

Aesthetic Assessment & Review of Orderly Development



View from the north end of the Project area looking southerly toward the Project.

Project Location: Upper Loveland Road, Norwich, Vermont
Project Size: 500kW
Prepared For: Vermont Department of Public Service
Prepared By: Lucy Thayer, PLA
TCE Project #: 22-068

May 29, 2022



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Introduction and Scope of Work

TCE was engaged by the Department of Public Service (“DPS”) to conduct a visual impact analysis to determine potential visual and orderly development impact of a 500-kW solar project located off Upper Loveland Road in Norwich, VT (the “Project”) as proposed by Norwich Upper Loveland Solar, LLC (the “Applicant” or “Petitioner”) currently under review by Public Utility Commission (PUC). The Project has been designated as **PUC Case No. 21-3587-NMP**. Documents and exhibits referenced in this report were accessed through the public ePUC online database¹.

This analysis is conducted in response to the requirements set forth for aesthetic review of net-metering projects under Public Utility Commission Rule 5.112. The PUC has adopted the Quechee Analysis, a two-step analysis as set forth originally for the review of aesthetics under Criterion 8 for Act 250 to determine that a proposed project will not have an undue adverse effect on a proposed project site’s aesthetics. The analysis presents findings and conclusions of investigation as to whether alterations to the areas visual character are adverse, and if so, whether the changes are unduly adverse as defined by the Quechee Analysis.

The methodologies for the aesthetic assessment of this Project include visual and spatial analyses of aerial photographs, satellite imagery and GIS data, field reconnaissance and site visits, and document research and review. Our primary analysis evaluates the Project’s visibility and potential for visual and aesthetic impacts to public vantage points such as state or local roads. Locations that include neighboring properties and residential areas in close proximity to the proposed solar Project were also considered, although it is understood that views from individual private homes and properties may change over time as property uses and demographics of the surrounding area change. We have used multiple field studies to verify our analyses of the proposed conditions following completion of the Project.

Report Organization and Contents

This report is organized around and relies on an extensive narrative of the Quechee Analysis as it applies to the proposed Project. Additionally, conclusions from this report rely on and reference materials submitted by the applicant, as well as local and regional documents referenced throughout. A few additional excerpts from the Town Plan and Zoning Regulations have been included with this report, to supplement the pages excerpted and provided by the Applicant in **Exhibit NUL MS-6**.

- Norwich Town Plan, adopted March 7, 2020, (the “**Town Plan**”)
- Norwich Zoning Regulations, amended July 1, 2009
- Two- Rivers-Ottauquechee Regional Plan and maps, adopted July 15, 2020 (the “**Regional Plan**”)

¹ <https://epuc.vermont.gov/>

Project Background

Project Description²

The Project is located in the Town of Norwich, in Windsor County, Vermont (43.724132°N, -72.291876°W) and will consist of the construction of a 500 kW (AC) ground-mounted photovoltaic generation facility (the "Array"). The Project proposes a limit of disturbance of ±8.2 on a ±40-acre parcel³. The Project is located west of Upper Loveland Road (±455 feet) and Interstate 91 (±545 feet) and southeast of Hawk Pine Road (±960 feet). A 150' wide aboveground utility corridor runs along the west and northern side of the parcel. The Project will be accessed via an existing gravel access drive off of Upper Loveland Road used to service the cell tower adjacent (east) to the Project.

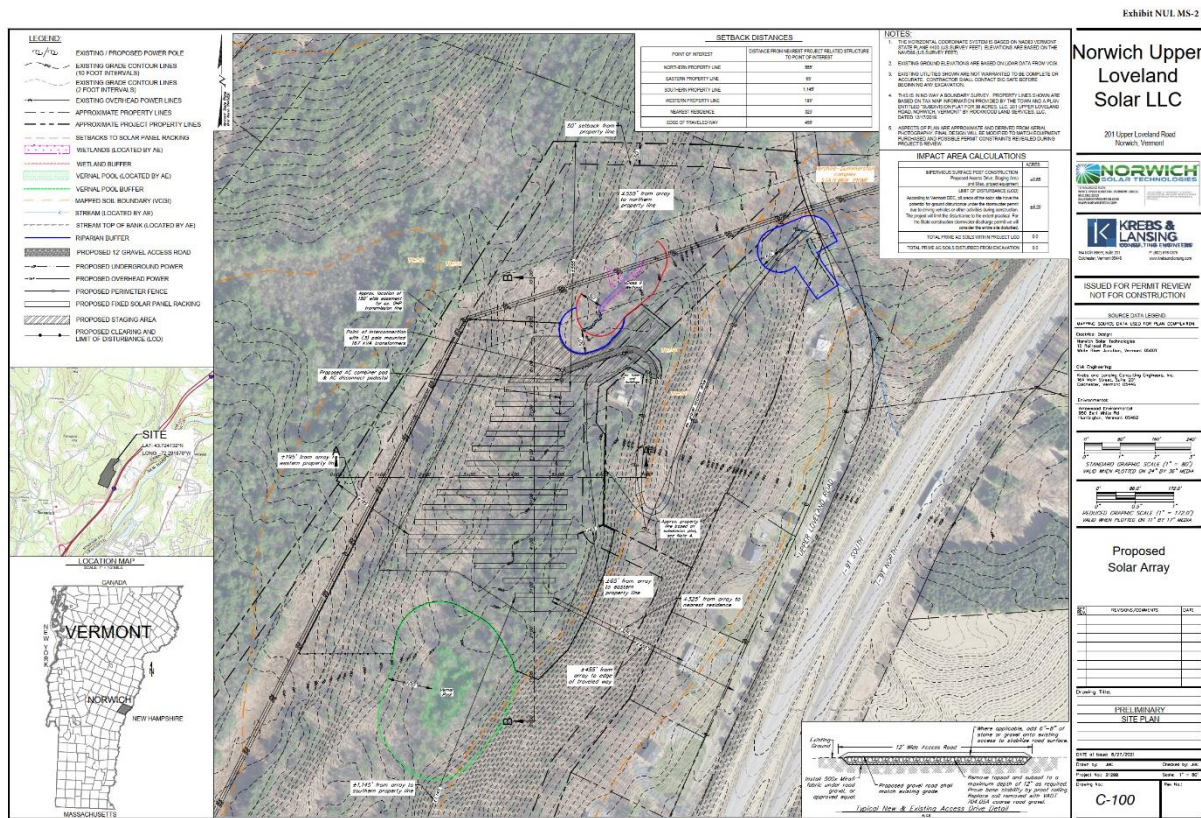


Image 1. Exhibit NUL MS-2, C-100 Site Plan retrieved from the ePUC website

The panels will be mounted on fixed-tilt ground mounted racks arranged in multiple rows generally running east-west with panels facing south. The total height of the panels will be approximately 10 feet height above ground level. The crystalline panels will have an anti-glare coating and are expected to be dark in color. The array equipment, other than the panels, will be galvanized metal with a light gray finish.

² Project description is based on Petitioner Exhibits including Prefiled Testimony of Martha Staskus and Exhibits NUL MS-2 through NUL MS-4
³ <https://maps.vcgi.vermont.gov/ParcelViewer/>

The electrical interconnection will be to the existing distribution line that runs along the cell tower access road and will include three new utility poles. The Array will be surrounded by an 8-foot high wildlife fence with mesh size no smaller than 6 inches by 6 inches. The existing access road is proposed to be extended by approximately 140 feet.

The Project parcel contains a Class II wetland with associated 50' wetland buffer and a small stream and riparian buffer on the north of the lot. A vernal pool exists south of the proposed Array and has a 100' buffer. The Project does not propose impacts to these natural resources or their associated buffers.

Vegetation on the site includes mature deciduous and evergreen trees where the Array is proposed and a cleared transmission line north of the Array. Project proposes ± 8.20 acres of clearing shown as the "Limit of Disturbance" on the C1-200 Site Plan that is Exhibit NUL MS-2. The panels are sited on relatively level portion of a hill that runs parallel to Upper Loveland Road and I-89. There is a steep hill east of the Array that slopes down to Upper Loveland Road. The slope varies depending on location, on average there is approximately 30% ($\pm 1V:3H$) with portions of the slope over 50% ($\pm 1V:2H$), and some portions with a less steep slope. From the southernmost panels – at the location noted on the plan as " $\pm 325'$ from array to nearest residence" in Exhibit NUL-MS-2 – there is an elevational difference of ± 160 feet.

These elevational differences from the nearby area roads to the panels will reduce, buffer and/or block visibility of the Project from nearby locations and area roads including Upper Loveland Road, Loveland Road, Route 5, Interstate 89, Maple Hill Road, Four Wheel Drive, Hawk Pine Road, and River Road. No visibility of the Project from nearby locations is expected due to the site and surrounding area topography and vegetation that serve to screen the Project from offsite.

Aesthetic Assessment

The Quechee Analysis is a two-step process that begins with assessing the nature of the Project, its context, and whether or not it will lead to an adverse aesthetic impact, and if it is adverse, if the Project is unduly adverse.

The first step asks questions of the project to test for adverse impacts. The five questions include the following themes:

1. The nature of the Project's surroundings.
2. The Project's design and compatibility with its surroundings.
3. The colors and materials selected for the Project and suitability for the context.
4. The Project's visibility.
5. The Project's impact on open space in the area.

If the conclusion from the first step of the analysis is that the aesthetic impact of the Project is considered to be in harmony or compatible with its surroundings, then the aesthetic impact of the project is considered not adverse. If this is not the case, then the project is considered to have an adverse impact and the second step of the Quechee Analysis is required to determine if the adverse impact is undue. An aesthetic impact is unduly adverse if any of the following is true:

1. The Project violates a clear, written community standard intended to preserve the aesthetics or scenic beauty of the area;
2. The Project offends the sensibilities of the average person because it is out of character with its surroundings or significantly diminishes the scenic qualities of the area; or
3. The Applicant has failed to take generally available mitigating steps which a reasonable person would take to improve the harmony of the project with its surroundings.

The Quechee Analysis

Step One of the Quechee Analysis

1. Project Surroundings

1. A. What is the nature of the project's surroundings?

The Project is located on an undeveloped parcel on the eastern side of the Town of Norwich off Upper Loveland Road, a dead-end road serving local residential traffic. A cellular communications tower facility is present at the end of the existing access road (east of the proposed Array). A 150-foot wide cleared

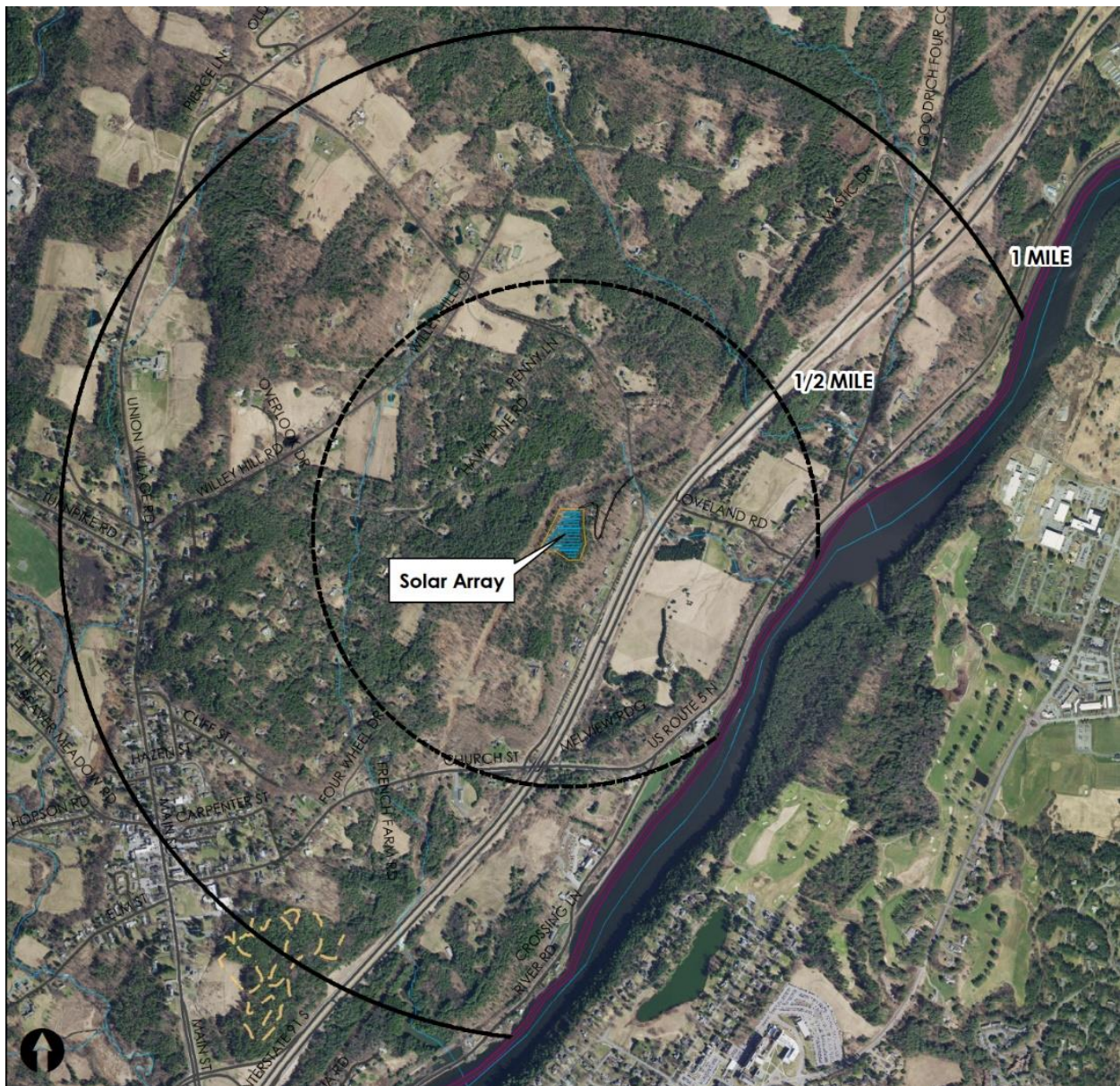


Image 2. Context Map showing a 2-mile radius

transmission corridor is north and west of the Project. Interstate 91 and the Connecticut River are east of the Project. The surrounding area has lower density, rural residential development, with twelve residential lots abutting the Project parcel on the south, east and north, all of which are accessed from Upper Loveland Road, except from one lot that is accessed from Four Wheel Drive.

The Village of Norwich is approximately 1 mile southwest. The greater surrounding area has a mix of wooded areas, forest blocks, open agricultural fields, and residential lots.

It appears that there is local trail northwest of the Project site; however, this trail is not shown on any of the Town's trail maps or in the publicly available GIS data, but does appear on online maps like Google.

Refer to **Figure 1 in the Appendix** for a photographic inventory showing context of the site and surrounding areas.

1. B. Is the project to be located in an urban, suburban, village, rural or recreational resort area?

The Project is located in the rural residential area as shown in the Town Plan Current Land Use Map on page 12, see Image 3 of this report. The nearby uses include the cell tower adjacent to the Project, but primarily consist of residential development in the surrounding area. There is little commercial development in the area, with a few commercial businesses on River Road.

1. C. What land uses presently exist?

The current land use is identified as “undeveloped” in the Town Plan Current Land Use Map (see Image 4 of this report) and the host parcel is primarily wooded with the exception of the portion of the transmission corridor that goes over the Project parcel. The surrounding area land uses mostly consist of wooded lands and forested areas with residential development of

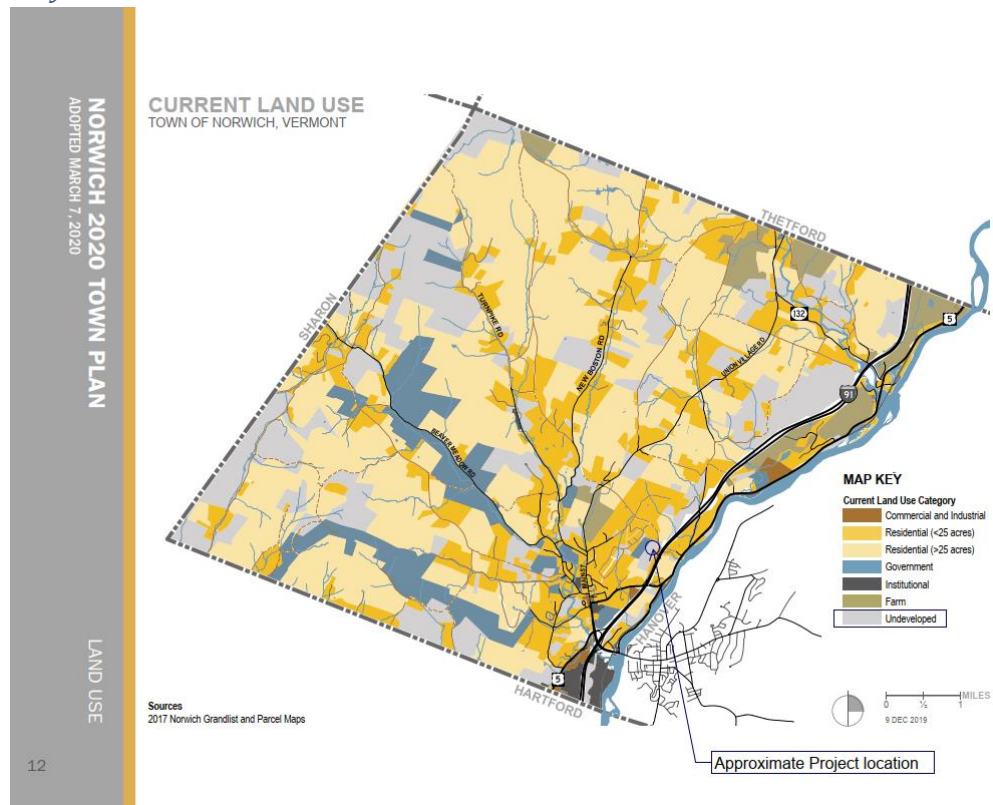


Image 3. Norwich Town Plan Current Land Use map at 12

parcels less than 25 acres per the Current Land Use Map, see Image 3.

1 D. What is the topography like?

The Project is located on a relatively level portion of land atop a steep hill that runs parallel to Upper Loveland Road, ascending from east to west. In the area where the Array is located, there is a small dip in the middle where the land is lower than the top of slope to the east and where the land rises again to the west toward the 150' utility corridor. The elevation of the utility corridor is approximately

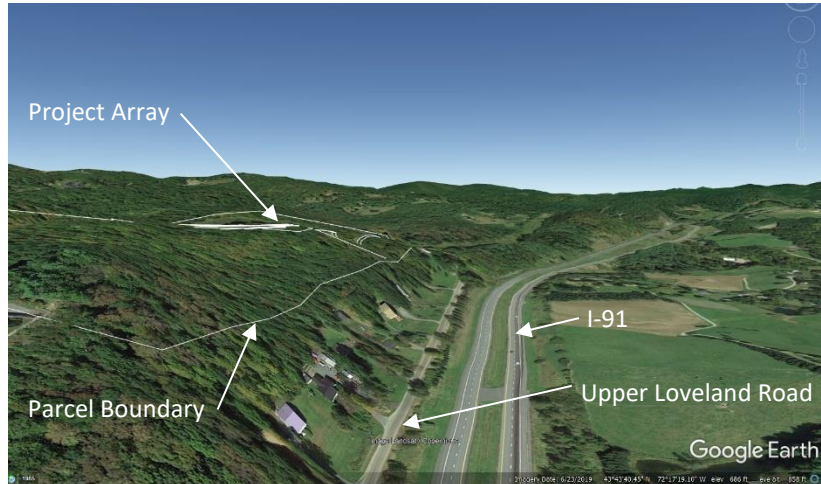


Image 4. Google Earth image showing area terrain with the Project overlaid on top.

45' higher than the low point of the Project and approximately 10' higher than the panels on the highest elevation at the southwest end that follow the slope and are within about 35 feet of the utility corridor. Slopes in the area of the Array range from $\pm 3\%$ north-south, 19-20% the western side of the Project area, and up to $\pm 47\%$ where the southwestern panels are located near the utility corridor based on topographic information on the Site Plan, Exhibit NUL MS-2.

A portion of the Project area within the Limit of Disturbance/tree clearing area extends onto the upper portion of a steep slope east of the Array that slopes down to Upper Loveland Road. The slope varies depending on location. There is an elevational difference of ± 160 feet from the top of slope to the bottom of slope at the location noted on C-100 Site Plan as " $\pm 325'$ from array to nearest residence" in Exhibit NUL-MS-2. The average grade is approximately 30% ($\pm 1V:3H$) with portions of the slope over 50% ($\pm 1V:2H$) and other portions that are less steep.



Image 5. View facing south at the top of the slope. The Project limits extend to east (left) for tree clearing and disturbance.

1. E. What structures exist in the area?

The surrounding area has limited development and structures, however of the structures that are in the nearby area they are primarily residential, with few commercial buildings. A cellular communication tower facility is adjacent to the Project parcel and has stealth pine branching for visual mitigation. Other structures nearby include the existing utility infrastructure along Upper Loveland Road and the existing access drive.

1. F. What vegetation is prevalent?

Vegetation where the Array is proposed consists of a mature stand of evergreen and deciduous species, including “pockets of dense hemlock,” oak, maple, and white ash.⁴ Forest blocks and wooded areas surround much of the parcel aside from clearings for homes. The slope east of the Project is vegetated with large evergreen and deciduous trees.



Image 6. View from the northwest end of the Project area looking southeast toward the Project.

Understory plants observed during a site visit include herbaceous woodland species, like ferns (maidenhair, Christmas, etc.), trout lily, mosses, etc.

Vegetation in the greater surrounding area consists of open meadows and agricultural fields interspersed with wooded, blocks of forested areas.

1. G. Does the area have particular scenic values?

A review of the Town Plan finds the Project area does not have particular scenic values. The Town Plan does note that Route 5 is part of the Connecticut River Scenic Byway, described as “a popular bicycle route” in the Town Plan at 41. The Project will not be visible from Route 5, so the Project will not impact this scenic resource. The Town Plan notes the Project area as being in the “Resources Protection” area on Future Land Use Maps⁵, this is discussed in the Orderly Development section of this report.

⁴ Exhibit NUL DB-2 at 7.

⁵ Norwich Town Plan at 19 and 20.

A review of the Town Plan finds that the Project site itself is not part of any identified scenic viewsheds or important vistas that would give the Project area particular scenic value. Scenic resources are also discussed in the Orderly Development section of this report.

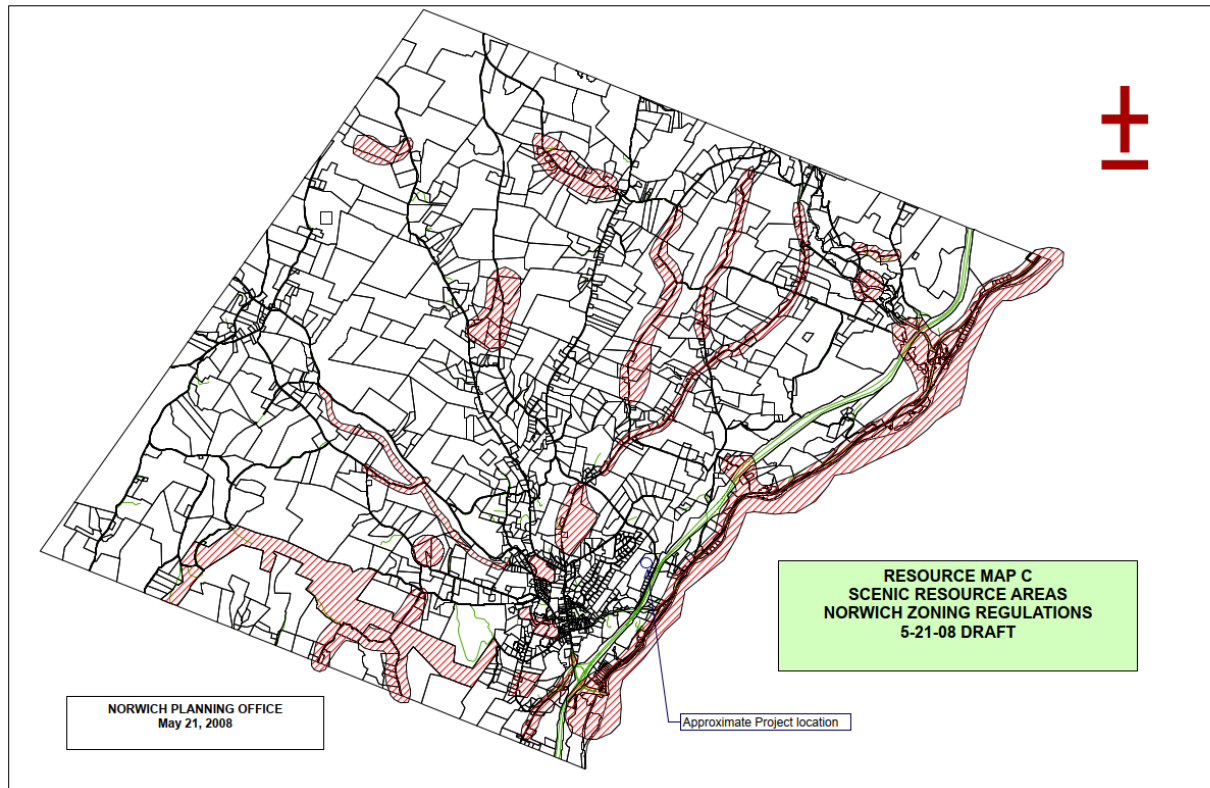


Image 7. Town Map showing Scenic Resource Areas.

2. Project Design

2. A. Is the project's design compatible with its surroundings?

The Project is designed to be as compatible with its surroundings as possible in most ways. The Project is sited in a location where it is screened from view by topography and existing vegetation for the average observer from offsite locations. An existing access road will serve Project access which greatly reduces the need for new access road infrastructure.

The Project is designed to avoid impacts to identified natural resources including the identified wetland, wetland buffer, vernal pool, vernal pool buffer, stream, and stream buffer.⁶ The panels follow the contours of the land and do not proposed land contouring or grading disturbance to the existing landforms. Existing

⁶ Exhibits NUL DB-2, NUL MS-2, Prefiled Testimony of Martha Staskus

utility infrastructure present on Upper Loveland Road and the access road will be used to limit new utility infrastructure, allowing the Project interconnection to occur with relatively minimal new impact.

One area that could be considered as less compatible is the proposed tree clearing of ± 8.2 acres, especially when compared to an already cleared or partially cleared site. The VT Agency of Natural Resources notes the following in a letter to the PUC dated January 3, 2022 at 5 “[t]he Agency notes for the PUC that this Project proposes the twelfth highest acreage of forest clearing per kWh of nameplate capacity of the 188 solar projects for which the Agency has collected forest clearing data since 2016.”

2. B. Is the architectural style of the buildings compatible with other buildings in the area?

Although there are no buildings being proposed as part of the Project, the proposed solar structures (arrays, transformers, fencing, etc.) are not incompatible with materials of the utility infrastructure nearby like the cell tower facility.



Image 8. View of the cellular communications tower facility adjacent to the Project.

2. C. Is the scale of the project appropriate to its surroundings?

From the perspective of land use, the scale of the Project is appropriate for the surroundings. The Project is located next to other large utility infrastructure including the cell tower and the 150-foot utility corridor. The Project area, ± 8.2 acres, is also comparable to nearby fields and clearings, and will be sited above/higher in elevation than the nearby travel corridors.

When evaluated on the local and regional level, the scale of the Project can be considered appropriate.

2. D. Is the mass of structures proposed for the site consistent with land use and density patterns in the vicinity?

The Project will not be visible from nearby local roads, travel corridors, trails, or accessible nearby locations, including residences, because it is sited up a steep slope from roads to the east and blocked by vegetation and topography in other directions. With the nature of the surrounding topography, existing vegetation, and low height of the panels, the mass of the Project is mitigated for offsite observers and is compatible with the land use and density patterns in the vicinity.

3. Project Materials

3. Are the colors and materials selected for the project suitable for the context within which the project will be located?

The array equipment, other than the panels, will be galvanized metal with a light gray finish. The crystalline panels will have an anti-glare coating and are expected to be dark in color.⁷ The supporting elements are sited together which will help to limit any visual impact they may have. The proposed above-ground utility elements will be similar in nature to the existing utility infrastructure on Upper Loveland Road. The access and road infrastructure will be used for the Project already exists, except for the extension of the drive into the Project area. The proposed access road extension will be gravel and similar in nature to existing access road infrastructure. The wildlife-style fence will be compatible with the other agricultural uses in the surrounding area and the fence surrounding the adjacent cell tower facility.

4. Project Visibility

To evaluate the visual impacts of the Project, we reference *In re Petition of Chittenden Renewable Energy, LLC. for Certificate of Public Good Pursuant to 30 V.S.A. § 248, 2016 Vt. 50, ¶121* that states “[i]n determining whether there has been an undue adverse impact, considering the sensibilities of the average person, the Board [sic] can and should consider all vantage points, including from private property.” When considering views from private properties the ruling goes on to state “in addition to considering neighbors’ interest, the Board [sic] ruled that the test definition of an average person meant ‘*the average member of the viewing public who would see a particular project from the vantage point of the public;*’ that is, while the Board [sic] must consider all vantage points, it does so from an *objective, as opposed to subjective and neighborly, perspective.*”⁸ (Emphasis added)

4. A. From where can the project be seen?

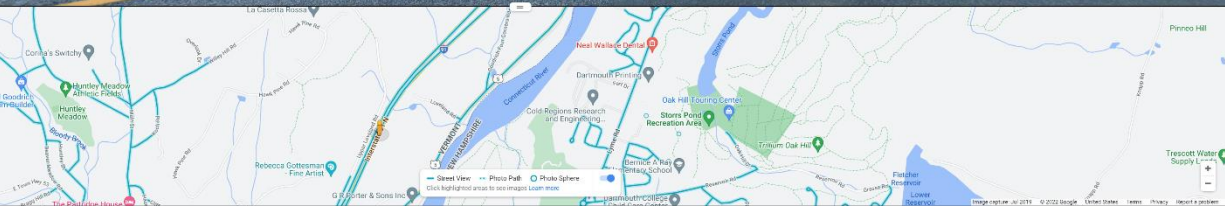
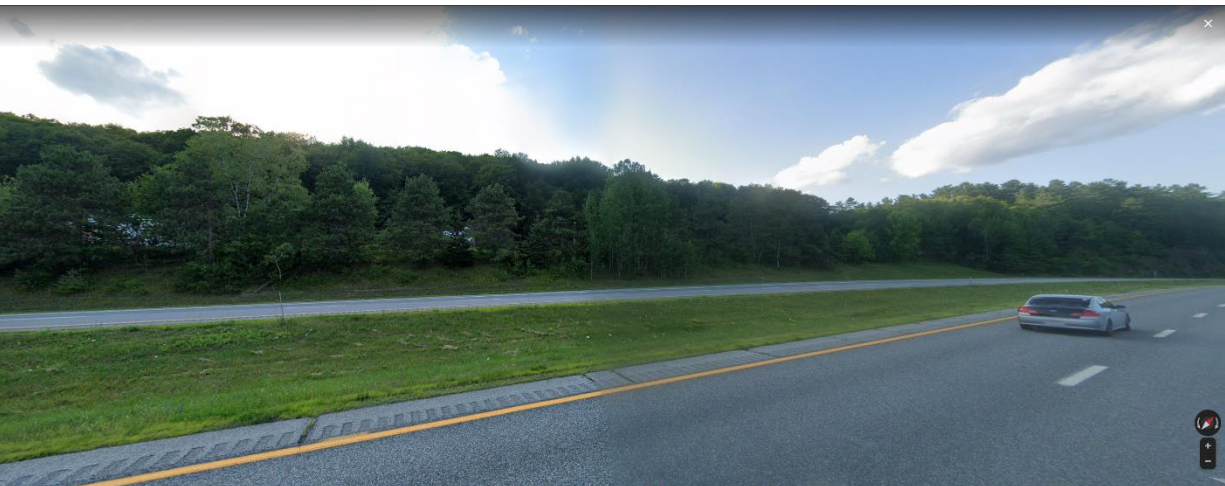
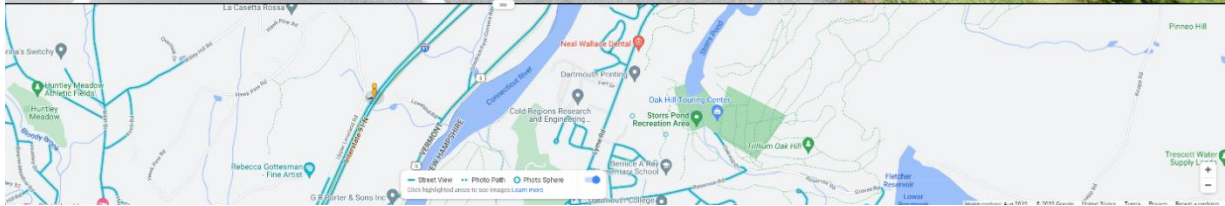
A site reconnaissance was conducted by TCE on April 20, 2022 along public roads near the site. Based on this review, there will be little to no visibility of the Project from publicly accessible roads and travel corridors. This is because of where the Project is proposed to be sited – on a hill that is much higher in elevation than the surrounding area roads where visibility would exist, and the intervening vegetation that otherwise blocks the Project from offsite locations.

Public Viewpoints: Project visibility from public roads is not expected due to the intervening topography, elevational difference, and vegetation between the Project and the average observer. These roads include Upper Loveland Road, Route 5, I-91, River Road, Four Wheel Drive, Hawk Pine Road, and Willey Hill Road. Of the nearby Roads, I-91 would have the greatest potential for Project visibility, however even from this travel way it is unlikely the average viewer will have views to the Project due to the difference in height, vegetated foreground and background, speed of travel, orientation of the road, and short distance where the interstate passes by the Project. The greatest potential for visual impact resulting from the Project is

⁷ Prefiled Testimony of Martha Staskus at 5.

⁸ *In re Petition of Rutland Renewable Energy, LLC. for Certificate of Public Good Pursuant to 30 V.S.A. § 248, 2016 Vt. 50, ¶122*

expected to result from the tree clearing which proposed to clear a large portion of the existing stand of evergreen trees on the eastern side of the Project. However, these impacts are expected to be mitigated



Images 9 & 10. Google Earth Street View screen grab looking toward the Project from the Interstate 91. Top image is northbound looking northwest toward the Project. Bottom Image is southbound looking southwest toward the Project.

by the vegetation to remain on the slope east of the Project and the trees to the west of the Project and utility corridor.

The C-100 Site Plan, Exhibit NUL MS-2, overlays the Project design over aerial imagery and it may be beneficial for the Applicant to more accurately identify what trees will be removed and what trees will remain, as the extent of these impacts and clearing is not fully clear from the aerial image. Based on the C-100 Site Plan, it appears that some evergreens may remain that would buffer the Project from offsite views to the east.

Private Viewpoints: From private view locations, the site investigation found it is unlikely that there will be visibility of the Array from private properties. This is because of the intervening vegetation, landforms, and elevational differences that screen or block the Project from nearby residences. If there is visibility of the panels, it would highly limited to specific viewpoints from residences at the bottom of the hill on Upper Loveland Road. *If* views did exist, they would only include a fraction of the east most edge of the eastern most panels that are at the top of slope. Even so, these views would be during leaf off conditions and screened and filtered through the existing vegetation that remains, and the Project would not be readily discernable or visible.



Image 11. View from Loveland Road looking west toward the Project. The cell tower is visible in the photo (center right) and evergreen trees to be cleared are along the top of the ridge visible on the left side of the photo.

In addition to TCE's visibility assessment based upon our site visits and reconnaissance, we performed a desktop GIS analysis⁹ (refer to **Figure 2** in the appendix) that provides information on *potential* visibility based on topography combined with tree cover. The results of the analysis were consistent with our observations: the Project will not be visible from nearby or surrounding locations due to the intervening topography and vegetation.

4. B. Will the project be in the viewer's foreground, middleground or background?

Views of the Project are not expected from offsite locations. If there are views of the Project, the Project will be in the background and will be heavily filtered through existing vegetation during leaf off conditions.

4. C. Is the viewer likely to be stationary so that the view is of long duration, or will the viewer be moving quickly by the site so that the length of view is short?

Views of the Project are not expected from offsite locations, therefore no long duration views of the Project will exist.

5. Open Space

5. A. What is the project's impact on open space in the area?

Open space is not specifically defined in the Town Plan but is understood to be open/undeveloped land. The Town Plan speaks generally to open space, for instance, the Land Use section discusses open space in Policy 2-2g at 5 as follows "[e]ncourage use of conservation subdivision design and low-impact development practices in the rural areas of town in order to protect and conserve natural resources, open space and rural character." The site is not open or cleared currently; it is a wooded site that has limited to no visibility from most surrounding locations.

A local trail is in the vicinity of the site, however this trail does not appear on the Town's trail maps. Even with a trail in the surrounding area, the introduction of the project will not adversely impact open space or inhibit the use of the trail.

Based on the Town Plan, the Project is not part of a specific open or scenic viewshed. The Town Plan does not identify any specific, special, unique, or preserved open spaces or open space views on or near the Project site that would be impacted or diminished as a result of the Project. It can therefore be concluded that the Project will not have an adverse impact on the visual open space of the area as defined in the Town Plan.

⁹ The viewshed analysis was conducted using ArcGIS 10.2 software and a LiDAR-derived 1.4 meter Digital Elevation Model. Using the Spatial Analysis Viewshed tool we were able to determine expected viewshed potential.

5. B. Will it maintain existing open areas, or will it contribute to a loss of open space?

The Project area is not currently an open space in the sense that it is wooded, so the Project would not contribute to a loss of open space. Additionally, the topographical nature of the site – at a higher elevation than most surrounding areas, and buffered from nearby roads by vegetation – prevents open space views on and to the site from the surrounding area.

Conclusion of Step One of the Quechee Analysis

After a review of the Project under Step One of the Quechee Analysis, TCE concludes that the Project does not present an adverse condition in and of itself due to the context of its surroundings, lack of Project visibility and natural screening. However, the Project does propose site impacts, specifically tree clearing, that can be considered adverse or incompatible with the site surroundings. Accordingly, we have continued the Project investigation through the second step of the Quechee Analysis to further explore the criteria that determine if the Project could be unduly adverse.

Step Two of the Quechee Analysis

If it was determined that the impact is adverse by the first step of the Quechee Analysis, the next investigation is *whether the adverse aesthetic impact would be undue*. An aesthetic impact is unduly adverse if any of the following is true:

1. The project violates a clear, written community standard intended to preserve the aesthetics or scenic beauty of the area;
2. The project offends the sensibilities of the average person because it is out of character with its surroundings or significantly diminishes the scenic qualities of the area; or
3. The applicant has failed to take generally available mitigating steps which a reasonable person would take to improve the harmony of the project with its surroundings.

Community Standard

1. Does the project violate a clear, written community standard intended to preserve the aesthetics or scenic beauty of the area?

TCE conducted a review of the local and regional plan included the Town Plan, Regional Plan, and maps, as listed on page 3 of this report. After an evaluation of these documents, we found the Project does not violate any clear, written community standard intended to preserve the aesthetics or scenic beauty of the area.

The Town Plan discusses the importance of scenic and natural resources as they contribute to the overall landscape and character of the town, however, the Town Plan does not identify any special, unique, or preserved open space, cultural, historic, natural, or scenic resources the Project would impact. The Project is not part of a greater viewshed and is buffered from view because of the site and surrounding topography that limit offsite view.

While the Project does propose to clear ±8.2 acres, the Town Plan does not prohibit the clearing of trees for solar or other types of development. The Project protects existing natural resources, including the wetland, wetland buffer, and vernal pool and associated buffer.

The Project is located in the Ridgeline Overlay district which requires careful site planning that doesn't allow development on steep slopes and/or prominent ridgelines. A review of the Town Plan and Ridgeline Overlay district regulations identified no clear, written standards the Project would violate.

The Town does not have any screening ordinances or bylaws with regard to solar development that are applicable to the Project, but does have a section in the Ridgeline Overlay District that relates to screening, excerpted below.

(3) Landscaping & Screening. In instances where existing forest cover or topography will not adequately screen proposed development, a landscaping plan may be required by the development Review Board. Such plan shall be designed to minimize the visibility of the structure as viewed from public roads.¹⁰

The Project meets the above criteria and will be adequately screened by topography and vegetation.

With regard to the Regional Plan, it generally recognizes the importance of scenic resources within the area, but it does not identify any specific scenic, cultural, historic, natural or other resources that would be adversely impacted within the proposed Project area. Both the Town and Regional Plan note the need to achieve the goal set by the state to meet 90% of the state's total energy needs by 2050 through renewable energy.^{11, 12}

A review of the Town and Regional Documents finds the Project does not violate a clear, written community standard intended to preserve the aesthetics or scenic beauty of the area. See the Orderly Development section of this report for further discussion on clear, written community standards.

Shocking and Offensive

2. Will the project offend the sensibilities of the average person because it is out of character with its surroundings or significantly diminishes the scenic qualities of the area?

The Project will be out of sight for viewers on public travel corridors near the site (Route 5, Upper Loveland, River, and Loveland Road, I-91) and is well buffered from offsite locations because of the

¹⁰ Norwich Zoning Regulations at 29.

¹¹ Norwich Town Plan at 24.

¹² Two Rivers-Ottawaquechee Regional Plan at 220.

topography and vegetation. The Project will not diminish the scenic qualities of the area for the average person primarily because it will not be visible or readily apparent to the public or average viewer.

No identified natural resources or habitat blocks are impacted by the Project and no modification to the existing landforms or topography is proposed. It is possible some may find the clearing of wooded land for solar development to be unfavorable or undesirable, however this can also be said of lands that are already cleared and/or are part of the open space of an area, or sites that have agricultural soils. On the contrary it is located next to a cell tower and large above ground utility corridor, which are compatible uses.

We have determined the Project will not significantly diminish the scenic qualities of the area and, therefore will not be shocking or offensive to the average person.

Mitigation

3. Has the applicant failed to take generally mitigating steps with a reasonable person would take to improve the harmony of the project with its surroundings?

The Applicant has taken generally available mitigating steps to improve the harmony of the Project with its surroundings. The Array is sited in a location that is buffered from public views and uses existing road and utility infrastructure that eliminates the need for new roads or significant interconnection infrastructure. The Project is designed to avoid natural resources (Class II wetland, vernal pool, stream, and buffers) and follows the contours of the land with no grading proposed.

The Project does propose approximately 8.2 acres of clearing, however the site is located next to a cell tower and large utility corridor, and does propose to keep trees on the eastern slope that will continue to screen the Project from view.

As a result, the applicant has taken reasonable mitigating steps in siting the Project appropriately to improve the harmony of the Project with its surroundings.

Findings of the Quechee Analysis

When the Project is reviewed against the Second Step of the Quechee Analysis, it **does not** create an **undue adverse** impact on the visual resources or scenic beauty of the area.

1. The Project **does not** violate a clear, written community standard intended to preserve the aesthetics or scenic beauty of the area;
2. The Project **does not** offend the sensibilities of the average person or significantly diminish the scenic qualities of the area; and
3. The Applicant **has taken** generally available mitigating steps which a reasonable person would take to improve the harmony of the project with its surroundings.

Orderly Development

This section evaluates the Project with regard to the orderly development of the region as is dictated by Town and Regional documents in accordance with 30 V.S.A. § 248(b)(1). Documents referenced for this report include the below documents also listed on page 3 of this report. The Two Rivers-Ottawaquechee Regional Plan (adopted July 15, 2020) has a duly adopted Energy Plan that has received an affirmative determination of energy compliance under 24 V.S.A. § 4352. The Norwich Town Plan, adopted March 7, 2020, has not received an affirmative determination of energy compliance under 24 V.S.A. § 4352, and therefore does not have a duly adopted energy plan.

Norwich Town Plan (2020)

A review of relevant Town Plan sections is below.

Land Use

The Norwich Town Plan discusses Land Use in Chapter 2. The section 2.2 Policies¹³ have two relevant policies for solar development that include “2-2.c [g]uide development away from visually prominent locations on ridgelines and hills as viewed from public vantage points” and “2-2.g Encourage use of conservation subdivision design and low-impact development practices in the rural

areas of town in order to protect and conserve natural resources, open space and rural character.” With regard to Policy 2-2c. the Project is on the ridgeline, but will not be visually prominent as viewed from public vantage points. Policy 2-2g. discusses natural resources, open spaces, and rural character. Rural character is described in the Town Plan at 6 as “wooded hillsides and hayfields.” While tree clearing on a portion of the wooded hillside is proposed, most of the vegetation on the hillside is expected to be remain and the hillside will generally retain a “wooded” appearance.



¹³ Norwich Town Plan at 5.

The *Energy* section of the *Key Findings* in 2.4 *Current Land Use* on page 7 notes that “[l]arge-scale solar installations away from valley floors are limited by topography.” This statement is also true of the Project site that utilizes a flatter section of the hillside.

The 2.5 *Future Land Use* section provides information on steep slopes, a definition of “steep” is not provided, but it is interpreted that slopes on and near the Project parcel can be considered as steep. “STEEP SLOPES are poorly suited to development. The landform of Norwich is dominated by narrow valleys and steep slopes. As severe weather events increase in frequency and intensity, reviewing land use regulations as they pertain to development on steep slopes will be needed.”¹⁴ Most of the panels are proposed on areas that are not steep, there are locations where the Array is proposed to be located on steep slope on the west side of the Project area and there is tree clearing proposed on steep slopes, however it is unclear if the Town considers clearing as “development”.

The Project is located in the “Resource Protection Planning Area” future land use area as identified on the Town Future Land Use map¹⁵, see Image 12.

THE RESOURCE PROTECTION PLANNING AREA is composed of lands with resource constraints or hazards that significantly limit their potential for future development, and lands not available for future development due to public ownership or private conservation easements. Despite the constraints, most of this land is part of a residential lot, albeit at extremely low densities. The intent of the Resource Protection Planning Area is to recognize the constraints and limitations that exist on a large portion of the land in Norwich. Little change in the use or development of these lands is anticipated and this plan discourages further disturbance or fragmentation of the remaining undeveloped portions of these lands through incremental, large-lot residential development. The high and medium priority forest blocks have been mapped and can form a basis for future decision-making.

The Project is compatible with this land use in that no large-lot residential development is proposed that would fragment the land. Similarly, the Project is not part of a high or medium priority forest block as shown on the Forest Blocks map at 18, see Image 13.

Section 2.6 *Forest Blocks and Habitat Connectors* notes the importance of resource protection “including steep slopes and forest cover”¹⁶ and minimization of forest and habitat fragmentation. It appears that much of this section is focused on the south and west portions of town and residential subdivision development that fragments lots from the creation of smaller lots.

¹⁴ Id at 7.

¹⁵ Id at 19-20.

¹⁶ Id at 9.

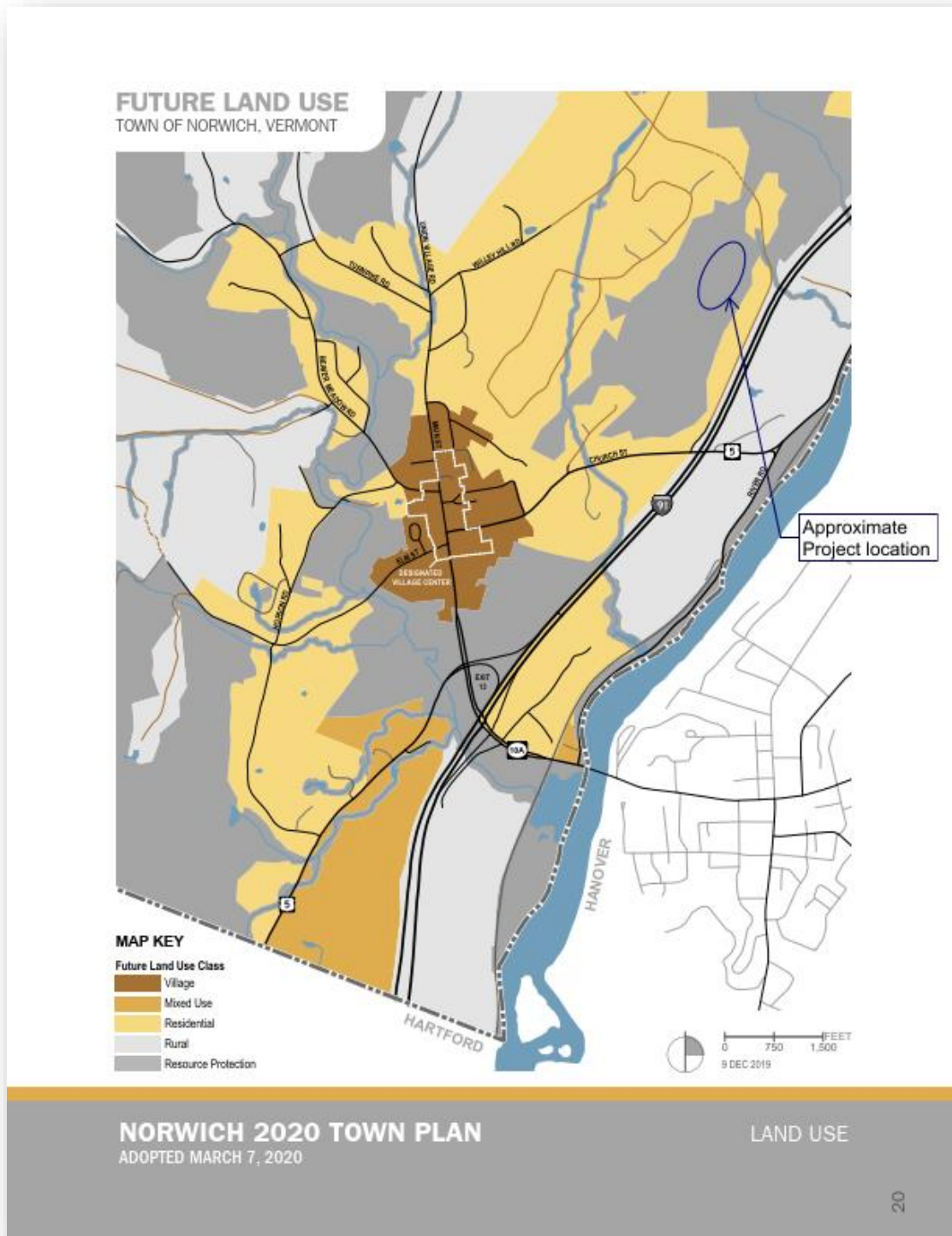


Image 12. Future Land Use Map, Town Plan at 20.

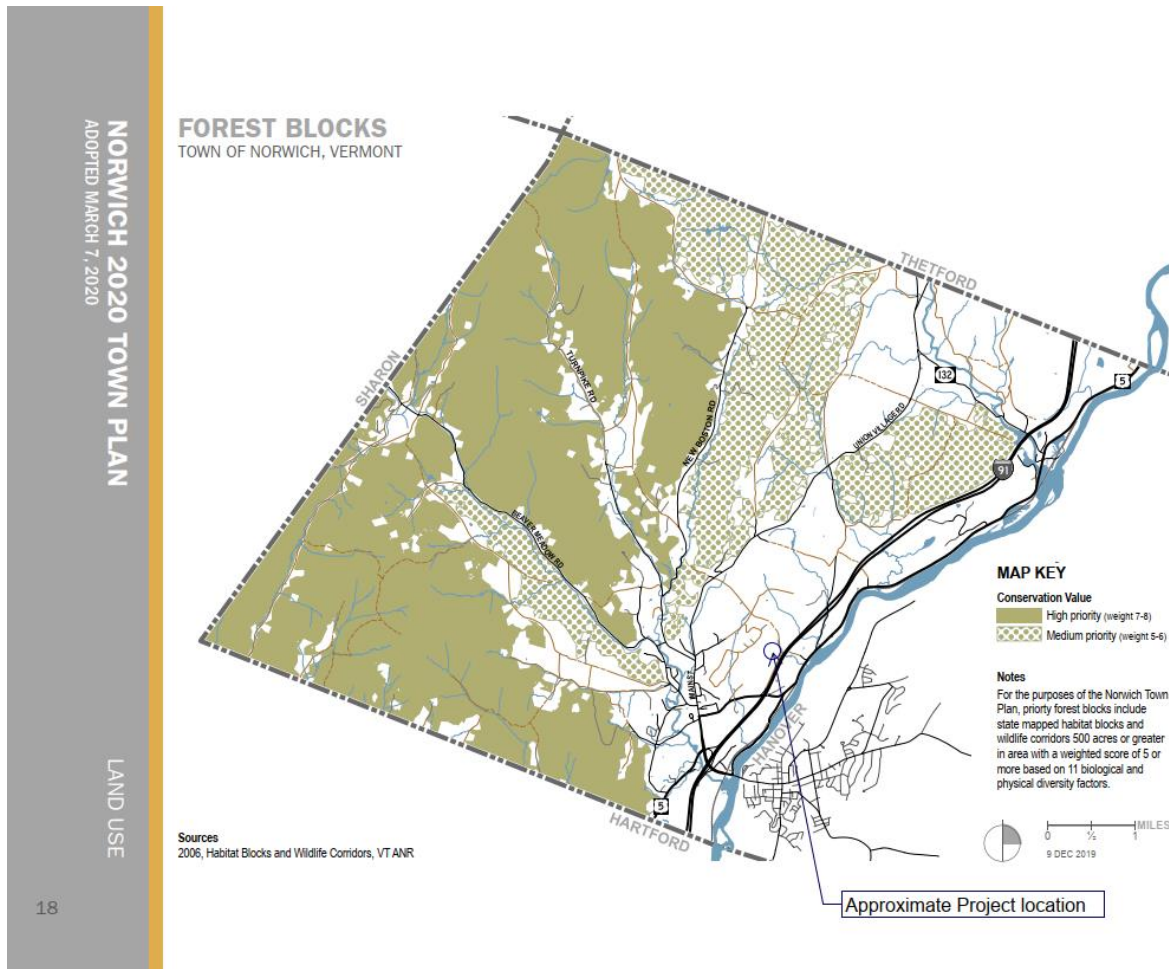


Image 13. Forest Blocks Map, Town Plan at 18.

Energy

Energy is discussed in Chapter 3 of the Town and provides information on the Town's actions and policies.

In section 3.2 Policies

3-2.h For solar generation projects sized from 15kW to 500kW the presumption is that all of Norwich meets the Public Utility Commission definition of 'preferred site', notwithstanding the existing areas of local concern including the Ridgeline Protection Overlay Area, Shoreline Protection Overlay Area and the historic village district as identified in the Norwich Land Use Regulations.

The Project is located in the Ridgeline Overlay district per the Town Zoning Map 5¹⁷, see Image 14. Based on this map, it appears that the Project does not meet the Town’s ‘preferred site’ criteria because it is located in an “area of local concern.”

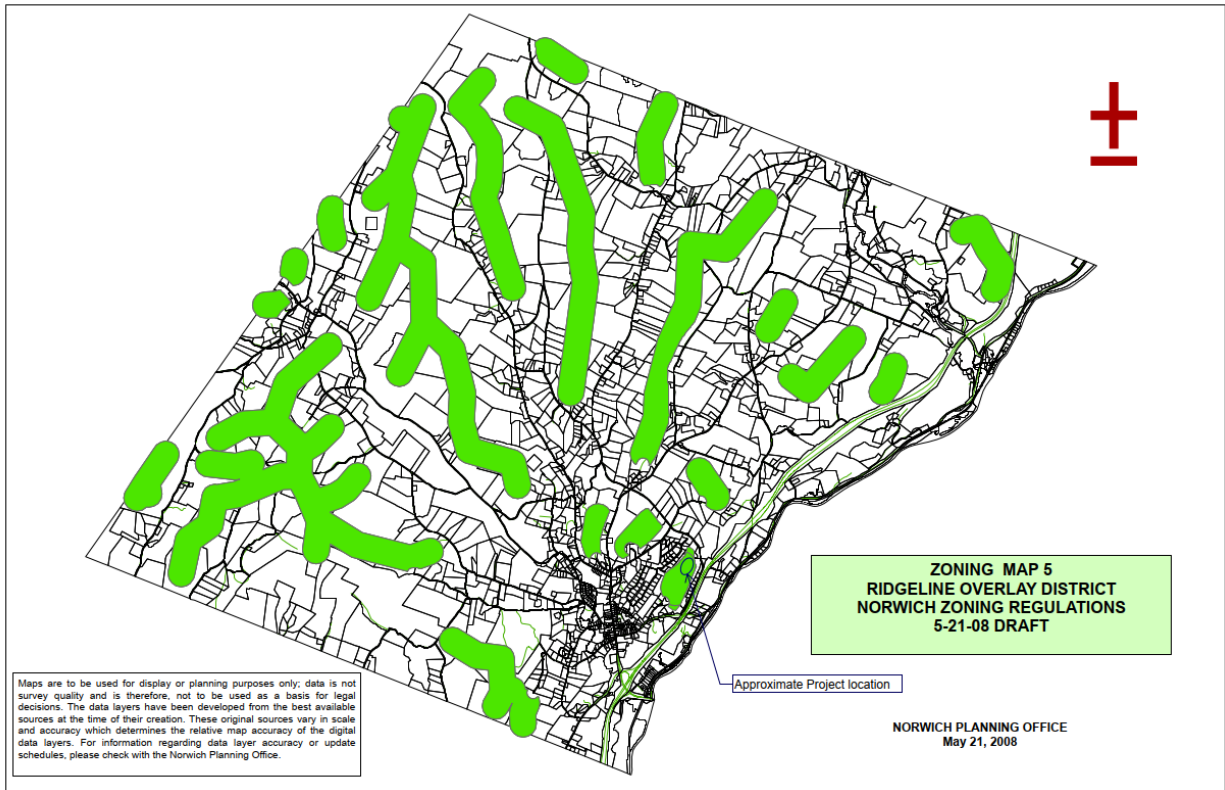


Image 14. Ridgeline Overlay District.

The Energy section *Renewable Energy Gernation Potential* notes the following about solar power at Town Plan 26:

While large scale development of solar energy will require proximity to a substation and three phase power, the utility grid in norwich is well-suited for projects of about 150kW or smaller. Using the Act 174 mapping methodology 6,341 acres out of a total 28, 620 acres in norwich has solar potential (southern facing slopes). But, 22,116 acres (or 77 percent) of norwich is forested. About 67 percent of the area identified as having solar potential is currently under forest. Aside from the economic cost of clearing, the release of carbon from cleared lands would diminish the climate benefits of solar development on these sites. The mapping of solar potential also includes the Right-of-Way (RoW) for interstate 1-91 and other lands not available for development.

¹⁷ <http://norwich.vt.us/planning-and-zoning/>

The above excerpt notes that a majority of the area identified as having solar potential is forested and that there is a “diminished climate benefit” from clearing trees for solar development, however there is no further guidance by the Town on the practice of clearing a forested or wooded area for solar.

Energy chapter section 3.8 *Future Generation, Use and Conservation* provides the following siting guidance.

Renewable Energy Project Siting Standards

This plan supports renewable energy production in Norwich. For this policy to continue with broad community support it must be balanced with this plan’s policies related to:

- Protecting natural resources, environmental quality, scenic resources and rural character
- Maintaining viable farms and the working lands needed to sustain them
- Focusing development in those areas of town already served by existing public infrastructure
- Preserving cultural resources within Norwich village
- Preserving the recreational and natural value of those lands identified in the Ridgeline Protection Overlay Area and Shoreline Protection Overlay Area
- Increasing the supply, diversity and affordability of housing in Norwich

This plan calls upon the Public Utility commission to issue Certificates of Public Good for projects between 15 kW and 500 kW based on the presumption that lands in Norwich meet the so-called ‘preferred site criteria’, except in areas already mapped as Ridgeline Protection overlay Area, the shoreline Protection overlay Area, and the designated village center. Renewable energy projects in Norwich are further conditioned on the following standards:

- For individual or group net metered renewable energy projects, the property owner must take reasonable measures to site and/or screen the installations to minimize any visual or noise impacts beyond the property line, particularly on sites where there are neighboring homes in close proximity.
- Projects larger than 150 kW must meet existing standards for setbacks, site design (landscaping, screening, lighting, stormwater, etc.) as laid out in the Norwich Zoning and Subdivision Regulations.
- Projects larger than 500 kW must have a management and decommissioning plan that will ensure the land will be returned to its prior condition when no longer actively used for renewable energy generation. Wherever feasible, the energy generation use must be combined with continued agricultural use of the land or habitat management, such that soil health and fertility is maintained.

- Projects larger than 500 kW must not clear land within a mapped forest block (see Figure 8)¹⁸ unless there is a management and decommissioning plan that will ensure the land will be re-forested and managed in accordance with a forest management plan, when no longer actively used for renewable energy generation.

The Project is broadly consistent with these goals, however since the Project is located in the Ridgeline Overlay district, further review of that district is required. This information is found in the Norwich Zoning Regulations (the “Zoning Regulations”) in *Table 2.9 Ridgeline Protection Overlay (RPO) District* at 28-29. While the Project is not subject to local zoning regulations, the Town Plan refers to the Ridgeline Overlay district area as being excluded from the ‘preferred site’ criteria and thus it is appropriate to review what the purpose of this district is.

(A) Purpose. The purpose of the Ridgeline Protection Overlay District is to protect Norwich’s rural character and scenic landscape by ensuring that development is located and designed in a manner that protects the uninterrupted skyline and minimizes adverse visual impact on designated ridgelines and adjacent slopes as viewed from public roads (Class I, II, and III town highways, state highways and interstate highways within the town).

(B) Area. The Ridgeline Protection Overlay District includes all land within 750 feet of the designated ridgelines except for land within 300 feet of Class I, Class II, or Class III town highways, state highways or interstate highways. The designated ridgelines are as shown on the Ridgeline Protection Overlay District Map.

The Zoning Regulations provide additional standards at 29, excerpted below.

(G) Supplemental District Standards. New structures within the RPO District shall comply with the following:

(1) Forest Cover. On wooded sites, forest cover shall be maintained or established adjacent to proposed structures to interrupt the facade of buildings, provide a forested backdrop to structures, and/or soften the visual impact of new development as viewed from public roads. The Development Review Board shall consider the location of proposed structures relative to existing vegetation, and may require additional planting and/or limit the amount of clearing adjacent to proposed development to provide screening and maintain a forested backdrop. A tree cutting, landscaping and/or forest management plan may be required to ensure that ridges and hill tops remain wooded, and to ensure that trees remain standing immediately adjacent to buildings to visually

¹⁸ Figure 8 refers to the Forest Blocks Map, excerpted in this report as Image 13.

interrupt facades and reduce reflective glare, as viewed from off site. Such a plan shall address specific measures to be taken to ensure the survival and, if necessary, replacement of designated trees during or after site development and the installation of all site improvements.

(2) Placement of Structures. New structures shall be as minimally visible from public roads as possible given site conditions and topography, and shall not stand in contrast to the surrounding landscape patterns and features, serve as a visual focal point, or be visible from multiple points along a road, for an extensive distance along a road segment, and/or which is highly visible from several vantage points within one mile of the development site.

(3) Landscaping & Screening. In instances where existing forest cover or topography will not adequately screen proposed development, a landscaping plan may be required by the Development Review Board. Such plan shall be designed to minimize the visibility of the structure as viewed from public roads.

(4) Glare. Exterior building materials of all structures visible from public roads may be required to be of a type and design to minimize reflective glare and avoid undue adverse visual impact. Exterior lighting visible from a public road shall be shielded and downcast.

(H) Pre-application Site Development. Forest management activities designed as pre-development site preparation shall be reviewed by the Development Review Board to determine compliance with the standards set forth in this section. Such activities include, but are not limited to, road and driveway construction, excavation related to the upgrade and conversion of logging roads to development roads or driveways, clearing and/or grading for house-sites and septic systems, or related work. Where a landowner fails to submit pre-development plans for review, the Board may direct the manner in which the site will be restored or re-vegetated prior to development and/or limit development to a portion of the property which best meets the standards of this district.

The Zoning Regulations do not prohibit development in locations similar to the proposed Project, but do require that development is screened from offsite, does not create glare, and that clearing is carefully considered. Based on this information, it does not appear the Project is inconsistent with the regulations.

Two Rivers-Ottauquechee Regional Plan (2020)

The Regional Plan supports responsibly sited and developed renewable energy projects within its boundaries. It desires to maintain the working landscape, conserved lands, habitat, and scenic views important to its tourism economy and rural cultural aesthetic. The Plan notes the goal of “[c]arefully sited renewable energy facilities are built in the Region to meet generation goals” and policy that “TRORC supports the continued development and siting of renewable energy generation that counts toward the goals of the CEP” at 245.

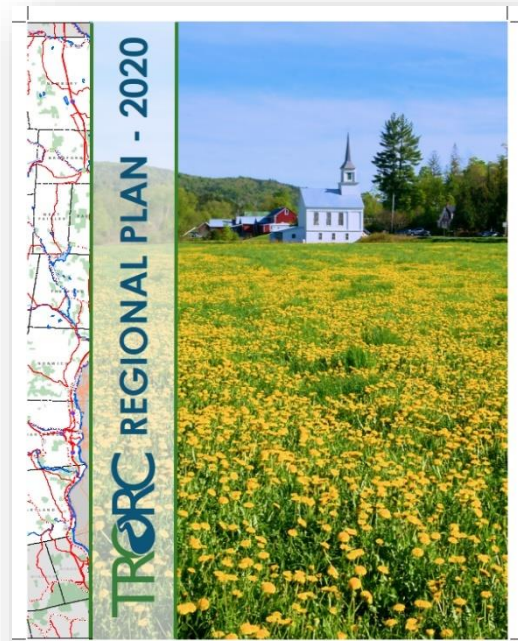
The Scenic Resources section identifies *Prominent Scenic Landscapes* at 159, excerpted below.

Prominent Scenic Landscapes

The following areas are likely to be affected by projects and should be reviewed. Such areas are generally accepted as areas of scenic significance:

1. Shorelands immediate to public lakes, rivers, or ponds;
2. Areas immediately adjacent to scenic corridors;
3. Prominent ridgelines, mountaintops, or excessively steep slopes that can be readily viewed from public corridors;
4. Exceptional agricultural and historic areas;
5. Areas within or immediately adjacent to natural areas (i.e., wetlands) designated by the State; and
6. Areas of high scenic quality that are publicly recognized as exceptionally unique or are noted examples of the dominant characteristics of an area in the Region. Examples of prominent scenic areas within the TRO Region include designated byways.
 - Connecticut River Byway (a National Scenic Byway): Route 5, Hartland to Newbury
 - Crossroads of Vermont Byway: Route 4, Bridgewater to Hartford
 - Scenic Route 100 Byway: Plymouth to Granville

The Project is located on a Ridgeline as identified on Town maps that is visible from public corridors, however the Project will not be visible from public corridors due to the existing vegetation that will remain on the slope and will continue to block views of the Project.



The Project is also located near Route 5, part of a scenic byway, but similarly, there will be no views of the Project from Route 5.

The Scenic Resources section also provides the following in the *Policies* section at 160, partially excerpted below.

1. Where development is proposed in areas of scenic value (including prominent ridgelines or mountaintops, highly scenic areas with distant views, scenic agricultural land, scenic areas highly visible from a public corridor, built environments with scenic value, and industrial or commercial development in areas of scenic value), because they possess scenic views, contain land with historic or scenic significance, or are highly visible within a scenic context, design plans must:

- a. Maintain the prominent natural feature of the developed area;
- b. Work toward enhancing or retaining views;
- c. Minimize adverse impact on views and areas of historic significance;
- d. Minimize contrasts with areas of historic significance; and
- e. Reflect traditional settlement patterns.

2. Project planners must minimize the adverse effects of strip development on existing visual resources by consideration of the following design principles:

- g. Minimize access roads or curb cuts onto public highways and use of common access drives.

4. It is appropriate that municipalities, TRORC, and other entities employ a process for evaluating impacts and recommend design characteristics to be considered by those involved in the review and preparation of development proposals.

The Project is consistent with these policies; the lack of Project visibility will prevent disruption of scenic views and corridors and does not impact historic resources or traditional settlement patterns.

Then Energy Section of the Regional Plan outlines regional energy policies and goals, noting State energy goals at 110. Solar siting guidelines are provided at 242-245 and identify potential siting constraints, prime areas, and preferred areas. The areas with constraints include areas with historic (i.e. landmarks, historic sites, etc.), scenic (i.e. recognized byways, viewsheds, etc.), and natural resource significance (i.e. mapped forest blocks, deer wintering areas, agricultural soils, floodways, wetlands, vernal pools, significant natural communities, etc.). Areas considered as “prime” include areas that are not located in a “constraint area”, “unsuitable area”, and located in an area with “reliable and safe access to the grid.” Sites defined as “preferred areas” include brownfields, parking lots, on top of existing structures, landfills, quarries, or areas identified as ‘preferred’ in municipal towns.

The Project does not meet the 'preferred area' criteria as outlined in the Regional Plan, but is also not located in an area determined to be unsuitable or constrained, as the Project avoids impacts to nearby wetland and vernal pool natural resources.

The Project site is not identified at the regional level as an existing or planned scenic or cultural resource, recreation area, important wildlife habitat or forest connection in any of the Regional Documents. Further, the Project is consistent with the goals, strategies, and development standards as presented in the Regional Plan. Therefore, as discussed above, a review of the Regional Plan found that the Project does not unduly interfere with the orderly development of the region.

Final Conclusion

After evaluating the criteria of the Quechee Test and the visual impact of the Project, as well as the impacts to orderly development, we conclude that the Project does not create an undue adverse aesthetic impact on the visual resources of the area and will not unduly interfere with the orderly development of the region.