



**FERRISBURGH SOLAR FARM  
Ferrisburgh, Vermont**

**Aesthetics, Historic Sites, and Town/Regional Plans  
Assessment Report**

**Prepared by:**

**SE GROUP**

**February 2010**

## **Part I: Project Background**

### **Section A: Scope and Mandate**

Pursuant to Title 30 Section 248 for the review of energy generation facilities and transmission projects, SE Group has prepared an analysis of potential aesthetic impacts of the proposed Ferrisburgh Solar Farm (FSF or Project). The scope of this assessment addresses the requirements under section 248(b)(5), which incorporates 10 V.S.A. Section 6086(a)(8)(A) related to aesthetics and historic sites. In addition, we review the town and regional plans with regard to section 248(b)(1) (orderly development of the region).

Relative to the potential impact on aesthetics, the analysis includes an evaluation of the “fit” of the Project relative to its scenic context and relies, in part, on the use of the Quechee Analysis as adopted by the Public Service Board.

In regards to the potential impact of the Project to historic sites, the analysis addresses the relationship between the proposed Project and its historic context, and identifies measures taken to minimize impacts.

### **Section B: Project Site**

The Project site is on a 15.9-acre tract within the Town of Ferrisburgh, south of the intersection of US Route 7 and Monkton Road. Presently, this tract is largely open agricultural land and is served by an unpaved access drive from Monkton Road at its northern edge. From this point, the topographic grades on the property drop from around 201 feet above sea level to about 166 feet at the southern edge of the property. The property is shown in context on Figure 1. As evidenced by the underlying aerial photograph, the site is largely open with hedgerows of trees (mixed second growth including some cedars) along the western perimeter.

A barn (circa late 1800s) fronting Monkton Road is to be maintained in its present form as part of this Project. Although the barn does not appear on any state or federal register, its age and location make it potentially sensitive to impacts. We have discussed the Project with the staff from the Vermont Division for Historic Preservation (DHP), which has concurred that it is not expected to impact historic properties or sites, including the barn. A letter from DHP regarding the potential for historic and archeological impacts from the Project is provided as part of the testimony of Mark Kane (Exhibit ASF-MK-3).

## **Section C: Project Description**

The Project will be a solar field comprised of individual solar modules of either 200 or 270 watt production capability. In either case the extent of the solar field will be the same with only the number and spacing of the rows of panels changing.

The 5,200 individual solar modules (3,872 if the 270 watt module is used) are organized into solar arrays; each set on single pole mounts that place the bottom of the arrays at approximately 48" above existing grade. Setting this height allows the array to shed snow without creating buildup on the ground that might compromise energy production. The Project integrator, Alteris Renewables, has designed the field so that each array is angled at 30 degrees. At this angle the maximum height of each array is 8 feet 11 inches (or 10 feet 6 inches for the 270 watt module configuration) above the ground surface. Each array is about 9 feet wide and 47 feet in length. The extent of the solar field is depicted in context to the surrounding landscape in Figure 1 of this report and in more detail on the site plan prepared by Scott Michael Mapes (Exhibit ASF-EP/LS-2 fig. b).

Individual modules comprising each array are mounted on a rack system two high by four wide. Each array is separated from adjacent ones by a white aluminum frame. A photograph showing the general appearance of this type of panel is provided as Exhibit ASF-EP/LS-3 fig. c. The single pole rack system would require one pile-driven pole every 8 feet making for a relatively "light" frame. This single pole system is illustrated in Exhibit ASF-EP/LS-3 fig. b.

The arrays within the 200 watt configuration are organized as a field of 34 rows set approximately 19 feet apart to minimize shading. The extent of the solar field was designed to maintain separation to surrounding land uses, minimize clearing and maximize retention of existing vegetation, particularly along the perimeter of the property. This configuration also maintains required isolation distances to wetlands found on the southern portion of the property. As set in the landscape, the array narrows considerably from north to south. The solar field is illustrated on the Project site plan (Exhibit ASF-EP/LS-2 fig. b). For the 270 watt module configuration, the spacing between rows increases to 23 feet 6 inches (See Exhibit ASF-EP/LS-2), but the extent of the solar field remains the same.

A separate shed housing the inverters and other electrical equipment is required for the Project. This structure is approximately 36 feet by 12 feet and nearly 10 feet high. The specifications of this inverter shed are provided in Exhibit ASF-EP/LS-3 fig. d. The proposed location of the structure, on the eastern side of the Project site, is screened by

the existing and retained vegetation on the site as well as by the solar field itself (as viewed from the Route 7 corridor). All electrical and data monitoring lines from the array to the inverter will be buried in conduit. The structure will be a neutral gray color.

The Project site will be accessed from Monkton Road. The existing barn on the property will be maintained in its current state. A new educational kiosk and parking spaces for four (4) cars will be provided to allow the general public and educational groups an opportunity to learn about the Project as well as the history and cultural evolution of the area. The area encompassing the solar field and inverter shed will be enclosed with a 6-foot tall chain link fence and access gate. Motion activated security lighting will be installed around the solar field and near the kiosk. A gravel drive will be created from Monkton Road to the inverter shed. These site features are depicted on the Project site plan (Exhibit ASF-EP/LS-2 fig. b).

#### **Section D: Evaluation Methods and Approach**

Firstly, we have thoroughly reviewed the applicant's engineering and design materials and documents to understand the project scope and scale, its location, characteristics and setting. We have also sought additional information on the Project and its setting from published sources, atlases and statistical records. We have reviewed the manufacturers information on the nature of the proposed solar panels related to appearance and glare.

Secondly, we reviewed the potential viewshed of the Project initially using Geographic Information Systems (GIS) tools. Given the relatively "flat" nature of the terrain and the low height of the proposed structures, we augmented the GIS analysis with fieldwork to validate areas of potential visibility. A more detailed discussion of how the viewshed was determined can be found in Part II–Section B.

After defining the likely extent of the viewshed, we also identified several key viewpoints from which the proposed solar field could be seen. We collected photographs and catalogued landscape and visual resource characteristics from these viewpoints.

Lastly, we evaluated all of these technical factors (where can it be seen, what would it look like, etc.) against the qualities and sensitivities of the visual environment. We have employed several techniques for this process that blend the quantitative and qualitative aspects of visual analysis. These have all been combined into a final analysis of visual impacts from the Project using the Quechee Analysis. This process is described in detail in Part II of this report.

For the review of the Project relative to historic resources, we reviewed relevant databases of listed historic properties, discussed the Project with representatives from the Division for Historic Preservation and documented the proposed Project relative to the observed historic context.

We have also reviewed the local zoning and subdivision regulations, town plan and relevant regional plan to address the compatibility of the project with the orderly growth of the region.

## **Part II: Visual Analysis**

### **Section A: Visual Context**

Given the nature of the Project and its relative scale, the spatial extent of the potential viewshed is small as compared to other structures such as communication towers or wind turbines. It is likely smaller than many common landscape features found in the region such as transmission lines, silos or large dairy barns. For this analysis we have focused on the visual context of the landscape within a 2-mile radius of the proposed Project. This roughly 8,042-acre study area is depicted graphically in Figure 1.

This overall study area includes portions of the towns of Ferrisburgh, New Haven, Waltham, Panton, and Vergennes. The major population center of the region is the City of Vergennes with approximately 2,800 residents. Route 7 travels north-south, bisecting the study area. Vermont Route 22A intersects with Route 7 from the west just north of the Project site. Otter Creek, the major watercourse in Addison County flows adjacent to the City of Vergennes along the western edge of the study area.

While recognizing that map-based land classification datasets based on remote sensing from satellites are subject to a 15 to 20% margin of error, such information can be useful to coarsely quantify the patterns of development and natural open spaces.

The following table summarizes the most recently available GIS land cover classification information for the State of Vermont within the study area.<sup>1</sup>

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<sup>1</sup> 2001 National Land Cover Dataset developed by the United State Geologic Survey and processed for Vermont by the Vermont Center for Geographic Information.

<b>Table 1: Summary of Land Cover Types within Ferrisburgh Solar Farm Project Study Area</b>			
<b>NLCD Code</b>	<b>Land Cover Description</b>	<b>Acres within Study Area</b>	<b>% of Study Area</b>
11	<b>Open Water</b> All areas of open water, generally with less than 25% cover or vegetation or soil	94.5	1%
<b>OPEN WATER SUBTOTAL</b>		<b>94.5</b>	<b>1%</b>
21	<b>Developed, Open Space</b> Includes areas with a mixture of some constructed materials, but mostly vegetation in the form of lawn grasses. Impervious surfaces account for less than 20% of total cover. These areas most commonly include large-lot single-family housing units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes	316.2	4%
22	<b>Developed, Low Intensity</b> Includes areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20 to 49% of total cover. These areas most commonly include single-family housing units.	326.7	4%
23	<b>Developed, Medium Intensity</b> Includes areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 50 to 79% of the total cover. These areas most commonly include single-family housing units.	279.8	3%
24	<b>Developed, High Intensity</b> Includes highly developed areas where people reside or work in high numbers. Examples include apartment complexes, row houses and commercial/industrial. Impervious surfaces account for 80 to 100% of the total cover.	38.7	<1%
<b>DEVELOPED LAND SUBTOTAL</b>		<b>961.4</b>	<b>12%</b>
41	<b>Deciduous Forest</b> Areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. More than 75% of the tree species shed foliage simultaneously in response to seasonal change.	985.2	12%
42	<b>Evergreen Forest</b> Areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. More than 75% of the tree species maintain their leaves all year. Canopy is never without green foliage.	45.8	1%
43	<b>Mixed Forest</b> Areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. Neither deciduous nor evergreen species are greater than 75% of total tree cover.	130.5	2%
52	<b>Shrub/Scrub</b> Areas dominated by shrubs; less than 5 meters tall with shrub canopy typically greater than 20% of total vegetation. This class includes true shrubs, young trees in an early successional stage or trees stunted from environmental conditions.	203.5	3%
71	<b>Grassland/Herbaceous</b> Areas dominated by grammanoid or herbaceous vegetation, generally greater than 80% of total vegetation. These areas are not subject to intensive management such as tilling, but can be utilized for grazing.	23.4	<1%

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<b>Table 1: Summary of Land Cover Types within Ferrisburgh Solar Farm Project Study Area</b>			
<b>NLCD Code</b>	<b>Land Cover Description</b>	<b>Acres within Study Area</b>	<b>% of Study Area</b>
<b>NATURAL OPEN SPACE SUBTOTAL</b>		<b>1,391.1</b>	<b>17%</b>
81	<b>Pasture/Hay</b> Areas of grasses, legumes, or grass-legume mixtures planted for livestock grazing or the production of seed or hay crops, typically on a perennial cycle. Pasture/hay vegetation accounts for greater than 20% of total vegetation.	3,761.1	47%
82	<b>Cultivated Crops</b> Areas used for the production of annual crops, such as corn, soybeans, vegetables, tobacco, and cotton, and also perennial woody crops such as orchards and vineyards. Crop vegetation accounts for greater than 20% of total vegetation. This class also includes all land being actively tilled.	1,474	18%
<b>AGRICULTURAL LANDS SUBTOTAL</b>		<b>5,235.1</b>	<b>65%</b>
90	<b>Woody Wetlands</b> Areas where forest or shrub land vegetation accounts for greater than 20% of vegetative cover and the soil or substrate is periodically saturated with or covered with water.	346	4%
95	<b>Emergent Herbaceous Wetlands</b> Areas where perennial herbaceous vegetation accounts for greater than 80% of vegetative cover and the soil or substrate is periodically saturated with or covered with water.	14.9	<1%
<b>WETLANDS SUBTOTAL</b>		<b>360.9</b>	<b>4%</b>
<b>GRAND TOTAL</b>		<b>8,042.9*</b>	<b>100%</b>

Derived from NLCD datasets clipped to the 2-mile buffer zone

\* Totals include some incidental land covers such as unclassified lands that represent less than 1% of the total. Values are rounded.

Again, while this information is based on coarse GIS data, the ratios of developed, open and agricultural lands seems right compared to field observations and recent aerial photographs of the study area.

We consider three basic components in our evaluation of the capacity of the landscape to absorb changes in land use or function:

- **Human Environment:** This component represents the built environment of the landscape and includes elements such as structures and roadways. It also can include land-uses that modify the natural character of the landscape including agricultural fields and pastures, athletics fields and other more “passive” elements. Signage, lighting and other components of the human environment are also considered as part of the existing visual reference.

Based on the land coverage types described above, the vast majority (65%) of the land within the study area is used for pasture or cultivated agricultural uses. Interspersed amongst these uses are pockets of deciduous and mixed forestlands that comprise about 17% of the landscape. This is the traditional Vermont farmland pattern; fields and forests in relatively small pockets, largely influenced by water courses and topographic variations. The landscape east of the proposed Project strongly exhibits this patchwork pattern.

Within a 1-mile distance from the Project is much of the City of Vergennes. While only 12% of the lands within the study area could be classified as “developed,” this percentage increases significantly to nearly 22% at the 1-mile scale. The Project site is located at the transition point between the agricultural land uses of the region and the developed growth center at the intersection of Route 7 and Monkton Road. Major built structures nearby include:

- Downtown Vergennes
- Vergennes Union High School
- VUHS sports fields
- Vergennes Shopping Center

It should also be noted that the lands encompassing the project area and extending across Route 7 are currently zoned as Highway Commercial 2 (HC-2) by the Town of Ferrisburgh (See Figure 1). This zoning designation is clearly oriented towards commercial and retail uses.

- Natural Environment: These are areas where human influence has not yet been felt, and include forestlands, open meadows and water courses. It is often the interaction and interplay between human and natural environments that helps define the visual resource.

At the southern edge of the 1-mile distance within the Town of Waltham, the pattern and density of forestland cover becomes more pronounced. This, in combination with topographic factors, effectively establishes a definite visual terminus. Similarly, large areas of forestland east of the Project site and south of Monkton Road constrain visibility within the landscape.

- Topography: This component considers the shape and orientation of the terrain within the visual context. This physical attribute helps define the potential visibility of the Project as well as the relationship between vantage points and focal points. This component also greatly influences how the human and natural land cover patterns are observed.

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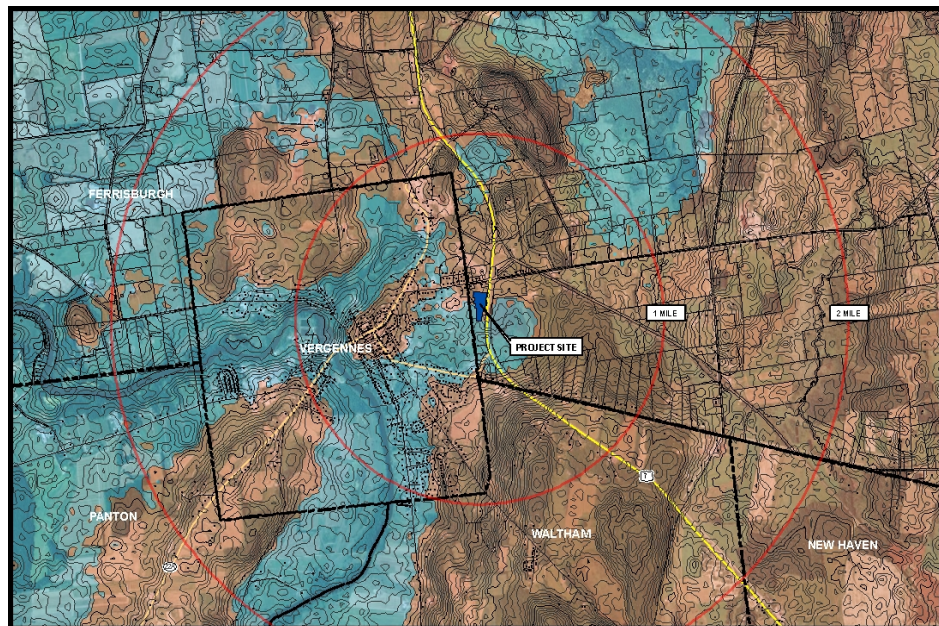
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The lands within the study area are generally rising towards the east, and are flat or slightly descending towards the west. The low points within the landscape are near the City of Vergennes and along the Otter Creek. To the north of the Project, the landscape generally rises slightly at a consistent grade, leveling out at around elevation 225 feet. To the south, the landscape rise is more pronounced, particularly within the Town of Waltham where several smaller hills are observed and elevations increase to 300 feet or more. To the east the landscape rises upwards, influenced by the foothills of the Green Mountains. Heading westward, the landscape remains relatively flat as it moves towards Lake Champlain.

An approximate “average” elevation within the Project site is 180 feet above sea level. Using this as a guide, the change in elevation relative to this average can be calculated using Digital Elevation Models (DEM) of the region. The following illustration shows the pattern of lands below (in blue) and above (in orange) this average elevation.



ELEVATION GRADIENT ANALYSIS WITHIN PROJECT STUDY AREA

The pattern shown is consistent with the general geomorphology of Vermont; areas within the Champlain Valley are low, rising upwards as you move east to the foothills of the Green Mountains and ultimately rising further to the Green Mountains themselves.

## **Section B: Viewshed Analysis**

The relatively flat terrain combined with the relatively low height and profile of the arrays comprising the solar field make a geometric calculation of the viewshed challenging. When projects are located on ridgelines or when they have greater height, changes in micro-topography (small, often unmapped changes in elevation), forests and other structures have less influence on the extent of the viewshed. In this Project, these factors play a significant role in defining the viewshed.

We have identified three potential viewshed “zones” based on the nature of the solar field, existing terrain and the pattern of vegetation. These viewshed zones are illustrated in the attached Figure 2.

The first viewshed zone extends south of the property and includes approximately 0.65 mile of Route 7 and some portions of New Haven Road and Church Road. While this zone has the highest view potential, it also is the least populous. Much of this zone is existing agricultural fields along Route 7. The eastern and southern edges of the zone are constrained by existing dense woodlands. The average observer within this zone would likely be traveling north along Route 7.

We have identified two representative viewpoints within this zone and have prepared simulations of how the project would look from each (see Figures 3 and 4). All simulations prepared are based on the 200 watt module configuration. Given the nominal difference in array height and spacing between the two configurations under consideration, we believe these simulations are representative of the appearance of the project in general.

- **Viewpoint A:** This vantage point is located about 2,215 feet to the south and east of the Project along Route 7 just south of the intersection with Plank Road at the Ferrisburgh/Waltham town line. This view is perhaps the most representative of the how the Project would be first introduced for travelers heading north along Route 7. The traffic volume of Route 7 within this segment is approximately 7,800 cars per day based on data available from the Vermont Department of Transportation.

As the simulation suggests (see Figure 3), the solar field is not oriented directly at Route 7 from this vantage point. The general orientation towards “solar south” and the use of panels that are 97% non-reflective greatly minimizes the potential for visual impact from the Route 7 corridor.

Also noteworthy from this simulation is how the solar field conforms to the general shape of the landscape. The barn would be visible behind the solar field.

- Viewpoint B: This vantage point is located along New Haven Road and is due south of the Project. It is approximately 1,625 feet away from the closest solar panel. Views would generally be of short duration for people traveling east on New Haven Road towards the intersection with Route 7. For a short stretch of New Haven Road (about 300 feet) the project would be visible directly in the midground, with the roadside development of Monkton Road in the background. The simulation provided (See Figure 4) shows that Project would be seen “face on” from this vantage point, but that the form of the landscape is maintained.

The second viewshed zone extends westward from the property into the City of Vergennes. It largely encompasses the Vergennes Union High School property and surroundings. Within this zone, visibility of the Project is low given the flat terrain and orientation of the solar field parallel to observers. The existing hedgerow of trees along the western property line largely screens the Project site from points beyond. The school and other structures along Monkton Road further constrain views from the west.

We have identified a viewpoint within this zone from which the Project will be visible and have prepared a simulation of what it will look like upon installation of the Project (see Figure 5).

- Viewpoint C: This viewpoint is taken directly west of the proposed solar field approximately 250 feet from the closest array. The location is within the student parking lot for Vergennes Union High School and shows the effectiveness of the hedgerow in softening the visual impact of the Project.

Because of the proximity from this vantage point, there would be a more detailed view of the Project components including the inverter shed, arrays and the proposed 6 foot tall chain link fence. The simulation shows how views are parallel to much of the solar field so that individual arrays are seen more from the side rather from face on. In addition, the rear of the panels that are located south of this particular viewpoint would be seen. The simulation also shows how the gently sloping grade and low profile of the array themselves reduces their perceived mass and scale.

The last viewshed zone includes areas to the north and northeast of the Project along Monkton Road. The view potential in this zone is minimal. The south facing property on which the Project is proposed falls away approximately 37 feet from elevation 201 feet at the northern edge near the existing barn to 166 feet at the southern edge. The solar field is offset from Monkton Road by a minimum of 250 feet. The terrain characteristics coupled with the preservation of the existing barn and much of the vegetation around the Monkton Road frontage will significantly limit offsite views of the solar field. The

proposed parking area and kiosk would be visible within some vantage points within this zone, but again would be partially screened by existing trees and when visible, would look similar to other uses found within the surrounding area.

We have identified two viewpoints within this zone that we believe are representative of the likely vantage points for the general public. Simulations of the Project from each are provided as Figures 6 and 7 of this report.

- **Viewpoint D:** This viewpoint is located north of the proposed solar field along Monkton Road. The view looking south from this viewpoint is dominated by the existing barn structure and associated accessory structures. The proposed kiosk, gravel access road and small parking area would be visible from Monkton Road, and would be to the right of the simulated view. Many of the mature trees including a large spruce tree would remain following development of the Project. As the simulation suggests, the distance from the public right-of-way to the nearest array significantly minimizes the impact of views from this location. In addition, the fact that the rear of the panels are observed make it difficult to discern the Project as a solar field from this location. The chain link fence would also be visible from this vantage point.
- **Viewpoint E:** This final viewpoint is located 413 feet from the closest solar array and just east of the intersection between Route 7 and Monkton Road. Again, given the grade relationships between the public right-of-way and the existing structures along the north end of the property (including a one-story office building on the southwestern corner of the intersection), views would be minimal. Any views would be in context with the developed lands along Monkton Road including residential and commercial uses. The simulation shows how minimally the Project can be seen from this vantage point including the proposed 6 foot chain link fence.

### **Section C: Assessment of Potential Visual Impacts**

Having identified the extent of the views and completed an analysis of representative views from the Project, the next step is to prepare an assessment of potential impacts using the Quechee Analysis. This process first tests whether the proposed Project's impacts are adverse. Second, assuming a conclusion that the Project would have an adverse aesthetic impact, the process continues to determine whether or not that impact would be undue.

### ***Test for Adverse Impact:***

The Quechee Analysis asks five basic questions, which are then used to determine whether the Project would result in an adverse impact with respect to the visual resource. These questions are:

- 1. What is the nature of the project's surroundings? Is the project located in an urban, suburban, rural or recreational resort area? What land uses presently exist? What is the topography like? What structures exist in the area? What vegetation is prevalent? Does the area have particular scenic value?**

Much of this has been discussed in Section B.

While the larger landscape affords long range views of the Adirondacks and the Green Mountains, and has elements of the traditional farmland pattern, the scenic qualities within the Project's viewshed are more dominated by the human environment and not unique or exemplary.

- 2. Is the project's design compatible with its surroundings? Is the architectural style of the buildings compatible with other buildings in the area? Is the scale of the project appropriate to its surroundings? Is the mass of the structures proposed for the site consistent with land use and density patterns in the vicinity?**

A solar field, such as the one proposed, would be a unique element within its surroundings. While the form might be unique, its scale is low and its mass is limited. The solar field conforms to the general shape of the existing terrain and does not introduce elements that are excessively tall or out of scale.

As mentioned previously, the Project sits at the transition between an agricultural landscape and a developed one. In this context, the Project seems appropriate; bridging the agricultural and resource-based uses of the region with the developed forms of the Project's immediate surroundings. In fact, the existing barn that will remain is the visual terminus of the Project when viewed from points south. This reinforces both the connectivity of the solar field to the land and helps anchor its scale relative to something familiar.

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

The color and materials needed for an individual solar panel are designed to maximize the conversion of solar radiation to energy. The dark blue hue of the panels is non-reflective and is not highly contrasting with the site during summer months. In the winter, the panels will be more obvious, but not overtly so.

The supporting elements of the Project include the 6 foot high chain link fence that surrounds the solar field, the inverter shed on the western edge of the site and the kiosk. The fence, a galvanized mesh fence with a top bar as depicted on ASF-SMM-2, is of a form typical for enclosure of utility projects and other large areas. The mesh itself will be minimally visible from most vantage points.

The proposed motion-activated security lighting within the fenced perimeter of the solar field and near the kiosk are incidental to the overall design similar in nature to many security systems commonly used in commercial settings.

The inverter shed is to be a neutral color and appear as a simple mass, consistent with other similar structures commonly associated with developed landscapes including storage units, transformers, etc.

The kiosk is intended to convey information about the Project and its setting using a simple design that is consistent with the other signage commonly found along travel corridors in Vermont.

**4. Where can the project be seen from? Will the project be in the viewer's foreground, middleground or background? 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?**

Of the three viewshed zones identified, the one to the south has the highest view potential. As discussed, the average observer would be traveling north along Route 7. Given the approximate 0.65 mile length of Route 7 in this zone and assuming an average travel speed of 55 miles per hour, we would estimate the duration of view to be approximately 42 seconds. Again from the southern viewshed, the Route 7 corridor would define the eastern edge of the Project and reinforce its visual connectivity to the surrounding developed intersection of Route 7 and Monkton Road.

**5. What is the project's impact on open space in the area? Will it maintain existing open space or will it contribute to the loss of open space?**

The Project would maintain open space and the productive use of the natural resources in the region. The local zoning for the property allows for commercial uses at densities consistent with nearby retail and office development. The proposed Project maintains productive, natural-resource based use of the property and preserves the visual appearance and character of the Monkton Road frontage.

The components that make up the solar field (arrays, inverter, and fencing) can be installed with minimal clearing of existing vegetation and with minimal disturbance to the ground surface. These same components can be easily removed with no permanent alteration to the property.

***Conclusion of Adversity:***

While the Project introduces a new visual element into this landscape, it does so within a context that seems to fit its function and form. Route 7 is a strong visual element in the landscape and, particularly viewed from the south, forms a boundary between the more developed portion of the viewshed and the agricultural lands to the east. This transitional quality, coupled with the relatively flat terrain, allows the Project to sit low on the landscape and fit more readily. It will be viewed most often for short durations; it preserves the frontage of Monkton Road to both screen and define the northern edge of the Project, and continues the appearance of a new “field” within the open landscape.

Based on these factors, we have concluded that the Project **would not** constitute an adverse impact in regards to the visual resource. Having concluded that, no further visual assessment under the Quechee test would technically be required, however, we also acknowledge the importance of continuing the Quechee Analysis process to consider the three tests for determining if the Project causes an undue adverse impact. In doing so, we can further explore how it might affect an average person, how the Project addresses specific community aesthetic standards, and the steps that have been taken to mitigate any impact.

***Test of Undue Adverse Impact:***

The Quechee Analysis process continues to evaluate whether the impact of the Project would be unduly adverse. This is done by addressing three fundamental questions:

- 1. 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?**

No. We **do not** believe that the Project would offend an average person. Its scale, mass and form are not so out of character that they are offensive nor do they diminish or distract from the scenic qualities of the area. Further, the viewshed is

very small, only hundreds of acres and has very few permanent residences. Factoring in vegetation, structures, and micro-topography, only a few vantage points afford unobstructed views and in all cases the project is seen within the context of the surrounding commercial, residential and institutional development.

While a solar field is an uncommon visual element in the landscape, an average person is familiar with solar panels through observation of them on homes and businesses, or as presented in the media.

Programs such as the Solar on Schools and the SPEED are increasing general public awareness of renewable energy projects. This awareness was evident in the recent public engagement process for Vermont's Energy Future completed by the Vermont Department of Public Service. Regional workshops and deliberative polling completed in late 2007 suggested that 94% of participants believed that Vermont should get the majority of its power from renewables. Further, solar projects were seen as extremely friendly to the environment.

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

We have reviewed three principal documents to evaluate conformity to community standards: the Town of Ferrisburgh Zoning Ordinance, Ferrisburgh Town Plan and the Addison County Regional Plan.

- 1) Town of Ferrisburgh Zoning Ordinance. We reviewed the most recently adopted ordinance for the town as amended on March 6, 2001. The ordinance identifies seven zoning districts representing a spectrum of uses ranging from conservation lands to village development. The subject property is zoned Highway Commercial (HC), a district that allows a wide variety of commercial, retail and light industrial (warehouse) uses.

The ordinance has general language related to maintenance of scenic qualities through Planned Unit Development review. As such, these standards generally relate to maintenance of sufficient buffers between adjacent uses and the preservation of landscape screening. The ordinance does not designate a scenic overlay districts nor does it define specific requirements for preservation of scenic views and therefore does not constitute a clear written community standard.

- 2) Town of Ferrisburgh Plan. The Town Plan for Ferrisburgh was adopted on July 6, 2006 and outlines wide-ranging policies related to land conservation, scenic preservation and development of renewable energy systems. Exhibit ASF-MK-4. Among these policies are: a call for the development of a scenic view inventory to assist in the development of scenic overlay districts, and recommendation for the protection of the scenic view from Route 7. Firstly, these policies do not provide “clear written community standards”, as that term has been defined in prior Act 250 and section 248 cases, on which this Project’s aesthetic impact could be evaluated. Rather, they identify mechanisms that could be created to achieve conservation and preservation objectives. Secondly, the Project has considered many of these recommended policies in its design including building the facility in one of the town’s designated commercial development zones, minimizing clearing and disturbance of the site, and maintaining the long-term use of the land for productive purpose.
  
- 3) Addison County Regional Plan. The currently approved plan (May 4, 2008) provides regional policy guidance related to a variety of natural resource, conservation and land use goals for Addison County. Exhibit ASF-MK-5. Within this broad document, the plan has a section entitled “Utilities, Facilities and Services.” Within this section the plan outlines several relevant goals and objectives related to energy infrastructure and impacts on scenic qualities:
  - a) On page 7-45 the plan stipulates that “infrastructure should be sited to respect the scenic character of the landscape and the aesthetic concerns of the citizens of the region.” The plan strongly encourages the participation of communities in the 248 process and defines as an objective for utilities and landowners to work with residents and municipalities to develop appropriate mitigation plans in advance of filing 248 applications. To this point, ASF has met with local residents, abutters and representatives from the Town of Ferrisburgh to discuss the Project. Issues that arose during these meetings included concerns over glare. The use of panel technology with multiple anti-glare coatings and negligible reflectivity directly addresses these concerns.

While the local zoning, town plan and regional plans do speak to the need for sensitivity to the scenic resource, these documents do not provide specific clear written community standards that are designed to protect the aesthetics or scenic beauty of the area. The design of the Project has met the intent of these

recommendations, goals and objectives; namely to assure that facilities like the one proposed are sited with considerable regard to the scenic qualities of the area.

**3. Has the Applicant failed to take generally available mitigating steps which a reasonable person would take to improve the harmony of the proposed project with its surroundings?**

We believe that applicant has taken reasonable steps to mitigate the Project with the landscape, including:

- a. The applicant has chosen a south-facing site that is predominately open, zoned for commercial uses and sloped relatively flat.
- b. The applicant has maintained substantial buffers between the proposed solar farm and adjacent properties and public rights-of-way.
- c. The applicant has placed the arrays comprising the solar field on slim mounting brackets that follow the natural terrain of the land to minimize its profile.
- d. The installation of the arrays will not require regrading or reshaping the landscape.
- e. With the exception of a single new electrical pole on the property to provide the interconnection, all of the electrical collection lines for the Project will be buried.
- f. The applicant has chosen neutral tones for supporting structures such as the inverter shed to minimize their appearance.
- g. The applicant has retained substantial areas of existing vegetation and the existing barn along Monkton Road to limit views into the site.
- h. The applicant has chosen a galvanized chain-link fence with minimal visual impact profile to secure the site.
- i. The applicant has included a public informational kiosk to present the nature of the Project and its context and has provided some parking spaces within the property. The applicant has also committed to working cooperatively with the Vergennes Union High School on curricula associated with the Project.

### **Overall Conclusion:**

On balance we believe that the Project represents a good fit within this context and does not create an adverse impact, let alone an undue adverse impact, to the aesthetics or scenic beauty of the area.

## **Part III: Impact on Historic Sites**

### **Section A: Context**

The surrounding landscape is a mix of traditional farmlands and more recently developed residential, commercial and retail uses. As part of our review of the Project we evaluated this context and whether it might impact historic buildings, structures, districts or landscapes. Further we also considered whether the site had known or potential archaeological resources.

The Town of Ferrisburgh has two sites listed on the Vermont and National Register of Historic Places (Rokeby Museum and Field Farm). Neither are located near the Project area. The City of Vergennes is a state and federally listed historic district. This review identified the existing farmstead and barn as potentially historic given its likely age (circa late 1800's) and setting. Other structures along Monkton Road could be potentially listed based on age (older than 50 years) and setting.

A site visit on December 3, 2009 by Scott Dillon, state archaeologist, was completed to evaluate historic sites and archaeologically sensitive areas. The Project was also reviewed with Devin Coleman, Building Sites Historian with the Division for Historic Preservation.

### **Section B: Steps Taken to Minimize Impacts**

Many of the mitigation measures identified above in the discussion of the aesthetic impacts of the Project clearly support preservation of the historic context of the site. These include:

1. The preservation of the farmstead and barn in its current form,
2. The substantial setback from Monkton Road to provide visual isolation between the Project and adjacent structures, and
3. The preservation of large trees that surround the farmstead and the Monkton Road frontage of the property.

## **Section C: Conclusions**

Having reviewed this Project within its context, it was our conclusion that no adverse effect to the historic resource was anticipated. To further support this conclusion, we sought the opinion and comment of the Division for Historic Preservation on the matter.

In a letter from State Historic Preservation Officer Giovanna Peebles to Scott Michael Mapes (Dated January 28, 2010), she states that “no historic sites or archaeologically sensitive areas were identified at the proposed project area”. Further, the letter goes on to conclude that the Project will have “**no adverse effect**” on any historic sites (Exhibit ASF-MK-2).

## **Part IV: Impact on the Orderly Development of the Region**

The Town of Ferrisburgh Zoning Bylaws (amended 3/6/2001) identify the zoning of the property as Highway Commercial District 2 or HC-2. This zoning designation conditionally allows a broad array of retail, commercial and warehouse uses. The purpose of this district is to “serve highway oriented businesses and highway uses”. This district supports the highest allowable densities within the town as well as the highest allowable lot coverage. It clearly is a district that supports intensive commercially-oriented development.

The Ferrisburgh Town Plan also identifies (page 68) the Project area as one of three areas planned for highway-oriented uses. The plan recommends that development within these areas “protect neighboring residences, the visual character and transportation function of the highway”. The plan goes on to acknowledge that the uses within these districts should “further the goals in the town plan for economic development”. A central goal for economic development in the town encourages “commercial and industrial development in the areas of town traditionally designated for commercial growth, namely the Highway Commercial areas and Industrial areas” (Page 58). The plan also goes on to encourage the development of alternative sources of energy such as solar (page 60) within the town. See Exhibit ASF-MK-4.

Page 7-28 of the Addison County Regional Plan outlines a goal “that energy infrastructure and services do not cause undue adverse impact to the health and safety of residents or on the natural environmental quality of the Addison Region.” It goes on to identify specific objectives including “for no new large-scale energy generation or

transmission facilities, which have as their primary purpose providing energy to markets outside of the Addison Region, to be constructed or expanded in the region.” The Plan does not define “large scale energy generation facilities”. Assuming the Project does constitute a large generator of power under the Plan, the power that it will produce will help meet the needs of the Addison Region. In fact, as part of the Standard Offer program, the power generated from this Project will be sold to all Vermont utilities, including those that supply power within Addison County. See Exhibit ASF-MK-5.

The Project **is compatible** with the continued orderly growth of the region as it:

1. Is within a locally and regionally recognized district supporting broad and intensive commercial development.
2. Is sensitive to its surroundings by minimizing its visibility to adjacent residences.
3. Does not impede the use of the Route 7 corridor by adding to traffic or by the establishment of new curb cuts.
4. Is consistent with town and regional goals for development of alternative energy sources.
5. Is a land use that, upon project closure, will return the land to its current state allowing for future redevelopment.