

Essex A North Lot Solar

Essex Junction, Vermont



Aesthetic & Orderly Development Analysis Report

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I. Project Description

The Essex A North Lot Solar Project (the “Project”) is being developed by Essex A North Lot Solar, LLC (the “Petitioner”), on a property located off Robinson Parkway south of Maple Street (Route 117) in the City of Essex Junction, Vermont. The Project is a proposed 3.5 MW (AC) photovoltaic electric generation facility. The fenced portion of the Project would occupy approximately 13.2 acres of the greater 228-acre parcel. The array is separated into three sections of racking, with two sections having 9 rows of panels, and the third section having 20 rows of panels for a total of +38 rows of fixed tilt, ground-mounted racking units, generally without the use of concrete. Array structures will utilize driven posts, generally without the use of concrete ballasts. Figure 1 illustrates the Project’s proposed array racking system.



Figure 1: Example of ground-mounted fixed-tilt array racks in east-west orientation.

Electricity will run from the panels in direct current to a network of string inverters or inverters dispersed among the array before being converted to alternating current. Electricity will then run in protective conduit to a switchgear before running underground to a single pad-mounted transformer with secondary oil containment located near the central part of the array. From the transformer, the electricity will run north, 375’ underground, to a proposed riser pole. From the riser pole, the electricity will run north approximately 360’ on new overhead 3-phase lines, which will require 5 new poles (1 riser pole, and 4 more poles to get to the existing GMP owned pole) to convey electricity to the point of interconnection with an existing GMP-owned pole on the east side of the Police Department access road. The 5 new wooden poles will be approximately 40 feet high. At the point where the new overhead lines connect with the existing GMP owned pole on the east side of the Police Station access road, the Project will interconnect with Green Mountain Power’s (“GMP”) existing distribution network. Petitioner will own the transformer, whereas GMP will own the above referenced overhead line extension and new poles.

The Project site will be accessed from an internal private drive that connects to Robinson Parkway east of the Project site. The Project will also involve the construction of a new 12’-wide gravel drive immediately northwest of the site in order to maintain internal access from Robinson Parkway to areas west of the Project. The total length of the new proposed gravel drive will be approximately 482’. The array will be arranged in two fenced areas, which will be enclosed by a 7-8’ high agricultural style fence and will have

gated entrances. The Project site is located both within an existing abandoned parking area and two existing fields, and will require tree clearing to prevent shading of the array. See Figure 2 for a general layout of the Project.

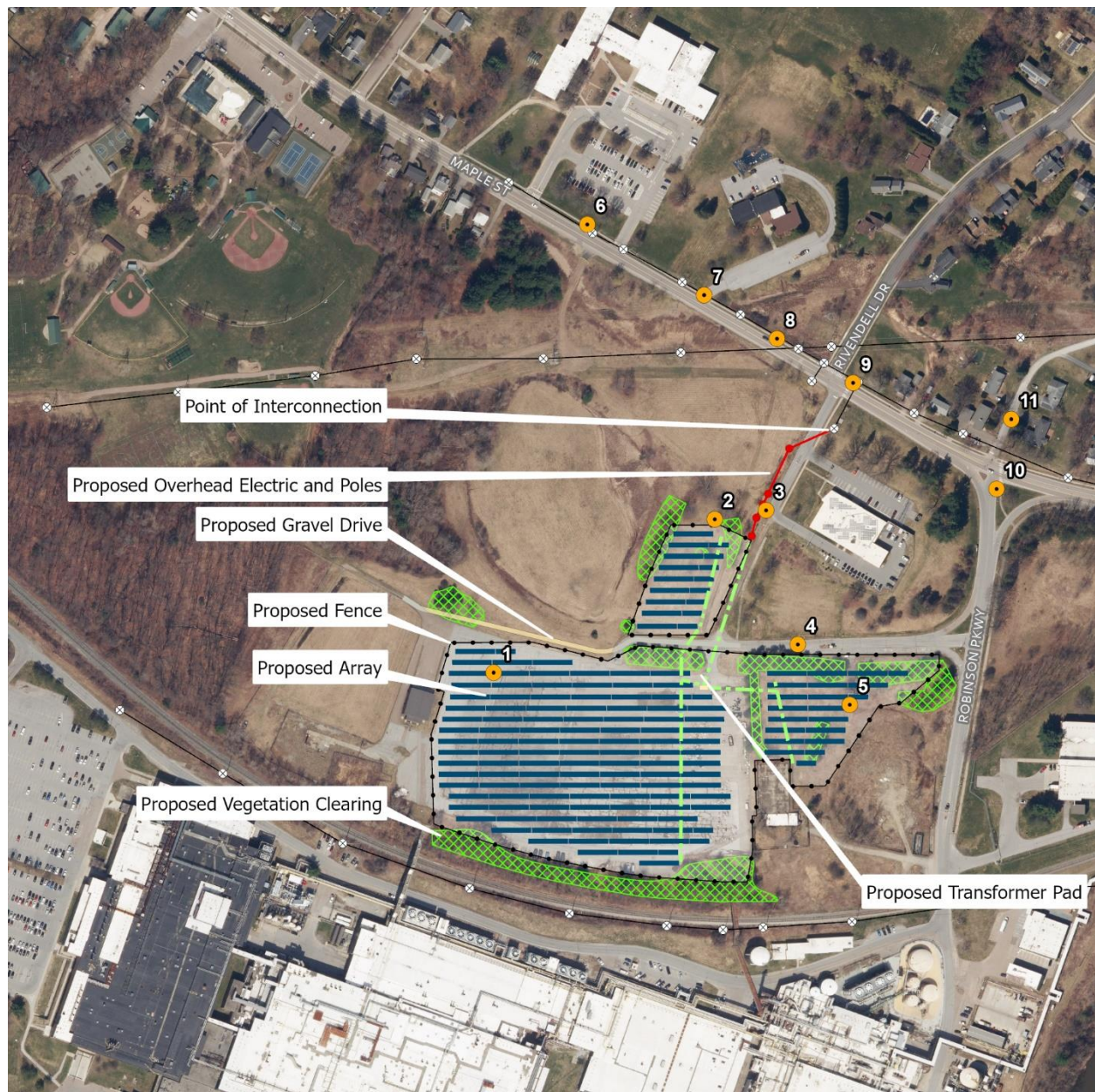


Figure 2: Proposed Project Layout and Viewpoint Locations

II. Methodology – *Quechee* Test

Section 248(b)(5) of Title 30, Vermont Statutes Annotated requires the Commission to make a finding that a proposed electrical generation Project would not have an undue adverse effect on aesthetics, as outlined in the so-called “*Quechee Lakes Decision*.”¹ As explained in the Commission’s order in Docket No. 6860, the Commission applies the so-called *Quechee* test in Section 248 proceedings, as follows:

The Commission has adopted the Environmental Board’s *Quechee* analysis for guidance in assessing the aesthetic impacts of proposed projects under Section 248. We have previously explained the components of the *Quechee* analysis as follows:

In order to reach a determination as to whether the project would have an undue adverse effect on the aesthetics of the area, the Commission employs the two-part test first outlined by the Vermont Environmental Board in *Quechee*, and further defined in numerous other decisions.

Pursuant to this procedure, first a determination must be made as to whether a project would have an adverse impact on aesthetics and the scenic and natural beauty. In order to find that it would have an adverse impact, a project must be out of character with its surroundings. Specific factors used in making this evaluation include the nature of the project's surroundings, the compatibility of the project's design with those surroundings, the suitability of the project's colors and materials with the immediate environment, the visibility of the project, and the impact of the project on open space.

The next step in the two-part test, once a conclusion as to the adverse effect of the project has been reached, is to determine whether the adverse effect of the project is “undue.” The adverse effect is considered undue when a positive finding is reached regarding any one of the following factors:

1. Does the project violate a clear, written community standard intended to preserve the aesthetics or scenic beauty of the area?
2. Have the applicants failed to take generally available mitigating steps which a reasonable person would take to improve the harmony of the project with its surroundings?
3. Does the project offend the sensibilities of the average person? Is it offensive or shocking because it is out of character with its surroundings or significantly diminishes the scenic qualities of the area?

Our analysis, however, does not end with the results of the *Quechee* test. Instead, our assessment of whether a particular project would have an “undue” adverse effect on aesthetics and scenic or natural beauty is “significantly informed by overall societal benefits of the project.”²

¹ *Quechee Lakes Corporation*, Applications #3W0411-EB and #3W0439-EB at pgs. 18-20

² *Petitions of Vermont Electric Power Company, Inc. (VELCO), Vermont Transco*, Docket No. 6860, Vt. Pub. Serv. Bd., Final Order of 01/28/2005 at 80 (citing *In Re: Northern Loop Project*, Docket 6792, Order of 7/17/03 at 28).

T.J. Boyle Associates interprets the first prong of the *Quechee* test to initially require an assessment of a project's visibility. Although the *Quechee* test lists visibility of a project as a "specific factor" for evaluation, visibility establishes the underlying method for which all visual aesthetics are evaluated. For instance, a project's design, materials and colors may be completely out of character with its surroundings, but if such project is not visible to the general public (or "average person"), then there would be no adverse visual effect. Likewise, when a project is determined to be out of character with its surroundings, one solution is to visually obscure the project with landscape mitigation or other screening, which itself is a simple reduction or occlusion of visibility. In this way, T.J. Boyle Associates interprets the first prong of the *Quechee* test to be asking, "What is the project's visibility, and is that visibility out of character with its surroundings?" In our experience, if the *Quechee* test were not interpreted in this way then a given project could be considered adverse even if it was completely invisible to surrounding areas, which would be an unreasonable interpretation and inconsistent with the purpose of the test.

Our initial study area for visibility of solar generation facilities tends to extend approximately two miles from a project location. This distance tells us whether a given project is, or is not, visible from prominent or protected locations in the study area, or, perhaps more importantly, if a project itself is in a prominent or highly visible location.

In conducting the *Quechee* analysis and preparing this report, three distinct methods have been used: (1) background data collection, (2) GIS viewshed analysis mapping, and (3) field investigation. The GIS viewshed mapping and field investigation are used to identify areas with potential visibility of the Project. The background data and field investigation are used to characterize the study area. All three methods are used to evaluate whether there are in fact 'adverse' impacts and if so, whether those impacts could be considered 'undue.'

- (1) **Background Data Collection.** Standard data that can help describe the landscape of the Project site, the surrounding area, and the Project are assembled. These data include available Project plans and details, aerial photography, topographical maps, Geographical Information System ("GIS") data including digital elevation model data, water and land cover information, transportation data and primary building data (public, commercial, residential), and applicable regulations such as the town plan and the regional plan.
- (2) **GIS Viewshed Analysis.** Following the background data collection, ESRI ArcGIS software is used to calculate a GIS viewshed or visibility analysis of potential visibility of the Project. Viewshed analysis can identify areas that have potential views of a project, and when mapped it shows the Project viewshed. The analysis applies a line-of-sight method from a prescribed point or points representing the Project (such as the top of an upright solar array, substation equipment, or power line structure), to all other locations within a designated study area. Figure 3 illustrates how line-of-sight is determined visibility. The analysis results (portrayed as two viewshed maps), and background data review form the basis for organizing the field investigation.

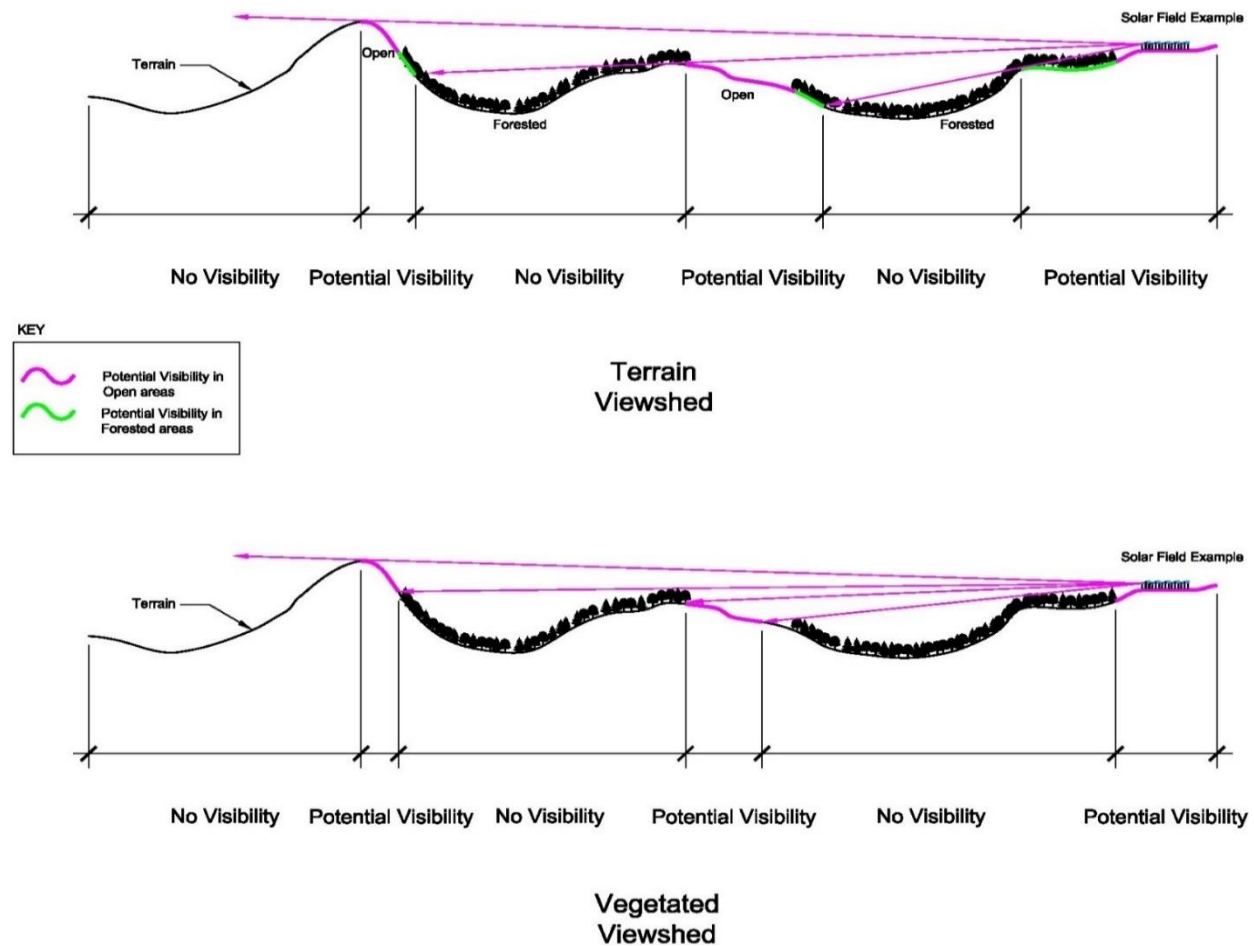


Figure 3: Terrain Viewshed and Vegetated Viewshed Diagrams. (Please note this diagram is for illustrative purposes only to portray the results of a GIS Viewshed analysis and is not representative of the proposed Project.)

- a. A “Terrain Viewshed” map (see Appendix A, Map 2) represents how landform may block views of Project upgrades. This analysis only accounts for intervening landform and does not incorporate how vegetation, buildings, hedgerows, street trees or any other vegetation or buildings would screen visibility of the Project. However, to facilitate interpretation of the results, the map differentiates between areas with and without forest cover, since there would be no distant views if one is standing in the forest. This map represents the maximum area from which the Project could be visible, and in almost every case overstates the probable visibility.
- b. A “Vegetated Viewshed” Map (see Appendix A, Map 3) represents a “Vegetated Viewshed.” This map shows how vegetation, buildings and other obstructions in the landscape may act in addition to landform, to block views of the Project. The data used to identify obstructions is derived from LiDAR data, the national elevation dataset, and the national land cover database. This map is a more realistic representation of the area from which the Project is potentially visible.

When properly taken into consideration, these maps indicate areas most likely to have views, emphasizing areas vulnerable to the greatest impacts. The viewshed maps also identify areas

that are unlikely to have views. The assumptions used to calculate these maps are conservative and tend to over-estimate Project visibility. Rather than serving as a final result, these maps are primarily used in preparation of the field investigation, which more fully evaluates the landscape context, views, and potential impacts based on the visibility indicated on the maps. Therefore, it is inappropriate to use these maps as the only basis to evaluate visual extent and impacts.

- (3) **Field Investigation.** The viewshed maps are used to focus the field investigation on areas most likely to have views of the Project. The purpose of the field investigation is to:
- Verify potential visibility as indicated on the viewshed maps
 - Photograph views toward the Project from sensitive areas (roadways, parks, public facilities, etc.)
 - Photographically document the landscape's visual character within the study area
 - Record notes concerning each viewpoint where photographs are taken as necessary
 - Identify the location of photograph viewpoints using a global positioning system ("GPS") unit

On completion of the field investigation, GPS data is transferred to a GIS database and synchronization of the data and photograph locations are verified. Photo locations and the actual photos are coordinated through indexed viewpoint numbers. Documentation of the field investigation is then prepared, which includes: (1) mapping of the routes traveled and locations of photograph viewpoints, displayed on mapping within Appendix A, and (2) a catalog of photography included as Appendix B - Photographic Inventory. Appendix B includes a series of panoramic views to provide context of the surrounding conditions, and single-frame photographs to represent views towards the Project site. Unless otherwise noted, single-frame photos utilize a focal length of 50mm on a FX digital single lens reflex camera, or a focal length approximately equivalent to 50mm on a 35mm film camera, which are considered a 'normal lens'. A normal lens reproduces a field of view that generally looks "natural" to a human observer. Panoramic views result in significant spatial distortion but are beneficial for providing a very wide field of view to illustrate the existing surroundings and character.

TJB evaluates data from the steps above and compares existing conditions with plans for the proposed Project. The following sections of this report describe in detail the collection and evaluation of data and the resulting conclusions. Appendix C – Cross Sections, which depict the proposed Project and underlying landform, have also been prepared as part of this review.

III. *Quechee* Test Part I – Evaluation of Adversity

A. Overview

The Project is proposed on an existing parking lot and two adjacent undeveloped portions of the Global Foundries campus, in an area located approximately 453' southwest of Maple Street (Vermont Route 117). The land surrounding the Project site contains varied uses, with a railroad corridor and large industrial buildings located immediately south and east of the site, existing fields and forested areas immediately west of the site, existing fields and a transmission line corridor north of the site, and the Essex Police Department located to the northeast. Photographs from the Project site are included in Appendix B, Viewpoints 1 through 5.

As noted above, GIS viewshed mapping was utilized as a preliminary evaluation method to determine potential visibility of the Project. Field investigation found that the GIS viewsheds were generally accurate, and the viewshed results indicate that the greatest potential for off-site visibility is from Maple Street to the north. Overall, the viewsheds show that Project visibility would be screened from most areas in Essex Junction (and Williston) by a combination of intervening landform and vegetation.

B. Maple Street (Vermont Route 117)

Maple Street is an AoT Class 1 paved town highway located north of the Project, which in the vicinity of the Project runs in a roughly northwest to southeast direction. Maple Street connects US Route 2A in downtown Essex Junction to the west with Route 2 and Richmond, Vermont, to the southeast. In the vicinity of the Project, the area along Maple Street is characterized by the undeveloped fields on the Project property and nearby forested areas on the south side of the road, as well as residential uses, an elementary school, a nearby church and the Police Department. An existing transmission corridor with large wooden and galvanized metal lattice structures crosses Maple Street in the vicinity of the Project, and the large industrial buildings associated with the former IBM campus are also visible from Maple Street. At its closest location, Maple Street passes approximately 453' northeast of the nearest proposed array structure. Maple Street has a 25 mile-per-hour speed limit through the area where the Project may be visible.

Field review revealed that for travelers heading southeast on Maple Street, the Project will become visible starting approximately 970' northwest of the Project, where the northern section of the proposed array will be intermittently visible as travelers proceed southeast for a distance of approximately 1,050', at which point the Project will be behind the Police Department and existing vegetation that will remain (see Appendix B, Viewpoints 6 through 9). At a speed of 25 miles per hour, this equates to approximately 29 seconds of intermittent visibility of the proposed array. Through this area, views of the array will be backgrounded by the existing industrial buildings south of the railroad corridor, as well as forested hillside that exists on the south side of the Winooski River.

For travelers heading northwest, the proposed array will be intermittently visible to the southwest starting near the Police Department, and continuing for approximately 335' before travelers move beyond the Project (see Viewpoints 8 through 10 in reverse order). Similar to southeast views, the proposed array will be intermittently screened by intervening vegetation that exists between the Project and Maple Street. At 25 miles per hour, this equates to approximately 9 seconds of potential intermittent visibility of the proposed array.

The proposed interconnection poles, which extend northeast from the site along the Police Department access road, will be visible from approximately the same section of Maple Street as the array. These poles will appear similar to roadside distribution structures currently visible along the Police Department access road, as well as along Maple Street and other roads in the area.

C. Rivendell Drive

Rivendell Drive is an AoT Class 3 paved town road located immediately north of the Project, which runs in a roughly northeast-southwest direction. Rivendell Drive is a relatively short dead-end road that connects Maple Street with a large residential neighborhood to the north. In the vicinity of the Project near the intersection with Maple Street, the area is characterized by the large electricity transmission corridor and associated large wooden and metal lattice structures that crosses the road at the intersection with Maple Street. The Police Department is visible to the southeast, and existing fields on the former IBM property are visible around roadside vegetation. Other surrounding land uses are visible, including residential homes and an existing church to the northwest. At its closest

location, Rivendell Drive is approximately 500' northeast of the nearest proposed array structure. Rivendell Drive has a 25 mile-per-hour speed limit, though actual speed will vary due as travelers approach, wait at, or leave the intersection with Maple Street.

Field review revealed that for travelers heading southwest on Rivendell Drive, a filtered view of the northernmost array structures will be possible from near the southern extent of the road, starting approximately 875' northeast of the Project, particularly during leaf-off conditions. Existing vegetation and intervening landform will significantly screen the proposed array for distance of approximately 375', with the greatest visibility possible at the intersection with Maple Street (see Appendix B, Viewpoint 9). At a speed limit of 25 miles per hour, this equates to approximately 10 seconds of potential visibility of the proposed array, most of which will be screened by existing roadside vegetation on the south side of Maple Street.

For travelers heading northeast, the proposed array will be directly behind travelers and outside the general cone of vision.

The proposed interconnection poles will be visible from approximately the same section of Rivendell Road as the array, and will appear similar to roadside distribution structures currently visible along Maple Street and the Police Department access road.

D. Other Surrounding Roads and Public Areas

Due to limited visibility of the Project caused by intervening vegetation, buildings and landform, other public roadways in the area are not expected to have significant visibility of the proposed array, including Maple Street Extension (see Viewpoint 11), Maple Street Park, and other roadways within the large neighborhood complex to the northwest, north, and northeast.

Limited visibility will be possible from the Essex Police Department (particularly the Police Department access drive, see Viewpoints 3 and 9), the Albert D. Lawton School (located north of Viewpoint 6), and the Grace United Methodist Church (located north of Viewpoints 7 and 8).

E. Residential Properties

Four existing residences are located northeast of the Project site, the closest of which is approximately 559' to the northeast. Filtered visibility of the proposed array will potentially be possible from these residences, though any visibility will be screened by intervening vegetation that exists north of the Police Department and along the west side of the Police Department access drive (see Viewpoint 9). The Police Department building will also partially or fully block views of the proposed array from these residences.

A filtered view of the Project may also be possible from residences near the southern end of Rivendell Drive, in which case Project visibility will be similar to the views from the south end of Rivendell Drive described above – mostly screened and in the context of the existing transmission corridor and associated structures immediately adjacent to Rivendell Drive's intersection with Maple Street.

Due to intervening vegetation and landform, Project visibility from other residences in the area is expected to be highly limited or not possible.

F. Suitability of Colors and Materials for the Project

The Project materials and colors will include the dark non-reflective photovoltaic panels, galvanized metal array racking systems, metal or black agricultural-style fence mesh with wooden posts, a gravel access drive, wooden utility poles, and a pad mounted transformer and associated electrical equipment. Comparable

elements exist in the nearby landscape, including large industrial buildings south of the Project site, the existing transmission corridor and associated wooden and metal structures north of the site, and existing electric distribution lines along Maple Street that include wooden pole structures and conductors similar to those proposed for the Project. Based on the existing structures around the proposed array, the Project's colors and materials are considered similar to those in the surrounding area.

G. Impact on Open Space

Act 250 and Section 248 do not clearly define what is meant by the term “open space,” and some regional plans and town plans have differing definitions of open space, if any at all. The 2018 ECOS Plan adopted June 20, 2018 (the “Regional Plan”)³ and its associated Supplements do not define the term “open space” or depict areas where it is located.

The City of Essex Junction Comprehensive Plan, adopted August 13, 2019 (“Town Plan”)⁴ does not specifically define the term “open space,” though a possible description is included in a section on housing, wherein forests, trails, parks and recreation fields are described as open space (Town Plan at p. 80). Land use categories and descriptions are provided in Chapter 4, Comprehensive Plan elements, where the Town Plan states:

Open Space: To provide and maintain open lands within the Village and its neighborhoods, and to provide locations for public recreation and school facilities. (Town Plan at p. 114)

The Town Plan's Map 3 – Recreation Facilities and Open Space depicts Public Passive Open Space and other parks, none of which are located at the Project site. Map 10 – Future Land Use depicts the Project site as being within a light industrial area rather than open space or open recreation areas.

Based on this review, the Regional and Town Plans do not clearly describe the Project site as being within open space areas. Additionally, neither Plan describes how impacts to open space should be described or evaluated. The Project site is also not officially designated or depicted as “open space” within these planning documents.

Because the Project site is not publicly accessible and lacks specific “open space” designation within the Regional and Town Plans and other properties are clearly identified as being “open space,” the Project site is not considered to be “open space.” Instead, the Project site is within an area identified as industrial, and is partially proposed on areas previously used for vehicle parking. As noted above, the Project will be somewhat visible from Vermont Route 117 across an existing field and transmission corridor, but this is an established view into the Global Foundries property, a well-known industrial area with industrial buildings clearly visible to the south. The Project will not be visible from areas that are depicted as “open space” in the Town Plan maps. Based on these considerations, in our opinion the Project will not have an impact to “open space” in the area.

H. Summary

Overall, the Project siting takes advantage of the industrial nature of the site, and utilizes surrounding landform and vegetation where possible to reduce potential visibility of the proposed solar array. Views that will be possible will be from portions of the closest roadway, Maple Street, and the southern portion of Rivendell Drive. Although the Project will not affect “open space” in the area, the Project will slightly

³ <https://www.ecosproject.com/2018-ecos-plan>

⁴ https://www.essexjunction.org/fileadmin/files/Planning_Zoning/EssexJunction_2019CompPlan_FinalApproved_2_.pdf

contrast with the existing character of the existing fields north of the Project site, particularly the northernmost array area. The Project will utilize similar materials and colors currently visible from Maple Street, including the existing industrial buildings south of the site, as well as overhead electric lines and poles along the nearby existing transmission corridor north of the site, as well as along nearby roadways. However, based on the extent of visibility from public roadways and a few nearby private residences, this review under the first part of the *Quechee* test concludes that the proposed Project will result in a limited adverse impact to the aesthetics and scenic or natural beauty of the area. Therefore, an analysis under the second part of the *Quechee* test is provided below.

IV. **Quechee Test Part II – Evaluation of Undue Adversity**

Because the Project would result in an adverse impact to the aesthetics of the area, it is necessary to evaluate the Project under the three prongs of the second part of the *Quechee* test.

A. Clear, Written Community Standards Intended to Preserve the Aesthetics or Scenic Beauty of the Area

Although Section 248 projects are exempt from municipal zoning and related permits, local plans and regulations are reviewed under the second prong of the *Quechee* test where it has been determined that a project may have a potential adverse visual impact. Under *Quechee*, this involves an assessment as to whether or not a project violates a clear, written community standard intended to preserve the aesthetics or scenic beauty of the area. In Docket No. 7508, the Public Utility Commission held that “[i]n order for a provision to be considered a clear, written community standard, it must be ‘intended to preserve the aesthetics or scenic beauty of the area’ where the proposed project is located and must apply to specific resources in the proposed project area.”⁵ The Commission clarified that generalized statements and general scenic resource policies that are not focused on a particular scenic resource or that fail to offer specific guidance or measures to protect the resource cannot be considered “clear written community standards.”⁶ The Commission has further clarified that any such standard must expressly “designate the [project] parcel as a scenic resource worthy of protection.”⁷

For the Essex A North Lot Solar Project, available local and regional planning documents were reviewed to determine if the Project would violate a clear written community standard. The following sections of this review discuss the community scenic quality standards as detailed in the Chittenden County Regional Plan (which includes the Regional Energy Plan⁸ as Supplement 6), the Town Plan⁹ (which includes the Essex Community Enhanced Energy Plan, adopted by the Village of Essex Junction August 13, 2019 (“Town Energy Plan”) as Appendix D to the Town Plan); the relevant pages from these plans are included in Appendix E – Regional and Town Plan Excerpts.

i. Regional Plan VISION, MISSION & GOALS

⁵ *Petition of Georgia Mountain Community Wind, LLC*, Docket No. 7508, Order of 6/11/2010 at p. 52

⁶ *Id.* at 53.

⁷ *Petition of Rutland Renewable Energy, LLC*, Docket No. 8188, Order of 3/11/15 at 85-86.

⁸ https://www.nrpcvt.com/wp-content/uploads/2022/09/NRPC_EnergyPlan_2017.pdf

⁹

https://www.essexjunction.org/fileadmin/files/Planning_Zoning/EssexJunction_2019CompPlan_FinalApproved_2_.pdf

Natural Systems – Design and maintain a strategically planned and managed green infrastructure network composed of natural lands, working landscapes, and open spaces that conserve ecosystem values and functions, and provide associated benefits to our community.

2. Scenic and Recreational Resources – Conserve, protect and improve valued scenic, recreational, and historic resources and opportunities.
(Regional Plan at pgs. 3-4)

Built Environment

13. Land Use - Encourage future growth in the Center, Metro, Enterprise, Suburban, and Village Planning Areas to maintain Vermont's historic settlement pattern and respect working and natural landscapes.
17. Energy - Move Chittenden County's energy system toward a cleaner more efficient and renewable system that benefits health, economic development, and the local/global climate by working towards the State's Comprehensive Energy Plan goals.
(Regional Plan at pgs. 3-5)

ECOS PLAN PRIORITIES & IMPLEMENTATION

4. Energy – Move the Region's energy system to meet the goals of Vermont's energy and greenhouse gas reduction goals while balancing economic vitality and affordability.

- a. Reduce energy consumption and decrease greenhouse gas emissions, to support the State's goals:
 - vi. Provide assistance to municipalities when requested to enhance town plans to be consistent with Act 174 standards for the purpose of enabling municipalities the ability to gain substantial deference in the Certificate of Public Good Section 248 process. This assistance will include working with municipalities to identify natural, cultural, historic, or scenic resources to be protected from all development types, identify preferred locations for renewable energy generation facilities, and encourage municipalities to lead by example with respect to energy efficiency for buildings and transportation and the deployment of renewable energy.
- b. CCRPC supports the generation of new renewable energy in the County to meet the Vermont Comprehensive Energy Plan's goal of using 90% renewable energy by 2050, in a manner that is cost effective and respects the natural environment.

Constraint Policies: Ground mounted renewable energy generation is constrained in certain areas due to state and local restrictions on development.

- i. Site renewable energy generation to avoid state and local known constraints and to minimize impacts to state and local possible constraints...
- ii. Site ground-mounted solar development in accordance with setback standards as defined in 30 V.S.A. §248(s) and municipal screening requirements adopted in accordance with 30 V.S.A. §248(b)(B).

Suitability Policies: After considering the constraints referenced above and found in Supplement 3, different levels of suitability exist for different scales and types of renewable energy generation depending on location within the County. To determine an appropriate location for a facility, first review the constraints above and then look at the policies below to determine how and where CCRPC encourages renewable energy generation facilities. CCRPC recommends the location of renewable energy generation facilities in accordance with the relevant guidelines below.

- i. Locate energy generation proximate to existing distribution and transmission infrastructure with adequate capacity and near areas with high electric load
- ii. Locate renewable energy generation in areas designated by a municipality in an adopted plan for such use, including specific preferred sites for solar
- iii. Locate solar generation (including but not limited to net metering) on previously impacted areas (such as, parking lots, previously developed sites, brownfields, State regulated landfills with post-closure certification, gravel pits/quarries, or on or near existing structures).

- iv. Locate ground-mounted solar larger than 15 kW AC...outside of state designated village centers, growth centers, downtowns, new town centers, neighborhood development areas, and historic districts on the State or National Register.
- v. Locate ground-mounted solar generation...in Chittenden County's areas planned for growth, while allowing infill development wherever reasonably practical.

(Regional Plan at pgs. 19-21)

SUPPLEMENT 2 – REGIONAL ANALYSIS

NATURAL SYSTEMS

Broad Goal: Design and maintain a strategically planned and managed green infrastructure network composed of natural areas, working lands, wildlife habitat, scenic views and air quality that help to conserve ecosystem values and functions (including climate change adaptation and mitigation), and provide associated benefits to our community.

(Regional Plan, Supplement 2 at pg. 16)

2. Scenic, Recreational, and Historic Resources

Scenic and Recreational Resources Goal: Conserve, protect and improve valued scenic, recreational, and historic resources and opportunities.

Key Issues/Trends/Insights

- Chittenden County is rooted in its scenic, recreational, and historic resources. These provide residents a place to relax, play, gather, and learn about nature, conservation, and our heritage. They also provide important ecological functions including wildlife habitat, and water and air quality protection. These are supplemented by indoor and outdoor recreation facilities. In addition to the many recreational opportunities associated with Lake Champlain (swimming, boating, fishing, etc.), an extensive system of shared-use paths, on-road bike lanes, and off-road trails connect the County's recreational facilities and areas...
- Scenic resources represent an important element of the region's landscape and contribute directly to sense of place, quality of life and economic vitality through tourism and by attracting new residents and businesses.
- Historic resources include buildings, structures, landscapes, and archeological sites, both on land and under water.
- As we work toward encouraging future development in areas planned for growth to maintain VT's historic settlement pattern of villages and urban centers, surrounded by rural countryside, access to valued scenic, recreation and historic resources should also be maintained and improved for all residents and visitors.
- There is low compatibility between municipal plan recommendations for natural and scenic resources and the implementation of those recommendations through zoning bylaws and subdivision regulation. Further, there are often contradictory goals within municipal plans regarding natural and scenic preservation and new infrastructure for energy generation and transmission. Reconciliation of these is necessary to meet community visions and bring predictability to the development process.

(Regional Plan, Supplement 2 at pgs. 21-22)

BUILT ENVIROMENT

13. Land Use

Land Use Pattern Goal: Encourage future growth in the Center, Metro, Enterprise, Suburban, and Village Planning Areas to maintain Vermont's historic settlement pattern and respect working and natural landscapes.

(Regional Plan, Supplement 2 at p. 59)

17. Energy

Energy Goal: Move Chittenden County's energy system toward a cleaner, more efficient and renewable system that benefits health, economic development, and the local/global climate by working towards the State's Comprehensive Energy Plan goals.

(Regional Plan, Supplement 2 at p. 73)

Transition to Renewable Energy

- A Vermont statute passed in 2015, Act 56 requires Vermont's Electric Utilities to be 55% renewable by 2017, 75% by 2032, and 90% by 2050.

Renewable Energy Generation

- Vermont's rural nature offers challenges for the transmission and distribution of energy. It is important to maintain and develop an energy production, transmission, and distribution infrastructure in Chittenden County that is efficient, reliable, cost-effective, and environmentally responsible...
- CCRPC has undergone a process to look at areas suitable for solar and wind energy generation to determine our ability to meet the 90% renewable by 2050 goal...

(Regional Plan, Supplement 2 at pgs. 75-76)

SUPPLEMENT 3 – REGIONAL PLAN

PLANNING AREAS

Enterprise Planning Areas are areas where local zoning authorizes a future concentration of employment uses that attract workers from the County and multi-county region. Development in these Planning Areas should have adequate wastewater capacity and access to transit or be near these services. Typically, this area encompasses major employers or a cluster of single employers and has current or planned transit service. (Regional Plan, Supplement 3 at p. 4)

ii. Town Plan

CHAPTER 2 – Community Vision and Strategies

2.1. Community Values, Vision and General Goals

Vision and General Goals:

- ...minimize land use conflicts that may occur from infill and redevelopment of underutilized properties.
- Maintain an aesthetically attractive urban environment that is sensitive to the natural environment.

(Town Plan at p. 15)

2.3. The Planning Challenge: Toward 2027 and Beyond

Goal 2: Promote thoughtful growth.

Objective 2.1: Ensure that new development and rehabilitation efforts enhance and reinforce the existing architecture, design and layout along major arterials and historic neighborhoods.

(Town Plan at p. 19)

CHAPTER 4 – Comprehensive Plan Elements

4.4 – Open Space/Recreation/Public Health

Open Space bolsters local economies, ensures residents have opportunities for physical activity, preserves significant natural resources, provides recreational opportunities, and guides growth into appropriate areas.

(Town Plan at p. 44)

4.5 – Natural Environmental Resources

Scenic Views

Although there are many outstanding view sheds within the Village, three areas have been particularly identified. First, in the northeasterly section of the Village, between Upper Main Street and the Countryside development, is the highest point within the Village. Spectacular views of Mount Mansfield and the Adirondack Mountains are visible from this location. Second, the river crossing on Park Street provides views of the Winooski River and serves as a scenic entrance to the Village. Third, along the westerly end of Pearl Street there are spectacular views of the Winooski River Valley.

(Town Plan at p. 52)

Natural Environmental Resource Goals

Goal 1: Preserve the natural beauty indigenous to Vermont within the Village of Essex Junction
(Town Plan at p. 55)

4.11 – Land Use

Land Use Goals

Goal 2: Promote responsible residential growth and encourage the growth and maintenance of quality residential areas.

Objective 2.1: Conserve open space/agricultural land for future generations.

Goal 3: Mitigate negative impacts of contiguous but different land uses.

Goal 4: Ensure that quality land planning and structural design occur in all commercial and industrial areas in a manner compatible with surrounding architecture.

(Town Plan at p. 110)

Land Use Categories

Open Space: To provide and maintain open lands within the Village and its neighborhoods, and to provide locations for public recreation and school facilities.

(Town Plan at p. 114)

iii. Town Energy Plan

Energy Compliance

Siting Policies

The policies in this section are the land conservation measures to be applied in the Section 248 decision making process with respect to the PUC's review of a petition for a renewable generation facility. The Essex Community will use the following siting policies to determine support for identifying a municipally designated preferred site and in the review of Section 248 applications.

1. The Essex Community strongly encourages development of renewable energy generation facilities on rooftops, parking lots, on parcels or directly adjacent parcels to a customer that has been allocated more than fifty percent of the net-metered system's electrical output, previously-developed sites, brownfields, landfills, former mineral resource extraction areas, and municipally designated sites.

2. Locate ground-mounted solar and wind turbines outside of the state designated Village Center in the Village of Essex Junction, the Essex Town Center, and the Business and Historic Preservation Design Control Districts.

3. Development of renewable energy generation facilities shall not take place in areas with known constraints and shall first explore alternatives to and then mitigate adverse impacts in areas with possible constraints, as identified in the constraints section of this plan. In determining whether known or possible constraints are present, on-site field verification should be conducted.

4. With the exception of preferred sites listed in policy 1, development of large-scale renewable energy generation facilities (capacity greater than 500kW) shall be located only within industrial zones, including the industrial zoned portion of the Resource Preservation District, in the Town of Essex.

5. Locate energy generation proximate to existing distribution and transmission infrastructure with adequate capacity and near areas with high electric load to reduce the need for new distribution and transmission extensions.

6. Avoid or minimize the adverse impacts of development (including renewable energy development and associated transmission and distribution infrastructure) on identified scenic resources, viewsheds and roadscape corridors in the Town of Essex Scenic Resource protection overlay district (See Map 3) through appropriate site planning and design practices.

9. Development (including renewable energy generation facilities and associated transmission and distribution infrastructure) is discouraged on slopes of 15 % or steeper and less than 20% due to the likelihood of erosion and stormwater runoff problems. Development shall be prohibited on slopes of 20 percent and steeper due to the likelihood of environmental damage.

10. Development (including renewable energy generation and associated transmission and distribution infrastructure) will not destroy or significantly imperil wildlife habitat identified on Map 3 as highest priority and priority landscape scale components) or all reasonable means of minimizing the destruction or imperilment of such habitat or species will be utilized.

11. Where feasible, pair renewable energy generation with electrical energy storage to ensure energy is utilized to the fullest potential, to increase resiliency/reliability of electricity during outages and decrease fossil fuel usage during peak periods. Renewable energy generation projects that can accommodate energy storage are strongly encouraged.

(Town Energy Plan at pgs. 3 through 6)

Implementation

Land Use and Development Policies

Goal: The Essex community is committed to development patterns and building energy use that result in the efficient use of energy.

Actions

4. Adopt a municipal screening requirement for solar generation facilities in accordance with 30 V.S.A. §248(b)(1)(B).

(Town Energy Plan at pgs. 7 through 8)

Appendix A

Scenic Resource Protection Standards

The scenic resource protection standards should be applied to the Town of Essex's Scenic Resource Protection District. The purpose of these standards is to avert or minimize the adverse impacts of development (including renewable energy generation) on identified scenic resources, viewsheds and roadscape corridors through appropriate siting and design practices. A proposed development along any of the scenic road segments identified in this section shall address any impacts on scenic resources as seen from public roads using these standards.

1. To minimize the loss of scenic character renewable energy generation facilities shall be designed and located to minimize the intrusion of incompatible and unharmonious development into existing scenic vantage points as viewed from public vantage points identified in the list of scenic streets.
2. Renewable energy generation facilities shall be positioned so that views to distant mountains remain as natural as possible.
3. Renewable energy generation facilities should be arranged in a manner that protects a significant portion of open space.
4. The use of vegetation to screen renewable energy generation facilities and associated fencing in all seasons is strongly encouraged. Plantings shall be of sufficient height, density and maturity to serve as a visual barrier from buildings and the roadscape identified in this section.
5. Shorter structures may be more appropriate in certain spaces than taller structures to keep the project from obstructing public vantage points identified in this section. Avoid locating a renewable energy generation facility in a location which diminishes the visual impact of the array from the owner's property but places the array immediately within their neighbor's or the public's viewshed. Locate facilities in a manner designed to reduce impacts on neighbors or public viewsheds.

Scenic Streets

Portions of the following streets are included in the Scenic Resource Protection Overlay District. To see which portions of the streets are in the district, refer to the SRPO map.¹⁰

¹⁰ The SRPO map is visible on p. 113 of the Essex Scenic Protection Manual
(<https://www.essexvt.org/DocumentCenter/View/152/Scenic-Protection-Manual-PDF---2011>)

- Bixby Hill Road
 - Browns River Road
 - Chapin Road
 - Colonel Page Road
 - Jericho Road/VT Route 15
 - Naylor Road
 - North Williston Road
 - Old Stage Road
 - Pettingill Road
 - River Road/VT Route 117
 - Towers Road
 - Upper Main Street/VT Route 15
 - Weed Road
 - Woodside Drive
- (Town Energy Plan at p. 25)

iv. **Summary Analysis of Clear, Written Community Standards in Regional Plan, Regional Energy Plan, and Town Plan**

The Regional Plan covers a wide range of topics for the region including land use, housing, economics, transportation, cultural resources and other community issues. As is often true of Regional Plans, encouragement and support is offered for the constituent towns to review their own needs and desires, and there are rarely any specific guidelines for scenic quality control. While the Regional Plan clearly recognizes the importance of scenic resources and supports renewable energy generation to meet Vermont's generation targets, it provides no clearly written standards regarding aesthetics at the Project site, instead only discussing general recommendations and policies. A review of the various Regional Plan maps did not reveal any specific protections or identification of scenic resources on or adjacent to the proposed Project location. While the Regional Plan clearly indicates that the Project site is in an "enterprise" area, and that there are possible constraints at the Project site, the possible constraints appear to directly relate to potential hydric and agricultural soils depicted on Essex's Map 3 – Possible Constraints. No specific goals, policies, guidelines or restrictions were found in the Regional Plan that are intended to preserve the aesthetics or scenic beauty of the Project site or surrounding areas.

Regarding the Town Plan, there are limited discussions of scenic resource locations, though the Town Plan does mention three areas with "scenic views": between Upper Main Street and the Countryside development, at the river crossing on Park Street, and along the westerly end of Pearl Street. None of these three locations are at or near the Project site. Otherwise, the Town Plan only includes general language regarding preserving character and scenic quality in Essex Junction.

The Town Energy Plan, which is a plan prepared by the Chittenden County Regional Planning Commission and adopted by both the Town of Essex and the Village of Essex Junction, offers more specific information for energy siting and scenic resources. Though most siting policies in the Town Energy Plan relate to net-metered renewable energy generation, siting is especially encouraged on parking lots and parcels on which the customer is also located, as well as other typical locations such as brownfields, landfills, quarries and municipally designated sites. The Town Energy Plan also directs developers to locate energy generation outside of the state-designated Village Center and other similar areas, and to avoid areas with known constraints. Many siting guidelines are provided for net-metered solar generation, but these do not clearly apply to other solar installations. The Town Energy Plan

does note that Projects larger than 500 kW are expected to be located only within industrial zones (within the Town of Essex) and in close proximity to existing distribution and transmission infrastructure, while avoiding or minimizing impacts to scenic resources, viewsheds and road corridors as shown on the Town of Essex Scenic Resource Protection Overlay (SRPO) District Map 3. However, the SRPO District clearly does not include any scenic resource areas within Essex Junction (where the Project is proposed). The list of scenic streets provided in the Town Energy Plan appears to exclusively list roadways that are located in the Town of Essex, none of which will have significant visibility of the Project.

The Town Energy Plan notes that an action that Essex Junction can take to meet its goals include adopting a municipal screening requirement for solar generation, though no screening requirement or ordinance was found during this review. Vegetation screening for renewable energy generation facilities is strongly encouraged, however.

Based on this review of the Regional Plan and Town Plan and associated Energy Plans, the proposed Project will not violate any clearly written community standard intended to preserve the aesthetics or scenic beauty of the area. These plans generally encourage the development of renewable energy sources and do not clearly specify the Project site or surrounding roadways for scenic protection. Based on a review of these Plans, renewable energy generation at the scale of the Project is expected to be sited within industrial zones.

B. Has the Applicant Taken Generally Available Mitigating Steps which a Reasonable Person would Take to Improve the Harmony of the Project with its Surroundings?

The Project includes a number of reasonable mitigating elements that reduce potential adverse aesthetic impacts and improve the harmony of the Project with its surroundings. Mitigation for the Project includes:

- The Project is setback approximately 453' from Maple Street (Vermont Route 117).
- Project components are low in profile, the rows of panels will be screened by intervening landform and contour with the existing topography, and where visibility will occur along Maple Street the Project will not substantially interfere with existing views to the south (see Appendix B, Viewpoints 6-10).
- All of the Project's internal wiring will be installed underground between array racks and the transformer location.
- Landscape mitigation is proposed to help screen and soften views of the Project from Maple Street and residential uses to the north and northeast (see Appendix D – Landscape Mitigation Plan).

C. Does The Project Offend The Sensibilities Of The Average Person? Is It Offensive Or Shocking Because It Is Out Of Character With Its Surroundings Or Significantly Diminishes The Scenic Qualities Of The Area?

When evaluating whether a project would offend the sensibilities of the average person, the criteria to make this assessment relates back to the first part of the Quechee Test; how the project 'fits' within its surroundings. The threshold for a project to be shocking or offensive is relatively high, and a given project would need to be entirely inconsistent with the surrounding land uses or exceptionally out of scale with the surroundings.

The assessment of impacts found the Project will result in an adverse impact to the aesthetics and scenic and natural beauty of the area. However, the Project could not be reasonably considered to be shocking or offensive for the following reasons:

- Visibility of the Project is limited to a brief section of Maple Street with existing views of two transmission corridors and the industrial buildings south of the Project site.
- Where visible, the Project will have a low profile and will not significantly intrude into existing views.
- Landscape screening is proposed to soften views from Maple Street and residential uses to the north and northeast (see Appendix D – Landscape Mitigation Plan).
- Existing and proposed intervening vegetation, as well as existing intervening landforms, will partially or completely obscure Project visibility from most public areas.
- Materials proposed for the Project are similar to existing materials currently visible in the nearby area, particularly the large industrial buildings south of the Project site.

For these reasons, the Project would not offend the sensibilities of the average person, and would not be offensive or shocking because it would not appear significantly out of character with its surroundings or significantly diminish the scenic qualities of the area in which it is proposed.

V. Conclusion of Aesthetic Analysis

The findings of this analysis conclude that the proposed Project will have a limited adverse effect on the scenic or natural beauty or aesthetics of the area. However, the Project will not violate any of the three criteria of the second part of the *Quechee* test:

- The Project does not violate a clearly written community standard intended to preserve the aesthetics or scenic beauty of the area based on the review of the Regional Plan, Regional Energy Plan, Town Plan and Town Energy Plan.
- The Project incorporates reasonable siting and mitigation efforts to reduce visibility and harmonize the Project with its surroundings, including the incorporation of a landscape mitigation plan (see Appendix D – Landscape Mitigation Plan).
- The Project would not be considered shocking or offensive to the average person due to the lack of extensive public views, presence of existing and proposed screening vegetation, and use of materials similar to large industrial buildings south of the Project site.

Based on these findings, the Essex A North Lot Solar Project meets the *Quechee* test insofar as its impact on aesthetics will NOT be UNDULY ADVERSE.

VI. Orderly Development Within the Region

Section 248(b)(1) of Title 30 of the Vermont Statutes Annotated requires that the Vermont Public Utility Commission find that a proposed project will not unduly interfere with the orderly development of the region, with due consideration having been given to the recommendations of the municipal legislative bodies, and the land conservation measures contained in the plan of any affected municipality. For generation projects, Section 248(b)(1)(C) further states that “the Commission shall

give substantial deference to the land conservation measures and specific policies contained in a duly adopted regional and municipal plan that has received an affirmative determination of energy compliance under 24 V.S.A. § 4352. In this subdivision (C), ‘substantial deference’ means “that a land conservation measure or specific policy shall be applied in accordance with its terms unless there is a clear and convincing demonstration that other factors affecting the general good of the State outweigh the application of the measure or policy.”

Even when a town plan has received a determination of energy compliance, provisions of a town plan must only be considered “to the extent they qualify as land conservation measures or where there are screening requirements of a municipal ordinance or bylaw.”¹¹ The Vermont Supreme Court has ruled that “broad and general statements in Town and Regional Plans are not sufficiently specific to constitute a basis for denying a permit under § 248.”¹² Instead, for purposes of Section 248(b)(1), provisions of a regional or municipal plan will only be given due consideration or substantial deference if they qualify as “land conservation measures” that apply clearly and specifically to a defined area or areas.¹³ As such, the particular language used within Town and Regional Plans is important to determining whether a standard is clearly written and specifically applies to a given Project to constitute a land conservation measure.

For the Essex A North Lot Solar Project, the Regional Plan, Regional Energy Plan, Town Plan, and Town Energy Plan set forth the standards for orderly development of the region. The following review discusses the standards, land conservation measures, and specific policies as detailed in these plans. Excerpts from the various plans are included in Appendix E – Regional and Town Plan Excerpts.

The Regional Energy Plan and Town Energy Plan have both received an affirmative determination of energy compliance under 24 V.S.A. § 4352.

A. Regional Plan

Regional plans help guide many issues within the region, including development, mostly in the form of recommendations and support to its member towns. The Regional Plan includes chapters which cover housing, natural resources, economics, transportation, utilities, and future land use. Topics included in Regional Plans which pertain to orderly development of the region pertinent to solar projects include overall regional goals, land conservation goals and recommendations, and the regions approach to renewable energy, including specific siting recommendations for solar projects.

While the Regional Plan supports land conservation efforts to protect ecological, agricultural, scenic, forest lands, and other valuable natural resources within the region (Regional Plan, Supplement 1 at pgs. 3 and 4, Supplement 2 at pgs. 16 and 55, Maps 9 and 10), it does not identify the Project site as existing conserved land or designate it for future conservation. The Project will have negligible impacts to agricultural soils on the site given the lack of connectivity to other primary agricultural soils in the vicinity and previous impacts and prevalence of existing infrastructure at the Project site, as set forth in Stephanie Wyman’s prefiled testimony. Upgrades necessary for the Project and its associated interconnection to the electric grid will not result in forest fragmentation or have an undue adverse impact on necessary wildlife habits, ecological systems, and water and/or air quality as demonstrated in Adam Crary’s prefiled testimony and associated exhibits.

¹¹ *Application of Emancipation Energy, LLC for A Certificate of Pub. Good, Pursuant to 30 V.S.A. Ss 248 & 8010, for A 150 Kw (Ac) Solar Net-Metering Sys. in Middlesex, Vermont*, No. 20-1848-NMP (Order of June 21, 2022).

¹² *In re Petition of Apple Hill Solar LLC*, 2021 VT 69 at ¶ 36.

¹³ *Id.* at ¶¶ 36, 43.

The Regional Plan also supports the development of renewable energy, and offers language supporting the location of renewable energy generation on preferred or previously disturbed sites, though other sites are not precluded from development (Regional Plan at p. 21). The Regional Plan's Supplement 6, Energy Analysis, Targets, & Methodology, adopted 6/20/2018, is a certified Enhanced Energy Plan for the region that discusses the need to meet the State of Vermont energy goals by 2050 and provides guidance on how to meet those goals based on the amount of generation facilities that need to be developed. Map 6 – Solar Generation Potential (Regional Plan at p. 29) categorizes the Project site as 'Base Solar: Areas with high solar potential and a presence of state/local possible constraint'. However, the Regional Plan does not include specific siting standards for solar generation facilities. Energy targets for Essex/Essex Junction are described as follows:

SUPPLEMENT 6 – ENERGY ANALYSIS, TARGETS, & METHODOLOGY

Calculating Renewable Energy Generation Targets

Table 29. Municipal Renewable Generation Targets

Town Name	Total Low Target (MWh)	Total High Target (MWh)	Existing Renewables (MWh)	Low Range New (MWh)	High Range New (MWh)
Junction + Town	211,386	353,629	43,750	167,636	309,879

(Regional Plan, Supplement 6 at p. 29)

In review, the Regional Plan and its associated Supplements and Maps, including the Regional Energy Plan as Supplement 6, do not contain specific land conservation measures or policies for the Project parcel. The Project complies with the Regional Plan's general goals and policies, and supports the Regional Plans goals for the development of renewable energy generation without violating land conservation measures within the plan. The Project therefore gives substantial deference to the duly adopted regional plan that has received an affirmative determination of energy compliance under 24 V.S.A. § 4352.

B. Town Plan

In terms of conservation, the Town Plan mentions that the Whitcomb Farm, which is not located on the Project site, is conserved (Town Plan at pgs. 31 and 34). Additionally, the Town Plan notes that Essex Junction “relies on the VCD [Vermont Conservation Design] project’s highest priority and priority landscape, species, and community components to identify areas of important ecological function” and use of the VCD project “will inform decision making regarding identification of locations most suitable for development and those on which to focus conservation efforts... Areas of ecological significance, mapped on Map 1, include highest priority and priority components found at both the landscape and species/community scale” (Town Plan at p. 51). The Town Plan also provides protection for Priority and Highest Priority forest blocks and species protection and specific goals and objectives for the protection of natural resources and wildlife habitat (Town Plan at pgs. 51-52, and p. 55 at Objective 2.5). However, the Natural Resources Map (Town Plan at p. 146, Map 1: Natural Resources) shows that the mapped priority areas informed by the VCD do not overlap with the existing industrial site where the Project is proposed.

The Energy Chapter of the Town Plan includes language that the Town Energy Plan is “the Essex Community’s plan for shifting away from fossil fuels to renewable sources of energy in the transportation and heating sectors, increase energy efficiency in all sectors and site additional renewable energy generators” (Town Plan at p. 30).

In regard to Global Foundries, the Town Plan states that “[t]he village should support development and infrastructure policies and investments that meet the needs of Global Foundries and other Innovation Park

businesses, but also minimize impacts on the local residents” (Town Plan at p. 40). Additionally, the Town Plan states that infill development “should be facilitated where appropriate, with care taken to preserve the character of neighborhoods and surrounding areas (Town Plan at p. 41). Indeed, to emphasize that minimizing impacts and preserving character as well as meeting economic needs are important, economic development goals in the Town Plan include to “[a]ssist and work with existing businesses to stay and expand within Essex Junction” and “preserve and enhance the appearance and historical character” (Town Plan at p. 43), as well as an objective to [w]ork with officials at Global Foundries...to meet their future development needs” (Town Plan at pgs. 41 and 42).

Land use objectives include an objective to “[c]onserve open space/agricultural land for future generations” Town Plan at p. 110, Objective 2.1).

C. Town Energy Plan

In order to meet state energy goals by 2050, the Town Energy Plan includes language to “[e]stablish enough renewable energy generation sites to generate between 211,386 to 353,629 MWh of electricity” (Town Energy Plan at p. 2). The Town Energy Plan goes on to state a goal of generating 183,587 – 325,830 MWh of new renewable energy, with a general policy to “support regulatory and non-regulatory initiatives that result in decreased greenhouse gas emissions, reduced energy consumption, and increased renewable energy generation” (Town Energy Plan at p. 10). Additional generation targets are excerpted below:

Renewable Energy Generation Targets

Regardless of ultimate use, the transformation to renewable sources of electricity will require increased generation from a variety of sources including biomass, hydro, solar, and wind....

Table 10 Renewable Energy Generation Target

	Low	High
Additional Target (MWh)	183,587	325,830
Existing (MWh)	27,799	
Total (MWh)	211,386	353,629
Additional Acres Needed to Meet Target	1,198 (5% of Community)	2,125 (8% of Community)

Of the total solar generation potential, 15 MW (18,262 MWh) could be located on existing impervious surfaces, such as rooftops and paved areas... Renewable energy generation facilities shall not take place in areas with known constraints; if impacts to possible constraints cannot be avoided, they shall be mitigated. Renewable energy installers should be encouraged to develop in tandem with other uses that could occur on a given site to add value in a way that speaks to holistic development patterns rather than a standalone facility. This type of development could also locate renewable energy installations on the same site as high energy users and reduce the need for distribution and transmission line upgrades.

Facilities with a generation capacity greater than 500kW are considered utility-scale and shall be located in designated industrial or commercial zones, where constraints are less numerous, impacts are more easily mitigated, and there is less competition for other land uses than in other areas.

(Town Energy Plan at pgs. 17, 20, and 21)

The Town Energy Plan also includes typical state and local constraints:

Known constraints are areas in which development, including renewable energy generation, is not appropriate. See Map 2 for the location of known constraints within the community. Known constraints are:

State Known Constraints

- FEMA Designated Floodway
- DEC River Corridors
- National Wilderness Areas State-significant Natural Communities
- Vernal Pools (confirmed and unconfirmed)

- Class 1 and 2 wetlands (VSWI and advisory layers)

Local Known Constraints

- Slopes of 20% and steeper [Essex Town only]
- Recreation/Conservation areas within the Resource Preservation-Industrial District

Possible constraints are areas in which the effects of development, including current types of renewable energy generation facilities, may need to be mitigated. See Map 3 for the location of possible constraints in the community. Possible constraints are:

State Possible Constraints

- Agricultural Soils (While the State will review agricultural soils, it is not the intent of the Village of Essex Junction to protect primary agricultural soils from development considering agricultural operations (outside of community gardens) are not feasible on small parcels isolated from more intact open agricultural areas. Further, mitigation of these soils through state development approval processes does not seem appropriate in such an urban environment).
- Hydric Soils
- Act 250 Agricultural Soil Mitigation Areas
- FEMA Special Flood Hazard Areas
- Protected Lands
- Deer Wintering Areas
- Vermont Conservation Design Highest Priority Landscape Scale Components. These include highest priority interior forest blocks, surface water and riparian areas, and connectivity blocks, and wildlife crossings.

Local Possible Constraints

- Industrial designated areas of the Resource Preservation-Industrial District (see siting policy 8)
- Designated Village Center Historic District in the Village, Town Center and Design Control Districts in the Town
- Scenic Resource Protection Overlay District (including portions of Bixby Hill Road, Browns River Road, Chapin Road, Colonel Page Road, Jericho Road/VT Route 15, Naylor Road, North Williston Road, Old Stage Road, Pettingill Road, River Road/VT Route 117, Towers Road, Upper Main Street/VT Route 15, Weed Road, and Woodside Drive)
- 15% or steeper and less than 20% [Essex Town Only]
- Vermont Conservation Design Priority Landscape Scale Components. These include priority forest blocks, connectivity blocks, surface water and riparian areas, and physical landscapes).
 - o Forest blocks are areas of contiguous forest and other natural communities and habitats, such as wetlands, ponds, and cliffs that are unfragmented by roads, development, or agriculture (Sorenson and Osborne 2014).
 - o Connectivity Blocks are the network of forest blocks that together provide terrestrial connectivity at the regional scale.
 - o Physical landscapes (often referred to as enduring features) are the parts of the landscape that resist change. They are the hills and valleys, the underlying bedrock, and the deposits left behind by glaciers.
 - o Surface Waters and Riparian Areas

The Town Energy Plan includes siting policies that “are the land conservation measures to be applied in the Section 248 decision making process with respect to the PUC’s review of a petition for a renewable generation facility” (Town Energy Plan at pgs. 5-6, excerpts provided above in Section IV. A. iii.). A close reading reveals that this list does not include specific conservation measures, per se, but is rather a list of types of sites encouraged (rooftops, parking lots, near existing distribution and transmission infrastructure, etc.) and discouraged (any ground-mounted solar within the village and town centers, preservation areas, areas with known constraints, steep areas, etc.). Other items in the list include avoiding or minimizing adverse impacts on identified scenic resources, avoiding destroying or significantly imperiling wildlife habitat, and encouraging the pairing of renewable energy generation with energy storage. One description in the list, a requirement that renewable energy generation facilities with a capacity greater than 500 kW only be located within industrial zones, is specifically written in reference to the Town of Essex and makes no mention of Essex Junction. As previously stated, the mapped priority habitats do not overlap the industrial property where the Project is proposed, and there are no scenic resources, viewsheds or road corridors marked for protection that

would be affected by the Project (see Appendix E, Town Plan Map 1 and Scenic Resource Protection Overlay District Map).

Based on the information presented within the Town Energy Plan and the information provided in the prefilled testimony of Adam Crary, the Project will avoid habitat fragmentation, conservation areas, wildlife corridors, wildlife core habitat, and historic districts. Hydric soils are depicted as a possible constraint at the Project site (see Appendix E, Essex Community Enhanced Energy Plan, Map 3 – Possible Constraints). Soil types, including hydric soils, are mapped in more detail on the Project site plans (see Exhibit EANL-JC-2, sheet C2.00). Sheet C2.00 depicts areas where hydric soils may be present based on data available from the National Resources Conservation Service. However, Map 3 of the Town Energy Plan – Possible Constraints does not definitively map wetland locations and, as the map indicates, “is not a replacement for surveyed information or engineering studies.” Onsite field investigation, assessment and delineation of wetlands was conducted and reviewed with the Vermont Department of Environmental Conservation’s Wetlands Program, and the Project has been designed to avoid any activity within wetlands and minimize activity within Class II wetland buffers. For further information, see the prefilled testimony of Jake Clark and Adam Crary.

The Project will also be near existing distribution infrastructure with adequate capacity and load, located on the same parcel as the off-taker, will incorporate underground electric lines where feasible, and includes landscape mitigation measures to reduce the visual impact of the Project and help preserve the existing local character.

D. Summary of Orderly Development Analysis

Overall, the Regional Plan, Regional Energy Plan, Town Plan and Town Energy Plan do not identify the Project area as having specific limitations, planned conservation measures, or being unsuitable for solar development. No land conservation measures specific to the Project site were found in these documents that would be affected by the Project.

Giving substantial deference to the recommendations and land conservation measures in the Regional Plan, Regional Energy Plan, Town Plan, and Town Energy Plan, the Essex A North Lot Solar Project **will not** unduly interfere with the orderly development of the region.