Visual Impact Assessment

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Trelina Solar Energy Center

Town of Waterloo, New York

Prepared For:

Trelina Solar Energy Center, LLC
700 Universe Boulevard
Juno Beach, Florida 33408

Prepared By:

TRC
650 Suffolk Street
Lowell, MA 01854

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ATTACHMENTS

1.0 INTRODUCTION

Trelina Solar Energy Center, LLC, a wholly-owned, indirect subsidiary of NextEra Energy Resources, LLC is proposing to construct, operate and maintain the Trelina Solar Energy Center (Project), and is submitting an Article 10 application to the NYS Board on Electric Generation Siting and the Environment in pursuit of a Certificate of Environmental Compatibility and Public Need.

Provided herein is a Visual Impact Assessment (VIA) that addresses the potential for visual impacts from the major components of the Project. The focus of this VIA includes the assessment of potential visual impacts from the proposed solar panels and the Project collection substation.

Within the framework of the Article 10 process, the purpose of this VIA is to:

- Describe the visual character of the Visual Study Area (VSA)
- Perform a visual resources inventory that identifies potentially sensitive receptors
- Evaluate potential Project visibility within the VSA
- Provide the results of computerized visualization studies that support the evaluation of Project visibility as well as field observations during the site visits
- Assess the visual impacts associated with the proposed Project

The VIA was performed according to the requirements in 16 NYCRR §1001.24 with results included within Exhibit 24 in the Article 10 application. The VSA for the Project is a 5-mile radius around the fence line of the Facility.

2.0 THE PROJECT

The Trelina Solar Energy Center (Project) will have a generating capacity of 79.5 to 80 MW and will be located on land leased from owners of private property in the Town of Waterloo, Seneca County, New York. Proposed Project components include commercial-scale solar arrays, access roads, inverters, fencing, buried electric collection lines, and electrical interconnection facilities. The Project also includes a proposed collection substation and interconnection facilities to be located on land within the Project Area, that will tap into NYSEG's existing Border City – Station 122 115 kV transmission line. The proposed interconnection facilities will include a 115 kV switchyard which will be transferred to NYSEG to own and operate. Figure C.200 in Attachment 1 shows the site plan.

Solar Arrays: The Project proposes to install fixed or tracker racking systems. As the technology is rapidly evolving for solar panel technology, and market conditions at the time procurement decisions need to be made are unknown. The tracking or fixed array racking systems to be employed would be similar to the Gamechange Solar Genius Tracker™ and the Gamechange Maxspan™ Pile Driven System, respectively, specification sheets of which have been included in Exhibit 2. Regardless of the type of array racking system ultimately selected for the Project, the

Applicant intends to use a solar module similar to the Jinko Solar Eagle 72HM G2 380-400 Watt Mono Perc Diamond Cell. A specification sheet for this module has been included in Exhibit 2. Only select elements of the Project would change based upon the decision of which type of array racking system is ultimately used, but all changes would be within the component fence line and to the same land uses shown in the Proposed Layout. The location of interior access roads and inverters, depending upon the final locations, could differ from that shown in the plans provided in Exhibit 11. There would be no additional significant, adverse environmental impacts choosing one racking system over the other.

Accordingly, the drawings, plan, and maps required by Exhibit 11 depict a tracker racking layout. As part of the alternative layout evaluation, Exhibit 9 presents a site plan depicting all fixed panels.

Inverters: Inverters will be located throughout the solar arrays. Their purpose is to convert direct current (DC) electricity generated by the solar modules into alternating current (AC) electricity. Cables from the solar modules are run to the inverters using a CAB® cabling system or underground lines. From the inverters, underground collection lines then convey electricity to the Project collection substation and ultimately to the existing electric transmission system. The Applicant intends to use an ABB PVS980 inverter or similar model.

Access Roads: Roads within the Project Area to be used for access to the solar arrays will follow existing farm roads and trails, where practicable, to minimize the need for new roads. The same access roads used during construction will be used during operation of the Project and will be gravel surfaced and approximately 14 feet wide. The total length of access roads is approximately 9.8 miles.

Collection Lines: The 34.5 kV collection lines will connect the solar arrays with the Project collection substation. The total length of collection line being included as part of the Application for the Project is approximately 7.86 miles. Collection lines will be installed underground (approximately 40,885 feet via direct burial and approximately 683 feet via horizontal directional drilling (HDD)).

Fencing: Fencing will be placed around the perimeter of the arrays and associated structures. Fencing will be chain-link and seven feet in height per local regulations and will only be topped with barbed wire around the perimeter of the collection substation and switchyard.

Project Collection Substation: The 34.5 kV collection lines within the Project Area will gather power from the solar arrays and transport it to a new collection substation that will increase the voltage to 115 kV. The construction of the collection substation is anticipated to occupy approximately 0.3 acres of agricultural land. This acreage does not include the adjacent switchyard.

Project Interconnection Facilities: Power from the collection substation will be transported to an immediately adjacent switchyard and then interconnected via a proposed 50-foot 115 kV transmission line to the existing NYSEG Border City – Station 122 transmission line. The switchyard and transmission line will be transferred to NYSEG to own and operate.

The following definitions will be used to describe various areas or boundaries of the Project:

Project: the proposed Trelina Solar Energy Center energy facility.

Project Area: the 1,067-acre area encompassing all Project parcels located within the Town of Waterloo.

Component or Facility: an individual piece, or collection of equipment or improvement of the Project, including a solar array, access road, fencing, inverters, buried electric collection lines, electrical interconnection facilities, and laydown areas.

Visual Study Area: A five-mile radius around the fence line of the Facility specifically designated for the study of visual impacts.

As noted, the Project proposes to install fixed or tracker racking systems. For the purposes of assessing visual impacts, the VIA analyses and discussion focuses on the tracker layout which is the highest above-ground heights of the two and evaluates worse-case scenario. The tracker system in all analyses are set at 13 feet above ground surface (it's height at maximum tilt). In the case of photo simulations, trackers are depicted as the main focus of discussion however simulations also include the fixed solar arrays for comparison. The fixed arrays are set at 8 feet above ground surface.

3.0 CHARACTER OF THE EXISTING LANDSCAPE

Solar panels are proposed in the Town of Waterloo, NY. The VSA is a 5-mile radius around the fence line of the solar arrays and includes Seneca and Ontario Counties. As a result of the larger Study Area under consideration, a number of additional towns are included over that of the Project location in Waterloo.

Towns that fall within One Half Mile Distance Zone: City of Geneva, Fayette, Town of Geneva, Phelps, Waterloo.

Towns that fall between One Half and Two Mile Distance Zone: City of Geneva, Fayette, Town of Geneva, Phelps, Waterloo.

Additional Towns that fall between Two and Five Mile Distance Zone: Junius, Seneca, and Seneca Falls.

3.1 PHYSIOGRAPHY, LANDFORM, AND LAND USE PATTERNS

The Project is in the Town of Waterloo and is located in the northwestern part of Seneca County. It is in the Ontario-Erie Plain and Finger Lakes Region Major Land Resource Area. The northern half of the VSA is within the Erie-Ontario Lowlands Physiographic Province while the southern half lies within the Allegheny Plateau.

Landform in the study area consists of mostly level with low rolling topography with no significant high elevation summits in the VSA. Ground elevations within the VSA range from 442 to 750 feet mean sea level (msl) while elevations at the site are generally level not varying more than 40 feet and generally range between 458 to 490 feet msl. Terrain within the VSA trends higher from east to west where elevation at Bauer Road in the Village of Waterloo to the east is 460 feet msl while Melvin Hill Road in Seneca to the west is 705 feet msl. Elevations also rise from the site to the southwest beyond the City of Geneva. Elevations between the site and the heart of the city are fairly consistent and range from 460 to 485 feet msl. Elevations begin to increase beyond the densely populated region and southwestern city limits, rising near 485 feet at the southwest city boundary and reaching 750 feet at the extent of the VSA near Hastings Road in the Town of Geneva. Elevations to the north near New Miller Road in Junius are approximately 485 feet msl and trend down to approximately 452 feet msl at Seneca Lake.

Gem Lake is a 34-acre waterbody in the project vicinity located on private property between Pre Emption Street and Servin Road, and south of Packwood Road. Seneca Lake is located 0.5 miles to the south and the Cayuga-Seneca branch (Seneca River) of the Erie Canal System crosses through the VSA to the southeast with the closest point at 0.2 miles. The New York State thruway is 3.5 miles north of the site. The landscape in the VSA and in the central portion where the project is located is primarily a rural mix of open farmland that is mostly active field crop production with several small intermittent blocks of forest groups. The majority of the VSA lies within Agricultural Districts #6 and #8. Rural residential development is scattered throughout the towns with areas of denser developed hamlets. Waterloo has a population of approximately 7,500 people. The Village of Waterloo is located 2.6 miles east with a population of approximately 5,000. Approximately 0.47 miles to the southwest is the City of Geneva with a population of around 12,800 people.

The Town of Waterloo is in a central location and serves as a crossroad. The north-south corridor of Route 96 intersects with Routes 5 & 20, a well-traveled east-west connector. Several other routes serve the town near or at its borders. To the west, Route 96A terminates its northern reach just inside the town. To the east, Route 414 is another well-traveled route and commercial corridor providing access to the Thruway.

To help describe the rural nature of the area and thus provide an understanding of the relative visual impacts one might receive by traveling in a vehicle, annual average daily traffic (AADT) counts are provided in the Table 1 listing of roadways in the area. AADT is a measure used primarily in transportation planning and transportation engineering. Traditionally, it is the total

volume of vehicle traffic of a highway or road for a year divided by 365 days. For perspective, highways such as I-90 has an AADT of 40,041. while Packwood Road, a local perimeter road adjacent to the Project has an AADT of 1,763.

Table 1. Available Traffic Data within the VSA

Route/ Road Name	From	To	AADT	Count Year
I-90	Inter 43 RT 21	Inter 42 RT 14	40,041	2004
NY 14	Gambee Rd	RT 96W Junius	9,151	2015
Packwood Rd	NY 14	Town Line Rd	1,763	2016
Pre Emption St	Geneva C Ln	Phelps T/L	1,538	2015
Border City Rd	T/L West	US 20	6,579	2015
NY 96A	CR 119 River Rd (N)	RTS 5 & 20 End RT 96A	9,341	2015
Serven Rd	CR 110	Packwood Rd	1,046	2011
US 20	Ont/Seneca Co Line	RT 96A	12,336	2015
US 20	RT 96A	RT 96 Waterloo	10,032	2011

Most of the roadways in the VSA are generally rural in nature and generally provide one travel lane in each direction with limited shoulder and roadside treatments. I-90 and portions of US 20 have more than one travel lane in each direction. A majority of the existing intersections are stop-controlled. There are a few signalized intersections. The following roadways are itemized below:

- *Principal Arterial Interstate* – The only Principal Arterial Interstate found within the Project Area is Interstate I-90. Principal Arterial Interstates are roadways classified as an interstate that carry multiple travel lanes and are designated for high rates of speed between major points.

- *Principal Arterial Other* – The two Principal Arterial Other found within the Project Area are US Route 20 and NY Route 14. Principal Arterials Other are roadways classified as a non-interstate that consist of a connected rural network of continuous routes that serve corridor movement having trip length and travel density characteristics indicative of substantial statewide or interstate travel and provide an integrated network without stub connections except where unusual geographic or traffic flow conditions dictate otherwise.

- *Minor Arterial* – There is one Rural Minor Arterial roadway classified by the NYSDOT in the vicinity of the Project Area: NY Route 96. Minor Arterials are often moderate length and usually provide a connection to a higher-level roadway, such as a Principal Arterial.

In rural areas, such as the Project Area, Minor Arterials provide high travel speeds with minimal disruption to the through traveling vehicles.

- *Major Collector* – There only Major Collector roadway analyzed within the Project Area as classified by the NYSDOT is NY Route 96A. Major Collectors generally have few driveways and also allow for minimal disruption to the through traveling vehicles. Major Collectors can be shorter in length and have fewer daily traffic than Minor Arterials.

- *Local Road* – There rest of the roadways within the Project Area are identified as Local Roads including Packwood Road, Pre Emption Street and Serven Road. These roads account for the largest percentage of total roadway miles. These roadways are short and are intended for specific local access. Local roads primarily facilitate direct access to adjacent property owners with many driveways and access points.

4.0 DISTANCE ZONES

Distance Zones are based on Project distances to an observer. Three distance zones are applied to the Project: foreground, middleground, and background. Each of these areas will determine the level of detail and acuity of objects. Distance Zones are often identified by the definitions in The US Forest Service Landscape Aesthetics – A Handbook for Scenery Management (1995). The effects of distance are highly dependent on the characteristics of the landscape however size, level of visibility perceived for this particular type of project (solar panels) and panel position in the landscape should also be considered in determining zones. Distance Zones for this Project have been reasonably modified from the US Forest Service Handbook to accommodate the VSA radius, limitations of human vision and perceptible detail of the low profile of the Project components, and how much of the Project can actually be seen. Solar panels are not wind turbines or tall buildings. They are of a different character with a low vertical height profile (13 feet high for tracker arrays) in comparison to other larger objects found in the landscape such as houses, barns, and trees in addition to the rolling topography in the area that could easily act as a visual obstruction for locations farther out. Solar projects typically have lateral breadth but as such, visibility of solar projects in the northeast, because of frequent and highly vegetated narrow ridge and valleys and dense forest areas surrounding agricultural lands often do not offer substantial far reaching vistas of many miles. Distance Zones for this project are as follows:

- Distance Zone 1: Foreground (up to 0.5 miles from the viewer). This is the closest distance at which details of the landscape and the solar panels can be seen. Individual landscape forms are typically dominant and individual panel strings and racking system detail may be seen. The concentration of predicted visible areas lies within this zone.

- Distance Zone 2: Middleground (0.5 to 2 miles from the viewer). At this distance individual tree forms and building detail can still be distinguished at for example, 1 mile. The outer boundary of this distance zone however is defined as the point where the texture and

form of individual plants are no longer as visibly acute in the landscape. In some areas, atmospheric conditions can reduce visibility and shorten the distance normally covered by each zone. Solar panels lose level of detail and are seen as a continuous mass of form and/or color.

- Distance Zone 3: Background (2 to 5 miles from the viewer to the horizon). At the extent of background distances, texture disappears, and color flattens but large light and dark patterns of vegetation or open land due to shape or color is distinguishable and ridgelines and horizon lines are the dominant visual characteristics. Landscapes are simplified and are viewed in groups or patterns. Solar panels can be detected as a distant form and color change but are not as discernible.

Further discussion on the percentages of visibility for each Distance Zone can be found in Section 10.1.3 and Table 5.

5.0 LANDSCAPE SIMILARITY ZONES

Landscape Similarity Zones (LSZ) are areas of similar landscape and aesthetic character based on patterns of landform, vegetation, water resources, land use, and user activity. These zones provide additional context for evaluating viewer circumstances and visual experiences. Land cover classification datasets from the 2016 USGS National Land Cover Dataset (NLCD) is available for GIS analysis and was used for an initial establishment of LSZs as they provide distinct and usable landscape categories. These NLCD land cover groupings were then refined based on aerial photo interpretation and general field review. This effort resulted in the definition of five final LSZs within the VSA as depicted in Table 2 and Figure 4, Attachment 2 and include the following:

Zone 1: Agricultural– This zone includes cultivated land and that which is used for row crops, hay, or pasture.

Zone 2: Forested – This zone includes mature deciduous and coniferous tree groups.

Zone 3: Developed – This zone includes the Village of Waterloo, the City of Geneva, residential groupings within the towns, rural residential abutting roadways, and transportation corridors.

Zone 4: Open – This zone includes miscellaneous other open parcels that may have minor development with less visually obstructive features as well as other open lands with few visual obstructions such as minor expanses of barren land, land with short scrub shrub vegetation, and emergent wetlands.

Zone 5: Open Water – This zone is essentially restricted to Seneca Lake, the Cayuga-Seneca Canal, and Gem Lake.

Table 2 summarizes the percentage of LSZs in the VSA.

Table 2. Percentage of Landscape Similarity Zones within Five Mile VSA

	Distance Zone 1 0.5 Miles		Distance Zone 2 0.5-2.0 Miles		Distance Zone 3 2.0-5.0 Miles			
LSZ	Square Miles	% of LSZ w/in VSA	Square Miles	% of LSZ w/in VSA	Square Miles	% of LSZ w/in VSA	Total Square Miles of LSZ	Total Percent of LSZ in VSA
Zone 1 Agricultural	2.41	2.23%	6.72	6.20%	48.45	44.68%	57.59	**53.11%**
Zone 2 Forested	1.83	1.69%	7.60	7.00%	16.92	15.61%	26.35	**24.30%**
Zone 3 Developed	0.41	0.37%	1.72	1.59%	3.70	3.41%	5.82	**5.37%**
Zone 4 Open	0.64	0.59%	1.76	1.62%	8.09	7.46%	10.49	**9.67%**
Zone 5 Open Water	0.05	0.04%	2.53	2.33%	5.62	5.18%	8.19	**7.56%**
Totals	**5.34**	**4.93%**	**20.33**	**18.74%**	**82.78**	**76.33%**	**108.45**	**100.00%**

Landscape Similarity Zone 1 Agricultural is the dominant LSZ found within the 5-mile VSA comprising 53.11% of the land area and appears the most in Distance Zones 2 and 3. Zone 2 Forest accounts for the next highest acreage resulting in 24.3% of the land area and is most abundant in Distance Zone 3 between 2.0 and 5.0 miles due to the greater square mileage inherent in that Zone. Zone 3 Developed occurs the least overall in the VSA at 5.37% and is the highest in Distance Zone 3. Zone 4 Open is land with few visual obstructions such as minor expanses of barren land, land with short scrub shrub vegetation, and emergent wetlands and comprises 9.67% of the VSA. Zone 5 Open Water assigned to Seneca Lake, the Cayuga-Seneca Canal, and Gem Lake is the fourth highest of the 5 groups occurring in 7.56% of the VSA land area. It is minimal in Distance Zone 1 within 0.5 miles and most abundant in Distance Zone 3 as that is where a portion of Seneca Lake falls.

6.0 SCENIC RESOURCE INVENTORY

An inventory of publicly available and accessible visual resources out to the 5-mile VSA was explored through the acquisition of GIS data, review of town, county, and agency reports, topographic data, and site visits along with photographic documentation. Visual resources within 5 miles of the Project are listed in Table 3.

Local, state, and federal visual resources were compiled under the provision of 16 NYCRR §1001.24 (b)(4)(ii). 16 NYCRR §1001.24(b) requires, among other things, that the viewshed analysis component of the VIA shall be conducted as follows and has guided the resource inventory:

§1001.24(b) (4) The applicant shall confer with municipal planning representatives, DPS, DEC, OPRHP, and where appropriate, APA in its selection of important or representative viewpoints. Viewpoint selection is based upon the following criteria:

> *§1001.24(b)(4)(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 DEC 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; 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;*

The preceding paragraph has been parsed and assigned numerical Visual Resource Category (VRC) numbers in the order in which they appear in 16 NYCRR §1001.24 (b)(4)(ii). The following have been reviewed for their appearance within the VSA:

1) landmark landscapes;
2) wild, scenic or recreational rivers;
3) 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;
4) Scenic districts and scenic roads;
5) Scenic Areas of Statewide Significance;
6) state parks or historic sites;
7) sites listed on National or State Registers of Historic Places;
8) areas covered by scenic easements, public parks or recreation areas;
9) locally designated historic or scenic districts and scenic overlooks; and,
10) high-use public areas;

For historic sites, listed National Register of Historic Places (NRHP) and eligible historic properties obtained from New York State Cultural Resource Information System (CRIS) are addressed in this

report. Refer to Exhibit 20 of the Article 10 Application for greater detail on cultural resources investigations.

6.1 RESULTS OF ARTICLE 10 SCENIC RESOURCES INVESTIGATION

Table 3 shows results of the investigatory findings of scenic resources that are required by the regulatory guidelines set forth for Article 10 (Section 6.0). Figure 5 in Attachment 2 show resource locations.

Table 3. Inventory of Visual Resources

VRC	Resource Name	Town	Distance (miles)	Expected Visibility*
	Federal, State, County, Municipal Recreation Lands			
8	Brook Street Park	City of Geneva	2.2	No
8	Charters Playground	City of Geneva	0.5	No
8	Gulvin Park	City of Geneva	1.2	No
8	Genesee Park	City of Geneva	1.6	No
8	Geneva Little League Park	City of Geneva	3.2	No
8	Geneva Recreation Complex	City of Geneva	1.8	No
8	Lakefront Park	City of Geneva	1.1	No
8	McDonough Park (includes Geneva Ball Park)	City of Geneva	2.5	No
8	NYS Finger Lakes Welcome Center	City of Geneva	1.4	No
8	Ridgewood Park	City of Geneva	2.6	No
6	Seneca Lake State Park	City of Geneva, Waterloo	0.4	No
3	Bishop Nature Preserve	Fayette	1.0	No
10	Cornell University Food and Agriculture Technology Park	Geneva	2.8	No
8	Jefferson Park	Geneva	2.4	No
10	Lenox Park	Geneva	3.6	No
8	Nieder Park	Geneva	1.4	No
8	Richards Park	Geneva	1.8	No
8	Washington Street Park	Geneva	2.7	No
8	Junius Ponds Campground	Junius	3.5	No
8	Cheerful Valley Campground	Phelps	4.4	No
8	Oak Corners Community Park	Phelps	3.6	No
8	Lafayette Park	Waterloo	3.0	No
8	Main Street Playground	Waterloo	2.9	No
8	Oak Island	Waterloo	3.0	No
8	Seneca County Fairgrounds	Waterloo	3.9	No
8	Waterloo Harbor Campground	Waterloo	2.3	No

VRC	Resource Name	Town	Distance (miles)	Expected Visibility*
8	Waterloo Little League	Waterloo	3.2	No
8	Welcome Traveler Campground	Waterloo	0.2	Yes, minimal
	Unique Areas			
8	Junius Pond Unique Area	Junius	3.4	No
	NYS Canal System			
8,10	Seneca Lake	City of Geneva, Fayette, Seneca Falls, Waterloo	0.5	No
8,10	Cayuga-Seneca Canal System	Fayette, Waterloo, Seneca Falls	0.2	No
	State Boat Launch			
8	State Boat Launch	Fayette	0.8	No
	Trails and Bikeways			
8	State Bike Route 14	City of Geneva, Geneva, Junius, Waterloo	0.8	Yes, minimal
8,10	Cayuga-Seneca Canal Trail	Waterloo	0.3	No

ID	USN	Historic Site	Town	Distance	Expected Visibility*
VRC7	**Historic NRHP**				
1	06940.000064	Ashcroft	Geneva	2.6	No
2	06913.000013	Barron, Thomas, House	Seneca	4.2	No
3	06906.000007	Belhurst Castle	Geneva	3.2	No
4	09941.000081	Burton, William H., House	Waterloo	3.3	No
5	06940.000725	First Baptist Church	Geneva	1.8	No
6	09941.000104	First Presbyterian Church	Waterloo	3.3	No
7	06940.000268	Geneva Armory	Geneva	1.9	No
8	06940.000321	Geneva Hall and Trinity Hall, Hobart & William Smith College	Geneva	2.2	No
9	06911.000056	Huffman, William, Cobblestone House	Phelps	5.0	No
10	09941.000002	Hunt House	Waterloo	4.1	No
11	09941.000280	M'Clintock House	Waterloo	3.3	No
12	06940.000323	Nester House	Geneva	2.5	No
13	06940.000008	Parrott Hall	Geneva	2.6	No

ID	USN	Historic Site	Town	Distance	Expected Visibility*
14	06913.000011	Rippey Cobblestone Farmhouse	Seneca	5.1	No
15	06940.000064	Rose Hill	Fayette	1.7	No
16	09941.000236	Saint Paul's Church	Waterloo	3.4	No
17	06911.000002	Swift, Philetus, House	Phelps	4.3	No
18	09941.000234	United Methodist Church	Waterloo	3.3	No
19	06940.000275	US Post Office--Geneva	Geneva	1.8	No
20	09941.000094	US Post Office--Waterloo	Waterloo	3.3	No
21	06940.000726	Washington Street Cemetery	Geneva	2.3	No
22	09941.000005	Waterloo Library	Waterloo	3.4	No
VRC 7	**NY CRIS Listed Historic Districts**				
	06940.000818	Genesee Park Historic District	Geneva	1.6	No
	06940.000819	Geneva Commercial Historic District	Geneva	1.7	No
	06940.000817	South Main Street Historic District	Geneva	1.9	No
VRC 9	**CRIS Listed Historic Eligible****				

* *Expected visibility is based on viewshed analysis results*

** *Please see Attachment 3 for full listing of eligible historic sites*

7.0 GIS AND 3D ANALYSIS FOR VISUAL IMPACT EVALUATION - METHODOLOGY

7.1 VIEWSHED ANALYSIS

A viewshed analysis is a computerized GIS analytical technique that illustrates the predicted visibility that may potentially be expected for a project. It allows one to determine if and where an object, such as a solar project, can geographically be seen within a larger regional area. The viewshed model accounts for topography, vegetation, and the height of the solar panels. The results of the viewshed analysis, typically displayed over a USGS topographic map or aerial photo, are combined with other sensitive location information such as historic places, national forests, or state parks, etc. Incorporating GIS integrated data along with a viewshed analysis assists in understanding the potential for project visibility at sensitive receptors.

7.1.1 Methodology

Two viewshed analyses have been produced to illustrate predicted visibility within the VSA:

- Topography-Only: A topography-only analysis illustrates the effects of the surrounding terrain and determines if landform is responsible for obscuring some of the views. Trees and buildings are not incorporated in this analysis.

- Incorporated Trees: A second viewshed analysis that accounts for the heights of existing trees with minor coverage of larger buildings. This contributes to a more realistic representation of landscape conditions over the topography-only analysis and is the analysis that is emphasized in this report.

In areas where available, the analysis used Light Detection and Ranging (LiDAR) data for FEMA Seneca Watershed (2012), provided by the New York State GIS Program Office as point cloud .las datasets. LiDAR data is the best available elevation data for this analysis as it includes high resolution ground elevations in addition to building and individual tree heights that offer realistic physical visual impediments in the landscape. However, LiDAR data was not available for Ontario County which represents the western quadrant of the VSA. For the non-LiDAR areas, a 10-meter USGS digital elevation model (DEM) was used to obtain ground elevations. The USGS DEMs do not have tree coverage incorporated. In order to obtain tree information for the non-LiDAR areas, supervised image classification using training pixels was performed on aerial photos to create a well-refined layer representing narrow tree rows and larger forested areas. As height data is not included with the data extraction, this tree layer was set at a height of 50 feet while conservatively, most buildings were not accounted for.

For the analysis, the top of the panels was set at a maximum 13 feet in height above ground surface representing tracker arrays and placed within the viewshed modeling environment. The viewshed model was further developed by establishing an observer height of 6 feet, and the assumption that the Project would not be visible to a viewer who is standing amongst trees in a forested area. The final resulting output identified those areas from which viewers would potentially see all or some part of the proposed solar panels. ESRI Spatial and 3D Analyst GIS software was used to develop the viewshed model.

7.1.2 Assumptions and Limitations of the Viewshed Model

The viewshed analysis identifies cells (image pixels) that contain elevation information and computes the differences along the terrain surface between an observer in the landscape and a target (e.g. solar panel). The analysis is a clear line of sight and therefore certain factors in the interpretation of results need to be considered:

1. The model, because of its computerized aspect, assumes the observer to have perfect vision at all distances. Therefore, a certain amount of reasonable interpretation needs to be considered because of the limitations of human vision at greater distances or those atmospheric/meteorological conditions that may cause imperfect vision, such as haze or inclement weather. Additionally, an object is naturally smaller and shows much less detail

at distances and will have less visual impact. These aspects cannot be conveyed with this analysis.

2. Because an area may show visibility, it does not mean the entirety of the Project will be seen. The viewshed analysis depicts areas of visibility over a regional area. It can only predict geographically on a map, areas where some part of the solar panels might be seen. It does not and cannot determine if it is seeing a full on view or a partial view. Additionally, if visibility is occurring in an area, it may sometimes only be a result of glimpsing a portion of the Project over undulating treetops between gaps of trees, or visibility of the tops of panels and not a full-on view. Likewise, there may be understory tree gaps where there may be visibility of the Project.

3. The viewshed model when trees are incorporated, assumes that any vegetation is opaque and therefore represents a leaf-on condition. By nature of the software model and available parameters, the trees are treated as an opaque object and therefore leaf on conditions are assumed. Transparency predictions through something similar to bare-branched trees under leaf off conditions cannot be made. A topography-only analysis has been included to help understand some of the visual environment in the absence of trees.

4. The model was developed with the assumption that a viewer would not see the panels if standing amongst trees in forested areas as it is assumed the tree canopy would preclude outward looking views.

7.2 LINE OF SIGHT ANALYSIS

Line of Sight profiles were performed for some viewpoints where there is limited or questionable visibility. On occasion at distance, even photosimulations may not adequately or clearly depict the visibility of a project. Lines of Sight analyses are able to provide the viewer with information that assists in examining the reasons why objects such as solar arrays may have impeded views or no views. The underlying topography of a sight line in addition to vegetative obstructions can be produced as well as an estimated amount of visibility of the upper portion of an object if it is visible.

Elevation data obtained for the Project noted in Section 7.1.1 was used for the data source. ArcGIS ESRI 3D Analyst was used to produce elevation samples across select sight lines for bare earth topography and for vegetation. Section 10.2.2 provides results discussion and Attachment 4 contains the profiles.

7.3 PHOTOGRAPHIC SIMULATIONS

Field surveys were conducted in March 2020 in order to acquire photographs for simulations during leaf-off conditions. See Project Photolog in Attachment 5. Attempts were made to take

photographs that provided the most unobstructed views possible at north, south, east, and west positions and/or in areas where the viewshed maps represent potential visibility and that which offers varying representation from Landscape Similarity and Distance Zones. Simulations are presented in Attachment 4.

7.3.1 Methodology

Coordinates of camera locations intended for simulations as well as other reference points within the view were collected via GPS as well as other reference points within the view. These reference locations were later used to refine the placement of the facility within the simulation photographs.

To create visual simulations, 3DS MAX visualization software was used to correctly dimension the 3d models into the digital photographic image from each viewpoint location. The 3d model of the solar layout was created by TRC using engineering specifications. Tracker panel positions change as they follow the sun and therefore angles vary throughout the day. Panel angles in their most extreme position with heights of 13 feet above ground surface are represented in all tracker array simulations. In the case of fixed arrays, a maximum height of 8 feet was used. The simulation model was further developed to position the viewer at the selected vantage point. For a given vantage point, the visualization software is capable of providing and adjusting a camera view that matches that of the actual photograph. From the field effort, the documented camera coordinate (x, y, z) positions were entered into the model. Reference locations, which are existing visible objects in the photograph such as light posts, building corners, placed stakes, gate posts or utility poles were used to assist with refined placement of the proposed Project within the photograph. GIS terrain modeling and analysis helped in accurately locking the 3d facility model within the photograph. Ground point elevations of the camera location and other referenced objects were obtained from the elevation data.

The day and time of the photographs were also recorded and typically exist as electronic information embedded in the respective digital photograph files. This information was used to adjust for sun angle in the simulation software in order to represent lighting conditions for the time of day and year.

7.3.2 Viewpoint Selection for Photosimulations

Integrating the results of the GIS resources inventory data along with the viewshed analysis results provided initial desktop reconnaissance for recognizing areas with potential visibility and identifying candidate locations for photosimulations. While focusing on inventoried locations as listed in Section 6.0, an additional objective in the viewpoint selection process is to also choose locations for simulations that represent the various LSZs as well as Distance Zones. As well, site field visits are necessary for ground-truthing and increasing the understanding of the visual environment. In March 2020, the Applicant began site visits to acquire on-the-ground information to support the VIA and the photosimulation site selection process.

Visibility as noted by the viewshed results in Figures 2, 3 and 5, Attachment 2 shows the most prominent visibility is within 0.5 miles of the Project. Outside of 0.5 miles there are isolated areas that may have views of solar arrays that are generally within open agricultural areas where much of the public will not be. These isolated areas are mainly located west and southwest of the Project. Some of those areas will be along public roadways having short duration views.

As noted in Table 3 Visual Resources Inventory, few of the listed visual receptors may experience views of the Project. Attempts to represent all LSZs are typically made however obtaining photo viewpoints from a representative forested area is often moot, since there are not expected to be outward views from within a forested area. Most viewpoints then are taken in the remaining two but abundant LSZs which is agricultural open land and developed roads and closer to the Project. A few viewpoint photos were taken to represent views from residential areas.

16 NYCRR § 1000.24(b)(4) requires both general and specific consultations with affected agencies and municipalities. *"The applicant shall confer with municipal planning representatives, DPS, DEC, OPRHP, and where appropriate, APA in its selection of important or representative viewpoints that may be subject to project visibility".* On April 20-21, 2020 an information request was sent out to stakeholders. In this request, a preliminary visual report was provided, indicating the extent and findings of visibility studies at that point in time which consisted of identified visual resources as well as the result of the trees-only viewshed analysis. Opportunity was provided for stakeholders, including local municipalities with predicted visibility of the project, to suggest additional and reasonable candidate locations for photosimulations or append additional visual resources of concern to the inventory. Correspondence can be found in Attachment 6.

In summary, viewpoints were selected based on representations of the Project as well as the need to incorporate the LSZs, inventoried locations, different distance zones as best as Project views allowed, different viewer types, varying lighting conditions, views that offered a clear unobstructed sightline as possible and consideration of DPS comments and stakeholder and agency consultations.

8.0 ADDITIONAL APPLICABLE VISUAL CONCEPTS TO CONSIDER: VIEWER CHARACTERISTICS

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

These concepts are applied when evaluating the visual landscape and assessing the importance of a viewpoint location if it falls in an area of visibility. Viewer groups and associated responses to visual changes are analyzed from a variety of factors including:

Viewer group – Types of viewers will vary by geographic region, as well as by travel route or use areas, such as a developed recreation site, urban area, or back yard. Viewer groups include:

- *local constituency*: - People living in the local area and/or surrounding communities who interpret the significance of where they live and interact with others; these people may include local residents and members of groups to which the local area is important in different ways.
- *commuter constituency*: - People who use or are generally restricted to travel corridors that are destination oriented towards places of employment. These people generally have transient short duration views.
- *visitor or recreational constituency*: Individuals who visit the area to experience its natural appearance, cultural landscape qualities or recreational opportunities. Visitors may be of local, regional, or national origin.

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

Number of viewers - The number of viewers is established by the amount of people estimated to be exposed to the view. In comparing viewing locations to each other, one can consider if the area is a high public use area or if it is a location that is less frequently visited or more inaccessible where the public is not expected to be present (such as marshes or swamps).

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

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

9.0 VISUAL IMPACT RATING

TRC has developed a visual impact rating form for use in comparing project photosimulations as required by Article 10. This form is a simplified version of various federal agency visual impact rating systems. It includes concepts and applications sourced from:

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

Depending on the project location, a variety of visual impact assessment (VIA) guidance and established procedures exist as noted above that apply to management of federal lands that fall under a specific agency such as the U.S. Forest Service or Bureau of Land Management. These guidance documents vary in regards to agency specific rating systems or procedures and often begin with the evaluation of existing conditions such as scenic quality or presence of sensitive resource locations.

This form has been developed by TRC for efficient and streamlined use with projects that undergo state environmental permitting processes. It is assumed that visual resource inventories, terrain analyses, development of landscape similarity zones or viewshed analyses have already been performed in the project VIA according to state regulatory requirements or other visual policy. This form was developed to be used as a numerical rating system for the comparison of Existing Conditions (Before) vs. With Project (After) photosimulations of final selected viewpoint locations and is meant to accompany the project VIA.

For evaluating visual change there are two parts to the form. Part 1 is *Visual Contrast Rating* which rates the Project as it contrasts against compositional visual elements of the viewpoint scene. This includes compositional contrasts against the existing and natural environment such as vegetation, water, sky, landform, or structures. The higher the rating total the higher the contrast. Part 2 is *Viewpoint Sensitivity Rating*. This section incorporates the ideas in Section 8.0. It rates the sensitivity of the viewpoint location which inherently considers the importance of the viewpoint (if it falls within a visual resource area), duration of view, if it is a high use area, or if there is the presence of water. The higher the rating total, the more sensitive the viewpoint is. Part 3 does not rate change but is an overall *General Scenic Quality of the View* which rates the view of existing conditions only, without the influence of the project.

Please refer to Attachment 7 for more comprehensive guidelines on how the contrast ratings were assessed and applied within each category.

The rating scale is as follows:

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

Degree of Contrast Criteria

None The element contrast is not visible or perceived.

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

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

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

10.0 VISUAL IMPACT ANALYSIS RESULTS

10.1 VIEWSHED RESULTS AND DISCUSSION

The viewshed analysis showing areas of potential visibility can be found in Figures 2, 3 and 5 in Attachment 2). As noted in Section 7.1.1, two viewshed analyses were performed, one with topography only and one with vegetation included, with panel heights set at 13 feet above ground surface.

Viewshed Results– Topography Only

As described in Section 7.1.1, viewshed analysis with bare earth topography without trees is recognized as not being a realistic representation of potential visibility. However, the analysis was performed as it is a useful tool in understanding the influence that terrain has on blocking views to the Project.

The bare earth topography-only viewshed analysis result shows that without the presence of existing vegetation the Project is visible in nearly the entire VSA. However unrealistic this result may be, it indicates that topography is generally quite level and there are minimal areas where

the terrain is high enough to block views. The topography-only result also must not be fully interpreted as representing visibility during leaf-off conditions, since even leaf-off bare branched tree groups act as a solid mass where lines of sight cannot be obtained. Under some circumstances, there possibly may be visibility through bare-branched trees only if the trees are sparse, that this sparse tree row is the only existing vegetation between the viewer and the site, and that the viewer is in fairly close proximity to the Project.

Some topographic-only screening does occur and is present in the north to northwest region of the VSA out greater than 2 miles. There is minimal to no visibility in the east central section of the Town of Phelps, in the southwestern section of the Town of Junius, and in the northeastern section of the Town of Waterloo beyond Route 50. In the southeastern quadrant of the VSA there is also limited to no visibility in the Town of Fayette. Western and southwestern portions of the VSA in the Towns of Phelps, Seneca, and Geneva have discrete areas of topographic obstruction occurring at the 4- to 5-mile range of the VSA.

Viewshed Results –Trees Included

When vegetation is included to present a more realistic depiction of the landscape, potential visibility decreases substantially. The majority of visibility that is expected occurs mostly in a focused location inside of the 0.5 mile Distance Zone 1 within the Project parcels themselves and in nearby open farm fields. Although the panels are sited in open farmland, the low profile panels set against existing tree buffers, hedgerows, and tree groups that frame the panel locations is enough to obscure many views. Because of a 13-foot panel maximum height in relation to the mature vegetation, there are minimal far reaching views outside of the general array locations. Outside of Distance Zone 1, there are no views predicted to the north, east, or south of the Project.

Predicted views that are in outer Distance Zones 2 and 3 occur primarily to the west. As noted in Section 3.1 topographic elevations are somewhat higher in the western section. However, many of these far views are in farm fields and open land where the public is not expected to be while short segments of a few of the roadways may have transient and distant intermittent views. In the western quadrant, several Project photos were acquired in potential areas of visibility in the section along Johnson and Prospect Hill Roads and are represented by VPs 16, 17, and 18. These photo VPs are in open areas each near a residence and are approximately 3.3 miles to the west with several fields and tree rows existing between the Project and the camera location. VP17 was investigated further as a representative simulation in this area to understand the nature of any visibility and resulted in no views from this location.

Views in the City of Geneva and respective historic or recreational areas are also not expected. Representative photographs within portions of the city in recreational or park areas adjacent to Seneca Lake are seen in the Project Photolog as VPs 25 and 26 within the urban setting. VP19 on Border City Road is located in the very outskirts of the city to the northwest just beyond the

conglomeration of urban buildings. This VP is located such that it is positioned within a narrowly defined region of predicted visibility where there will be views between a small gap of vegetation and a building. A simulation was produced at this location.

Visual changes with respect to the visual resources listed in Table 3 are minimal to none, with possible intermittent and partial visibility from the Welcome Traveler Campground 0.2 miles to the east and NY State Bike Route 14 approximately 0.8+ miles to the west. Impacts to historic sites or Seneca Lake are not expected.

The New York State Thruway lies 3.5 miles north and will not experience views of the Project. As noted by the results, the most visibility is expected along the perimeter Project roads including Packwood Road, Pre Emption Street, and Border City Road, the interior Project roads namely, Serven and Welch Road, and small discrete areas on a few exterior roads such as Manley Road, County Road 6, Johnson Road, Prospect Hill Road.

Refer to Section 10.1.2 and 10.1.3 for tables and more detailed discussion of the percentages of land area that may experience visual change as a result of the viewshed visibility analysis. In summary however as noted in these Sections, the viewshed analysis results show that 2.7% of the land area within the 5-mile VSA will have either a full or partial view of the Project.

10.1.1 Article 10 Resources

Visibility results from the viewshed analysis is explained in the previous Section 10.1. The viewshed visibility results indicate that most of the listed Table 3 visual receptors will not have views of the Project. Those resources that may experience some level of visibility per viewshed results are itemized out below.

10.1.1.1 Federal Scenic Resources

Federal visual resources consist of the Erie Canalway National Heritage Corridor that includes an upper portion of Seneca Lake as well as the Cayuga-Seneca Canal. There will be areas within the geographic demarcation of the Erie Canalway Heritage Corridor that will have views since portions of the Town Waterloo are within the Heritage Corridor boundaries. There are no expected views from Seneca Lake and the Cayuga-Seneca Canal. There are 22 National Register of Historic Places sites and 3 historic districts. None of historic sites and districts will have views (listed in Table 3). Eligible historic sites as obtained from CRIS will also not have views of the Project, save for a possible limited and far-reaching view from Cobblestone Restaurant in the City of Geneva 3.4 miles from the Project. From this location and distance however, there will be several urban features that will occupy the view that are proximal to the viewer.

10.1.1.2 State and County Scenic Resources

Of the state and county resources, State Bike Route 14 may have intermittent and partial views of solar arrays along a short segment. The bike route runs in a north-south direction and is located 0.8 miles west of the Project. Approximately 5.6 miles of the Route passes through the VSA in the Towns of Phelps and Geneva, and through the City of Geneva. However, expected visibility may occur along one 0.5 mile segment of the route in Geneva near the Geneva-Phelps town boundary.

10.1.1.3 Local Scenic Resources

One local resource may experience partial views of the Project. The Welcome Traveler Campground is located 0.2 miles to the east where partial views might be obtained in discrete locations where there are views between gaps in vegetation. The campground is not a governmentally-classified scenic resource.

However, not classed specifically as an agency listed scenic resource it is recognized that local town residents and local roadway traffic will experience views of the Project in varying locations. Several locations are represented in the Project photosimulations.

10.1.2 Visibility Within Landscape Similarity Zones

For reference, a reiteration of the total percentage of LSZ within 5 miles outlined in Section 5.0 Table 2 is reiterated as follows:

- LSZ Percent of 5 Miles
  Zone 1 Agricultural: 53.1%
  Zone 2 Forested: 24.3%
  Zone 3 Developed: 9.7%
  Zone 4 Open: 1.35%
  Zone 5 Water: 7.56%

Table 4. Percent Visibility within Landscape Similarity Zones Within Five Mile VSA

LSZ	Total LSZ Sq Miles Within 5 Miles	LSZ Sq Miles of Visibility	% Visibility within LSZ	% Visibility Within VSA
Zone 1 Agricultural	57.59	2.44	4.23%	**2.25%**
Zone 2 Forested	26.35	0.12	0.45%	**0.11%**

LSZ	Total LSZ Sq Miles Within 5 Miles	LSZ Sq Miles of Visibility	% Visibility within LSZ	% Visibility Within VSA
Zone 3 Developed	5.82	0.08	1.40%	**0.07%**
Zone 4 Open	10.49	0.20	1.92%	**0.19%**
Zone 5 Open Water	8.19	0.03	0.36%	**0.03%**
Total VSA	**108.45**	**2.87**	**2.65%**	**2.65%**

One can use the results in a variety of ways. For example, when using Table 4 one can begin to distinguish or make assumptions about which viewer types may be impacted visually. For example, Table 2 (recap above) states that 9.7% of the land area within 5 miles falls in the Developed Zone which is fairly low. Section 5.0 describes this zone as primarily residential groupings within the towns, the Village of Waterloo, and the City of Geneva. The Developed Zone also includes local roadways where residential development is intermittently established along the existing road network as well as accounting for roadway travelers. Note that calculated percentages do not indicate the actual percentage of viewers that would be impacted. The percentage numbers indicate how much physical area within a designated LSZ where visual change could take place. Table 1 provides the types of roads and traffic counts within the Project Area and indicates the roads are generally rural low traffic types of roads. One may assume then, that upon land area relative to viewer types (inferred by LSZ category) and location density, resident numbers that may see some portion of the Project are low. As Table 4 notes, there will be 1.4% visibility within the LSZ itself (all developed areas) but it accounts for less than 1% of visibility within the entire VSA.

Comparing the Agricultural category is a similar exercise. The Agricultural LSZ comprises about 53.1% of the 5-mile VSA, however only 2.3% of the land area within 5-miles may experience visibility of the Project. As described in Section 5.0 this LSZ predominantly consists of land consisting of cultivated crops, hay, or pasture. Frequently there are hedgerows or small tree groups that provide intermittent screening. One can infer which viewer type might be affected (refer to Section 8.0 for discussion of viewer groups and other factors that assist in evaluating visual change). Much of this land is farmland infrequently visited and not accessible to the public. It belongs to private landowners or rather, the local constituency viewer type who themselves may not access parts of their properties at all times. Although the amount of land area that receives visibility is comparatively higher than that of Developed areas, the number of viewers is likely low. However intermittent or low the exposure is or where the constituency is from, visibility may diminish the viewer experience depending on viewer expectations or reactions to solar development.

In using the 5-mile VSA again, Table 2 shows that approximately 24.3% of the land area belongs to the Forested LSZ. Although this is 25% of the 5-mile VSA, Table 4 shows that 0.1% of the 5-mile land area will have visibility from forested areas. This low number in part is due to the fact that the viewshed model assumes that viewers in the interior of tree groups will not have outward views through the density of tree trunks or through the canopy above.

The Zone 4 Open category will have very low visibility comprising less than 1% of the entire VSA. Zone 5 Open Water category takes up 7.6% of the land area mainly consisting of Seneca Lake. However, Seneca Lake will not have views of the Project. Waters within this category will experience less than 1% of visible area, generally at Gem Lake, a 34 acre waterbody located on private property at the northwest portion of the Project.

10.1.3 Visibility Within Distance Zones

Table 5 shows that considering visibility between Distance Zones, the highest amount of visibility occurs within Zone 1 comprising at 36.1% of the land area. This makes sense because there is a concentrated amount of visibility in proximity to the Project within the half mile acreage, much of it within the solar array parcels themselves. There is an abrupt difference once one travels outside of a half mile where visibility for respective Distance Zones trends downward to less than 1.0% as distance increases into the larger acreages of Zones 2 and 3. There is approximately 2.9 square miles of total visibility within the entire 108.45 square miles that comprises the VSA, or rather, 2.7% of the VSA is predicted to experience partial, close, intermittent, or distant views of the Project.

Table 5. Percent Visibility within Distance Zones

Distance Zone	Total Area Comprising Distance Zone Square Miles	Visibility Within Distance Zone Square Miles	% Visibility Within Distance Zone	% Visibility Within Full VSA
Zone 1 0-0.5 Miles	5.34	1.93	36.10%	**1.78%**
Zone 2 0.5-2.0 Miles	20.33	0.18	0.89%	**0.17%**
Zone 3 2.0-5.0 Miles	82.78	0.76	0.92%	**0.70%**
Total	**108.45**	**2.87**	**2.65%**	**2.65%**

10.2 PHOTOSIMULATION AND LINE OF SIGHT RESULTS AND DISCUSSION

The discussion of predicted visibility in Section 10.1 focuses on relative quantities of visibility (how much is seen and where) under various conditions such as within LSZs and Distance Zones

all in an effort to understand the amount of change in the landscape. Summaries of the few visual receptors that might experience visibility of the Project were discussed.

Photosimulations from representative vantage points at varying distances have been developed to provide the quality of the view that will be obtained as a result of the Project (what does it look like). Typically, representative simulations are often obtained from visual receptors in the area where visual change will occur. However, since there will be few to no sensitive resources impacted by the Project that are listed in Table 3 Section 6.0, most of the focus on representative simulations was directed to what the immediate community would experience such as travelers on local roads and near residences and farmlands.

Photos then were taken to show the most unobstructed views as possible representing the compass points around the Project and along in interior roads. Line of Sight analysis was performed for additional and/or questionable areas. Table 6 summarizes information for each simulation and line of sight viewpoint.

Table 6. Summary Table Simulation and Line of Sight Viewpoints

Viewpoint ID*	Location	Town	Distance	Landscape Similarity Zone	Comment
VP3	Packwood at Maney Rd	Waterloo	683 ft	1	View towards Project near residence and along road
VP11	Packwood Rd near Pre Emption St	Waterloo	298 ft	1	View towards Project near residence and along road
VP17	Johnson Road	Seneca	3.4 mi	1,(2)	View towards Project from the west
VP19	Border City Road	Waterloo	1,004 ft	3	View from outskirts of City of Geneva with most likely view
VP20	Pre Emption St	Geneva/Waterloo	198 ft	1	View toward Project from the west adjacent to Project
VP22	Serven Road	Waterloo	888 ft	1,3	View toward Project on interior road
VP23a	Serven Road	Waterloo	414 ft	1,3	View toward Project on interior road
VP23b	Serven Road	Waterloo	358 ft	1,3	View toward Project on interior road
L1	Pre Emption St to	Waterloo	0.4 miles	1,3	Local traveler, commuter, through-traveler

Viewpoint ID*	Location	Town	Distance	Landscape Similarity Zone	Comment
	Collection Substation				
L2	Pre Emption St to Collection Substation	Waterloo	0.3 miles	1,3	Local traveler, commuter, through-traveler
L3	Johnson Road to Project	Seneca	3.3 miles	1	Local traveler, nearby residence
L4	Route 20 to Project	Seneca	4.2 miles	3	Busy travel corridor, commercial area

*VP= simulation viewpoint; L= line of sight location

10.2.1 Discussion of Simulations

The following discusses the visibility of the Project to viewers at or in the immediate vicinity of the photo viewpoint. Simulations are presented as sets of Existing Conditions and Proposed Conditions based on VP (viewpoint) number and can be found in Attachment 4. Proposed mitigation vegetation at 5 years is anticipated to range between 5 to 15 feet in height and is depicted in the simulations. According to the Landscape Plan presented in Appendix 11-1, fully mature heights of the year-round coniferous species can reach heights between 40-60 feet in future years.

10.2.1.1 VP3 Packwood Road, View Southeast – Waterloo (LSZ 1; Distance 683 feet)

VP3 is on Packwood Road near the junction of Maney Road. The viewer is approximately 683 feet from the fence line looking towards the southeast. This photo was taken as it is representative of arrays at the northeastern end of the Project along a local perimeter road where there are residences in the vicinity.

Existing conditions show several bands of horizontal shapes sweeping across the view consisting of a large yellow ochre shape that is a field against another large shape that is sky. A thin horizontal band of trees is seen in the background splitting these two large shapes. From this location, the sight lines show clear views of solar panels. The overall shape that the arrays form as seen in the proposed view is consistent with the horizontal landscape patterns and provides a similar narrow band, both in size and shape, as the existing tree line in view. The arrays appear compatible in the view due to size, height and distance against these trees. Color contrasts are weak to moderate as color values are similar to that of the wood line. The panels do not appear higher than the background vegetation and do not break the horizon line. Due to proximity, the

Project is apparent. However, Project contrast is weak to moderate as contrasts are absorbed by the background wood line.

The Applicant, nevertheless, is proposing vegetative screening in this area as depicted on the Landscape Plan drawings included in Appendix 11-1. Accordingly, it is expected there will be limited to no views of the arrays from this location when the proposed landscaping reaches maturity as demonstrated in the simulation with mitigation at 5 years. With the inclusion of vegetative mitigation, views are softened and moderated as the trees and shrubs are more congruous with the existing environment. Project color and value contrasts are reduced even further as they blend in with the background trees. There are likely a low number of viewers because of the rural location and few residences. Views of the mitigation for motorists will be intermittent and of short duration while longer duration views will be obtained by residences.

10.2.1.2 VP11 Packwood Road – Waterloo (LSZ 1; Distance 298 feet)

VP11 is on Packwood road approximately 960 feet east of Pre Emption Street and 298 feet from the Project. This photo was taken as it representative of views from the northwestern portion of the Project along a local perimeter road near a residence. Existing conditions are similar to VP3 where large horizontal shapes consisting of field and sky occur in the view with a narrow band of tree line. The solar arrays are similar in color and value to that of the background trees at this time of year. The size and scale of the Project has a low-profile appearance. The lateral extent of the Project occupies the view due to proximity and wide angle of view and shows a moderate to strong visual change in color and pattern.

The Applicant is proposing vegetative screening in this area as depicted on the Landscape Plan drawings included in Appendix 11-1. Accordingly, it is expected there will be limited to no views of the arrays from this location when the proposed landscaping reaches maturity as demonstrated in the simulation with mitigation at 5 years. With the inclusion of vegetative mitigation, views are softened and moderated as the trees and shrubs are more congruous with the existing environment. Project color and value contrasts are reduced even further as they blend in with the background trees. There are likely a low number of viewers because of the rural nature of the roadway and very few residences in the vicinity. Views of the mitigation for motorists will be intermittent and of short duration while longer duration views of the vegetative buffer will be obtained by residences.

10.2.1.3 VP17 Johnson Road, Seneca (LSZ 1 (2); Distance 3.4 miles)

VP17 is 3.4 miles to the west on Johnson Road and is presented herein as this location lands in an area of predicted visibility farther out from the Project as seen in the viewshed visibility maps in Attachment 2 (Figure 5). There are several VP locations where there is predicted visibility in

this area. This VP is shown as a representative example to illustrate that there will be no visibility of the Project from this location despite what the viewshed analysis predicted.

10.2.1.4 VP19 Border City Road – Waterloo (LSZ 3; Distance 1,004 feet)

VP19 on Border City Road is located in the very outskirts of the City of Geneva to the northwest just beyond the high density of urban buildings. This photo was taken as it is representative of that particular area at the southwestern most extent of predicted visibility that is proximal to the Project. It is in a semi-urban location as it transitions from more rural land use but is not yet within the full City of Geneva limits. As noted in the simulation, this VP and photo vantage point is located such that it is positioned with a view through a narrowly defined region of visibility where there are views between a small gap of vegetation and a building (church). The viewer is approximately 1,004 feet from the Project. Partial views are obtained of a small portion of arrays. Other urban development occupies the view such as the church to the left, commercial buildings to the right, and transmission lines as well as street distribution lines. The low profile of the panels places the Project well below the horizon line where there are no vertical objects interrupting the skyline. Color contrasts are not strong due to similar color value to that of the background trees. Overall the Project contrast is weak and is subordinate in the view.

The Applicant is proposing vegetative screening in this area as depicted on the Landscape Plan drawings included in Appendix 11-1. Accordingly, it is expected there will be limited to no views of the arrays from this location when the proposed landscaping reaches maturity as demonstrated in the simulation with mitigation at 5 years. With the inclusion of vegetative mitigation, views are softened and moderated as the trees and shrubs are more congruous with the existing environment. Project color and value contrasts are reduced even further as they blend in with the background trees. Views of the mitigation for motorists will be intermittent and of short duration while longer duration views of the vegetative buffer might be obtained by people from the building property.

10.2.1.5 VP20 Pre Emption Street – Geneva/Waterloo (LSZ 1; Distance 198 feet)

VP20 is located on Pre Emption Street approximately 198 feet west of the Project. This photo was taken as it is representative of the first local roadway encountered westerly at an open area along the road. Few residences are in this area. One resident just to the south has views blocked by existing trees and one resident to the north has more open views. The existing conditions view shows a large field with a narrow line of trees in the background at the far opposing side of the field. Large horizontal shapes of yellow ochre field and sky are present. Proposed conditions show the Project at close proximity that stretches across the view. The Project is apparent due to proximity and discernible detail while some of the arrays are seen to interrupt the horizon line. Color and contrasts are moderate to strong and overall the Project is dominant in the view.

The Applicant is proposing vegetative screening along this area as depicted on the Landscape Plan drawings included in Appendix 11-1. As seen in the simulation with mitigation at 5 years, the proposed trees and shrubs block a substantial amount of the Project. With the inclusion of the proposed vegetative, views are softened and moderated as the trees and shrubs are more congruous with the existing environment. Project color and value contrasts are reduced with the mitigation. There are few residences in the immediate area, so views are mainly restricted to roadway travel. Views of the mitigation for motorists will be intermittent at a gap in the roadside trees, and of short duration.

10.2.1.6 VP22 Serven Road, North – Waterloo (LSZ 1; Distance 888 feet)

VP22 is located on Serven Road which is an interior road (as opposed to a perimeter road) that runs through the middle of the Project between proposed array locations. The view is looking at arrays on the east side of the road. This photo was taken to represent a view taken in the middle of the Project with nearby residences. Existing conditions shows a clear sight line of an agricultural field along with other agriculturally related structures and features. A wood line is present at the opposing end of the field from the viewer. As this location shows, there is no existing roadside vegetation that would block views and the simulation shows views of the solar panels. Although the Project is approximately 888 feet from the viewer on the road, here one can observe the effectiveness of road offsets/setbacks in moderating views combined with placement against existing tree rows at field edges which helps to visually absorb the Project. In the view, the arrays appear as a distant narrow horizontal band of color set against the forest at the edge of field. The horizontal band, shape, and look of the panels mimics that of horizontal existing forest interface. The low profile of the Project does not provide a vertical interruption of the skyline. Color changes are apparent but contrasts moderately against the background vegetation. Overall contrasts are weak to moderate and the Project is subordinate in the view.

The Applicant is proposing vegetative screening along this area as depicted on the Landscape Plan drawings included in Appendix 11-1. Accordingly, it is expected there will be limited to no views of the arrays from this location when the proposed landscaping reaches maturity as demonstrated in the simulation with mitigation at 5 years. With the inclusion of vegetative mitigation, views are softened and moderated as the trees and shrubs are more congruous with the existing environment. Project color and value contrasts are reduced even further as they blend in with the background trees. There are a low number of viewers because of the rural nature of the roadway and few residences in the vicinity. Views of the mitigation for motorists will be intermittent and of short duration while longer duration views of the vegetative buffer will be obtained by residences.

10.2.1.7 VP23a Serven Road, South – Waterloo (LSZ 1,3; Distance 414 feet)

VP23a is located on Serven Road which is an interior road that runs north-south through the middle of the Project between proposed array locations. There are arrays proposed on both sides

of the road at this location. VP23a is looking east. Existing conditions show a residential house just out of view to the right of the photo with a small red utility shed in view. The remaining area to the left (north) of the residence is open field and occupies the majority of the view. Proposed conditions in the simulation shows a partial view of a portion of the arrays behind the house in the back field approximately 414 feet from the viewer. The low profile panels show the Project below the horizon line and color contrasts are weak as they are moderated by the dark colors of the tree line in the background. Due to a proximal distance and partial views the Project remains apparent but is co-dominant in the view from the road location. The Project is likely dominant in the view in areas from within the residential property.

The Applicant is proposing vegetative screening along this area as depicted on the Landscape Plan drawings included in Appendix 11-1. Accordingly, it is expected there will be limited to no views of the arrays from this location when the proposed landscaping reaches maturity as demonstrated in the simulation with mitigation at 5 years. With the inclusion of vegetative mitigation, views are softened and moderated as the trees and shrubs are more congruous with the existing environment. Project color and value contrasts are reduced even further as they blend in with the background trees. There are a low number of viewers because of the rural nature of the local roadway and few residences in the vicinity. Views of the mitigation for motorists will be intermittent and of short duration while longer duration views of the vegetative buffer will be obtained by residences.

10.2.1.8 VP23b Serven Road, South – Waterloo (LSZ 1,3; Distance 358 feet)

VP23b is located on Serven Road which is an interior road that runs north-south through the middle of the Project between proposed array locations. There are arrays proposed on both sides of the road at this location. VP23b is looking west. Existing conditions show an agricultural field and farm development on the west side of the road with rural residential houses on the east side. For the most part, the left side of the view that is the field and sky are large horizontal expanses of shape while the right side of the view is more visually cluttered by the varying sizes of shapes and color presented by residential development. Proposed conditions show the arrays located at distance in the westerly field and appears as a narrow band of new color and form introduced into the environment. Discernible detail is not high, color contrast is moderated by the background trees, and the Project does not interrupt the horizon line. Overall Project contrast is moderate. Because of the size and shape of the newly introduced elements of the Project in this view combined with moderate contrast, the Project is co-dominant in the view.

The Applicant is proposing vegetative screening along this area as depicted on the Landscape Plan drawings included in Appendix 11-1. Accordingly, it is expected there will be limited to no views of the arrays from this location when the proposed landscaping reaches maturity as demonstrated in the simulation with mitigation at 5 years. With the inclusion of vegetative mitigation, views are softened and moderated as the trees and shrubs are more congruous with the existing environment. Project color and value contrasts are reduced even further as they

blend in with the background trees. There are a low number of viewers because of the rural nature of the roadway and few residences in the vicinity. Views of the mitigation for motorists will be intermittent and of short duration while longer duration views of the vegetative buffer will be obtained by residences.

10.2.2 Discussion – Line of Sight Results

Line of Sight (LOS) profiles can be found in Attachment 4.

10.2.2.1 L1 – Pre Emption Street (North), Waterloo, to Collection Substation (LSZ 1, 3; Distance 0.4 miles)

L1 LOS is located at an open area along Pre Emption Street approximately 0.4 miles from the collection substation and switchyard. There is a resident approximately 300 feet south of the LOS location. The collection substation is adjacent to the existing Border City – Station 122 115 kV transmission line and is consistent and compatible with the existing transmission line infrastructure where highest vertical proposed heights of substation components are similar. The highest components at the collection substation include three 48-foot lightning masts within the fence line; one static mast that will be 32 inches in diameter at the base tapering to 18 inches in diameter at the top and two surge arresters associated with deadend structures at the station. A control building is proposed that will be 12.5 feet high. The highest switchyard component will be a static lightning mast that is 50 feet high. The next highest switchyard component is the Take-Off structure which is 48 feet high. Vegetative mitigation is proposed along the northwest the fence line of the arrays between the road, the residence and the station. Minimal to no views of the collection substation are expected from the L1 location. Tree and shrub plantings are predicted to reach heights from 5-15 feet by 5 years. Several of the deciduous and coniferous tree species could reach 40 to 60 feet at full maturity thereby reducing the visibility even further.

Line of Sight L1 in Attachment 4 shows the various component profile heights as well as visibility of solar panels. and station components along the L1 profile. Generally, from the L1 location, the profile shows that most of the collection substation site will not be visible following the vegetative mitigation at 5 years. As the profile indicates, at 5 years there may be possible views of upper 15-17 feet or so of the lightning mast or surge arresters.

10.2.2.1 L2 - Pre Emption Street (South), Waterloo, to Collection Substation (LSZ 1, 3; Distance 0.3 miles)

As noted above, the proposed collection substation and switchyard has been sited in an open field amongst the solar arrays approximately 0.4 miles east of Pre Emption Street, with highest structures proposed at 48 to 50 feet high. Highest proposed station components are consistent

and compatible with the existing adjacent Border City – Station 122 115 kV transmission line. Much of Pre Emption Street has mature roadside vegetation which will block views of arrays and the collector station. L2 LOS is located approximately 125 feet north of a residence. The resident is not expected to have views of the Project as the dwelling is surrounded by trees. As the L2 profile in Attachment 4 shows, there will be no expected views to the Project or collector station from this location as the roadside trees act as a visual obstruction. Furthermore, there is proposed vegetative mitigation also proposed just beyond the roadside trees at the Project fence line.

10.2.2.2 L3 – Johnson Road, Seneca, to Project (VP18) (LSZ 1; Distance 3.3 miles)

Line of Sight L3 is in an agricultural area along Johnson Road approximately 3.3. miles west of the Project in an area of predicted visibility according to viewshed mapping in Attachment 2. L3 is actually VP18 according to the Project photolog in Attachment 5). L3 is in the vicinity of some residential houses located along this road. One house is approximately 250 feet north and one is 826 feet to the south. The L3 profile in Attachment 4 shows that the Project will not be visible at this location. Elevations increase as one travels westerly. Although the elevation of L3 is 170 feet higher than that of the Project, there are intervening trees that will block views to the arrays and collector substation.

10.2.2.3 L4 – Route 20, Town of Seneca to Project (LSZ 3; Distance 4.2 miles)

There are a few isolated areas of predicted visibility southwest of the Project and beyond the city limits of the City of Geneva as noted in the visibility maps in Attachment 5. L4 is in such a location and in the Town of Seneca near the extents of the study area and was chosen to understand to the contour of the land in this area. L4 is on highly traveled Route 20 in the vicinity of commercial development. L4 LOS profile in Attachment 4 shows the observer at an elevation 240 feet higher than that of the Project. As noted in the profile, there will be no expected views of the Project from this location due to the presence of intervening trees.

10.3 VISUAL IMPACT RATING RESULTS

Section 9.0 describes the concepts and methodology applied to rating visual change incurred by the proposed Project by evaluating the Project photosimulations. Only the simulations without mitigation were rated to understand contrasts under worse-case conditions. Three panelists evaluated and scored the simulations where there were views of the Project. Panelist 1 has been trained in the visual arts with a B.F.A. with a minor in art history as well as having an environmental background with an M.S. in Soil Science. Panelist 2 is a landscape architect. Panelist 3 has no visual arts study or landscape architecture experience but understands solar projects in addition to the Article 10 process. The raw evaluation forms for each viewpoint can be found in Attachment 7. However, Table 7 below summarizes the final scores and averages for Part 1 Visual Contrast, Part 2 Viewpoint Sensitivity and Part 3 Existing Scenic Quality. Here trends

of contrast ratings where those VP locations that are considered to have the highest or lowest visual change in relation to each other can be obtained. Mean deviations are also calculated to gauge the variation between each of the panelists.

10.3.1 Part 1 Contrast Rating

Part 1 Contrast as fully described in Attachment 7 rates proposed visual change with respect to compositional elements such as newly introduced line, shape, color, project scale, broken horizon lines, etc. Under Part 1 there are 9 categories to rate where the total rating ranges from 0 to 27. When the rating contrast scale outlined in Section 9.0 is rescaled to account for the averages found in Table 7 with respect to the nine categories, the scale is thus:

Contrast Rating Scale	
0	None
4.5	
9	Weak
13.5	
18	Moderate
22.5	
27	Strong

Table 7. Visual Impact Rating Results

P	Location	Contrast Rating Panelist 1			Contrast Rating Panelist 2			Contrast Rating Panelist 3			Avg Part 1	Mean Dev* Part 1	Avg Part 2	Mean Dev* Part 2	Avg Part3	Mean Dev* Part 3
		Part 1	Part 2	Part 3	Part 1	Part 2	Part 3	Part 1	Part 2	Part 3						
3	Packwood Rd	12.6	6	2	14	5	1	16.5	6	0.5	14.4	1.4	5.7	0.4	1.2	0.6
11	Packwood Rd	15.5	5	1.5	15	5.5	1	17	4	0.5	15.8	0.8	4.8	0.6	1.0	0.3
19	Border City Rd	6.5	5	0.5	7.5	6.5	1	6.5	4.4	0	6.8	0.4	5.3	0.8	0.5	0.3
20	Pre Emption St	19	4.5	1.5	19	6	1	23.5	5	0	20.5	2.0	5.2	0.6	0.8	0.6
22	Serven Rd	10	6.5	1.5	11	6	1	16	6	0.5	12.3	2.4	6.2	0.2	1.0	0.3
23a	Serven Rd	7.5	5.5	0.5	11	6	1	13	6.5	0	10.5	2.0	6.0	0.3	0.5	0.3
23b	Serven Rd	17.5	6.5	1.5	13.5	6	1	22	7	0	17.7	2.9	6.5	0.3	0.8	0.6

The viewpoint with the strongest Part 1 Contrast is VP20 on Pre Emption Street with an average rating of 20.5. This simulation shows the viewer 198 feet from the viewer. The Project will not be seen in its entirety as only a portion of the Project is visible from this location. However, the proposed view results in a slightly higher than moderate contrast rating due to new form, color, line, and texture contrasts of discernible detail and proximity to the viewer, compared to what is currently there.

The next highest contrast groupings are VPs 23b, 11 and 3 with average ratings of 17.7, 15.8 and 14.4 respectively. These VPs drop to a weak to moderate contrast rating. All generally show a clear sight line however each have some level of offset from the road and some portions of the Project in view are seen against similarly colored background trees that help absorb and moderate views. However, form and line contrasts are apparent as is the level of discernible detail at this distance.

VPs 22 and 23a have similar weak average ratings of 12.3, and 10.5, respectively. Contributing to weak ratings is a road offset of approximately 888 feet at VP22 while VP23a shows only a portion of the arrays as they appear behind a residence. Each of these views has some level of moderated views as they have a similar color to the tree groups in the background.

VP19 has the weakest contrast with an average rating of 6.8. This location only shows a small portion of the arrays in a semi-urban area as viewed through a narrow gap between trees and a building. VP19 is also 1,004 feet away from the viewer. The Project appears smaller with distance and the level of discernible detail is low.

Mean deviations were calculated to observe the level of variance between the panelists within each simulation evaluation. Mean deviations ranged between 0.4 and 2.9. It appears panelist opinion varied the most regarding contrast changes when assessing VPs 23b, and 22. For VP23b two panelist rated contrasts similarly as weak to moderate while one panelist rated the visual change leaning towards strong. Again, for VP22 two panelists rated the contrast lower while the third panelist gave the contrast a higher rating. The closest agreement was for VP 19 where the assessment of visual change appeared more straightforward.

10.3.2 Part 2 Viewer Sensitivity

There are 8 categories under Part 2 to rate where the total rating ranges from 0 to 24. When the rating contrast scale outlined in Section 9.0 is rescaled to account for the averages found in Table 7 with respect to the eight categories, the scale is thus:

Contrast Rating Scale	
0	None
4	
8	Weak
12	
16	Moderate

Contrast Rating Scale	
20	
24	Strong

Part 2 takes into account viewer sensitivity, in particular if the VP falls within or has a view of an existing visual receptor as well as the character of viewer groups such as number of viewers, duration of view, presence of existing development, etc.

Since Table 3 indicates minimal views of the Project will occur at the listed visual receptors, most of the viewer sensitivity issues focus on viewer groups related to the community travelers or residents as opposed to recreational or tourists. All viewer sensitivity ratings for the Project simulations were rated as weak as there were no views that were considered to be recognized as being highly unique to the area nor do the simulations have the presence of water within the view. The highest Part 2 viewer sensitivity is at VP23b with a rating of 6.5. It is weak rating but is likely rated highest in the group because of Project proximity to a number of residences.

VPs 22 and 23a resulted in average ratings of 6.2 and 6.0.

VPs 3, 19 and 20 were somewhat similar with an average sensitivity rating from 5.2 to 5.7.

VP11 had an average sensitivity rating of 4.8.

Mean deviations for Part 2 Viewer Sensitivity do not show a lot of variance between panelist opinion, with simulation ratings ranging between 0.2 and 0.8. This can be somewhat expected as the Part 2 categories are less subjective than Part 1 and there were slight differences of opinion on how panelists rated their opinion on how the presence of development or view duration and numbers affected viewer sensitivity.

10.3.3 Part 3 Scenic Quality

Part 3 Scenic Quality is a standalone single rating that assesses the overall scenic quality of the VP's existing conditions (see also Attachment 7). Here there is no evaluation of visual change but a simple appraisal of the scenic quality of the view. A rating of 1 is weak; 2 is moderate; 3 is strong.

Scenic quality for the simulation VPs were generally rated as weak. Although there are restful pastoral views of open fields with little development, panelists felt the views were average and typical of the area and didn't offer a high degree of visual interest or offer outstanding views according to criteria in Attachment 7.

Mean deviations for Part 3 are comparatively very low, ranging between 0.3 and 0.6. This suggests the panelist's opinions on scenic quality regarding each viewpoint were very similar.

11.0 LIGHTING

Lighting is only proposed at the Project interconnection facilities and is only for security, safety, and maintenance purposes; no lighting is proposed within the solar arrays. The Project's Lighting Plan includes the type, number, and location of exterior lighting fixtures and indicates measures to be taken to prevent or mitigate, to the maximum extent practicable, unnecessary light trespass beyond the Project property line. Manually operated security lighting is proposed at the collection substation and switchyard. The lighting plan for the collection substation and switchyard is included with the Exhibit 11 drawings. This plan was developed to minimize fugitive light while meeting lighting standards established by the National Electric Safety Code (NESC). The collection substation and switchyard will normally be unoccupied. All lighting will be activated manually turned on by a switch. Lighting will be installed facing downward to minimize potential impacts to the surrounding public. Lighting has been designed to provide a 3.4 foot-candle maximum, to eliminate unnecessary light trespass beyond the collection substation and switchyard and will be equipment or pole structure mounted. During unoccupied periods, lighting will not be illuminated. The collection substation and switchyard will use full cut-off fixtures, no drop-down optics, and task lighting wherever feasible, specified in the Lighting Plan.

12.0 MITIGATION

Mitigation includes siting and design and vegetative plantings to help moderate visibility. To maximize the benefits of siting renewable energy facilities on agricultural lands, solar installations can also be co-located with ongoing agricultural operations for the parcel owner. Solar facilities can be designed to be compatible with continued farming practices in order to limit the amount of land taken out of agricultural production.

When a solar farm is decommissioned and removed, the land can be returned to other productive use, including farming. In this way, a solar lease can be a way to preserve land for potential future agricultural use. Large-scale solar projects can be made less visible from roads or other public vantage points. Several techniques for minimizing and mitigating visibility from large-scale solar projects can be made; keeping facility components at low profile and site and designing the site to take advantage of natural topographic and vegetative screening; road setbacks; siting against tree lines; and avoiding use of overhead interconnection lines.

12.1 Siting and Design

Current siting is optimized so as to minimize visibility by placing the arrays in certain ways. Siting against tree lines as well as setback distances of several hundred feet are effective in reducing visibility.

Siting layout and design considerations that offer mitigation are summarized as follows:

- Use of surrounding woodlands and hedgerows as existing visual barriers.

- Panels proposed against trees to reduce visual contrasts, as color contrasts are absorbed and moderated by the background trees.
- Setbacks and offsets: panels proposed on the far end of fields as opposed to directly adjacent to roadways to further the distance from travel corridors. Additionally, minimum setbacks of 200 feet from roadways and 300 feet from non-participating residences have been utilized.
- Use of antireflective coatings on solar panels. Solar photovoltaic panels are also designed to absorb light, not reflect light, and therefore produce minimal glare.
- When employed, tracker technology keeps panels at a 90-degree angle from the sun reflecting any glare back towards the sky.
- Project overall shape that follows the edges of natural forested areas or create patterns that mimic existing landscape patters at distance.
- General site location placed far from sensitive recognized and listed visual receptors.
- The Project has been sited away from the population centers in order to minimize potential visibility by a relatively larger number of viewers.
- Collection substation located proximal to existing transmission right-of-way for minimally distant interconnect to electric grid.
- Vegetative buffers: plantings of native pollinator species included in proposed buffer.
- Collection lines have been placed underground to decrease additional aboveground impacts. This configuration allows continued use of the land within the Project Site.
- Minimized vegetation clearing outside of the arrays.
- There is the possibility of existing agricultural practices to resume in agricultural fields adjacent to arrays, such as the planting of row crops, where plantings such as corn could provide screening during a portion of the year.

12.2 Vegetative Mitigation

Both the solar array themselves and their ancillary components can affect the character of a landscape. From a scenery point of view, methods and techniques of hiding/screening solar farms can be quite effective. Typically, selected landscaping is chosen to provide year-round screening, provide a long-lived, resilient and dense bank of vegetation, and be a native and/or pollinator species readily available in the area.

The Landscaping Plan for vegetative mitigation can be found in Exhibit 11 Attachment 11-1. The following items and concepts were applied to the plan:

- The Town of Waterloo Land Use Code and Zoning Law was reviewed to understand how and where to apply visual screening. The screening proposed herein complies with any substantive requirements of that Code.

- Native evergreen and deciduous shrubs and trees were chosen for the vegetative barriers. Species chosen need to reach an adequate height and width to provide visual screening

yet not be too high at maturity that could ultimately produce shade over the Project in later years. Deciduous and evergreen tree species include: Eastern Red Cedar (*Juniperus virginiana*), White Spruce (*Picea glauca*), Black Hills Spruce (*Picea glauca 'densata'*), **Black Cherry (*Prunus serotina*)**, and **Downy Shadbush (*Amelanchier arborea*)**. Shrub species include: **Red Chokeberry (*Aronia arbutifolia*)**, Red Twig Dogwood (*Cornus sericea*), **Common Witch Hazel (*Hamamelis virginiana*)**, Cranberry Viburnum (*Viburnam trilocum)*, and **Highbush Blueberry (*Vaccinium corymbosum*)**. Pollinator species were also considered. Pollinator species are shown in bold font within the above listing.

- The planting scheme is generally proposed along the fence line at locations where the Project faces residential locations that do not have existing vegetative screening. Expected growth heights depending on tree or shrub is expected to be between 5 to 15 feet at 5 years. However, fully mature heights of the year-round coniferous species may reach between 40-60 feet high.

13.0 VISUAL IMPACTS DURING CONSTRUCTION

Visual impacts during construction are anticipated to be minor and temporary in nature. Construction activities for a solar facility are site and project dependent; however, construction of a typical facility would normally involve the following major actions with potential visibility: building/upgrading roads; constructing laydown areas; removing some vegetation from construction; transporting components and other materials and equipment related to the solar site; assembling the solar panels; constructing ancillary structures (e.g., collection substation, fences) and installing power-conducting cables (typically buried). Potential visual contrasts that could result from construction activities include contrasts in form, line, color, and texture resulting from road upgrading; construction and use of staging and laydown areas; vehicular, equipment, and worker presence and activity; dust; and emissions.

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

14.0 CONCLUSIONS – VISUAL IMPACTS DURING OPERATION

The information in this visual impact assessment can provide an understanding of the particular issues involved in the visual relationship between the Project and its surrounding context. In-depth compilation of computerized analysis results and corresponding discussion was provided in Section 10.0. The viewshed analysis results show that there is minimal expected visibility (2.7%) within the overall VSA but there would be limited areas from which the Project would be visible and, in contrast, a multitude of areas from which it would not be seen. A majority of the overall visibility will occur within one-half mile of the arrays (1.8%) although there are several tree groups

surrounding the Project that will block views. There are also attributes of the design of this solar project and its relationship to its particular surroundings that would minimize the Project's impacts as discussed in Mitigation Section 12.0.

The arrays will be located on parcels of land currently used for agricultural purposes. The general visual appearance of the low-profile panels as a group contribute to a homogenous form with low discernible detail at distance which consists of a new horizontal pattern similar in color, shape, and size to the background forested areas and field edges found in many views. The horizontal shapes en masse in many instances provides a visual flow that is repeated or similar to what is in the landscape as the panels follow the existing ground contours. Color differences between the Project and the landscape may provide some contrast but will vary throughout the seasons. Overall Project contrast and the overall visual effect will vary depending on the extent of panel visibility (partial or full), distance of the arrays from the viewer, and if the panels are seen in the context of other existing noticeable modifications to the local natural landscape. The Applicant is proposing to install landscaping along portions of the Project to provide nearby residences with screened views towards the Project. Landscaping will consist of a variety of evergreen trees and shrubs that will provide year-round screening. Visual Project contrast from solar panels is anticipated to be avoided or minimized in areas where landscaping is proposed.

It is expected that there will be extremely limited to no views of the collection substation site as demonstrated in Line of Sight viewpoints L1 and L2 (Attachment 4) due to its placement east of Pre Emption Street farther into the Project property within the arrays. The collection substation is surrounded by existing trees to the north, east, and south. Much of Pre Emption Street to the west at points perpendicular to the substation is tree-lined. There is vegetative mitigation proposed at the fence line where views from open areas along Pre Emption Street to the station will be obstructed. At the L1 location it is possible that the upper 15-17 feet of a lightning mast or surge arrester may be visible at 5 years while the remaining elements of the station will not be visible. Most station components such as electrical equipment will likely be visible in the early years from discrete locations from Pre Emption Street prior to the growth of the landscape mitigation. Highest proposed station components are consistent and compatible with the existing adjacent Border City – Station 122 115 kV transmission line. The higher proposed small diameter lightning masts will be similar in look to other utility poles in the area.

Other factors assessing the degree of visual change other than percentages of visibility expected as a result of the Project can be considered:

- Except for the City of Geneva, the towns that fall within the 5-mile VSA are rural with an agricultural economy. Agricultural practices and revenue will not be degraded in the overall region. Farming practices may continue on portions of the Project Area not utilized for the Project Components and in fact, participating landowners will continue to receive consistent income throughout the economic useful life of the Project.

- Project Facilities are set back from property lines to both reduce visibility and to not disturb surrounding agricultural activities on adjacent parcels.

- Through the use of either tracker or fixed solar arrays where best suited due to existing topography, the Applicant is able to limit the ground cover required to achieve its objective of 79.5-80 MW generating capacity. Additionally, solar farms typically result in a minimal amount of ground disturbance for the installation of racking and mounting posts thereby preserving the ability to use the land for agricultural purposes in the future following decommissioning.

- The AC collection lines will be placed underground for the entirety of their length and installed primarily via direct burial or trenching with some portions to be proposed via horizontal direction drill (HDD) in order to avoid wetland resources and roadways.

- While the Project area consists of many pastoral views, landscape features are similar to each other and landscape characteristics are typical of what you would find in a rural area in this part of New York. The Project will not impair these regional landscape characteristics.

- The Project does not always appear as a dominant feature in a view and due to limited and/or long-range visibility, it should not interfere with the general enjoyment of recreational resources in the area.

- The Applicant has employed reasonable mitigation measures in the overall design and layout of the proposed Project so that it fits reasonably well into the available parcels and landscape.

- Vertical scale is typically not an issue in relation to surrounding features such as trees, hills, and barns. Lateral extent may be an issue if the arrays appear to overwhelm a ridgeline, scenic water body, or cultural feature that appears diminished in prominence. The Project solar arrays, considering their layout, spacing and the topography and resources in the area, do not overwhelm such physical geographic areas.

- Visual clutter often is adversely perceived and commonly results from the combination of human-made elements in close association that are of differing shapes, colors, forms, patterns, or scales. Generally, solar farms offer simple and uniform or geometrically patterned arrays or groupings that may be more visually appealing than mixed types and sizes of objects. At distance the arrays usually appear as a continuous nearly homogenous shape or color following the grade as opposed to randomly scattered objects.

- Aside from normal road traffic (see also AADTs in Table 1), the public areas in proximity to the Facility are not exceedingly high-use destination areas.

- The Project does not have an adverse effect on a known listed scenic vista.
- The Project does not damage or degrade existing scenic resources.
- The Project will not impede the use of recreational activities including Seneca Lake.
- The Project does not create a new source of substantial light which would adversely affect nighttime views in the area. Glare from the solar modules and associated equipment would be negligible as they would consist of a non-reflective coating and would be at least partially screened by the proposed fencing and perimeter landscaping. In the case of tracker arrays, the face of the solar panel surface is programmed to follow the movement of the sun.

15.0 GLARE

The Project is not predicted to emit significant glare into the existing environment. Panels are designed to absorb sunlight and will be treated with anti-reflective coatings that will absorb and transmit light rather than reflect it. In general, solar panels are less reflective than window glass or water surfaces (NYSERDA, 2019) and any reflected light from solar panels will have a significantly lower intensity than glare from direct sunlight (Mass. Department of Energy Resources, 2015).

The Applicant prepared a Glint and Glare Analysis, included as Appendix 24-2, to identify any potential glint/glare impacts on nearby residences and roads and the need for any necessary mitigation. The analysis was prepared by Capitol Airspace Group utilizing the Solar Glare Hazard Analysis Tool (SGHAT). The results of the analysis conform to, and are in accordance with, the FAA's interim policy for Solar Energy System Projects on Federally Obligated Airports (78 FR 63271, October 2013), although this policy is only applicable for projects proposing to install solar panels at federally funded airports. SGHAT is a very conservative tool in that:

- Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover, and geographic obstructions;
- The glare analysis assumes clear, sunny skies for 365 days of the year and does not take into account meteorological conditions that would nullify predicted glare such as clouds, rain or snow; and,
- Although only a portion of a modeled array may have the potential to produce glare, the results are provided as if the receptor has visibility of the entire array.

The results of the analysis indicate there is no predicted glare for the proposed tracker arrays. For fixed arrays, no arrays have potential for glare greater than 60 hours annually. Furthermore, 18 of the 24 arrays assessed have either no potential for glare or the potential for glare less than

30 hours (1,800 minutes) annually. The SGHAT model assumes, amongst other conservative factors noted above, clear, sunny skies for 365 days of the year and therefore the results are overestimated. As a conservative measure, the Applicant has proposed visual mitigation in the form of landscape buffers.
Based on the results of the analysis and the proposed mitigation measures, no significant impacts from glare are expected as a result of the Project. Predicted impacts have been minimized to the maximum extent practicable.

Refer to the VIA and Appendix 24-2 for full details on the glint and glare analysis.

16.0 REFERENCES

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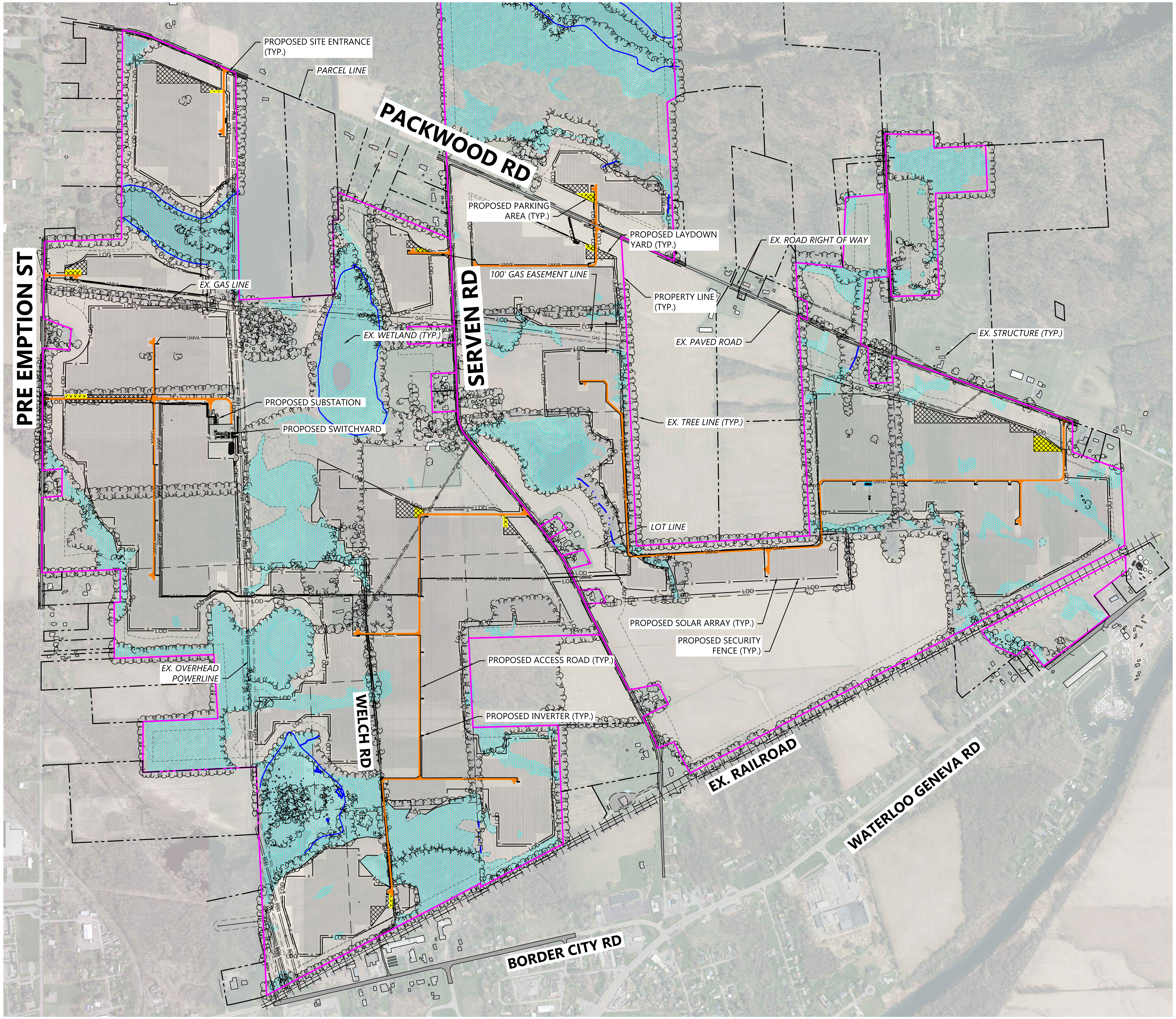
TRELINA SOLAR ENERGY CENTER
ARTICLE 10 EXHIBIT 24

SITE PLAN

ATTACHMENT 1



LEGEND:

- SURVEYED PROPERTY LINE
- PARCEL LINE
- LOT LINE
- PUBLIC RIGHT-OF-WAY
- EASEMENT LINE
- EX. OVERHEAD POWER
- EX. GAS
- EX. FENCE
- EX. EDGE OF WATER
- EX. STREAM
- EX. WETLAND
- EX. GRAVEL ROAD
- EX. PAVED ROAD
- EX. STRUCTURE
- EX. RAILROAD
- EX. TREELINE
- PROPOSED BUILDABLE AREA
- PROPOSED ELECTRICAL EQUIPMENT
- LIMIT OF DISTURBANCE
- PROPOSED SOLAR ARRAY
- PROPOSED ACCESS ROAD
- PROPOSED SECURITY FENCE
- PROPOSED UNDERGROUND COLLECTOR
- PROPOSED OVERHEAD POWERLINE
- PROPOSED HORIZONTAL DIRECTIONAL DRILLING
- PROPOSED LAYDOWN YARD
- PROPOSED TEMPORARY PARKING AREA

Westwood

Phone (952) 937-5150
Fax (952) 937-5822
Toll Free (888) 937-5150

12701 Whitewater Drive, Suite #300
Minnetonka, MN 55343
westwoodps.com

Westwood Surveying and Engineering, P.C.

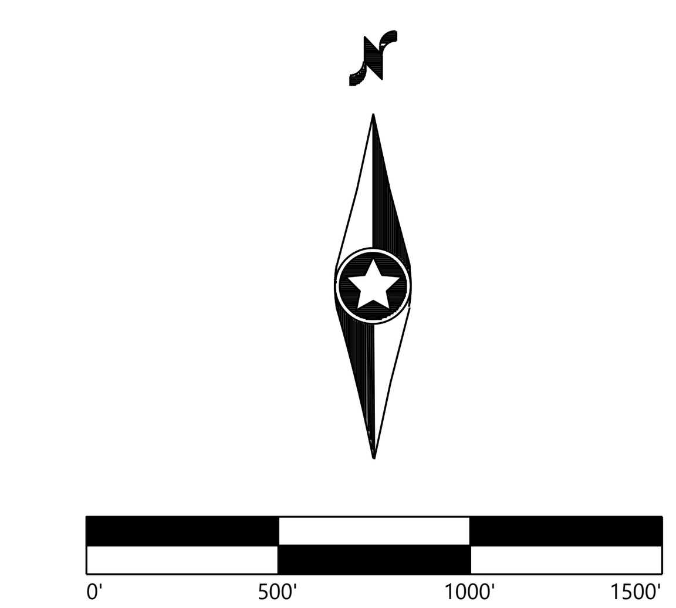
PREPARED FOR:

NEXTera ENERGY

700 Universe Blvd,
Juno Beach, FL 33408

REVISIONS:

#	DATE	COMMENT
A	04/17/2020	ISSUED FOR REVIEW
B	05/28/2020	ISSUED FOR REVIEW
C	06/30/2020	ISSUED FOR REVIEW



Trelina Solar Energy Center

Town of Waterloo
Seneca County, NY

Overall Site Plan

ISSUED FOR REVIEW
PRELIMINARY
NOT FOR CONSTRUCTION

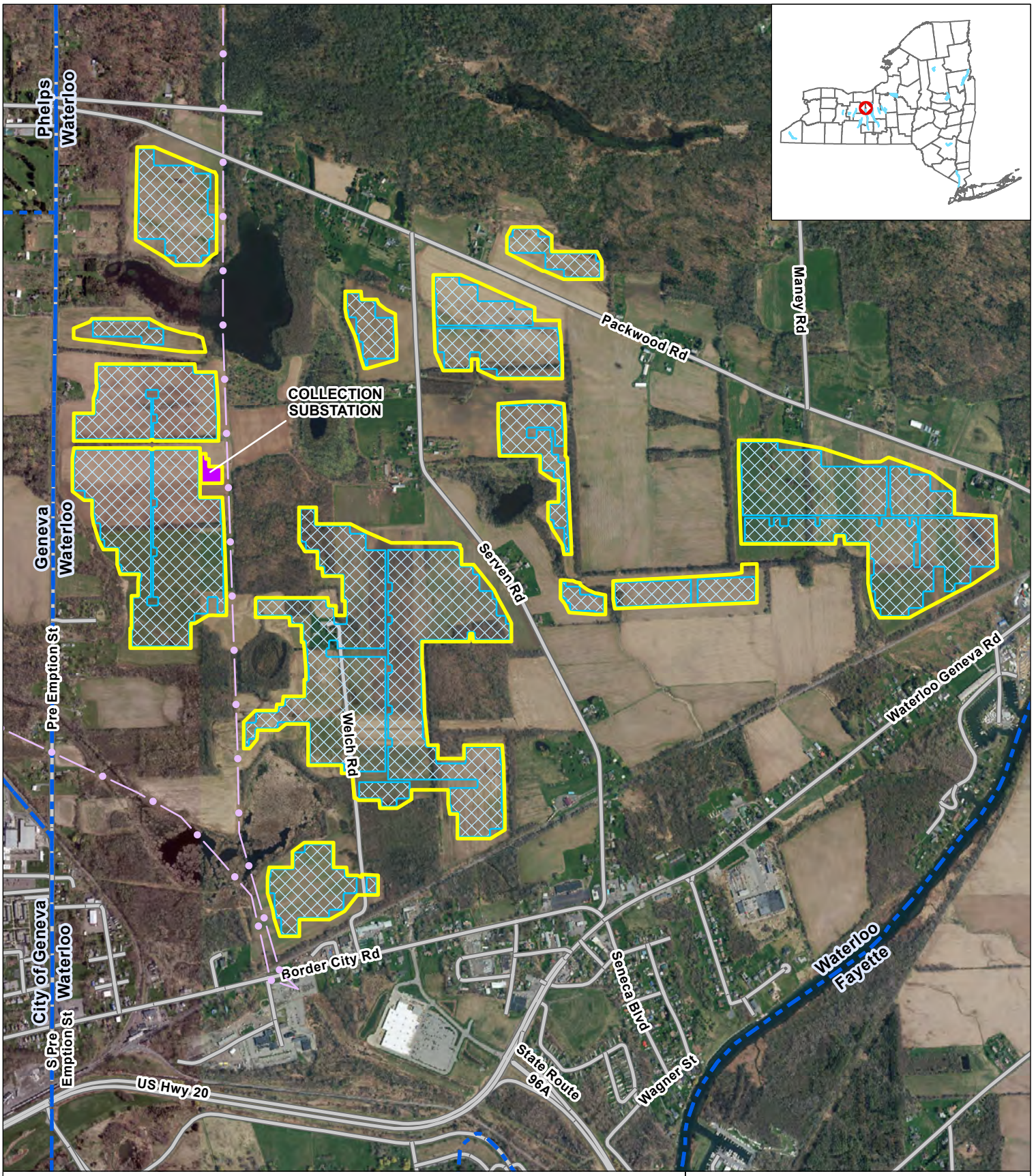
DATE: 06/30/2020

SHEET: C.200

TRELINA SOLAR ENERGY CENTER
ARTICLE 10 EXHIBIT 24

MAPS

ATTACHMENT 2



ARRAY LOCATIONS
FENCE LINE
COLLECTION SUBSTATION
EXISTING TRANSMISSION LINE
TOWN BOUNDARY

N

0 1,000 2,000 Feet

NEXTera ENERGY

TRELINA SOLAR ENERGY CENTER
SITE LOCATION MAP

FIGURE 1

Date : 7/14/2020

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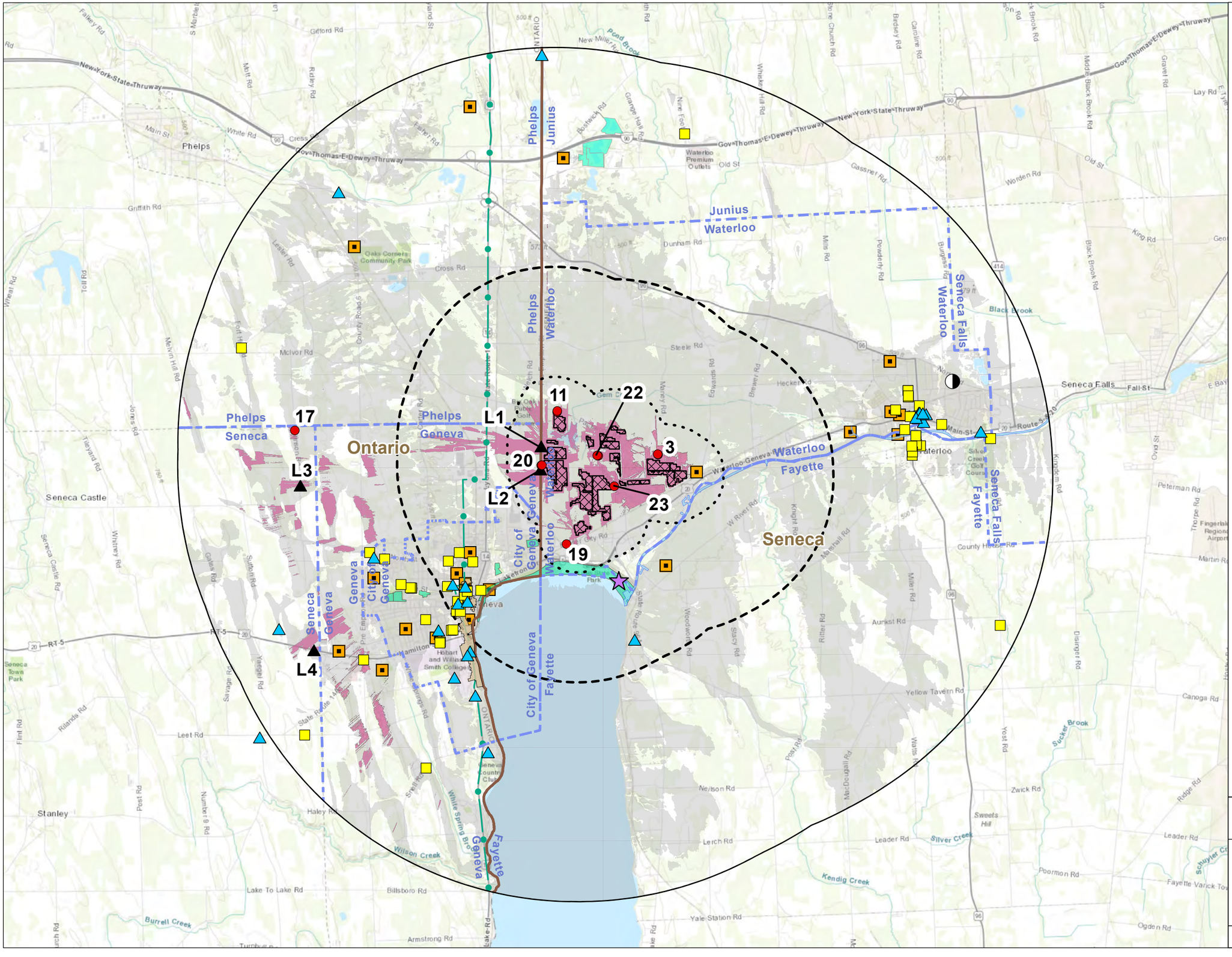

- SIMULATION VIEWPOINT LOCATION
- LINE OF SIGHT LOCATION
- VISIBILITY (BARE EARTH, NO VEGETATION)
- VISIBILITY (WITH VEGETATION)
- ARRAY LOCATIONS
- ZONE 1 - HALF MILE DISTANCE ZONE
- ZONE 2 - TWO MILE DISTANCE ZONE
- ZONE 3 - FIVE MILE DISTANCE ZONE
- MUNICIPAL BOUNDARY
- COUNTY BOUNDARY
- LOCAL PARK
- STATE BOAT LAUNCH
- SENECA COUNTY FAIRGROUNDS
- ERIE CANALWAY HERITAGE CORRIDOR
- FEDERAL/STATE/COUNTY RECREATION
- STATE BIKE ROUTE 14

HISTORIC

- NRHP LISTED
- CRIS ELIGIBLE HISTORIC
- HISTORIC DISTRICT

N

0 0.5 1 Miles

NEXTera ENERGY

TRELINA SOLAR ENERGY CENTER
OVERVIEW MAP - TOPOGRAPHIC

FIGURE 2

Date : 7/15/2020

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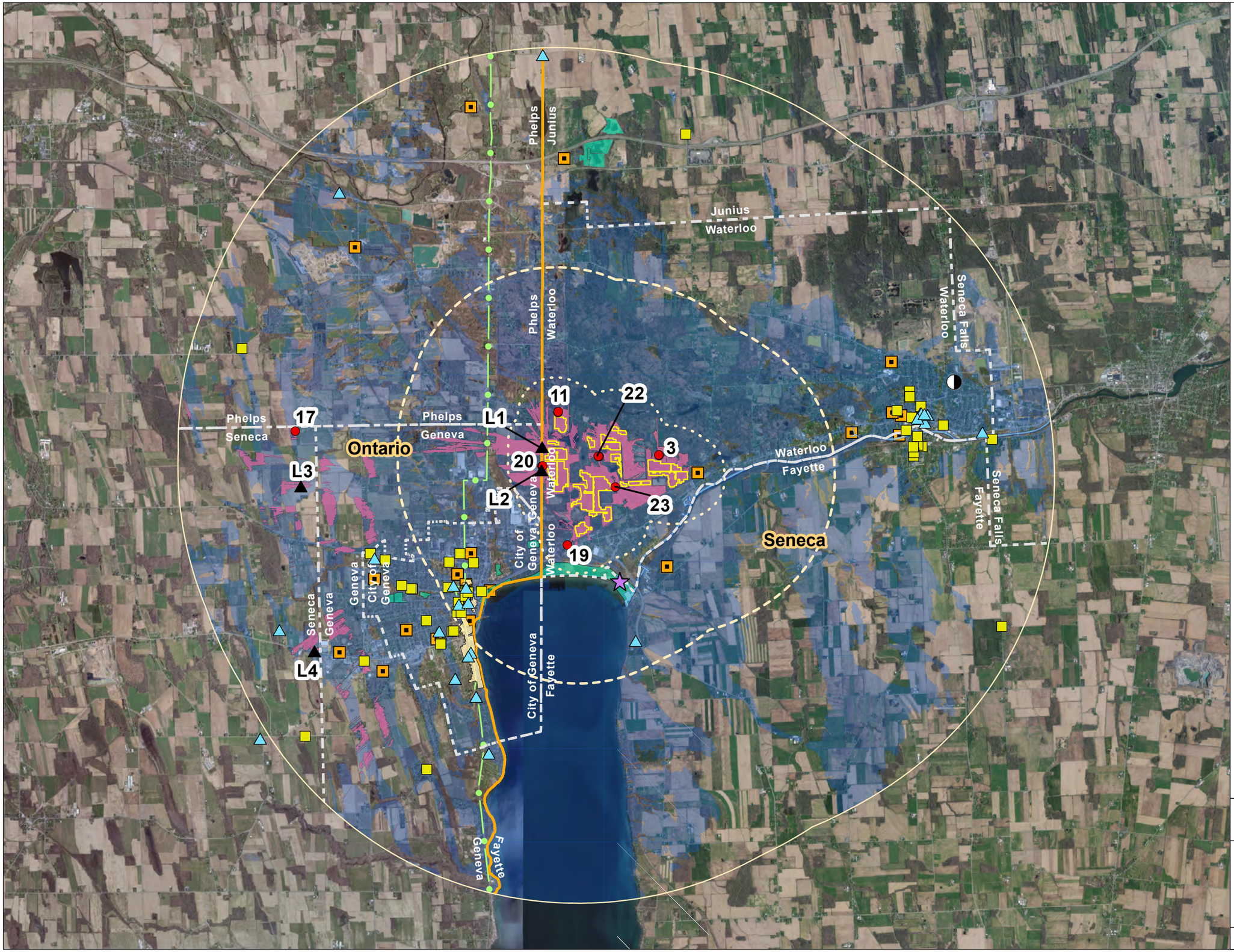

SIMULATION VIEWPOINT LOCATION
LINE OF SIGHT LOCATION
VISIBILITY (BARE EARTH, NO VEGETATION)
VISIBILITY (WITH VEGETATION)
ARRAY LOCATIONS
ZONE 1 - HALF MILE DISTANCE ZONE
ZONE 2 - TWO MILE DISTANCE ZONE
ZONE 3 - FIVE MILE DISTANCE ZONE
MUNICIPAL BOUNDARY
COUNTY BOUNDARY
LOCAL PARK
STATE BOAT LAUNCH
SENECA COUNTY FAIRGROUNDS
ERIE CANALWAY HERITAGE CORRIDOR
FEDERAL/STATE/COUNTY RECREATION
STATE BIKE ROUTE 14

HISTORIC
NRHP LISTED
CRIS ELIGIBLE HISTORIC
HISTORIC DISTRICT

N

0 0.5 1
Miles

NEXTera ENERGY

TRELINA SOLAR ENERGY CENTER
OVERVIEW MAP - AERIAL PHOTO

FIGURE 3

Date : 7/15/2020

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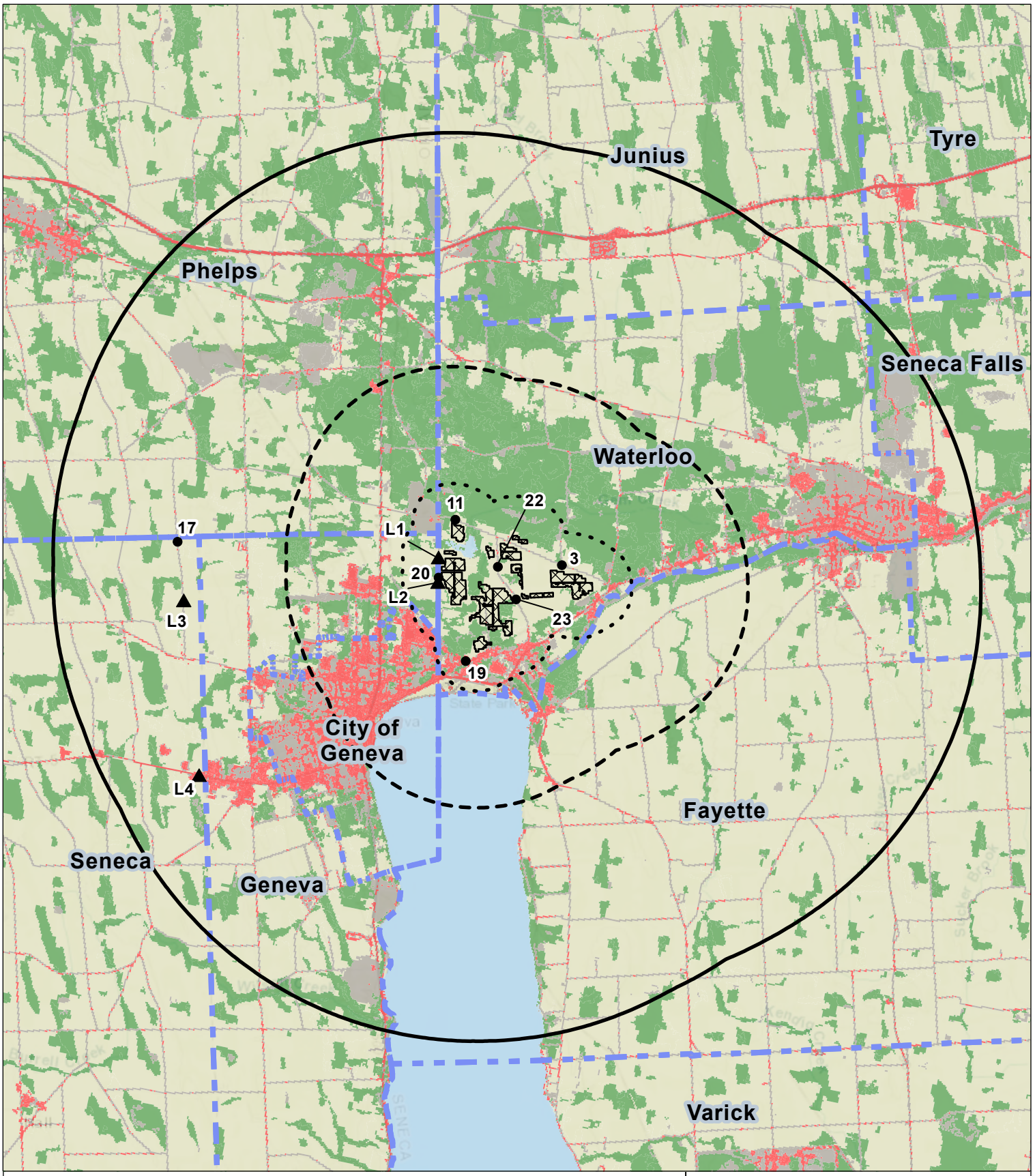

NEXTera ENERGY

TRELINA SOLAR ENERGY CENTER
LANDSCAPE SIMILARITY ZONES

FIGURE 4

Date : 7/7/2020

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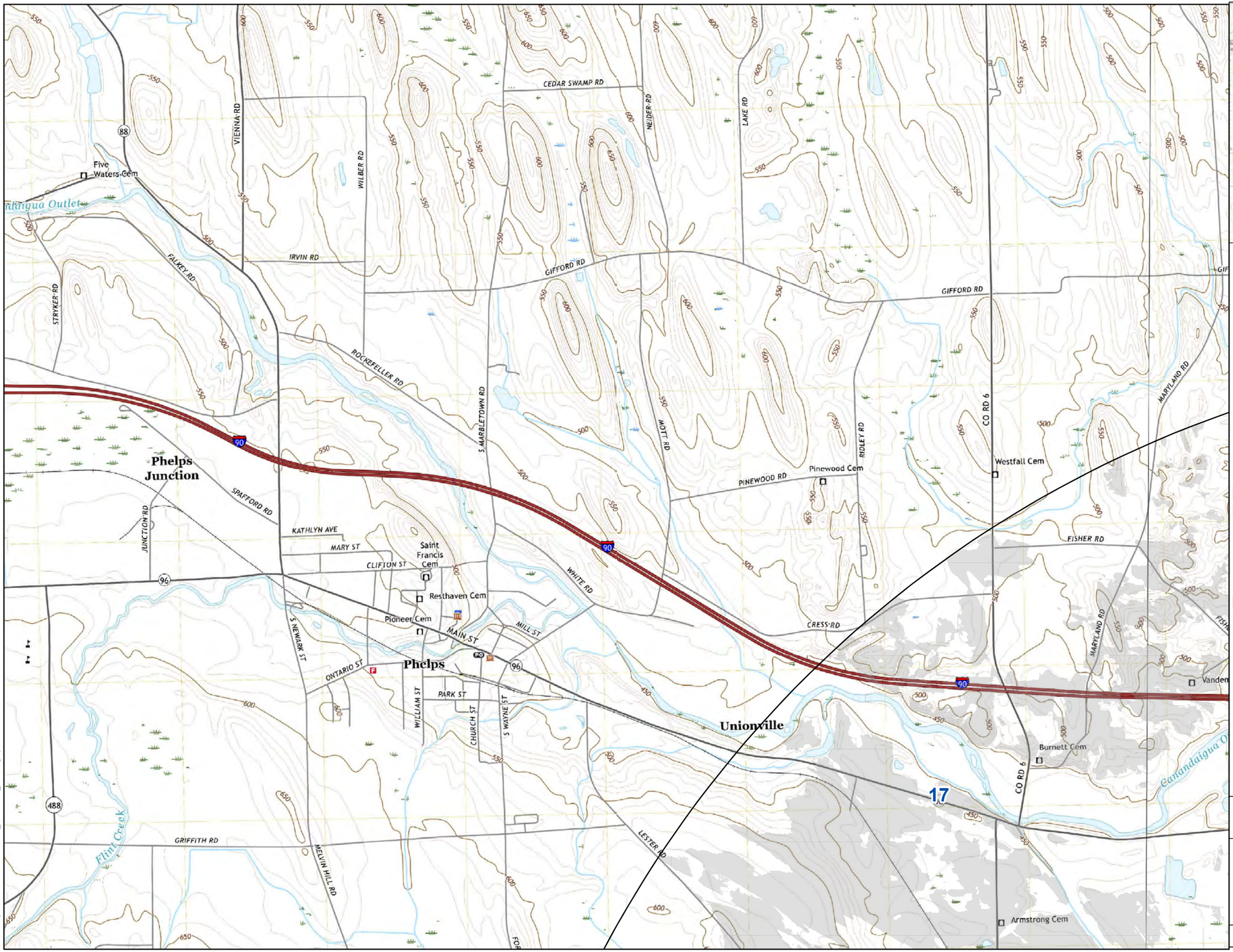

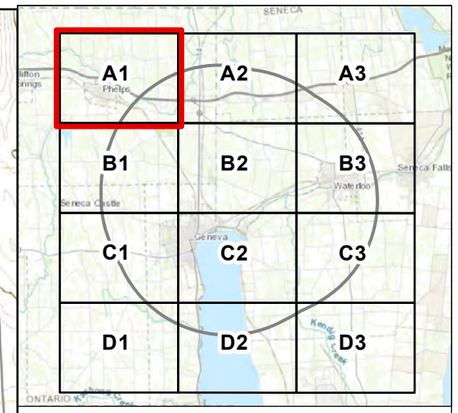

- SIMULATION VIEWPOINT LOCATION
- PHOTO DIRECTION
- LINE OF SIGHT LOCATION
- VISIBILITY (BARE EARTH, NO VEGETATION)
- VISIBILITY (WITH VEGETATION)
- ARRAY LOCATIONS
- ZONE 1 - HALF MILE DISTANCE ZONE
- ZONE 2 - TWO MILE DISTANCE ZONE
- ZONE 3 - FIVE MILE DISTANCE ZONE
- LOCAL PARK
- STATE BOAT LAUNCH
- SENECA COUNTY FAIRGROUNDS
- ERIE CANALWAY HERITAGE CORRIDOR
- FEDERAL/STATE/COUNTY RECREATION
- STATE BIKE ROUTE 14

HISTORIC

- 1 NRHP LISTED*
- CRIS ELIGIBLE HISTORIC
- HISTORIC DISTRICT

Please refer to Table 3 in Visual Impact Assessment for corresponding name and ID

Map: A1

N

0 0.25 0.5 Miles

Base Map: USGS 2019 GeoTiff acquired at ngmdb.usgs.gov/topoview/viewer

NEXTera ENERGY

TRELINA SOLAR ENERGY CENTER
POTENTIAL VISIBILITY AND VISUAL RESOURCES

FIGURE 5

Date : 7/15/2020

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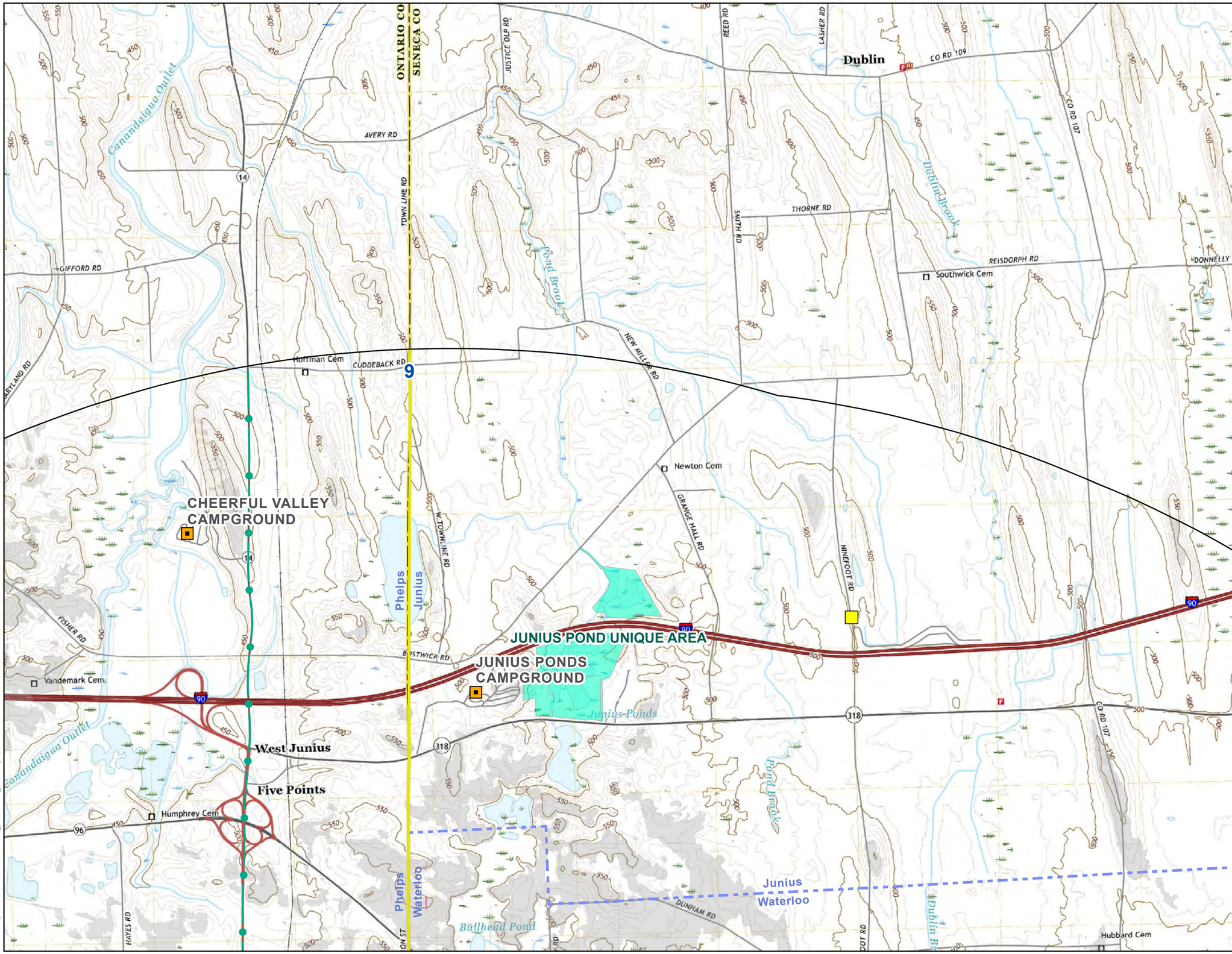

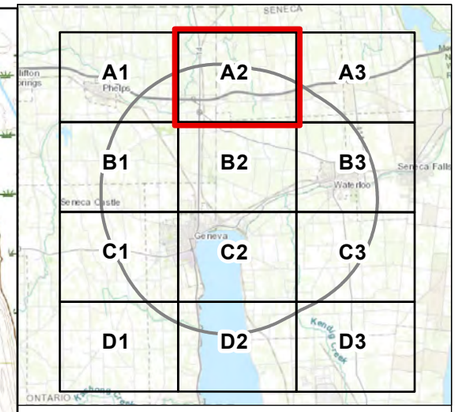

- SIMULATION VIEWPOINT LOCATION
- PHOTO DIRECTION
- LINE OF SIGHT LOCATION
- VISIBILITY (BARE EARTH, NO VEGETATION)
- VISIBILITY (WITH VEGETATION)
- ARRAY LOCATIONS
- ZONE 1 - HALF MILE DISTANCE ZONE
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HISTORIC

- 1 NRHP LISTED*
- CRIS ELIGIBLE HISTORIC
- HISTORIC DISTRICT

**Please refer to Table 3 in Visual Impact Assessment for corresponding name and ID*

Map: A2

N

0 0.25 0.5 Miles

Base Map: USGS 2019 GeoTiff acquired at ngmdb.usgs.gov/topoview/viewer

NEXTera ENERGY

TRELINA SOLAR ENERGY CENTER
POTENTIAL VISIBILITY AND VISUAL RESOURCES

FIGURE 5

Date : 7/15/2020

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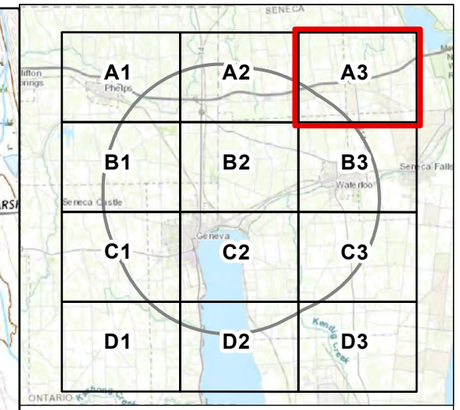

- SIMULATION VIEWPOINT LOCATION
- PHOTO DIRECTION
- LINE OF SIGHT LOCATION
- VISIBILITY (BARE EARTH, NO VEGETATION)
- VISIBILITY (WITH VEGETATION)
- ARRAY LOCATIONS
- ZONE 1 - HALF MILE DISTANCE ZONE
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- ERIE CANALWAY HERITAGE CORRIDOR
- FEDERAL/STATE/COUNTY RECREATION
- STATE BIKE ROUTE 14

HISTORIC

- 1 NRHP LISTED*
- CRIS ELIGIBLE HISTORIC
- HISTORIC DISTRICT

**Please refer to Table 3 in Visual Impact Assessment for corresponding name and ID*

Map: A3

N

0 0.25 0.5 Miles

Base Map: USGS 2019 GeoTiff acquired at ngmdb.usgs.gov/topoview/viewer

NEXTera ENERGY

TRELINA SOLAR ENERGY CENTER
POTENTIAL VISIBILITY AND VISUAL RESOURCES

FIGURE 5

Date : 7/15/2020

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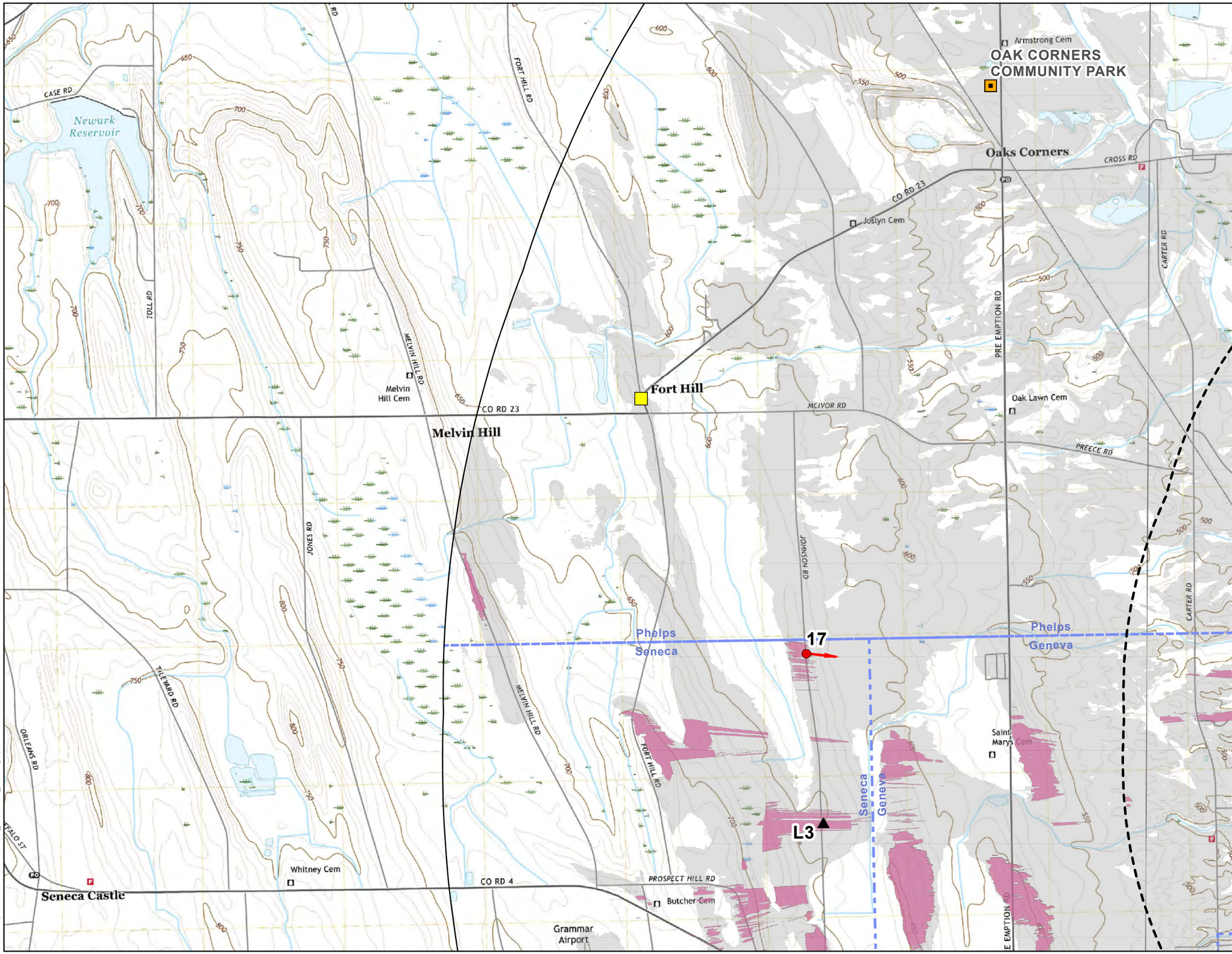

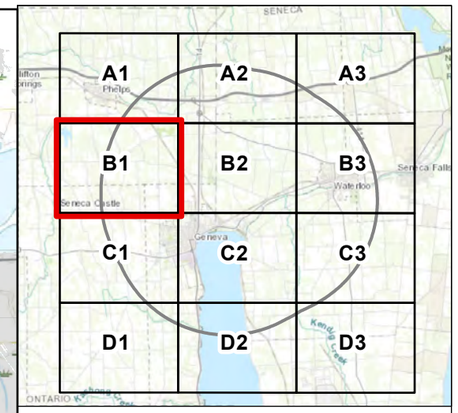

- SIMULATION VIEWPOINT LOCATION
- PHOTO DIRECTION
- LINE OF SIGHT LOCATION
- VISIBILITY (BARE EARTH, NO VEGETATION)
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- FEDERAL/STATE/COUNTY RECREATION
- STATE BIKE ROUTE 14

HISTORIC

- 1 NRHP LISTED*
- CRIS ELIGIBLE HISTORIC
- HISTORIC DISTRICT

**Please refer to Table 3 in Visual Impact Assessment for corresponding name and ID*

Map: B1

N

0 0.25 0.5 Miles

Base Map: USGS 2019 GeoTiff acquired at ngmdb.usgs.gov/topoview/viewer

NEXTera ENERGY

TRELINA SOLAR ENERGY CENTER
POTENTIAL VISIBILITY AND VISUAL RESOURCES

FIGURE 5

Date : 7/15/2020

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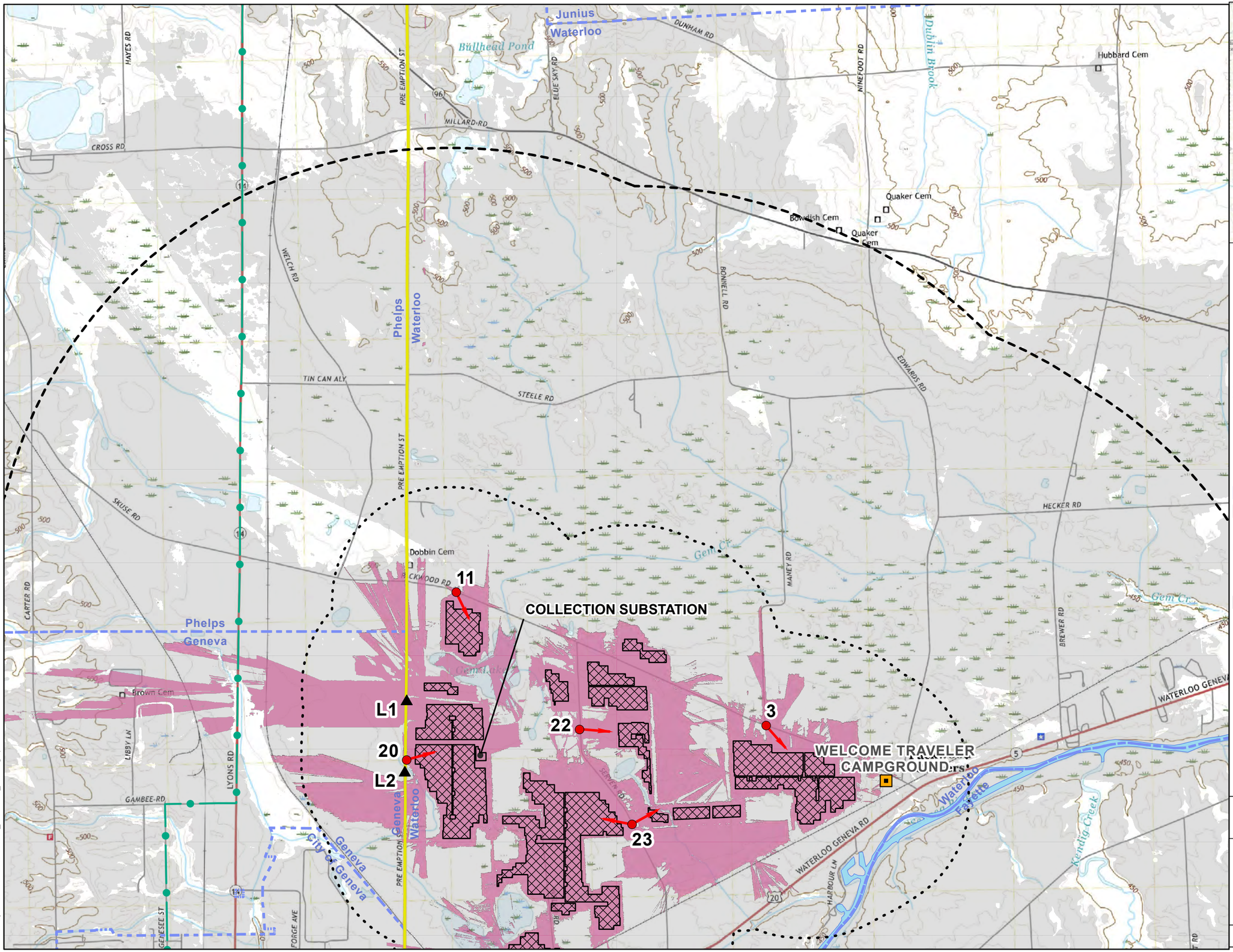

TRELINA SOLAR ENERGY CENTER
POTENTIAL VISIBILITY AND VISUAL RESOURCES

FIGURE 5

Date : 7/15/2020

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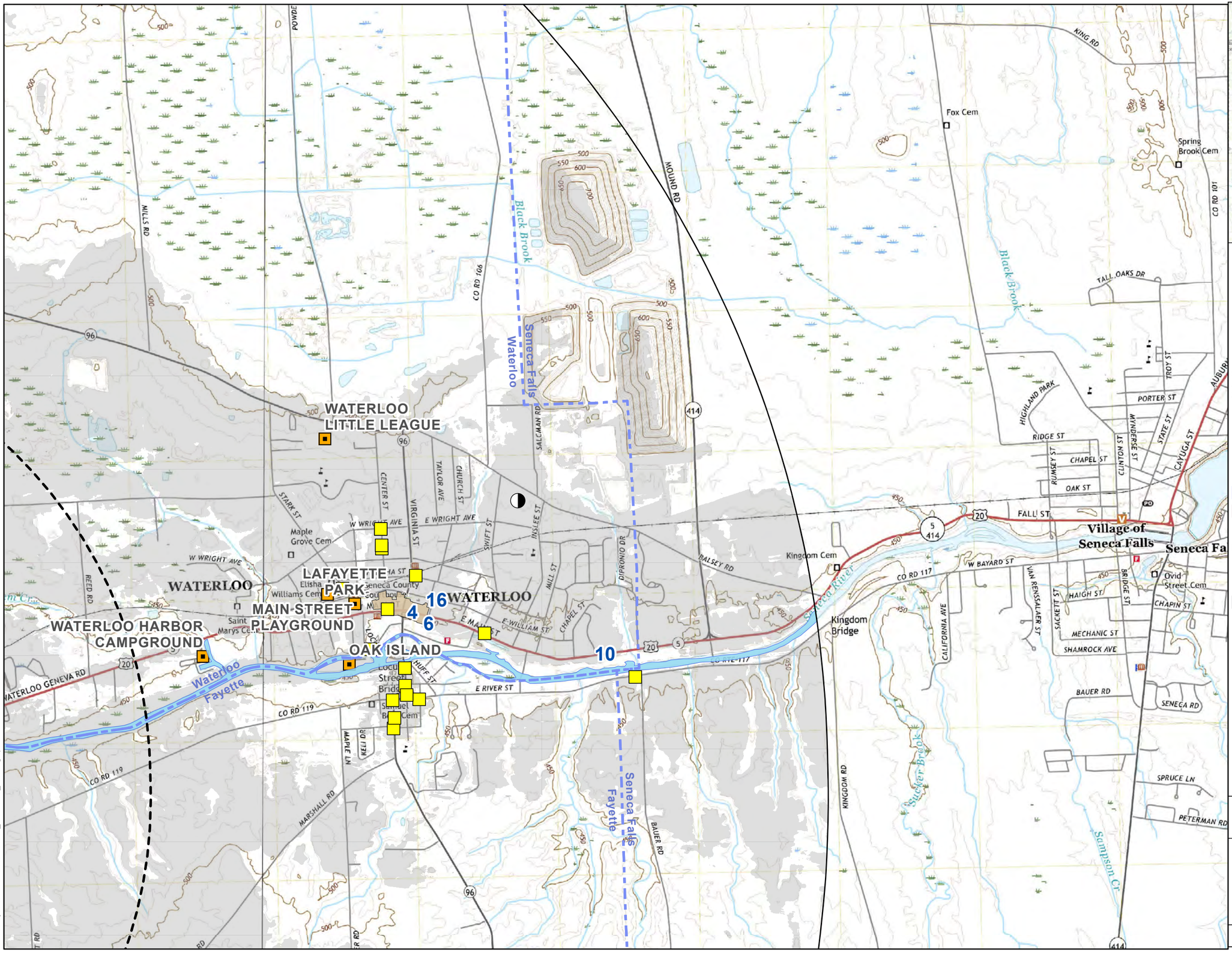

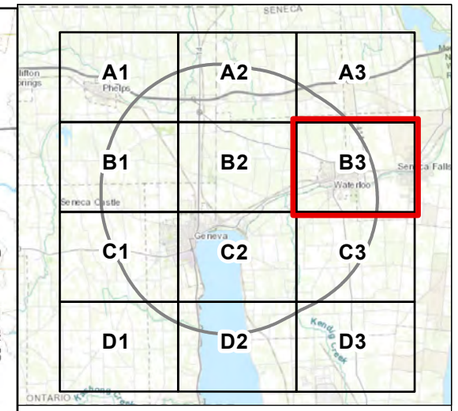

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HISTORIC

- 1 NRHP LISTED*
- CRIS ELIGIBLE HISTORIC
- HISTORIC DISTRICT

**Please refer to Table 3 in Visual Impact Assessment for corresponding name and ID*

Map: B3

N

0 0.25 0.5 Miles

Base Map: USGS 2019 GeoTiff acquired at ngmdb.usgs.gov/topoview/viewer

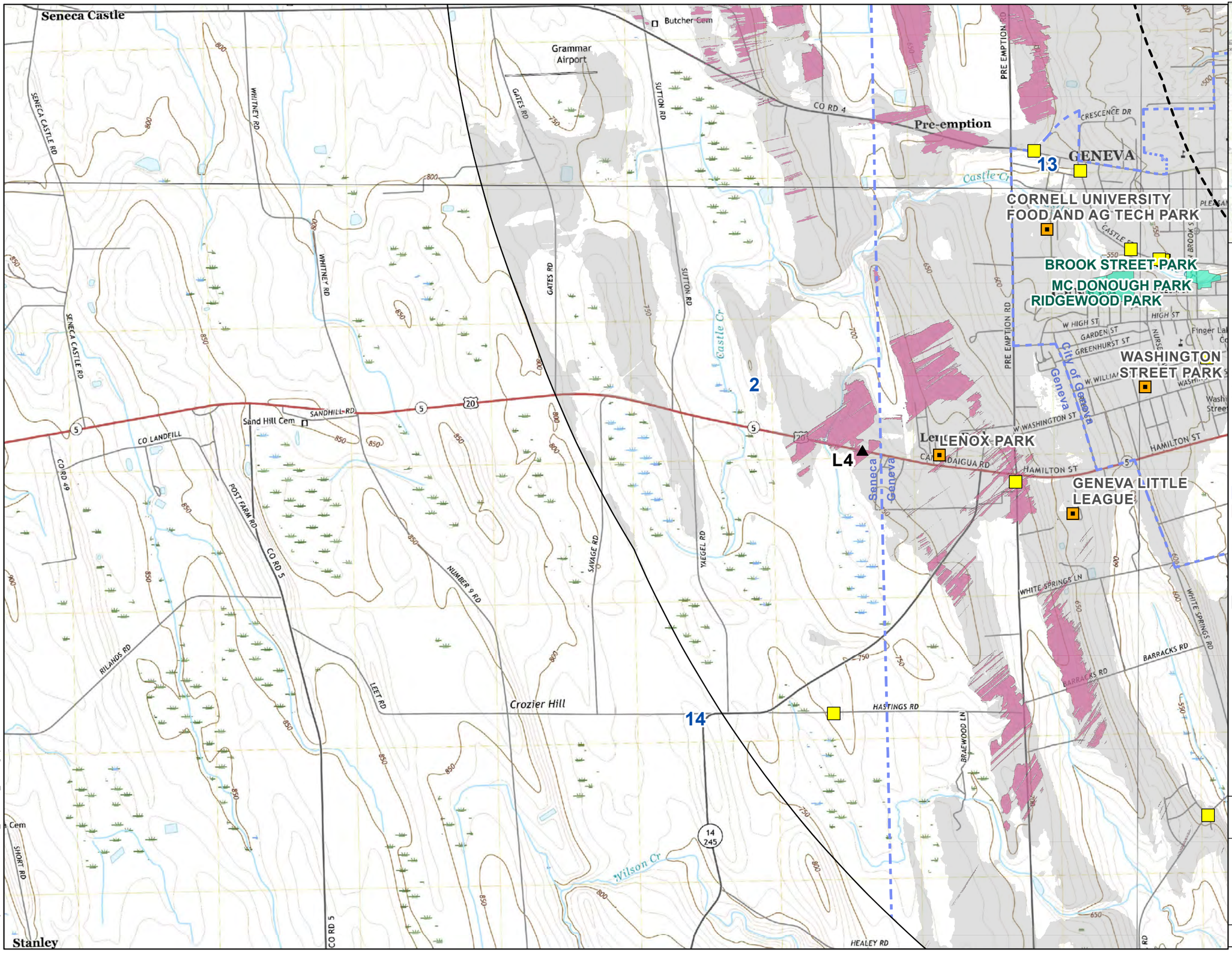
NEXTera ENERGY

TRELINA SOLAR ENERGY CENTER POTENTIAL VISIBILITY AND VISUAL RESOURCES

FIGURE 5

Date : 7/15/2020

C:\Users\jbartos\WorkDocs\328807_TrelinaUB_Working\aprx\



NEXTera ENERGY

TRELINA SOLAR ENERGY CENTER
POTENTIAL VISIBILITY AND VISUAL RESOURCES

FIGURE 5

Date : 7/15/2020

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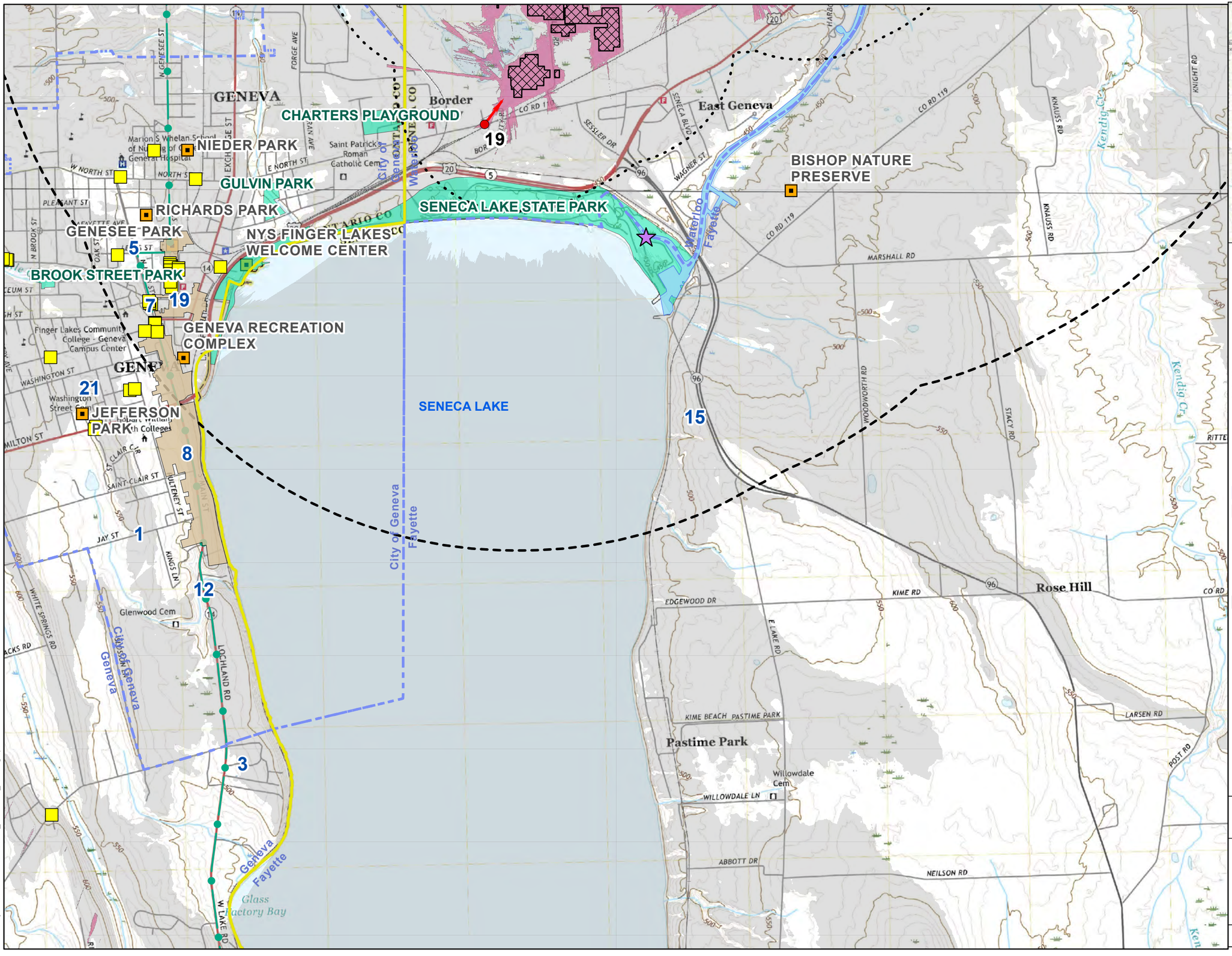

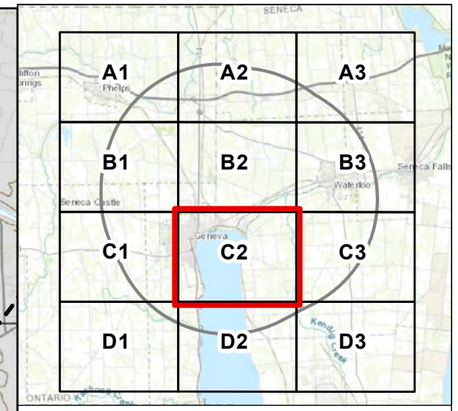

- SIMULATION VIEWPOINT LOCATION
- PHOTO DIRECTION
- LINE OF SIGHT LOCATION
- VISIBILITY (BARE EARTH, NO VEGETATION)
- VISIBILITY (WITH VEGETATION)
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- FEDERAL/STATE/COUNTY RECREATION
- STATE BIKE ROUTE 14

HISTORIC

- 1 NRHP LISTED*
- CRIS ELIGIBLE HISTORIC
- HISTORIC DISTRICT

**Please refer to Table 3 in Visual Impact Assessment for corresponding name and ID*

Map: C2

N

0 0.25 0.5 Miles

Base Map: USGS 2019 GeoTiff acquired at ngmdb.usgs.gov/topoview/viewer

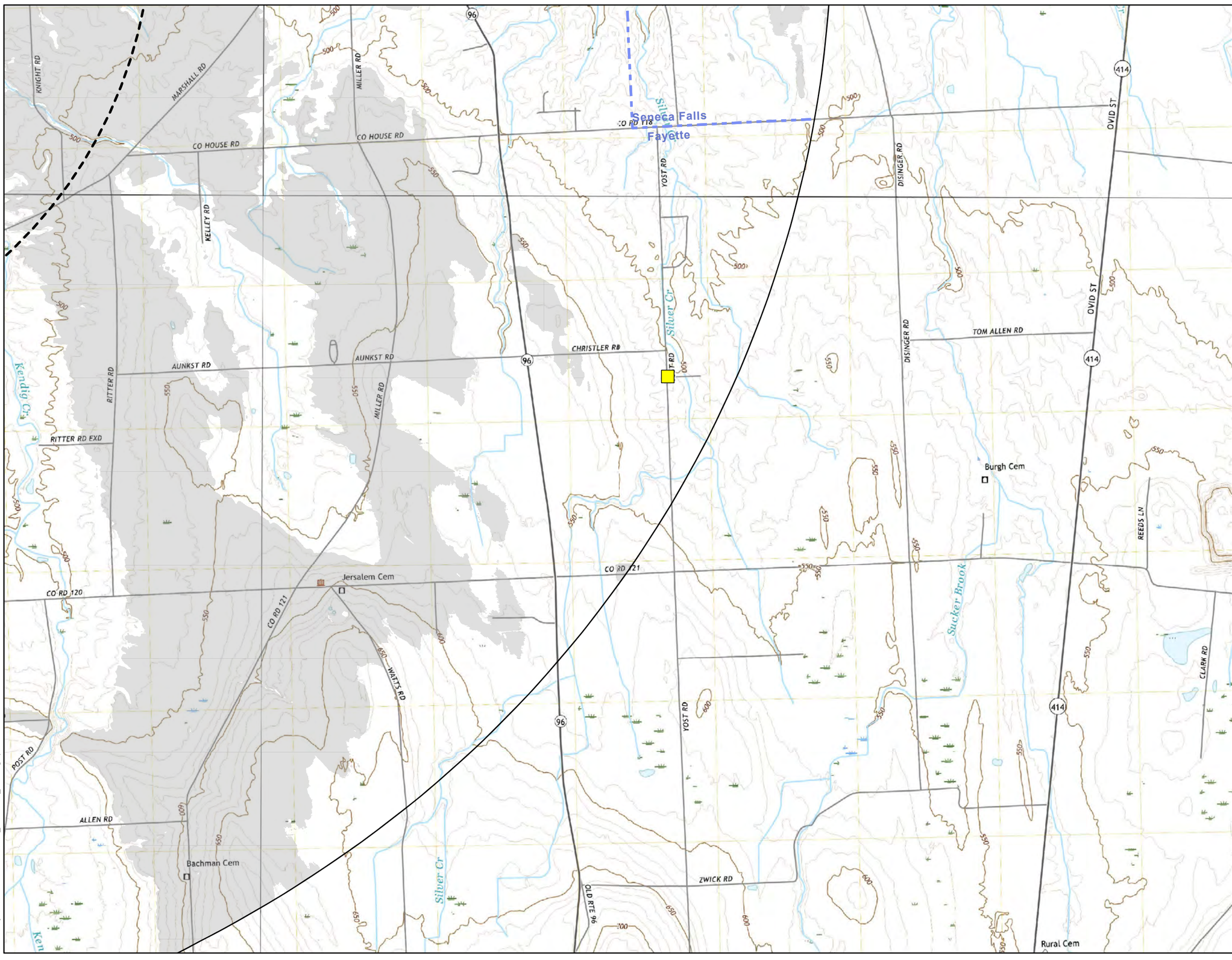
NEXTera ENERGY

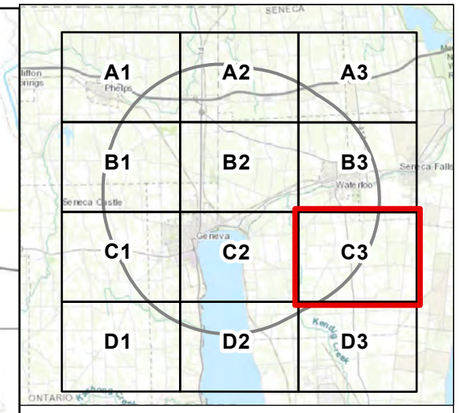
TRELINA SOLAR ENERGY CENTER
POTENTIAL VISIBILITY AND VISUAL RESOURCES

FIGURE 5

Date : 7/15/2020

C:\Users\jbartos\WorkDocs\328807_TrelinaVIB_Working\aprx\





- SIMULATION VIEWPOINT LOCATION
- PHOTO DIRECTION
- LINE OF SIGHT LOCATION
- VISIBILITY (BARE EARTH, NO VEGETATION)
- VISIBILITY (WITH VEGETATION)
- ARRAY LOCATIONS
- ZONE 1 - HALF MILE DISTANCE ZONE
- ZONE 2 - TWO MILE DISTANCE ZONE
- ZONE 3 - FIVE MILE DISTANCE ZONE
- LOCAL PARK
- STATE BOAT LAUNCH
- SENECA COUNTY FAIRGROUNDS
- ERIE CANALWAY HERITAGE CORRIDOR
- FEDERAL/STATE/COUNTY RECREATION
- STATE BIKE ROUTE 14

HISTORIC

- 1 NRHP LISTED*
- CRIS ELIGIBLE HISTORIC
- HISTORIC DISTRICT

Please refer to Table 3 in Visual Impact Assessment for corresponding name and ID

Map: C3

N

0 0.25 0.5 Miles

Base Map: USGS 2019 GeoTiff acquired at ngmdb.usgs.gov/topoview/viewer

NEXTera ENERGY

TRELINA SOLAR ENERGY CENTER POTENTIAL VISIBILITY AND VISUAL RESOURCES

FIGURE 5

Date : 7/15/2020

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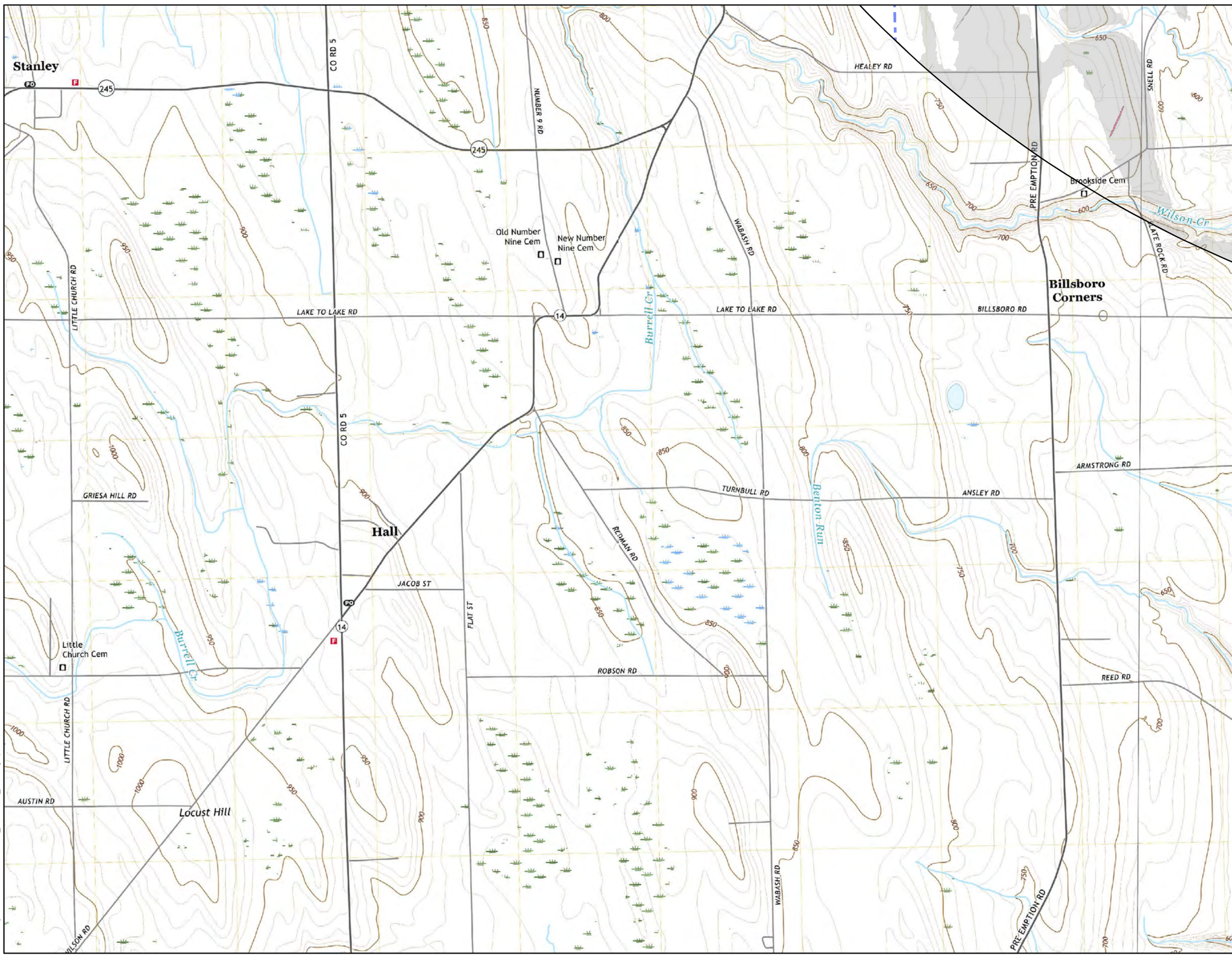


- SIMULATION VIEWPOINT LOCATION
- PHOTO DIRECTION
- LINE OF SIGHT LOCATION
- VISIBILITY (BARE EARTH, NO VEGETATION)
- VISIBILITY (WITH VEGETATION)
- ARRAY LOCATIONS
- ZONE 1 - HALF MILE DISTANCE ZONE
- ZONE 2 - TWO MILE DISTANCE ZONE
- ZONE 3 - FIVE MILE DISTANCE ZONE
- LOCAL PARK
- STATE BOAT LAUNCH
- SENECA COUNTY FAIRGROUNDS
- ERIE CANALWAY HERITAGE CORRIDOR
- FEDERAL/STATE/COUNTY RECREATION
- STATE BIKE ROUTE 14

HISTORIC

- 1 NRHP LISTED*
- CRIS ELIGIBLE HISTORIC
- HISTORIC DISTRICT

**Please refer to Table 3 in Visual Impact Assessment for corresponding name and ID*

Map: D1

N

0 0.25 0.5 Miles

Base Map: USGS 2019 GeoTiff acquired at ngmdb.usgs.gov/topoview/viewer

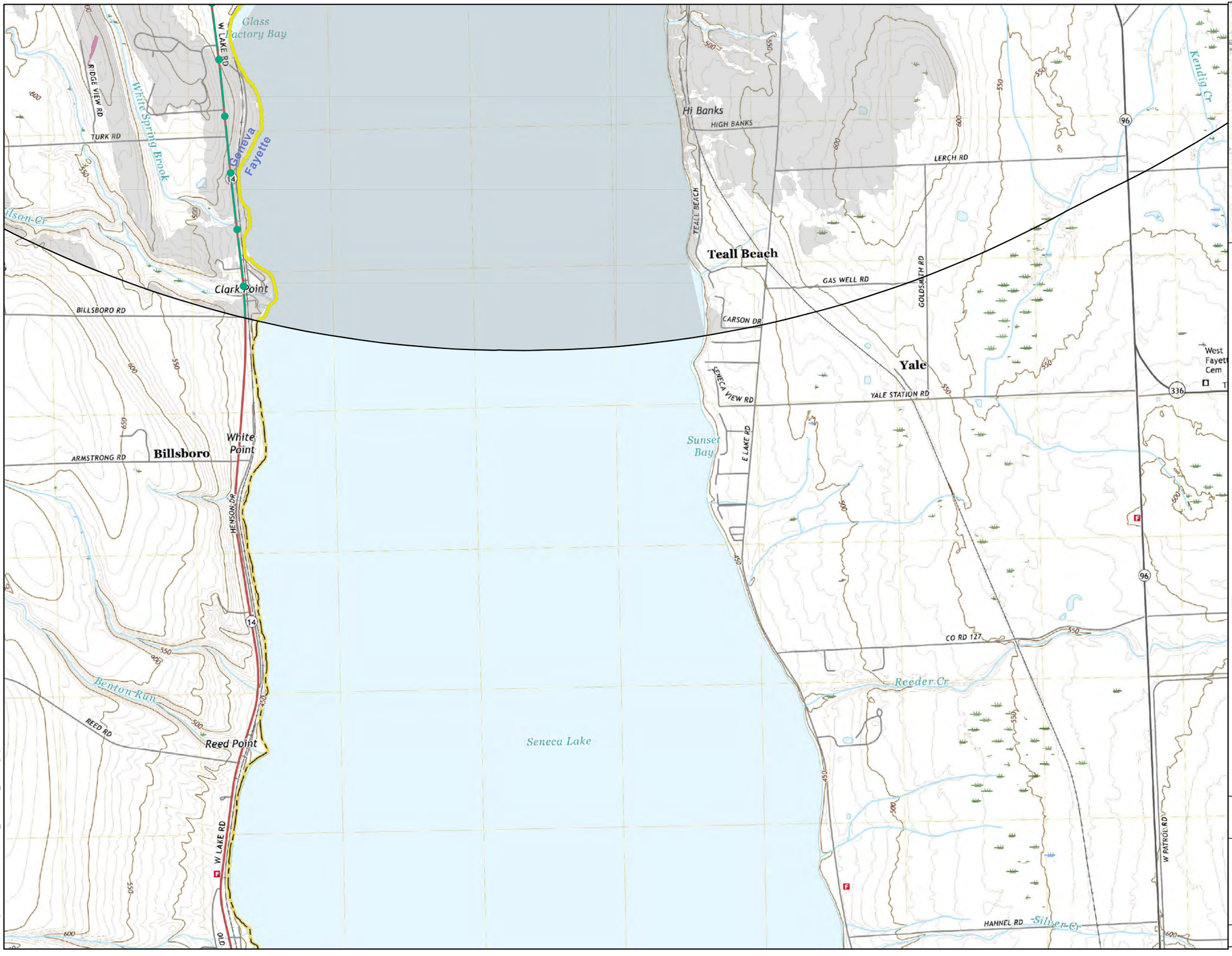
NEXTera ENERGY

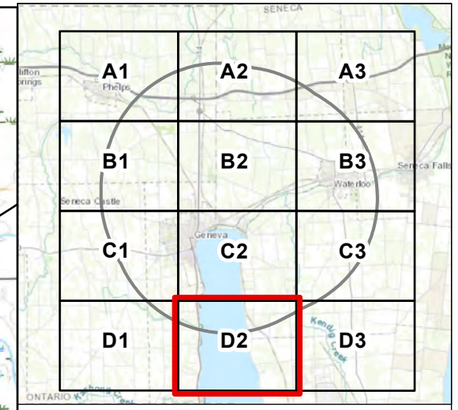
TRELINA SOLAR ENERGY CENTER
POTENTIAL VISIBILITY AND VISUAL RESOURCES

FIGURE 5

Date : 7/15/2020

C:\Users\jbartos\WorkDocs\328807_Trelina\JB_Working\aprx\





- SIMULATION VIEWPOINT LOCATION
- PHOTO DIRECTION
- LINE OF SIGHT LOCATION
- VISIBILITY (BARE EARTH, NO VEGETATION)
- VISIBILITY (WITH VEGETATION)
- ARRAY LOCATIONS
- ZONE 1 - HALF MILE DISTANCE ZONE
- ZONE 2 - TWO MILE DISTANCE ZONE
- ZONE 3 - FIVE MILE DISTANCE ZONE
- LOCAL PARK
- STATE BOAT LAUNCH
- SENECA COUNTY FAIRGROUNDS
- ERIE CANALWAY HERITAGE CORRIDOR
- FEDERAL/STATE/COUNTY RECREATION
- STATE BIKE ROUTE 14

HISTORIC

- 1 NRHP LISTED*
- CRIS ELIGIBLE HISTORIC
- HISTORIC DISTRICT

Please refer to Table 3 in Visual Impact Assessment for corresponding name and ID

Map: D2

N

0 0.25 0.5 Miles

Base Map: USGS 2019 GeoTiff acquired at ngmdb.usgs.gov/topoview/viewer

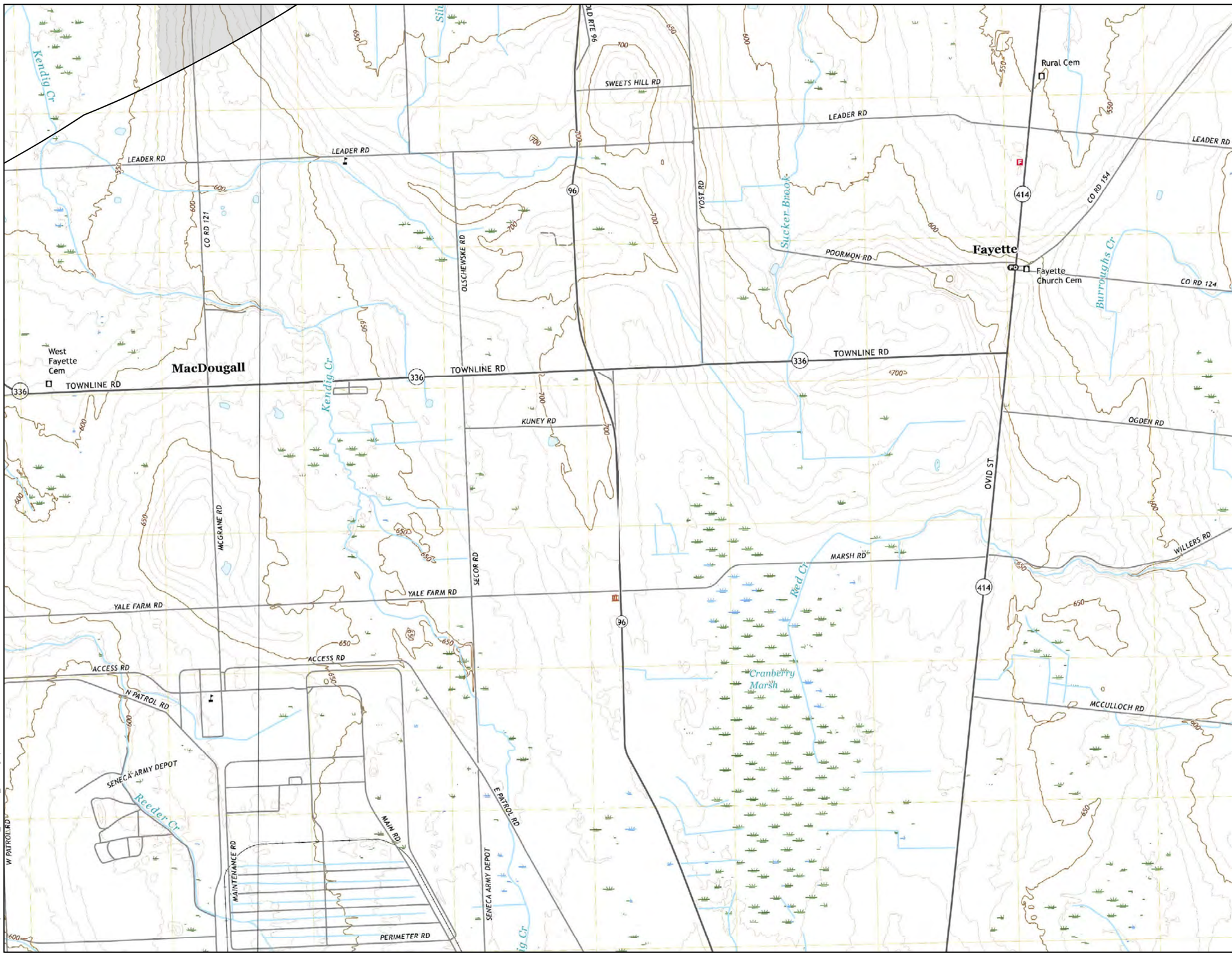
NEXTera ENERGY

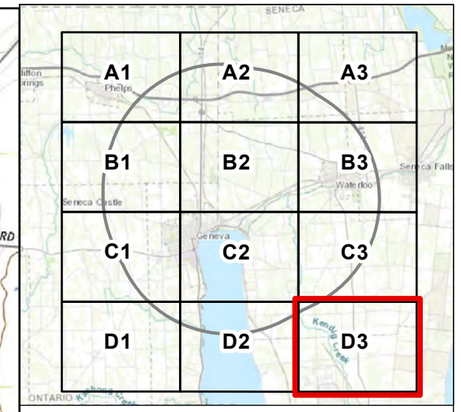
TRELINA SOLAR ENERGY CENTER
POTENTIAL VISIBILITY AND VISUAL RESOURCES

FIGURE 5

Date : 7/15/2020

C:\Users\jbartos\WorkDocs\328807_Trelina\JB_Working\aprx\





- SIMULATION VIEWPOINT LOCATION
- PHOTO DIRECTION
- LINE OF SIGHT LOCATION
- VISIBILITY (BARE EARTH, NO VEGETATION)
- VISIBILITY (WITH VEGETATION)
- ARRAY LOCATIONS
- ZONE 1 - HALF MILE DISTANCE ZONE
- ZONE 2 - TWO MILE DISTANCE ZONE
- ZONE 3 - FIVE MILE DISTANCE ZONE
- LOCAL PARK
- STATE BOAT LAUNCH
- SENECA COUNTY FAIRGROUNDS
- ERIE CANALWAY HERITAGE CORRIDOR
- FEDERAL/STATE/COUNTY RECREATION
- STATE BIKE ROUTE 14

HISTORIC

- 1 NRHP LISTED*
- CRIS ELIGIBLE HISTORIC
- HISTORIC DISTRICT

Please refer to Table 3 in Visual Impact Assessment for corresponding name and ID

Map: D3

N

0 0.25 0.5 Miles

Base Map: USGS 2019 GeoTiff acquired at ngmdb.usgs.gov/topoview/viewer

NEXTera ENERGY

TRELINA SOLAR ENERGY CENTER
POTENTIAL VISIBILITY AND VISUAL RESOURCES

FIGURE 5

Date : 7/15/2020

C:\Users\jbartos\WorkDocs\328807_TrelinaJB_Working\aprx\

TRELINA SOLAR ENERGY CENTER
ARTICLE 10 EXHIBIT 24

ELIGIBLE HISTORIC SITES LISTING WITHIN THE PROJECT VISUAL STUDY AREA

ATTACHMENT 3

Table 3-A CRIS Listed Eligible Historic Sites					
USN	**Resource**	**Distance (Miles)**	**Potential Visibility***	**Address**	**Town**
6906.000043	Big Stone Mansion And Outbuildings	3.8	No	463 Snell Rd	Geneva
6906.000044	The Cobblestone Restaurant	3.4	Minimal to None	3610 Preemption Rd	Geneva
6906.000045	Unkown	2.4	No	184 Hamilton St	Geneva
6940.000007	760 Castle St	2.5	No	760 Castle St	Geneva
6940.000044	Mc Cormick House (Hobart & William Smith Womens Res))	2.4	No	183 Hamilton St	Geneva
6940.000199	Unkown	1.8	No	225 Genesee St	Geneva
6940.000201	(Texaco Gas Station)	1.5	No	41 Lake St	Geneva
6940.000261	Persons And Siglar Building (The Main Place)	1.9	No	293 South Main St	Geneva
6940.000267	Columbia Block (Harris Apts)	1.9	No	282 South Main St	Geneva
6940.000269	Kershaw Apts	1.9	No	326 South Main St	Geneva
6940.00027	Kershaw Apts	1.9	No	330 South Main St	Geneva
6940.000271	Geneva Woman's Club	1.9	No	336 South Main St	Geneva
6940.000272	First Methodist Church	1.9	No	340 South Main St	Geneva
6940.000298	Geneva Public Library	1.9	No	244 Main St.	Geneva
6940.000315	Residence	2.4	No	498 Castle St	Geneva
6940.000316	Res	2.4	No	500 Castle St	Geneva
6940.000317	House	2.4	No	508 Castle St	Geneva
6940.000318	Ranch House	2.5	No	570 Castle St	Geneva
6940.000324	Wright House	1.8	No	224 North St	Geneva
6940.000416	Residence	2.7	No	666 West North St	Geneva
6940.00058	Unkown	2.2	No	23 Cortland St	Geneva
6940.000581	Unkown	2.2	No	11 Cortland St	Geneva
6940.000582	Unkown	2.4	No	229 William St	Geneva
6940.000605	Unkown	1.6	No	51 Sherill St	Geneva
6940.00065	Unkown	1.5	No	66 North St	Geneva
6940.000652	Unkown	1.9	No	177 Lewis St	Geneva
6940.000666	Unkown	1.7	No	157 Genesee St	Geneva
6940.000667	Unkown	1.7	No	159 Genesee St	Geneva
6940.000668	Unkown	1.7	No	163 Genesee St	Geneva
6940.000676	Unkown	1.7	No	156 Genesee St	Geneva
6940.000677	Unkown	1.7	No	160 Genesee St	Geneva
6940.000678	Unkown	1.7	No	164 Genesee St	Geneva
6940.000679	Unkown	1.7	No	170 Genesee St	Geneva
6940.00068	Unkown	1.7	No	172 Genesee St	Geneva
6940.000681	Unkown	1.7	No	176 Genesee St	Geneva
6940.000682	Unkown	1.7	No	180 Genesee St	Geneva
6940.000683	Unkown	1.8	No	196 Genesee St	Geneva

Table 3-A CRIS Listed Eligible Historic Sites					
USN	**Resource**	**Distance (Miles)**	**Potential Visibility***	**Address**	**Town**
6940.000694	Unkown	1.7	No	26 Geneva St	Geneva
6940.000695	Unkown	1.7	No	30 Geneva St	Geneva
6940.000769	Unkown	2	No	35 William St	Geneva
6940.00077	Unkown	1.9	No	388 South Main St	Geneva
9903.000013	Unkown	4.2	No	1329 Nine Foot Rd	Junius
6911.00008	2380 Fort Hill Road	4.4	No	2380 Fort Hill Road	Phelps
6913.000034	Unkown	4.6	No	1039 Hastings Rd	Seneca
9902.00007	Henry Schankweiler Farm	4.8	No	3319 Yost Road	Waterloo
9910.000064	1 1/2 Story Brick Colonaed Greek Rev House	4.2	No	1850 River Rd	Waterloo
9941.000019	St Mary's Catholic Church	3.3	No	35 Center St	Waterloo
9941.00003	(Porter Residence)	3.3	No	7 East Elisha St	Waterloo
9941.000064	(Judd Residence)	3.1	No	5 Locust St	Waterloo
9941.000091	Bucknav's Central Market (Walter's Grill)	3.6	No	211 East Main St	Waterloo
9941.000153	(Doris Residence)	3.3	No	8 East River St	Waterloo
9941.000158	(Benedicks Residence)	3	No	9 Stark St	Waterloo
9941.000221	Cook/Becker/Lux House	3.2	No	68 Washington St	Waterloo
9941.000224	(Pearson Residence)	3.2	No	55 Washington St	Waterloo
9941.00023	(Schreck Residence)	3.2	No	75 Washington St	Waterloo
9941.000408	Unkown	3.1	No	52 Fayette St	Waterloo
9941.000415	Unkown	3.1	No	43 Fayette St	Waterloo
9941.000421	Unkown	3.1	No	30 Fayette St	Waterloo
9941.000435	Unkown	3.2	No	55 Washington St	Waterloo
9941.000476	St Mary's Convent (Cayuga Seneca Community Action Agency)	3.2	No	23 Center Street	Waterloo
9941.000477	St Mary's Rectory	3.2	No	25 Center Street	Waterloo
9941.000478	St Mary's School	3.3	No	35 Center Street	Waterloo
9941.000483	Waterloo Village Offices	3.2	No	38 West Main St	Waterloo

* Expected visibility is based on viewshed analysis results

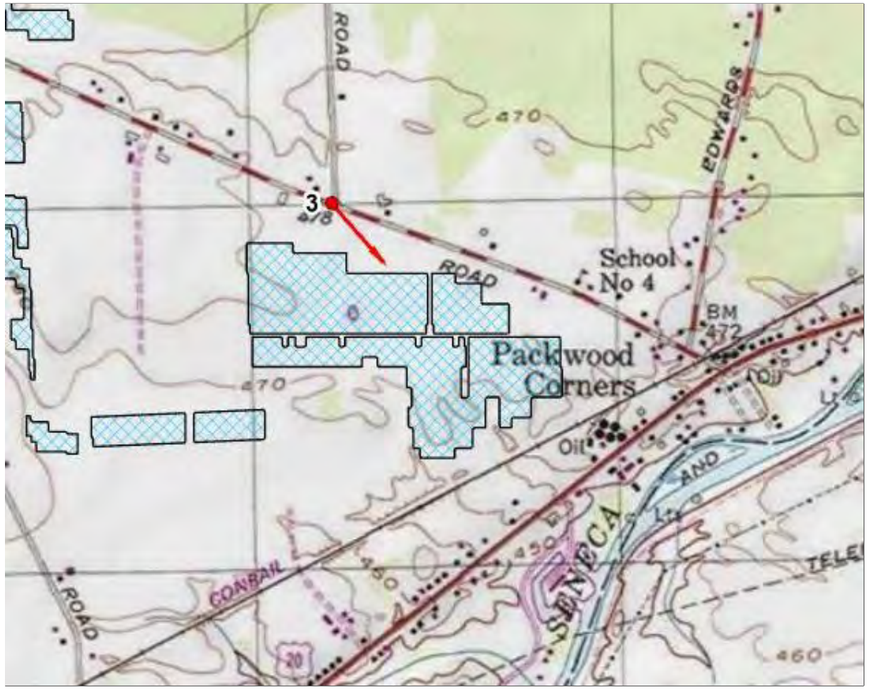
TRELINA SOLAR ENERGY CENTER
ARTICLE 10 EXHIBIT 24

SIMULATIONS AND LINES OF SIGHT

ATTACHMENT 4

Viewpoint Location Aerial

Viewpoint Location Topo



Viewpoint Coordinates in	726783.5 E
NY State Plane Central	1057475.4 N
Town	Waterloo
Viewer Elevation (ft msl)	477
Distance to Fence Line	683 ft
Direction of View	SE
Date/Time	3/27/20 2:23 PM

Trelina Solar Energy Center
Waterloo, New York
Visual Simulation of Project
April 2020

VP3 PACKWOOD AND MANEY RD

Simulation Proposed Conditions

Simulation Mitigation at 5 years

VP3 PACKWOOD AND MANEY RD - TRACKER ARRAYS

TRC

Simulation Proposed Conditions

Viewpoint Location Aerial

Viewpoint Location Topo

NEXTera ENERGY

Viewpoint Coordinates in	719550.6 E
NY State Plane Central	1058879.5 N
Town	Waterloo
Viewer Elevation (ft msl)	484
Distance to Fence Line	298 ft
Direction of View	S
Date/Time	3/27/20 12:41 PM

Trelina Solar Energy Center
Waterloo, New York
Visual Simulation of Project
April 2020

VP11 PACKWOOD RD

TRC

Simulation Proposed Conditions

Simulation Mitigation at 5 years

VP11 PACKWOOD RD – TRACKER ARRAYS

Simulation Proposed Conditions

Viewpoint Location Aerial

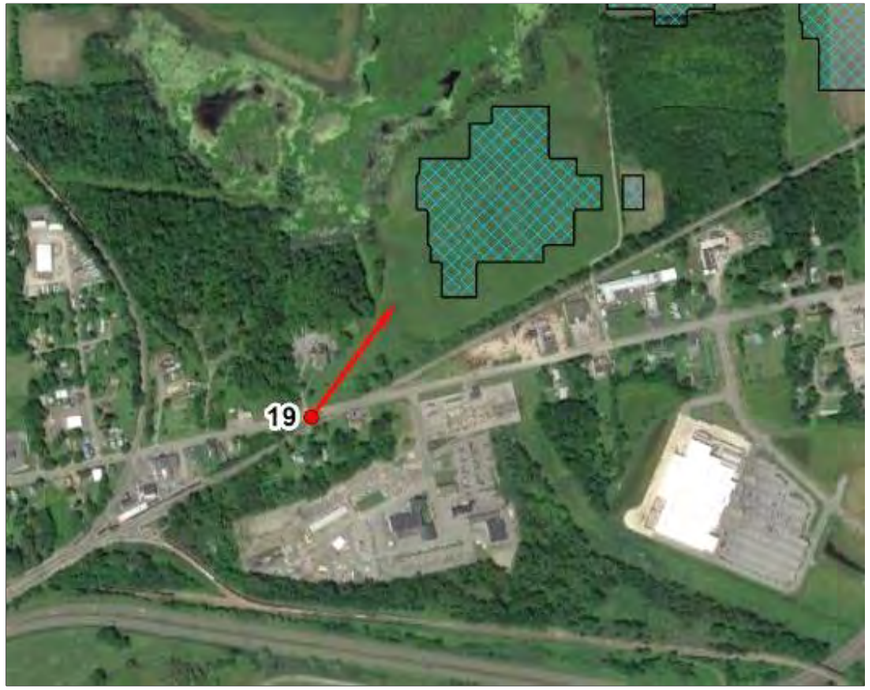
Viewpoint Location Topo

Viewpoint Coordinates in	720213.3 E
NY State Plane Central	1049292.9 N
Town	Waterloo
Viewer Elevation (ft msl)	631
Distance to Fence Line	3.4 miles
Direction of View	E
Date/Time	3/27/20 12:13 PM

Trelina Solar Energy Center
Waterloo, New York
Visual Simulation of Project
April 2020

VP17 JOHNSON ROAD

Viewpoint Location Aerial



Viewpoint Location Topo

Viewpoint Coordinates in	720213.3 E
NY State Plane Central	1049292.9 N
Town	Waterloo
Viewer Elevation (ft msl)	463
Distance to Fence Line	1,004 ft
Direction of View	NE
Date/Time	3/27/20 12:13 PM

Trelina Solar Energy Center
Waterloo, New York
Visual Simulation of Project
April 2020

VP19 BORDER CITY ROAD

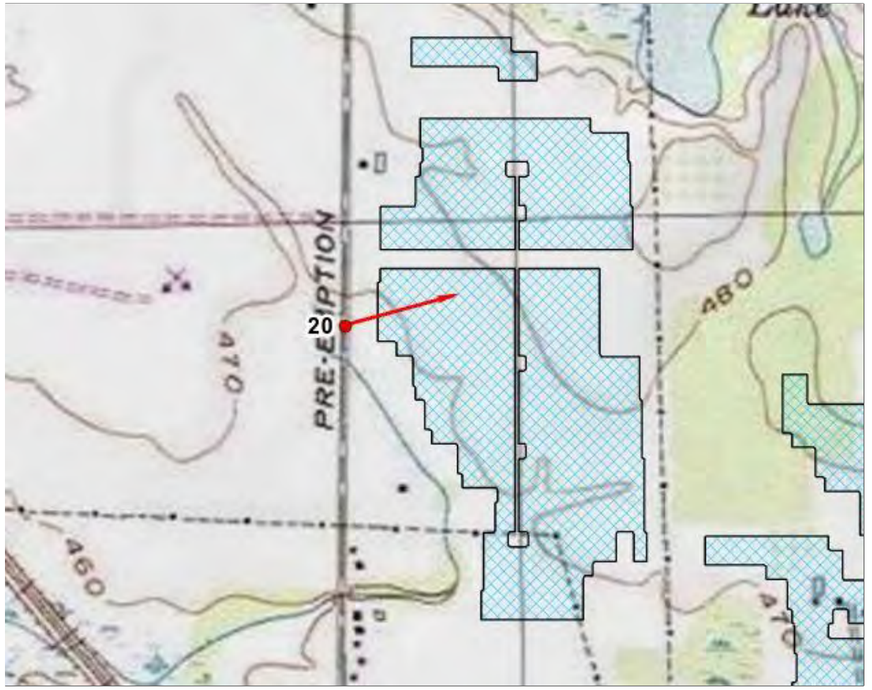
Simulation Proposed Conditions

Simulation Mitigation at 5 years

Simulation Proposed Conditions

Viewpoint Location Aerial

Viewpoint Location Topo



Viewpoint Coordinates in	718392.6 E
NY State Plane Central	1054960.6 N
Town	Waterloo
Viewer Elevation (ft msl)	468
Distance to Fence Line	198 ft
Direction of View	E
Date/Time	3/27/20 12:22 PM

Trelina Solar Energy Center
Waterloo, New York
Visual Simulation of Project
April 2020

VP20 PRE EMPTION ST

Simulation Proposed Conditions

Simulation Mitigation at 5 years

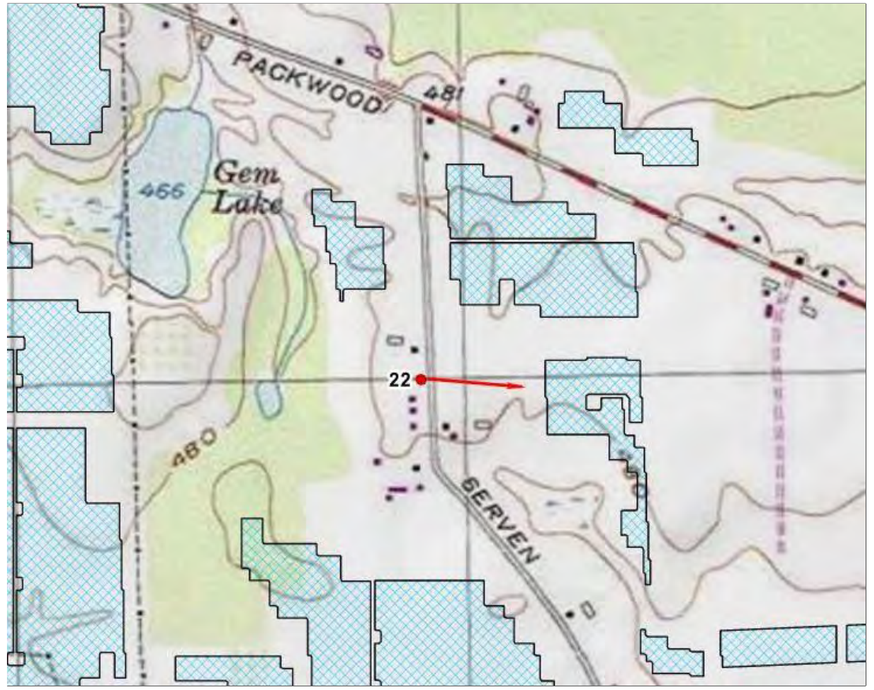
VP20 PRE EMPTION ST – TRACKER ARRAYS

TRC

Simulation Proposed Conditions

Viewpoint Location Aerial

Viewpoint Location Topo



NEXTera ENERGY

Viewpoint Coordinates in	722428.3 E
NY State Plane Central	1055673.6 N
Town	Waterloo
Viewer Elevation (ft msl)	483
Distance to Fence Line	888 ft
Direction of View	E
Date/Time	3/27/20 1:15 PM

Trelina Solar Energy Center
Waterloo, New York
Visual Simulation of Project
April 2020

VP22 SERVEN ROAD, NORTH

TRC

Simulation Proposed Conditions

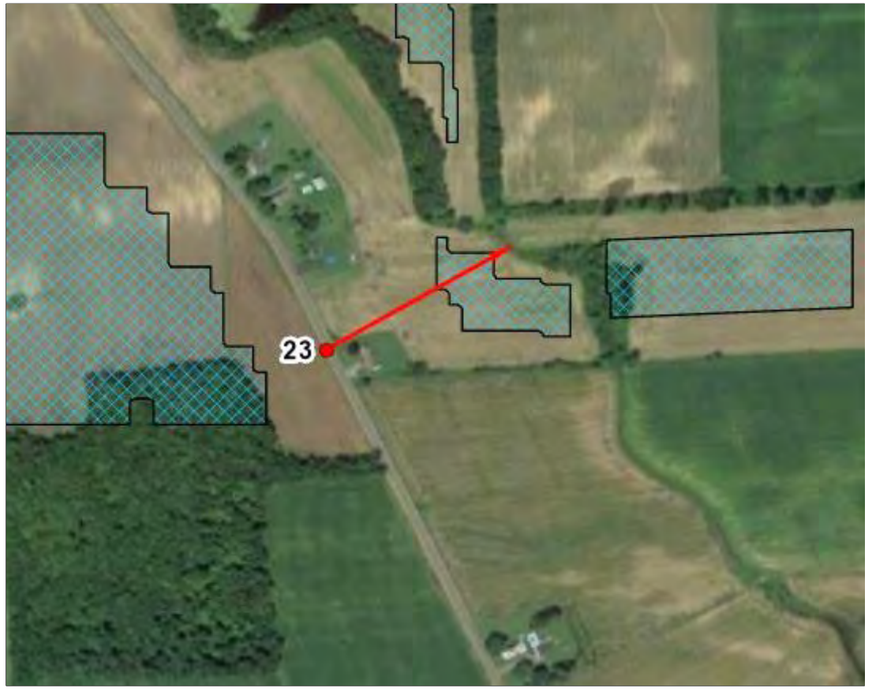
Simulation Mitigation at 5 years

VP22 SERVEN ROAD, NORTH – TRACKER ARRAYS

TRC

Simulation Proposed Conditions

Viewpoint Location Aerial



Viewpoint Location Topo

Viewpoint Coordinates in	722428.3 E
NY State Plane Central	1055673.6 N
Town	Waterloo
Viewer Elevation (ft msl)	474
Distance to Fence Line	414 ft
Direction of View	NE
Date/Time	3/27/20 1:15 PM

Trelina Solar Energy Center
Waterloo, New York
Visual Simulation of Project
April 2020

VP23a SERVEN ROAD, SOUTH

Simulation Proposed Conditions

Simulation Mitigation at 5 years

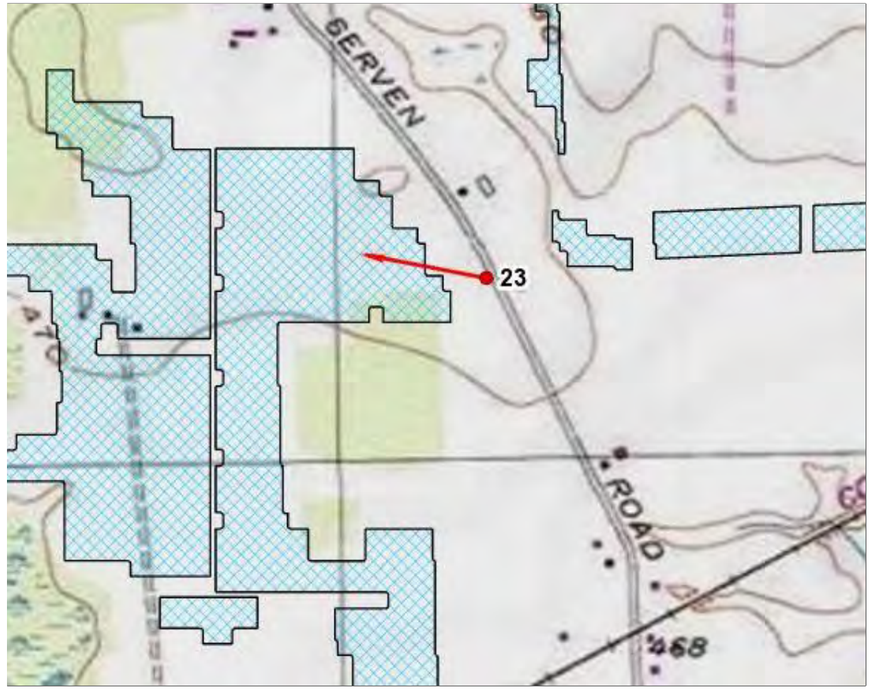
VP23a SERVEN ROAD, SOUTH – TRACKER ARRAYS

TRC

Simulation Proposed Conditions

Viewpoint Location Aerial

Viewpoint Location Topo



NEXTera ENERGY

Viewpoint Coordinates in	722428.3 E
NY State Plane Central	1055673.6 N
Town	Waterloo
Viewer Elevation (ft msl)	474
Distance to Fence Line	358 ft
Direction of View	W
Date/Time	3/27/20 1:15 PM

Trelina Solar Energy Center
Waterloo, New York
Visual Simulation of Project
April 2020

VP23b SERVEN ROAD, SOUTH

TRC

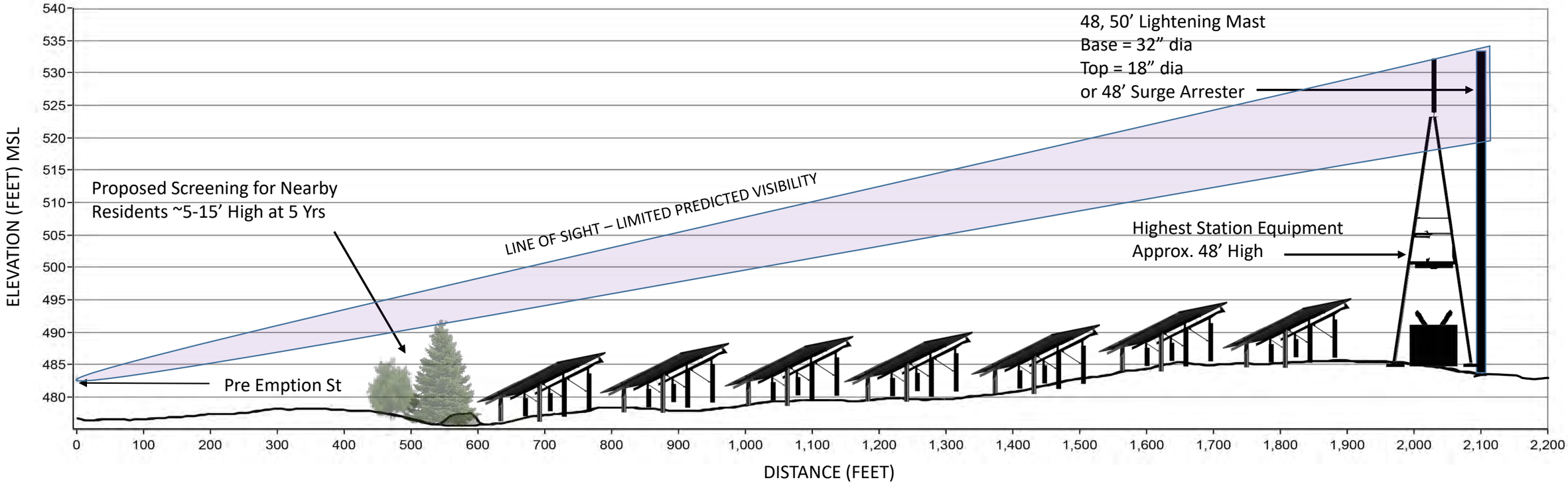
Simulation Proposed Conditions

Simulation Mitigation at 5 years

VP23b SERVEN ROAD, SOUTH – TRACKER ARRAYS

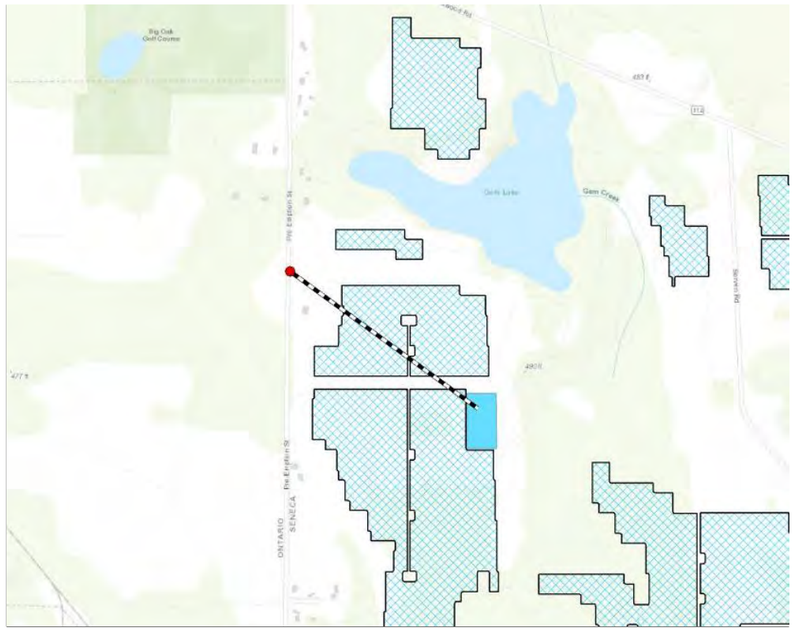
Simulation Proposed Conditions

L1 - LINE OF SIGHT FROM PRE EMPTION ST (NORTH) TO COLLECTION SUBSTATION, WATERLOO



Viewpoint Location Aerial

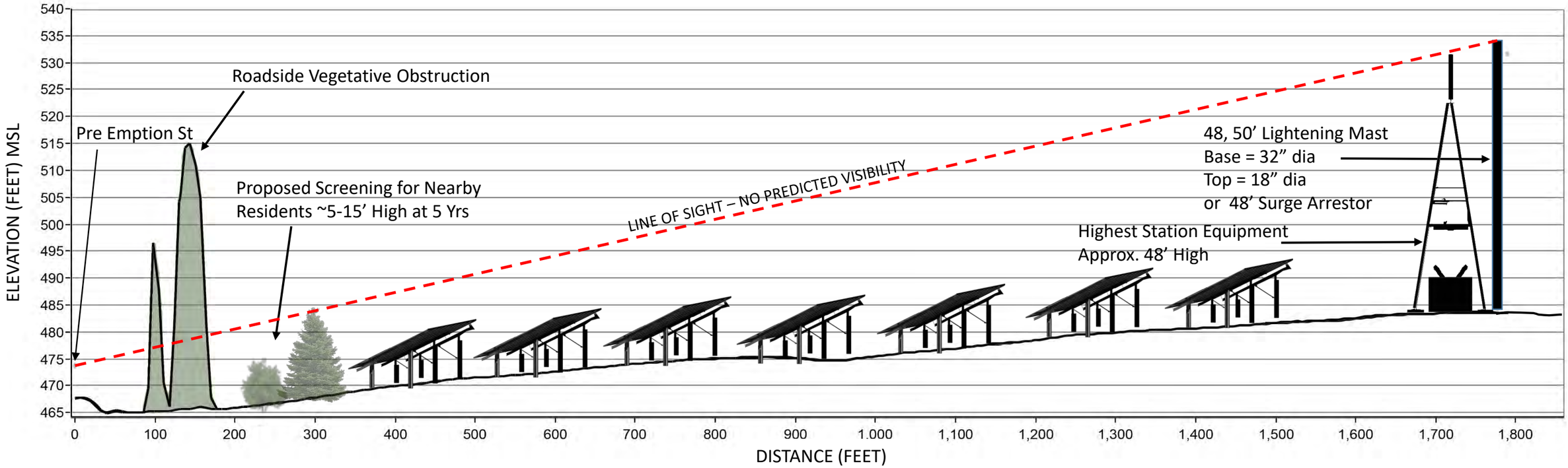
Viewpoint Location Topo



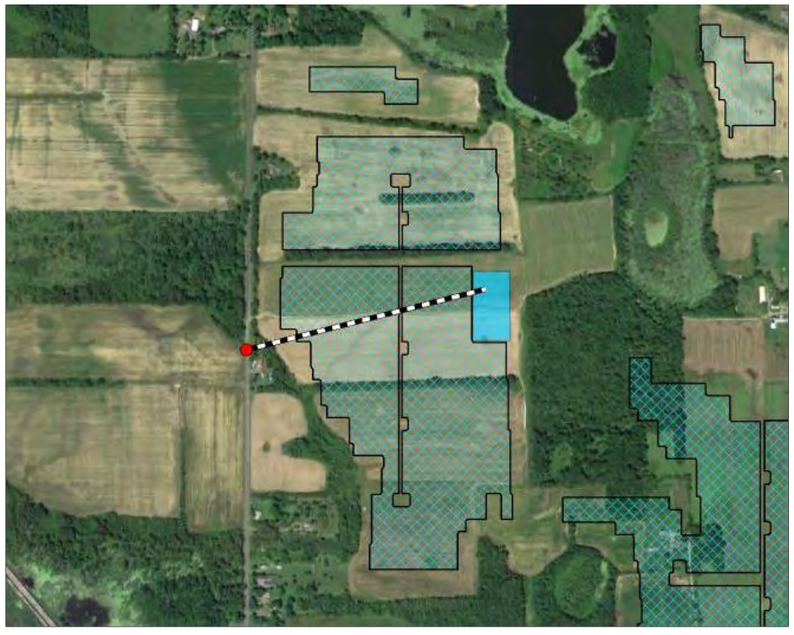
Viewpoint Coordinates in	718392.9
NY State Plane East	1056381.8
Viewpoint Location	Pre Emption St
Distance to Object	0.4 miles
Direction of View	SE

Trelina Solar Energy Center
Waterloo, New York
Line of Sight
July 2020

L2 - LINE OF SIGHT FROM PRE EMPTION ST (SOUTH) TO COLLECTION SUBSTATION, WATERLOO



Viewpoint Location Aerial



Viewpoint Location Topo

NEXTera ENERGY

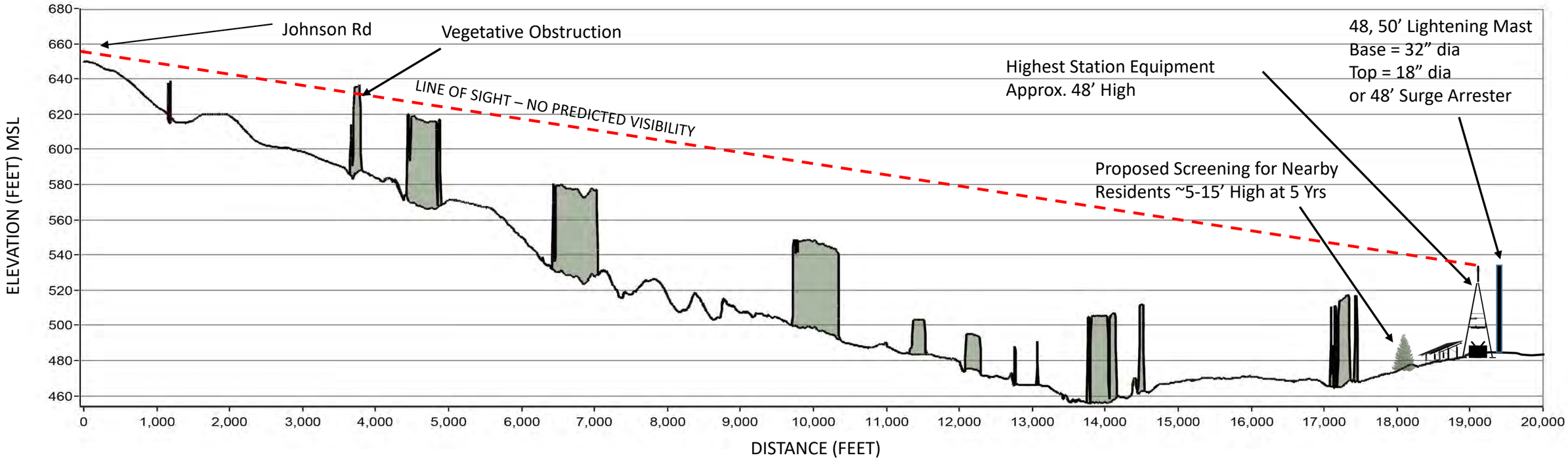
Viewpoint Coordinates in	718349.5
NY State Plane East	1054716.9
Viewpoint Location	Pre Emption St
Distance to Object	0.3 miles
Direction of View	NE

Trelina Solar Energy Center
Waterloo, New York
Line of Sight
July 2020

L2 – PRE EMPTION ST (SOUTH) TO COLLECTION SUBSTATION, WATERLOO

TRC

L3 - LINE OF SIGHT FROM JOHNSON ROAD (VP18) , SENECA, TO PROJECT



Viewpoint Location Aerial

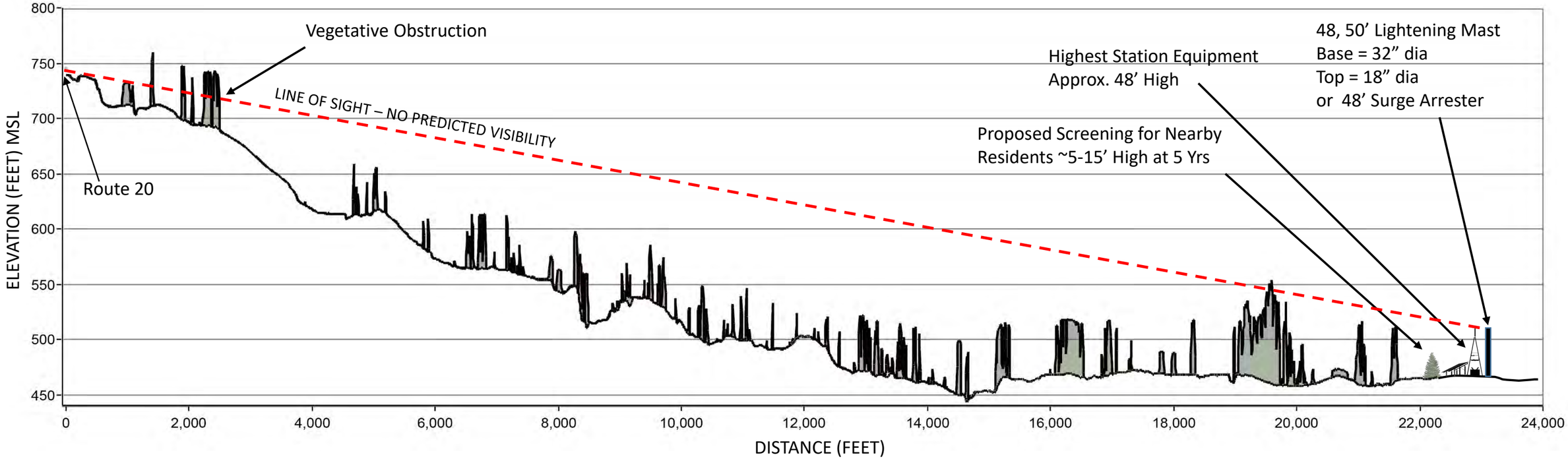
Viewpoint Location Topo

Viewpoint Coordinates in	701049.8
NY State Plane East	1053558.8
Viewpoint Location	Johnson Road (VP18)
Distance to Object	3.3 miles
Direction of View	W

Trelina Solar Energy Center
Waterloo, New York
Line of Sight
July 2020

L3 – JOHNSON ROAD, SENECA, TO PROJECT

L4 - LINE OF SIGHT FROM ROUTE 20, TOWN OF GENEVA, TO PROJECT



Viewpoint Location Aerial

Viewpoint Location Topo

Viewpoint Coordinates in	702028.9
NY State Plane East	1041704.6
Viewpoint Location	Route 20
Distance to Object	4.2 miles
Direction of View	NE

Trelina Solar Energy Center
Waterloo, New York
Line of Sight
July 2020

L4 – ROUTE 20, TOWN OF GENEVA, TO PROJECT

TRELINA SOLAR ENERGY CENTER
ARTICLE 10 EXHIBIT 24

PHOTOLOG

ATTACHMENT 5

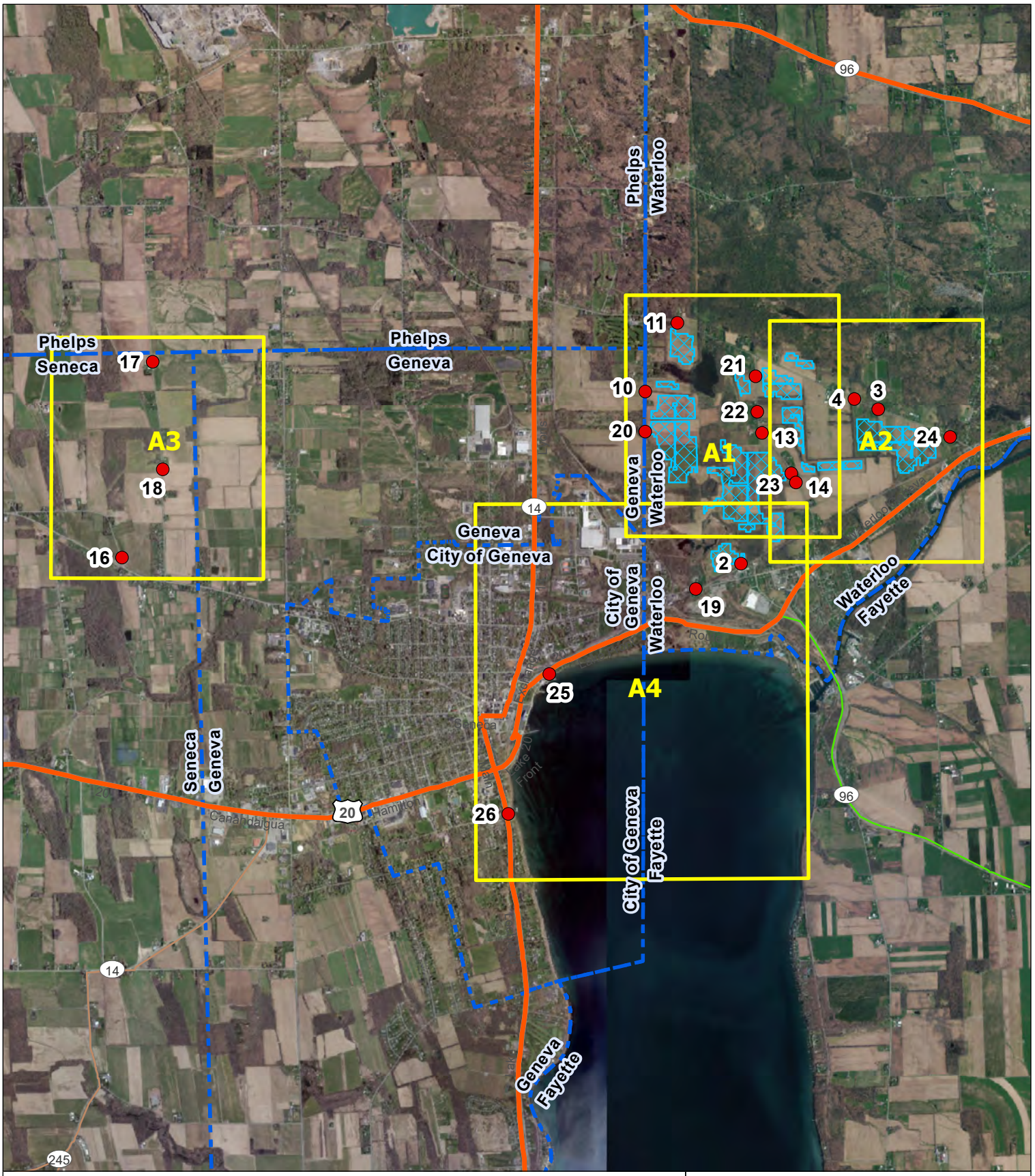


PHOTO VIEWPOINT LOCATION

ARRAY LOCATION

MAP INDEX

TOWN BOUNDARY

N

0 0.5 1 Miles

NEXTera ENERGY

TRELINA SOLAR ENERGY CENTER
PHOTO LOCATION

OVERVIEW MAP

Date : 7/1/2020

C:\Users\jbartos\WorkDocs\328807_Trelina\JB_Working\aprx\

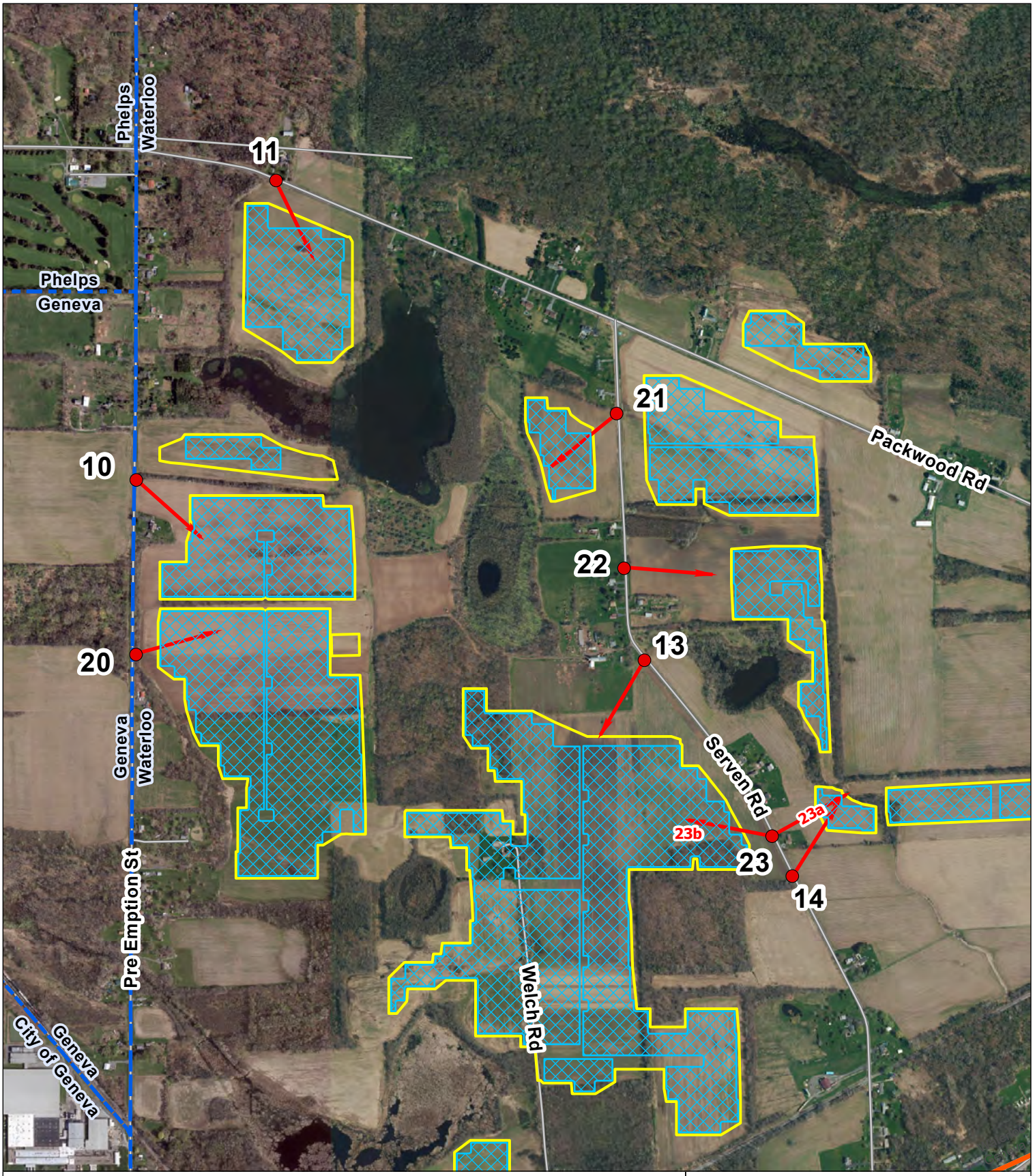


PHOTO VIEWPOINT LOCATION

PHOTO DIRECTION

ARRAY LOCATION

FENCE LINE

N

0 500 1,000 Feet

NEXTera ENERGY

TRELINA SOLAR ENERGY CENTER
PHOTO LOCATION AND ORIENTATION

Map: A1

Date : 7/14/2020

C:\Users\jbartos\WorkDocs\328807_Trelina\JB_Working\aprx\

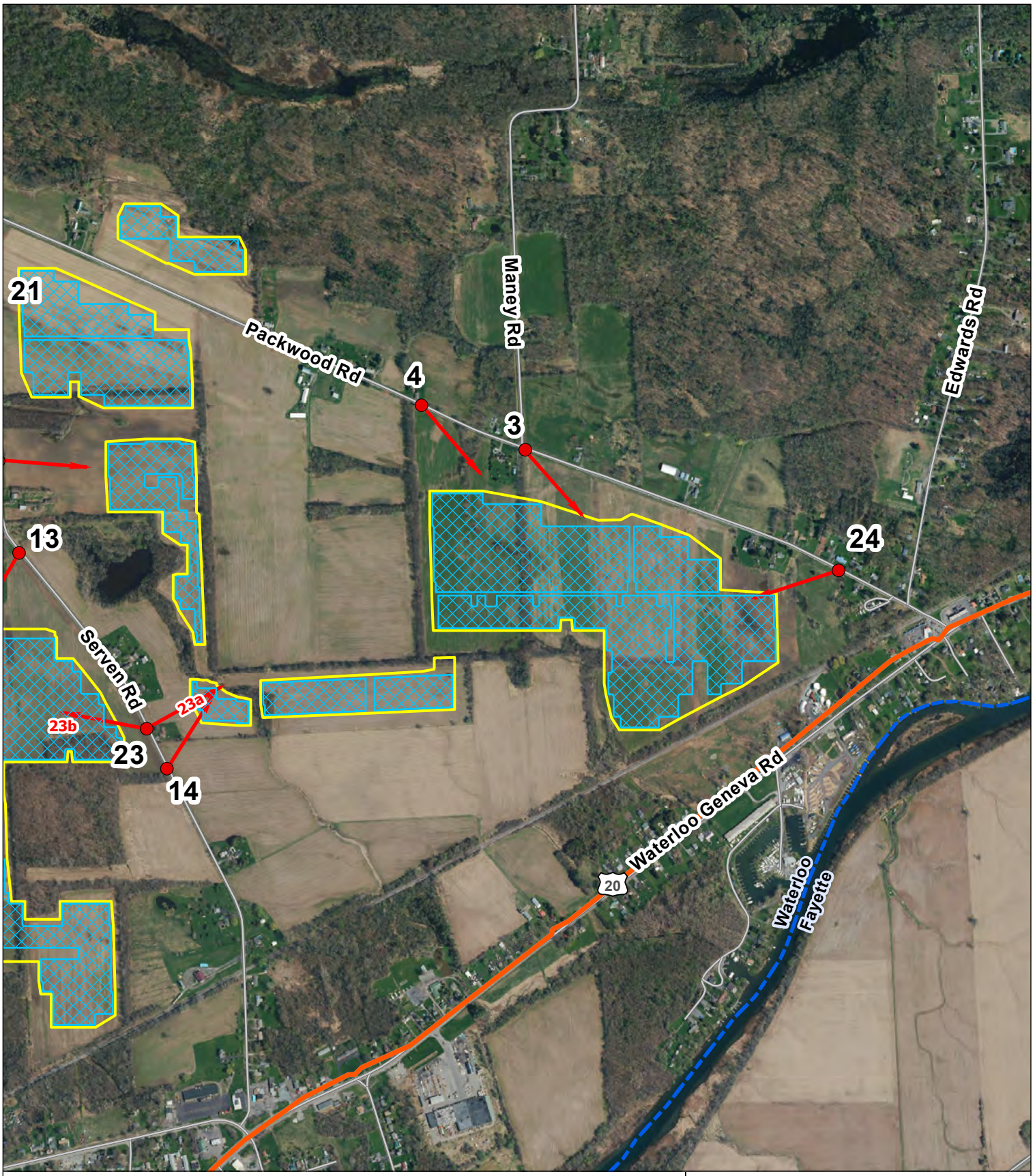


PHOTO VIEWPOINT LOCATION

PHOTO DIRECTION

ARRAY LOCATION

FENCE LINE

N

0 500 1,000 Feet

NEXTera ENERGY

TRELINA SOLAR ENERGY CENTER
PHOTO LOCATION AND ORIENTATION

Map: A2

Date : 7/14/2020

C:\Users\jbartos\WorkDocs\328807_Trelina\VB_Working\aprx\

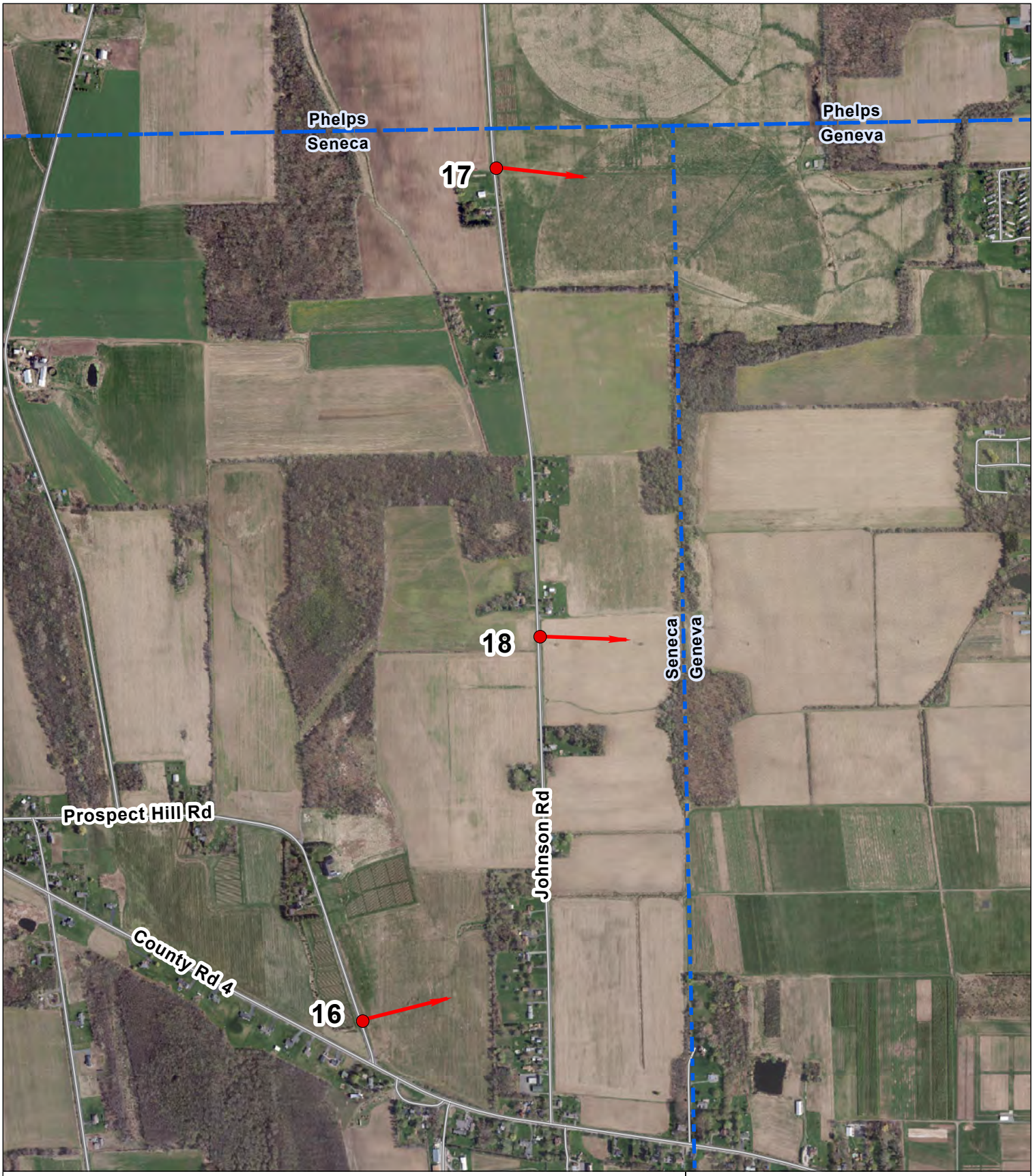


PHOTO VIEWPOINT LOCATION

PHOTO DIRECTION

ARRAY LOCATION

FENCE LINE

N

0 500 1,000 Feet

NEXTera ENERGY

TRELINA SOLAR ENERGY CENTER
PHOTO LOCATION AND ORIENTATION

Map: A3

Date : 7/14/2020

C:\Users\jbartos\WorkDocs\328807_TrelinaVB_Working\aprx\

NEXTera ENERGY

TRELINA SOLAR ENERGY CENTER
PHOTO LOCATION AND ORIENTATION

Map: A4

Date : 7/14/2020

C:\Users\jbartos\WorkDocs\328807_TrelinaVB_Working\aprx\

Viewpoint 2

Location
Welch Rd

LSZ: 1,2 DZ: 1

Photo Date: 3/27/2020

Town: Waterloo

Orientation: NW

VP2 IMG_Series

Viewpoint 3

Location
Packwood Rd at Maney Rd

LSZ: 1 DZ: 1

Photo Date: 3/27/2020

Town: Waterloo

Orientation: SE

VP3 IMG_Series

Viewpoint 4

Location
Packwood Rd

LSZ: 1 DZ: 1

Photo Date: 3/27/2020

Town: Waterloo

Orientation: S

VP4 IMG_Series

Viewpoint 10

Location
Pre Emption St

LSZ: 1 DZ: 1

Photo Date: 3/27/2020

Town: Waterloo

Orientation: SE

VP10 IMG_Series

Viewpoint 11

Location
Packwood Rd

LSZ: 1 DZ: 1

Photo Date: 3/27/2020

Town: Waterloo

Orientation: S

VP11 IMG_Series

Viewpoint 13

Location
Serven Road

LSZ: 1 DZ: 1

Photo Date: 3/27/2020

Town: Waterloo

Orientation: SW

VP13 IMG_Series

Viewpoint 14

Location
Serven Road

LSZ: 1 DZ: 1

Photo Date: 3/27/2020

Town: Waterloo

Orientation: NW

VP14 IMG_Series

Viewpoint 16

Location
Prospect Hill Road

LSZ: 1 DZ: 3

Photo Date: 3/27/2020

Town: Seneca

Orientation: E

VP16 IMG_Series

Viewpoint 17

Location
Johnson Road

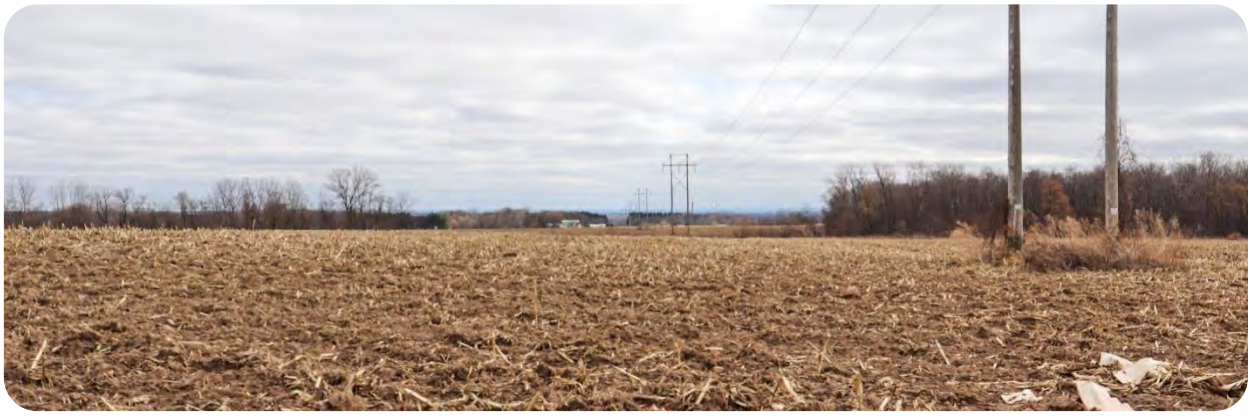
LSZ: 1 DZ: 3

Photo Date: 3/27/2020

Town: Seneca

Orientation: E

VP17 IMG_Series



Viewpoint 18

Location
Johnson Road

LSZ: 1 DZ: 3

Photo Date: 3/27/2020

Town: Seneca

Orientation: E

VP18 IMG_Series

Viewpoint 19

Location
Border City Road

LSZ: 3 DZ: 1

Photo Date: 3/27/2020

Town: Waterloo

Orientation: NE

VP19 IMG_Series

Viewpoint 20

Location
Pre Emption St

LSZ: 1 DZ: 1

Photo Date: 3/27/2020

Town: Geneva/Waterloo

Orientation: E

VP20 IMG_Series

Viewpoint 21

Location
Serven Road

LSZ: 1 DZ: 1

Photo Date: 3/27/2020

Town: Waterloo

Orientation: SW

VP21 IMG_Series

Viewpoint 22

Location
Serven Road

LSZ: 1 DZ: 1

Photo Date: 3/27/2020

Town: Waterloo

Orientation: E

VP22 IMG_Series

Viewpoint 23a

Location
Serven Road

LSZ: 1 DZ: 1

Photo Date: 3/27/2020

Town: Waterloo

Orientation: E

VP23a IMG_Series

Viewpoint 23b

Location
Serven Road

LSZ: 2 DZ: 1

Photo Date: 3/28/2020

Town: Waterloo

Orientation: W

VP23b IMG_Series

Viewpoint 24

Location
Packwood Road

LSZ: 1,3 DZ: 1

Photo Date: 3/27/2020

Town: Waterloo

Orientation: W

VP24 IMG_Series

Viewpoint 25

Location
Lakefront Park, NYS Finger Lakes Welcome Center

LSZ: 3,4 DZ: 2

Photo Date: 3/27/2020

Town: City of Geneva

Orientation: NE

VP25 IMG_Series

Viewpoint 26

Location

South Main Street, near Bozzuto Boat House and Dock

LSZ: 3,4 DZ: 3

Photo Date: 3/27/2020

Town: City of Geneva

Orientation: NE

VP26 IMG_Series

Viewpoint

Location

LSZ:

Photo Date:

Town:

Orientation:

Viewpoint

Location

LSZ:

Photo Date:

Town:

Orientation:

TRELINA SOLAR ENERGY CENTER
ARTICLE 10 EXHIBIT 24

OUTREACH CORRESPONDENCE

ATTACHMENT 6

Bartos, Judith

From: Dickey, Jason
Sent: Tuesday, April 21, 2020 11:31 AM
To: Andrew.Davis@dps.ny.gov
Cc: William Boer (Guest); Bartos, Judith
Subject: Trelina Solar Energy Center - Visual Impact Assessment
Attachments: Trelina Solar Energy Center - Visual Outreach Report (NYSDPS).pdf

Mr. Davis,

Attached please find an information request regarding the Trelina Solar Energy Center (Project; Case No. 19-F-0366). We are requesting input from DPS regarding the Applicant's selection of important or representative viewpoints for inclusion in the Article 10 Application's Visual Impact Assessment (VIA). We kindly request your input by March 11, 2020. Any comments or feedback you may have are requested by May 11, 2020 and should be sent to the following:

- Via email to Judy Bartos: JBartos@trccompanies.com
- Via email to William Boer: William.Boer@nexteraenergy.com

A hard copy of this consultation package can be provided upon request. Thank you for your input.

R. Jason Dickey
Senior Project Manager

TRC

10 Maxwell Drive, Clifton Park, NY 12065
M 518.469.8843| **F** 518.348.1194
LinkedIn | Twitter | Blog | TRCcompanies.com

19-F-0366 Trelina Solar Energy Center
Visual Impact Survey Request
DPS Comments
April 26, 2020

DPS Staff Comments:

1. DPS staff notes that there is potential visibility from the Hobart and William Smith Colleges and requests that a viewpoint photo be taken from this location. The Colleges have a notable history https://www.hws.edu/about/history.aspx and the preservation of the setting of the colleges makes this a definite candidate for viewpoint selection.
2. DPS staff notes that there is potential visibility from the National Register of Historic Places (NRHP) Location Number 22, The Washington Street Cemetery. This cemetery should be reviewed as a potential photo location due to its historical background and the notable citizens and veterans buried here.
3. DPS staff notes that there are potential views from the National Register of Historic Places (NRHP) Location Number 14, Parrot Hall and this building is adjacent to the Cornell University Food and Agriculture Technology Park. According to the Town of Geneva, "*The earliest inhabitants of this area were the Seneca Indians… and the tribe's capital was a village near what is now the corner of County Roads 4 and 6 – the present site of the New York State Agricultural Experiment*." (http://www.townofgeneva.com/) Due to the nature of this general location, DPS staff recommend the further study of this area as a photo location viewpoint.
4. DPS staff recommend that the distance zone should be noted on all photos located in the Photolog.
5. DPS staff request further information on the solar panels as a maximum height is listed at 8 feet. Many solar panels have a maximum height of 12-15 feet due to tracking systems which cause the panels to tip to allow for the greatest angle of insolation. DPS requests that the Applicant ensure that 8 feet is the greatest height and if not, further information should be provided on the panels and the potential visibility of them.
6. DPS staff notes on page 7 that the viewshed model assumes that vegetation represents a leaf-on condition. This can make a great difference in Project visibility a half of the year, there will be leaf-off conditions that are not accounted for. DPS recommends that the Applicant provide a map that accounts for leaf-off visibility as the Project visibility on the maps provided may not be a proper representation of the views experienced from late fall through early spring.
7. DPS staff notes that accurate Li-DAR was not available for Ontario County and requests information pertaining to if leaf-on or leaf-off conditions were accounted for regarding the tree groups in the western quadrant of the VSA.
8. DPS staff requests the Applicant provide an Overview Map (Figure 2) with a satellite view.
9. DPS staff recommend that the following resources be added to the Federal, State, County and Municipal recreation lands heading in Table 1:
    - NYS Finger Lakes Welcome Center
    - Genesee Park
    - Geneva Bark Park
    - Geneva Little League Park
    - Geneva Recreation Complex

- Lenox Park

Other notable resources include the following:

- Cornell University Food and Agriculture Technology Park

Bartos, Judith

From: Dickey, Jason
Sent: Tuesday, April 21, 2020 11:58 AM
To: Andrew.Davis@dps.ny.gov
Cc: William Boer (Guest); Bartos, Judith
Subject: RE: Trelina Solar Energy Center - Visual Impact Assessment
Attachments: Trelina Solar Energy Center - Visual Outreach Report (NYSDPS)_04-21-20.pdf

Mr. Davis,

The dates in my previous email need amendment. We are requesting responses by May 11 (not March 11 as previously stated). Also, the attached has the correct date stamp (today's date) on the cover letter. I apologize for any inconvenience. Thank you,

R. Jason Dickey
Senior Project Manager

TRC
10 Maxwell Drive, Clifton Park, NY 12065
M 518.469.8843| **F** 518.348.1194
LinkedIn | Twitter | Blog | TRCcompanies.com

From: Dickey, Jason
Sent: Tuesday, April 21, 2020 11:30 AM
To: 'Andrew.Davis@dps.ny.gov' <Andrew.Davis@dps.ny.gov>
Cc: William Boer (Guest) <William.Boer@nexteraenergy.com>; Bartos, Judith <JBartos@trccompanies.com>
Subject: Trelina Solar Energy Center - Visual Impact Assessment

Mr. Davis,

Attached please find an information request regarding the Trelina Solar Energy Center (Project; Case No. 19-F-0366). We are requesting input from DPS regarding the Applicant's selection of important or representative viewpoints for inclusion in the Article 10 Application's Visual Impact Assessment (VIA). ~~We kindly request your input by March 11, 2020.~~ Any comments or feedback you may have are requested by May 11, 2020 and should be sent to the following:

- Via email to Judy Bartos: JBartos@trccompanies.com
- Via email to William Boer: William.Boer@nexteraenergy.com

A hard copy of this consultation package can be provided upon request. Thank you for your input.

R. Jason Dickey
Senior Project Manager

10 Maxwell Drive, Clifton Park, NY 12065
M 518.469.8843| **F** 518.348.1194
LinkedIn | Twitter | Blog | TRCcompanies.com

Bartos, Judith

From: Dickey, Jason
Sent: Tuesday, April 21, 2020 11:35 AM
To: Cady-Poulin, Kristen K (DEC)
Cc: William Boer (Guest); Bartos, Judith
Subject: Trelina Solar Energy Center - Visual Impact Assessment
Attachments: Trelina Solar Energy Center - Visual Outreach Report (NYSDEC).pdf

Kristen,

Attached please find an information request regarding the Trelina Solar Energy Center (Project; Case No. 19-F-0366). We are requesting input from DEC regarding the Applicant's selection of important or representative viewpoints for inclusion in the Article 10 Application's Visual Impact Assessment (VIA). A hard copy of this consultation package can be provided upon request. Any comments or feedback should be sent to:

- Via email to Judy Bartos: JBartos@trccompanies.com
- Via email to William Boer: William.Boer@nexteraenergy.com

We kindly request your input by March 11, 2020.

Thank you for your input.

R. Jason Dickey
Senior Project Manager

10 Maxwell Drive, Clifton Park, NY 12065
M 518.469.8843| **F** 518.348.1194
LinkedIn | Twitter | Blog | TRCcompanies.com

Bartos, Judith

From: Dickey, Jason
Sent: Tuesday, April 21, 2020 11:55 AM
To: Cady-Poulin, Kristen K (DEC)
Cc: William Boer (Guest); Bartos, Judith
Subject: RE: Trelina Solar Energy Center - Visual Impact Assessment
Attachments: Trelina Solar Energy Center - Visual Outreach Report (NYSDEC)_04-21-20.pdf

Kristen, the dates in my previous email need amendment. We are requesting responses by May 11 (not March 11 as previously stated). Also, the attached has the correct date stamp (today's date) on the cover letter. I apologize for any inconvenience. Thank you,

R. Jason Dickey
Senior Project Manager

10 Maxwell Drive, Clifton Park, NY 12065
M 518.469.8843| **F** 518.348.1194
LinkedIn | Twitter | Blog | TRCcompanies.com

From: Dickey, Jason
Sent: Tuesday, April 21, 2020 11:35 AM
To: Cady-Poulin, Kristen K (DEC) <kristen.cady-poulin@dec.ny.gov>
Cc: William Boer (Guest) <William.Boer@nexteraenergy.com>; Bartos, Judith <JBartos@trccompanies.com>
Subject: Trelina Solar Energy Center - Visual Impact Assessment

Kristen,

Attached please find an information request regarding the Trelina Solar Energy Center (Project; Case No. 19-F-0366). We are requesting input from DEC regarding the Applicant's selection of important or representative viewpoints for inclusion in the Article 10 Application's Visual Impact Assessment (VIA). A hard copy of this consultation package can be provided upon request. Any comments or feedback should be sent to:

- Via email to Judy Bartos: JBartos@trccompanies.com
- Via email to William Boer: William.Boer@nexteraenergy.com

We kindly request your input by ~~March 11~~ May 11, 2020.

Thank you for your input.

R. Jason Dickey
Senior Project Manager

10 Maxwell Drive, Clifton Park, NY 12065
M 518.469.8843| **F** 518.348.1194
LinkedIn | Twitter | Blog | TRCcompanies.com

NEW YORK STATE OF OPPORTUNITY. Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ERIK KULLESEID
Commissioner

May 11, 2020

Ms. Jasmine Gollup
Archaeologist/Laboratory Director
TRC
4425-B Forbes Boulevard
Lanham, MD 20706

Re: PSC
Trelina Solar Energy Center
Waterloo, Seneca County
19PR03766

Dear Ms. Gollup:

Thank you for your continued consultation with the Division for Historic Preservation of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the submitted materials in accordance with the New York State Historic Preservation Act of 1980 (section 14.09 of the New York Parks, Recreation and Historic Preservation Law). These comments are those of the Division for Historic Preservation and relate only to Historic/Cultural resources.

We have reviewed the submission received on April 21, 2020. Based on our review, it is our understanding that this office's opinion on the proposed Visual Impact Assessment is desired. We further understand that the Architectural Survey Report, requested by James Finelli in our National Register and Survey unit has not been submitted. Until we have the opportunity to review the requested survey, we are unable to offer comments on the appropriateness of the proposed Visual Impact Assessment.

Please submit the requested Architectural Survey and the Phase 1B Archaeological Survey requested by Tim Lloyd in our Archaeology Unit via the response wheel in CRIS, so we can continue our review of the proposed undertaking.

We would appreciate additional submissions be provided via our Cultural Resource Information System (CRIS) at www.nysparks.com/SHPO/online-tools/. To submit, log into CRIS as a guest, choose "submit" at the very top of the menu. Go to "Other Options" and choose "submit new information for an existing project." If you have any questions, I can be reached at (518) 268-2170.

Sincerely,

Robyn Sedgwick
Historic Site Restoration Coordinator
e-mail: robyn.sedgwick@parks.ny.gov

via e-mail only

Bartos, Judith

From: Boxold, David <David.Boxold@nexteraenergy.com>
Sent: Monday, April 20, 2020 6:29 PM
To: fayettetownclerk@ottcmail.com
Cc: William Boer (Guest); Bartos, Judith
Subject: [EXTERNAL] Trelina Solar Energy Center - Visual Impact Assessment
Attachments: Trelina Final Cover Ltr_Town-Fayette.pdf

Dear Ms. Murray,
Attached please find an information request regarding the Trelina Solar Energy Center (the Project; Case No. 19-F-0366), an 80MW solar facility that is proposed in the Town of Waterloo with a 2022 commercial operations date.

We are requesting input from the Town of Fayette regarding the selection of important or representative viewpoints for inclusion in the Article 10 Application's Visual Impact Assessment (VIA). You are receiving this request as your municipality is located within the 5-mile visual study area for the Project. A hard copy of this consultation package can be provided upon request.

Any comments or feedback you may have are requested by May 11, 2020 and should be sent to the following:

- Via email to Judy Bartos: JBartos@trccompanies.com
- Via email to William Boer: William.Boer@nexteraenergy.com

We appreciate your input.

David Boxold
Project Manager, Development
561-694-4735 office
561-818-9638 cell
David.Boxold@NextEraEnergy.com

Bartos, Judith

From: Boxold, David <David.Boxold@nexteraenergy.com>
Sent: Tuesday, April 21, 2020 10:02 AM
To: fayettetownclerk@ottcmail.com
Cc: William Boer (Guest); Bartos, Judith
Subject: [EXTERNAL] RE: Trelina Solar Energy Center - Visual Impact Assessment
Attachments: Trelina Solar Energy Center - Visual Outreach Report (Town-Fayette).pdf

Dear Ms. Murray,
I'm resending the attachment, which includes both the cover letter and the report.

With kind regards
David

From: Boxold, David
Sent: Monday, April 20, 2020 6:29 PM
To: 'fayettetownclerk@ottcmail.com' <fayettetownclerk@ottcmail.com>
Cc: Boer, William <William.Boer@nexteraenergy.com>; Bartos, Judith <JBartos@trccompanies.com>
Subject: Trelina Solar Energy Center - Visual Impact Assessment

Dear Ms. Murray,
Attached please find an information request regarding the Trelina Solar Energy Center (the Project; Case No. 19-F-0366), an 80MW solar facility that is proposed in the Town of Waterloo with a 2022 commercial operations date.

We are requesting input from the Town of Fayette regarding the selection of important or representative viewpoints for inclusion in the Article 10 Application's Visual Impact Assessment (VIA). You are receiving this request as your municipality is located within the 5-mile visual study area for the Project. A hard copy of this consultation package can be provided upon request.

Any comments or feedback you may have are requested by May 11, 2020 and should be sent to the following:

- Via email to Judy Bartos: JBartos@trccompanies.com
- Via email to William Boer: William.Boer@nexteraenergy.com

We appreciate your input.

David Boxold
Project Manager, Development
561-694-4735 office
561-818-9638 cell
David.Boxold@NextEraEnergy.com

Bartos, Judith

From: Boxold, David <David.Boxold@nexteraenergy.com>
Sent: Monday, April 20, 2020 5:18 PM
To: townclerk@tyreny.com
Cc: Bartos, Judith; William Boer (Guest)
Subject: [EXTERNAL] Trelina Solar Energy Center - Visual Outreach Report
Attachments: Trelina Solar Energy Center - Visual Outreach Report (Town-Tyre).pdf

Dear Ms. Sosnowski,

Attached please find an information request regarding the Trelina Solar Energy Center (the Project; Case No. 19-F-0366), an 80MW solar facility that is proposed in the Town of Waterloo with a 2022 commercial operations date.

We are requesting input from the Town of Tyre regarding the selection of important or representative viewpoints for inclusion in the Article 10 Application's Visual Impact Assessment (VIA). You are receiving this request as your municipality is located within the 5-mile visual study area for the Project. A hard copy of this consultation package can be provided upon request.

Any comments or feedback you may have are requested by May 11, 2020 and should be sent to the following:

- Via email to Judy Bartos: JBartos@trccompanies.com
- Via email to William Boer: William.Boer@nexteraenergy.com

We appreciate your input.

David Boxold
Project Manager, Development
561-694-4735 office
561-818-9638 cell
David.Boxold@NextEraEnergy.com

Bartos, Judith

From: Boxold, David <David.Boxold@nexteraenergy.com>
Sent: Monday, April 20, 2020 5:11 PM
To: ngreer@senecafalls.com
Cc: William Boer (Guest); Bartos, Judith
Subject: [EXTERNAL] Trelina Solar Energy Center - Visual Outreach Report
Attachments: Trelina Solar Energy Center - Visual Outreach Report (Town-Seneca Falls).pdf

Dear Ms. Greer,

Attached please find an information request regarding the Trelina Solar Energy Center (the Project; Case No. 19-F-0366), an 80MW solar facility that is proposed in the Town of Waterloo with a 2022 commercial operations date.

We are requesting input from the Town of Seneca Falls regarding the selection of important or representative viewpoints for inclusion in the Article 10 Application's Visual Impact Assessment (VIA). You are receiving this request as your municipality is located within the 5-mile visual study area for the Project. A hard copy of this consultation package can be provided upon request.

Any comments or feedback you may have are requested by May 11, 2020 and should be sent to the following:

- Via email to Judy Bartos: JBartos@trccompanies.com
- Via email to William Boer:William.Boer@nexteraenergy.com

We appreciate your input.

David Boxold
Project Manager, Development
561-694-4735 office
561-818-9638 cell
David.Boxold@NextEraEnergy.com

From: Boxold, David
Sent: Monday, April 20, 2020 4:58 PM
To: 'tclerk@phelpsny.com' <tclerk@phelpsny.com>
Cc: Boer, William <William.Boer@nexteraenergy.com>; Bartos, Judith <JBartos@trccompanies.com>
Subject: Trelina Solar Energy Center - Visual Outreach Report

Bartos, Judith

From: Boxold, David <David.Boxold@nexteraenergy.com>
Sent: Monday, April 20, 2020 5:05 PM
To: townclerk@townofseneca.com
Cc: William Boer (Guest); Bartos, Judith
Subject: [EXTERNAL] Trelina Solar Energy Center - Visual Outreach Report
Attachments: Trelina Solar Energy Center - Visual Outreach Report (Town-Seneca).pdf

Dear Ms. Eagley,

Attached please find an information request regarding the Trelina Solar Energy Center (the Project; Case No. 19-F-0366), an 80MW solar facility that is proposed in the Town of Waterloo with a 2022 commercial operations date.

We are requesting input from the Town of Seneca regarding the selection of important or representative viewpoints for inclusion in the Article 10 Application's Visual Impact Assessment (VIA). Although your town has minimal predicted visibility, you are receiving this request as your municipality is located within the 5-mile visual study area for the Project. A hard copy of this consultation package can be provided upon request.

Any comments or feedback you may have are requested by May 11, 2020 and should be sent to the following:

- Via email to Judy Bartos: JBartos@trccompanies.com
- Via email to William Boer: William.Boer@nexteraenergy.com

We appreciate your input.

David Boxold
Project Manager, Development
561-694-4735 office
561-818-9638 cell
David.Boxold@NextEraEnergy.com

From: Boxold, David
Sent: Monday, April 20, 2020 4:52 PM
To: 'tproclerk@aol.com' <tproclerk@aol.com>
Cc: Boer, William <William.Boer@nexteraenergy.com>; Bartos, Judith <JBartos@trccompanies.com>
Subject: Trelina Solar Energy Center - Visual Outreach Report

Dear Ms. Prosser,

Attached please find an information request regarding the Trelina Solar Energy Center (the Project; Case No. 19-F-0366), an 80MW solar facility that is proposed in the Town of Waterloo with a 2022 commercial operations date.

We are requesting input from the Town of Junius regarding the Trelina Solar' selection of important or representative viewpoints for inclusion in the Article 10 Application's Visual Impact Assessment (VIA). Although your town has minimal

predicted visibility, you are receiving this request as your municipality is located within the 5-mile visual study area for the Project. A hard copy of this consultation package can be provided upon request.

Any comments or feedback you may have are requested by May 11, 2020 and should be sent to the following:

- Via email to Judy Bartos: JBartos@trccompanies.com
- Via email to William Boer: William.Boer@nexteraenergy.com

We appreciate your input.

David Boxold
Project Manager, Development
561-694-4735 office
561-818-9638 cell
David.Boxold@NextEraEnergy.com

Bartos, Judith

From: Boxold, David <David.Boxold@nexteraenergy.com>
Sent: Monday, April 20, 2020 4:59 PM
To: tclerk@phelpsny.com
Cc: William Boer (Guest); Bartos, Judith
Subject: [EXTERNAL] Trelina Solar Energy Center - Visual Outreach Report
Attachments: Trelina Solar Energy Center - Visual Outreach Report (Town-Phelps).pdf

Dear Ms. Nieskes,

Attached please find an information request regarding the Trelina Solar Energy Center (the Project; Case No. 19-F-0366), an 80MW solar facility that is proposed in the Town of Waterloo with a 2022 commercial operations date.

We are requesting input from the Town of Phelps regarding the Trelina Solar' selection of important or representative viewpoints for inclusion in the Article 10 Application's Visual Impact Assessment (VIA). Although your town has minimal predicted visibility, you are receiving this request as your municipality is located within the 5-mile visual study area for the Project. A hard copy of this consultation package can be provided upon request.

Any comments or feedback you may have are requested by May 11, 2020 and should be sent to the following:

- Via email to Judy Bartos: JBartos@trccompanies.com
- Via email to William Boer:William.Boer@nexteraenergy.com

We appreciate your input.

David Boxold
Project Manager, Development
561-694-4735 office
561-818-9638 cell
David.Boxold@NextEraEnergy.com

Bartos, Judith

From: Boxold, David <David.Boxold@nexteraenergy.com>
Sent: Monday, April 20, 2020 4:53 PM
To: tproclerk@aol.com
Cc: William Boer (Guest); Bartos, Judith
Subject: [EXTERNAL] Trelina Solar Energy Center - Visual Outreach Report
Attachments: Trelina Solar Energy Center - Visual Outreach Report (Town-Junius).pdf

Dear Ms. Prosser,

Attached please find an information request regarding the Trelina Solar Energy Center (the Project; Case No. 19-F-0366), an 80MW solar facility that is proposed in the Town of Waterloo with a 2022 commercial operations date.

We are requesting input from the Town of Junius regarding the Trelina Solar' selection of important or representative viewpoints for inclusion in the Article 10 Application's Visual Impact Assessment (VIA). Although your town has minimal predicted visibility, you are receiving this request as your municipality is located within the 5-mile visual study area for the Project. A hard copy of this consultation package can be provided upon request.

Any comments or feedback you may have are requested by May 11, 2020 and should be sent to the following:

- Via email to Judy Bartos: JBartos@trccompanies.com
- Via email to William Boer: William.Boer@nexteraenergy.com

We appreciate your input.

David Boxold
Project Manager, Development
561-694-4735 office
561-818-9638 cell
David.Boxold@NextEraEnergy.com

Bartos, Judith

From: Boxold, David <David.Boxold@nexteraenergy.com>
Sent: Monday, April 20, 2020 4:49 PM
To: lguinan@geneva.ny.us
Cc: William Boer (Guest); Bartos, Judith
Subject: [EXTERNAL] Trelina Solar Energy Center - Visual Outreach Report
Attachments: Trelina Solar Energy Center - Visual Outreach Report (City-Geneva).pdf

Dear Ms. Guinan,

Attached please find an information request regarding the Trelina Solar Energy Center (the Project; Case No. 19-F-0366), an 80MW solar facility that is proposed in the Town of Waterloo.

We are requesting input from the City of Geneva regarding the selection of important or representative viewpoints for inclusion in the Article 10 Application's Visual Impact Assessment (VIA). Although your town has minimal predicted visibility, you are receiving this request as your municipality is located within the 5-mile visual study area for the Project. A hard copy of this consultation package can be provided upon request.

Any comments or feedback you may have are requested by May 11, 2020 and should be sent to the following:

- Via email to Judy Bartos: JBartos@trccompanies.com
- Via email to William Boer: William.Boer@nexteraenergy.com

We appreciate your input.

David Boxold
Project Manager, Development
561-694-4735 office
561-818-9638 cell
David.Boxold@NextEraEnergy.com

David Boxold
Project Manager, Development
561-694-4735 office
561-818-9638 cell
David.Boxold@NextEraEnergy.com

Bartos, Judith

From: Boxold, David <David.Boxold@nexteraenergy.com>
Sent: Monday, April 20, 2020 4:34 PM
To: townclerk@townofgeneva.com
Cc: Bartos, Judith; William Boer (Guest)
Subject: [EXTERNAL] Trelina Solar Energy Center - Visual Outreach Report
Attachments: Trelina Solar Energy Center - Visual Outreach Report (Town-Geneva).pdf

Dear Ms. Naegele,

Attached please find an information request regarding the Trelina Solar Energy Center (the Project; Case No. 19-F-0366), which is proposed in the Town of Waterloo.

We are requesting input from the Town of Geneva regarding the Trelina Solar' selection of important or representative viewpoints for inclusion in the Article 10 Application's Visual Impact Assessment (VIA). Although your town has minimal predicted visibility, you are receiving this request as your municipality is located within the 5-mile visual study area for the Project. A hard copy of this consultation package can be provided upon request.

Any comments or feedback you may have are requested by May 11, 2020 and should be sent to the following:

- Via email to Judy Bartos: JBartos@trccompanies.com
- Via email to William Boer: William.Boer@nexteraenergy.com

We appreciate your input.

David Boxold
Project Manager, Development
561-694-4735 office
561-818-9638 cell
David.Boxold@NextEraEnergy.com

Bartos, Judith

From: Boxold, David <David.Boxold@nexteraenergy.com>
Sent: Monday, April 20, 2020 4:27 PM
To: 'sridley@townofwaterloo.org'
Cc: Bartos, Judith; William Boer (Guest)
Subject: [EXTERNAL] Trelina Solar Energy Center - Visual Outreach Report
Attachments: Trelina Solar Energy Center - Visual Outreach Report (Waterloo-Historian).pdf

Hi Sandy,
Hope you're doing well. I just emailed Don a copy of the visual outreach report. Note that the project map is on page 17 of the PDF. Happy to set up a call to discuss.

The attachment itself represents an information request regarding the Trelina Solar Energy Center (the Project; Case No. 19-F-0366). We are requesting input from the Town of Waterloo regarding the Applicant's selection of important or representative viewpoints for inclusion in the Article 10 Application's Visual Impact Assessment (VIA). We kindly request your input by May 11, 2020. A hard copy of this consultation package can be provided upon request.
If you have questions, please feel free to reach out.

Any comments or feedback on the report is requested by May 11, 2020 and should be sent to the following:

- Via email to Judy Bartos: JBartos@trccompanies.com
- Via email to William Boer: William.Boer@nexteraenergy.com

Again, happy to set up a call to discuss. We appreciate your input.

David Boxold
Project Manager, Development
561-694-4735 office
561-818-9638 cell
David.Boxold@NextEraEnergy.com

Bartos, Judith

From: Boxold, David <David.Boxold@nexteraenergy.com>
Sent: Monday, April 20, 2020 4:22 PM
To: Don Trout
Cc: William Boer (Guest); Bartos, Judith
Subject: [EXTERNAL] Trelina Solar Energy Center - Visual Outreach Report
Attachments: Trelina Solar Energy Center - Visual Outreach Report (Waterloo Superv).pdf

Hi Don,
The map that I mentioned is on page 17 of the PDF. Happy to set up a call to discuss.

The attachment itself represents an information request regarding the Trelina Solar Energy Center (the Project; Case No. 19-F-0366). We are requesting input from the Town of Waterloo regarding the Applicant's selection of important or representative viewpoints for inclusion in the Article 10 Application's Visual Impact Assessment (VIA). We kindly request your input by May 11, 2020. A hard copy of this consultation package can be provided upon request.
If you have questions, please feel free to reach out.

Any comments or feedback you may have are requested by May 11, 2020 and should be sent to the following:

- Via email to Judy Bartos: JBartos@trccompanies.com
- Via email to William Boer: William.Boer@nexteraenergy.com

We appreciate your input

David Boxold
Project Manager, Development
561-694-4735 office
561-818-9638 cell
David.Boxold@NextEraEnergy.com

TRELINA SOLAR ENERGY CENTER
ARTICLE 10 EXHIBIT 24

PHOTOSIMULATION CONTRAST RATING

ATTACHMENT 7

TRC Visual Impact Rating Form

This form is a simplified version of various federal agency visual impact rating systems. It includes concepts and applications sourced from:

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

Depending on the project location, a variety of visual impact assessment (VIA) guidance and established procedures exist as noted above that apply to management of federal lands that fall under a specific agency such as the U.S. Forest Service or Bureau of Land Management. These guidance documents vary in regards to agency specific rating systems or procedures and often begin with the evaluation of existing conditions such as scenic quality or presence of sensitive resource locations.

This form has been developed by TRC for efficient and streamlined use with projects that undergo state environmental permitting processes. It is assumed that visual resource inventories, terrain analyses, development of landscape similarity zones or viewshed analyses have already been performed in the project VIA according to state regulatory requirements or other visual policy. This form was developed to be used as a numerical rating system for the comparison of Existing Conditions (Before) vs. With Project (After) photosimulations of final selected viewpoint locations and is meant to accompany the project VIA.

1. How to Use the Visual Impact Rating Form

For evaluating visual impacts there are two parts to the form. Part 1 is *Visual Contrast Rating* which rates the Project as it contrasts against compositional visual elements of the viewpoint scene. This includes compositional contrasts against the existing and natural environment such as vegetation, water, sky, landform, or structures. The higher the rating total the higher the contrast. Part 2 is *Viewpoint Sensitivity Rating*. This section rates the sensitivity of the viewpoint location which inherently considers the importance of the viewpoint (if it falls within a visual resource area), duration of view, if it is a high use area, as well as general scenic quality. The higher the rating total, the more sensitive the viewpoint is. Part 3 is an overall *General Scenic Quality of the View* which rates the view of existing conditions only without the influence of the project.

The rating scale is as follows:

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

1.1. Degree of Contrast Criteria

None The element contrast is not visible or perceived.

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

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

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

2. Part 1 Visual Contrast Rating

Form Contrast: Form in this sense generally means the shape of an object or unification of shapes massed together by perceived pattern or color. In many rural undeveloped areas, the landscape may consist of homogenous or visually restful views of large shapes or shapes of color belonging to expanses of open field or forested areas. New project elements may provide a contrast or interruption against existing homogenous shapes within the view (strong). Conversely, there may be much visual existing clutter comprised of multiform shapes found in developed or urban areas where newly introduced project elements may better be visually absorbed in the view (weak).

Line Contrast: Line generally refers to the perceived edges of shapes as well as the orientation of these line edges. An undeveloped area at distance may be mostly horizontal line comprised of distant ridges or forest treetops as well as forest and field interfaces. New project elements may disrupt some of the line or they may introduce new vertically oriented lines as such as from a transmission line or wind farm (strong).

Texture Contrast: Trees and their leaves or buildings at close proximity will offer higher detail (strong). Texture and the level of discernible detail decreases with distance (weak). Objects at distance may appear as one homogenous texture or shape.

Color Contrast: Does the project color contrast greatly against color in the existing view (strong)? Color contrast may occur with the terrestrial background or the sky.

Project Scale Contrast/Spatial Dominance: Is the project size and scale dominant (strong), co-dominant, or subordinate (weak) in the view in relation to the rest of the surroundings?

Broken Horizon Line: Does the project remain below the horizon line (weak) or is the horizon line broken by project elements (strong)?

Visual Acuity: Visual acuity is the acuteness or clarity of vision, most often related to the amount of discernible detail or contrast with distance. Atmospheric conditions may also decrease visual acuity, especially on hazy humid days.

Amount of Project Clearing Perceived: The With Project (After) simulation may show extensive clearing that has occurred compared to existing conditions, thereby showing a large visual change from the project

(strong). In many cases, no clearing is required (none), or minimal clearing might be seen from a viewpoint location (weak or moderate).

Screening/Mitigation Needed: This category is treated in two ways. 1) Is the project at a particular viewpoint seen because of being mostly in the open which would require some type of vegetative or structural mitigation (strong) to obscure direct views? Conversely, is there some type of existing screening that blocks partial or whole views such as trees, buildings, or topography that act as visual impediments in the landscape (weak). Or 2) How important is it to mitigate at a certain area or how high is the visual absorption capacity? For example, there may be a clear unobstructed view of a new transmission structure in the view, but if there are existing transmission poles or cell towers, or distribution lines along the street in a more urban area providing similar utility development it may not be necessary to mitigate (weak). Is a substation being proposed where there is a clear view but within industrial development (weak)? Or, there may be visible modifications to an existing substation but proposed elements are visually absorbed by the substation because of "like" components and thereby requires no mitigation (weak).

3. Part 2 Viewpoint Sensitivity Rating

Within a Visual Resource: Is the viewpoint located within a visual resource as listed in the Visual Resources Inventory section of the VIA? This is a yes or no question, therefore either a rating 0 (none) or 3 (strong) should be applied. If yes, then viewer expectations and sensitivity may be higher.

View of Other Visual Resources: Can you see a visual resource listed in the Visual Resources Inventory from the viewpoint location in combination with the project? This is a yes or no question, therefore either a rating 0 (none) or 3 (strong) should be applied.

A Listed/Known Scenic Resource of Visual Quality: Is the viewpoint located within a listed or known scenic area of visual quality? This is a yes or no question, therefore either a rating 0 (none) or 3 (strong) should be applied. If yes, this location would also be identified as a visual resource as listed in the Visual Resources Inventory section of the VIA. It is evaluated in the Viewpoint Sensitivity Rating because there are often town by-laws, master plans, or regional planning documents that call out specifically named locations that have been designated as a scenic viewing area and is important to note. It means that the location has added importance to the community and if yes, then viewer expectations and sensitivity are likely higher. This will be used infrequently.

Number of Viewers/High Use Activity: An area of high use and high number of viewer will incur a greater amount of visual impact to the community (strong). These areas may consist of high destination type locales visited by the public such as recreational areas, shopping centers, densely populated areas, or highways with large traffic counts. A roadway may not always be considered as high use. There may be viewpoints along local rural roadways that have relatively very low traffic counts. This category accounts for the immediate vicinity. For example the simulation might only show a roadway, but a resident may be very nearby or behind the viewer.

Duration of View: The duration of views is categorized as Long Duration (strong), Short Duration (weak) or Infrequent (weak). Residents or workers with views from the workplace or day long use at a picnic area would be a long duration view. Short duration views imply movement and are transient, such as

passing the site on a highway, glimpsing a project from an open area on a hiking or snowmobile trail. A moderate duration view might be a destination type location such as a summit or historic landmark where the visitor seeks the location with purpose but only stays for a few hours. However care must be taken when attributing an area to a short duration view. There could be short duration views encountered frequently over distance, such as a snowmobile trail.

Presence of Existing Development: For this category we are looking at intactness and how much the landscape has been altered by the presence of people. Is there much existing development consisting of commercial, utility, or industrial development or densely populated residential or urban neighborhoods in the photo or near vicinity? If so, then the sense of place or importance may be diminished and decreases viewer sensitivity as a place that does not have high value and should be rated as weak. Conversely, the lack of existing development contributes to the intactness of a more undisturbed natural environment a gives a sense of greater value. However, development is not all negative. Some development may have altered the environment but has only "somewhat" changed the view over time and may not be as visually impactful, such as a farm and associated farm fields. In this case, the Presence of Existing Development could be rated as moderate.

Uniqueness of Landscape Compared to Rest of Study Area: Photographs for project simulations are generally taken within a designated study area. Landscape features or scenic quality in the study area shown in simulations may be found to be consistently similar or unvaried (weak). If the viewpoint shows a view that is unique to the area such as an outstanding water feature, a series of dramatic cliffs, or mountain views not typically found elsewhere in the vicinity then it should be rated as strong.

Presence of Water: Generally the presence of water implies greater scenic quality or importance. This is a yes or no question, therefore either a rating 0 (none) or 3 (strong) should be applied. If there is the presence of water and it is not very discernible in the view, then a rating of 2 (moderate) can be applied.

4. Part 3 Scenic Quality of the View

This section rates existing conditions only, without the influence of the project.

Each landscape expresses unique scenic qualities. Scenic attractiveness indicates the potential of a landscape to produce varying degrees of satisfaction, of positive physiological responses; such as reduced stress; positive psychological responses; and a general feeling of well-being.

Please consider the following when assessing existing scenic quality:

- Note that a higher rating of scenic quality does not always have to be within natural or rural environments. This can also occur within urban or other man-made cultural type environments that consist of pleasing building structures, hardscaping, or landscaping.

- Landscape Diversity. The degree of existing scenic quality is usually correlated with landscape diversity – the more natural diversity, generally, the greater the scenic quality. For example, landscapes with greater diversity in vegetation and topography are more likely to be scenic than flat landscapes with uniform vegetation. Water features such as rivers or ponds tend to add diversity as do natural rock outcroppings. High scenic quality often results from the contrast among landscape features such as field and forest, steep and flat or rolling, village and countryside.

- Intactness. Another relevant factor in determining scenic quality is the intactness of the landscape. A lack of landscape degradation contributes to the "intactness" of the landscape. Landscapes where there is a clear underlying order or logic tend to be more visually appealing. Natural landscapes exhibiting little evidence of human alteration (e.g. an intact prairie landscape) are likely to have high visual as well as natural value. In the human (built) landscapes too much diversity can lead to visual chaos or clutter, for example strip development in which every business vies for one's attention by looking different from its neighbor. But landscapes which retain 19th early 20th century landscape patterns, places with split-rail fencing or stone walls are often visually appealing in their simplicity and clear connections of use to the land itself.

- Focal Point. Focal points are elements in the landscape that stand out due to their contrasting shape (form), color or pattern. Often distinct focal points enhance scenic quality. They can be natural elements such as a lake, river or mountain; or they can be built elements such as an important public building, or a central green.

- Unity in a landscape provides a sense of order.

- Vividness is related to variety as well as contrast adding clearly defined visual interest.

- Coherence describes the ability of a landscape to be seen as intelligible rather than chaotic.

- Harmony exhibits a combination of parts of a landscape into a pleasing or orderly whole and a state of agreement, congruity, or proportionate arrangement of form, line, color, and texture.

- Pattern includes pleasing repetitions and configurations of line, form, color, or textures.

- *Strong values* might consist of areas where landform, vegetation patterns, water characteristics, and cultural features combine to have unique and strong positive attributes of variety, unity, vividness, mystery, intactness, order, harmony, uniqueness, pattern, and balance.

- *Moderate values* are generally areas where landform, vegetation patterns, water characteristics, and cultural features use combine to provide ordinary or common scenic quality. These landscapes have generally positive, yet common, attributes of variety, unity, vividness, mystery, intactness, order, harmony, uniqueness, pattern, and balance. Normally they would form the basic typical matrix within the study area.

- Weak values are areas where landform, vegetation patterns, water characteristics, and cultural land use have lower scenic quality. Often water and rockform of any consequence are missing in these landscapes. These landscapes have weak or missing attributes of variety, unity, vividness, mystery, intactness, order, -harmony, uniqueness, and balance.

5. Assessing the Outcome of the Rating

The rating system and those developed by the other aforementioned agencies are designed to guide a subjective process (visual observation) objectively, by using straightforward common language that involves the discussion of compositional elements. A rating system is applied from low to high with the intent to provide consistent comparison between or across subject matter.

The simulations will show varying distance zones and landscape zones. The rating is also meant to provide comparison of the project within these zones as seen across the study area. The rating form is not meant as a public survey or to assess or appeal to how one feels about the development at a more emotional level.

However it should be noted that when evaluating the outcome of the ratings, a high rating of form or texture contrast for example, does not necessarily imply a negative or disturbing result. Nor may the project be offensive to the average person. As well, there may be visual impacts implied by the rating forms but they may not be adverse.

In many cases the building design or choice of building material can be aesthetic and visually pleasing to the viewer and/or remain consistent with other development in the area. With utility development for example, a battery storage facility that may have a high texture, line, or form rating that is proposed within a seaside environment may incorporate weathered cedar shakes, white trim, and dormers into the building design in order to remain similar to cape style houses in the area. Although compositionally it may have a high contrast rating against what is currently there, the project may be considered to be aesthetically pleasing and interesting to look at. Similarly, a converter building project in a rural area may elect to design the building to look like a red barn. Although the proposed building may provide a large form with new vertical elements against the current landscape, and its red color may contrast highly against either green vegetation or white winter snow, the design choice of a red barn could be considered aesthetically pleasing and suitable while also remaining consistent with other large development (farms) in the area. Or perhaps there are brick materials proposed as building materials or hardscape for a project which could be considered aesthetically pleasing and visually interesting. In the case of solar development, although a solar panel could provide color contrast, the look of a solar panel itself may not be displeasing. Although basic solar panel design cannot be changed, the project can be combined with vegetative mitigation of native flowering and pollinator species implemented and spaced in a naturalized manner resulting in overall aesthetic and interesting landscape screening.

The rating forms are not standalone nor are results provided without context. The rating results are typically accompanied by a summary discussion that considers project design aspects as noted in the above examples as well as how the overall project fits within the landscape.

TRC Visual Impact Rating Form

Project: Trelina Solar Energy Center	Date: 6.29.2020
Viewpoint Number: 3	Preparer: JBartos
Viewpoint Location: Packwood and Maney Road, Waterloo	
Viewpoint Description: View southeast of agricultural field from local roadway. Near resident.	
Landscape Similarity Zone: 1	
Viewer Type (check all that apply): ☒ Resident ☒ Commuter/Traveler ☐ Recreational ☐ Worker	
Seasonal Condition: ☐ Leaf On ☒ Leaf Off	

Visual Rating Element	Rating	Notes
Part 1 Visual Contrast Rating		
Form Contrast	1.5	Form is similar to background trees
Line Contrast	1.0	Similar horizontal line to what is existing in landscape
Texture Contrast	2.0	Texture contrasts moderately against landscape. Discernible detail is not high
Color Contrast	2.0	Color contrast is apparent but is not strong due to similar value
Project Scale Contrast/Spatial Dominance	1.0	Project scale is not strong at this distance
Broken Horizon Line	0	
Visual Acuity	2.0	Some detail perceived and Project is definitely visibile
Amount of Project Clearing Seen	0	
Screening/Mitigation Needed	3	Is in an open field but there is some road offset
Total	**12.5**	
Part 2 Viewpoint Sensitivity Rating		
Within a Visual Resource*	0	
View of Other Visual Resource with Project*	0	
A Listed/Known Scenic Resource of Visual Quality*	0	
Number of Viewers (Low or High Use Activity)	2	A moderately traveled local road
Duration of View	1.5	Views from road are intermittent. Very few residence near VP
Presence of Existing Development	1	Some noted in view but is far away
Uniqueness of Landscape Compared to Region	1.5	Typical for NY in this area
Presence of Water	0	
Total	**6**	
Part 3 Scenic Quality		
General Scenic Quality of the View	**2**	A typical wide expanse of open field view is restful

** these visual rating elements are yes or no answers. Therefore, a rating of 0 or 3 should be applied*

Rating Scale	
0	None
1	Weak
2	Moderate
3	Strong

TRC Visual Impact Rating Form

Project: Trelina Solar Energy Center	Date: 06/29/2020
Viewpoint Number: 3	Preparer: Michael Ross
Viewpoint Location: Packwood and Maney Road, Waterloo	
Viewpoint Description: View southeast of agricultural field from local roadway. Near resident.	
Landscape Similarity Zone: 1	
Viewer Type (check all that apply): ☒ Resident ☒ Commuter/Traveler ☐ Recreational ☐ Worker	
Seasonal Condition: ☐ Leaf On ☒ Leaf Off	

Visual Rating Element	Rating	Notes
Part 1 Visual Contrast Rating		
Form Contrast	2	The form of the solar arrays is narrow and linear and unnatural as well however, this unnatural form does not consume the majority of the landscape in this view due to layout configuration which helps to minimize the overall impact of the natural surroundings.
Line Contrast	1.5	The line of the solar arrays is strong and solid but, follows the natural terrain, horizon line, and wood line creating minimum contrast.
Texture Contrast	1.5	Although the solar arrays are man-made, which contrast with the natural landscape, the distance and location of the arrays helps to "soften" the look and feel of the structures against the smooth terrain in the foreground and vegetation in the wood line in the background.
Color Contrast	2	Even though the steel gray colors of the man-made arrays and fencing play off the colors of the clouds and sky, there is contrast with the greens and earth tones found within the foreground and background of this view.
Project Scale Contrast/Spatial Dominance	1.5	The length of the project dominates in this view however, the overall area covered is not completely discernable due to angle location and distance creating less contrast and dominance within this view.
Broken Horizon Line	0	The horizon line is not broken in this view.
Visual Acuity	1.5	Some discernable detail of the arrays and fence line are visible within this view allowing for a better interpretation of the structures being proposed.
Amount of Project Clearing Seen	1	A smaller percentage of project clearing of the existing wood line can be observed within this view.
Screening/Mitigation Needed	3	Significant screening efforts will be needed to mitigate this view.
Total	**14**	
Part 2 Viewpoint Sensitivity Rating		
Within a Visual Resource*	0	
View of Other Visual Resource with Project*	0	
A Listed/Known Scenic Resource of Visual Quality*	0	
Number of Viewers (Low or High Use Activity)	1.5	Although the area is rural in nature, there are several residential structures and a local vehicular road present.
Duration of View	1.5	A combination of long-term views from the residential structures and short-term views from the passersby in vehicles will consistently occur in this location.
Presence of Existing Development	1.5	There are several residential properties and structures present at this viewpoint and numerous other small-town type residential properties and businesses in the immediate area.
Uniqueness of Landscape Compared to Region	1	This landscape is typical agricultural farmland in this region with little to no significance pertaining to uniqueness of existing views.
Presence of Water	0	No water can be observed within this view.

Total	**5.5**	
Part 3 Scenic Quality		
General Scenic Quality of the View	**1**	The scenic quality is minimum with little to no aesthetic value.

** these visual rating elements are yes or no answers. Therefore, a rating of 0 or 3 should be applied*

Rating Scale	
0	None
1	Weak
2	Moderate
3	Strong

TRC Visual Impact Rating Form

Project: Trelina Solar Energy Center	Date: June 29, 2020
Viewpoint Number: 3	Preparer: Kirsten Johnson
Viewpoint Location: Packwood and Maney Road, Waterloo	
Viewpoint Description: View southeast of agricultural field from local roadway. Near resident.	
Landscape Similarity Zone: 1	
Viewer Type (check all that apply): ☒ Resident ☒ Commuter/Traveler ☐ Recreational ☐ Worker	
Seasonal Condition: ☐ Leaf On ☒ Leaf Off	

Visual Rating Element	Rating	Notes
Part 1 Visual Contrast Rating		
Form Contrast	2	Because the panels are set so far back from the road, they almost blend in to the treeline
Line Contrast	1	The orientation of the panels is such that they match the horizon line
Texture Contrast	1	Again – because o the distance of the panels from the road, they begin to blend with the tree line in the distance
Color Contrast	2.5	significant contrast with the existing vegetation
Project Scale Contrast/Spatial Dominance	2	co-dominant
Broken Horizon Line	3	horizon is flat up to tree line and panels completely break the horizon line
Visual Acuity	2	
Amount of Project Clearing Seen	0	
Screening/Mitigation Needed	3	screening will be requires
Total	**16.5**	
Part 2 Viewpoint Sensitivity Rating		
Within a Visual Resource*	0	
View of Other Visual Resource with Project*	0	
A Listed/Known Scenic Resource of Visual Quality*	0	
Number of Viewers (Low or High Use Activity)	2	likely a moderate amount of traffic on this paved rural roadway
Duration of View	2.5	residences located across the road from the panel area will experience long duration views; vehicle traffic will experience short duration
Presence of Existing Development	1.5	scattered residences and farm fields
Uniqueness of Landscape Compared to Region	0	
Presence of Water	0	
Total	**6**	
Part 3 Scenic Quality		
General Scenic Quality of the View	**0.5**	

** these visual rating elements are yes or no answers. Therefore, a rating of 0 or 3 should be applied*

Rating Scale	
0	None
1	Weak
2	Moderate
3	Strong

TRC Visual Impact Rating Form

Project: Trelina Solar Energy Center	Date:6.29.2020
Viewpoint Number: 11	Preparer: JBartos
Viewpoint Location: Packwood Road, Waterloo	
Viewpoint Description: View south of agricultural field from local roadway. Near resident.	
Landscape Similarity Zone: 1	
Viewer Type (check all that apply): ☒ Resident ☒ Commuter/Traveler ☐ Recreational ☐ Worker	
Seasonal Condition: ☐ Leaf On ☒ Leaf Off	

Visual Rating Element	Rating	Notes
Part 1 Visual Contrast Rating		
Form Contrast	2	Horizontal form is similar to that of landscape
Line Contrast	1.5	Similar horizontal line to terrain. Any vertical line is weak
Texture Contrast	1.5	Some texture difference noted but contrasts slightly with landscape
Color Contrast	2.5	Color contrast is moderate to strong in this view
Project Scale Contrast/Spatial Dominance	2	Scale is not outrageous nor incompatible to scale of objects in view0.5
Broken Horizon Line	0.5	Slightly
Visual Acuity	2.5	
Amount of Project Clearing Seen	0	
Screening/Mitigation Needed	3	None of the Project has natural screening
Total	**15.5**	
Part 2 Viewpoint Sensitivity Rating		
Within a Visual Resource*	0	
View of Other Visual Resource with Project*	0	
A Listed/Known Scenic Resource of Visual Quality*	0	
Number of Viewers (Low or High Use Activity)	2	Moderate use local road.
Duration of View	1.5	Views from road are short duration. Long duration view for one resident
Presence of Existing Development	0	Only utility development
Uniqueness of Landscape Compared to Region	1.5	Typical for NY in this area
Presence of Water	0	
Total	**5**	
Part 3 Scenic Quality		
General Scenic Quality of the View	**1.5**	Restful open field view. Utility development in view.

** these visual rating elements are yes or no answers. Therefore, a rating of 0 or 3 should be applied*

Rating Scale	
0	None
1	Weak
2	Moderate
3	Strong

TRC Visual Impact Rating Form

Project: Trelina Solar Energy Center	Date: 06/29/2020
Viewpoint Number: 11	Preparer: Michael Ross
Viewpoint Location: Packwood Road, Waterloo	
Viewpoint Description: View south of agricultural field from local roadway. Near resident.	
Landscape Similarity Zone: 1	
Viewer Type (check all that apply): ☒ Resident ☒ Commuter/Traveler ☐ Recreational ☐ Worker	
Seasonal Condition: ☐ Leaf On ☒ Leaf Off	

Visual Rating Element	Rating	Notes
Part 1 Visual Contrast Rating		
Form Contrast	2.5	The form of the solar arrays in this view is foreign to the natural landscape and rigid as well creating quite a bit of contrast with the natural surroundings.
Line Contrast	2	The lines created by the tubing in the fencing and edges of the solar arrays is strong creating vertical visual impact and contrast with the natural surround landscape.
Texture Contrast	1.5	Although appearing somewhat "smooth" in look, the man-made materials of the fencing and arrays contrast with the natural vegetation of the existing wood line in the background and grasses found in the foreground.
Color Contrast	2	The steel gray colors of the man-made arrays and fencing contrast with the natural green and earth tone colors found with the grasses in the foreground and the wood line vegetation in the background of this view.
Project Scale Contrast/Spatial Dominance	1.5	The man-made project consumes a large portion of the space available in the farm field found in this view however, the solar arrays do feel like they are confined and "boxed in" by the surrounding existing wood line vegetation.
Broken Horizon Line	0.5	A very small portion of the horizon line is broken in this view.
Visual Acuity	1.5	Some good discernable detail of a portion of the arrays and most of the fence line is visible within this view allowing for a better interpretation of the structures actual appearance.
Amount of Project Clearing Seen	0.5	It can be observed that a small island or patch of existing vegetation within the farm field will be removed/cleared within this view.
Screening/Mitigation Needed	3	Significant screening efforts will be needed to mitigate this view.
Total	**15**	
Part 2 Viewpoint Sensitivity Rating		
Within a Visual Resource*	0	
View of Other Visual Resource with Project*	0	
A Listed/Known Scenic Resource of Visual Quality*	0	
Number of Viewers (Low or High Use Activity)	1.5	Although the area is rural in nature, there are a number of residential structures and local vehicular roads present.
Duration of View	1.5	A combination of long-term views from the residential structures and short-term views from the passersby in vehicles will consistently occur in this location.
Presence of Existing Development	1.5	There are a number residential properties and structures that are present at this viewpoint. Additionally, numerous other small-town type residential properties and businesses such as a local public golf course can be found in the immediate area.
Uniqueness of Landscape Compared to Region	1	This landscape is typical agricultural farmland in this region with little to no significance pertaining to uniqueness of existing views.
Presence of Water	0	No water can be observed within this view.

Total	**5.5**	
Part 3 Scenic Quality		
General Scenic Quality of the View	**1**	The overall general scenic quality of this view is minimal.

** these visual rating elements are yes or no answers. Therefore, a rating of 0 or 3 should be applied*

Rating Scale	
0	None
1	Weak
2	Moderate
3	Strong

TRC Visual Impact Rating Form

Project: Trelina Solar Energy Center	Date: June 29, 2020
Viewpoint Number: 11	Preparer: Kirsten Johnson
Viewpoint Location: Packwood Road, Waterloo	
Viewpoint Description: View south of agricultural field from local roadway. Near resident.	
Landscape Similarity Zone: 1	
Viewer Type (check all that apply): ☒ Resident ☒ Commuter/Traveler ☐ Recreational ☐ Worker	
Seasonal Condition: ☐ Leaf On ☒ Leaf Off	

Visual Rating Element	Rating	Notes
Part 1 Visual Contrast Rating		
Form Contrast	3	
Line Contrast	2	the fencing follows the horizontal line of the woodline in the distance, but the panels create vertical lines which contrast with existing features
Texture Contrast	2.5	each panel array is distinct, fence posts are very visible
Color Contrast	2.5	
Project Scale Contrast/Spatial Dominance	1.5	the setback from the roads makes the arrays appear co-dominant
Broken Horizon Line	3	definitively blocks view of the horizon
Visual Acuity	2	
Amount of Project Clearing Seen	0.5	minimal clearing of small patch of trees
Screening/Mitigation Needed	2.5	
Total	**17**	
Part 2 Viewpoint Sensitivity Rating		
Within a Visual Resource*	0	
View of Other Visual Resource with Project*	0	
A Listed/Known Scenic Resource of Visual Quality*	0	
Number of Viewers (Low or High Use Activity)	1.5	from traffic on roads and adjacent residences
Duration of View	2	from residence, long duration, from road, short duration
Presence of Existing Development	0.5	some powerlines and associated infrastructure are visible in the distance
Uniqueness of Landscape Compared to Region	0	
Presence of Water	0	
Total	**4**	
Part 3 Scenic Quality		
General Scenic Quality of the View	**0.5**	

** these visual rating elements are yes or no answers. Therefore, a rating of 0 or 3 should be applied*

Rating Scale	
0	None
1	Weak
2	Moderate
3	Strong

TRC Visual Impact Rating Form

Project: Trelina Solar Energy Center	Date:6.29.2020
Viewpoint Number: 19	Preparer: JBartos
Viewpoint Location: Border City Road (Route 110), Waterloo	
Viewpoint Description: View northeast from semi-urban area at busy travel corridor	
Landscape Similarity Zone: 3	
Viewer Type (check all that apply): ☐ Resident ☒ Commuter/Traveler ☐ Recreational ☒ Worker	
Seasonal Condition: ☐ Leaf On ☒ Leaf Off	

Visual Rating Element	Rating	Notes
Part 1 Visual Contrast Rating		
Form Contrast	1	Similar to what is in landscape
Line Contrast	1	Similar to what is in landscape
Texture Contrast	0.5	Very weak
Color Contrast	1.5	Similar value but hue offers some contrast
Project Scale Contrast/Spatial Dominance	0.5	Scale is very small in view
Broken Horizon Line	0	
Visual Acuity	1	Can be seen but is not very discernible and most of Project screened
Amount of Project Clearing Seen	0	
Screening/Mitigation Needed	1	Not much needed
Total	**6.5**	
Part 2 Viewpoint Sensitivity Rating		
Within a Visual Resource*	0	
View of Other Visual Resource with Project*	0	
A Listed/Known Scenic Resource of Visual Quality*	0	
Number of Viewers (Low or High Use Activity)	1.5	Road is more heavily traveled than others in area. Several people in the church left in photo may have views but not a high number.
Duration of View	1	Roadway views of such a small portion of project is short. Longer term views in building but is assumed intermittent and most of Project is screened.
Presence of Existing Development	2	Church left of photo, commercial down the road right in photo.
Uniqueness of Landscape Compared to Region	0.5	
Presence of Water	0	
Total	**5**	
Part 3 Scenic Quality		
General Scenic Quality of the View	**0.5**	

** these visual rating elements are yes or no answers. Therefore, a rating of 0 or 3 should be applied*

Rating Scale	
0	None
1	Weak
2	Moderate
3	Strong

TRC Visual Impact Rating Form

Project: Trelina Solar Energy Center	Date: 06/29/2020
Viewpoint Number: 19	Preparer: Michael Ross
Viewpoint Location: Border City Road (Route 110), Waterloo	
Viewpoint Description: View northeast from semi-urban area at busy travel corridor	
Landscape Similarity Zone: 3	
Viewer Type (check all that apply): ☐ Resident ☒ Commuter/Traveler ☐ Recreational ☒ Worker	
Seasonal Condition: ☐ Leaf On ☒ Leaf Off	

Visual Rating Element	Rating	Notes
Part 1 Visual Contrast Rating		
Form Contrast	1	Although the overall form of the project can be observed in this view, the solar arrays only present some contrast in form due to location and distance of the project site.
Line Contrast	1.5	The line created by the solar array field cutting across the existing vegetation of the wood line in the background is noticeable and creates some additional contrast already present from the color banding of the different types of grasses in the middle ground of this view.
Texture Contrast	0.5	Minimal textures of the solar array field and/or fencing can be observed in this view due to location and distance.
Color Contrast	1.5	The steel gray colors of the man-made arrays and fencing contrast with the natural green and earth tone colors found with the grasses in the middle ground and the wood line vegetation in the background of this view.
Project Scale Contrast/Spatial Dominance	1	It can be observed that the project uses a large portion of in the farm field found in this view however, the distance and location minimizes impact, contrast, and dominance.
Broken Horizon Line	0	The horizon line is not broken in this view.
Visual Acuity	0.5	Minimal details of the arrays and fence line can be discerned within this view due to location and distance.
Amount of Project Clearing Seen	0	No project clearing can be observed in this view.
Screening/Mitigation Needed	1.5	Some screening efforts will be needed to mitigate this view.
Total	**7.5**	
Part 2 Viewpoint Sensitivity Rating		
Within a Visual Resource*	0	
View of Other Visual Resource with Project*	0	
A Listed/Known Scenic Resource of Visual Quality*	0	
Number of Viewers (Low or High Use Activity)	2	The project is located just outside of town and there are a number of residential structures businesses, and local vehicular roads present.
Duration of View	1.5	A combination of long-term views from the residential structures and short-term views from the passersby in vehicles will consistently occur in this location.
Presence of Existing Development	2	There are a number residential properties and structures that are present at this viewpoint. Additionally, numerous other small-town type residential properties and businesses can be found in the immediate area.
Uniqueness of Landscape Compared to Region	1	This landscape is typical for a rural small town in this region with little to no significance pertaining to uniqueness of existing views.
Presence of Water	0	No water can be observed within this view.
Total	**6.5**	

Part 3 Scenic Quality		
General Scenic Quality of the View	**1**	The overall general scenic quality of this view is minimal.

** these visual rating elements are yes or no answers. Therefore, a rating of 0 or 3 should be applied*

Rating Scale	
0	None
1	Weak
2	Moderate
3	Strong

TRC Visual Impact Rating Form

Project: Trelina Solar Energy Center	Date: June 29, 2020
Viewpoint Number: 19	Preparer: Kirsten Johnson
Viewpoint Location: Border City Road (Route 110), Waterloo	
Viewpoint Description: View northeast from semi-urban area at busy travel corridor	
Landscape Similarity Zone: 3	
Viewer Type (check all that apply): ☐ Resident ☒ Commuter/Traveler ☐ Recreational ☒ Worker	
Seasonal Condition: ☐ Leaf On ☒ Leaf Off	

Visual Rating Element	Rating	Notes
Part 1 Visual Contrast Rating		
Form Contrast	1	some contrast from present view, but generally due to distance and existing structures contrast is minimal
Line Contrast	0.5	panels follow existing horizon line
Texture Contrast	0.5	due to distance and orientation, panels appear as one mass object
Color Contrast	2.5	significantly different from vegetation
Project Scale Contrast/Spatial Dominance	1	from this viewpoint, project is small proportion of view
Broken Horizon Line	0	
Visual Acuity	0.5	
Amount of Project Clearing Seen	0	
Screening/Mitigation Needed	0.5	from this vantage, complexity of surroundings to me makes screening seem unnecessary
Total	**6.5**	
Part 2 Viewpoint Sensitivity Rating		
Within a Visual Resource*	0	
View of Other Visual Resource with Project*	0	
A Listed/Known Scenic Resource of Visual Quality*	0	
Number of Viewers (Low or High Use Activity)	2.5	heavily trafficked road
Duration of View	1	this viewpoint is from driveway of a residence; however residence is set far from road; user on the road will experience short duration views
Presence of Existing Development	1	substantial existing development
Uniqueness of Landscape Compared to Region	0	
Presence of Water	0	
Total	**4.5**	
Part 3 Scenic Quality		
General Scenic Quality of the View	**0**	

** these visual rating elements are yes or no answers. Therefore, a rating of 0 or 3 should be applied*

Rating Scale	
0	None
1	Weak
2	Moderate
3	Strong

TRC Visual Impact Rating Form

Project: Trelina Solar Energy Center	Date:6.29.2020
Viewpoint Number: 20	Preparer: JBartos
Viewpoint Location: Pre Emption St, Geneva/Waterloo	
Viewpoint Description: Western side of Project view east towards agricultural field	
Landscape Similarity Zone: 1	
Viewer Type (check all that apply): ☒ Resident ☒ Commuter/Traveler ☐ Recreational ☐ Worker	
Seasonal Condition: ☐ Leaf On ☒ Leaf Off	

Visual Rating Element	Rating	Notes
Part 1 Visual Contrast Rating		
Form Contrast	2.5	Form varies greatly from existing but still maintains horizontal aspect
Line Contrast	2.5	Maintains similar horizontal line. Moderate to strong vertical lines in view
Texture Contrast	2	Text is incongruous to surroundings but somewhat moderate
Color Contrast	2.5	Darkness of objects perceived
Project Scale Contrast/Spatial Dominance	2	Still a low profile Project but proximity gives a larger scale not fitting in surroundings
Broken Horizon Line	2	Horizon line is broken but not a strong vertical component
Visual Acuity	2.5	Panels in close proximity
Amount of Project Clearing Seen	0	All in open land clearing not needed
Screening/Mitigation Needed	3	Not all of project is visible but what can be seen is.
Total	**19**	
Part 2 Viewpoint Sensitivity Rating		
Within a Visual Resource*	0	
View of Other Visual Resource with Project*	0	
A Listed/Known Scenic Resource of Visual Quality*	0	
Number of Viewers (Low or High Use Activity)	2	Somewhat heavily traveled road
Duration of View	1	Short durations views from roadway
Presence of Existing Development	0.5	None really seen
Uniqueness of Landscape Compared to Region	1	Typical of this part of NY
Presence of Water	0	
Total	**4.5**	
Part 3 Scenic Quality		
General Scenic Quality of the View	**1.5**	

** these visual rating elements are yes or no answers. Therefore, a rating of 0 or 3 should be applied*

Rating Scale	
0	None
1	Weak
2	Moderate
3	Strong

TRC Visual Impact Rating Form

Project: Trelina Solar Energy Center	Date: 06/29/2020
Viewpoint Number: 20	Preparer: Michael Ross
Viewpoint Location: Pre Emption St, Geneva/Waterloo	
Viewpoint Description: Western side of Project view east towards agricultural field	
Landscape Similarity Zone: 1	
Viewer Type (check all that apply): ☒ Resident ☒ Commuter/Traveler ☐ Recreational ☐ Worker	
Seasonal Condition: ☐ Leaf On ☒ Leaf Off	

Visual Rating Element	Rating	Notes
Part 1 Visual Contrast Rating		
Form Contrast	3	The size and location of the man-made solar arrays and fencing create significant contrast in form with the existing flat farmland and less defined vegetation.
Line Contrast	2.5	The line created by the solar array field and fencing does mimic the existing grade and terrain of the landscape however, there are numerous broken, very well defined, and strong, short, horizontal and vertical lines that are created by these new man-made structures creating significant contrast.
Texture Contrast	2	The smooth solar panels and texture of the fencing contrast with the farmland and existing natural vegetation.
Color Contrast	2.5	The large band of steel gray colors of the man-made arrays and fencing contrast significantly with the natural earth tone colors found in the farm field and existing vegetation.
Project Scale Contrast/Spatial Dominance	2.5	The project dominates this view and consumes a significant portion of the land creating contrast with the existing surroundings.
Broken Horizon Line	2	Most of the horizon line is broken in this view.
Visual Acuity	2	Details of the arrays and fence line can be discerned within this view due to location and distance.
Amount of Project Clearing Seen	0	No project clearing can be observed in this view.
Screening/Mitigation Needed	2.5	Screening efforts will be needed to mitigate this view.
Total	**19**	
Part 2 Viewpoint Sensitivity Rating		
Within a Visual Resource*	0	
View of Other Visual Resource with Project*	0	
A Listed/Known Scenic Resource of Visual Quality*	0	
Number of Viewers (Low or High Use Activity)	1.5	The project is located just outside of town and there are a few residential structures and a local vehicular road present.
Duration of View	1.5	A combination of long-term views from the residential structures and short-term views from the passersby in vehicles will consistently occur in this location.
Presence of Existing Development	2	There are a few residential properties and structures that are present at this viewpoint. Additionally, numerous other small-town type residential properties and businesses can be found in the immediate area.
Uniqueness of Landscape Compared to Region	1	This landscape is typical for a rural small town in this region with little to no significance pertaining to uniqueness of existing views.
Presence of Water	0	No water can be observed within this view.
Total	**6**	

Part 3 Scenic Quality		
General Scenic Quality of the View	**1**	The overall general scenic quality of this view is minimal.

** these visual rating elements are yes or no answers. Therefore, a rating of 0 or 3 should be applied*

Rating Scale	
0	None
1	Weak
2	Moderate
3	Strong

TRC Visual Impact Rating Form

Project: Trelina Solar Energy Center	Date: June 29, 2020
Viewpoint Number: 20	Preparer: Kirsten Johnson
Viewpoint Location: Pre Emption St, Geneva/Waterloo	
Viewpoint Description: Western side of Project view east towards agricultural field	
Landscape Similarity Zone: 1	
Viewer Type (check all that apply): ☒ Resident ☒ Commuter/Traveler ☐ Recreational ☐ Worker	
Seasonal Condition: ☐ Leaf On ☒ Leaf Off	

Visual Rating Element	Rating	Notes
Part 1 Visual Contrast Rating		
Form Contrast	3	
Line Contrast	3	creates new vertical features
Texture Contrast	3	
Color Contrast	3	significant difference from vegetation
Project Scale Contrast/Spatial Dominance	2.5	nothing really in the field, but it appears some filed area has been maintained
Broken Horizon Line	3	
Visual Acuity	3	panel arrays are distinctly visible, and discernible from fence and natural surroundings
Amount of Project Clearing Seen	0	
Screening/Mitigation Needed	2	the area from which the photo was taken would need screening but from the aerial imagery it seems much of this panel array would be screened by existing vegetation
Total	**23.5**	
Part 2 Viewpoint Sensitivity Rating		
Within a Visual Resource*	0	
View of Other Visual Resource with Project*	0	
A Listed/Known Scenic Resource of Visual Quality*	0	
Number of Viewers (Low or High Use Activity)	1.5	paved rural road
Duration of View	0.5	users would have to stop to experience more than a very short duration view
Presence of Existing Development	3	project would constitute only development in the view
Uniqueness of Landscape Compared to Region	0	
Presence of Water	0	
Total	**5**	
Part 3 Scenic Quality		
General Scenic Quality of the View	**0**	

** these visual rating elements are yes or no answers. Therefore, a rating of 0 or 3 should be applied*

Rating Scale	
0	None
1	Weak
2	Moderate
3	Strong

TRC Visual Impact Rating Form

Project: Trelina Solar Energy Center	Date: 6.29.2020
Viewpoint Number: 22	Preparer: JBartos
Viewpoint Location: Serven Road, Waterloo	
Viewpoint Description: View east towards agricultural field. Near residents	
Landscape Similarity Zone: 1	
Viewer Type (check all that apply): ☒ Resident ☐ Commuter/Traveler ☐ Recreational ☐ Worker	
Seasonal Condition: ☐ Leaf On ☒ Leaf Off	

Visual Rating Element	Rating	Notes
Part 1 Visual Contrast Rating		
Form Contrast	2	Form similar to existing background trees
Line Contrast	1.5	Horizontal line similar to terran
Texture Contrast	0.5	Texture difference not really noted
Color Contrast	2	Color is different than what is in existing but is not extreme
Project Scale Contrast/Spatial Dominance	1	Scale is not large and does not dominate the view
Broken Horizon Line	0	
Visual Acuity	1	Is visible but no discernible detail
Amount of Project Clearing Seen	0	
Screening/Mitigation Needed	2	Road offset helps with moderating views but this portion of project is visible. Is partially screened by existing woods
Total	**10**	
Part 2 Viewpoint Sensitivity Rating		
Within a Visual Resource*	0	
View of Other Visual Resource with Project*	0	
A Listed/Known Scenic Resource of Visual Quality*	0	
Number of Viewers (Low or High Use Activity)	1.5	Local low traveled road with a few but low number of residences
Duration of View	2	Short duration from the roadway, longer duration from residensces
Presence of Existing Development	1.5	Some in view
Uniqueness of Landscape Compared to Region	1.5	Common to the area
Presence of Water	0	
Total	**6.5**	
Part 3 Scenic Quality		
General Scenic Quality of the View	**1.5**	

** these visual rating elements are yes or no answers. Therefore, a rating of 0 or 3 should be applied*

Rating Scale	
0	None
1	Weak
2	Moderate
3	Strong

TRC Visual Impact Rating Form

Project: Trelina Solar Energy Center	Date: 06/29/2020
Viewpoint Number: 22	Preparer: Michael Ross
Viewpoint Location: Serven Road, Waterloo	
Viewpoint Description: View east towards agricultural field. Near residents	
Landscape Similarity Zone: 1	
Viewer Type (check all that apply): ☒ Resident ☐ Commuter/Traveler ☐ Recreational ☐ Worker	
Seasonal Condition: ☐ Leaf On ☒ Leaf Off	

Visual Rating Element	Rating	Notes
Part 1 Visual Contrast Rating		
Form Contrast	1.5	The solar field creates a sizable and long, linear, unnatural form that follows the existing wood line but, contrasts with its natural shape.
Line Contrast	1.5	The line created by the long, linear form solar array field and fencing does mimic the existing grade, terrain, and wood line of the landscape however, the line is rigid and unnatural creating contrast. The vertical lines in the farm field further enhance this contrast of the horizontal line created by the solar array field.
Texture Contrast	2	The smooth patterns of the solar panels and fencing contrast with the farmland soil and existing natural vegetation.
Color Contrast	2	The color of the arrays contrast with the earth tone colors of the soil and existing vegetation however, the colors of this project appear to work nicely.
Project Scale Contrast/Spatial Dominance	1.5	The project dominates the farm fields towards the background in this view providing a sense of scale however, the project seems to "fit" within this location and distance captures the existing vegetation wrapping around the project site.
Broken Horizon Line	0	The horizon line is not broken in this view.
Visual Acuity	1	Minimal discernable details of the arrays and fence line can be observed within this view due to location and distance.
Amount of Project Clearing Seen	0	No project clearing can be observed in this view.
Screening/Mitigation Needed	1.5	Some screening efforts will be needed to mitigate this view.
Total	**11**	
Part 2 Viewpoint Sensitivity Rating		
Within a Visual Resource*	0	
View of Other Visual Resource with Project*	0	
A Listed/Known Scenic Resource of Visual Quality*	0	
Number of Viewers (Low or High Use Activity)	1.5	The project is located just outside of town and there are several residential structures, a farm, and a local vehicular road present.
Duration of View	1.5	A combination of long-term views from the residential structures and short-term views from the passersby in vehicles will consistently occur in this location.
Presence of Existing Development	2	There are several residential properties and structures and a farm that are present at this viewpoint. Additionally, numerous other small-town type residential properties and businesses can be found in the immediate area.
Uniqueness of Landscape Compared to Region	1	This landscape is typical for a rural small town in this region with little to no significance pertaining to uniqueness of existing views.
Presence of Water	0	No water can be observed within this view.
Total	**6**	

Part 3 Scenic Quality		
General Scenic Quality of the View	**1**	The overall general scenic quality of this view is minimal.

** these visual rating elements are yes or no answers. Therefore, a rating of 0 or 3 should be applied*

Rating Scale	
0	None
1	Weak
2	Moderate
3	Strong

TRC Visual Impact Rating Form

Project: Trelina Solar Energy Center	Date: June 29, 2020
Viewpoint Number: 22	Preparer: Kirsten Johnson
Viewpoint Location: Serven Road, Waterloo	
Viewpoint Description: View east towards agricultural field. Near residents	
Landscape Similarity Zone: 1	
Viewer Type (check all that apply): ☒ Resident ☐ Commuter/Traveler ☐ Recreational ☐ Worker	
Seasonal Condition: ☐ Leaf On ☒ Leaf Off	

Visual Rating Element	Rating	Notes
Part 1 Visual Contrast Rating		
Form Contrast	2.5	some clutter from existing structures in the background
Line Contrast	2	panels generally follow existing lines of the horizon
Texture Contrast	2	panels are discernible, though because of distance from the road details are not as apparent
Color Contrast	2.5	definitively differs from existing vegetation
Project Scale Contrast/Spatial Dominance	2	appears as though substantial field area has been maintained so panels appear co-dominant
Broken Horizon Line	2	tops of tree line are visible, but horizon up to trees has been interrupted
Visual Acuity	1.5	because of the orientation, individual panels become less visible moving from north to south
Amount of Project Clearing Seen	0	
Screening/Mitigation Needed	1.5	depending on the vegetation in the maintained field area, screening may be required
Total	**16**	
Part 2 Viewpoint Sensitivity Rating		
Within a Visual Resource*	0	
View of Other Visual Resource with Project*	0	
A Listed/Known Scenic Resource of Visual Quality*	0	
Number of Viewers (Low or High Use Activity)	2.5	residences across from and within the same field; moderate road traffic
Duration of View	2.5	from residences viewers will have long duration views; from road, users will have short duration
Presence of Existing Development	1	some structures
Uniqueness of Landscape Compared to Region	0	
Presence of Water	0	
Total	**6**	
Part 3 Scenic Quality		
General Scenic Quality of the View	**0.5**	

** these visual rating elements are yes or no answers. Therefore, a rating of 0 or 3 should be applied*

Rating Scale	
0	None
1	Weak
2	Moderate
3	Strong

TRC Visual Impact Rating Form

Project: Trelina Solar Energy Center	Date: 6.29.2020
Viewpoint Number: 23a	Preparer: JBartos1.5
Viewpoint Location: Serven Road, Waterloo	
Viewpoint Description: View northeast towards open field. Near residents	
Landscape Similarity Zone: 1	
Viewer Type (check all that apply): ☒ Resident ☐ Commuter/Traveler ☐ Recreational ☐ Worker	
Seasonal Condition: ☐ Leaf On ☒ Leaf Off	

Visual Rating Element	Rating	Notes
Part 1 Visual Contrast Rating		
Form Contrast	1.5	Horizontal shape similar to existing landscape
Line Contrast	1	Horizontal line similar to existing landscape
Texture Contrast	1	Some texture difference perceived but not strong
Color Contrast	1	Color similar to existing background trees
Project Scale Contrast/Spatial Dominance	1	Low profile compared to existing objects
Broken Horizon Line	0	
Visual Acuity	1	Only a small portion of Project can be seen but it is visible with not strong detail observed
Amount of Project Clearing Seen	0	
Screening/Mitigation Needed	1	From the roadway, not much of Project is exposed but some can be seen. Likely more of Project is visible from resident just to right of photo
Total	**7.5**	
Part 2 Viewpoint Sensitivity Rating		
Within a Visual Resource*	0	
View of Other Visual Resource with Project*	0	
A Listed/Known Scenic Resource of Visual Quality*	0	
Number of Viewers (Low or High Use Activity)	1.5	Low use travel road, a few residents but not a high number
Duration of View	2	Short term for roadway, longer term for resident
Presence of Existing Development	1.5	
Uniqueness of Landscape Compared to Region	0.5	Typical in area
Presence of Water	0	
Total	**5.5**	
Part 3 Scenic Quality		
General Scenic Quality of the View	**0.5**	

** these visual rating elements are yes or no answers. Therefore, a rating of 0 or 3 should be applied*

Rating Scale	
0	None
1	Weak
2	Moderate
3	Strong

TRC Visual Impact Rating Form

Project: Trelina Solar Energy Center	Date: 06/29/2020
Viewpoint Number: 23a	Preparer: Michael Ross
Viewpoint Location: Serven Road, Waterloo	
Viewpoint Description: View northeast towards open field. Near residents	
Landscape Similarity Zone: 1	
Viewer Type (check all that apply): ☒ Resident ☐ Commuter/Traveler ☐ Recreational ☐ Worker	
Seasonal Condition: ☐ Leaf On ☒ Leaf Off	

Visual Rating Element	Rating	Notes
Part 1 Visual Contrast Rating		
Form Contrast	1.5	The well-defined horizontal/rectilinear form of the man-made solar field creates contrast with the existing vegetation and shapes of the farm fields.
Line Contrast	1.5	Although the project appears to run parallel with the roadway in the foreground, the line created by the horizontal linear form solar array field and fencing contrasts with the vertical lines of the existing vegetation, structures, and utility pole.
Texture Contrast	1.5	The smooth patterns of the solar panels and fencing contrast with the farmland soil and existing natural vegetation.
Color Contrast	1.5	The unnatural color of the arrays contrast with the natural green and earth tone colors of the existing vegetation however, distance and location minimizes impact.
Project Scale Contrast/Spatial Dominance	1.5	The project uses a significant portion of the field located in the background of this view creating contrast with existing surroundings however, distance and location minimize the overall impact and special dominance.
Broken Horizon Line	0	The horizon line is not broken in this view.
Visual Acuity	1	Minimal discernable details of the arrays and fence line can be observed within this view due to location and distance.
Amount of Project Clearing Seen	0	No project clearing can be determined in this view.
Screening/Mitigation Needed	2.5	Screening efforts will be needed to mitigate this view.
Total	**11**	
Part 2 Viewpoint Sensitivity Rating		
Within a Visual Resource*	0	
View of Other Visual Resource with Project*	0	
A Listed/Known Scenic Resource of Visual Quality*	0	
Number of Viewers (Low or High Use Activity)	1.5	The project is located just outside of town and there are several residential structures and a local vehicular road present.
Duration of View	1.5	A combination of long-term views from the residential structures and short-term views from the passersby in vehicles will consistently occur in this location.
Presence of Existing Development	2	There are several residential properties and structures that are present at this viewpoint. Additionally, numerous other small-town type residential properties and businesses can be found in the immediate area.
Uniqueness of Landscape Compared to Region	1	This landscape is typical for a rural small town in this region with little to no significance pertaining to uniqueness of existing views.
Presence of Water	0	No water can be observed within this view.
Total	**6**	

Part 3 Scenic Quality		
General Scenic Quality of the View	**1**	The overall general scenic quality of this view is minimal.

** these visual rating elements are yes or no answers. Therefore, a rating of 0 or 3 should be applied*

Rating Scale	
0	None
1	Weak
2	Moderate
3	Strong

TRC Visual Impact Rating Form

Project: Trelina Solar Energy Center	Date: June 29, 2020
Viewpoint Number: 23a	Preparer: Kirsten Johnson
Viewpoint Location: Serven Road, Waterloo	
Viewpoint Description: View northeast towards open field. Near residents	
Landscape Similarity Zone: 1	
Viewer Type (check all that apply): ☒ Resident ☐ Commuter/Traveler ☐ Recreational ☐ Worker	
Seasonal Condition: ☐ Leaf On ☒ Leaf Off	

Visual Rating Element	Rating	Notes
Part 1 Visual Contrast Rating		
Form Contrast	2.5	
Line Contrast	1.5	seems less pronounced because there are many contrasting lines created by existing elements
Texture Contrast	1.5	again, the existing elements create variable texture, so project components seem to disrupt this only weakly
Color Contrast	2.5	strong difference in color between natural vegetation and arrays
Project Scale Contrast/Spatial Dominance	1	sub-dominant in the view
Broken Horizon Line	1.5	horizon is partially broken
Visual Acuity	1.5	components are discernible from landscape and each other, though only weakly
Amount of Project Clearing Seen	0	
Screening/Mitigation Needed	1	panels do not drastically disrupt the existing character of the area visible from this vantage, and some screening may reduce this disruption but to me would seem even more unnatural
Total	**13**	
Part 2 Viewpoint Sensitivity Rating		
Within a Visual Resource*	0	
View of Other Visual Resource with Project*	0	
A Listed/Known Scenic Resource of Visual Quality*	0	
Number of Viewers (Low or High Use Activity)	2.5	homeowners in the adjacent residences and moderate road traffic
Duration of View	2.5	long duration for homeowners, short duration for travelers
Presence of Existing Development	1.5	rural residences and outbuildings present
Uniqueness of Landscape Compared to Region	0	
Presence of Water	0	
Total	**6.5**	
Part 3 Scenic Quality		
General Scenic Quality of the View	**0**	

** these visual rating elements are yes or no answers. Therefore, a rating of 0 or 3 should be applied*

Rating Scale	
0	None
1	Weak
2	Moderate
3	Strong

TRC Visual Impact Rating Form

Project: Trelina Solar Energy Center	Date: 6.29.2020
Viewpoint Number: 23b	Preparer: JBartos
Viewpoint Location: Serven Road, Waterloo	
Viewpoint Description: View northwest towards open field. Near residents	
Landscape Similarity Zone: 1	
Viewer Type (check all that apply): ☒ Resident ☐ Commuter/Traveler ☐ Recreational ☐ Worker	
Seasonal Condition: ☐ Leaf On ☒ Leaf Off	

Visual Rating Element	Rating	Notes
Part 1 Visual Contrast Rating		
Form Contrast	2.5	Horizontal form similar to landscape but it is new and proximal to viewer
Line Contrast	2	Horizontal ine is similar to existing landscape
Texture Contrast	2.5	Texture difference is notable
Color Contrast	2.5	Color and value somewhat similar to background trees but new color consumes the field and contrasts against existing yellow ochre field
Project Scale Contrast/Spatial Dominance	2	Project scale is not overly dominant but is noticable
Broken Horizon Line	0.5	slightly
Visual Acuity	2.5	Fair level of detail observed and is very apparent in field
Amount of Project Clearing Seen	0	
Screening/Mitigation Needed	3	Arrays visible from roadway
Total	**17.5**	
Part 2 Viewpoint Sensitivity Rating		
Within a Visual Resource*	0	
View of Other Visual Resource with Project*	0	
A Listed/Known Scenic Resource of Visual Quality*	0	
Number of Viewers (Low or High Use Activity)	1.5	Low traveled local roadway, a few residents nearby
Duration of View	2	Short duration on road. Longer duration from residents
Presence of Existing Development	2	Residential houses in view. Farm in distance
Uniqueness of Landscape Compared to Region	1	Typical of the area
Presence of Water	0	
Total	**6.5**	
Part 3 Scenic Quality		
General Scenic Quality of the View	**1.5**	

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Rating Scale	
0	None
1	Weak
2	Moderate
3	Strong

TRC Visual Impact Rating Form

Project: Trelina Solar Energy Center	Date: 06/29/2020
Viewpoint Number: 23b	Preparer: Michael Ross
Viewpoint Location: Serven Road, Waterloo	
Viewpoint Description: View northwest towards open field. Near residents	
Landscape Similarity Zone: 1	
Viewer Type (check all that apply): ☒ Resident ☐ Commuter/Traveler ☐ Recreational ☐ Worker	
Seasonal Condition: ☐ Leaf On ☒ Leaf Off	

Visual Rating Element	Rating	Notes
Part 1 Visual Contrast Rating		
Form Contrast	1	The form and shape of the solar field parallels the road and rows of remaining crops in the farm field however, the well-defined horizontal/rectilinear form of the man-made solar arrays and fencing creates some contrast with the existing vegetation in the background.
Line Contrast	1	The project runs parallel with the roadway and the remaining crops in the farm field in the foreground allowing the project to blend in or mimic its surroundings creating less contrast as a man-made structure.
Texture Contrast	2.5	The man-made patterns and textures of the solar panels and fencing contrast with the existing structures, smooth roadway surface, farmland, and existing natural vegetation.
Color Contrast	1.5	The dark unnatural color of the arrays contrast with the natural green and earth tone colors of the existing vegetation however, the asphalt road does help to soften visual impacts somewhat.
Project Scale Contrast/Spatial Dominance	2	The project uses a significant portion of the farm field and is located in closer proximity to the existing roadway in this view creating contrast with existing surroundings and appearance of some special dominance.
Broken Horizon Line	0.5	A small portion of the horizon line is broken in this view.
Visual Acuity	2	Discernable details of the arrays and fence line can be observed within this view due to location and close proximity to the existing roadway.
Amount of Project Clearing Seen	0	No project clearing can be determined in this view.
Screening/Mitigation Needed	3	Significant screening efforts will be needed to mitigate this view.
Total	**13.5**	
Part 2 Viewpoint Sensitivity Rating		
Within a Visual Resource*	0	
View of Other Visual Resource with Project*	0	
A Listed/Known Scenic Resource of Visual Quality*	0	
Number of Viewers (Low or High Use Activity)	1.5	The project is located just outside of town and there are several residential structures and a local vehicular road present.
Duration of View	1.5	A combination of long-term views from the residential structures and short-term views from the passersby in vehicles will consistently occur in this location.
Presence of Existing Development	2	There are several residential properties and structures that are present at this viewpoint. Additionally, numerous other small-town type residential properties and businesses can be found in the immediate area.
Uniqueness of Landscape Compared to Region	1	This landscape is typical for a rural small town in this region with little to no significance pertaining to uniqueness of existing views.
Presence of Water	0	No water can be observed within this view.

Total	**6**	
Part 3 Scenic Quality		
General Scenic Quality of the View	**1**	The overall general scenic quality of this view is minimal.

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Rating Scale	
0	None
1	Weak
2	Moderate
3	Strong

TRC Visual Impact Rating Form

Project: Trelina Solar Energy Center	Date: June 29, 2020
Viewpoint Number: 23b	Preparer: Kirsten Johnson
Viewpoint Location: Serven Road, Waterloo	
Viewpoint Description: View northwest towards open field. Near residents	
Landscape Similarity Zone: 1	
Viewer Type (check all that apply): ☒ Resident ☐ Commuter/Traveler ☐ Recreational ☐ Worker	
Seasonal Condition: ☐ Leaf On ☒ Leaf Off	

Visual Rating Element	Rating	Notes
Part 1 Visual Contrast Rating		
Form Contrast	3	view before panel placement is largely uninterrupted farm field
Line Contrast	2.5	horizontal lines follow the horizon, but panels are distinct and create a vertical line that was absent before; orientation of panels is not parallel with the road creating additional contrast
Texture Contrast	3	high level of detail visible with panels in view; present conditions are largely uniform in texture
Color Contrast	3	distinct from vegetation
Project Scale Contrast/Spatial Dominance	2.5	some forested areas and field remain
Broken Horizon Line	2.5	tree tops are visibile
Visual Acuity	2.5	details are highly visible
Amount of Project Clearing Seen	0	none apparent
Screening/Mitigation Needed	3	direct views along a fairly long stretch of road indicate visual screening would be appropriate
Total	**22**	
Part 2 Viewpoint Sensitivity Rating		
Within a Visual Resource*	0	
View of Other Visual Resource with Project*	0	
A Listed/Known Scenic Resource of Visual Quality*	0	
Number of Viewers (Low or High Use Activity)	2.5	adjacent residences, moderate traffic
Duration of View	2.5	residents would have long duration views, travelers short duration
Presence of Existing Development	2	several existing structures are visible
Uniqueness of Landscape Compared to Region	0	
Presence of Water	0	
Total	**7**	
Part 3 Scenic Quality		
General Scenic Quality of the View	**0**	

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Rating Scale	
0	None
1	Weak
2	Moderate
3	Strong