning activities will be similar to construction activities but will occur over a shorter period of time than initial construction. Once Facility components are removed, the Facility will return to pre-existing conditions, depending upon plans of the landowners. See Exhibit 23 for a discussion of Site Restoration and Decommissioning.

5.2.1 Construction and Installation

Short-term visual effects, typical of any major commercial or industrial project, will occur during construction of the Facility, resulting from construction activities and the presence of construction equipment and work crews. Construction activities associated with the solar facility will include surveying, clearing portions of the construction site, stockpiling top soil, grading, trenching for installation of collector lines, installation of support pilings, delivery of the solar panel and substation components, solar panel installation, installation of substation foundations, placement and erection of substation equipment and distribution line poles, and placement of perimeter fencing.

It is anticipated that visual contrast will be introduced during Facility construction primarily for viewers associated with residences directly adjacent to the Facility, which include homes along NY 3, Old Rome State Road, Jericho Road, Lloyd Road, and Youngs Road, which primarily run north and south, and Massey Street Road, Fields Road, Martin Road, Beutel Road, and Parker Road, which primarily run east and west, where the presence of construction equipment, materials, and crews will be dominant in the foreground. However, these visual effects will be temporary because construction equipment and crews will be removed once construction is completed in each specific area. Views of Facility construction from areas not immediately adjacent to the Facility will be mostly screened by existing vegetation and/or topography. Visual effects to these viewers will be mostly limited to the presence of construction traffic on local roads.

5.2.2 Maintenance and Operation

5.2.2.1 Facility Characteristics

Visual effects during operation of the Facility will result from the visibility of the above-ground components associated with the Facility, including the PV panels, inverters, on-site substation, 34.5-kV overhead collection lines, and internal infrastructure including permanent access roads and fencing.

PV Panels

The Facility is located in upland terrain approximately 5 miles from the eastern bank of Henderson Bay which feeds into Lake Ontario, at its closest point. The Facility is sited in an area of mixed rural residential, residential, commercial, and agricultural uses characterized by relatively flat to rolling topography, with fingers or rows of moderately rolling to moderately steep wooded areas interspersed between agricultural fields. The PV panels will be located on parcels of land currently used for agricultural purposes. The PV panels will be separated into smaller arrays interspersed with the natural vegetated landscape. The regular

forms and strong horizontal lines associated with the rows of PV panels will be similar to the strong horizontal lines created by the edges of the agricultural fields where they abut forested or wetland areas. The color contrast associated with the PV panels will vary throughout the day as the panels rotate to track the sun from east to west. The dark, dull color of the panels will contrast with the dull hues of the surrounding green/tan fields and the varying shades of green of the forested areas. Although the PV panels will contrast with some of the elements of the existing landscape, their overall visual effect will vary depending on the extent of PV panels visibility, distance of the PV panels from the viewer, and if the PV panels are seen in the context of other existing noticeable modifications to the local natural landscape. For example, contrast is anticipated to be stronger where residential viewers are located directly adjacent to the Facility boundary and will have open views toward the PV panels. Some views toward the PV panels will also include views of other Facility components, including the on-site substation and switchyard, inverters, and 34.5-kV on-site collection line, as well as existing distribution lines located along local roads and along the edges of fields, and an existing transmission line that runs primarily north-south through the eastern portion of Facility. However, given the scale of the blocks of PV panels and the close proximity to the viewer, where visible, the PV panels are anticipated to create moderate to strong contrast, depending on the viewing location. In some areas, where active agricultural fields are adjacent to the Facility, contrast will be reduced during the growing season when crops, such as corn or grains, will be at a similar height as the PV panels and therefore, may provide screening.

The Applicant is proposing to install landscaping along portions of the Facility boundary in areas where residences and primary roads will have unobstructed views towards the Facility. Landscaping will consist of a variety of evergreen trees that will provide year-round screening (Appendix H). Visual contrast is anticipated to be significantly reduced in areas where landscaping is proposed.

Moderate to strong contrast may also occur for travelers along local roads such as NY 3, Massey Road, or Interstate 81, where PV panels will be located adjacent to the road and adjacent views toward the Facility are unobstructed. However, these impacts will have a short duration for individual viewers because travelers will only be approaching and parallel to the Facility for a limited time and their primary focus will be on the road ahead.

The Applicant are also proposing to install landscaping along the northern side of NY 3, in areas where PV panels are adjacent to the road. In addition, the Applicant increased the setback for these PV panels from NY 3 in consideration of its visual resource value as a Scenic Byway. Visual contrast is anticipated to be significantly reduced in areas where landscaping is proposed. It is anticipated that views from locations located approximately 1 mile or more in most areas from the PV panels will be screened by topography and/or vegetation.

Power Collection System

The Facility's power collection system includes inverters, underground collector lines, four spans of overhead collector lines, and one substation. The inverters (with integrated transformers) will be located within boxes on concrete pads and dispersed throughout the Facility (amongst the PV panels). The boxes that house the inverters will have a similar geometric shape as the PV panels and they will be treated to reduce potential visibility and reflectivity through use of dulled finishes in colors selected to blend into the backdrop. The inverters will be seen in varying degrees from local roads that pass near the Facility (i.e., NY 3, Old Rome Road, Massey Street Road, Lloyd Road, Fields Road) or from nearby residences. Views

toward the inverters will also include views of other Facility components, including PV panels and perimeter fence. In some instances, the inverters will also be seen in the context of the proposed on-site substation and 34.5-kV overhead collection line, as well as existing distribution lines located along local roads and along the edges of fields, and a transmission line that runs through the eastern portion of Facility. Given the scale of the inverters in relation to other Facility components and existing features in the landscape, it is anticipated that, where visible, the inverters will create weak contrast.

The on-site substation and its short (approximately 75 ft) interconnection with the existing 115 kV transmission line will introduce vertical and geometric metal structures into a relatively flat landscape. Although the substation will contrast with some of the elements of the existing landscape, its overall visual effect will vary depending on the portions of the substation that are visible, distance of the substation from the viewer, and if the substation is seen in the context of other existing and proposed noticeable modification to the local natural landscape. For example, contrast is anticipated to be stronger where travelers along Old Rome and Beutel roads are approaching or adjacent to the Facility boundary and will have open views toward the substation. Although the substation will be seen in the context of other Facility components, including the PV panels, inverters and perimeter fencing, because of the scale of the facilities and the close proximity to the viewer, the substation will appear as a dominant feature. This visibility, however, will have a short duration for individual viewers because travelers will only be approaching and parallel to the substation for a limited time and their primary focus will be on the road ahead. Contrast is also anticipated to be strong for the residences located along Old Rome and Beutel roads approximately 0.2 miles north and west of the substation. An existing 115 kV transmission line that runs through the Facility, and on either side of the substation, has introduced vertical elements into the landscape setting, due to close proximity of the viewer. Contrast is anticipated to be reduced to moderate or weak for residences located farther from the substation site, where views will be partially screened by topography, intervening vegetation or structures associated with farming (i.e., barns, sheds). It is also anticipated that views will be limited to the upper portions of the substation infrastructure equipment, such as the static masts, that may extend above tree line. Furthermore, the substation will be seen in the context of existing transmission line, and other Facility components including large tracts of PV panels that will surround the substation. It is anticipated that views from locations located 0.5-1 mile or more from the substation will be mostly to completely screened by topography and/or vegetation.

The 34.5-kV collection line is predominantly underground and features four lengths of overhead collection lines which are further described in this paragraph. Two of the overhead collection line lengths, both proposed on the southern portion of Parcel ID 82.00-3-56.2, are each shorter than 100 ft and are proposed to allow the collection to avoid impacts to wetlands. These two shorter collection line lengths are also within the interior of the Facility and are each at least 1,500 ft from the closest existing residential structure. The third collection line length is along Jericho Road, Martin Road, and Lloyd Road in the Town of Hounsfield; the collection line for this portion of the Facility runs in parallel to the public roads and is adjacent to an existing series of utility poles. The fourth collection line is along Old Rome State Road in the Town of Hounsfield; the collection line runs parallel to the public road. The collection lines along Jericho Road, Martin Road, Lloyd Road, and Old Rome State Road are being supported by utility poles adjacent to a public road as is typical in this rural agricultural setting. The overhead distribution lines will introduce new vertical elements into the landscape setting. Views toward the 34.5-kV collection and feeder lines also will often include views of other Facility components, including PV panels and perimeter fence. In some

instances, the 34.5-kV collection line will also be seen in the context of existing distribution lines located along local roads and along the edges of fields. Given the scale of the distribution line in relation to other Facility components and existing features in the landscape, it is anticipated that, where visible, the distribution lines will create weak contrast.

Internal Infrastructure

There are multiple access points to the Facility that will be located off multiple roads (e.g., Old Rome, Fields, Lloyd, Jericho, and Massey Street Roads) in the Facility, including a series of permanent gravel access roads along the interior perimeter of the Facility and grass access corridors between the PV panel blocks and between the PV panel blocks and the fence. Access roads will be approximately 15 to 25 ft wide. The access roads will create a series of wide straight lines on the ground within the Facility. Internal access roads (i.e., those in between the PV panels) will be grassed and will most likely be screened by the PV panels. Views of the access roads will be limited to primarily those around the perimeter fence line. The access roads that are visible along the perimeter of the Facility will be similar to other driveways and farm roads within the area. Given the low profile and small scale of the access roads in relation to other Facility components and existing features in the landscape, it is anticipated that, where visible, the access roads will create weak contrast.

Security fencing will consist of a 7-foot-high chain-link fence around the Facility and the substation perimeter. The chain-link fence surrounding the Facility will consist of standard chain link fencing material. The security fence will introduce a long, continuous light-colored feature into the landscape. Because the security fence will be chain-link, it will be transparent and allow views through it to the Facility components that are within the fence line. As distance between the viewer and the Facility increases the texture of the security fence will be less distinct and the dark, dull light gray color of the security fence may begin to blend with the dark colors of the PV panels and become less noticeable. Given the transparency of the security fence and its scale in relation to other Facility components, it is anticipated that the security fence will create weak contrast.

5.2.2.2 Extent of Potential Visibility of the Facility

The geographic extent of potential visibility of the PV panels within the Visual Study Area was determined through the viewshed analysis as discussed in Section 4.1.1. Based on the vegetated viewshed analysis, views are limited primarily to the area within 1 to 2 miles surrounding the PV panels, with additional areas of potential visibility in higher-elevation areas to the south-southwest. The highest percentage of PV panels that will potentially be visible (i.e., greater than 75 percent) were found within and adjacent to the Facility, primarily to the south. Areas not directly adjacent to the Facility that were indicated as having potential visibility will see primarily less than 25 percent of the PV panels. Potential locations from which the PV panels may be visible include residences adjacent to the Facility, portions of local roads adjacent to the Facility such as NY 3, Old Rome Road, Field Road, Lloyd Road, Jericho Road, and Interstate 81, and elevated locations such as residences and travelers from along US 11 located approximately 1 mile to the east. Locations identified as having potential visibility of the Facility were field verified as discussed in Section 4.2.3, with the results of existing views from each representative viewpoint described in Section 4.3.3. The degree of visibility for those viewers that will have views based on the viewshed and field verification are discussed below in Section 5.2.2.3. According to the vegetated viewshed analysis, views of

the PV panels not directly adjacent to the Facility will be primarily screened by existing vegetation and intervening terrain. Scattered forested hills south and east of US 11 may have views of the Facility.

Electrical-distribution infrastructure equipment

The viewshed results of the utility equipment (i.e., on-site substation and 34.5 kV collection line) were similar to the results of the PV panel viewshed in that the majority of areas identified as "seen" on both viewsheds were essentially the same.[5] The similarity in the viewshed results can be attributed to the varying terrain and dense forested areas of the landscape surrounding the Facility.

5.2.2.3 Visual Effects at Representative Viewpoints

As noted in Section 5.1.1, a panel of three visual professionals completed contrast rating worksheets for six representative viewpoints. To assist in the evaluation of changes associated with the implementation of the Facility, photographic simulations were compared to exiting photographs taken during the field visit.

The panel focused the evaluation of potential effects on the vegetation and structural contrast measures due to the uniform zero rating on the landform contrast measure by the panel members. The landform contrast was rated as zero primarily because the Facility is located on flat to gently rolling terrain and little to no grading will be required. Therefore, no change in the landform is anticipated. Contrast rating worksheets are included in Appendix F.

Table 3. Summary of Results of Contrast Rating Panel

Representative Viewpoint No. a/	Representative Viewpoint	Distance to Nearest Facility Component (miles/feet)	Viewer Group	Average Contrast Rating Results			
				Panelist 1	Panelist 2	Panelist 3	Contrast Rating Results b/
VP-01	East Hounsfield Christian Church	0.1 / 525	Residential / Traveler	3.7	3.7	4	Moderate-Strong
VP-02	Massey Street Road / Residential	0.04 / 200	Residential / Traveler	4.3	4	3.7	Moderate-Strong
VP-03	Old Rome State Road / Residential	0.1 / 450	Residential / Traveler	3.7	2.7	2.3	Moderate
VP-04	Fields Road and Lloyd Road / Residential	0.1 / 1,000	Residential / Traveler	3	2.3	2.7	Moderate
VP-05	Old Rome State Road / Residential	0.1 / 600	Residential / Traveler	2	2	1.7	Moderate-Weak
VP-06	Beutel Road and Old Rome	0.01 / 55	Residential / Traveler	3	2.3	2	Moderate-Weak

[5] Areas identified as "seen" on the electrical-distribution infrastructure equipment viewshed that were not identified as "seen" on the PV panel viewshed consisted of locations that were either forested or surrounded by dense forested areas, therefore, it was assumed that there would be no to little visibility from these outlier locations.

	State Road / Residential						
	Notes: a/ Simulation number (VP-#) corresponds to the order in which the simulations appear in Table 2 (e.g., 3, 5, 20, 21, 22, 24) and Appendix G. b/ Contrast rating results reflect averages without mitigation taken into consideration.						

Representative Viewpoint 1: East Hounsfield Christian Church

The nearest portion of the Facility will be located approximately 0.1 mile southeast of this viewpoint location. Views toward the Facility will be mostly unobstructed from this simulation, however, from this viewpoint the panels will be partially screened by vegetation and existing infrastructure. The dark color, uniform shapes of the PV panels, and ordered row of panels within each block will contrast against the natural forms and earth-tone colors of the surrounding agricultural fields. The color of the perimeter fence will contrast with the natural earth-tone and agricultural fields and stands out from the panels due to its light gray color. Because travelers along Arsenal Street will be approaching or parallel to the Facility only for a limited time and their focus will be on the road ahead, the degree of contrast will be reduced by the short view duration. For nearby residences and churchgoers, the view will be extended for a longer period of time. For either set of viewers (travelers and residents), contrast will be reduced by implementing landscaping along portions of the Facility's boundary parallel to the road. Landscaping will consist of a variety of evergreen trees (e.g., Louie White Pine, Eastern White Pine, and the Eastern Red Cedar) as shown in the simulation that will help to screen portions of the Facility and break up the uniformity of the blocks of PV panels. The panel provided moderate-strong overall contrast ratings for this viewpoint. These ratings are due to the distant landform being no longer visible, primarily agricultural fields, and the distance of the Facility components to the viewer. Contrast rating worksheets completed by the panel are included in Attachment in F. Simulations representing views from this viewpoint with proposed landscaping[6] is included in Appendix G.

Representative Viewpoint 2: Massey Street Road/ Residence

The nearest portion of the Facility will be located approximately 0.04 mile north of this viewpoint location. Views toward the Facility will be mostly unobstructed from this simulation, however, from this viewpoint the panels will be partially screened by existing stands of trees located between fields and along Massey Street Road. From this viewpoint, the PV panels will appear as geometric patterns, predominantly horizonal, surrounded by patches of trees (not in the simulated view). The straight, horizonal lines created by the rows of PV panels will cover the middleground horizontal lines of the existing power line. The PV panels will be skylined, which creates contrast between the darker panels and the lighter color of the sky. The fence will also be visible in the view and will appear as short, thin, vertical elements in the foreground. The gray color of the structures is similar to the earth-tone brown colors of the vegetation. The panels and fence will be seen in the context of utility lines along the road. No landscaping is proposed for this location. The panel provided moderate-strong overall contrast ratings for this viewpoint. These ratings are due to the removal of vegetation, primarily agricultural fields, and the distance of the Facility components to the

[6] The first simulation illustrates the growth of the landscaping at 5 years after installation. The second simulation illustrates the growth of the landscaping at 5 years after installation.

viewer. Contrast rating worksheets completed by the panel are included in Attachment F. A simulation representing views from this viewpoint is included in Appendix G.

Representative Viewpoint 3: Old Rome State Road/Residence

The nearest portion of the Facility will be located approximately 0.1 mile east of this viewpoint. Views toward the Facility, particularly views within 0.1 mile, will be mostly unobstructed from this simulation. Distant views of the panels are partially screened by landform. On the right side, the panels are facing the opposite direction and appear as uniform shapes in ordered rows of tans/browns with darker vertical lines under the panels and lighter vertical lines for the fencing. On the left side, the panels appear to be a darker gray in color with the same uniform shapes in ordered rows. The panels contrast against the natural forms and earth-tone colors of the surrounding agricultural fields; however, the panels are backdropped in the distance and therefore do not stand out as much against the darker vegetation beyond the panels. The panels and fencing in the foreground are skylined which adds to the contrast with the lighter sky color beyond the panels. Because travelers along Old Rome State Road will be approaching or parallel to the Facility only for a limited time and their focus will be on the road ahead, the degree of contrast will be reduced by the short view duration. For nearby residences, the view will be extended for a longer period of time. Landscaping will consist of evergreen trees as shown in the simulation that will help to screen portions of the Facility from the residence and break up the uniformity of the blocks of PV panels. The panel provided moderate overall contrast ratings for this viewpoint. These ratings are due to being primarily agricultural fields and the distance of the Facility components to the viewer. Contrast rating worksheets completed by the panel are included in Attachment in F. Simulations representing views from this viewpoint are included in Appendix G.

Representative Viewpoint 4: Field Road and Lloyd Road/Residence

The nearest portion of the Facility will be located approximately 0.1 mile west of this viewpoint. Views toward the Facility will be mostly unobstructed from this simulation. The dark color, uniform shapes of the PV panels, and ordered row of panels will contrast against the natural forms and earth-tone colors of the surrounding agricultural fields. The color of the perimeter fence will contrast with the natural earth-tone and agricultural fields and stands out from the panels due to its lighter gray color. The panels are skylined except on either end where they are backdropped against the existing vegetation in the distance. Because travelers along Fields and Lloyd roads will be approaching or parallel to the Facility only for a limited time and their focus will be on the road ahead, the degree of contrast will be reduced by the short view duration. For nearby residences, the view will be extended for a longer period of time. The panel provided moderate overall contrast ratings for this viewpoint. These ratings are due to the visual removal of vegetation, primarily agricultural fields, and the distance of the Facility components to the viewer. Contrast rating worksheets completed by the panel are included in Attachment in F. A simulation representing views from this viewpoint is included in Appendix G.

Representative Viewpoint 5: Old Rome State Road/Residence

The nearest portion of the Facility will be located approximately 0.1 mile southwest of this viewpoint. Views toward the Facility will be mostly unobstructed from this viewpoint. The dark color, uniform shapes of the PV panels, and ordered row of panels will contrast against the natural forms and earth-tone colors of the surrounding open agricultural fields. The color of the perimeter fence will contrast with the natural earth-tone and agricultural fields and stands out from the panels due to its lighter gray color. The panels are

backdropped against the vegetation in the middleground. Because travelers along Old Rome State Road will be approaching or parallel to the Facility only for a limited time and their focus will be on the road ahead, the degree of contrast will be reduced by the short view duration. For nearby residences, the view will be extended for a longer period of time. The panel provided moderate-weak overall contrast ratings for this viewpoint. These ratings are due to the visual removal of vegetation, primarily agricultural fields, and the distance of the Facility components to the viewer. Contrast rating worksheets completed by the panel are included in Attachment in F. A simulation representing views from this viewpoint is included in Appendix G.

Representative Viewpoint 6: Beutel Road and Old Rome State Road/Residence

The nearest portion of the Facility will be located approximately 0.01 mile north of this viewpoint. Views toward the Facility will be mostly unobstructed from this simulation and will be split on either side of the road. The panels appear as uniform shapes in ordered rows of dark gray with lighter gray horizontal and vertical lines, as well as along the fencing which will be lighter gray in color. The panels contrast against the natural forms and earth-tone colors of the surrounding agricultural fields and darker vegetation in the middleground distance zone; however, on the right side of the road the panels are backdropped in the distance and therefore do not stand out as much against the darker vegetation beyond the panels. On the left side of the road, the panels and fencing in the foreground are skylined which adds to the contrast with the lighter sky color beyond the panels. Because travelers along Beutel Road will be approaching or parallel to the Facility only for a limited time and their focus will be on the road ahead, the degree of contrast will be reduced by the short view duration. For nearby residences, the view will be extended for a longer period of time. Landscaping will consist of evergreen trees as shown in the simulation that will help to screen portions of the Facility from the residence and break up the uniformity of the blocks of PV panels. The panel provided moderate-weak overall contrast ratings for this viewpoint. These ratings are due to the visual removal of vegetation, primarily agricultural fields, and the distance of the Facility components to the viewer. Contrast rating worksheets completed by the panel are included in Attachment in F. Simulations representing views from this viewpoint with proposed landscaping[7] around the residence is included in Appendix G.

5.2.2.4 Lighting

Proposed lighting associated with the Facility includes manually-activated emergency and security lighting located at the on-site substation. The emergency lighting will only be activated in the event of an outage or other repair--related event at the substation during nighttime hours. Within the substation a total of four emergency lights will be installed. The lighting will be mounted at a height of 30 ft on two static masts and the H-Frame structure (two lights will be mounted on the structure) and will be directed downward toward equipment. RAB LED Area light fixtures with a lumen output of 15,760 (or similar) will be used. The lights will only be turned on when Facility personnel are performing maintenance; lights will be turned off after repairs are completed. Security lights will be installed above the door of the control building at the substation. RAB LED Wall Pack fixtures (or similar) with a lumen output of 3,392 will be used. The security lights will be on during nighttime hours only when motion is detected. Security lighting will be

[7] The first simulation illustrates the growth of the landscaping at 5 years after installation. The second simulation illustrates the growth of the landscaping at 5 years after installation.

directed downward and shielded to avoid light trespass and nighttime light pollution impacts. No nighttime lighting is proposed as part of the solar arrays.

The amount and character of light generated by the Facility emergency lights will be consistent with existing light sources within the Visual Study Area including outdoor lighting at residences, schools, and businesses near the proposed Facility. The lighting plan is provided in Appendix H.

5.2.2.5 Glare

The Facility is not anticipated to introduce a significant source of glare into the existing environment. The PV panels are designed to absorb sunlight, rather than reflect it, and the glass panels that protect the PV panel surface are typically formulated with glass designed to allow sunlight to pass with minimal reflection. Panels will have anti-reflective coatings that will further reduce reflectivity from PV panels.

The single-axis tracker system will rotate the panels, so they are aimed at the sun throughout most of the day, and any reflected sunlight will be aimed directly back at the sun. During morning and evening hours when the trackers cannot directly match the angle of the sun, the tilt will not be low enough to produce lower angles of reflection.

Based on the PV panel design and construction, as well as operation of the tracker system, glare resulting from sunlight reflected by the PV panels will occur to only a limited extent within the Visual Study Area. Although the Facility may represent a potential source of additional glare in the Visual Study Area, introduced glare will not be sufficient to adversely affect views in the area or create an annoyance for viewers. Therefore, potential glare impacts from the Facility are considered to be negligible, as documented in the glare analysis provided in Appendix H.

6.0 CUMULATIVE

Past and present resource-based activity within the region surrounding the proposed Facility has substantially changed the landscape by altering natural landforms and vegetation and introducing human--made features.

A noticeable change throughout much of the visual setting has been the conversion of land to agricultural fields, agricultural development (e.g., silos, barns), residential development. The visual setting has also been modified by a number of industrial, commercial, utility and transportation facilities. There are some business and technology parks located approximately 1 to 2 miles or more from the Facility along major thoroughfares such as I-81 and US 11. An existing 115 kV transmission line runs through the Facility. Portions of the proposed Facility, including PV panels and the substation, will be seen in the context of distribution lines located along local roads and along the edges of fields and high voltage transmission lines within the Facility. No other future projects were identified within proximity to the Facility, for which potential visual impacts will be considered cumulatively with the Facility.

7.0 MITIGATION

The following avoidance, minimization and mitigation measures form an integral part of the proposed Facility's design:

- "Good housekeeping" will be implemented to maintain the Facility free of debris, trash, and waste during construction.
- The solar panels will be located within the existing open fields within the Facility and vegetation clearing will be limited, to the maximum extent practicable. Several swaths of forested wetlands within the Facility will be retained.
- The Facility setbacks have been reduced based on community and stakeholder input. The setback of the PV panels reduces the visibility of the Facility from several residential areas and local roads.
- Vegetative screening will be provided along portions of NY 3 and around multiple residential areas that traverse the Facility , to help screen views of the solar panels from residences and travelers along the roadway.
- The design approach of breaking up the PV panels into smaller sections interspersed with natural vegetated landscape will help to mitigate the visual effects from surrounding areas.
- When construction is complete, areas disturbed during the construction process will be reseeded.
- Panels will have anti-reflective coatings that will reduce the level of reflectivity and will be trackers, minimizing glare even further.
- The electrical collection system will be located underground, to the maximum extent practicable. Structures will be constructed overhead for portions where necessary based on engineering constraints and environmental considerations.
- Outdoor night lighting at the substations will be kept to the minimum required for emergencies. Lighting will only be activated in the event of an outage or other repair-related event at the substation during nighttime hours and will be turned off after repairs are completed.
- A Visual Impacts Minimization and Mitigation Plan is provided as Appendix H.

8.0 CONCLUSIONS

Overall, the Facility will result in minimal to no change to the landscape conditions for most viewers within the Visual Study Area. Higher levels of change to the landscape may be apparent to a limited number of viewers located adjacent to the Facility . Limited views of the Facility will also be visible from a limited number of viewers at slightly elevated locations within approximately 1 mile of the Facility, including residential and travelers along NY 3, US 11, and Interstate 81. During the construction period for Facility components, viewers will be able to observe construction equipment, laydown areas, and crews. Varying degrees of visual contrast will occur when equipment and construction crews are present; however, this source of contrast will be short-term since equipment and support facilities will be removed once construction is complete. Visual effects during operation of the Facility will result from the visibility of the aboveground components associated with the Facility, including PV panels, inverters, on-site substation, distribution and collection lines, access roads, and perimeter fencing. The Facility will introduce regular forms and horizontal and vertical lines into a landscape setting that has been modified primarily by agricultural, residential, and commercial development. Residences and travelers' local roads, such as NY 3, Old Rome State Road, and Jericho Road Lloyd Road, and Youngs Road that traverse north and south through the Facility and Massey Street Road, Fields Road, Martin Road, Beutel Road, and Parker Road located east and west, respectively, will have views towards the Facility that range from unobstructed to partially screened to completely screened by vegetation along the Facility boundary. It is anticipated that the Black River and Lake Ontario will not have views towards the Facility based on the screening effects of existing vegetation, buildings and other structures, and distance. Based on the results of the rating panel, contrast will range from moderate-weak visual impact to moderate-strong visual impact which primarily depends on the distance of the viewer to Project components, existing vegetation screening surrounding the viewpoint, and other human-made modifications visible within the viewscape. Landscaping is proposed around the perimeter of the Facility where adjacent viewers will have unobstructed views towards the Facility. Landscaping will consist of a variety of evergreen trees that will help to screen portions of the Project and break up the uniformity of the blocks of PV panels. Landscape screening will help to reduce contrast, significantly in some areas, and overall visibility for adjacent viewers. Viewers not directly adjacent to the Facility will be mostly to completely screened by topography and/or vegetation within the existing landscape and will therefore result in minimal to no visual impacts.

9.0 REFERENCES

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Appendix A: Sources of Data

Appendix B: Scenic Resources within the Visual Study Area and Composite

Appendix C:
Site Photographs

Appendix D:
Line-of-Sight Profiles

Appendix E:
Rating Panel Qualifications

Appendix F:
Visual Contrast Rating Forms/Rating Criteria

Appendix G:
Photographic Simulations

Appendix H:Visual Impacts Minimization and Mitigation Plan