VELCO Windsor Substation Project

Town of Windsor, Vermont

Aesthetic Analysis Report

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Appendices

I. Introduction

T. J. Boyle Associates, LLC, a landscape architecture and planning firm located in Burlington, Vermont, was retained by Vermont Transco LLC, and Vermont Electric Power Company, Inc. (collectively "VELCO"), to conduct a visual analysis to evaluate potential impacts due to proposed upgrades to an existing substation in the Town of Windsor, Vermont (referred to as the "Windsor Substation Project" or "Project").

T. J. Boyle Associates has conducted field investigations, analyzed geographic information system ("GIS") data, USGS maps, aerial photography, detailed design plans, and used the latest computer technologies to best understand the Project and how it would alter the visual character of the landscape in which it is located. This aesthetic analysis determines whether changes to the landscape's visual character attributable to the proposed Project would be adverse, and if so, whether these changes would also be undue.

II. Methodology

Section 248(b)(5) of Title 30 of the Vermont Statutes Annotated requires that the Vermont Public Utility Commission find a proposed project will not have an "undue adverse effect" on a proposed project site's aesthetics. This requirement is outlined in the Quechee Lakes Decision (Quechee Lakes Corporation, #3EW0411-EB and #30349-EB [1986]). As explained in the Public Utility Commission's order in Docket No. 6860, this Commission applies the Quechee Test in Section 248 proceedings, as follows:

> The Public [Utility 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 will have 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 will have an adverse impact on aesthetics and the scenic and natural beauty. In order to find that it will 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 will have an "undue" adverse effect on aesthetics and scenic or natural beauty is "significantly informed by overall societal benefits of the project."

Petitions of the Vermont Electric Power Company, Inc. (VELCO), Vermont Transco, Docket No. 6860, Vt. Pub. Util. Comm'n (Jan. 28, 2005) at 79 (footnotes omitted).

T. J. Boyle Associates interprets the first prong of the Quechee test to first require an assessment of the project's visibility. Visibility establishes the underlying method for which all visual aesthetics are evaluated to comply with the purpose of the Quechee Test. 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 that the Quechee Test offers to mitigate this is to visually obscure the project with landscape mitigation or other screening, which itself is a simple reduction or occlusion of project 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 study area for visibility of transmission 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. We may find that a project has an adverse effect on a particular viewpoint, but that the project does not have an adverse impact on the surrounding area as a whole.

In conducting the Quechee Analysis and preparing this report, the following three methods have been used: (1) background data collection, (2) GIS viewshed analysis mapping, and (3) field investigation. The background data and field investigation are used to characterize the study area. The GIS viewshed mapping and field investigation are used to identify areas with potential visibility of the Project. 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, zoning ordinances, sub-division regulations, and the regional plan. As part of the background data collection, an "Aerial Context Map" is created using aerial photos as the base (see Appendix A, Map 1), which provides an overview of the general context around the Project site.

(2) **GIS Viewshed Analysis.** Following the background data collection, ESRI ArcView software is used to calculate a GIS viewshed analysis of potential visibility of the Project. Viewshed analysis mapping can identify areas that may have potential views of a project by utilizing a line-of-sight method from a prescribed point or points (such as the top of substation equipment), representing the Project to all other locations within a designated study area. Figure 1 illustrates how line of sight is determined in the viewshed analysis. The analysis results (portrayed as two viewshed maps), and background data review form the basis for organizing the field investigation.

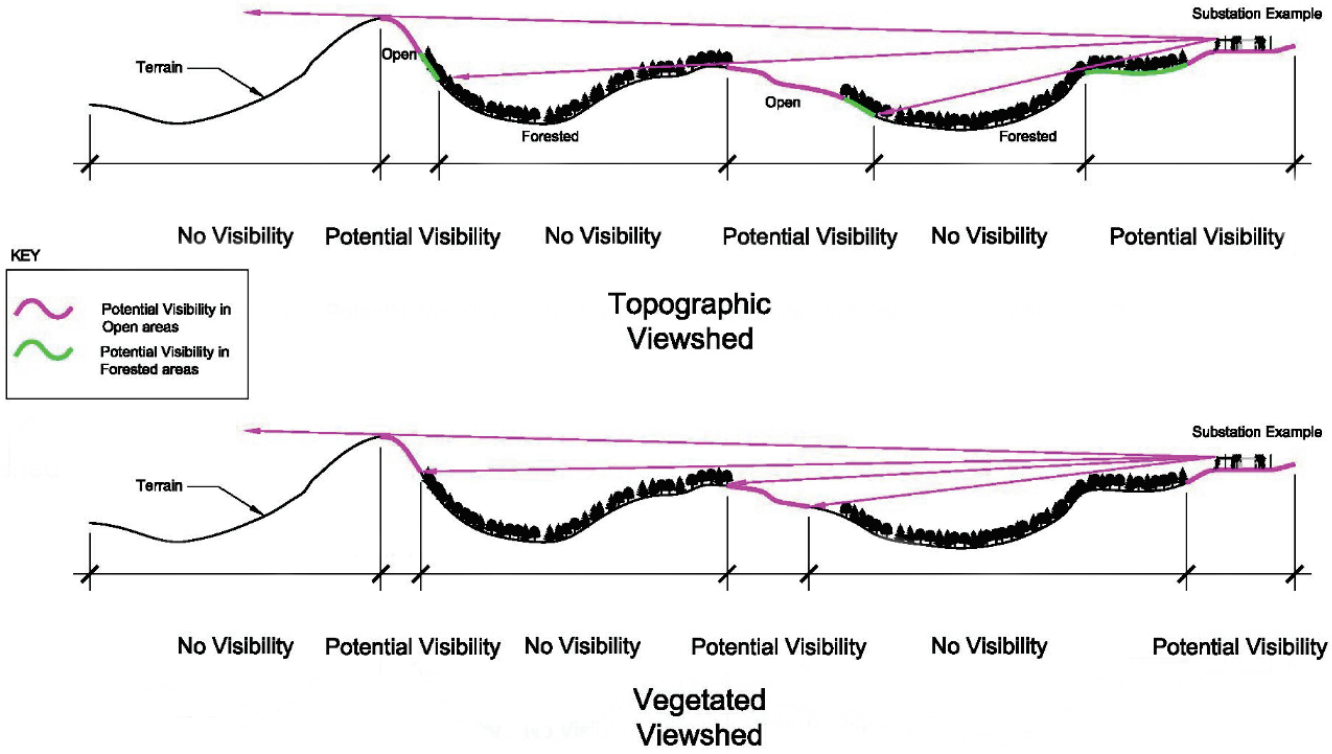


Figure 1: Terrain Viewshed and Vegetated Viewshed Diagrams. (Please note this diagram is to illustrate the results of a GIS Viewshed analysis and is not representative of the proposed Project.)

a. First, a "Terrain Viewshed" map (see Appendix A, Map 2) is created to evaluate how the landform may block views of Project upgrades. The map differentiates potential viewing areas as "open" areas without forest cover or areas within forest cover. However, 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. This map represents the maximum potential area from which the Project could be visible.

b. Next, a second map (see Appendix A, Map 3) is created to represent a "Vegetated Viewshed." This map shows how forest trees, in addition to landform, may block views of the Project. The data used to identify forested areas is based on the 2012 National Land Cover Database (NLCD). This analysis reflects a conservative assumption that the forest canopy is only 40 feet high, even though the canopy in the study area is typically between 50 feet and 80 feet high. The screening effect of non-forest land cover (buildings, residential landscaping, hedgerows,

street trees, and other roadside vegetation) is not included in this analysis. This map represents a more likely potential area from which the Project could be visible than the Terrain Viewshed.

When properly reviewed, these maps indicate areas most likely to have views, emphasizing areas vulnerable to the greatest impacts while also identifying 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. Figure 2 illustrates the difference between the Terrain Viewshed and the Vegetated Viewshed maps.

(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:

a. Verify potential visibility as indicated on the viewshed maps

b. Photograph views toward the Project from these and any other sensitive areas (parks, public facilities, etc.)

c. Photographically document the landscape's visual character within the study area

d. Record notes concerning each viewpoint where photographs are taken

e. Identify location of photograph viewpoints using a global positioning system ("GPS") unit

On completion of the field investigation, the GPS data is transferred to a GIS database and synchronization of the data and photograph locations are verified. Documentation of the field investigation is then prepared, which includes: (1) mapping of the routes traveled and locations of photograph viewpoints (Appendix A, Maps 1-3), and (2) a catalog of photographs or photographic inventory (Appendix B). The maps and photographic inventory are coordinated through indexed viewpoint numbers. Unless specified otherwise, all single-frame photos included in Appendix B are captured with a 'normal lens' or a focal length equivalent to 50mm on a full frame camera, to most accurately replicate a person's field of view.

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.

III. Project Description

The VELCO Windsor Substation (the "Substation") is located at 488 Hunt Road in Windsor, Vermont, on two parcels of land comprising approximately 20.8 acres adjacent to Interstate 91 (I-91). The Substation is a 115kV/46kV radial facility that feeds GMP's sub-transmission system in the Windsor area and was originally commissioned in 1978.

VELCO conducted a condition assessment of the Substation and identified the need to replace some of the equipment due to condition. Deficiencies were identified in equipment such as the control building, 115 circuit switcher, the driveway, and the substation fence.

VELCO proposes to address most of the substation concerns by replacing the existing control building with a larger control building, replacing the existing 115 circuit switcher with a new circuit breaker, replacing the protection and control panels with the construction of a new control building, and replacing the substation fence with an expanded fence. VELCO also plans to reconstruct and widen the existing driveway as well as establish a location along the driveway to provide power during Project construction, as well as relocate a portion of driveway and the entryway onto Hunt Road.

The Project consists of the following primary components:

- Replace and relocate the existing 20' x 28' VELCO control building with a new, approximately 32' x 60' control building that will accommodate the protection and control system, redundant AC & DC station services, communication equipment, security systems, and new bathroom facilities. The new control building will be located in the northwest corner of the substation.
- Replace the existing 115kV circuit switcher with a new circuit breaker that meets VELCO's design standards.
- Expand the fence to accommodate the new control building, and to improve access to equipment for maintenance. The substation fence expansion will be approximately 30 feet to the north, 12 feet to the east, and 4 feet to the south.
- Reconstruct and widen driveway to 20 feet with turn-around.
- Relocate approximately 620 feet of driveway and the entryway onto Hunt Road.
- Improve site drainage.
- Perform tree clearing to accommodate the temporary infrastructure, temporary construction support area, expanded substation yard and improvements and relocation of the driveway.
- Replace the existing 46 kV GMP dead-end support structure.

The areas where this equipment will be installed are identified on the site plan, shown on Exhibit PET-EJM-5. To maintain proper clearance to the fenced yard and to allow for the expansion in the northwest corner, the Project will require cleanup of the ledge on the west side of the Substation, which likely will require some blasting and rock hammering.

A diagram of proposed upgrades to the VELCO Windsor Substation is provided in Figure 2. Figure 3 is an oblique arial view of the existing substation, including the adjacent overhead transmission and distribution facilities.

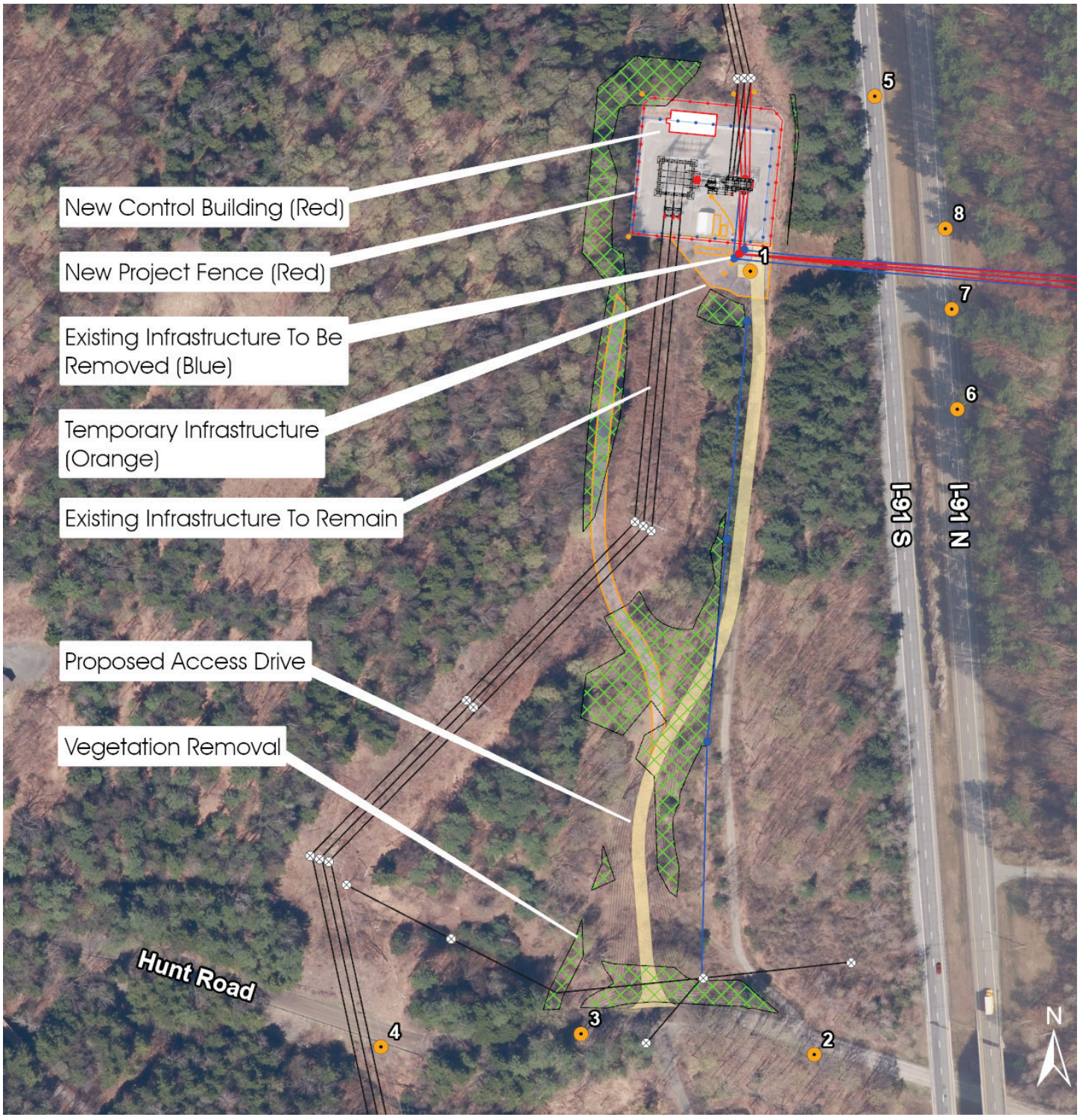


Figure 2: Proposed Substation Improvements

Figure 3: Oblique aerial view of the existing substation and surrounding overhead transmission and distribution facilities. This view is looking roughly south from the north, with I-91 visible in the upper left side of the image.

IV. Evaluation of Adverse Impacts

The VELCO Windsor Substation is located roughly one mile west of the downtown area of Windsor. The town of Windsor is in the Southern Vermont Piedmont physiographic region that is characterized by gentle hills that rise from the Connecticut River Valley in the east to meet the Green Mountains to the west. Mount Ascutney is a prominent exception to this description and is a prominent feature of the area. The Project site is a previously developed area containing the existing substation and several existing overhead transmission and distribution lines. The Project is located approximately 1,200 feet from Hunt Road in a low-visibility wooded area that is adjacent to I-91. While the Project site is relatively close to the downtown and village area of Windsor, the area immediately surrounding the Project is rural, with the exception of I-91. There are no residential or commercial structures in close proximity to the substation site. Vegetation and landform significantly screen visibility of the existing substation from the surrounding area. The terrain slopes up from the substation towards the west. Appendix A, Map 1 provides an Aerial Context Map within a one-mile radius of the Project.

Visibility

Overall, visibility of Project upgrades would be limited. As noted in the methodology sections, GIS viewshed analyses were used to identify areas from which Project upgrades would most likely be visible. Field investigation found the GIS viewshed mapping to be closely accurate. Observation of visibility to the Project site was limited to an isolated area along I-91 immediately adjacent to the Substation. The following section describes anticipated visibility and evaluates potential aesthetic effects under the first part of the Quechee Test. The attached Photographic Inventory (see Appendix B) includes Viewpoints that were documented during field investigation and represent locations with the highest potential for visibility of the Project. Images include a series of 180-degree panoramic images to provide context and character of the surrounding area and single-frame photos, captured with a 50mm equivalent focal length, to illustrate views towards the Project.

Interstate 91

I-91 immediately abuts the Project site to the east and is part of the US Interstate Highway System. Near the Project, it's configured as a controlled access, four-lane divided highway. Mature woods line either side of the interstate. The median adjacent to the Project is relatively narrow, with grass and an emergency turn around, which allows visibility across the southbound lanes when traveling northbound.

Visibility of the existing Substation was observed from a short, isolated stretch along both the northbound and southbound lanes. However, the angle of view towards the Substation is generally limited to travel in the northbound direction. Viewpoints 5 through 8 in the attached photographic inventory (Appendix B). Visibility of VELCO transmission infrastructure is limited to the very tops of the lattice steel support structures and a very limited portion of the 115 kV conductors accessing the Substation from the south. A GMP overhead line crosses I-91 to the east after exiting the Substation to the south and immediately angling to the east on a three-pole angle structure, the very top of which also has minimal visibility.

Views of the existing Substation are substantially screened by a dense, narrow strip of mature woods, roughly 60 to 100 feet wide between the Substation and I-91, and a small stretch of what appears to be white cedar where the GMP overhead line crosses. The majority of this vegetation will be retained, the Project requires very minimal clearing along the northwestern side of this stretch of vegetation. It is not anticipated that the clearing would result in additional visibility from I-91. Project upgrades are generally lower in elevation and would not result in new visibility of transmission infrastructure from I-91. However, as part of the Project, the existing GMP three-pole structure, immediately south of the substation will be replaced with a new single-

pole structure. This would change the configuration from an horizontal alignment to a vertical alignment and requires a taller structure. Visible change along I-91 is anticipated to be limited to the replacement of the GMP structure.

Hunt Road

The substation is accessed from Hunt Road, a class 3 town highway. It is a paved surface roadway in the immediate vicinity of the Project, continuing east, but transitions to a gravel surface, just west of the Project site. Hunt Road provides access from rural residential and agricultural properties to the west to the downtown and village area to the east. Immediately east of the Project, Hunt Road passes beneath I-91. An existing VELCO 115 kV transmission corridor crosses the road west of the current and proposed access roads. Both sides of the road are vegetated with mature woods.

A combination of vegetation and terrain block visibility from Hunt Road to the Substation site, including an embankment along the north side of the roadway, that increases to the west. Viewpoint 2 through 4 (Appendix B) illustrate the existing conditions along Hunt Road. The Project is proposing to relocate where the existing access road intersects with Hunt Road, visible in Viewpoint 2, to the west, closer to Viewpoint 3. The relocation of the access road will result in additional clearing, but final conditions will be similar to the existing access road, which are a common feature along Hunt Road. Improvement within the Substation area, including the relocation of the access road, would create visibility of the Substation from Hunt Road.

Other Roads and Surrounding Areas

Visibility of Project upgrades from other locations are unlikely. The Project is well screened by surrounding mature woods and landform.

Private Residences

The closest residence appears to be located approximately 690 feet to the northeast of the Substation area, along the opposite side of I-91. It appears a combination of landform and vegetation screen views from all surrounding residences to the Project site.

Suitability of Colors and Materials

The Project consists of upgrades to the existing VELCO Windsor Substation. In locations where proposed upgrades would be visible, there are existing views of electrical transmission infrastructure including limited views of the existing substation and transmission lines. Proposed improvements would include colors, materials, and textures that would be similar and within the immediate context of similar existing components.

Open Space

Previous Act 250 and Section 248 decisions do not clearly define the term "open space." Similarly, regional plans and town plans have differing definitions of open space, if they are defined at all. The Mount Ascutney Regional Commission Regional Plan, effective November 18, 2022 (the "Regional Plan")[1] defines open space as follows:

"'Open Space' may be defined as land which is not developed and is of some benefit to the public for many of the reasons described throughout this chapter and the Natural Resources chapter."

[1] https://www.marcvt.org/2022-regional-plan.html

(Regional Plan at p. 156)

Based on this definition, which is vague and non-specific, the Project site would not qualify as open space since it is already the site of an existing substation. Notably, the site itself is not particularly scenic nor is there a specific "benefit" to the public as defined in the Regional Plan.

The Windsor Municipal Plan adopted November 12, 2019 ("Town Plan")[2] does not define what open space is, where it is located, or how impacts to open space should be described or evaluated. Notably, the Project site is not within the "Open & Agriculture" land use district and is instead within the "Rural" land use district. A recommendation in Chapter 8, Land Use, is to "Develop an open space plan in order to layout priorities for open space preservation and protection, including the identification of economically viable farmlands." (Town Plan at p.40)

If the Project location were to be considered open space for the purposes of this review, it should be noted that the Project site is not open to the public. It is already the site of the existing Substation and other electrical transmission and distribution infrastructure. Furthermore, there is limited visibility from the surroundings area onto the Project site.

Summary

The review of potential adverse aesthetic impacts finds that the proposed Project has extremely limited visibility from the surrounding area. Upgrades consist of limited incremental upgrades within an existing site previously developed with electrical transmission and distribution facilities. The most visible change would be from along Hunt Road, where the access road would be relocated further west and would replace the existing access road. Visibility from I-91 is extremely limited and visual changes from I-91 would not be noticeable to the average person. As such, the Project is **not** expected to result in an **adverse** impact to the aesthetics and scenic and natural beauty of the area.

V. Evaluation of Undue Adverse Impacts

Although the Project was found to not result in adverse impacts, this review continues its review of the Project under the second part of the Quechee Test in the event the Project was determined to result in an adverse impact.

A. Community Standards

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."[3] The Commission clarified that generalized statements and general scenic resource policies that

[2] https://app.box.com/s/ebl1uvg9q6mzauwlycmbq11x7wuuqoqb/file/1349599222834

[3] Petition of Georgia Mountain Community Wind, LLC, Docket No. 7508 at p. 52

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."[4] The Commission has further clarified that any such standard must expressly "designate the [project] parcel as a scenic resource worthy of protection."[5]

For the Windsor Substation Project, available local and regional planning documents were reviewed to determine if the Project would violate a clear written community standard. These include the Regional Plan and the Town Plan. A review of these plans pertaining to aesthetics, or the Project site are as follows:

REGIONAL PLAN

The following are excerpts from the Regional Plan that are most closely related to a clear written standard. Appendix D includes pages with highlights of all excerpts related to scenic resources.

CH1: INTRODUCTION

E. GOALS, POLICIES, AND RECOMMENDATIONS DEFINED

Regional Policies

3. Irreplaceable natural and fragile areas, outstanding water resources, rare and endangered species and their habitats, and significant scenic features should be protected and preserved.

6. All appropriate agencies should cooperate in the development and maintenance of a safe and efficient regional transportation system that meets the vehicular and pedestrian needs of all residents with minimum impact to the Region's environmental and aesthetic qualities.

(Regional Plan at p.17)

CH3: LAND USE

B. LAND USE CLASSIFICATIONS

Conservation.

This land use classification includes lands that are protected from development through public ownership or conservation easements, as well as large blocks of forest land that are largely undeveloped. Some of these lands have physical constraints such as high elevations, steep slopes, or shallow soils…

… Conservation lands are an essential element of our region's landscape and are part of the rural countryside this plan seeks to preserve. They provide ecological services – such as wildlife habitat, floodwater reduction, soil retention, carbon sequestration, recreation, and scenic beauty – that make them a valuable resource for our region.

(Regional Plan at p.35)

Rural Residential.

Through context-sensitive approaches to siting and design, housing can be accommodated in these rural settings in a manner that protects the productive, ecological, and/or scenic value of these lands provided that the overall density of development in the area remains low.

[4] Id. at 53.

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

(Regional Plan at p.37)

C. SPECIAL USE AREAS

Riparian Areas.

…Healthy riparian areas provide multiple benefits to our region such as:

- Offering recreation opportunities and contributing to the scenic beauty of our landscape;

(Regional Plan at p.43)

CH7: CULTURAL & AESTHETIC RESOURCES

B. AESTHETICS: SCENIC LANDS AND OPEN SPACE

Scenic Lands and Open Space Goals

Achieve a balance between scenic or open land uses and other land uses in the best interest of the environment and the Region's residents through:

1. Maintaining and/or enhancing the diversity of ecosystems throughout the Region by promoting connectivity between significant habitat wherever possible;
2. Protecting the environmental character and integrity of significant natural and scenic resources as identified by member towns.
3. Integrating indigenous knowledge of conservation into policies and practices.

The harmonious mix of open space, villages, farms, country roads, mountainous terrain, historic architecture, and surface waters in the Region provides for scenic vistas and an attractive landscape. This landscape is also an economic asset and has a tangible economic value to the Region. The rural lifestyle and scenic landscapes attract many tourists. Tourism is a significant industry in the Region. The preservation of these aesthetic and scenic resources has become increasingly difficult due to economic and development pressures. Over the past several decades, highway strip development has emerged between town and village centers and the countryside thus threatening the Region's traditional land use pattern. Agricultural fields and working forestlands juxtaposed to dense villages combine to create the traditional Vermont landscape that residents and tourists cherish. Development can occur in ways that do not adversely impact this traditional landscape, such as innovative site plans, clustering around already established villages and town centers. Future development needs to be cognizant of the landscape's heritage and work towards mitigating any adverse impacts to the land's historic legacy.

Scenic Resources

Scenic resources are public or publicly accessible areas, features, landscape patterns, or sites that are easily recognized by the Region and contribute to Region's distinct character. Vermont has been involved with scenery preservation issues as early as 1937. In 1966, the State established the Scenery Preservation Council. Key milestones for the Council were the passage of the "outdoor Advertising Law, i.e., the billboard ban in 1968; numerous studies on Vermont's scenic qualities; and the publication of the "Vermont Backroads Handbook". Efforts to mitigate any negative effects of development are necessary to protect, preserve, and improve the significant aesthetic resources within the Region. Such efforts should include a continued emphasis and restructuring of municipal planning and zoning administration, which protects and preserves the landscape heritage in the Region. Identifying key scenic resources is imperative to protecting the rural landscape and value of the Region.

while scenic resources can be hard to identify, they can be sorted into four main categories; Highlands, Lowlands; Centers; and Countryside.

Highlands:

Mountainous areas made up of scenic ridgelines with significant changes of topography, bedrock and soil conditions that also host woodlands containing native plant and wildlife habitat. The Region has prominent ridgelines and mountain tops that are inherently and especially sensitive, e.g. the Alps and Little Ascutney Mountain. Development in these areas is strongly discouraged. Such proposed development should work towards design plans that retain the prominent natural appearance by locating in less visible areas and away from highly visible ridgelines, blending and or hiding structures within existing wooded hillsides, and where possible, avoid excessive use of reflective glass. Aesthetic resources are protected by Criterion 8 of Vermont's Act 250, which does not relegate scenic beauty to pristine areas alone, but to settled areas and farmlands as well.

Lowlands:

Characterized by riparian corridors, wetlands, waterways, and floodplains, areas like this can provide ecological benefits as well as recreational opportunity. Lowland areas, like those around the Connecticut River, are good examples of resources that should be preserved. Covered Bridges that go over waterways are of particular interest to this region and help create a unique aesthetic experience for visitors and community members alike.

Central Gateways:

Dense central places like a village center that is characterized by significant or historic buildings like public offices, monuments, a commercial core, and a more urbanized residential area.

Countryside:

Woodland or agricultural areas outside of an urban center with limited residential development. Countryside can be characterized by open fields, managed crop fields, and/or orchards.

Scenic Roadways:

The Scenic Roads Law was passed in 1977, initiating the state Scenic Roads Program. The purpose of the Scenic Roads Program was to protect the physical character and condition of the roadway right-of-way.

National Scenic Byways Program: The purpose of the Byway program is to foster cooperative ventures or public-private partnerships, and to protect, enhance, and/or promote the natural, cultural, historic, archeological, recreational, and scenic qualities. The Connecticut River Byway was awarded national designation by the Federal Highway Administration. The segment of the Byway in this Region includes the US Route 5 corridor through Windsor, Weathersfield and Springfield. The two spurs including VT Route 44 to Brownsville and VT Route 11 to downtown Springfield, continue to be part of the originally designated Connecticut River Scenic Byway.

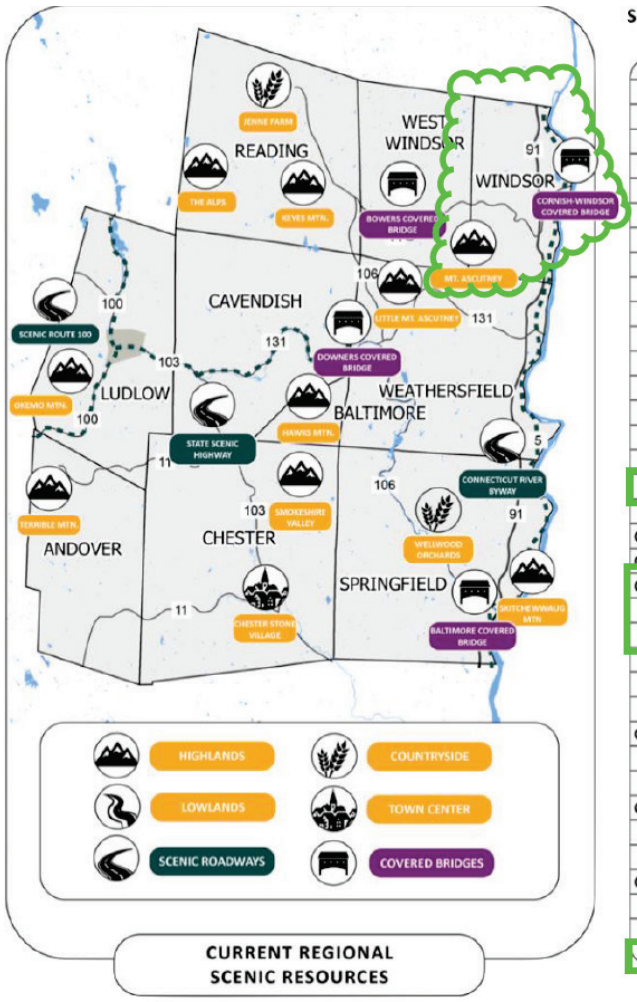
State scenic roads may be established by recommendation of the Scenery Preservation Council per 19 V.S.A. §2501. Any construction or maintenance work on designated state scenic roads must be consistent with the standards established by VTrans pursuant to 10 V.S.A. §425. The segment of VT Route 131 in Cavendish is the only designated State Scenic Highway in this Region.

Towns in Vermont are enabled to designate municipally maintained roads as "scenic roads," as established by 19 V.S.A. §2502. Town scenic roads are also subject to the standards established by the State Transportation Board. Those standards for scenic roads address appropriate minimum roadway

widths, alignment, landscaping, and traffic control methods, pursuant to 10 VSA §425. There are no town designated scenic roads in this Region currently.

Covered Bridges:

Covered bridges are a staple of New England, and the character of many of the scenic resource elements listed above are amplified by covered bridges in the region. For example, the iconic Cornish-Windsor covered bridge from multiple angles frames a view of Mount Ascutney and the Connecticut River.



SCENIC RESOURCE TYPOLOGY	TOWN	NAME
COUNTRYSIDE	CAVENDISH	20 MI. STREAM RD.
COUNTRYSIDE	READING	BAILEY MILLS RD
COUNTRYSIDE	WEST WINDSOR	BIBLE HILL
LOWLANDS	LUDLOW	BLACK RIVER
CENTRAL GATEWAY	WEST WINDSOR	BROWNSVILLE
COUNTRYSIDE	READING	CAPERS HILL RD.
LOWLANDS	CHESTER	CHESTER RESEVOIR
LOWLANDS	SPRINGFIELD	COMTU FALLS
LOWLANDS	WINDSOR, WEATHERSFIELD, SPRINGFIELD	CONNECTICUT RIVER
HIGHLANDS	WINDSOR	CORNISH HILLS
COUNTRYSIDE	LUDLOW	GHIA FARM
LOWLANDS	SPRINGFIELD	GOULDS MILLS
COUNTRYSIDE	WINDSOR	GREAT RIVER FARM
HIGHLANDS	BALTIMORE, CAVENDISH	HAWKS MOUNTAIN
COUNTRYSIDE	READING	JENNE FARM
HIGHLANDS	READING	KEYES MOUNTAIN
LOWLANDS	CAVENDISH	KNAPP POND
LOWLANDS	WINDSOR	LAKE RUNNEMEDE
HIGHLANDS	WEST WINDSOR	LITTLE MT. ASCUTNEY
CENTRAL GATEWAYS	LUDLOW	MAIN ST.
CENTRAL GATEWAYS	SPRINGFIELD	MAIN ST.
CENTRAL GATEWAYS	WINDSOR	MAIN ST.
LOWLANDS	WINDSOR	MILL BROOK
LOWLANDS	WINDSOR	MILL POND
HIGHLANDS	WEATHERSFIELD	MOUNT ASCUTNEY
HIGHLANDS	LUDLOW	OKEMO MOUNTAIN
COUNTRYSIDE	WEST WINDSOR	PARIS HILL FARM
CENTRAL GATEWAYS	CAVENDISH	PROCTORSVILLE VILLAGE CENTER
HIGHLANDS	SPRINGFIELD	SKITCHWAUG MOUNTAIN
HIGHLANDS	CHESTER	SMOKESHIRE VALLEY
CENTRAL GATEWAYS	CHESTER	STONE VILLAGE
HIGHLANDS	ANDOVER	TERRIBLE MOUNTAIN
HIGHLANDS	READING	THE ALPS
CENTRAL GATEWAYS	CHESTER	THE GREEN
LOWLANDS	CAVENDISH	TWENTY MI. STREAM
COUNTRYSIDE	SPRINGFIELD	WELLWOOD ORCHARD
COUNTRYSIDE	WINDSOR	WINDSOR PRISON PROP.

Preserving Scenic Resources:

Limiting Light Pollution:

One of the most valued resources of a rural region is a night sky unimpaired by "sky glow" from the misdirected light of urbanized areas and recreational resorts. Many outdoor lights are poorly designed or improperly aimed, allowing light to project above the horizon and wash out the view of the stars. Poorly designed exterior lighting also creates glare, light trespass on neighboring property, and energy waste. There are now options for outdoor lighting, which are better designed to direct light downward where it belongs. These fixtures are commonly referred to as "dark sky compliant," and maintain light distribution towards the ground full cutoffs avoiding projection into the sky. Future consideration of this technology would help reduce cumulative negative effects on aesthetic resources. Groups like the Springfield Stellafane astronomy club rely on the dark sky created by limited light of sky to recreate.

Springfield also has an "Observatory Protection Overlay District" that minimizes light effecting observatories in Springfield.

Maintaining Open Space:

"Open space" may be defined as land which is not developed and is of some benefit to the public for many of the reasons described throughout this chapter and the Natural Resources chapter. Open space that is publicly owned or permanently protected through the sale or donation of development rights may ensure the long-term productive capacity of forest or agricultural land; preserve wildlife habitat; protect groundwater resources; provide recreation land; and preserve important historic, scenic and cultural resources.

The Upper Valley Land Trust (UVLT) is in Hanover, New Hampshire, and provides conservation leadership, tools and expertise to permanently protect the working farms, forested ridges, wildlife habitat, water resources, trails and scenic landscapes that surround residential areas and commercial centers. UVLT focuses its mission in 45 Vermont and New Hampshire towns (including Springfield, Weathersfield, Windsor, West Windsor, and Reading) in the upper Connecticut River valley. UVLT is a sponsor member of the Land Trust Alliance, an organization that promotes land conservation by providing advocacy and professional resources to over 1,600 land trusts nationwide.

To ensure that open lands that provide the greatest public benefit are protected for present and future generations, towns should develop open space plans.

For more information: Open Space & Resource Protection Programs

POLICIES

A. Cultural and Historic Resources Policies

6. Promote the education and increased awareness of significant cultural/aesthetic resources, such as cellar holes and stonework.

B. Scenic Lands and Open Space Policies (See also Natural Resources Chapter)

1. Support local, state, or federal programs and legislative efforts which protect and enhance the economic, cultural, environmental, and aesthetic values of forested and scenic resources.
2. Support, and promote, the continuation of programs that provide incentives for landowners to conserve farmland, forestland, and open space (e.g., Forest Legacy Program, Use Value Appraisal Program).
3. Conservation easements of important open and scenic lands are supported.
4. Historic, archeological, and indigenous sacred resources that enhance the scenic resources of the Region are preserved.
5. The sites highlighted in the Scenic Resources section of this chapter are inherently and especially sensitive. Development around the Region must not result in undue adverse impacts on these scenic resources.
6. Structures and exterior areas shall be illuminated only at levels necessary to ensure the safety and security of persons and property. Any lighting that will disturb the natural or aesthetic value of a scenic resource shall not be used.

   Exterior lighting must be fully shielded and minimize the amount of blue light in the nighttime environment (i.e., Dark Sky Friendly).

(Regional Plan at p.152-158)

The Regional Plan covers a wide range of topics for the region including land use, utilities, natural resources, cultural and aesthetic resources, energy, housing, economics, as well as other community issues. The Regional Plan recognizes the importance of scenic resources within the region, and the importance of protecting scenic features and aesthetic qualities is noted in multiple sections. Chapter 3, Land Use, relates scenic beauty to the Conservation Land Use Classification, and the Regional Plan notes that the vision is for the Conservation lands to remain largely undeveloped. The Project appears to be within an area classified as Rural Residential, which notes residential development can be accommodated through context-sensitive design and that other uses, including renewable energy generation are appropriate in these areas.

Most specifically, the Regional Plan includes a significant section dedicated to scenic quality, Chapter 7, Section B, Aesthetics: Scenic Lands and Open Space. It provides an overall discussion about the importance of scenic quality and discusses Scenic Resources as six different categories: Highlands, Lowlands, Central Gateways, Countryside, Scenic Roadways, and Covered Bridges. The Regional Plan at page 155 includes a list and map of 'Current Regional Scenic Resources', also provided above. Within Windsor, the identified scenic resources include Mt. Ascutney (Highlands), Cornish-Windsor Covered Bridge, Lake Runnemede (Lowlands), Main Street (Central Gateways), Mill Brook (Lowlands), Mill Pond (Lowlands), and Windsor Prison Property (Countryside). The Project is not within any of these noted scenic resources, and there is no visibility of the Project site from these scenic resources. To preserve scenic resources, the Regional Plan provides limited guidance, mostly related to limiting light pollution and maintaining open space. The Scenic Lands and Open Space Policies are general and are not related to specific locations or resources.

Chapter 8, Energy, refers to Volume 3 of the Regional Plan, (referred to here as the 'Regional Energy Plan), adopted June 25, 2018 and re-adopted on October 14, 2022[6]. While the Regional Energy Plan discusses scenic resources, it is mostly related to the siting of solar and wind projects and does not address electrical transmission projects, or the Project site.

While the Regional Plan clearly recognizes the importance of scenic resources and scenic quality for the region, it does not identify the Project site as a scenic resource or provide clear guidance of how to protect the scenic quality of the site.

TOWN PLAN

The following are excerpts from the Town Plan that are most closely related to a clear written standard. Appendix D includes pages with highlights of all excerpts related to scenic resources.

7. LAND USE

EXISTING LAND USE

US Route 5 Corridor

… Sections of US Route 5 both north and south of downtown are notable for clusters of single-family residences and scenic farm land…

VT Route 44 Corridor

VT Route 44 is the western approach to Windsor, and connects to Ascutney State Park, and the Towns of West Windsor, Reading and Woodstock… Scenic fields and prime or statewide important agricultural soils are found along much this corridor.

[6] https://www.marcvt.org/uploads/1/4/7/0/147010472/2022_regional_energy_plan_volume_3.pdf

Agricultural and Open

… The largest tracts of prime agricultural land in town lie in the flood plain along the Connecticut River both north and south of the downtown area. These strips of good, usable farmland are valuable not only for their agricultural function, but also for their scenic and cultural significance along the Connecticut River Corridor…

… The farmlands along US Route 5 north and south are noteworthy not only as quality agricultural soils, but also as scenic resources…

… Open fields contribute to the valued scenic resources in Town, affording dramatic views of the Connecticut River, Mt. Ascutney and other resources.

(Town Plan at p. 31-32)

FUTURE LAND USE

Residential

… Residential land uses will predominate within these areas, but dispersed agricultural and open land, small-scale neighborhood stores and/or home based businesses, and country inns and Bed & Breakfasts may be appropriate within some residential areas. In some rural areas, where preservation of open lands, wildlife habitat, or scenic views is a priority, cluster development is the preferred development approach for any large development…

(Town Plan at p.36)

8. NATURAL, SCENIC AND CULTURAL RESOURCES

SCENIC RESOURCES

Mount Ascutney, which is partially located in the Town of Windsor, is known regionally as an important scenic resource. Distant views of the mountain are an important sense of identity for Windsor and the surrounding area. The scenic mountain was an important focal point for the Cornish Artist's Colony centered in Cornish, NH in the late 1800s and early 1900s.

Other significant scenic resources include:

Connecticut River – Views of the River from US Route 5 are an essential aspect of the Connecticut River Scenic Byway. The large farm fields located between US Route 5 and the River both to the north and south of Downtown are very significant to maintain this scenic corridor.

Pastures and Farm Fields – In general, these features contribute to rural character and are results of the desired working landscape economic activities in rural areas. Specifically, fields along US Route 5 across from Artisans Park are scenic and maintain a pleasant rural gateway from I-91 Exit 9 into the Town of Windsor, as well as the fields along the river as discussed above.

Ridgelines and Prominent Knolls – High elevation areas and ridgelines include Mount Ascutney as well as the long ridge that roughly parallels I-91 to the west and extends generally between Hunt Road and the Hartland town line. Not only is this ridgeline in itself scenic, but it also divides the rural countryside to the west from the more developed areas in Windsor to the east.

Natural areas controlled by the State including the State Park and the scenic portions of the Grasslands Wildlife Management Area (WMA) along the Marton Road area. Not only are these areas scenic, but they provide other valuable functions, such as wildlife habitat, stormwater/groundwater recharge, and outdoor recreational opportunities.

Lakes and Ponds – Mill (Kennedy) Pond, Lake Runnemede and the Grasslands WMA pond are important scenic assets for the community.

Paradise Park – Not only is this park an outstanding recreational asset, it is also an important scenic area surrounding Lake Runnemede. Located just north of Downtown, this area provides a clear divide between the more developed area and the rural countryside. This area contributes to a pleasant rural gateway for visitors entering Windsor from the north.

Great views of the Connecticut River can be found from the Great Farm and other properties to the east of US Route 5 North. These areas could support developments that take advantage of these views and great access to I-91 Exit 9. These scenic qualities may be impacted by adjacent uses, such as fuel distribution and contractor yards.

Hunt Road – Rural western sections of Hunt Road are very scenic and worth preserving the rural character that it currently provides.

Goals

1) Preserve these scenic resources that most contribute to Windsor's rural character.

Policies

1) Development is discouraged in identified scenic resource areas. Any development in these areas shall minimize negative visual and environmental impacts through the careful placement of buildings, limited clearing, landscaping, screening and other methods.

Recommendations

1) Consider mapping scenic resources.
2) Consider land use regulations to restrict developments in scenic areas.

(Town Plan at p.47-48)

9. ECONOMIC DEVELOPMNT

PRESENT ECONOMIC CONDTIONS

Local Assets and Opportunities

7. Natural Resources – Natural resources abundantly located within Windsor add an intrinsic value to the Town as a location for economic development… Mount Ascutney provides a scenic backdrop for the downtown, with the State Park and trail networks providing excellent recreational opportunities.

(Town Plan at p.54)

Like the Regional Plan, the Town Plan acknowledges the importance of scenic resources within the town. Chapter 7, Land Use first mentions scenic resources in discussions of the US Route 5 corridor, US Route 44 corridor, the Agricultural and Open, and Residential land use areas. The Project is in the Rural land use district. More specifically, Chapter 8, Natural, Scenic Cultural Resources includes a scenic resources section that lists several scenic resources. It highlights Mount Ascutney as an important focal point that creates a sense of identity to the area. Views of Mount Ascutney would not include any visibility of the Project. It continues to list other scenic resources in Windsor, all of which visibility of the Project would not be possible, with one exception.

The last resource discussed is Hunt Road, and states "Rural western sections of Hunt Road are very scenic and worth preserving the rural character that it currently provides". Generally, the Project is located towards the eastern end of Hunt Road, and the area near the Project doesn't exhibit what would typically be considered, 'very scenic' character. Near the Project along Hunt Road, is the I-91 overpass, curb cut with high visibility gate and warning signs, and the existing VELCO 115kV transmission line, as well as GMP overhead distribution facilities. Visibility of the Substation and the proposed improvements to Substation equipment would not be visible from Hunt Road. Visibility would be limited to the relocation of the access drive, which would simply replace the existing access drive.

The Town Plan continues to note the goal to preserve scenic resources and to discourage development, but it does not exclude development from within identified scenic resource areas. It also recommends that the Town map scenic resources and 'consider land use regulation to restrict developments in scenic areas.' In chapter 10, Telecommunications Facilities, the most specific language regarding the preservation of scenic resources is included but is specifically related to telecommunication towers. While the Town Plan understands and discusses the importance of scenic resources, it does not identify the Project site as a scenic resource or provide specific guidance of how to protect scenic quality within the Project area.

In review, both the Regional and Town Plan recognize the importance and value of scenic resources within the area. The Project site is not in a designated scenic resource or visible from an identified scenic resource in either plan. Neither plan provides a clear written community standard that would apply to the Project. In review of the Regional and Town Plans, the Project would not violate a clear, written community standard intended to preserve the aesthetics or scenic beauty of the area.

B. Mitigating Elements

The Project incorporates several mitigating elements to help significantly reduce potential adverse aesthetic impacts. Mitigation for the Project includes:

- Most importantly, the Project consists of upgrades to an existing transmission substation. The Project site is currently characterized by electrical transmission, sub-transmission, and distribution infrastructure. The Project does not introduce electrical transmission infrastructure into new areas and consists of modest incremental upgrades of existing infrastructure. As proposed, the Project would not create a noticeable change to transmission infrastructure within the surrounding area.
- The Project is setback from nearby roads and residences and takes advantage of surrounding landform and vegetation to screen the Project from the surrounding area. The Project will retain most of the surrounding features that screen it from the adjacent landscape. In particular, the Project will retain the important vegetative buffer with I-91.

Mitigation incorporated with the Project would reduce and limit the extent of potential adverse impacts and in time, would further reduce visibility of the substation. These efforts represent generally available mitigating steps which a reasonable person would take to improve the harmony of the Project with its surroundings.

C. Shocking and Offensive

When evaluating whether a project would offend the sensibilities of the average person, the criteria to make this assessment is related back to the first part of the *Quechee* Test; how the project 'fits' within its surroundings. An 'average person' is considered a disinterested party, not an affected neighbor. The threshold for a project

to be shocking or offensive is high, and a project would need to be entirely inconsistent with the surrounding land uses or exceptionally out of scale with the surroundings.

The overall finding is that the Project would not result in an adverse impact to the aesthetics of the area. Similarly, the proposed Project upgrades would not offend the sensibilities of the average person; it would not be offensive or shocking. This determination is based on a number of factors that were assessed during the aesthetic analysis:

- The Project consists of upgrades to existing electrical transmission facilities that are an established component of the visual landscape.
- Proposed upgrades would not substantially increase the amount or extent of visible transmission infrastructure from the surrounding area.
- Project upgrades would incorporate similar colors, materials, and the general appearance of components which they are replacing.
- Existing vegetation surrounding the substation would largely be retained that would continue to screen visibility of the existing substation and Project upgrades form the surrounding area.

The Project proposes upgrades to an existing substation that is an established component of the visual landscape within the area where it is visible. However, there is extremely limited visibility of the existing substation, and Project upgrades would not materially increase visibility of transmission infrastructure. Based on these facts the Project would not be shocking or offensive.

VI. Findings and Conclusions

In review of upgrades proposed as part of the VELCO Windsor Substation Project, we conclude that the Project would NOT result in an adverse impact to the aesthetics and scenic and natural beauty of the area in which the Project is located. This determination is largely based on limited expansion of the substation yard to the north and associated grading and clearing. Even so, the Project was reviewed under the second part of the Quechee Test. A positive finding was NOT determined for any of the three criteria.

1) The conformance review found that the Project did not violate a clear, written community standard intended to preserve the aesthetics or scenic beauty of the area. Review of the Regional Plan and Town Plan did not find standards that specifically designated the Project site as a scenic resource or provided other scenic standards applicable to the Project.
2) VELCO has incorporated generally available mitigating steps which a reasonable person would take to improve the harmony of the Project with its surroundings. The Project utilizes an existing facility, is setback from nearby locations with potential visibility, and utilizes existing vegetation to screen and soften potential views.
3) The Project would not be shocking or offensive, similar to the reasons why the Project was determined to be not adverse. Project upgrades include limited incremental expansion of transmission infrastructure at an existing substation, which is part of the established visual landscape. There is extremely limited visibility of the Project. It would not shock or offend the sensibilities of an average person.

In conclusion, the VELCO Windsor Substation Project meets the Quechee Test insofar as its impact on aesthetics would NOT be UNDULY ADVERSE.

Appendix A

Project Maps 1-3

Appendix B

Photographic Inventory of Existing Conditions

Appendix C

Regional & Town Plan Excerpts