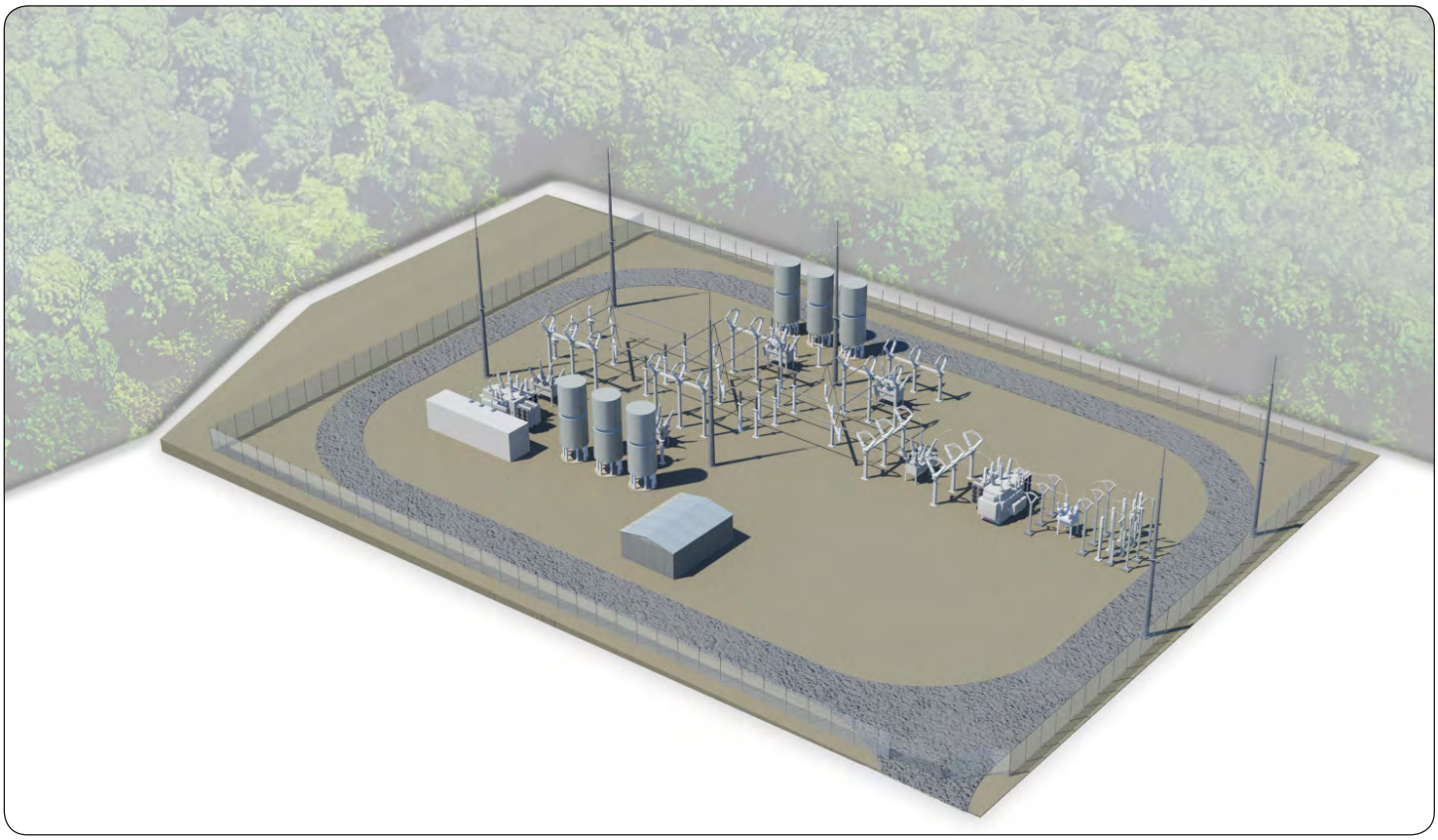

Visual Resource Assessment

South Fork Export Cable Onshore Substation

Town of East Hampton, Suffolk County, New York

Prepared for:

South Fork Wind Farm, LLC
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Providence, RI 02903

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1.0 INTRODUCTION

1.1 Purpose of the Investigation

Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C. (EDR) was retained by Deepwater Wind South Fork, LLC (Deepwater Wind or the Applicant) and AECOM to prepare a Visual Resource Assessment (VRA) for the South Fork Export Cable Onshore Substation associated with the proposed South Fork Wind Farm (SFWF) and South Fork Export Cable (SFEC) Project. This VRA has been prepared in support of the SFEC application for siting a major electric transmission facility under Article VII of the New York State Public Service Law. The substation is proposed to be located in the Town of East Hampton in Suffolk County, New York (see Figure 1). The purpose of this VRA is to:

- Describe the visible components of the proposed substation.
- Define the visual character of the substation study area.
- Inventory and evaluate the existing visual resources.
- Evaluate the potential visibility of the substation within the study area.
- Identify key views for visual assessment.
- Assess the visual impacts associated with the proposal.

This VRA was prepared in accordance with the policies, procedures, and guidelines contained in established visual assessment methodologies (see Literature Cited/References section).

1.2 Project Description and Location

1.2.1 Project Description

Deepwater Wind is proposing to construct an offshore wind energy facility consisting of the South Fork Wind Farm (SFWF) and the offshore and onshore components of the South Fork Export Cable (SFEC). The SFEC[1] is an electrical energy export cable that will interconnect the SFWF with the existing Long Island Power Authority (LIPA) transmission system on Long Island, New York. The SFEC consists of the following components within New York State:

[1] For the purposes of Article VII compliance, only the portion of the SFEC from a point located three miles offshore to its interconnection point with the LIPA transmission system, is subject to Article VII and the requirements of 16 NYCRR Subpart 85. The SFWF and the segment of the SFEC located on the Atlantic Outer Continental Shelf will be reviewed by the federal Bureau of Ocean Energy Management (BOEM) as part of the Construction and Operations Plan (COP) submitted pursuant to 30 CFR 585.625.

- SFEC – NYS: a submarine export cable buried beneath the seafloor, from the boundary of New York state waters to a sea-to-shore transition vault located in the Town of East Hampton on Long Island, Suffolk County, New York;
- SFEC – NYS Onshore: a terrestrial export cable buried beneath existing roads or within other public rights-of-way (ROWs), from the SFEC – NYS transition vault to a new onshore substation to be located adjacent the existing East Hampton substation located at 3 Cove Hollow Road in the Town of East Hampton;
- SFEC Onshore Substation: a new substation to be located adjacent to the existing East Hampton substation, owned and operated by LIPA, located at 3 Cove Hollow Road in East Hampton;

The proposed locations of the onshore components of the SFEC (including the SFEC Onshore Substation) are shown in Figure 2. The proposed substation evaluated in this VRA is part of the SFEC, which is a proposed major electrical transmission facility that would interconnect the SFWF with the LIPA transmission system. The SFWF is an offshore wind energy facility that would consist of up to 15 offshore wind turbine generators, a submarine inter-array cable, and an offshore substation. The SFWF is proposed to be located approximately 16 miles southeast of Block Island, Rhode Island, and approximately 30 miles east of Montauk Point, New York at the boundary between Rhode Island Sound and the open outer continental shelf.

The SFEC would consist of a high voltage alternating current (HVAC) submarine export cable running from the offshore substation to a landing site on the south shore of the South Fork of Long Island in the Town of East Hampton. The offshore segment of the SFEC will transition to the upland cable at the SFEC – NYS transition vault. The transition vault will be located underground within the road or parking lot behind the beach. As shown in Figure 2, multiple alternative landfalls have been considered for the SFEC – NYS transition vault. The proposed SFEC – NYS Onshore terrestrial export cable would be buried beneath existing roads or within other public ROWs (such as the Long Island Railroad [LIRR] ROW), from the SFEC – NYS transition vault to a new onshore substation to be located adjacent the existing East Hampton substation. Upland from the vault, the export cable will run underground along public road ROWs and/or the LIRR ROW to the proposed substation site. Wherever possible, the SFEC – NYS Onshore cable will run within the existing pavement section. Minimal clearing of trees is anticipated to be required along the route of the terrestrial export cable.

The SFEC – NYS Onshore cable is proposed to be located entirely underground, with the exception of the point of interconnection. SFEC landside construction staging and laydown will occur within the Town of East Hampton, at a location yet to be determined. The alternative routes that have been considered for the SFEC – NYS Onshore cable are illustrated in Figure 2.

Visual impacts associated with the proposed SFWF are being reviewed as part of environmental review of the wind energy facility under the National Environmental Policy Act (NEPA) by the Bureau of Ocean Energy Management (BOEM). Therefore, potential visual impacts associated with the proposed SFWF are not considered or evaluated in this report. The SFEC Onshore Substation is the only proposed above-ground facility that would be built as part of the SFEC. The remaining components/facilities of the SFEC would be installed either underground or in the ocean, and therefore would not result in any potential visual impacts. Therefore, the SFEC Onshore Substation is the only component of the project that is considered in this VRA.

1.2.2 SFEC Onshore Substation – Project Location

The proposed SFEC Onshore Substation would be located adjacent to the existing East Hampton Substation at 3 Cove Hollow Road in the Town of East Hampton, Suffolk County, New York. The proposed substation site is a 2.4-acre portion of a larger 17.6-acre parcel owned by National Grid. The East Hampton Substation is owned and operated by LIPA and the East Hampton Diesels in between the East Hampton Substation and the proposed substation area is owned and operated by National Grid. The proposed substation site is located immediately adjacent to (west of) the existing East Hampton Diesels and Gas Turbine and East Hampton Substation (see Figure 3). The entire property, including the LIPA substation, the National Grid parcel leased by the Applicant, and East Hampton Diesels is owned by National Grid. The site is approximately 0.3-mile outside of the Village of East Hampton and is presently forested. Elevations within the SFEC Onshore Substation site ranges from 42 to 52 feet above mean sea level (amsl). The site is bounded by the existing substation/diesels and gas facility to the east and the Long Island Railroad to the north. Existing transmission lines and a storage unit facility are located on the north side of the Long Island Railroad, across from the proposed substation. Other nearby land uses include suburban residential neighborhoods, light commercial use, forest, row crops and nurseries.

1.2.3 SFEC Onshore Substation – Project Description

The final configuration of the proposed SFEC Onshore Substation would be developed as part of the NYISO interconnection process and would include all the equipment necessary to safely connect the SFEC with the NYISO transmission system. However, for the purposes of this VRA, a preliminary substation layout and design was developed. The design of the SFEC Onshore Substation that is evaluated in this VRA is based on conservative assumptions intended to result in an analysis of the tallest (and therefore most visible) facilities that have been considered during the development of the substation design. Based on these conservative design assumptions, the substation would be comprised of an approximately 1.6-acre fenced in area measuring approximately 315 feet by 230 feet oriented roughly on a north-south axis (see Figure 4 Sheets 1 and 2). It is anticipated that the entry road to the substation would extend west from the existing East Hampton substation access road, just south of and parallel to the Long Island Railroad ROW. A gravel maintenance road would encircle the facility just inside of a 9-foot-tall galvanized

chain link perimeter fence. The interior of the proposed SFEC Onshore Substation would include riser structures to bring the underground SFEC to the surface, steel bus structures and voltage conversion equipment with a maximum height of approximately 30 feet, and another riser structure to transition the SFEC back underground. The SFEC would continue underground for approximately 980 feet to the east where it would resurface to tie into the existing 69 kilovolt (kV) East Hampton substation. The substation would also contain a 12-foot-tall control building with length and width measuring approximately 30 feet by 22 feet. Lighting would consist of a limited number of full cut off fixtures for site security and safety. Additional pole mounted flood lights would only be active during maintenance and repair operations.

The proposed SFEC Onshore Substation would also include lightning masts, which consist of tapered galvanized steel monopoles. The lightning masts are anticipated to be the tallest structures proposed as part of the substation. For the purpose of this VRA, the maximum height of the lightning masts was assumed to be approximately 65.5 feet. It is anticipated that the lightning masts proposed in the final design of the substation would be considerably shorter, up to 45 feet tall. To provide a conservative analysis, the assessment of potential project visibility and visual simulations included in this VRA were based on the maximum potential height (i.e., 65.5 feet) of the proposed lightning masts installed at six locations within the proposed substation footprint; however, the number, location, and height of these could change. EDR evaluated what would likely be the maximum height, but this height could decrease along with the quantity of masts increasing.

2.0 BACKGROUND

2.1 Existing Visual Character

2.1.1 Visual Study Area

Per 16 NYCRR § 86.3(a)(1)(iii), which requires mapping of "any known archaeologic, geologic, historical or scenic area, park or untouched wilderness on or within three miles of the ROW," the visual study area was defined as a three-mile radius around the proposed SFEC Onshore Substation. All other onshore components of the SFEC are proposed to be located entirely below grade, and are therefore not evaluated with respect to visual impacts. The three-mile visual study area covers approximately 28.3 square miles and lies within the Towns of East Hampton and Southhampton, encompassing the Village of East Hampton in its entirety as well as a portion of the Village of Sagaponack. The location and extent of the visual study area is illustrated in Figure 5.

2.1.2 Physiographic/Land Use Setting

The visual study area lies within the Embayed section of the Coastal Plain physiographic province, which in turn falls within the Atlantic Plain physiographic division (Fenneman and Johnson, 1946). The dominant land form within the visual study area is the uneven ridgeline passing through the northern portion of the study area. The area to the south of this landform gently slopes toward Georgica Pond, Hook Pond, the valley along Threemile Harbor Road, and the Atlantic Ocean. Elevation within the visual study area ranges from sea level in the south to approximately 182 feet amsl in the northwestern portion of the study area, south of Whooping Hollow Road.

Land use within the study area consists of a mix of suburban residential and commercial development, agricultural fields, nurseries, and forested areas. The Long Island Railroad passes through the center of the visual study area and the East Hampton Airport is located in the western portion of the study area. Forestland is the dominant land use, covering roughly one third of the study area. While forestland is found throughout the visual study area, it is most concentrated outside of the population centers, in the northern and western portions of the study area. However, forest is a dominant visual feature even in developed residential areas, with the majority of houses set back into the forest and enclosed by relatively dense stands of mature trees. Similarly, within the Village of East Hampton, interspersed forest stands are prevalent although the primary land use is residential development.

Residential land use is present in the form of upscale, low-density development along road frontage and in cul-de-sacs present throughout much of the study area, and higher density residential development in the Village of East Hampton. Commercial land use is found along the Long Island Railroad ROW and major roads such as NYS Route 27, County Route 41, and Main Street in the Village of East Hampton. Agricultural land is also present within the visual study area, and is most heavily concentrated just to the northeast of the proposed substation and in the western portion of the

visual study area, west of Sayres Path. Crops include corn, potatoes, rye, and pumpkins as well as numerous species of trees, shrubs, and herbaceous plants grown in sizable nurseries located in this area.

Water plays a significant role in the visual character of the study area due to its location on the south fork of Long Island. The study area includes approximately 10.3 miles of Atlantic Ocean coastline and features inland waterways of Georgica Pond, Wainscott Pond, and Hook Pond. Three Mile Harbor overlaps the northeastern portion of the study area slightly, and Northwest Creek is just beyond the study area's northwestern border.

2.1.3 Landscape Character

Review of the landscape character within a given study area provides a useful framework for the analysis of a facility's potential visual effects. Areas of unique landscape character can be defined within the study area based on the similarity of various landscape features, including landform, vegetation, water, and/or land use patterns, in accordance with established visual assessment methodologies (Smardon et al., 1988; USDA Forest Service, 1995; USDOT Federal Highway Administration, 1981; USDI Bureau of Land Management, 1980). Land cover within the visual study area (generalized from the 2011 United States Geologic Survey [USGS] National Land Cover Dataset), which was used to help identify these areas, is illustrated in Figure 6. The general landscape character, use, and potential views to the proposed Project are described below.

Inset 1 – Main Street in the Village of East Hampton

Inset 2 – Jericho Road in the Village of East Hampton

Inset 3 – Darby Lane in East Hampton Village Historic District

The Village of East Hampton lies wholly within the southern portion of the visual study area and has a distinct historic village character (Inset 1). Buildings within the village tend to be two-to-three stories tall and of a traditional/historic architectural character. Roadways are commonly lined with fences and trees or hedges with an emphasis on visual screening (Inset 2). Eight National Register of Historic Place (NRHP) listed historic districts occur within the Village of East Hampton. The East Hampton Village Historic District is the largest of these, extending southwest from the village center along Main Street and continuing to the Atlantic coastline. This historic district is characterized primarily by heavily wooded eighteenth-, nineteenth- and twentieth-century residences. Views of, and from, many of the historic district's contributing resources in this area are intentionally blocked by landscaping to provide residents with privacy (Inset 3). The Village of East Hampton is characterized by typical village-oriented user activities (home and yard use, shopping, local travel) that occur in vehicles and on foot. Due to the relatively dense vegetation as well as screening provided by structures, open views are very limited. The Long Island Railroad passes through the village, potentially leaving an open view toward the proposed substation expansion. However, both sides of the railroad ROW are lined with trees, providing a long-distance view of only the ROW itself and screening views of adjacent features.

Outside of the Village, much of the visual study area can be characterized as partially forested, up-scale residential development. This character area is relatively widespread in locations that are not in agricultural land use. While also largely residential, this area has a distinctly different visual character from the village due to the larger lot size, newer construction up-scale homes, dominance of mature forest in between and surrounding the residences, and the infrequency of through-roads coupled with a relative abundance of spur roads with cul-de-sacs (Insets 4 and 5). This character area includes limited commercial development along main roads and recreational development such as tennis clubs and a day camp, which occur near the western end of Buckskill Road. User activities in this character area include home and yard use, recreation, and local travel. Open views are extremely limited due to the prevalence of forest extending to the road edges and enclosing yards in most areas.

Inset 4 – Towhee Trail near Spencer Lane

Inset 5 – Mane Lane near Harness Lane

Agricultural land use is focused in two discrete areas within the visual study area. One of these areas is near the center of the study area roughly bordered by NYS Route 114, the Village of East Hampton, Cedar Street, and Stephens Hand Path. The other is located west of Sayres Path, extending south to the coast. The visual character of these areas include open, long distance views across fields, which are uncommon elsewhere within the study area (Insets 6 and 7). Limited residential development occurs in agricultural areas in the form of scattered houses and a couple of small residential developments. The East Hampton High School lies at the eastern edge of the centrally located agricultural area, adjacent to the Village. Agricultural crops include corn, potatoes, rye, and pumpkins. Several large nurseries also occur in this character area, growing a wide variety of trees and shrubs as well as annual and perennial plants, both outdoors and in greenhouses. User activities include local travel, home and yard use, and agricultural work.

Inset 6 – Open field along Long Lane/County Route 52

Inset 7 – Agricultural field south of East Hampton High School

Existing utility and transportation infrastructure in the visual study area includes the Long Island Railroad, East Hampton Airport, transmission lines, the East Hampton Substation and East Hampton Diesel and Gas Fuels, and an adjacent self-storage facility (Insets 8 and 9). A sizable quarry is located in the northeastern portion of the study area, which is distinct from the residential character found throughout most portions of the visual study area. These facilities are generally surrounded by mature forest and set back from residences. User activities in these utilitarian/infrastructure

areas are limited, but include work by maintenance and operations crews, local travel, and distance travel by rail and plane. Views of the proposed substation will likely be available from the adjacent railroad, existing substation, and self-storage facility. In general, long distance views within these utilitarian/infrastructure areas are limited to narrow corridors along cleared ROWs, with the exception of the quarry, which offers an open field of view.

Inset 8 – LIPA Substation

Inset 9 – Long Island Railroad at Buckskill Road

The Atlantic Ocean, coastline, and coastal ponds/lagoons represent a character area defined by open water as a dominant foreground element. This is a significant component of the southern portion of the visual study area, which overlaps the Atlantic Ocean and East Hampton Beach, and includes Georgica Pond, Wainscott Pond, Lily Pond, and Hook Pond. The inland tip of Three Mile Harbor represents this character area in the northeastern portion of the study area. Viewer activity on, and near, the water includes pleasure boating, fishing, swimming, sun-bathing, walking, beach combing, fishing and surfing and other various water sports. Long distance views are available looking out over the water as well as up and down the shoreline, but inland views are typically screened by grassy dunes, forest, and/or coastal scrub vegetation, as well as man-made features and structures (Insets 10 and 11).

Inset 10 – East Hampton Beach at Ocean Avenue

Inset 11 – Grassy dune adjacent to East Hampton Beach

2.2 Visual Sensitivity

2.2.1 Visually Sensitive Resources

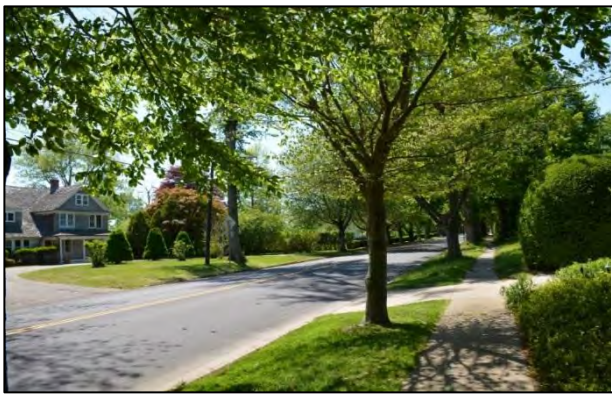
The New York State Department of Environmental Conservation (NYSDEC) Program Policy DEP-00-2 *Assessing and Mitigating Visual Impacts* (NYSDEC, 2000) identifies categories of resources that are considered aesthetic resources of statewide significance. To identify visually sensitive resources within the visual study area, EDR consulted a variety of data sources, including: digital geospatial data (shapefiles) obtained primarily through the New York State GIS Clearinghouse or the Environmental Systems Research Institute; numerous national, state, county and local agency/program websites, as well as websites specific to identified resources; the DeLorme Atlas and Gazetteer for New York State; USGS 7.5-minute topographical maps; and web mapping services such as Google Maps. The three-mile radius visual study area includes several scenic resources of statewide significance, which are listed in Appendix A and depicted on Figure 6. These include 15 resources listed on the NRHP, 59 resources eligible or potentially eligible for listing on the NRHP, and the East Hampton Scenic Area of Statewide Significance (SASS). All inventoried visually sensitive resources are listed in Appendix A, along with distance to the proposed substation and potential visibility. The location of these resources is illustrated in Figure 7.

The National Register of Historic Places (NRHP)

Inset 12 – NRHP-listed Hook Windmill within North Main Street Historic District

The visual study area includes seven individual properties and eight historic districts listed on the NRHP. The majority of these resources are located within the Village of East Hampton and all are within 1.5 miles of the Atlantic Coast. Individually listed historic properties include the East Hampton Railroad Station, three residences, and three historic windmills (Inset 12). The Buell Lane Historic District is the only NRHP-listed resource within 0.5 mile of the proposed substation. This historic district includes a collection of Victorian style residences on the north and south sides of the lane, centered on a church, and exemplifies the years of middle class growth and affluence from 1883-1913 (Peckham, 1987; Inset 13)).

The area within one mile[2] of the proposed substation also includes two residences, Josiah Dayton House and Miller Dayton House, that have been formally determined to be NRHP-eligible, and an additional 57 resources that are potentially eligible for listing according to the recommendations made in the SFEC's Historic Architectural Resources Survey (EDR, 2017). Three of these resources are potentially eligible for listing as individual properties, and the remaining 53 properties are contributing resources to a potentially eligible historic district located on, and north of, Newton Lane in the Village of East Hampton (Inset 14).



Inset 13 – View southwest along Buell's Lane in the Buell's Lane Historic District

Inset 14 – View East along Newton Lane (potentially NRHP-eligible historic district)

State Parks

Review of the NYSOPRHP website and geospatial data indicate that no state parks occur within the visual study area (NYSOPRHP, 2016; NYSOPRHP, 2017e).

Heritage Areas

No Urban Cultural Parks or State or National Heritage Areas occur within the visual study area (NPS, 2017b; NYSOPRHP 2017c).

State Forest Preserves

New York State Forest Preserves occur within the Adirondack and Catskill Parks, neither of which are located within the visual study area (NYSDEC, 2016e).

[2] The Applicant and EDR previously met with staff at the New York State Historic Preservation Office (SHPO) on March 23, 2017 to discuss potential impacts to cultural resources and the appropriate scope of studies to evaluate those impacts. Based on the predicted minimal visibility of the substation (see Section 3.0), SHPO concurred that identification of potential NRHP-eligible resources within a 1-mile study area around the proposed substation would be an appropriate and acceptable level of effort.

National Wildlife Refuges, State Game Refuges, and State Wildlife Management Areas

Review of the U.S. Fish and Wildlife Service (USFWS) National Wildlife Refuge System website indicates that no National Wildlife Refuges occur within the visual study area (USFWS, 2017). NYSDEC's website and available geospatial data indicate that no State Wildlife Management Areas are located within the three-mile radius visual study area (NYSDEC, 2017b).

National Natural Landmarks

Review of the National Park Service National Natural Landmarks Program website indicates that no National Natural Landmarks are located within the visual study area (NPS, 2017c).

National Parks, Recreation Areas, Seashores, and/or Forests

Review of the National Park Service and U.S. Forest Service websites indicates that no National Parks, National Recreation Areas, National Seashores or National Forests are located within the visual study area (NPS, 2017a; USFS, 2013).

National or State Designated Wild, Scenic and Recreational Rivers:

No national or state designated wild, scenic or recreational rivers occur within the visual study area (National Wild and Scenic Rivers, 2017; NYSDEC, 2017g; NPS, 2011).

Sites, Areas, Lakes, Reservoirs or Highways Designated or Eligible as Scenic

There are no state- or nationally- designated scenic byways within the visual study area (USDOT, 2017; NYSDOT, 2017b).

Scenic Areas of Statewide Significance (SASS)

The East Hampton SASS occurs along the Atlantic coast through the visual study area, extending anywhere from 0.3-mile to 1.5 miles inland from the shoreline, depending on the location (Figure 6).

> "The East Hampton SASS is one of the most recognized segments of the New York State coastline. It contains a coastline of exceptional beauty and variety, including historic village and estate neighborhoods, numerous scenic ponds, natural dunefields and productive farmland." (NYSDOS, 2010)

This SASS is divided into three subunits, each of which overlap the visual study area. The Georgica/Wainscott Subunit includes Wainscott, Georgica, and Lily Ponds, farmland, forests, estates, and sandy beaches. Views that contribute to the significance of this subunit feature beaches, dunes, expansive ocean views, and scenic ponds (Inset 15). The

East Hampton Village Center Subunit consists of seaward portions of the historic East Hampton village center, the mansion district at Apaquogue, the Divinity Hill neighborhood and historic residential areas on the east side of Main Street. Dominant visual features of this subunit include historic architecture, tree-lined village streets, parks, estate grounds, focal landmarks, and a notable lack of overhead utilities allowing street trees to grow unrestrained. The Further Lane Subunit includes Hook Pond and areas to the east, including the open landscapes of Maidstone Golf Club, the Atlantic Double Dunes Preserve and farm fields (Inset 16). This subunit is well known as an exclusive summer resort, historic landscape and scenic coastal area. (NYSDOS, 2010)

The location of the proposed substation is approximately 1.0 mile outside of the East Hampton SASS at the nearest point. Furthermore, the views and landscapes contributing to the significance of this resource are focused on the open ocean, sandy shoreline, historic village, and coastal landscapes rather than views inland toward the proposed substation. The siting of the proposed project complies with the New York State Coastal Management Program's Coastal Policy 24 to prevent impairment of scenic resources of statewide significance, which advises:

> "Siting structures and other development such as highways, power lines and signs back from the shoreline or in other inconspicuous locations to maintain the attractive quality of the shoreline and to retain views to and from the shore..." (NOAA and NYSDOS, 2017)

The East Hampton SASS document also identifies five areas with potential for designation as scenic areas of local significance, three of which occur within the visual study area and are addressed below under Locally Significant Resources.

Inset 15 – View of Georgica Cove within the Georgica/Wainscott Subunit of the East Hampton SASS.

Inset 16 – Maidstone Golf Course within the Furtherlane Subunit of the East Hampton SASS.

State and Federally Designated Trails

State Bike Route 27 is a signed on-road bicycle route along Montauk Highway/NYS Route 27 through the visual study area. State Bike Route 114 exists as a designated bike lane along NYS Route 114 and joins with State Bike Route 27 in the Village of East Hampton. (NYSDOT, 2017a)

Adirondack Park Scenic Vistas

No portions of the Adirondack Park are located within the study area.

Palisades Park

No portions of the Palisades Park are located within the study area.

State Nature and Historic Preserve Areas and Bond Act Properties for Exceptional Beauty or Open Space

Review of existing data did not identify any State Nature or Historic Preserve Areas or Bond Act Properties that were purchased under the Exceptional Scenic Beauty or Open Space Category within the study area.

Locally Significant Resources

Beyond these scenic resources of statewide significance identified within the visual study area, the area within 1-mile of the proposed substation was reviewed for resources that could be considered regionally or locally significant/sensitive due to the type or intensity of land use they receive. These include East Hampton High School, John M. Marshall Elementary School, Child Development Center of the Hamptons; Stephen Hands Path Park/Ball Field; several recreational centers and tennis clubs; NYS Routes 27, 114, and 59; and areas of intensive land use including the Village of East Hampton and the Hamlets of East Hampton North, Wainscott, and Northwest Harbor.

Additionally, several resources of local significance have been identified within the full extent of the three-mile visual study area due to their specific designation as scenic resources (at the local level). These include the previously mentioned potential scenic areas of local significance identified in the East Hampton SASS document as well as locations/views identified as scenic in the Town of East Hampton Local Waterfront Revitalization Program (LWRP) document (NYSDOS, 2010; Town of East Hampton Planning Department, 2007). The East Hampton Village Scenic Area of Local Significance is largely made up of the portion of the Village of East Hampton that falls outside of the SASS (with the exception of the Newtown Lane vicinity); the Hardscrabble Scenic Area of Local Significance lies to the north of the Village, and is comprised of East Hampton High School and the adjacent agricultural land that extends to the north and west; and the Wainscott Scenic Area of Local Significance encompasses the agricultural area north of Wainscott Pond, between Wainscott Main Street and Montauk Highway/NYS Route 27. Resources identified as scenic by the East Hampton LWRP document are largely located within the East Hampton SASS, including Wainscott Pond

and the surrounding roads of Beach Lane, Wainscott Main Street, and Town Line Road; NYS Route 27 State Access to Georgica Pond; and Further Lane. Outside of the SASS, these resources include Three Mile Harbor, East Hampton Marina, and Three Mile Harbor Marina, all located in the northeastern portion of the study area. As described above, the proposed substation has been sited well inland in an area with existing utility infrastructure and, as further described below, no adverse impacts to these locally designated scenic areas are anticipated,

2.2.2 Distance Zones

Three distinct distance zones are typically defined in visual studies. Consistent with well-established agency protocols (e.g., Jones and Jones 1977; U.S. Forest Service, 1995), EDR generally defines these zones as follows:

- *Foreground*: 0 to 0.5 mile. At these distances, a viewer is able to perceive details of an object with clarity. Surface textures, small features, and the full intensity and value of color can be seen on foreground objects.

- *Mid-ground*: 0.5 to 3.5 miles. The mid-ground is usually the predominant distance at which landscapes are seen. At these distances a viewer can perceive individual structures and trees but not in great detail. This is the zone where the parts of the landscape start to join together; individual hills become a range, individual trees merge into a forest, and buildings appear as simple geometric forms. Colors will be clearly distinguishable, but will have a bluish cast and a softer tone than those in the foreground. Contrast in color and texture among landscape elements will also be reduced.

- *Background*: Over 3.5 miles. The background defines the broader regional landscape within which a view occurs. Within this distance zone, the landscape has been simplified; only broad landforms are discernable, and atmospheric conditions often render the landscape an overall bluish color. Texture has generally disappeared and color has flattened, but large patterns of vegetation are discernable. Silhouettes of one land mass set against another and/or the skyline are often the dominant visual characteristics in the background. The background contributes to scenic quality by providing a softened backdrop for foreground and mid-ground features, an attractive vista, or a distant focal point.

2.2.3 Viewer/User Groups

Four categories of viewer/user groups were identified within the visual study area. These include the following:

- *Local Residents:* Local residents include those who live and work within the visual study area. They generally view the landscape from their yards, homes, local roads and places of employment. Residents are concentrated in and around the Village of East Hampton and in the residential areas in the central and western

portions of the study area. However, residents may be present throughout the entire visual study area. Except when involved in local travel, residents are likely to be stationary and have frequent or prolonged views of their surroundings although, in many areas, views are limited by forest, landscaping, and/or privacy fences. Local residents may view the landscape from ground level or elevated viewpoints (typically upper floors/stories of homes). This viewer group may be more focused on the visual qualities of their surroundings than travelers or visitors to the visual study area. Residents may engage in recreational outdoor activities such as swimming, tennis, horseback riding or entertaining within their residential landscape.

- *Through Travelers/Commuters:* Commuters and travelers passing through the area view the landscape from motor vehicles on their way to work or other destinations. Commuters and through travelers typically are moving, have a relatively narrow field of view, and are destination oriented. Drivers on major roads in the area (e.g., State Routes 27 and 114) generally will be focused on the road and traffic conditions, but do have the opportunity to observe roadside scenery. Passengers in moving vehicles will have greater opportunities for prolonged off-road views than will drivers, and accordingly, may have greater perception of changes in the visual environment.

- *Tourists/Recreational Users:* Recreational users and tourists include local (full-time and part-time) residents and out-of-town visitors involved in cultural and recreational activities in locations such as local beaches, parks, schools, athletic facilities, and historic districts within the study area. Members of this group may view the landscape from area highways while on their way to these destinations, or from the sites themselves. This group includes bicyclists, tennis players, sports spectators, visitors to the local cemetery, and those involved in more passive recreational activities (e.g., picnicking, sightseeing, or walking). Visual quality may or may not be an important part of the recreational experience for these viewers. However, for some, scenery will be a very important part of their experience, and in almost all cases enhances the quality of recreational experiences. Recreational users and tourists engaged in outdoor activities will often have continuous views of landscape features over relatively long periods of time, and will typically view the surrounding landscape from ground-level vantage points.

3.0 VISUAL ASSESSMENT

The visual assessment procedures and analyses presented in this study are consistent with methodologies developed by the NYSDEC (2000), U.S. Department of the Interior, the Bureau of Land Management (1980), the U.S. Department of Agriculture, the U.S. Forest Service (1974), the U.S. Department of Transportation, the Federal Highway Administration (1981), and the U.S. Army Corps of Engineers (Smardon, et al., 1988). The specific techniques used to assess potential facility visibility and visual effects are described in the following section.

3.1 Viewshed Analysis

An analysis of the visibility of the proposed substation was undertaken to identify those locations within the visual study area where there is potential for the proposed substation to be seen from ground-level vantage points. This analysis included identifying potentially visible areas on viewshed maps and verifying visibility in the field. The methodology employed for each of these assessment techniques is described below.

3.1.1 Viewshed Methodology

Viewshed analysis of the proposed substation was based on USGS 2014 light detection and ranging (lidar) data for Long Island. Lidar is a remote sensing method that uses light in the form of a pulsed laser to measure ranges (variable distances) to the Earth to generate precise, three-dimensional information about the shape of the Earth and its surface characteristics (NOAA, 2017). A topographic viewshed map for the proposed SFEC Onshore Substation was prepared using a lidar-derived bare earth digital terrain model (DTM); location and height of the tallest proposed substation components; an assumed viewer height of 6 feet; and ESRI ArcGIS® software with the Spatial Analyst extension.

As described in Section 1.2.3 of this report, the lightning masts are anticipated to be the tallest structures proposed as part of the substation. For the purpose of this VRA and viewshed analysis, the maximum height of the lightning masts was assumed to be approximately 65.5 feet. It is anticipated that the lightning masts proposed in the final design of the substation would be considerably shorter, up to 45 feet tall. To provide a conservative analysis, the assessment of potential project visibility and visual simulations included in this VRA were based on the maximum potential height (i.e., 65.5 feet) of the proposed lightning masts. The viewshed analysis was based on the proposed locations of six 65-foot-tall lightning masts, which represent the tallest potential substation components. The proposed substation layout, including the lightning masts, is illustrated in Figure 4.

The ArcGIS program defines the viewshed (using topography only) by reading every cell of the bare earth (or ground surface) DTM data and assigning a value based upon the existence of a direct, unobstructed line of sight to the substation location/elevation coordinates from observation points throughout the three-mile study area. The resulting

topographic viewshed map defines the maximum area from which the substation could potentially be seen within the study area (i.e., ignoring the screening effects of existing vegetation and built structures). Because the screening provided by vegetation and buildings is not considered in this stage of the analysis, the topographic viewshed represents a "worst case" assessment of potential substation visibility.

In addition, a second-level analysis was conducted to incorporate the screening effect of structures and vegetation, as captured in the USGS 2014 lidar data for Long Island. A digital surface model (DSM) of the study area was created from these lidar data, which includes the elevations of buildings, trees, and other objects large enough to be resolved by lidar technology. Since the substation site is presently forested, the DSM was modified to reflect the bare-earth elevation within the substation footprint to account for project-related clearing. This modified DSM was then used as a base layer for the viewshed analysis, as described above. Once the viewshed analysis was completed, a conditional statement was used to set substation visibility to zero in locations where the DSM elevation exceeded the bare earth elevation by six feet or more. This was done for two reasons; 1) because in locations where trees or structures are present in the DSM, the viewshed would reflect visibility from the vantage point of standing on the tree top or building roof, which is not the intent of this analysis and 2) to reflect the fact that ground-level vantage points within buildings or areas of vegetation exceeding 6 feet in height will generally be screened from views of the substation.

Because it accounts for the screening provided by structures and trees, this second-level analysis is a more accurate representation of probable substation visibility. However, it is worth noting that because certain characteristics of the substation that may influence visibility (color, narrow profile, distance from viewer, etc.) are not into taken consideration in the viewshed analyses, being located within the DSM viewshed does not necessarily equate to actual substation visibility.

3.1.2 Viewshed Results

Potential visibility of the substation, as indicated by the viewshed analyses, is illustrated in Figure 8, Sheets 1 and 2. As indicated by the topographic analysis, the substation could potentially be visible from approximately 66.8% of the visual study area. This “worst case” assessment of potential visibility indicates the area where the substation potentially could be seen without considering the screening effect of existing vegetation and structures.

This analysis indicates that the ridgeline passing through the northern portion of the study area will serve to screen views north of its peak. The valleys along Three Mile Harbor Road and Wainscott Hollow Road are also largely screened from view as well as several low-lying areas within the Village of East Hampton. The Atlantic Ocean shoreline is almost entirely screened by adjacent bluffs, with the exception of the Georgica Pond outlet. However, visibility is indicated from the ocean surface toward the outskirts of the three-mile study area (Figure 8, Sheet 1). Visually sensitive

resources indicated as being fully screened from views of the substation by intervening topography include NRHP-listed Stephen Sherrill House and three scenic resources identified in the Town of East Hampton LWRP document: Three Mile Harbor, Three Mile Harbor Marina, ad East Hampton Marina. There will be no impact on local residents, through travelers/commuters, or tourists/recreational user groups at these locations.

Factoring structures and vegetation into the viewshed analysis, however, drastically reduces the potential visibility of the proposed substation, and is a more accurate reflection of what the actual extent of visibility is likely to be. This analysis indicates that the proposed substation could potentially be visible from only 1.8% of the visual study area (Figure 8, Sheet 2). Based on the results of the viewshed analysis, areas of potential visibility include nearby open areas (portions of the Dune Alpin Drive and Horseshoe Drive development, the Long Island Rail Road ROW, the existing East Hampton substation, and the adjacent self-storage facility); agricultural fields and nurseries in the Hardscrabble area, East Hampton High School, the western portion of the East Hampton Airport, agricultural fields east of Green Hollow Road; portions of Maidstone Golf Club, and portions of the quarry and landfill located in the northeastern portion of the study area. Visually sensitive resources that may have views of the proposed substation according to this analysis include four NRHP-listed historic districts (Buell's Lane, East Hampton Village, Briar Patch Road, and Pantigo Road Historic Districts), NRHP-listed East Hampton Railroad Station, seven NRHP-eligible (or potentially eligible) resources, East Hampton SASS, NYS Routes 114 and 27 (which are also State Bike Routes), County Route 59, East Hampton Tennis Club, East Hampton High School, East Hampton Village and Hardscrabble Scenic Areas of Local Significance, and Beach Lane (LWRP-identified scenic resource). A person from any of the user groups, described above, located at each of these resources may experience a mix of screened and open views of the substation, depending on the exact location of the viewer. For example, the substation is only potentially visible from certain areas within the East Hampton High School grounds, cumulatively totaling approximately 30% of the property, while views are screened from the remainder of this property.

It should be noted that the viewshed analysis treats all structures and vegetation as if they were opaque, and therefore, isolated trees and small woodlots are indicated as fully blocking views of the substation. In leaf-on conditions, this likely will be the case. However, during leaf-off conditions, particularly sparsely wooded areas may not provide enough screening to fully obscure views of the substation. The field surveys for this study were conducted during leaf-off conditions to help address the question of potential visibility through existing vegetation. It is also important to note that the lidar data used in this analysis is from 2014, and therefore the analysis does not reflect any changes that have occurred since that time. In addition, factors such as the effects of distance and the occurrence of overcast weather conditions are not considered in this analysis.

3.2 Field Verification

3.2.1 Field Verification Methodology

Visibility of the proposed substation was evaluated in the field on March 9, 2017. The purpose of the site visit was to verify potential substation visibility within the study area, and obtain photographs for subsequent use in the development of visual simulations. The field review was conducted under "leaf-off" conditions to ensure that the photography captured the most conservative condition with respect to potential visual screening provided by vegetation. Weather conditions in the field on March 9, 2017 consisted of sunny, blue skies with low relative humidity. The weather conditions were ideal for depicting the highest visibility conditions and therefore the potential "worst case" visual impact of the project. Consideration was also given to viewer orientation and time of day by strategically capturing a variety of lighting conditions (front lit, side lit and backlit) in the photographs.

During the field verification, an EDR field crew drove public roads and visited public vantage points within the 1-mile radius study area to document points from which the substation expansion would likely be visible, partially screened, or fully screened. This determination was made based on the visibility of the existing East Hampton substation, which served as a location and scale reference. Photos were taken from 75 representative viewpoints within the study area. The locations of all viewpoints visited during the field review are depicted on Figure 9. A representative photograph from each viewpoint is included in Appendix B of this VRA report.

Photos were obtained using a Nikon D7100 with a focal length between 28 and 35 mm (equivalent to between 45 and 55 mm on a full frame 35mm camera). This focal length most closely approximates the relative scale and perspective relationship of objects in the view (minimal distortion between foreground, mid-ground, and background elements). Viewpoint locations were determined using hand-held global positioning system (GPS) units, high resolution aerial photographs (digital ortho quarter quadrangles), photographs taken of the viewpoint location, and high resolution lidar data (to determine elevation). The time and location of each photo were documented on all electronic equipment (camera, GPS unit, etc.) and noted on field maps and data sheets. To assist in orienting the viewer, the position of the existing substation and associated towers were entered into the GPS unit and programmed as a "target", providing the viewer with an orientation arrow relative to viewer position. Additionally, the existing towers associated with the East Hampton substation and other tall, nearby structures were used as a visual indicator to assist in determining potential project visibility. Where views existed, viewpoints photographed during field review generally represented the most open, unobstructed available views toward the proposed SFEC Onshore Substation.

3.2.2 Field Verification Results

Field verification suggests that the areas of potential visibility of the proposed substation would be somewhat less than suggested by the viewshed analysis. Longer distance views throughout the study area are limited and in most places obstructed by mature vegetation, which is generally the same height (or taller) than the proposed lightning masts. Other factors that will limit the actual visibility of the proposed lightning masts (and substation) include the narrow, slender profile of the masts, which do not generally attract viewer attention, particularly when viewed amongst mature vegetation or with a backdrop of mature vegetation. Review of potential project visibility from visually sensitive areas throughout the study area is summarized in Appendix A. Observations based on EDR's field review include:

- Anticipated visibility will be generally limited to a few areas within approximately a quarter mile of the proposed substation. These areas generally correspond to the areas of predicted visibility located adjacent to the proposed substation site as determined by viewshed analysis (see Figure 8 Sheet 2). The existing East Hampton substation, as well as the proposed substation, is generally screened from view from most nearby areas by dense, mature vegetation that ranges in height between approximately 50 and 70 feet. Narrow views of small portions of the substation may be available from portions of NYS Route 114 located adjacent to the project site, as well as from the entrance to the access road into the East Hampton substation from Cove Hollow Road (see Appendix B: Viewpoints 2 and 68). As indicated by the viewshed analysis, there is potential visibility of the proposed substation from some areas within the residential neighborhood south of the proposed substation site. These areas include portions of properties located along Horseshoe Drive and Dune Alpin Drive (Viewpoints 8 and 71). Where visible, it is expected that visibility of the proposed substation from most of these areas would be limited to the uppermost portions of the proposed lightning masts (based on assumed conservative height of 65.5 feet).
- Residential neighborhoods to the north (Viewpoints 12-15), east (Viewpoints 4-7, 24, 25, 28, and 30), and west (Viewpoints 10 and 11) of the proposed substation site were also visited during the field review. In most cases, the existing mature vegetation in these areas provide complete screening in the direction of the project.
- As suggested by the viewshed, the open fields south of Long Lane/County Route 59 would provide opportunities for longer distance views of the proposed substation (Viewpoints 57, 58, and 59). This area is part of the locally designated Hardscrabble Scenic Area of Local Significance. From this area, visibility of the existing East Hampton substation provides a basis for evaluating potential visibility of the proposed substation. At this distance the towers associated with the existing substation are nearly indecipherable against a background of dense vegetation. It is anticipated that visibility of the proposed lightning masts would be similarly limited.

- During the field verification, photos were taken from the various historic districts within the study area, such as, Buell's Lane Historic District (Viewpoints 6 and 28), Jericho Historic District (Viewpoint 19), and East Hampton Historic District (Viewpoints 26, 27, 31-33, 36-39, 50, 75). At each of these locations the project would be screened due to the combination of large, mature street trees, forest vegetation, and structures. No visibility of the project is anticipated from these areas.
- In addition, the field review included areas identified as part of the East Hampton SASS, including Viewpoints 20-23, 26, 27, 32-36, 39, 54, 55. While this SASS is located 1.0 mile from the proposed substation at the nearest point, the limited areas of potential visibility identified through the viewshed analysis within this resource boundary range from 1.3 to 2.1 miles away. At these distances, the lightning masts, even if visible, would be difficult to distinguish on the horizon due to their narrow profile and gray color. This is illustrated in the existing view from Viewpoint 55 in Appendix B, which depicts that the existing substation, although visible, does not attract viewer attention nor stand out against the horizon (note that the structure visible on the horizon near the center of the photo is the steeple of the First United Methodist Church of East Hampton, not the existing substation).
- Scenic areas of local significance were also visited during field review (Viewpoints 4-7, 17, 18, 24, 25, 28, 30, 31, 37, 38, 40, 41, 48-53, 57-59, 66, 67, 75). The Wainscott Scenic Area is not anticipated to have any visibility of the proposed substation and potential visibility from the East Hampton Village Scenic Area would be extremely limited. As described previously, in village areas the project would be screened due to the combination of large, mature street trees, forest vegetation, and structures. Viewshed analysis indicates that the project would be potentially visible from the Hardscrabble Scenic Area due to the presence of open fields that provide unscreened views toward the project site. However, as previously described, from this area the existing East Hampton substation is nearly indecipherable against a background of dense vegetation (Viewpoints 57 and 58) and it is anticipated that visibility of the proposed lightning masts would be similarly limited.

In summary, throughout most of the study area, the proposed substation is not anticipated to be visible due to densely situated buildings and houses in the villages, and dense, mature evergreen and deciduous forest in the surrounding areas. Potential visibility of the substation will be generally limited to a few areas within approximately a quarter mile of the site. Where visible, it is expected that views of the proposed substation from most of these areas would be limited to the uppermost portions of the proposed lightning masts.

3.3 Visual Simulations

In addition to evaluating the potential visibility of the substation, the VRA also examined the visual impact of the substation on the aesthetic resources and viewers within the visual study area. This assessment involved creating

computer models of the proposed substation, selecting representative viewpoints within the study area, and preparing computer-assisted visual simulations of what the substation would look like from those vantage points. These simulations then were used to characterize the type and extent of visual impact resulting from the construction of the substation.

Typically, the selection of viewpoints for use as visual simulations in a visual impact assessment is based on the following criteria:

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1. They provide clear, unobstructed views of the planned substation from publicly accessible locations (as determined through field verification).
2. They illustrate visibility of the substation from sensitive sites/resources within the visual study area.
3. They illustrate typical views from landscape similarity zones where views of the substation will be available.
4. They illustrate typical views of the proposed substation that will be available to representative viewer/user groups within the visual study area.
5. They illustrate typical views from a variety of viewer distances, and orientations.
6. They illustrate visibility/contrast of the substation under different lighting conditions, to illustrate the range of visual change that will occur once the substation is in place.

However, due to the very limited potential visibility of the proposed substation from surrounding areas, no unobstructed open views nor potential views from visually sensitive sites, or any of the other considerations listed above, were identified within the visual study area. From the photographic documentation conducted during the surveys, EDR selected four viewpoints (Viewpoints 2, 8, 68, and 71) for development of visual simulations. These viewpoints were selected because they represent the most open views of the proposed substation from publicly accessible vantage points substation (as determined through field verification). As shown on Figure 10, these viewpoints are located in areas where the viewshed analysis predicted visibility of some portion of the proposed substation.

3.3.1 Visual Simulation Methodology

To show anticipated visual changes associated with the proposed substation expansion, high-resolution computer-enhanced image processing was used to create realistic photographic simulations of the proposed substation from each of the four selected viewpoints. The photographic simulations were developed by using Autodesk 3ds Max Design® to create a simulated perspective (camera view) to match the location, bearing, and focal length of each existing conditions photograph. Existing elements in the view (e.g., topography, buildings, roads, existing turbines) were modeled based on aerial photographs and DEM data in AutoCAD Civil 3D®. A three dimensional ("3-D")

topographic mesh of the landform (based on lidar-derived DEM data) was then brought into the 3-D model space. At this point minor adjustments were made to camera and target location, focal length, and camera roll to align all modeled elements with the corresponding elements in the photograph. This assures that any elements introduced to the model space (i.e., the proposed substation) will be shown in proportion, perspective, and proper relation to the existing landscape elements in the view. Consequently, the alignment, elevations, dimensions and locations of the proposed structures will be accurate and true in their relationship to other landscape elements in the photograph.

A computer model of the proposed substation was prepared based on specifications and data provided by the Applicant (see Figure 4, Sheet 2). Preparation of the digital model included the removal of vegetation (i.e., anticipated forest clearing) from the Project footprint. Using the camera view as guidance, the visible portions of the modeled substation were imported to the landscape model space described above, and set at the proper coordinates. This allows the accurate depiction of these elements in the landscape of the individual photograph.

Once the proposed substation expansion was accurately aligned within the camera view, a lighting system was created based on the actual time, date, and location of the photograph. Using the Mental Ray Rendering System® with Final Gather and Mental Ray Daylight System® within the Autodesk 3ds Max Design® software, light reflection, highlights, color casting, and shadows were accurately rendered on the modeled project based on actual environmental conditions represented in the photograph. The rendered project was then superimposed over the photograph in Adobe Photoshop® and portions of the substation that fall behind vegetation, structures or topography were masked out. Photoshop was also used to remove any existing vegetation proposed to be removed as part of the project. Once the substation was added to the photo, any shadows cast on the ground by the proposed structures were also included by rendering a separate "shadow pass" over the DEM model in Autodesk 3ds Max Design® and then overlaying the shadows on the simulated view with the proper fall-off and transparency using Adobe Photoshop CS5®.

To further illustrate the factors that affect visibility from the viewpoints selected for visual simulations, line of sight profile drawings were prepared for each viewpoint. These diagrams depict the vegetation and other features along a direct line of sight between the viewer and a point within the proposed substation (in this instance, the proposed lightning mast located nearest to or otherwise that would be visible from that viewpoint). It is worth noting that the visual simulations and line of sight profile drawings are based on a conservative maximum height of the lightning masts of 65.5 feet.

3.3.2 Visual Simulation Results

The four simulations prepared for the VRA illustrate the most open views of the proposed substation from publicly accessible vantage points. Potential visual effects of the Project that are illustrated in these simulations are summarized below. Full size versions of each visual simulation, as well as line of sight diagrams that further describe visibility (or lack thereof) for each viewpoint, are included in Figures 11-14.

Viewpoint 2 – View from Substation Access Road at Cove Hollow Road

Inset 17 – Viewpoint 2. Existing Conditions

The photo above (see also Figure 11) illustrates the existing view to the west-southwest from Cove Hollow Road, toward the proposed substation site. From this location, the substation site is approximately 1,130 feet away, and separated from the viewer by mature foreground trees and the existing East Hampton substation (largely screened from view). The existing view features the paved entrance to the station, flanked by tall wooden poles carrying overhead power lines. A mix of mature deciduous and coniferous trees, and thick understory vegetation on all sides of the road block views of the existing power station and more distant landscape features. Due largely to the abundance of overhead utility lines, the existing view has a relatively low scenic quality.

Inset 18 – Viewpoint 2. Visual Simulation

As shown in the simulation above and in Figure 11, with the proposed SFEC Onshore Substation in place the foreground screening provided by dense forest vegetation effectively blocks views of the proposed substation from this location. The only evidence of the station is a new galvanized pole (a lighting mast) and some reduction in the density of trees at the end of the existing entrance road. These changes will be barely noticeable to viewers, and have no effect on landscape character or scenic quality at this location. For a full-size version of this simulation, and line of sight drawing that illustrates the screening effect of vegetation on this view, please refer to Figure 11.

Viewpoint 8 – View from Dune Alpin Drive North at Horseshoe Drive North

Inset 19 – Viewpoint 8. Existing Conditions

The photo above (see also Figure 12) illustrates the existing view to the north-northeast from Dune Alpin Drive North, toward the proposed substation site. From this location, the substation site is approximately 1,270 feet away, and separated from the viewer by an open field and wooded residential yards. The existing view features a large expanse of open grass in the immediate foreground, backed by a thick band of deciduous and coniferous trees interspersed with residential structures. The open field is separated from the residential areas and vegetation by a wooden split rail fence. Due to the abundance of vegetation, only the roofs and upper portions of these structures are visible. The band of vegetation, in combination with the relatively flat topography blocks views of more distant landscape features. The view has a rural/suburban residential character and moderate scenic quality.

Inset 20 – Viewpoint 8. Visual Simulation

As shown in the simulation above and in Figure 12, with the proposed SFEC Onshore Substation in place the screening provided by the thick band of mid-ground vegetation and structures effectively blocks views of the proposed substation from this location. The only evidence of the station is a minor reduction in height of some treetops in the center of the mid-ground band of trees as a result of clearing at the substation site. However, this change will be barely noticeable to viewers, and will have no effect on landscape character or scenic quality at this location. For a full-size version of this simulation, and line of sight drawing that illustrates the screening effect of vegetation on this view, please refer to Figure 12.

Viewpoint 68 – View from East Hampton Sag Harbor Turnpike at Hardscrabble Court

Inset 21 – Viewpoint 68. Existing Conditions

The photo above (see also Figure 13) illustrates the existing view to the southwest from the East Hampton Sag Harbor Turnpike (at Hardscrabble Court), toward the proposed substation site. From this location, the substation site is approximately 1,500 feet away, on the opposite side of the Hardscrabble Court complex and the railroad tracks. The existing view features a broad expanse of road pavement in the immediate foreground, separated from the structures and parking lots of the Hardscrabble Court complex by a split rail fence and some associated trees and shrubs. Trees and the upper portions of overhead utility lines are visible beyond Hardscrabble Court in the background. The existing view has a suburban commercial character and relatively low scenic quality.

Inset 22 – Viewpoint 68. Visual Simulation

As shown in the simulation above and in Figure 13, with the proposed SFEC Onshore Substation in place the foreground screening provided by structures within the Hardscrabble Court complex, and trees at the far end of the complex, effectively block views of the proposed substation from this location. The only evidence of the station is some minor thinning of the background vegetation, which will be barely noticeable to viewers and has no effect on landscape character or scenic quality at this location. For a full-size version of this simulation, and line of sight drawing that illustrates the screening effect of vegetation on this view, please refer to Figure 13.

Viewpoint 71 – View from Horseshoe Drive

Inset 23 – Viewpoint 71. Existing Conditions

The photo above (see also Figure 14) illustrates the existing view to the east-northeast from Horseshoe Drive, toward the proposed substation site. From this location, the substation site is approximately 610 feet away, and separated from the viewer by well vegetated residential yards and mature deciduous forest. The existing view features the paved surface of Horseshoe Drive in the center of the view, flanked by residential yards. The yards are characterized by mowed lawns and an abundance of relatively large trees and shrubs. One home is partially visible through the yard vegetation on the left side of the view. The abundance of vegetation encloses the view and largely screens views of both foreground and background features of the landscape. The view has a rural residential character with moderate to high scenic quality.

Inset 24 – Viewpoint 71. Visual Simulation

As shown in the simulation above and in Figure 14, with the proposed SFEC Onshore Substation in place the foreground screening provided by the mature forest vegetation and yard plantings effectively screens views of the proposed substation from this location. Portions of the station are partially visible through the trees at the end of the road. However, these are not identifiable as components of a substation, and the facility is largely out of view. The screening provided by the existing forest vegetation will essentially be complete when the trees are in foliage during the growing season. Consequently, the Project has minimal effect on landscape character or scenic quality at this location. For a full-size version of this simulation, and line of sight drawing that illustrates the screening effect of vegetation on this view, please refer to Figure 14.

4.0 CONCLUSION

4.1 Visual Assessment Summary

The results of the visual assessment for the SFEC Onshore Substation can be summarized as follows:

- The SFEC would consist of a HVAC submarine export cable running from the offshore substation to a landing site on the south shore of the South Fork of Long Island in the Town of East Hampton. The proposed SFEC-Onshore terrestrial export cable would be buried beneath existing roads or within other public ROWs, from the landing site to a new onshore substation to be located adjacent the existing East Hampton substation. Minimal clearing of trees will be required along the route of the terrestrial export cable. The SFEC Onshore Substation is the only proposed above-ground facility that would be built as part of the SFEC. The remaining components/facilities of the SFEC would be installed either underground or in the ocean, and therefore would not result in any potential visual impacts.
- The tallest (and therefore most visible) facilities proposed as part of the SFEC Onshore Substation would be lightning masts, which consist of tapered galvanized steel monopoles. For the purpose of this VRA, the maximum height of the lightning masts was assumed to be approximately 65.5 feet. It is anticipated that the lightning masts proposed in the final design of the substation would be considerably shorter, up to 45 feet tall. To provide a conservative analysis, the assessment of potential project visibility and visual simulations included in this VRA were based on the maximum potential height (i.e., 65.5 feet) of the proposed lightning masts installed at six locations within the proposed substation footprint; however, the number, location, and height of these could change. EDR evaluated what would likely be the maximum height, but this height could decrease along with the quantity of masts increasing.
- The visual study area was defined as a three-mile radius around the proposed SFEC Onshore Substation. Land use within the study area consists of a mix of suburban residential and commercial development, agricultural fields, nurseries, forested areas, waterbodies, and beaches. The southern portion of the visual study area includes the Atlantic Ocean and East Hampton Beach, as well as Georgica Pond, Wainscott Pond, Lily Pond, and Hook Pond.
- The visual study area includes several scenic resources of statewide significance. These include 15 resources listed on the NRHP, 59 resources eligible or potentially eligible for listing on the NRHP, and the East Hampton SASS. In addition, the East Hampton SASS document identifies five areas with potential for designation as scenic areas of local significance, three of which occur within the visual study area. These include the East Hampton Village Scenic Area, the Hardscrabble Scenic Area, and the Wainscott Scenic Area.
- GIS-based viewshed analyses were prepared to evaluate potential visibility of the proposed SFEC Onshore Substation within the study area. Viewshed analysis based solely on topography (i.e., an analysis that ignores

potential visual screening provided by vegetation, buildings, and other objects in the environment) indicates that the substation could be theoretically visible from approximately 66.8% of the visual study area based on screening provided by topography alone. This analysis overstates potential visibility but is good indicator of those areas where there is no possibility for views of the SFEC Onshore Substation.

- Factoring structures and vegetation into the viewshed analysis drastically reduces potential visibility of the SFEC Onshore Substation and is a far more accurate reflection of what is likely to be the actual extent of visibility of the project. A DSM of the study area was created from lidar data, which includes the elevations of buildings, trees, and other objects. This analysis indicates that the proposed substation could potentially be visible from only 1.8% of the visual study area.
- Field review indicated that the actual visibility of the SFEC Onshore Substation is likely to be even more limited than suggested by the viewshed analysis. Throughout most of the study area, the proposed substation is not anticipated to be visible due to densely situated buildings and houses in the villages, and dense, mature evergreen and deciduous forest in the surrounding areas.
    - Potential visibility of the substation will be generally limited to a few areas within approximately one-quarter mile of the proposed substation. These areas generally correspond to the areas of predicted visibility as indicated by the lidar-based viewshed analysis. In these areas, the existing East Hampton substation, as well as the proposed substation, is screened from view from most nearby areas by dense, mature vegetation that ranges in height between approximately 50 and 70 feet.
    - Narrow views of small portions of the substation may be available from portions of NYS Route 114 located adjacent to the project site, the entrance to the access road into the East Hampton substation from Cove Hollow Road, and some areas within the residential neighborhood south of the proposed substation site. Where visible, it is expected that views of the proposed substation from most of these areas would be limited to the uppermost portions of the proposed lightning masts (the tallest structures in the proposed station).
    - Where the substation is visible from greater distances, the lightning masts, even if visible, would be difficult to distinguish on the horizon due to their narrow profile and gray color.
- Field review confirmed that the project would not be visible from, or have a negligible visual effect, from the aesthetic resources of statewide significance within the study area.
- Four visual simulations were prepared to illustrate the most open views of the proposed SFEC Onshore Substation from publicly accessible vantage points. All of these viewpoints are located within approximately one-quarter mile of the proposed substation. In addition, to further illustrate the factors that affect visibility from these locations, line-of-sight profile drawings were prepared for each viewpoint. These diagrams depict the vegetation and other features along a direct line of sight between the viewer and the proposed substation.

- As shown in the visual simulations and line-of-sight diagrams included in Figures 11-14 of this report, existing vegetation screens views of the proposed SFEC Onshore Substation from nearby vantage points located in public ROWs. The existing East Hampton substation, as well as the proposed SFEC Onshore Substation, is generally screened from view from most nearby areas by dense, mature vegetation. The only visible components of the proposed substation from these areas would be limited to the uppermost portions of the proposed lightning masts and a thinning of existing vegetation. However, foreground vegetation that screens visibility of the substation from public vantage points would not be removed. In addition, the visual simulations depict the most conservative potential height of the lightning masts (65.5 feet tall). Shorter lightning masts visible from fewer locations/vantage points and further minimize the visual effect of the Project. The SFEC Onshore Substation would be even less visible, and have even less of an effect on the visual environment, from more distant vantage points. As a result, construction of the proposed SFEC Onshore Substation is not anticipated to result in significant changes to the existing visual character or scenic quality of the visual study area.

4.2 Mitigation

NYSDEC Program Policy DEP-00-2 *Assessing and Mitigating Visual Impacts* (NYSDEC, 2000) provides guidance for identifying and considering potential mitigation measures to reduce or eliminate the visibility of a project or alter a project's effect on scenic or aesthetic resources. As described in that guidance, a properly sited and designed project is the best way to mitigate potential visual impacts. As indicated by the results of the analyses summarized above, visual impact of the proposed SFEC Onshore Substation has been avoided and minimized through careful site selection. Due to the relatively small size and modest height of the proposed facility, and because the proposed site is largely surrounded by forest, long distance views and views from visually sensitive resources have largely been avoided. Existing vegetation that will remain following construction also minimizes visual impact from adjacent sites (including residences). In addition, the proposed SFEC Onshore Substation is sited adjacent to existing utility infrastructure, thereby avoiding the potential introduction of utility-related visual elements in areas where such facilities are not currently part of the landscape. The proposed substation would not be visible from, or have a negligible visual effect, from the aesthetic resources of statewide significance within the study area. By selecting this location for the proposed substation, the siting of the proposed SFEC Onshore Substation complies with the New York State Coastal Management Program's Coastal Policy 24 to prevent impairment of scenic resources of statewide significance.

Additional mitigation measures would likely have a limited effect on substation visibility and visual impact. The feasibility and possible benefits of such measures are described below.

- Screening. The proposed SFEC Onshore Substation is located in a forested area adjacent to the East Hampton substation and the Long Island Railroad. The existing East Hampton substation, as well as the proposed substation, is generally screened from view from most nearby areas by dense, mature vegetation that ranges in height between approximately 50 and 70 feet. As shown in the visual simulations and line-of-sight diagrams included in Figures 11-14 of this report, existing vegetation screens views of the proposed substation from nearby vantage points located in public ROWs. However, the project does include the removal of approximately 1.6 acres of existing vegetation. As a result, there is a potential for increased visibility of the proposed substation (relative to current visibility of the existing East Hampton substation) from the nearest residential properties located on Horseshoe Drive, west of the proposed substation site. To further minimize potential visibility of the proposed substation from these residences, a buffer of evergreen plantings could be installed along the western perimeter of the proposed substation to provide additional year-round screening. As demonstrated by the visual simulations and line-of-sight cross-sections, additional screening measures around the northern, eastern, and southern perimeters of the station (in the form of fencing, berms, or plantings) is not warranted.
- Relocation. The proposed SFEC Onshore Substation has been sited in a forested area adjacent to an existing substation to avoid and minimize potential visual impacts from visually sensitive sites in the study area. As shown in the visual simulations and line-of-sight diagrams included in Figures 11-14 of this report, existing vegetation effectively screens views of the proposed substation from nearby vantage points. The proposed substation is also sited adjacent to existing utility infrastructure, thereby avoiding the potential introduction of utility-related visual elements in areas where such facilities are not currently part of the landscape. From a visual impact perspective, the site of the proposed substation avoids and minimizes potential visibility and visual impacts to the greatest extent practicable.
- Camouflage. Camouflage of project components is not the preferred option at substations, due to site security concerns. In addition, station components are metallic (silver or gray) and their color and form cannot easily be changed.
- Low Profile. The tallest structures within the SFEC Onshore Substation would be the proposed lightning masts. To provide a conservative analysis, this VRA is based on an assumed maximum height of 65.5 feet for the lightning masts, which is generally comparable to the height of existing forest vegetation that surrounds the site. Field review, which included consideration of the visibility of the East Hampton substation, indicated that views of the proposed substation will be screened (by vegetation and structures) from most locations in the study area. As shown in the visual simulations and line-of-sight diagrams included in Figures 11-14 of this report, the heights of proposed structures that would be installed as part of the proposed substation are generally the same height or lower than the existing vegetation that surrounds the site. It is anticipated that the height of the lightning masts included in the final design of the substation will be shorter, up to 45 feet tall. Analysis of the most conservative

design under consideration (i.e., 65.5-foot tall lightning masts) determined that the proposed substation would have a minimal or negligible visual impact.

- Downsizing. The size of the proposed SFEC Onshore Substation (dimensions and voltages) is necessary to achieve the project's purpose and need (i.e., interconnecting the SFWF to the LIPA transmission system) and to maintain required safety and reliability standards. Therefore, downsizing is not a feasible mitigation alternative.
- Alternate Technologies. Alternate technologies do not exist that would substantially reduce the visibility and visual impact of the proposed SFEC Onshore Substation. The potential visibility and visual impact of the project has been significantly minimized by proposing to install the SFEC-Onshore terrestrial export cable in an underground duct bank within existing roadways (as opposed to on overhead utility poles or within a new ROW). Because the SFEC-Onshore cable will be installed in an underground duct bank, and will require minimal clearing of street trees, potential visual impacts that would have resulted from installation of an overhead transmission line have been avoided. Therefore, the project has considered alternate technologies and by selecting the use of a buried cable for the SFEC transmission line, has avoided and minimized potential visual impacts to the maximum extent practicable.
- Nonspecular Materials. Due to the extent of vegetative screening around the proposed substation site, and siting of the proposed substation adjacent to an existing comparable facility, the materials used in construction of the proposed substation are not anticipated to result in significant visibility or visual impacts. Because the SFEC-Onshore transmission line will be installed in an underground duct bank, the use of nonspecular materials for the transmission cable would have no visual benefit.
- Lighting. Substation lighting will be kept to the minimum necessary for facility safety and security and will comply with Town requirements for limiting off-site light spillage. It is anticipated that lighting will be directed downward where possible and manual switches and/or movement sensors will be installed for the security lighting to minimize the effects of light pollution and reduce potential wildlife attraction.
- Maintenance. The Applicant will maintain the proposed SFEC Onshore Substation so that it appears clean and orderly. The proposed substation components will not require regular painting to maintain their appearance.
- Decommissioning. If the SFEC Onshore Substation is decommissioned, it will be done in accordance with 30 CFR 585.905 through 585.912. The first step will be submission of a decommissioning application in accordance with 30 CFR 585.905.
- Offsets. Correction of an existing aesthetic problem within the viewshed is a viable mitigation strategy for projects that result in significant adverse visual impact. However, the analysis presented herein indicates that adverse visual impact, if any, will be very minor and localized to the areas immediately adjacent to the SFEC Onshore Substation site. Therefore, based on the results of the Visual Resources Assessment, no offset mitigations are necessary.

5.0 REFERENCES

America's Byways. 2017. America's Byways [website]. Available at: http://www.fhwa.dot.gov/byways/ (Accessed September 25, 2017). U.S. Department of Transportation Federal Highway Administration.

East Hampton Village. 2017. East Hampton Village [website]. Available at: http://www.easthamptonvillage.org/ (Accessed September 26, 2017).

Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C. (EDR). 2017. *Historic Architectural Resources Survey: South Fork Wind Farm Upland Export Cable & Substation, Town of East Hampton, Suffolk County, New York.* EDR, Syracuse, New York.

Fenneman, N.M. and D.W. Johnson. 1946. *Physiographic Divisions of the Conterminous U.S.* [shapefile]. Available at: http://water.usgs.gov/lookup/getspatial?physio (Accessed March 10, 2015).

National Oceanic and Atmospheric Administration (NOAA). 2017. *What is Lidar?* [website]. Available at: https://oceanservice.noaa.gov/facts/lidar.html. (Accessed November 16, 2017).

NOAA and New York State Department of State (NYSDOS). 2017. *New York State Coastal Management Program and Final Environmental Impact Statement.* Accepted in 1982, revised to incorporate all approved routine program changes from 1982 to 2017. Available at: https://www.dos.ny.gov/opd/programs/pdfs/NY_CMP.pdf (Accessed December 7, 2017).

National Park Service (NPS). 2011. *Nationwide Rivers Inventory* [website]. Available at: http://www.nps.gov/ncrc/programs/rtca/nri/index.html (Accessed September 25, 2017). U.S. Department of the Interior, National Center for Recreation & Conservation.

NPS. 2017a. *Find a Park in NY* [website]. Available at: http://www.nps.gov/state/ny/index.htm (Accessed September 25, 2017). U.S. Department of the Interior.

NPS. 2017b. *National Heritage Areas* [website]. Available at: https://www.nps.gov/heritageareas/ (Accessed September 25, 2017).

NPS. 2017c. *National Natural Landmarks in New York* [website]. Available at: https://www.nps.gov/subjects/nnlandmarks/state.htm?State=NY (Accessed September 25, 2017).

NPS. 2017d. *National Trails System* [website]. Available at: http://www.nps.gov/nts/nts_trails.html (Accessed September 25, 2017). U.S. Department of the Interior.

National Recreation Trails (NRT). 2017. *The National Recreation Trails Database* [website]. Available at: http://www.americantrails.org/ee/index.php/nationalrecreationtrails (Accessed September 25, 2017).

National Register of Historic Places. 2017a. *Historic Districts* [website]. Available at: http://www.nationalregisterofhistoricplaces.com/districts.html (Accessed September 25, 2017).

National Register of Historic Places. 2017b. *State Listings* [website]. Available at: http://www.nationalregisterofhistoricplaces.com/state.html (Accessed September 25, 2017).

National Wild and Scenic Rivers. 2017. *New York* [website]. Available at: https://www.rivers.gov/new-york.php (Accessed September 25, 2017).

Nature Conservancy, The (TNC). 2017. *New York: Places We Protect* [website]. Available at*:* https://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/newyork/index.htm (Accessed September 25, 2017).

New York State Department of Environmental Conservation (NYSDEC). Not Dated. *D.E.C. Aesthetics Handbook*. NYSDEC. Albany, N.Y.

NYSDEC. 2000. *Program Policy Assessing and Mitigating Visual Impacts (DEP 00-2)*. NYSDEC. Albany, NY.

NYSDEC. 2017a. *Wildlife Management Areas* [website]. Available at: http://www.dec.ny.gov/outdoor/7768.html (Accessed September 25, 2017).

NYSDEC. 2017b. *List of State Forests By Region* [website]. Available at: http://www.dec.ny.gov/lands/34531.html (Accessed September 25, 2017).

NYSDEC. 2017c. *Environmental Education Centers and Programs* [website]. Available at: http://www.dec.ny.gov/education/74.html (Accessed September 25, 2017).

NYSDEC. 2017d. *New York's Forest Preserve* [website]. Available at: http://www.dec.ny.gov/lands/4960.html (Accessed September 25, 2017).

NYSDEC. 2017e. *Part 591: Procedures for the selection, review, approval and funding of state projects under the 1986 Environmental Quality Bond Act* [website]. Available at: https://govt.westlaw.com/nycrr/Browse/Home/NewYork/NewYorkCodesRulesandRegulations?guid=If1120df0b5a011dda0a4e17826ebc834&originationContext=documenttoc&transitionType=Default&contextData=(sc.Default)&bhcp=1 (Accessed September 25, 2017).

NYSDEC. 2017f. *State Lands Interactive Mapper* [website]. Available at: http://www.dec.ny.gov/outdoor/45415.html (Accessed September 25, 2017).

NYSDEC. 2017g. *Wild, Scenic and Recreational Rivers* [website]. Available at: http://www.dec.ny.gov/permits/32739.html (Accessed September 25, 2017).

NYSDEC. 2017h. *Public Fishing Rights Maps, Waters with Public Fishing Rights* [website]. Available at: http://www.dec.ny.gov/outdoor/9924.html (Accessed September 25, 2017).

NYS Department of State (NYSDOS). 2010. *East Hampton Scenic Areas of Statewide Significance*. Division of Coastal Resources. Available at: https://www.dos.ny.gov/opd/programs/pdfs/SASS_Report 20081229_All.pdf. (Accessed December 7, 2017).

NYSDOS. 2017. *Scenic Areas of Statewide Significance* [website]. Available at: http://www.dos.ny.gov/opd/programs/consistency/scenicass.html (Accessed September 25, 2017). Office of Planning and Development.

New York State Department of Transportation (NYSDOT). 2017a. *Bicycling in New York* [website]. Available at: https://www.dot.ny.gov/bicycle (Accessed December 6, 2017).

NYSDOT. 2017b. *New York State Scenic Byways* [website]. Available at: https://www.dot.ny.gov/scenic-byways (Accessed December 6, 2017).

New York State Education Department (NYSED). 1999a. *Colleges and Universities in NY* [shapefile]. Available at: http://gis.ny.gov/gisdata/inventories/details.cfm?DSID=415.

NYSED. 1999b. *Public Schools (K-12) in NY* [shapefile]. Available at: http://gis.ny.gov/gisdata/inventories/details.cfm?DSID=411.

NYS Office of Information Technology Services. 2017. *NYS GIS Clearinghouse* [website]. Available at: http://gis.ny.gov/.

NYSOPRHP. 2014. *NYS Heritage Areas System* [shapefile]. File received via email May 30, 2014 from Christina Croll at New York State Office of Parks, Recreation and Historic Preservation.

NYSOPRHP. 2016. *State Park Trails* [shapefile]. File received via email April 01, 2016 from Cristina Croll at New York State Office of Parks, Recreation and Historic Preservation.

NYSOPRHP. 2017a. *New York State Historic Sites and Park Boundary* [shapefile]. File received via email March 03, 2017 from Lynne Gort at New York State Office of Parks, Recreation and Historic Preservation.

NYSOPRHP. 2017b. *Cultural Resource Information System (CRIS)* [website]. Available at: https://cris.parks.ny.gov/Login.aspx?ReturnUrl=%2f (Accessed March 1, 2017).

NYSOPRHP. 2017c. *Heritage Areas* [website]. Available at: http://nysparks.com/historic-preservation/heritage-areas.aspx (Accessed September 26, 2017).

NYSOPRHP. 2017d. *National Register of Historic Places listings in New York State* [shapefile]. File received via email March 03, 2017 from Lynne Gort at New York State Office of Parks, Recreation and Historic Preservation.

NYSOPRHP. 2017e. *State Parks* [website]. Available at: http://parks.ny.gov/parks/ (Accessed September 26, 2017).

NYSOPRHP. 2017f. *Trails* [website]. Available at: http://www.nysparks.com/recreation/trails/ (Accessed September 26, 2017).

Palisades Parks Conservancy. 2017. *Parks & Historic Sites* [website]. Available at: https://www.palisadesparksconservancy.org/parks.php (Accessed September 26, 2017).

Peckham, Mark, 1987b. *Buell's Lane District Expansion.* Waterford, New York: New York State Office of Parks, Recreation, and Historic Preservation. Available online at: https://cris.parks.ny.gov/Uploads/ViewDoc.aspx?mode=A&token=VP2AxpWrxLpEHh8ITcd3gTWjsuKsaDsf+d6vApLDA+B9ZoxNeYxJjS0ENHmd1CopTwQbvpnxKOQCAQKC+4kujsiTeAFeSzv+WMFPCScLvtTDupglHIBxjego6LwaTl/l&q=false. (Accessed on July 19, 2017).

Private School Review. 2017. *Private School Review* [website]. Available at: https://www.privateschoolreview.com/find-schools (Accessed September 26, 2017).

Smardon, R.C., J.F. Palmer, A. Knopf, K. Grinde, J.E. Henderson, and L.D. Peyman-Dove. 1988. *Visual Resources Assessment Procedure for U.S. Army Corps of Engineers*. Instruction Report EL-88-1. Department of the Army, U.S. Army Corps of Engineers. Washington, D.C.

Suffolk County Government. 2016. *Suffolk County Government* [website]. Available at: http://www.suffolkcountyny.gov/ (Accessed September 26, 2017).

Town of East Hampton. 2005. *Town of East Hampton Comprehensive Plan*. Available at: http://ehamptonny.gov/DocumentCenter/Home/View/1319 (Accessed September 26, 2017).

Town of East Hampton. 2017. *Town of East Hampton* [website]. Available at: http://ehamptonny.gov/ (Accessed September 26, 2017).

Town of East Hampton Planning Department. 2007. *Town of East Hampton Local Waterfront Revitalization Program*. Available at: https://docs.dos.ny.gov/opd-lwrp/LWRP/East%20Hampton_T/Index.html (Accessed October 9, 2017).

United Stated Department of Agriculture (USDA), National Forest Service. 1995. Landscape Aesthetics, A Handbook for Scenery Management. Agricultural Handbook 701. Washington D.C.

United States Department of the Interior (USDOI), Bureau of Land Management. 1980. Visual Resource Management Program. U.S. Government Printing office. 1980. 0-302-993. Washington, D.C.

United States Department of Transportation (USDOT), Federal Highway Administration. 1981. *Visual Impact Assessment for Highway Projects*. Office of Environmental Policy. Washington, D.C.

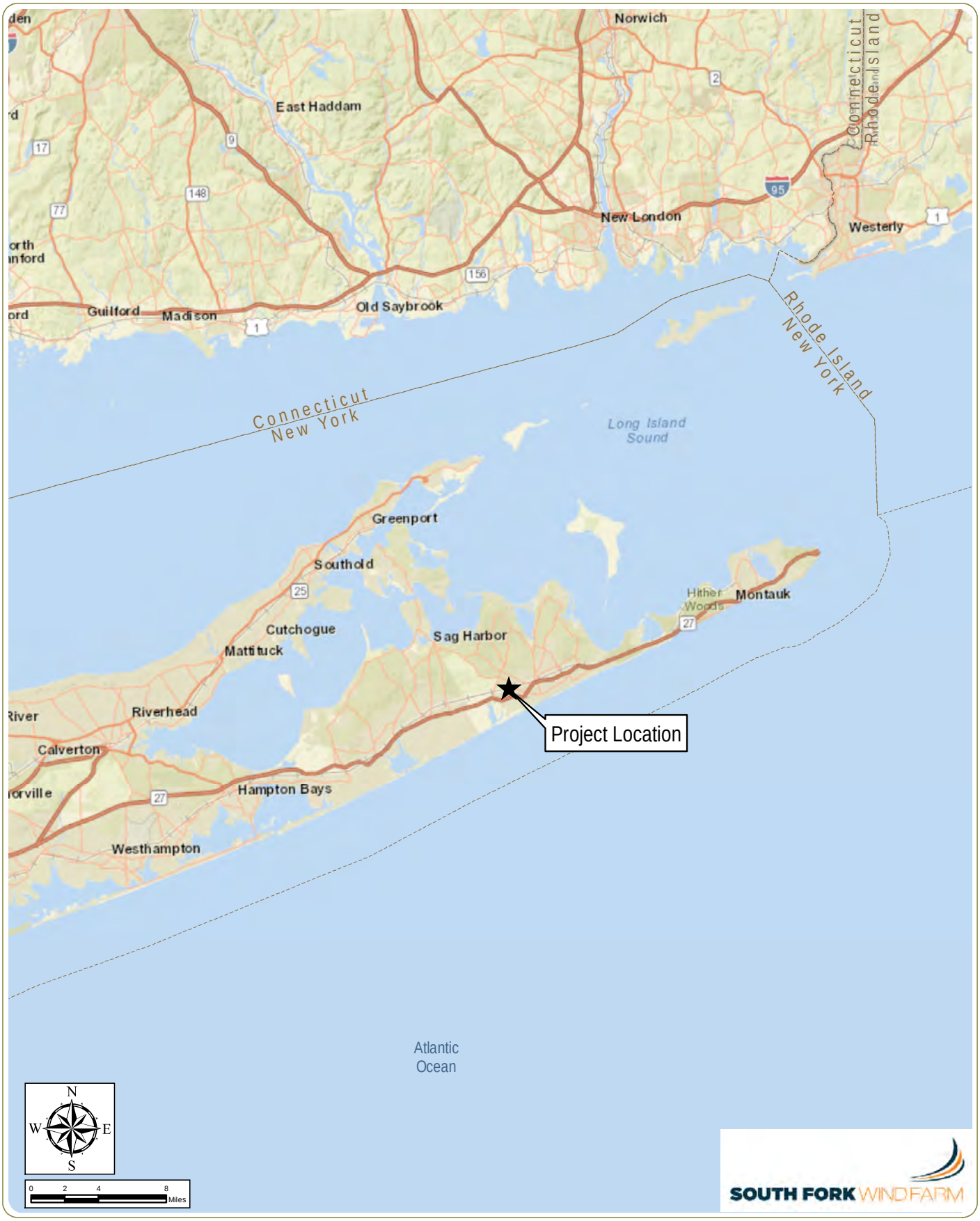
United States Department of Transportation (USDOT). 2017. America's Byways [website]. Available at: https://www.fhwa.dot.gov/byways (Accessed December 6, 2017).

United States Fish and Wildlife Service (USFWS). 2017. *National Wildlife Refuge Locator* [website]. Available at: http://www.fws.gov/refuges/refugeLocatorMaps/index.html (Accessed September 26, 2017).

United States Forest Service (USFS). 2013. *Find National Forests and Grasslands* [website]. Available at: http://www.fs.fed.us/recreation/map/finder.shtml (Accessed September 26, 2017).

Village of East Hampton. 2002. *Draft Generic Environmental Impact Statement and Village of East Hampton Comprehensive Plan*. Available at: http://www.easthamptonvillage.org/DocumentCenter/View/185 (Accessed September 26, 2017).

Figures



South Fork Wind Farm Upland Export Cable and Substation

Town of East Hampton, Suffolk County, New York

Figure 1: Regional Project Location

Notes: 1. Basemap: ESRI ArcGIS Online "World Street Map" map service.
2. This map was generated in ArcMap on December 8, 2017.
3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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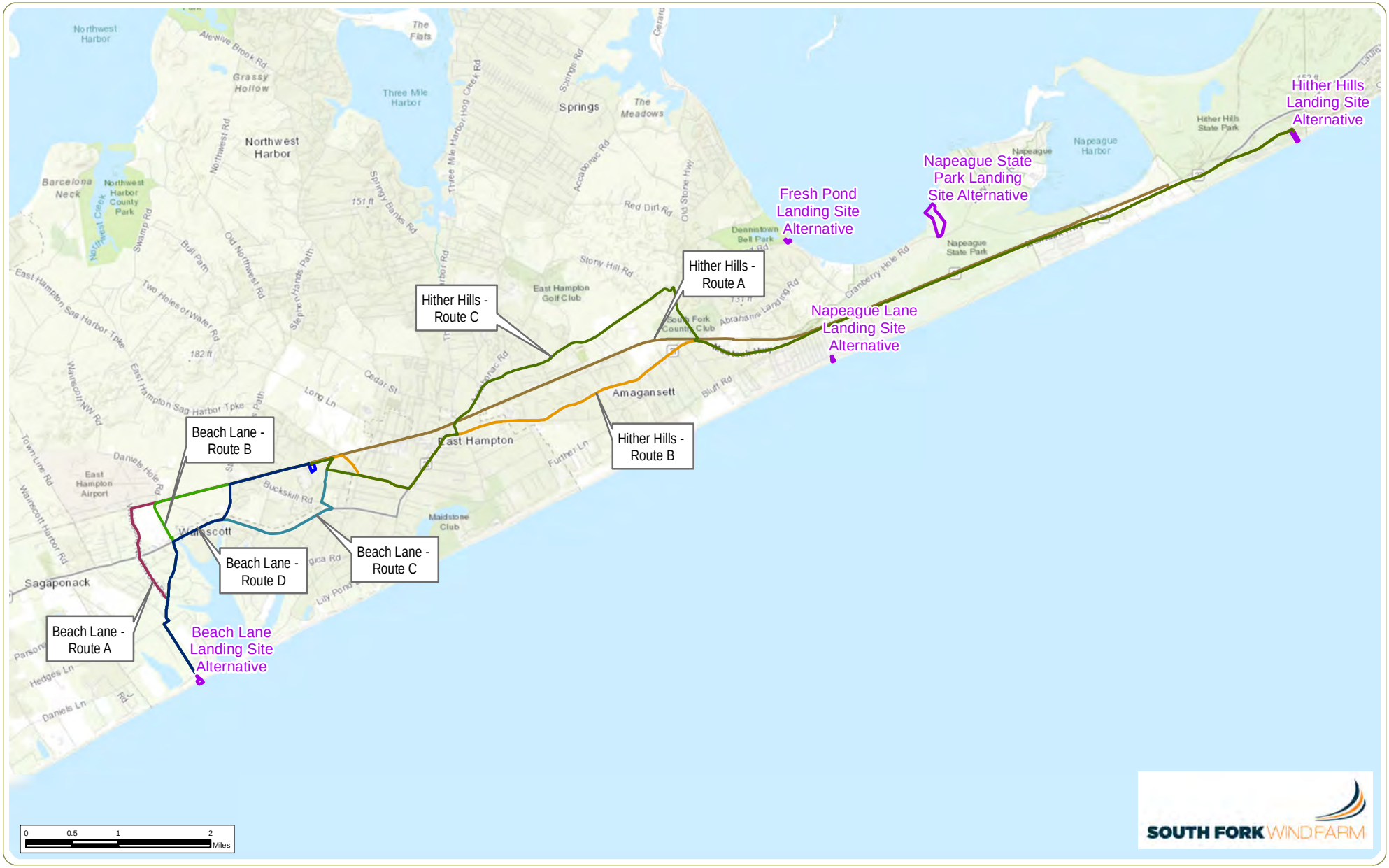

South Fork Export Cable-Onshore Cable & Substation

Town of East Hampton, Suffolk County, New York

Figure 2: Proposed SFEC Project Layout

SFEC-Onshore Alternatives

- Beach Lane - Route A
- Beach Lane - Route B
- Beach Lane - Route C
- Beach Lane - Route D
- Hither Hills - Route A
- Hither Hills - Route B
- Hither Hills - Route C

SFEC-Onshore Substation

Landfall Site

Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" map service. 2. This map was generated in ArcMap on May 11, 2018. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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South Fork Wind Farm Upland Export Cable and Substation

Town of East Hampton, Suffolk County, New York

Figure 3: Substation Site Existing Conditions

Proposed SFEC Onshore Substation

Notes: 1. Basemap: ESRI ArcGIS Online "World Imagery" map service.
2. This map was generated in ArcMap on December 8, 2017.
3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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South Fork Wind Farm Upland Export Cable and Substation

Town of East Hampton, Suffolk County, New York

Figure 4: Proposed Substation Layout

Sheet 1: Substation Layout Map

Notes: 1. Basemap: ESRI ArcGIS Online "World Imagery" map service.
2. This map was generated in ArcMap on May 11, 2018.
3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

- Lightning Masts
- Substation Features
- Proposed Access Road
- Proposed SFEC Onshore Substation

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Town of East Hampton, Suffolk County, New York

Figure 4: Proposed Substation Layout - Digital Model of Proposed Substation

Sheet 2 of 2

SOUTH FORK WIND FARM

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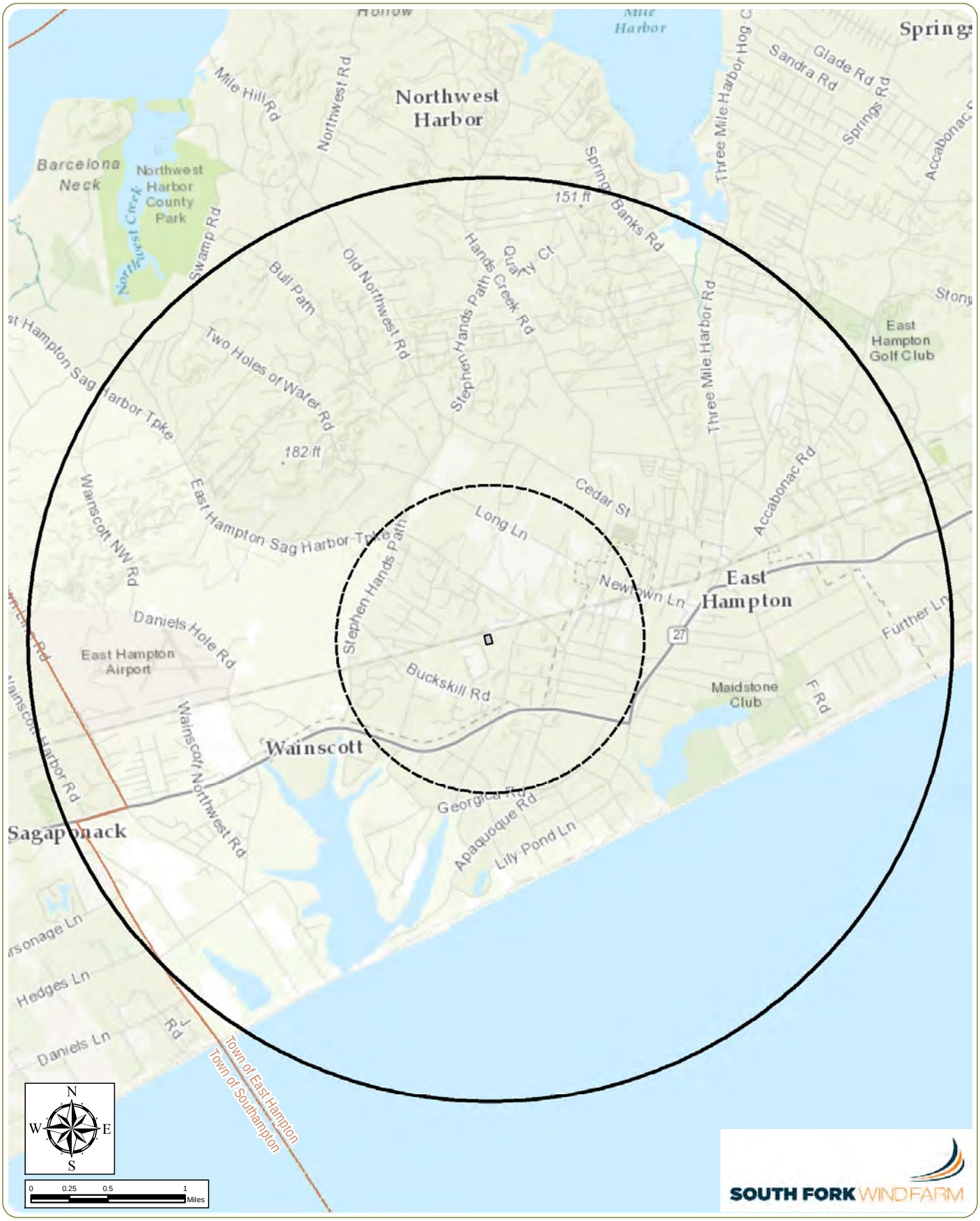

South Fork Wind Farm Upland Export Cable and Substation

Town of East Hampton, Suffolk County, New York

Figure 5: Visual Study Area

Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" map service.
2. This map was generated in ArcMap on December 8, 2017.
3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

- Proposed SFEC Onshore Substation
- 1-Mile Study Area
- 3-Mile Study Area
- Town Boundary

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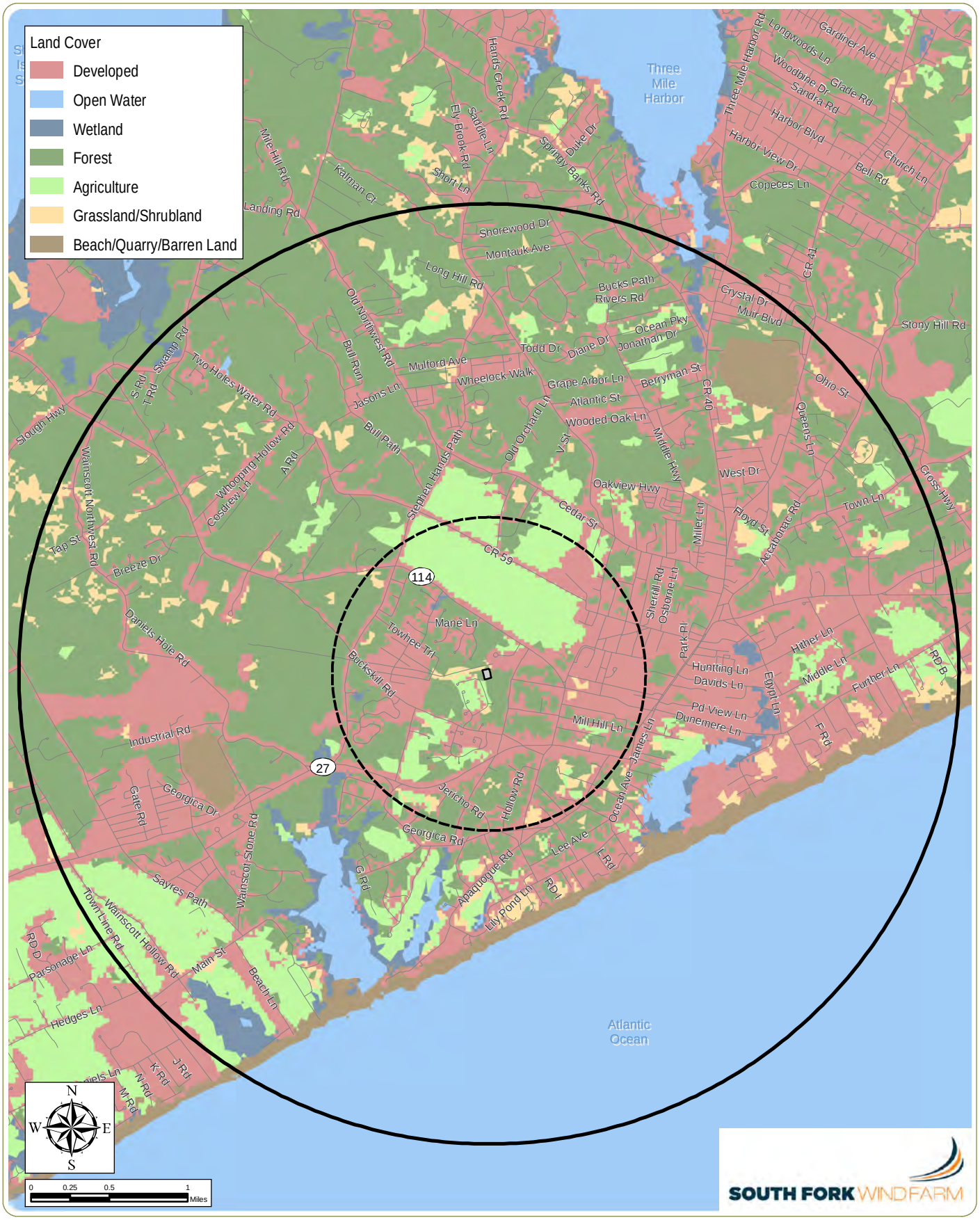

South Fork Wind Farm Upland Export Cable and Substation

Town of East Hampton, Suffolk County, New York

Figure 6: Land Cover

Proposed SFEC Onshore Substation

1-Mile Study Area

3-Mile Study Area

Notes: 1. Basemap: USGS NLCD Land Cover, 2011.
2. This map was generated in ArcMap on December 8, 2017.
3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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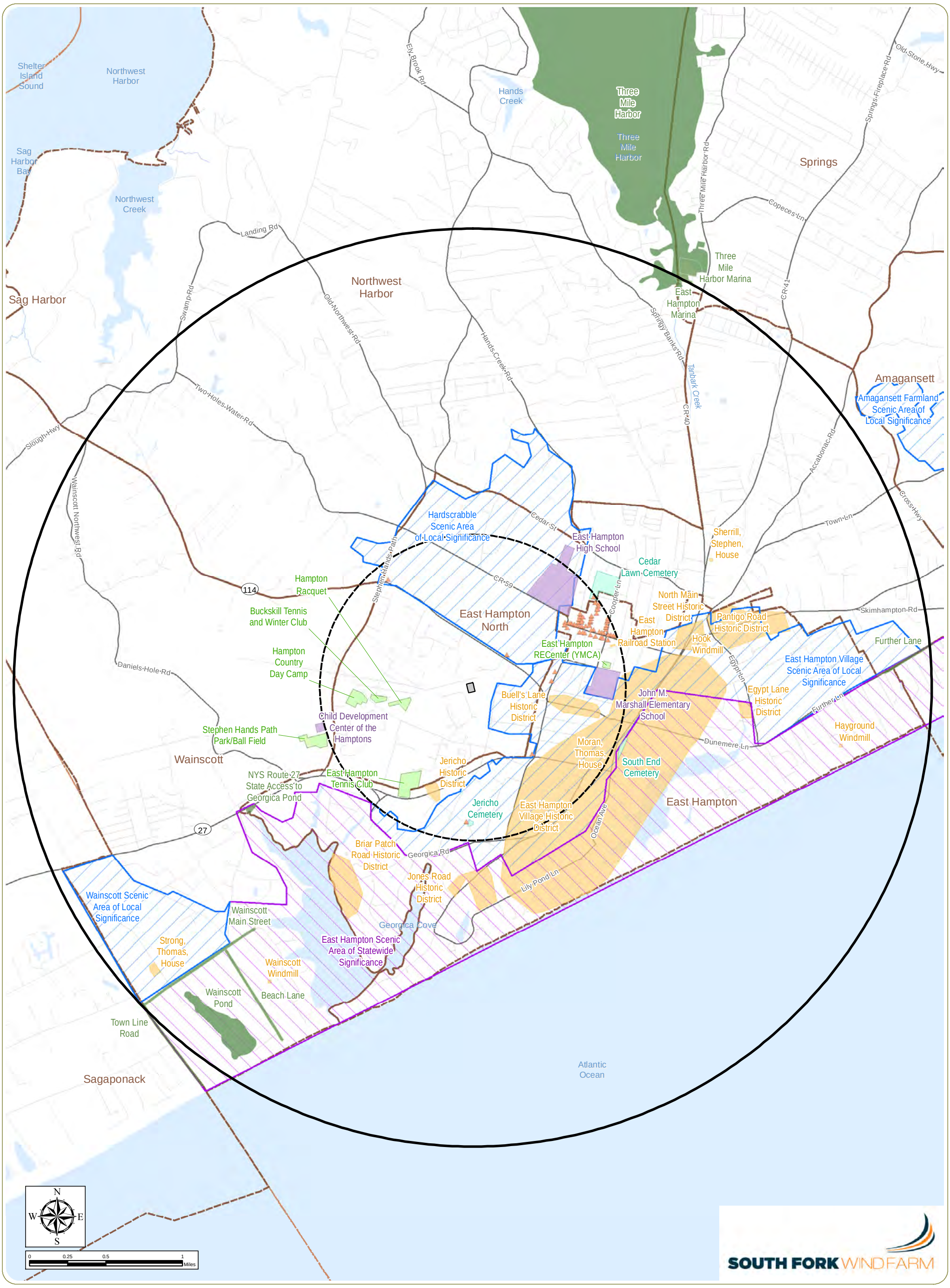

South Fork Wind Farm Upland Export Cable and Substation

Town of East Hampton, Suffolk County, New York

Figure 7: Visually Sensitive Resources

Notes: 1. Basemap: ESRI StreetMap North America, 2008.
2. This map was generated in ArcMap on December 8, 2017.
3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

- NRHP-Eligible Resource
- NRHP-Listed Site
- Scenic Area of Statewide Significance
- Scenic Area of Local Significance
- LWRP-Identified Scenic Resource
- School
- Cemetery
- Local Recreation
- Proposed SFEC Onshore Substation
- 1-Mile Study Area
- 3-Mile Study Area
- Village/Hamlet Boundary
- Town Boundary

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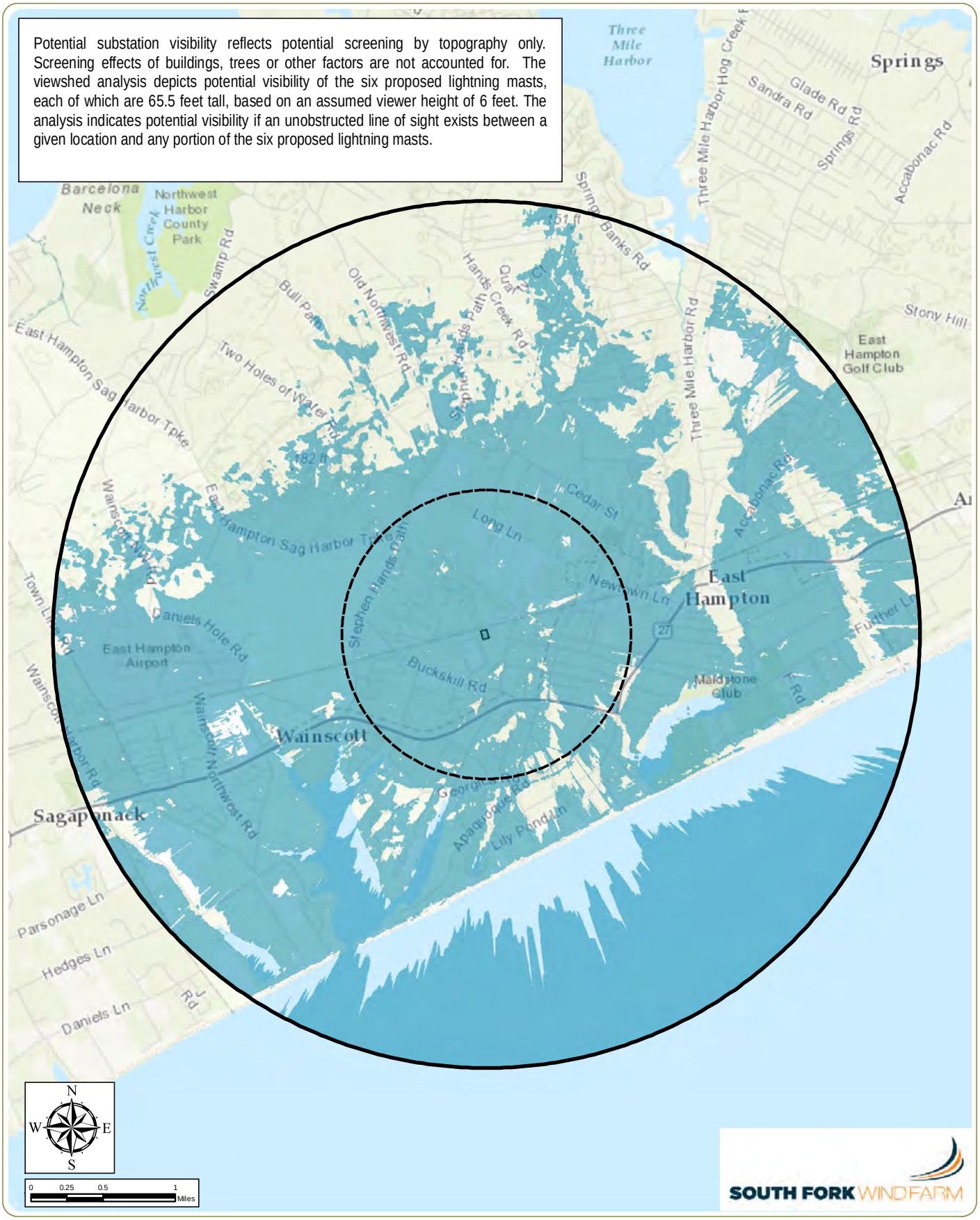

South Fork Wind Farm Upland Export Cable and Substation

Town of East Hampton, Suffolk County, New York

Figure 8: Viewshed Analysis

Sheet 1 of 2: Substation Visibility Based on Topography Only

Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" map service.
2. This map was generated in ArcMap on December 8, 2017.
3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

- Potential Substation Visibility
- Proposed SFEC Onshore Substation
- 1-Mile Study Area
- 3-Mile Study Area

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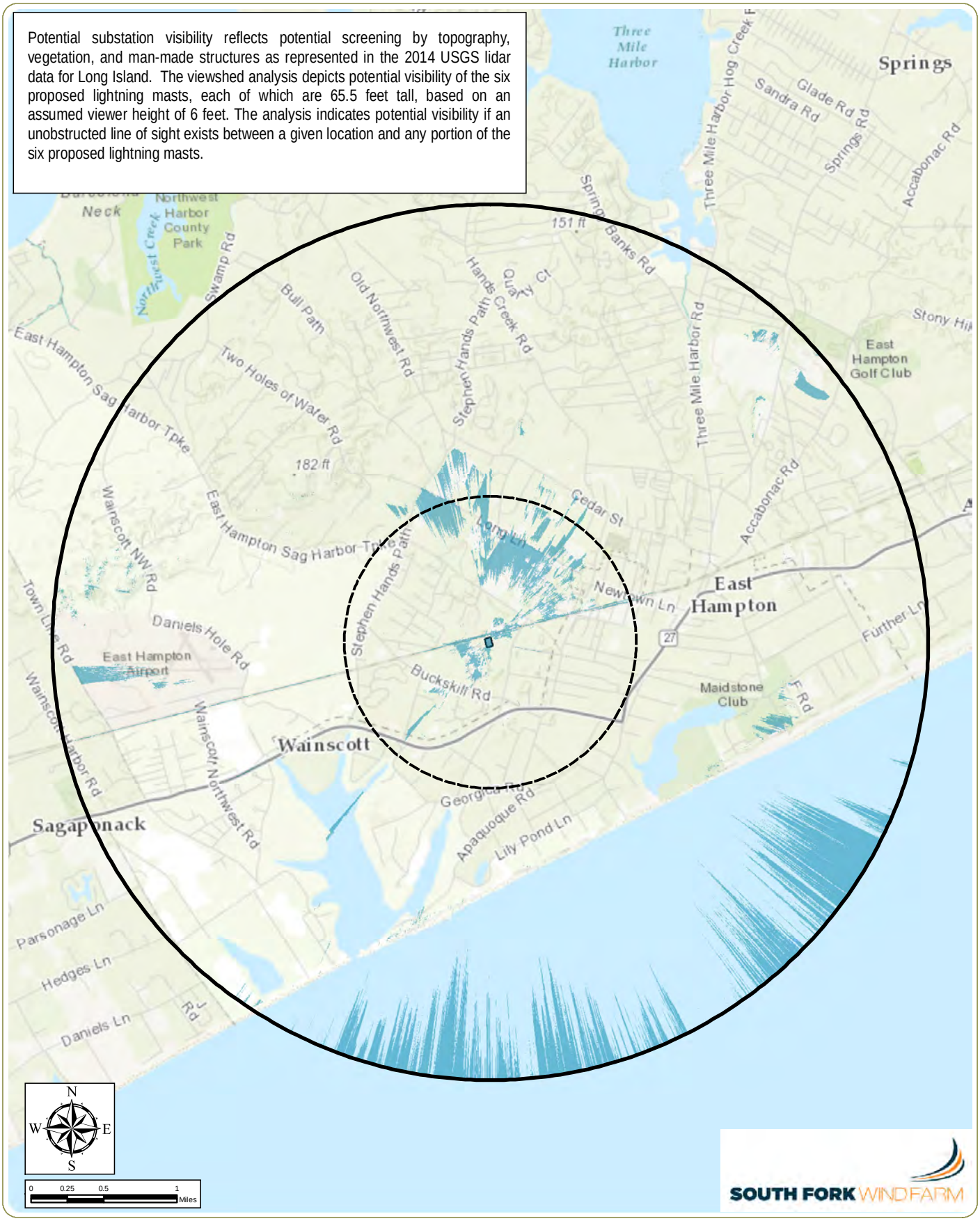
Potential substation visibility reflects potential screening by topography, vegetation, and man-made structures as represented in the 2014 USGS lidar data for Long Island. The viewshed analysis depicts potential visibility of the six proposed lightning masts, each of which are 65.5 feet tall, based on an assumed viewer height of 6 feet. The analysis indicates potential visibility if an unobstructed line of sight exists between a given location and any portion of the six proposed lightning masts.



South Fork Wind Farm Upland Export Cable and Substation

Town of East Hampton, Suffolk County, New York

Figure 8: Viewshed Analysis

Sheet 2 of 2: Substation Visibility Based on Topography, Structures, and Vegetation

Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" map service.
2. This map was generated in ArcMap on December 8, 2017.
3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

- Potential Substation Visibility
- Proposed SFEC Onshore Substation
- 1-Mile Study Area
- 3-Mile Study Area

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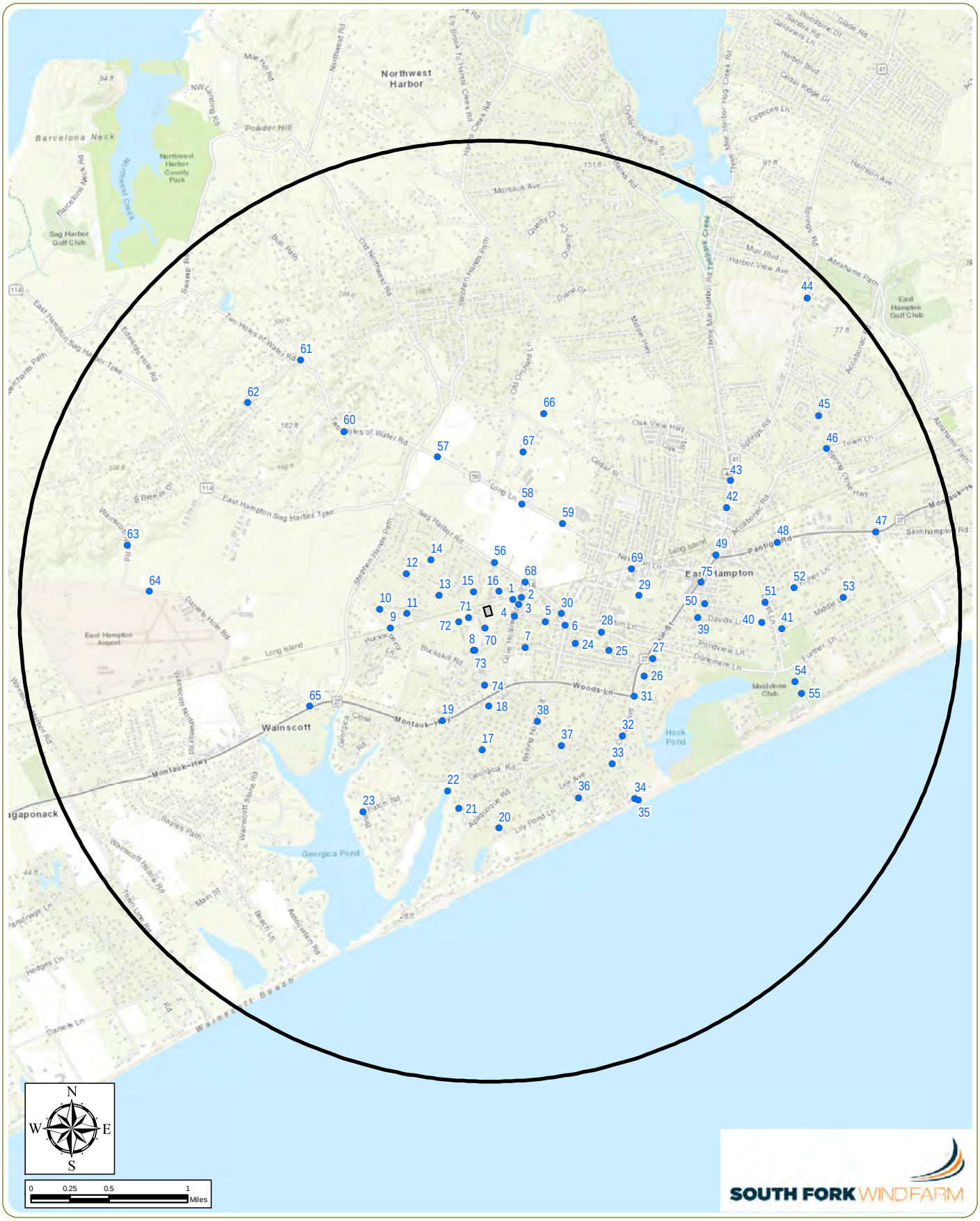

South Fork Wind Farm Upland Export Cable and Substation

Town of East Hampton, Suffolk County, New York

Figure 9: Viewpoint Location Map

Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" map service.
2. This map was generated in ArcMap on December 8, 2017.
3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

- Viewpoint
- Proposed SFEC Onshore Substation
- 3-Mile Study Area

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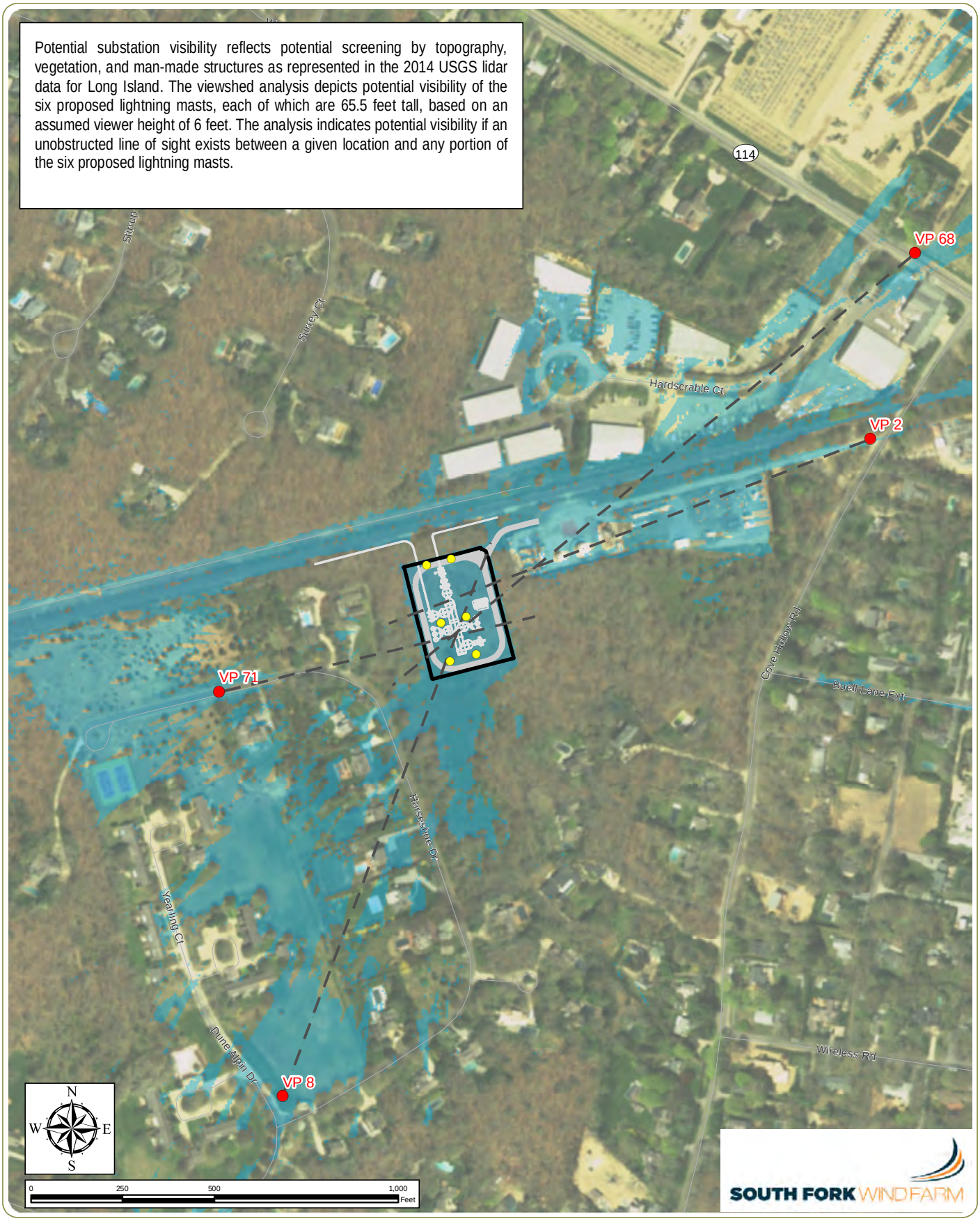

South Fork Wind Farm Upland Export Cable and Substation

Town of East Hampton, Suffolk County, New York

Figure 10: Viewpoints Selected for Simulation

- Viewpoint Selected for Simulation
- Line of Sight
- Lightning Masts
- Substation Features
- Proposed Access
- Proposed SFEC Onshore Substation
- Potential Substation Visibility

Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" map service.
2. This map was generated in ArcMap on December 8, 2017.
3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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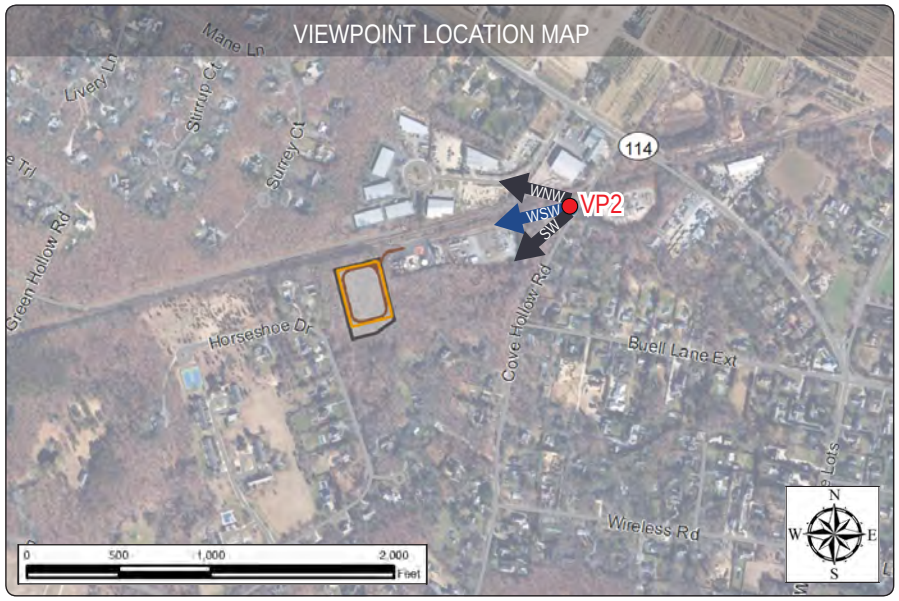

South Fork Wind Farm Upland Export Cable and Substation

Town of East Hampton, Suffolk County, New York

Figure 11: Visual Simulations - Viewpoint 2, Views from Substation Access Road at Cove Hollow Road

SOUTH FORK WIND FARM

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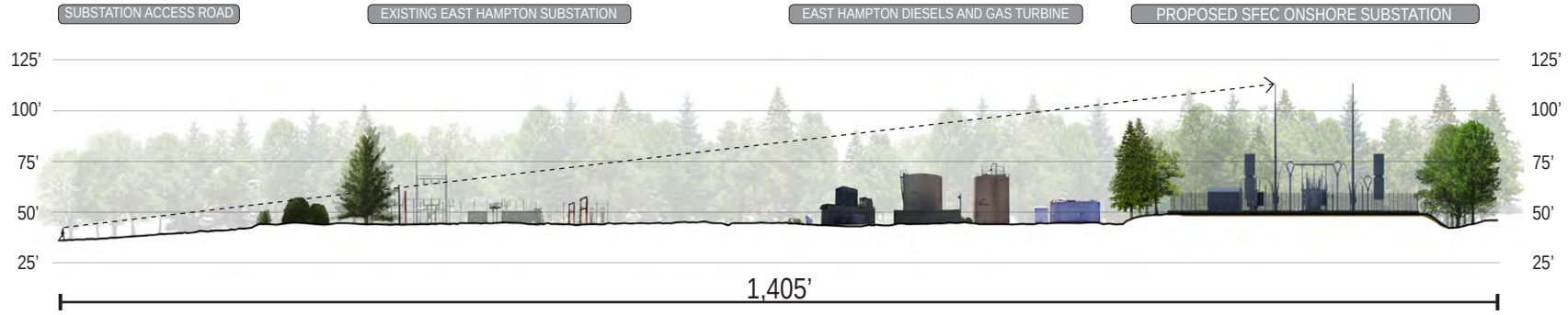

South Fork Wind Farm Upland Export Cable and Substation

Town of East Hampton, Suffolk County, New York

Figure 11: Visual Simulations - Viewpoint 2, Line of Sight from Substation Access Road at Cove Hollow Road

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South Fork Wind Farm Upland Export Cable and Substation

Town of East Hampton, Suffolk County, New York

Figure 11: Visual Simulations - Viewpoint 2, Existing view to the West-Southwest from Substation Access Road at Cove Hollow Road

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South Fork Wind Farm Upland Export Cable and Substation

Town of East Hampton, Suffolk County, New York

Figure 11: Visual Simulations - Viewpoint 2, Simulated view with project in place to the West-Southwest from Substation Access Road at Cove Hollow Road

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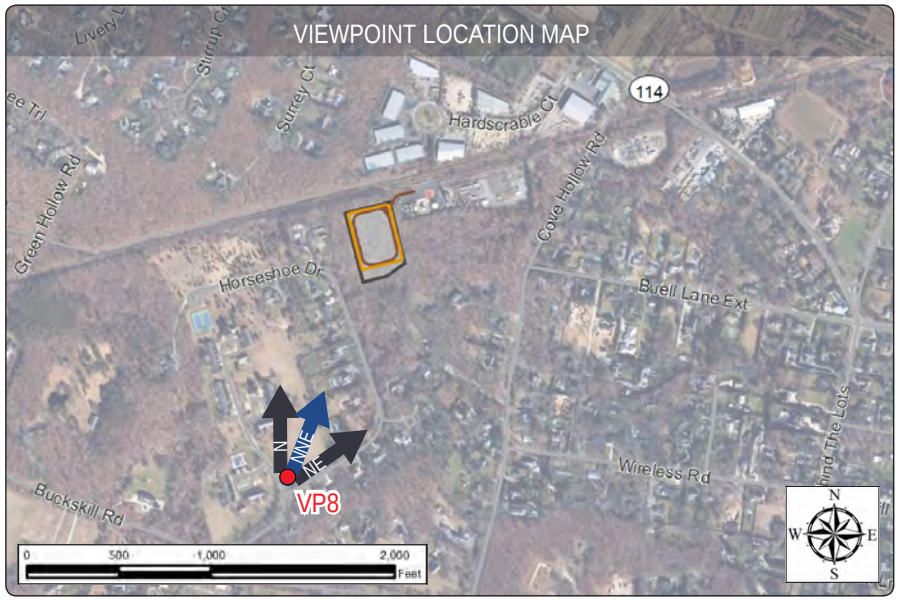
VIEWPOINT LOCATION MAP



PROPOSED SFEC ONSHORE SUBSTATION LOCATION BEHIND SCREENING

Screened Substation

Note: For informational purposes, this image includes a digital wireframe model of the proposed substation shown in it's accurate location and scale behind the screening vegetation.

CONTEXT PHOTO: VIEW TO THE NORTH

SIMULATION PHOTO: VIEW TO THE NORTH-NORTHEAST

CONTEXT PHOTO: VIEW TO THE NORTHEAST

South Fork Wind Farm Upland Export Cable and Substation

Town of East Hampton, Suffolk County, New York

Figure 12: Visual Simulations - Viewpoint 8, Views from Dune Alpin Drive North at Horseshoe Drive North

SOUTH FORK WINDFARM

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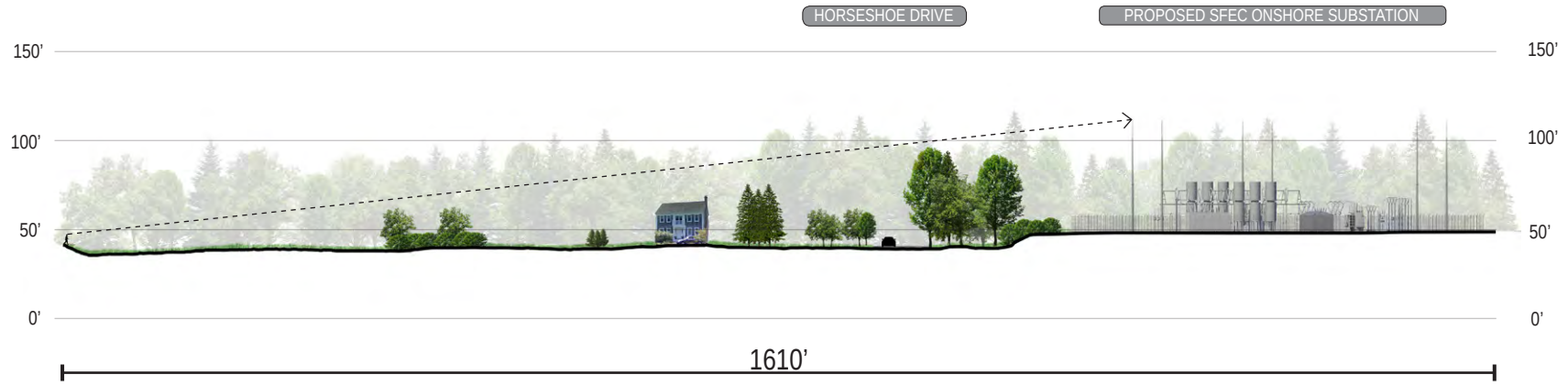

South Fork Wind Farm Upland Export Cable and Substation

Town of East Hampton, Suffolk County, New York

Figure 12: Visual Simulations - Viewpoint 8, Line of Sight from Dune Alpin Drive North at Horseshoe Drive North

Sheet 2 of 4

SOUTH FORK WIND FARM

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South Fork Wind Farm Upland Export Cable and Substation

Town of East Hampton, Suffolk County, New York

Figure 12: Visual Simulations - Viewpoint 8, Existing view to the Northeast from Dune Alpin Drive North at Horseshoe Drive North

SOUTH FORK WINDFARM

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South Fork Wind Farm Upland Export Cable and Substation

Town of East Hampton, Suffolk County, New York

Figure 12: Visual Simulations - Viewpoint 8, Simulated view with project in place to the Northeast from Dune Alpin Drive North at Horseshoe Drive North

SOUTH FORK WINDFARM

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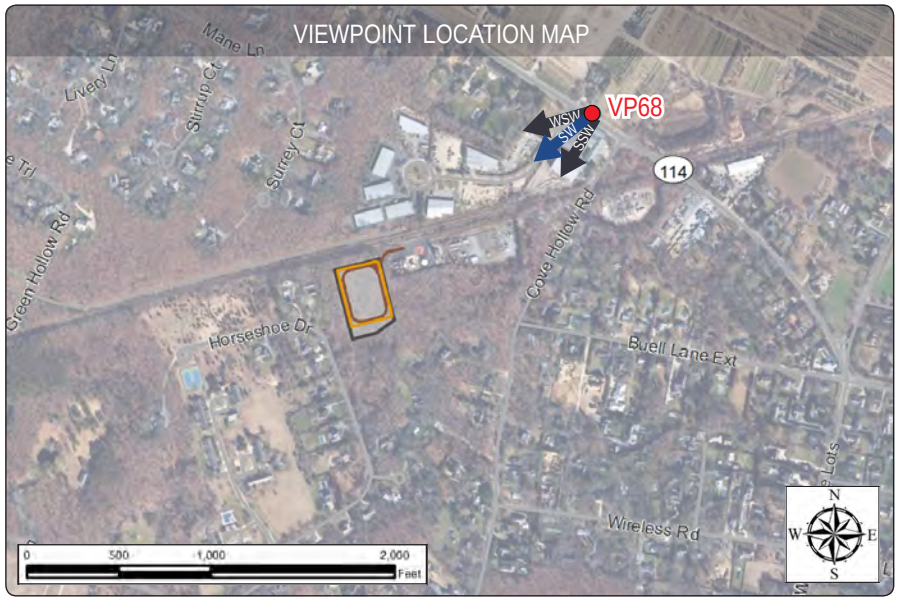

South Fork Wind Farm Upland Export Cable and Substation

Town of East Hampton, Suffolk County, New York

Figure 13: Visual Simulations - Viewpoint 68, Views from East Hampton Sag Harbor Turnpike at Hardscrabble Court

SOUTH FORK WIND FARM

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South Fork Wind Farm Upland Export Cable and Substation

Town of East Hampton, Suffolk County, New York

Figure 13: Visual Simulations - Viewpoint 68, Line of Sight from East Hampton Sag Harbor Turnpike at Hardscrabble Court

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South Fork Wind Farm Upland Export Cable and Substation

Town of East Hampton, Suffolk County, New York

Figure 13: Visual Simulations - Viewpoint 68, Existing view to the Southwest from East Hampton Sag Harbor Turnpike at Hardscrabble Court

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South Fork Wind Farm Upland Export Cable and Substation

Town of East Hampton, Suffolk County, New York

Figure 13: Visual Simulations - Viewpoint 68, Simulated view with project in place to the Southwest from East Hampton Sag Harbor Turnpike at Hardscrabble Court

SOUTH FORK WIND FARM

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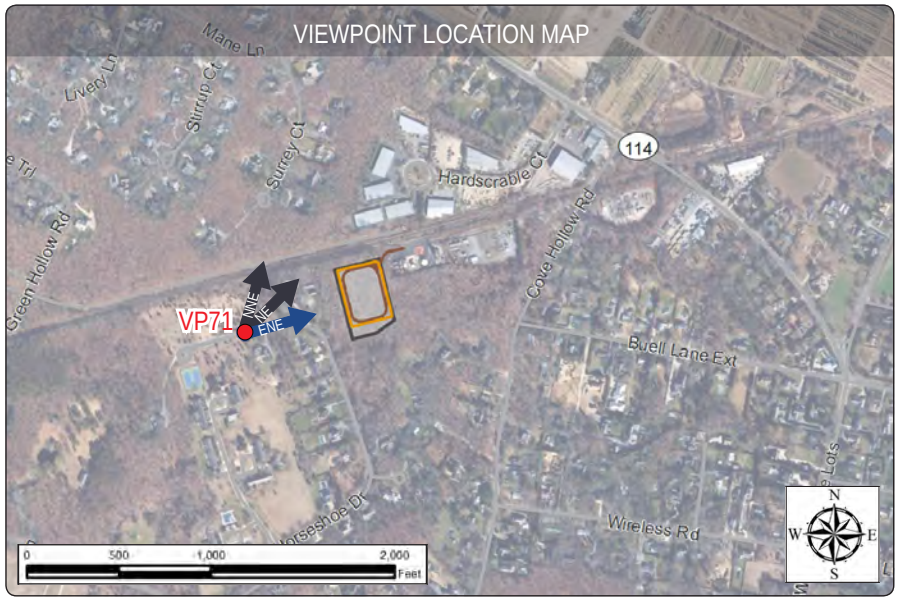
VIEWPOINT LOCATION MAP



PROPOSED SFEC ONSHORE SUBSTATION LOCATION BEHIND SCREENING

Screened Substation

Note: For informational purposes, this image includes a digital wireframe model of the proposed substation shown in it's accurate location and scale behind the screening vegetation.

CONTEXT PHOTO: VIEW TO THE NORTH-NORTHEAST

CONTEXT PHOTO: VIEW TO THE NORTHEAST

SIMULATION PHOTO: VIEW TO THE EAST-NORTHEAST

South Fork Wind Farm Upland Export Cable and Substation

Town of East Hampton, Suffolk County, New York

Figure 14: Visual Simulations - Viewpoint 71, Views from Horseshoe Drive

SOUTH FORK WIND FARM

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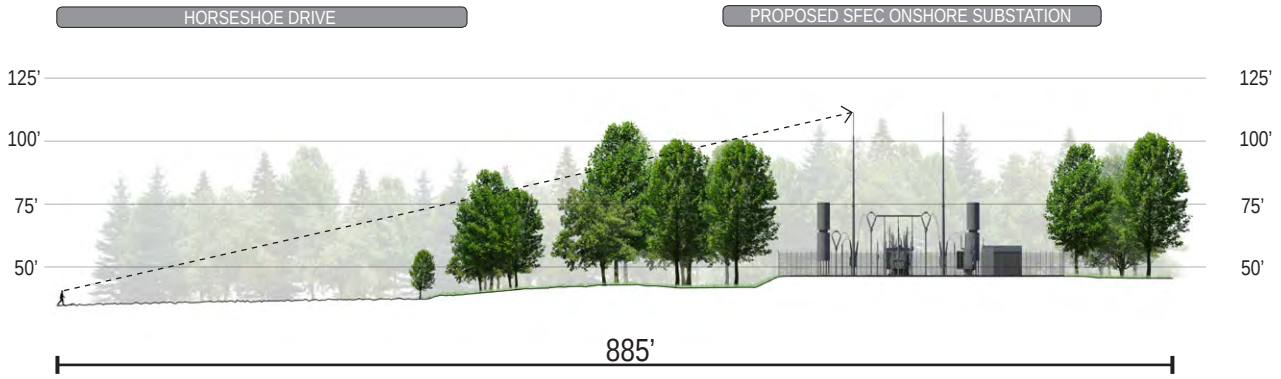

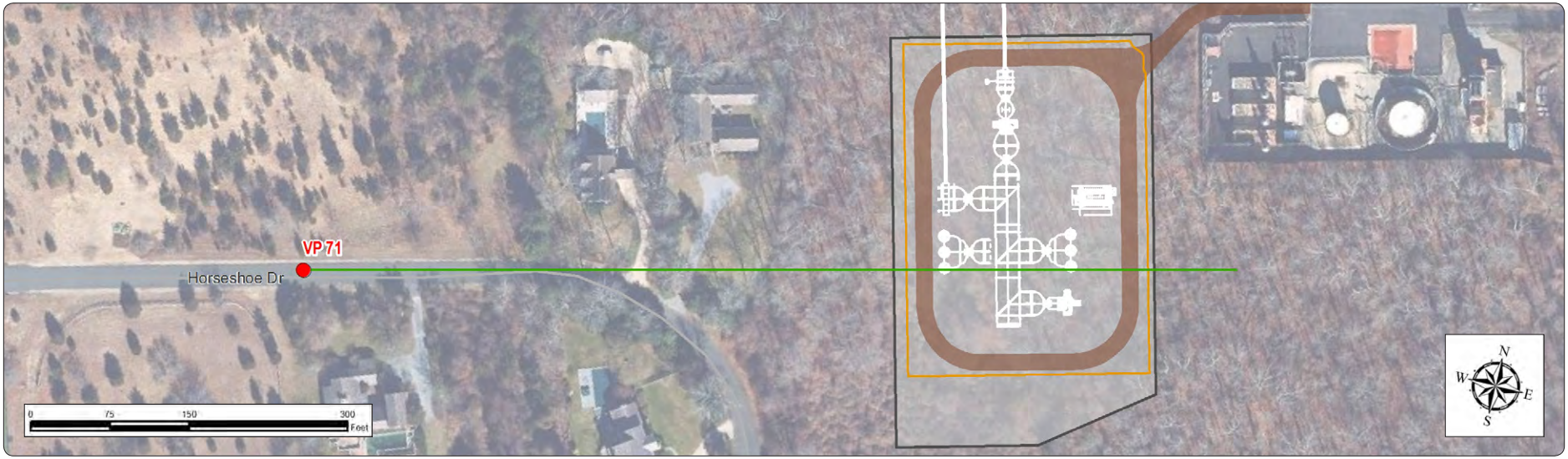

South Fork Wind Farm Upland Export Cable and Substation

Town of East Hampton, Suffolk County, New York

Figure 14: Visual Simulations - Viewpoint 71, Line of Sight from Horseshoe Drive

Sheet 2 of 4

SOUTH FORK WIND FARM

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South Fork Wind Farm Upland Export Cable and Substation

Town of East Hampton, Suffolk County, New York

Figure 14: Visual Simulations - Viewpoint 71, Existing view to the East-Northeast from Horseshoe Drive

Sheet 3 of 4

SOUTH FORK WIND FARM

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South Fork Wind Farm Upland Export Cable and Substation

Town of East Hampton, Suffolk County, New York

Figure 14: Visual Simulations - Viewpoint 71, Simulated view with project in place to the East-Northeast view from Horseshoe Drive

Sheet 4 of 4

SOUTH FORK WIND FARM

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Appendix A: Sensitive Sites Table

Visually Sensitive Resource	Location: Municipality	Location: County	Location: VP Number[1]	Distance[2]: Miles from Substation	Distance Zone: ● Foreground ● Midground • Background	Project Visibility: +Visible - Not Visible +/- Partially: Topographic Viewshed	Topographic & Vegetation Viewshed	Field Review
1. Properties listed on the National or State Register of Historic Places								
Buell's Lane Historic District	Village of East Hampton	Suffolk	6, 28	0.5	●	+	+/-	-
East Hampton Village Historic District	Village of East Hampton	Suffolk	26, 27, 31-33, 36-39, 50, 75	0.6	•	+/-	+/-	-
Jericho Historic District	Village of East Hampton	Suffolk	19	0.6	•	+	-	-
East Hampton Railroad Station	Village of East Hampton	Suffolk	69	0.9	•	+	+/-	-
Moran, Thomas, House	Village of East Hampton	Suffolk		1.0	•	+/-	-	-
Jones Road Historic District	Village of East Hampton	Suffolk	20	1.1	•	+/-	-	-
North Main Street Historic District	Village of East Hampton	Suffolk	49	1.3	•	+/-	-	-
Briar Patch Road Historic District	Village of East Hampton	Suffolk	23	1.3	•	+/-	+/-	-
Hook Windmill	Village of East Hampton	Suffolk		1.4	•	+/-	-	-
Pantigo Road Historic District	Village of East Hampton	Suffolk	48	1.6	•	+/-	+/-	-
Egypt Lane Historic District	Village of East Hampton	Suffolk		1.7	•	+/-	-	-
Sherrill, Stephen, House	Town of East Hampton	Suffolk		1.7	•	-	-	-
Wainscott Windmill	Town of East Hampton	Suffolk		2.3	•	+	-	-
Hayground Windmill	Village of East Hampton	Suffolk		2.4	•	+	-	-
Strong, Thomas, House	Town of East Hampton	Suffolk		2.7	•	+/-	-	-
Properties eligible or potentially eligible for inclusion in the National or State Register of Historic Places[3] (within 1-Mile Study Area)								
84 Sag Harbor Turnpike	Town of East Hampton	Suffolk		0.2	●	+	+/-	+/-
Josiah Dayton House	Village of East Hampton	Suffolk		0.4	●	+	-	-
Miller Dayton House	Village of East Hampton	Suffolk		0.5	●	+/-	-	-
Georgica Exxon	Village of East Hampton	Suffolk		0.5	●	+/-	-	-
197 Newtown Lane	Village of East Hampton	Suffolk		0.7	•	+	+/-	-
195 Newtown Lane	Village of East Hampton	Suffolk		0.7	•	+/-	+/-	-
201 Newtown Lane	Village of East Hampton	Suffolk		0.7	•	+	+/-	-
204 Newtown Lane	Village of East Hampton	Suffolk		0.7	•	+	-	-
192 Newtown Lane	Village of East Hampton	Suffolk		0.7	•	+	-	-
190 Newtown Lane	Village of East Hampton	Suffolk		0.7	•	+	-	-
188 Newtown Lane	Village of East Hampton	Suffolk		0.7	•	+	-	-
175 Newtown Lane	Village of East Hampton	Suffolk		0.7	•	+	-	-
153 Newtown Lane	Village of East Hampton	Suffolk		0.7	•	+	+/-	-
186 Newtown Lane	Village of East Hampton	Suffolk		0.7	•	+	-	-

Location				Distance[2]	Distance Zone	Project Visibility		
						+Visible	- Not Visible	+/- Partially
Visually Sensitive Resource	Municipality	County	VP Number[1]	Miles from Substation	● Foreground ● Midground ● Background	Topographic Viewshed	Topographic & Vegetation Viewshed	Field Review
182 Newtown Lane	Village of East Hampton	Suffolk		0.8	●	+	-	-
171 Newtown Lane	Village of East Hampton	Suffolk		0.8	●	+	-	-
7 Gould Street	Village of East Hampton	Suffolk		0.8	●	+	-	-
169 Newtown Lane	Village of East Hampton	Suffolk		0.8	●	+	-	-
11 Gould Street	Village of East Hampton	Suffolk		0.8	●	+	-	-
180 Newtown Lane	Village of East Hampton	Suffolk		0.8	●	+	-	-
178 Newtown Lane	Village of East Hampton	Suffolk		0.8	●	+	-	-
15 Gould Street	Village of East Hampton	Suffolk		0.8	●	+	-	-
8 Gould Street	Village of East Hampton	Suffolk		0.8	●	+	-	-
172 Newtown Lane	Village of East Hampton	Suffolk		0.8	●	+	-	-
19 Gould Street	Village of East Hampton	Suffolk		0.8	●	+	-	-
161 Newtown Lane	Village of East Hampton	Suffolk		0.8	●	+	-	-
12 Gould Street	Village of East Hampton	Suffolk		0.8	●	+	-	-
147 Newtown Lane	Village of East Hampton	Suffolk		0.8	●	+	+/-	-
16 Gould Street	Village of East Hampton	Suffolk		0.8	●	+	-	-
Jericho Road Burial Ground	Village of East Hampton	Suffolk		0.8	●	+	-	-
7 McGuirk Street	Village of East Hampton	Suffolk		0.8	●	+	-	-
180 Sag Harbor Turnpike	Town of East Hampton	Suffolk		0.8	●	+/-	-	-
162 Newtown Lane	Village of East Hampton	Suffolk		0.8	●	+	-	-
11 McGuirk Street	Village of East Hampton	Suffolk		0.8	●	+	-	-
160 Newtown Lane	Village of East Hampton	Suffolk		0.8	●	+	-	-
13 McGuirk Street	Village of East Hampton	Suffolk		0.8	●	+	-	-
17 McGuirk Street	Village of East Hampton	Suffolk		0.8	●	+/-	-	-
19 McGuirk Street	Village of East Hampton	Suffolk		0.9	●	+	-	-
152 Newtown Lane	Village of East Hampton	Suffolk		0.9	●	+	-	-
146 Newtown Lane	Village of East Hampton	Suffolk		0.9	●	+	-	-
137 Newtown Lane	Village of East Hampton	Suffolk		0.9	●	+	-	-
144 Newtown Lane	Village of East Hampton	Suffolk		0.9	●	+	-	-
26 McGuirk Street	Village of East Hampton	Suffolk		0.9	●	+	-	-
11 Cooper Lane	Village of East Hampton	Suffolk		0.9	●	+	-	-
7 Cooper Lane	Village of East Hampton	Suffolk		0.9	●	+	-	-

Location				Distance[2]	Distance Zone	Project Visibility		
						+Visible - Not Visible +/- Partially		
					● Foreground ● Midground • Background			
Visually Sensitive Resource	Municipality	County	VP Number[1]	Miles from Substation		Topographic Viewshed	Topographic & Vegetation Viewshed	Field Review
17 Cooper Lane	Village of East Hampton	Suffolk		0.9	●	+	-	-
30 McGuirk Street	Village of East Hampton	Suffolk		0.9	●	+	-	-
35 McGuirk Street	Village of East Hampton	Suffolk		0.9	●	+	-	-
Cedar Lawn Cemetery	Town of East Hampton	Suffolk		0.9	●	+	-	-
138 Newtown Lane	Village of East Hampton	Suffolk		0.9	●	+	-	-
15 Cooper Lane	Village of East Hampton	Suffolk		0.9	●	+	-	-
32 McGuirk Street	Village of East Hampton	Suffolk		0.9	●	+	-	-
36 McGuirk Street	Village of East Hampton	Suffolk		0.9	●	+	-	-
136 Newtown Lane	Village of East Hampton	Suffolk		0.9	●	+	-	-
21 Cooper Lane	Village of East Hampton	Suffolk		0.9	●	+	-	-
40 McGuirk Street	Village of East Hampton	Suffolk		0.9	●	+	-	-
25 Cooper Lane	Village of East Hampton	Suffolk		0.9	●	+	-	-
132 Newtown Lane	Village of East Hampton	Suffolk		0.9	●	+	-	-
128 Newtown Lane	Village of East Hampton	Suffolk		1.0	●	+	-	-
2. State Parks								
None in Study Area								
3. Urban Cultural Parks/Heritage Areas								
None in Study Area								
4. State Forest Preserves								
None in Study Area								
5. National Wildlife Refuges, State Game Refuges and State Wildlife Management Areas								
None in Study Area								
6. National Natural Landmarks								
None in Study Area								
7. National Parks, Recreation Areas, Seashores and/or Forests								
None in Study Area								
8. National or State Designated Wild, Scenic, or Recreational Rivers								
None in Study Area								
9. Sites, Areas, Lakes, Reservoirs or Highways Designated or Eligible as Scenic								
None in Study Area								
10. Scenic Areas of Statewide Significance								

Visually Sensitive Resource	Location: Municipality	Location: County	VP Number[1]	Distance[2]: Miles from Substation	Distance Zone: ● Foreground ● Midground • Background	Project Visibility: + Visible - Not Visible +/- Partially: Topographic Viewshed	Topographic & Vegetation Viewshed	Field Review
East Hampton Scenic Area of Statewide Significance	Town and Village of East Hampton	Suffolk	20-23, 26, 27, 32-36, 39, 54, 55	1.0	●	+/-	+/-	-
11. State and Federally Designated Trails								
State Bike Route 114	Town and Village of East Hampton	Suffolk	6, 28, 30, 56, 68	0.2	●	+/-	+/-	+/-
State Bike Route 27	Town and Village of East Hampton	Suffolk	19, 47, 48, 65, 75	0.5	●	+/-	+/-	-
12. Adirondack Park Scenic Vistas								
None in Study Area								
13. State Nature and Historic Preserve Areas								
None in Study Area								
14. Palisades Park								
Not in Study Area								
15. Bond Act Properties for Exceptional Beauty or Open Space								
None in Study Area								
Locally Important Resources (within 1-Mile Study Area)								
Areas of Intensive Land Use (City, Village, Hamlet)								
Hamlet of East Hampton North	Town of East Hampton	Suffolk	1-5, 7-16, 42-47, 56,-59, 67, 68, 70-74	0.0	●	+/-	+/-	+/-
Village of East Hampton	Village of East Hampton	Suffolk	6, 17-41, 48-55, 65, 69, 75	0.4	●	+/-	+/-	-
Hamlet of Wainscott	Town of East Hampton	Suffolk	63, 64	0.8	●	+/-	+/-	-
Hamlet of Northwest Harbor	Town of East Hampton	Suffolk	60-62, 66	0.9	●	+/-	+/-	-
Transportation Corridors								
SR 114	Town and Village of East Hampton	Suffolk	6, 28, 30, 56, 68	0.2	●	+/-	+/-	+/-
SR 27	Town and Village of East Hampton	Suffolk	19, 47, 48, 65, 75	0.4	●	+/-	+/-	-
CR 59	Town and Village of East Hampton	Suffolk	57, 59	0.6	●	+	+/-	+/-
Recreation Resources								
Local Parks and Playgrounds								
Stephen Hands Path Park/Ball Field	Town of East Hampton	Suffolk		1.0	●	+	-	-
Lakes and Rivers								
None within the 1-Mile Study Area								

Visually Sensitive Resource	Location: Municipality	Location: County	VP Number[1]	Distance[2]: Miles from Substation	Distance Zone: ● Foreground ● Midground ● Background	Project Visibility: + Visible - Not Visible +/- Partially: Topographic Viewshed	Topographic & Vegetation Viewshed	Field Review
Trails								
None within the 1-Mile Study Area								
NYSDEC Lands								
None within the 1-Mile Study Area								
Other Local Recreational Resources								
Hampton Racquet	Town of East Hampton	Suffolk		0.4	●	+	-	-
Buckskill Tennis and Winter Club	Town of East Hampton	Suffolk		0.5	●	+	-	-
East Hampton Tennis Club	Town and Village of East Hampton	Suffolk		0.6	●	+	+/-	-
Hampton Country Day Camp	Town of East Hampton	Suffolk		0.7	●	+	-	-
East Hampton RECenter (YMCA)	Village of East Hampton	Suffolk		0.8	●	+	-	-
Schools and Colleges								
East Hampton High School	Town of East Hampton	Suffolk		0.7	●	+/-	+/-	+/-
John M. Marshall Elementary School	Village of East Hampton	Suffolk	29	0.7	●	+	-	-
Child Development Center of the Hamptons	Town of East Hampton	Suffolk		1.0	●	+/-	-	-
Cemeteries								
Jericho Cemetery	Village of East Hampton	Suffolk		0.8	●	+	-	-
Cedar Lawn Cemetery	Town of East Hampton	Suffolk		0.9	●	+	-	-
South End Cemetery	Village of East Hampton	Suffolk		1.0	●	+/-	-	-
Hospitals								
None within the 1-Mile Study Area								
Locally Designated Scenic Resources (within 3-Mile Study Area)								
East Hampton Village Scenic Area of Local Significance	Town and Village of East Hampton	Suffolk	4-7, 17, 18, 24, 25, 28, 30, 31, 37, 38, 40, 41, 48-53, 75	0.1	●	+/-	+/-	+/-
Hardscrabble Scenic Area of Local Significance	Town of East Hampton	Suffolk	57-59, 66, 67	0.2	●	+/-	+/-	+/-
Wainscott Scenic Area of Local Significance	Town of East Hampton	Suffolk		2.1	●	+/-	-	-
Resources Identified as Scenic in the Local Waterfront Revitalization Plan								
NYS Route 27 State Access to Georgica Pond	Town of East Hampton	Suffolk		1.6	●	+/-	-	-
Wainscott Main Street	Town of East Hampton	Suffolk		2.1	●	+/-	-	-
Beach Lane	Town of East Hampton	Suffolk		2.3	●	+/-	+/-	-
Further Lane	Town of East Hampton	Suffolk		2.6	●	+/-	-	-
Wainscott Pond	Town of East Hampton	Suffolk		2.6	●	+/-	-	-

Location				Distance[2]	Distance Zone	Project Visibility		
						+ Visible	- Not Visible	+/- Partially
Visually Sensitive Resource	Municipality	County	VP Number[1]	Miles from Substation	● Foreground ● Midground ● Background	Topographic Viewshed	Topographic & Vegetation Viewshed	Field Review
Three Mile Harbor	Town of East Hampton	Suffolk		2.8	●	-	-	-
East Hampton Marina	Town of East Hampton	Suffolk		2.9	●	-	-	-
Town Line Road	Town of East Hampton	Suffolk		2.9	●	+/-	-	-
Three Mile Harbor Marina	Town of East Hampton	Suffolk		3.0	●	-	-	-

[1] If no viewpoint (VP) number is indicated, no photo was obtained during fieldwork.

[2] For large areas and linear sites, approximate distance to the proposed substation was measured from the respective area's closest point.

Appendix B: Viewpoint Photo Log

Viewpoint 1

Location:
View from Substation Access Road

Direction of View:
Southwest

Viewpoint 2

Location:
View from Substation Access Road at Cove Hollow Road

Direction of View:
West-Southwest

Viewpoint 3

Location:
View from Cove Hollow Road

Direction of View:
West

Viewpoint 4

Location:
View from Cove Hollow Road at Buell Lane Extension

Direction of View:
Northwest

Viewpoint 5

Location:
View from Buell Lane Extension

Direction of View:
West-Northwest

Viewpoint 6

Location:
View from Buell Lane Extension at Buell Lane and Toilsome Lane

Direction of View:
West-Northwest

Viewpoint 7

Location:
View from Wireless Road

Direction of View:
Northwest

Viewpoint 8

Location:
View from Dune Alpin Drive North at Horseshoe Drive North

Direction of View:
Northeast

Viewpoint 9

Location:
View from Railroad Tracks at Buckskill Road

Direction of View:
East-Northeast

Viewpoint 10

Location:
View from Blue Jay Way

Direction of View:
East

Viewpoint 11

Location:
View from Blue Jay Way

Direction of View:
East

Viewpoint 12

Location:
View from Towhee Trail

Direction of View:
Southeast

Viewpoint 13

Location:
View from Dead End of Towhee Trail

Direction of View:
East-Southeast

Viewpoint 14

Location:
View from Mane Lane at Harness Lane

Direction of View:
Southeast

Viewpoint 15

Location:
View from Surrey Court

Direction of View:
Southeast

Viewpoint 16

Location:
View from Hardscrabble Court

Direction of View:
Southwest

Viewpoint 17

Location:
View from Jericho Road

Direction of View:
Northeast

Viewpoint 18

Location:
View from Cove Hollow Road

Direction of View:
North

Viewpoint 19

Location:
View from Montauk Highway at Jericho Road

Direction of View:
North-Northeast

Sensitive Site:
Jericho Historic District

Viewpoint 20

Location:
View from Jones Road

Direction of View:
North

Sensitive Site:
Jones Road Historic District

Viewpoint 21

Location:
View from La Forest Lane

Direction of View:
North-Northwest

Viewpoint 22

Location:
View from Cove Hollow Road

Direction of View:
North-Northeast

Viewpoint 23

Location:
View from Briar Patch Road at North Briar Patch Road

Direction of View:
East-Northeast

Sensitive Site:
Briar Patch Road Historic District

Viewpoint 24

Location:
View from Meadow Way

Direction of View:
Northwest

Viewpoint 25

Location:
View from Gingerbread Lane Extension

Direction of View:
West

Viewpoint 26

Location:
View from James Lane

Direction of View:
Northwest

Sensitive Site:
East Hampton Village Historic District

Viewpoint 27

Location:
View from Town Green Park, James Lane

Direction of View:
West-Northwest

Sensitive Site:
East Hampton Village Historic District

Viewpoint 28

Location:
View from Church Street at Buell Lane

Direction of View:
West-Northwest

Sensitive Site:
Buell's Lane Historic District

Viewpoint 29

Location:
View from Village Park at Gingerbread Lane Extension

Direction of View:
West

Viewpoint 30

Location:
View from East Hampton Sag Harbor Turnpike

Direction of View:
West-Northwest

Viewpoint 31

Location:
View from James Lane

Direction of View:
Northwest

Sensitive Site:
East Hampton Village Historic District

Viewpoint 32

Location:
View from Ocean Avenue at Pudding Hill Lane

Direction of View:
Northwest

Sensitive Site:
East Hampton Village Historic District

Viewpoint 33

Location:
View from The Crossways

Direction of View:
Northwest

Sensitive Site:
East Hampton Village Historic District

Viewpoint 34

Location:
View from Ocean Avenue

Direction of View:
North-Northwest

Sensitive Site:
East Hampton Village Historic District

Viewpoint 35

Location:
View from Beach at Ocean Avenue

Direction of View:
Southwest

Viewpoint 36

Location:
View from Cottage Avenue at Lily Pond Lane

Direction of View:
North-Northwest

Sensitive Site:
East Hampton Village Historic District

Viewpoint 37

Location:
View from Darby Lane

Direction of View:
North-Northwest

Sensitive Site:
East Hampton Village Historic District

Viewpoint 38

Location:
View from Darby Lane at Baiting Hollow Road

Direction of View:
North-Northwest

Sensitive Site:
East Hampton Village Historic District

Viewpoint 39

Location:
View from Davids Lane

Direction of View:
West-Northwest

Sensitive Site:
East Hampton Village Historic District

Viewpoint 40

Location:
View from Davids Lane Stream

Direction of View:
North-Northwest

Sensitive Site:
Egypt Lane Historic District

Viewpoint 41

Location:
View from Egypt Lane

Direction of View:
West-Northwest

Viewpoint 42

Location:
View from North Main Street

Direction of View:
Southwest

Viewpoint 43

Location:
View from Spring Fireplace Road

Direction of View:
Southwest

Viewpoint 44

Location:
View from Spring Fireplace Road at Ohio Avenue

Direction of View:
Southwest

Viewpoint 45

Location:
View from Queens Lane at Accabonac Road

Direction of View:
Southwest

Viewpoint 46

Location:
View from Town Lane at Spring Close Highway

Direction of View:
Southwest

Viewpoint 47

Location:
View from Montauk Highway at Spring Close Highway

Direction of View:
West

Viewpoint 48

Location:
View from Montauk Highway at Fredericka Lane

Direction of View:
West-Southwest

Sensitive Site:
Pantigo Road Historic District

Viewpoint 49

Location:
View from Green Space at North Main Street

Direction of View:
West-Southwest

Sensitive Sites:
Hook Windmill and North Main Street Historic District

Viewpoint 50

Location:
View from Huntting Lane

Direction of View:
West-Northwest

Sensitive Site:
East Hampton Village Historic District

Viewpoint 51

Location:
View from Huntting Lane at Egypt Lane

Direction of View:
West-Southwest

Viewpoint 52

Location:
View from Hither Lane

Direction of View:
West-Southwest

Viewpoint 53

Location:
View from Middle Lane

Direction of View:
West

Viewpoint 54

Location:
View from Old Beach Lane

Direction of View:
West-Northwest

Viewpoint 55

Location:
View from Old Beach Lane

Direction of View:
Northwest

Viewpoint 56

Location:
View from East Hampton Sag Harbor Turnpike

Direction of View:
South-Southeast

Viewpoint 57

Location:
View from Long Lane

Direction of View:
Southeast

Viewpoint 58

Location:
View from Long Lane

Direction of View:
South

Viewpoint 59

Location:
View from Long Lane at East Hampton High School

Direction of View:
Southwest

Viewpoint 60

Location:
View from Two Holes Water Road

Direction of View:
East

Viewpoint 61

Location:
View from Two Holes Water Road at Oakhill Lane

Direction of View:
Southeast

Viewpoint 62

Location:
View from Whooping Hollow Road at Cosdrew Lane

Direction of View:
Southeast

Viewpoint 63

Location:
View from Northwest Road

Direction of View:
East-Southeast

Viewpoint 64

Location:
View from Daniels Hole Road

Direction of View:
East-Southeast

Viewpoint 65

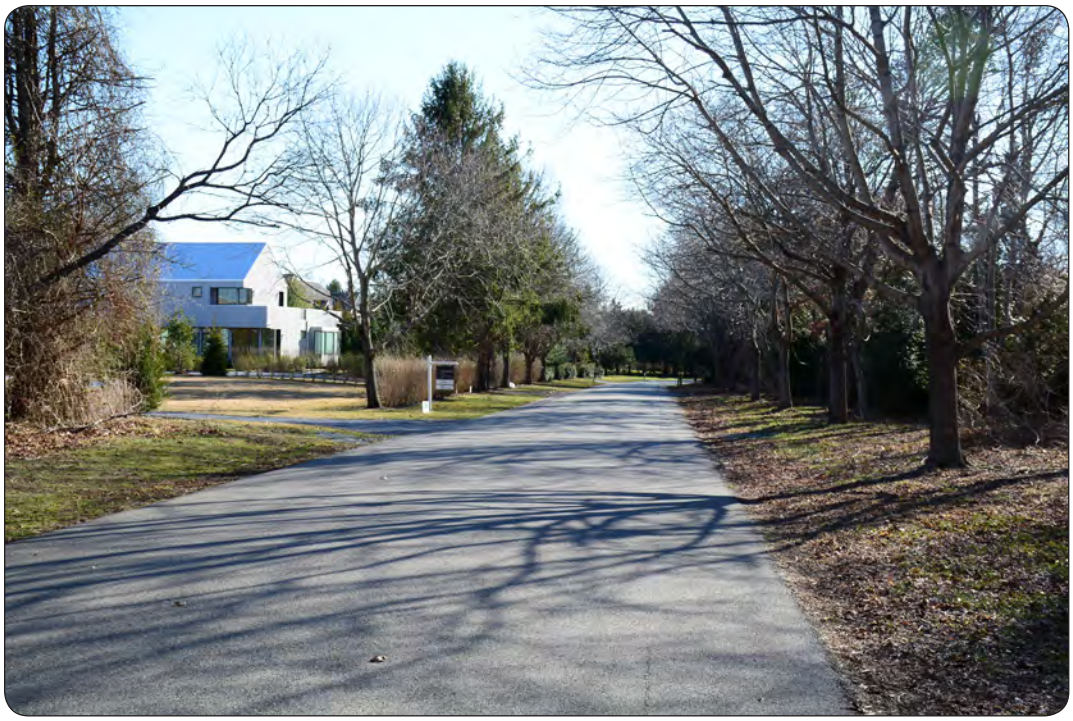
Location:
View from Daniels Hole Road at Montauk Highway

Direction of View:
East

Viewpoint 66

Location:
View from Cemetery

Direction of View:
South



Viewpoint 67

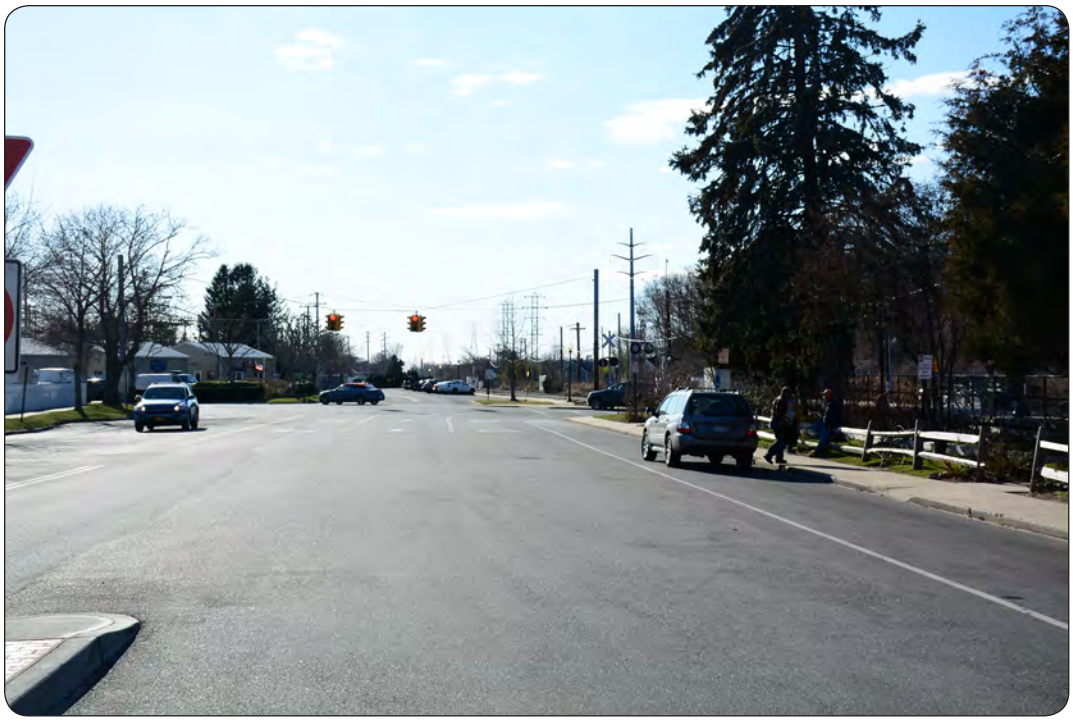
Location:
View from Fieldview Lane

Direction of View:
South

Viewpoint 68

Location:
View from East Hampton Sag Harbor Turnpike at Hardscrabble Road

Direction of View:
Southwest



Viewpoint 69

Location:
View from East Hampton Train Station

Direction of View:
West-Southwest

Viewpoint 70

Location:
View from Horseshoe Drive North

Direction of View:
North-Northeast

Viewpoint 71

Location:
View from Horseshoe Drive

Direction of View:
East-Northeast

Viewpoint 72

Location:
View from Horseshoe Drive

Direction of View:
East-Northeast

Viewpoint 73

Location:
View from Dune Alpin Drive North at Horseshoe Drive North

Direction of View:
Northeast

Viewpoint 74

Location:
View from Dune Alpin Drive South

Direction of View:
North

Viewpoint 75

Location:
View from North Main Street

Direction of View:
West

Sensitive Site:
East Hampton Village Historic District