

**REDACTED VERSION**

# **Sunrise Wind New York Cable Project**

## **Appendix 4-D Addendum**

### **Phase 1A Archaeological Survey**

Prepared for:

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## **Sunrise Wind Farm Project**

### **Phase IA Archaeological Survey Sunrise Wind Onshore Facilities – Victory Avenue Segment**

March 2021

## **Prepared by:**

Environmental Design & Research,  
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## **Submitted to:**

Bureau of Ocean Energy Management  
National Park Service  
Shinnecock Indian Nation  
Delaware Tribe of Indians  
Unkechaug Indian Nation  
Narragansett Indian Tribe  
Mashpee Wampanoag Tribe  
Wampanoag Tribe of Gay Head (Aquinnah)  
Mashantucket Pequot Tribal Nation  
Mohegan Tribe  
New York State Historic Preservation Office  
New York State Energy Research & Development Authority  
New York State Department of Public Service  
United States Fish and Wildlife Service



## MANAGEMENT SUMMARY

NYSHPO Project Review Number:	19PR00055
Involved State and Federal Agencies:	Bureau of Ocean Energy Management (BOEM); National Park Service (NPS); U.S. Fish and Wildlife Service (USFWS); New York State Energy Research and Development Authority (NYSERDA); New York State Department of Public Service (NYSDPS); New York State Historic Preservation Office (NYSHPO)
Phase of Survey:	Phase IA
Location Information:	Town of Brookhaven, Suffolk County, New York
Survey Area:	
Project Description:	The construction and installation of onshore electrical and ancillary components to connect an offshore wind farm to New York State's high-voltage electrical transmission network.
Project Area:	Preliminary Area of Potential Effect measures approximately 37.4 acres (15.1 hectares)
USGS 7.5-Minute Quadrangle Map:	<i>Bellport, NY; Moriches, NY</i>
Archaeological Resources Overview:	One Native American site overlaps with portions of the Preliminary Area of Potential Effect. An additional seven sites have been previously recorded within 0.25 miles (0.4 kilometers) of the Preliminary Area of Potential Effect, consisting of two Native American sites, four historic-period sites, and one multiple component Native American and historic-period site.
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Date of Report:	March 2021

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## 1.0 INTRODUCTION

### 1.1 Purpose of the Investigation

On behalf of Sunrise Wind LLC (Sunrise Wind), a 50/50 joint venture between Orsted North America Inc. (Orsted NA) and Eversource Investment LLC (Eversource), and Stantec, Environmental Design & Research, Landscape Architecture, Engineering, & Environmental Services, D.P.C. (EDR) has prepared this Phase IA archaeological survey for the proposed Sunrise Wind Farm Project (the Project). This report serves as an addendum to the Project's previously submitted *Phase IA Archaeological Survey* report (EDR 2020) and pertains specifically to a new segment of the Onshore Transmission Cable route (hereafter, the Victory Avenue Segment). This survey pertains only to terrestrial archaeology, and as such is only concerned with the Onshore Facilities associated with the Project, which are located entirely within the Town of Brookhaven, Suffolk County, New York. The Phase IA survey pertaining to marine archaeology is being prepared under separate cover.

The purpose of this Phase IA archaeological survey is to determine whether previously identified terrestrial archaeological resources are located in the Victory Avenue Segment Preliminary Area of Potential Effect (PAPE), and to evaluate the potential for previously unidentified terrestrial archaeological resources to be located within the PAPE. The information and recommendations included in this report are intended to assist the New York State Historic Preservation Office (NYSHPO), the Bureau of Ocean Energy Management (BOEM), and other state and/or federal agencies in their review of the Project's Onshore Facilities under Article VII of the New York State Public Service Law, the New York State Environmental Quality Review Act (SEQRA), Section 14.09 of the New York State Parks, Recreation and Historic Preservation Law, and/or Section 106 of the National Historic Preservation Act, as applicable.

The Phase IA archaeological survey was conducted under the supervision of an archaeologist who meets the U.S. Secretary of Interior's Standards for Archaeology and Historic Preservation (36 CFR 61) and is a Registered Professional Archaeologist (RPA). The survey was conducted in accordance with the New York Archaeological Council's (NYAC's) *Standards for Cultural Resources Investigations and the Curation of Archaeological Collections in New York State* (the NYAC Standards; NYAC 1994) and the NYSHPO's *Phase I Archaeological Report Format Requirements* (NYSHPO 2005), as appropriate.

BOEM will consult with Native American tribes and other parties to determine an appropriate approach for the identification and protection of cultural resources that may be present within the PAPE.

### 1.2 Onshore Facilities Location and Description

Sunrise Wind proposes to construct, own, and operate an offshore wind farm (the Project) to be located in federal waters on the Outer Continental Shelf (OCS), approximately 18.5 statute miles (mi) (16 nautical miles [nm]/30 kilometers [km]) southwest of Martha's Vineyard, Massachusetts, and approximately 30 statute mi (26 nm/48 km) east of Montauk, New York. Project components will be located in federal waters on the OCS, in state waters of New York, and onshore in the Town of Brookhaven, Suffolk County, New York. The proposed interconnection location is the Holbrook Substation, which is owned and operated by the Long Island Power Authority (LIPA).

This Phase IA archaeological survey pertains only to terrestrial archaeology for the Victory Avenue Segment, which is located entirely within the Town of Brookhaven, Suffolk County, New York (see Figure 1.2-1). As

stated above, this report serves as an addendum to the Project's previously submitted *Phase IA Archaeological Survey* report (EDR 2020), which was conducted for all of the Project's Onshore Facilities. For the purposes of this Phase IA survey, a PAPE was determined based on the maximum horizontal limits of ground disturbance for the Victory Avenue Segment, including potential variations. This PAPE serves as the bounds within which this Phase IA archaeological survey was conducted. It is anticipated that the vertical limits of disturbance for construction of the Victory Avenue Segment will range from approximately 3-ft (0.9-m) to 15-ft (4.6-m) in depth.

The Victory Avenue Segment is proposed to be installed within a trench within public road rights-of-way. Wherever possible, the Onshore Transmission Cable will run underneath existing paved sections of active roadways. Portions of the Onshore Transmission Cable will be installed via horizontal directional drilling (HDD), or other trenchless crossing. The approximate footprint of activities associated with these processes have been identified and are represented in Figure 1.2-2. The Victory Avenue Segment is proposed to be buried underneath Victory Avenue and measures approximately 2.2 mi (3.5 km) long (see Figure 1.2-2). Three potential route variations were evaluated to connect the Onshore Transmission Cable between Montauk Highway and Victory Avenue. The Onshore Transmission Cable along Victory Avenue and these three variations collectively have a PAPE of approximately 37.4 acres (15.1 hectares [ha]). HDD, or other trenchless crossing, would be utilized along these variations to install the Onshore Transmission Cable underneath Sunrise Highway. The three variations that were evaluated for this Phase IA survey include the:

- **Revilo Avenue Variation**, which measures approximately 0.3 mi (0.5 km) and will be buried beneath Revilo Avenue (see Figure 1.2-2);
- **Candido Avenue Variation**, which measures approximately 0.2 mi (0.3 km) and will be buried beneath Candido Avenue (see Figure 1.2-2); and
- **Smith/Old River Road Variation**, which measures approximately 0.2 mi (0.3 km) long and will be buried within the right-of-way of an abandoned section of Smith/Old River Road (see Figure 1.2-2).

The Project's offshore components are not considered part of the PAPE for terrestrial archaeological resources given their location in the marine environment. Potential impacts to any marine resources are considered under a separate report.

The following terms are used throughout this report:

- **The Project:** The proposed construction and operation of an offshore wind farm, as well as all associated offshore and onshore facilities.
- **The Preliminary Area of Potential Effect (PAPE):** The maximum spatial limits of ground disturbance associated with the Project's Onshore Facilities, which have the potential to impact terrestrial archaeological resources. This Phase IA survey pertains only to the portion of the PAPE for the Victory Avenue Segment, including variations.
- **The Onshore Transmission Cable:** The electrical transmission cable that will run from the landfall site to the Onshore Converter Station (OnCS–DC). This Phase IA survey pertains only to the Victory Avenue Segment, including variations.

### 1.3 Report Organization

This Phase IA archaeological survey report is organized into the following sections:

- **Section 2.0 – Background Research:** This report section documents the background research conducted in order to determine whether archaeological resources may be physically impacted by Onshore Facility construction. Section 2 documents the environmental setting of the PAPE (Section 2.1), details previous identified archaeological sites and previously conducted archaeological resource surveys located within and adjacent to the PAPE (Sections 2.2 and 2.3), describes the historic context of the region (Section 2.4), and documents existing conditions within the PAPE (Section 2.5).
- **Section 3.0 – Archaeological Sensitivity Assessment:** This report section assesses the pre-European contact Native American archaeological sensitivity and post-European contact archaeological sensitivity of the PAPE (Section 3.1), which is informed by Section 2. Prior disturbance and its effect on where archaeological resources may be encountered within the PAPE are also discussed (Section 3.2).
- **Section 4.0 – Archaeological Resources Survey Research Design:** This report section provides an overview of the recommended Phase IB archaeological testing strategy to be implemented prior to Onshore Facility construction. This section documents the locations and extent of the PAPE to be submitted to Phase IB survey, based on the results of archaeological reconnaissance (Section 4.1), as well as the methods to be carried out during the survey (Section 4.2).
- **Section 5.0 – Summary and Conclusions:** This report section summarizes the findings and recommendations of this Phase IA archaeological survey. A summary of the Phase IA archaeological assessment relating to previously identified archaeological sites, archaeological sensitivity, and prior ground disturbance is discussed (Section 5.1). This section also summarizes the recommended Phase IB archaeological testing strategy to be implemented prior to Onshore Facility construction in order to identify potential archaeological resources within the PAPE (Section 5.2).

## 2.0 BACKGROUND RESEARCH

### 2.1 Environmental Setting and Soils

The proposed Project's Onshore Facilities are located in south-central Suffolk County. The Onshore Facilities are located within the Atlantic Coastal Plain physiographic province, which is a very low-lying, low-relief area that was formed from sea level rising and falling events over the past 150 million years (see Figure 2.1-1). Therefore, the bedrock in this physiographic province is derived predominately from marine and littoral sediments. More recent deposits consist of large terminal glacial moraines and associated outwash plains formed during the Pleistocene Epoch (approximately 12,000 to 2.6 million years ago) (National Park Service [NPS] 2017).

The surficial geology of the Victory Avenue Segment vicinity is depicted on Figure 2.1-2 and consists of outwash sand and gravel. Ten mapped soil units are located within the Victory Avenue Segment PAPE; however, only four soil units individually compose more than 5 percent of the PAPE (Environmental Systems Research Institute [ESRI] and Natural Resources Conservation Service [NRCS] 2021; NRCS 2021). These soil units consist of glacially-deposited fluvial and deltaic sediments that range widely between sandy, loamy, and gravelly sediments (NRCS 2021). These soils range from well to excessively drained. Although collectively only composing 3.9 percent of the PAPE, two soil units (Cut and fill land, gently sloping [CuB] and Recharge basin [Rc]) of anthropogenic origin are present within the PAPE. A summary of typical characteristics for the mapped soils that individually compose 5 percent or more of the Victory Avenue Segment PAPE is provided in Table 2.1-1.

**Table 2.1-1. Major Mapped Soil Units within the Victory Avenue Segment PAPE (ESRI and NRCS 2021; NRCS 2021; SCS 1975).**

Name	% of PAPE	Soil Horizon Depth (inches)	Color <sup>1</sup>	Texture, Inclusions <sup>2</sup>	Slope %	Drainage	Landform
Riverhead sandy loam, 0 to 3% slopes (RdA)	52.7	<ul style="list-style-type: none"> <li>0 to 12</li> <li>12 to 27</li> <li>27 to 32</li> <li>32 to 35</li> <li>35 to 40</li> <li>40 to 65</li> </ul>	<ul style="list-style-type: none"> <li>Brn to Dk Brn</li> <li>StrBrn</li> <li>YBrn</li> <li>YBrn</li> <li>Brn to Dk Brn</li> <li>VPI Brn</li> </ul>	<ul style="list-style-type: none"> <li>SaLo</li> <li>SaLo</li> <li>LoSa</li> <li>Grl LoSa</li> <li>Sa</li> <li>Cs and Md Sa</li> </ul>	0 to 3	Well drained	Moraines, outwash plains
Plymouth loamy sand, 3 to 8% slopes (PIB)	15.8	<ul style="list-style-type: none"> <li>0 to 4</li> <li>4 to 10</li> <li>10 to 17</li> <li>17 to 27</li> <li>27 to 58</li> </ul>	<ul style="list-style-type: none"> <li>VDk GBrn</li> <li>YBrn</li> <li>YBrn</li> <li>Brn</li> <li>YBrn</li> </ul>	<ul style="list-style-type: none"> <li>LoSa</li> <li>LoSa</li> <li>LoSa</li> <li>LoSa</li> <li>Grl Cs Sa</li> </ul>	3 to 8	Excessively drained	Moraines, outwash plains
Plymouth loamy sand, 0 to 3% slopes (PIA)	10.7	<ul style="list-style-type: none"> <li>0 to 4</li> <li>4 to 10</li> <li>10 to 17</li> <li>17 to 27</li> <li>27 to 58</li> </ul>	<ul style="list-style-type: none"> <li>VDk GBrn</li> <li>YBrn</li> <li>YBrn</li> <li>Brn</li> <li>YBrn</li> </ul>	<ul style="list-style-type: none"> <li>LoSa</li> <li>LoSa</li> <li>LoSa</li> <li>LoSa</li> <li>Grl Cs Sa</li> </ul>	0 to 3	Excessively drained	Moraines, outwash plains
Haven loam, 0 to 2% slopes (HaA)	7.7	<ul style="list-style-type: none"> <li>0 to 2</li> <li>2 to 5</li> <li>5 to 19</li> <li>19 to 28</li> <li>28 to 60</li> </ul>	<ul style="list-style-type: none"> <li>Dk Gry</li> <li>Gry or Lt Gry</li> <li>Brn</li> <li>StrBrn</li> <li>Lt YBrn to BYlw</li> </ul>	<ul style="list-style-type: none"> <li>Highly decomposed plant material</li> <li>Lo</li> <li>Lo</li> <li>Grl Lo</li> <li>Grl Sa</li> </ul>	0 to 2	Well drained	Outwash plains

<sup>1</sup> Lt = Light; Dk = Dark; Pl = Pale; V = Very; / = Mottled; Brn = Brown; Blk = Black; Gry = Gray; Wht = White; Ylw = Yellow; Olv = Olive; GBrn = Gray Brown; StrBrn = Strong Brown; RBrn = Red Brown; YBrn = Yellow Brown; OBrn = Olive Brown; BGry = Brownish Gray; BYlw = Brownish Yellow; RGry = Reddish Gray  
<sup>2</sup> Fn = Fine; Md = Medium; Cs = Coarse; V = Very; Cl = Clay; Si = Silt; Sa = Sand; Lo = Loam; Grl = Gravel; Cbs = Cobbles; Pbs = Pebbles; Chn = Channery; Rts = Roots

## 2.2 Previous Archaeological Resource Investigations

EDR consulted NYSHPO's online Cultural Resource Information System (CRIS) database to determine if previous archaeological surveys have been conducted within, or within 0.25 mi (0.4 km) of, the Victory Avenue Segment PAPE.

Three previous archaeological surveys/investigations overlap with the central and eastern portions of the PAPE (see Table 2.2-1; see Figure 2.2-1). They consist of one Phase IA survey in support of municipal sewer improvements (LBG 2016), one Phase IB survey in support of municipal sewer improvements (CAC 2018), and one combined Phase IA/IB archaeological and architectural survey in support of road improvements (NYSM 2010). For two of these three, no archaeological testing (i.e., shovel testing, pedestrian surface survey, etc.) conducted for these surveys overlaps with the PAPE. A review of the technical report for Survey 10SR60344 (NYSM 2010), which consisted of archaeological survey along both sides of Sunrise Highway, indicates that shovel testing conducted for this project overlaps large portions of the PAPE, measuring approximately 11.4 acres (4.6 ha) total. These areas are located along the south side of Victory Avenue, approximately between its intersections with Strawberry Lane and River Road, and along both sides of Sunrise Highway adjacent to Old River/Smith Road, Candido Avenue, and Revilo Avenue (see Figure 2.2-1). No archaeological resources were identified within the PAPE at these locations (see Figure 2.2-1).

In addition, three previous archaeological surveys/investigations have been conducted within 0.25 mi (0.4 km) of the PAPE. They consist of three combined Phase IA/IB surveys in support of residential and retail development and bicycle/pedestrian path construction (RBAG 2012; TAS 2002; TAS 2004) (see Table 2.2-1; see Figure 2.2-1).

**Table 2.2-1. Previous Archaeological Resource Investigations within 0.25 mi (0.4 km) of the Victory Avenue Segment PAPE.**

Year	Survey Number	Report Name	Sites Identified/ Investigated <sup>1</sup>	Distance from PAPE	Reference
2010	10SR60344	Cultural Resources Reconnaissance Survey Report, PIN 0059.08, NYS Route 27 from NYS Route 112 to Wading River Road			NYSM 2010
2016	16SR00867	Phase IA Archaeological Sensitivity Assessment, Forge River Watershed Sewer Project			LBG 2016
2018	18SR56022	Phase IB Field Test Report, Forge River Watershed Sewer Project			CAC 2018
2002	02SR52348	Phase I Archaeological Investigation for The Proposed Aspen Creek Estates			TAS 2002
2012	12SR61205	Phase I Archaeological Survey, River Road Path			RBAG 2012

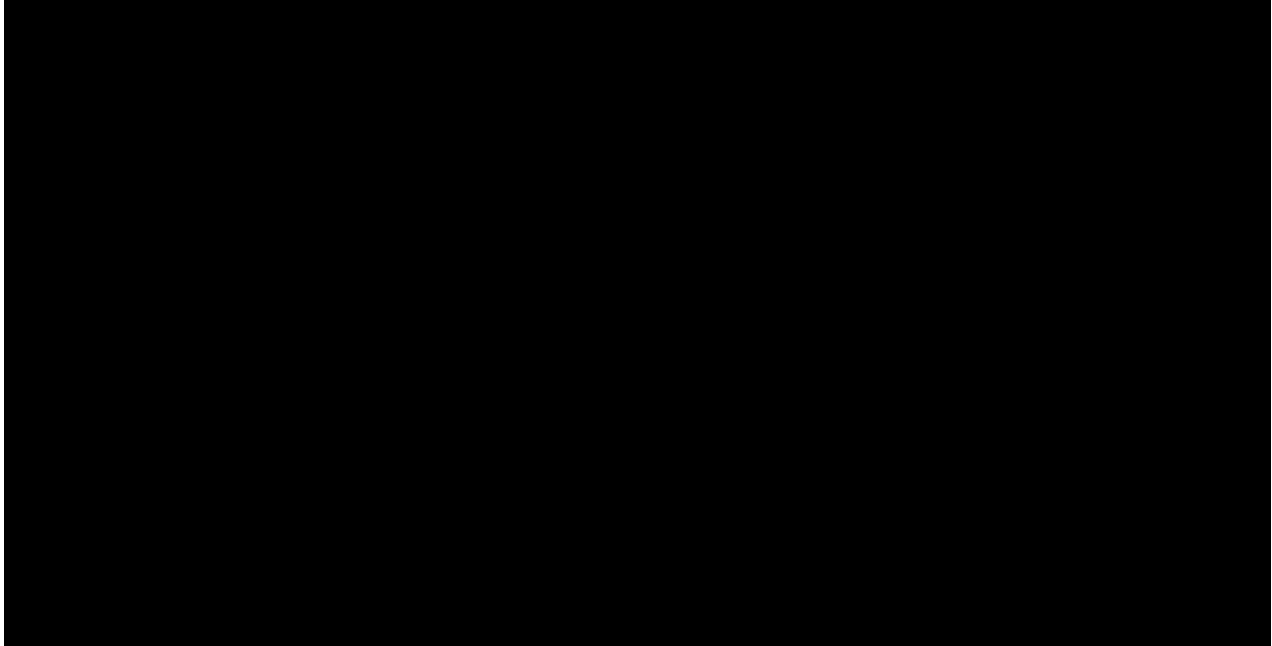


Year	Survey Number	Report Name	Sites Identified/ Investigated <sup>1</sup>	Distance from PAPE	Reference
2004	04SR54386	Phase I Archaeological Investigations for the Proposed ACE Builders at Southaven Subdivision			TAS 2004

<sup>1</sup> For surveys extending outside the 0.25 mi (0.4 km) search radius, only archaeological sites within 0.25 mi (0.4 km) of the PAPE are included in this table.

## 2.3 Previously Identified Archaeological Resources





## 2.4 Pre-European Contact Native American and Post-European Contact Historic Context

The following cultural context briefly summarizes the pre-European contact period Native American settlement of eastern Long Island and post-European contact period settlement as it relates to cultural resources which may be present within the PAPE. A more in-depth summary can be found in the previously submitted *Phase IA Archaeological Survey* report (EDR 2020). Table 2.4-1 provides a summary of Native American cultural periods for Long Island that are typically recognized by archaeologists.

Archives and repositories consulted during EDR's historical research for the Onshore Facilities included the online digital collections of the Library of Congress, New York State Library, New York Heritage, David Rumsey Map Collection, and the United States Geological Survey (USGS), as well as EDR's in-house reference materials. Additionally, EDR reviewed the *Gazetteer of the State of New York* (French 1860), *Historical and Descriptive Sketches of Suffolk County...From First Settlement by Europeans* (Bayles 1874), *History of Suffolk County, New York with Illustrations, Portraits, & Sketches of Prominent Families and Individuals* (Munsell 1882), and *The History of Long Island, From Its Earliest Settlement to the Present Time* (Ross 1902). Historic maps reviewed included the 1780 Covens et al. *Connecticut and Parts Adjacent* (Covens et al. 1780), the 1804 Bradley et al. *Map of the United States, Exhibiting the Post-Roads, the Situations, Connections & Distances of the Post-Offices, Stage Roads, Counties & Principal Rivers* (Bradley et al. 1804), the 1804 DeWitt *A Map of the State of New York* (DeWitt 1804), the 1829 Burr *Map of the County of Suffolk* (Burr 1829), the 1839 Burr *Map of New York Exhibiting the Post Offices, Post Roads, Canals, Rail Roads &c.* (Burr 1839), the 1840 Burr *Map of the County of Suffolk* (Burr 1840), the 1858 Chace et al. *Map of Suffolk Co., L.I., New York* (Chace et al. 1858; see Figure 2.5-1), the 1873 Beers *Atlas of Long Island, New York* (Beers 1873), the 1904 USGS *Moriches, NY 1:62500 Topographic Quadrangle* (USGS 1904), the 1915 and 1917 Hyde *Atlas of a Part of Suffolk County, Long Island, New York* (Hyde 1915, 1917), the 1926 USGS *Moriches, NY 1:62500 Topographic Quadrangle* (USGS 1926; see Figure 2.5-2), the 1947 and 1956 USGS *Bellport, NY 1:24000 Topographic Quadrangles* (USGS 1947, 1956; see Figure 2.5-3), the 1957 USGS *Moriches, NY 1:24000 Topographic Quadrangle* (USGS

1957; see Figure 2.5-3), and the 1967 USGS *Bellport, NY and Moriches, NY* 1:24000 Topographic Quadrangles (USGS 1967a, 1967b).

**Table 2.4-1. Native American Cultural Periods for Long Island.**

Time Period	Environment	Settlement Pattern & Subsistence Strategy	Artifact Assemblage	Comments
Paleoindian Period (Prior to 10,000 BP)	Non-forested plains; Pleistocene megafauna present along the coast; low sea level causes coastline to be miles out to sea from its current location	Mobile hunting and gathering	Fluted points	Sites along coastlines now inundated under the Atlantic Ocean; low population density; sites are extremely rare; very few sites dating to the Paleoindian Period are known from Long Island
Early Archaic Period (10,000-8,000 BP)	Warmer and wetter conditions relative to previous period; sea level begins to rise	Mobile hunting and gathering (but somewhat decreased mobility)	Bifurcated points	Sites along coastlines now inundated under the Atlantic Ocean; low population density; sites are extremely rare; very few sites dating to the Early Archaic Period are known from Long Island
Middle Archaic Period (8,000-6,000 BP)	Continuation of warm and wet conditions; sea level rise and coast stabilizes near current extent; pine and oak dominated forests give way to mixed deciduous forests	Mobile hunting and gathering; seasonal exploitation of resources; initial exploitation of marine resources at the end of this period	Sylvan Lake Phase; Sylvan Lake stemmed projectile points, notched atlatl weights, biface knives, drills, side scrapers, hammerstones, and choppers	Small seasonal sites utilizing a majority of terrestrial fauna for subsistence; marine shellfish were utilized but not deposited in great numbers due to high mobility; very few sites dating to the Middle Archaic Period are known from Long Island
Late Archaic Period (6,000-3,500 BP)	Continuation of warm and wet conditions	Somewhat high residential mobility, likely on a seasonal basis; exploitation of marine resources (not widely represented)	Snook Kill Phase; Wading River and Snook Kill projectile point types; cremation burials in shallow pits; stone toolkit	Larger population sizes than the previous period; small settlements seasonally located on upland landforms and sandy plateaus
Transitional Period (4,000-3,000 BP)	Cooling trend; mixed deciduous forests persist	Somewhat high residential mobility, likely on a seasonal basis; small scale exploitation of marine resources	Orient Phase; small shell middens; cemeteries; Orient fishtail projectile points (quartz); soapstone vessels	Shellfish exploitation in seasonal camps leaving middens; burials in cemeteries
Early Woodland Period (3,000-2,300 BP)	Cooler temperatures persist; mixed deciduous forests persist	Terrestrial foraging coupled with intensive exploitation of marine resources	Middlesex Phase; large shell middens/rings; presence of ceramics	Increased sedentism leads to larger communities developing leaving more material traces
Middle Woodland Period (2,300-1,000 BP)	Warming and drying trend (Medieval Climatic Anomaly); mixed deciduous forests persist	Terrestrial foraging coupled with intensive exploitation of marine resources; introduction of agriculture	Northbeach and Clearview Phases; lithic toolkits including quartz projectile points; shell-tempered and stamped ceramics	Large communities exploiting all available resources; introduction of agriculture

Time Period	Environment	Settlement Pattern & Subsistence Strategy	Artifact Assemblage	Comments
Late Woodland Period (1,000-400 BP)	Warm and dry conditions persist; mixed deciduous forests persist	Sedentary villages supported by agriculture; seasonal camps targeting large and small game, plants, riverine, and marine resources	Sebanoc, Bowmans Brook, Clasons, Shanlok and Niantic Phases; wide variety of projectile point types; high frequency of projectile points, including quartz; highly decorated ceramics	Large communities exploiting all available resources, including agriculture; relationships with surrounding populations result in consistent trade
Contact Period (400 BP)	Cooler and wetter conditions (Little Ice Age); mixed deciduous forests persist	Sedentary villages supported by agriculture; seasonal camps targeting large and small game, plants, riverine, and marine resource	Similar technology to Late Woodland Period, as well as European trade goods; shell wampum	Relationships with the English and Dutch reveal a mixture of pre-European contact and post-European contact material culture/technologies; large manufacture of wampum to facilitate political interests

At the time of contact between Native Americans and Europeans in southern New England and New York, the Montaukett Indian Nation inhabited all of Long Island east of the approximate location of the modern-day Queens County Line. Due to extensive notes and manuscripts from early European settlers throughout Long Island and New England, there is a wealth of knowledge about native populations at the time of contact. Settlement patterns in southern New England and Long Island were focused around a residential village which was occupied for much of the year, with seasonally occupied logistical camps at fishing stations, wild plant collection areas, or other areas of high natural resource richness such as tidal marshes and forests. Typically, summers were spent harvesting natural resources as they came into season as well as growing and harvesting agricultural staples such as corn, beans, and squash; whereas during the winters, populations subsisted on preserved food stores and hunted game. On Long Island specifically, the main locus of occupation was at the cornfields. Hunting and fishing sites were utilized throughout the year, and utilized heavily outside of harvest seasons, but evidence supporting a predictable seasonal cycle has not been discovered. Houses within the main residential village were abandoned after the death of their inhabitants, and entire villages would relocate if the local firewood supply became depleted (Montaukett Indian Nation 2015; Salwen 1978a).

Several Native American groups were recorded during the establishment of English towns in the vicinity of the Town of Brookhaven, including the Setalcott (or Setauket), Secatogue, Patchogue, Unquachog (or Unkechaug), Shinnecock, and Montaukett. The Setauket's territory was primarily along the north shore at the Long Island Sound, while the latter groups lived on the south shore and South Fork. The Montauketts reportedly occupied the South Fork east of the Shinnecock territory, although their own history indicates that they occupied all of Long Island east of the modern-day Queens County line, as noted above. English historical accounts describe a sachem for each group who served as a leader. These sachems were described as brothers; however, this status was likely cultural rather than familial affiliation. Their groups would occasionally converge under duress from war or for particularly important cultural gatherings (Ales 1993; Montaukett Indian Nation 2015; Wunderlich 2005).

Early in the seventeenth century, the Dutch and English rivalry included alliances with local Native American groups. Growing tensions between the Pequot alliance of tribes in Connecticut and western Long Island and

the English colonists and allied tribes (including the Montaukett) in Massachusetts and eastern Long Island erupted into protracted violence. This conflict was later called the Pequot War, which lasted from 1636 to 1638. The Montauketts and their surrounding groups had courted an alliance with the English in order to achieve favorable trade and peace. This alliance served them well during the Pequot War, but did not last long as the English soon turned their eyes toward the rich lands of eastern Long Island (Ales 1993; Salwen 1978a).

English colonization on Long Island began under the authority of the Plymouth Colony following the defeat of the Pequot nation. In 1639, Lion (also, Lyon) Gardiner established the first English settlement in what would become New York State on Gardiner's Island. In 1648, a royal British charter established Long Island as a colony distinct from New York and Connecticut, which resulted in the Montaukett's sale of much of the island to English settlers (Ales 1993; French 1860).

The Town of Brookhaven was established in 1655 when six settlers from New England and Long Island purchased land from the Setauket nation in exchange for tools, gunpowder, lead, wampum, and other supplies. They initially settled along the Long Island Sound at Setauket, named after the original inhabitants. The government in Brookhaven was largely independent and run by town meetings; however, the town was briefly under the protection of the Colony of Connecticut from 1659 to 1662. In 1664, King Charles II of England granted New Amsterdam and Long Island to his brother, James, Duke of York, which would become the Colony of New York following the expulsion of the Dutch. Shortly afterwards, Governor Nicolls issued a patent in 1666 confirming title to the land already purchased in the colony. In 1686, Governor Dongan instituted the "Dongan Patent," which formally established the Town of Brookhaven's government, provisions, and procedures (Munsell 1882; Ross 1902; Town of Brookhaven 2020a, 2020b).

Acculturation of Native American populations in eastern Long Island was intrinsically tied to the whaling industry and its effect on the region between the eighteenth and twentieth centuries. At the start of this period, the resistance to English practices, including European-style agriculture and housing was staunch. Many Native Americans rented out tribal lands to English populations for farming and made a living off the rent received in-lieu of practicing European farming methods themselves (Salwen 1978b). Due to consistent expansion of European settlements, as well as land use restrictions imposed on Native populations, many of the subsistence and settlement patterns they had practiced in preceding periods were no longer feasible. In response to this economic climate many Native American men in the area turned to wage-earning occupations like whaling and fishing.

## 2.5 Existing Conditions

Existing conditions within the Victory Avenue Segment PAPE were observed and photographed during archaeological reconnaissance, which was conducted by two EDR archaeologists on November 3, 2020. The reconnaissance included walking or driving along the proposed route of the Victory Avenue Segment to record existing conditions, primarily for documenting the extent of previous disturbance within the PAPE. Observations of existing conditions within the PAPE are depicted on Figure 2.6-1 and in Appendix A, and include the following:

- Being located on the Atlantic Coastal Plain physiographic province, the Victory Avenue Segment PAPE is located across a low-lying area of minimal relief. The PAPE is located across gently undulating glacial outwash plain terrain that varies from flat to gently sloping. Very little of the PAPE

intersects steep terrain (i.e., in excess of 12 to 15 percent slope). The PAPE is bisected by the Carmans River, which flows southward between the hamlets of South Haven and Shirley.

- Onshore Facilities occurs within a heavily developed area of Suffolk County. In the vicinity of the Victory Avenue Segment, this development is largely suburban in nature, characterized by uniformly subdivided neighborhoods consisting of tightly-spaced homes situated along rectilinear road networks. Outside of these residential areas, the Victory Avenue Segment vicinity is relatively undeveloped, consisting of woodland, farmland, or recreational space. The Victory Avenue Segment vicinity has also been heavily developed for transportation purposes, particularly Sunrise Highway, which both parallels and bisects the Victory Avenue Segment. The heavily developed nature of the Victory Avenue Segment vicinity has caused extensive disturbance throughout the PAPE. See Section 3.2 below for a more detailed discussion of prior ground disturbance within the PAPE.
- Vegetation within the PAPE varies between mixed deciduous and coniferous woodland, residential and commercial lawns and landscaped gardens, and grassy and scrubby roadside shoulder areas.

## 3.0 ARCHAEOLOGICAL SENSITIVITY ASSESSMENT

### 3.1 Native American and Euro-American Archaeological Sensitivity Assessment

[REDACTED]

[REDACTED]

In general terms, portions of the PAPE that are not located close to freshwater streams and wetlands (and associated ecological habitats) are less likely to contain potentially significant Native American archaeological sites. Therefore, those portions of the PAPE generally located proximate to sources of freshwater should be considered as having a relatively higher potential for the presence of Native American archaeological resources.

As described in Section 2.4 above and illustrated on historic maps (see Figures 2.5-1 to 2.5-3), the surrounding area has an historic-period occupational history since at least the mid-seventeenth century. [REDACTED]

[REDACTED]

As illustrated by these sites, when determining the probability of encountering historic-period archaeological resources, increased potential exists at the locations of former structures. As such, a review of historic maps for identifying map-documented structures (MDSs) is the most effective way for determining historic-period archaeological sensitivity. The following represents a brief overview of historic maps for the Victory Avenue Segment vicinity, which underwent conservative development throughout the nineteenth century before undergoing rapid suburbanization in the twentieth century.

Historic maps reveal that up until the mid-twentieth century, the Victory Avenue Segment vicinity remained largely undeveloped. During the mid-nineteenth and early twentieth centuries, almost none of the roads along which the Victory Avenue Segment PAPE is sited were in existence, and very few structures were located in the PAPE's vicinity (Chace et al. 1858; USGS 1904, 1926; see Figures 2.5-1 and 2.5-2). MDSs at this time, including houses, schools, mills, shops, and churches, were located along South Country Road (Montauk

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Highway today), south of the PAPE. The 1858 Chace et al. *Map of Suffolk County, Long Island, New York* and 1926 USGS *Moriches, NY 15-Minute Topographic Quadrangle* depict cleared land for agriculture surrounding these structures amongst a heavily wooded landscape (Chace et al. 1858; USGS 1926). In the vicinity of the Victory Avenue Segment, roads during the mid-nineteenth and early twentieth centuries consisted of diagonal thoroughfares running between various settlements.

Between the early to mid-twentieth century, the Town of Brookhaven transitioned from an agricultural community to a burgeoning suburb. At this time, the Victory Avenue Segment witnessed drastic suburban development, including the construction of numerous roads and increased population density (USGS 1947, 1956, 1957, 1967a, 1967b; see Figure 2.5-3). The most significant development consisted of the construction of Victory Avenue and Sunrise Highway, both of which involved significant modification of the landscape, particularly in the vicinity of the Carmans River. In addition, a rectilinear road network was established across the eastern end of the Victory Avenue Segment, within the Hamlet of Shirley, to facilitate residential and commercial development for a rapidly growing commuter population. This growth has continued to the present day.

Due to the presence of previously identified historic-period archaeological sites near the Victory Avenue Segment, the PAPE should be considered to have an elevated sensitivity for the presence of historic-period archaeological resources. Based on the historic map review (see Figures 2.5-1 to 2.5-3), historic-period archaeological sites most likely to be encountered within the PAPE would be associated with early to mid-twentieth century residences. However, a greater likelihood exists for encountering pre-twentieth century historic-period archaeological sites in the vicinity of the Hamlet of South Haven, which existed prior to suburbanization.

### 3.2 Prior Ground Disturbance

Previous ground disturbance throughout the Victory Avenue Segment vicinity has been significant over the past century, during which a largely wooded environment with scattered houses, farms, and hamlets has transformed into a densely populated and commercially developed sprawling suburban landscape. This transformation occurred relatively quickly and deliberately as developers purchased large tracts of land during the early and mid-twentieth century and constructed uniformly subdivided neighborhoods for a rapidly growing commuter population of middle-class Americans. Development throughout the Victory Avenue Segment continues to the modern day as new residences and businesses are constructed within interstitial pockets of undeveloped land. This development would have significantly disturbed, if not destroyed, any archaeological sites that may have been present within now-developed areas. Limited to the Victory Avenue Segment PAPE specifically, this disturbance is predominately the result of road construction and maintenance.

The *NYAC Standards* (NYAC 1994) indicate that Phase I archaeological survey is not necessary in delineated wetlands, inundated terrain, previously disturbed areas, and areas where slopes exceed 12 to 15 percent. Slope is not a significant factor in the archaeological sensitivity of the PAPE as the Victory Avenue Segment is predominately located across flat to gently sloping terrain.

Prior ground disturbance within the Victory Avenue Segment PAPE was recorded by two EDR archaeologists on November 3, 2020, which included walking or driving along the proposed route of the Victory Avenue Segment Onshore Transmission Cable along Victory Avenue, Smith/Old River Road, and Candido Avenue to record existing conditions, which were documented by photographs, field notes, and GPS data. The primary goal of the reconnaissance was to identify those areas adjacent to the existing roadway along the Victory



Avenue Segment Onshore Transmission Cable route where visible prior ground disturbance (e.g., engineered/artificial landforms, grading, cut and fill, and/or buried utility markers) was evident (and therefore would not require archaeological testing), as well as those areas that appear undisturbed (and therefore would require archaeological testing). Observations of existing conditions within the PAPE are depicted on Figure 2.6-1 and in Appendix A.

Subsequent to this archaeological reconnaissance, the Victory Avenue Segment PAPE was modified to include the Revilo Avenue Variation, areas adjacent to Sunrise Highway, and trenchless crossing footprints. Existing conditions within these additional areas were determined via desktop assessment based on a combination of historic and modern aerial imagery, historic maps, digital elevation model (DEM) data, contour data, NRCS soil data, and Google Street View, as well as field observations noted within the vicinity of the conducted archaeological reconnaissance fieldwork. Evaluation of the trenchless crossing footprints was not conducted independently as they fall within the PAPE of their associated Onshore Facility (i.e. the Victory Avenue Segment Onshore Transmission Cable).

Results of the archaeological reconnaissance and desktop assessment for the Victory Avenue Segment are summarized as follows:

- The large majority of the Victory Avenue Segment PAPE was found to have been previously disturbed, and as such does not warrant archaeological testing (see Figure 2.6-1). In addition to the construction of the roadways themselves that this Onshore Transmission Cable route segment is sited along, disturbance was also noted in the form of modified/made land associated with road cuts and berms, grading, paving, buried utilities, sidewalks, landscaping, and excavations for a groundwater recharge basin (see Appendix A: Photographs 1-6). Much of this disturbance is the result of the close proximity of Sunrise Highway (and its interchanges) and significant earthmoving that occurred for the Carmans River crossings of Victory Avenue and Sunrise Highway (see Appendix A: Photograph 1). Historic maps and aerial imagery, as well as observed field conditions, indicate that Victory Avenue crosses the Carmans River on an artificial berm, construction of which involved both the creation of made land within areas previously occupied by the river and the removal and subsequent inundation of natural terrain (see Appendix A: Photograph 3).
- Based on currently available information and observations noted during archaeological reconnaissance, approximately 33.2 acres (13.4 ha) of the Victory Avenue Segment PAPE has been previously disturbed, is inundated, is located on slopes in excess of 12 to 15 percent, or has been previously submitted to Phase IB archaeological survey (see Section 2.2 above; see Figure 2.6-1). The remaining 4.2 acres (1.7 ha) of the PAPE are potentially undisturbed, consisting of undeveloped, or lightly developed, terrain adjacent to existing roadways along this route (see Appendix A: Photographs 7-10; see Figure 2.6-1). See Section 4.1 below for a breakdown of potentially undisturbed terrain.

## 4.0 ARCHAEOLOGICAL RESOURCES SURVEY RESEARCH DESIGN

### 4.1 Phase IB Archaeological Survey Recommendations

As discussed in Section 3.2 above, the results of the archaeological reconnaissance indicate that the large majority of the Victory Avenue Segment PAPE has been previously disturbed. However, portions of the PAPE are located on potentially undisturbed terrain. In order to identify any archaeological sites that could be disturbed by Onshore Facility-related construction, a Phase IB archaeological survey is proposed only in those areas which have been identified as potentially undisturbed (see Figure 2.6-1). Note that the archaeological testing plan presented herein is preliminary in nature and is based on available sources of information that have been reviewed to date, in addition to observations noted in the field. To further refine the evaluation of areas where Phase IB archaeological survey (i.e., shovel testing) may be appropriate, EDR anticipates reviewing additional sources of information, such as utility data shapefiles, and/or as-built road plans to further refine evaluation of prior disturbance within the PAPE. Therefore, the anticipated scope of Phase IB archaeological survey fieldwork will continue to be refined concurrent with potential refinement of the Onshore Facility designs and revisions to the PAPE.

To evaluate and define potential Phase IB fieldwork efforts (i.e., number of shovel tests), areas identified as potentially undisturbed within the PAPE were classified as either “Linear” or “Block.” Portions of the PAPE classified as “Linear” consist of narrow (50 ft [15 m] or less) areas along existing roadways between the edge of pavement and road right-of-way boundary, while portions of the PAPE classified as “Block” consist of wider (more than 50 ft [15 m]) and/or irregular areas along existing roadways between the edge of pavement and road right-of-way boundary. “Linear” areas would be surveyed via a single transect of shovel tests spaced every 50 ft (15 m) if only one side of the roadway was deemed potentially undisturbed or if both sides were deemed potentially undisturbed but were more than 50 ft (15 m) apart. “Linear” areas would be surveyed on a single staggered-transect on either side of the roadway (i.e., spaced every 100 ft [30 m] on a single side of the road) if both sides of the roadway were deemed potentially undisturbed and less than 50 ft (15 m) apart. “Block” areas would be surveyed via a grid of shovel tests at 50-ft (15-m) intervals, or 16 shovel tests per acre. Table 4.1-1 presents the amount of potential “Linear” and “Block” testing for the Victory Avenue Segment PAPE.

**Table 4.1-1. Potential Phase IB Fieldwork Efforts for the Victory Avenue Segment PAPE.**

Onshore Facility	Linear (Feet/Meters)	Block (Acres/Hectares)
Onshore Transmission Cable – Victory Avenue Segment	8,481/ 2,585	1.2 / 0.5

No archaeological survey is recommended for those portions of the PAPE that overlap with Phase IB archaeological testing conducted for prior surveys. As discussed in Section 2.2 above, shovel testing conducted for a prior survey (10SR60344 [NYSM 2010]), overlaps large portions of the PAPE, measuring approximately 11.4 acres (4.6 ha) total. These areas are located along the south side of Victory Avenue, approximately between its intersections with Strawberry Lane and River Road, and along both sides of Sunrise Highway adjacent to Old River/Smith Road, Candido Avenue, and Revilo Avenue (see Figure 2.6-1). No archaeological resources were identified within the PAPE at these locations.

## 4.2 Phase IB Archaeological Survey Methodology

A more intensive discussion of the Phase IB archaeological survey methodology is included in the previously submitted *Phase IA Archaeological Survey* report (EDR 2020). The methodology described in that report will be followed for the Phase IB archaeological testing of the Victory Avenue Segment. Because the Onshore Transmission Cable is proposed to be buried underneath active, public roadways, archaeological testing will be conducted within unpaved portions of the road rights-of-way, along shoulder areas adjacent to the pavement as removing the pavement to conduct archaeological testing prior to construction is not feasible, given the expenses and logistical arrangements that would be required (e.g., the need for re-routing traffic and potentially emergency vehicles). Phase IB archaeological survey will be limited to shovel testing as no portions of the PAPE are suitable for pedestrian surface survey. Shovel testing is only proposed for those areas identified during the archaeological reconnaissance and desktop assessment as potentially undisturbed. These areas do not include wetlands, inundated terrain, or slopes in excess of 12 to 15 percent slope, as these areas are not required under the *NYAC Standards* (NYAC 1994).

## 5.0 SUMMARY AND CONCLUSIONS

### 5.1 Summary of Phase IA Archaeological Survey

Relative to the potential for archaeological sites to be located in the PAPE, the results of the Phase IA archaeological survey can be summarized as follows:

- No previously identified cultural resources are located in the PAPE for the Victory Avenue Segment.
- [REDACTED]
- [REDACTED] the PAPE should be considered to have an elevated sensitivity for the presence of Native American archaeological resources.
- [REDACTED]
- [REDACTED] the PAPE should be considered to have an elevated sensitivity for the presence of historic-period archaeological resources.
- An archaeological reconnaissance and desktop assessment of the Victory Avenue Segment was conducted to determine the extent of previous disturbance within the PAPE. This reconnaissance and desktop assessment found that the large majority of the PAPE has been previously disturbed by road construction and maintenance, modified/made land associated with road cuts and berms, grading, paving, buried utilities, sidewalks, landscaping, and excavations for a groundwater recharge basin.
- The archaeological reconnaissance and desktop assessment identified portions of the Victory Avenue Segment PAPE which are potentially undisturbed, as they are located on undeveloped, or lightly developed, terrain.

### 5.2 Summary of Phase IB Archaeological Survey Research Design

Based on the results of the archaeological reconnaissance and desktop assessment, it is the opinion of EDR that portions of the Victory Avenue Segment PAPE do not warrant archaeological testing due to prior ground disturbance.

EDR recommends that archaeological testing only be conducted within those portions of the PAPE that have been identified as potentially undisturbed and have not been submitted to shovel testing by previous archaeological surveys. Based on the current Onshore Facility designs, it is anticipated that the Phase IB archaeological survey for the Victory Avenue Segment will include:

- The excavation of shovel tests along approximately 8,481 linear ft (2,585 linear m) of roadside areas and across 1.2 acres (0.5 ha) of potentially undisturbed terrain adjacent to existing roadways.
- Preparation of a Phase IB archaeological survey report (or reports), to be submitted to NYSHPO via the CRIS website. The report (or reports) will be prepared in accordance with applicable portions NYSHPO's *Phase I Archaeological Report Format Requirements* (NYSHPO 2005).
- Submission of site information for any identified archaeological sites via the CRIS website.

Note that the archaeological testing plan presented herein is preliminary in nature and is based on available sources of information that have been reviewed to date, in addition to observations noted in the field. To further refine the evaluation of areas where Phase IB archaeological survey (i.e., shovel testing) may be appropriate, EDR anticipates reviewing additional sources of information, such as utility data shapefiles and/or as-built road plans, to further refine evaluation of prior disturbance within the PAPE prior to commencement of Phase IB testing. Therefore, the anticipated scope of Phase IB archaeological survey fieldwork will continue to be refined concurrent with potential refinement of the Onshore Facility designs and revisions to the PAPE.

EDR provided this research design to NYSHPO in advance of conducting the Phase IB archaeological survey to confirm the anticipated field methodology for the Victory Avenue Segment and to ensure that the proposed scope of the survey is consistent with NYSHPO's expectations.

## 6.0 REFERENCES

Ales, M. 1993. "A History of the Indians of Montauk, Long Island." In *The History and Archaeology of the Montauk, Volume Three, Second Edition*, Gaynell Stone, ed. Stony Brook, NY: Suffolk County Archaeological Association and Nassau County Archaeological Committee.

Bayles, R.B. 1874. *Historical and Descriptive Sketches of Suffolk County, and Its Towns, Villages, Hamlets, Scenery, Institutions, and Important Enterprises; With A Historical Outline of Long Island, From Its First Settlement by Europeans*. Richard M. Bayles, Port Jefferson, NY.

Beers, F.W. 1873. *Atlas of Long Island, New York*. Beers, Comstock & Cline, New York. David Rumsey Historical Map Collection. Available at [https://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~217374~5503560:New-York-?sort=Pub\\_List\\_No\\_InitialSort%2CPub\\_Date%2CPub\\_List\\_No%2CSeries\\_No&qvq=w4s:/where%2FNew%2BYork;q:New%20York%20State;sort:Pub\\_List\\_No\\_InitialSort%2CPub\\_Date%2CPub\\_List\\_No%2CSeries\\_No;lc:RUMSEY~8~1&mi=20&trs=420#](https://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~217374~5503560:New-York-?sort=Pub_List_No_InitialSort%2CPub_Date%2CPub_List_No%2CSeries_No&qvq=w4s:/where%2FNew%2BYork;q:New%20York%20State;sort:Pub_List_No_InitialSort%2CPub_Date%2CPub_List_No%2CSeries_No;lc:RUMSEY~8~1&mi=20&trs=420#). (Accessed March 2020).

Bradley, A., W. Harrison, and W. Barker. 1804. *Map of the United States, Exhibiting the Post-Roads, the Situations, Connections & Distances of the Post-Offices, Stage Roads, Counties & Principal Rivers*. Abraham Bradley, Philadelphia. Library of Congress, Geography and Map Division, Washington, D.C. Available at <https://www.loc.gov/item/2015591091/>. (Accessed March 2020).

Burr, D.H. 1829. *Map of the County of Suffolk*. David H. Burr, New York. David Rumsey Historical Map Collection. Available at [https://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~20008~510004:Suffolk-County-?sort=Pub\\_List\\_No\\_InitialSort%2CPub\\_Date%2CPub\\_List\\_No%2CSeries\\_No&qvq=w4s:/who%2FBurr%25252C%2BDavid%2BH.%25252C%2B1803-1875%2Fwhere%2FNew%2BYork;q:new%20york%20state;sort:Pub\\_List\\_No\\_InitialSort%2CPub\\_Date%2CPub\\_List\\_No%2CSeries\\_No;lc:RUMSEY~8~1&mi=8&trs=65](https://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~20008~510004:Suffolk-County-?sort=Pub_List_No_InitialSort%2CPub_Date%2CPub_List_No%2CSeries_No&qvq=w4s:/who%2FBurr%25252C%2BDavid%2BH.%25252C%2B1803-1875%2Fwhere%2FNew%2BYork;q:new%20york%20state;sort:Pub_List_No_InitialSort%2CPub_Date%2CPub_List_No%2CSeries_No;lc:RUMSEY~8~1&mi=8&trs=65). (Accessed March 2020).

Burr, D.H. 1839. *Map of New York Exhibiting the Post Offices, Post Roads, Canals, Rail Roads &c*. David H. Burr, London. Library of Congress, Geography and Map Division. Available at <https://www.loc.gov/item/98688518/>. (Accessed March 2020).

Burr, D.H. 1840. *Map of the County of Suffolk*. Stone and Clark Republishers, Ithaca, NY. David Rumsey Historical Map Collection. Available at <https://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~296700~90068099:Map-of-the-County-of-Suffolk--New-Y>. (Accessed March 2020).

Chace, J., J. Douglass, and R.P. Smith. 1858. *Map of Suffolk Co., L.I., New York*. John Douglass, Philadelphia. Library of Congress, Geography and Map Division. Available at <https://www.loc.gov/item/2013593235/>. (Accessed March 2020).

Chrysalis Archaeological Consultants, Inc. (CAC). 2018. *Phase IB Field Test Report, Forge River Watershed Sewer Project, Town of Brookhaven, (Suffolk County), New York*. Report prepared for Governor's Office of Storm Recovery by CAC, Brooklyn, NY.

Covens Et Mortier Et Covens, Jr., H. Klockhoff, and B. Romans. 1780. *Connecticut and Parts Adjacent*. Amsterdam. Library of Congress, Geography and Map Division, Washington, D.C. Available at <https://www.loc.gov/item/73691554/>. (Accessed March 2020).

DeWitt, S. 1804. *A Map of the State of New York*. S. DeWitt, New York. David Rumsey Historical Map Collection. Available at [https://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~2487~220057:A-Map-of-the-State-Of-New-York-?sort=Pub\\_List\\_No\\_InitialSort%2CPub\\_Date%2CPub\\_List\\_No%2CSeries\\_No&qvq=w4s:/who%2FDeWitt%25252C%2BSimeon;q:new%20york%20state;sort:Pub\\_List\\_No\\_InitialSort%2CPub\\_Date%2CPub\\_List\\_No%2CSeries\\_No;lc:RUMSEY~8~1&mi=1&trs=2](https://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~2487~220057:A-Map-of-the-State-Of-New-York-?sort=Pub_List_No_InitialSort%2CPub_Date%2CPub_List_No%2CSeries_No&qvq=w4s:/who%2FDeWitt%25252C%2BSimeon;q:new%20york%20state;sort:Pub_List_No_InitialSort%2CPub_Date%2CPub_List_No%2CSeries_No;lc:RUMSEY~8~1&mi=1&trs=2). (Accessed March 2020).

Environmental Design and Research, Landscape Architecture, Engineering, and Environmental Services, D.P.C. (EDR). 2020. *Phase IA Archaeological Survey, Sunrise Wind Onshore Facilities, Town of Brookhaven, Suffolk County, New York*. Prepared for Sunrise Wind, LLC by EDR, Syracuse, NY. August 2020.

Environmental Systems Research Institute (ESRI) and Natural Resources Conservation Service (NRCS). 2021. SSURGO Soil Data Downloader: Southern Long Island Subbasin Soils. Available at <https://landscapeteam.maps.arcgis.com/home/webmap/viewer.html?webmap=e28dd05eb144481b90d39e9ec573ad92>. (Accessed March 2021).

French, J.H. 1860. *Gazetteer of the State of New York: Embracing A Comprehensive View of the Geography, Geology, and General History of the State, and A Complete History and Description of Every County, City, Town, Village, and Locality*. Pearsall Smith, Syracuse, NY.

Hyde, M.B. 1915. *Atlas of a Part of Suffolk County, Long Island, New York*. E. Belcher Hyde, New York. New York Public Library Digital Collections, Lionel Pincus and Princess Firyal Map Division, NY. Available at <https://digitalcollections.nypl.org/items/510d47e4-3ade-a3d9-e040-e00a18064a99>. (Accessed March 2020).

Hyde, M.B. 1917. *Atlas of a Part of Suffolk County, Long Island, New York*. E. Belcher Hyde, New York. New York Public Library Digital Collections, Lionel Pincus and Princess Firyal Map Division, NY. Available at <https://digitalcollections.nypl.org/items/510d47e4-3b2f-a3d9-e040-e00a18064a99>. (Accessed March 2020).

Louis Berger Group (LBG). 2016. *Phase IA Archaeological Sensitivity Assessment, Forge River Watershed Sewer Project, Town of Brookhaven, Suffolk County, New York*. Report prepared for Governor's Office of Storm Recovery by LBG, Albany, NY.

Montaukett Indian Nation. 2015. *History Overview*. Available at [http://montaukett.org/?page\\_id=22](http://montaukett.org/?page_id=22). (Accessed September 2017).

Munsell, W.W. 1882. *History of Suffolk County, New York, with Illustrations, Portraits, & Sketches of Prominent Families and Individuals*. W.W. Munsell & Co., New York, NY.



National Park Service (NPS). 2017. *Geology of the Atlantic Coastal Plain*. NPS, Washington, D.C. Available at [https://www.nps.gov/cue/geology/geo\\_coastalplain.htm](https://www.nps.gov/cue/geology/geo_coastalplain.htm). (Accessed September 2017).

Natural Resources Conservation Service (NRCS). 2021. *Web Soil Survey*. United States Department of Agriculture, Washington, D.C. Available at <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>. (Accessed March 2021).

New York Archaeological Council (NYAC). 1994. *Standards for Cultural Resources Investigations and the Curation of Archaeological Collections in New York State*. New York State Historic Preservation Office, Waterford, NY.

New York State Historic Preservation Office (NYSHPO). 2005. *New York State Historic Preservation Office (NYSHPO) Phase I Archaeological Report Format Requirements*. NYSHPO, Waterford, NY.

New York State Museum (NYSM). 2010. *Cultural Resources Reconnaissance Survey Report, PIN 0059.08, NYS Route 27 from NYS Route 112 to Wading River Road, Town of Brookhaven, Suffolk County, New York, Volume I: Archaeological Reconnaissance Survey*. Report prepared for NYSDOT by NYSM, Albany NY.

RBA Group, Inc. (RBAG). 2012. *Phase I Archaeological Survey, River Road Path, Town of Brookhaven, Suffolk County, New York*. Report Prepared for Town of Brookhaven by RBAG, Melville, NY.

Ritchie, W.A. 1959. "The Stony Brook Site and Its Relation to Archaic and Transitional Cultures of Long Island." In *New York State Museum and Science Service Bulletin 372*. The University of the State of New York, Albany, NY.

Ross, P. 1902. *A History of Long Island, New York, From Its Earliest Settlement to the Present Time*. Lewis Publishing Company, New York, NY.

Salwen, B. 1978a. "Indians of Southern New England and Long Island: Early Period." In *Smithsonian Handbook of North American Indians Vol 15 Northeast*, pp. 160-176, Bruce Trigger, ed. Smithsonian Institution Press, Washington, D.C.

Salwen, B. 1978b. "Indians of Southern New England and Long Island: Late Period." In *Smithsonian Handbook of North American Indians Vol 15 Northeast*, pp. 177-189, Bruce Trigger, ed. Smithsonian Institution Press, Washington, D.C.

Soil Conservation Service (SCS). 1975. *Soil Survey of Suffolk County, New York*. United States Department of Agriculture, SCS, Washington, D.C.

Town of Brookhaven. 2020a. *Establishment of Brookhaven*. Town of Brookhaven, Farmingville, NY. Available at <https://www.brookhavenny.gov/525/Establishment-of-Brookhaven>. (Accessed March 2020).

Town of Brookhaven. 2020b. *Growth of Brookhaven*. Town of Brookhaven, Farmingville, NY. Available at <https://www.brookhavenny.gov/527/Growth-of-Brookhaven>. (Accessed March 2020).



Tracker Archaeology Services, Inc. (TAS). 2002. *Phase I Archaeological Investigation for the Proposed Aspen Creek Estates, Yaphank, Township of Brookhaven, Suffolk County, New York*. Report prepared for Kaywood Properties, Ltd. by TAS, North Babylon, NY.

TAS. 2004. *Phase I Archaeological Investigations for the Proposed ACE Builders at Southaven Subdivision, Southaven, Town of Brookhaven, Suffolk County, New York*. Report prepared for Cramer Consulting Group by TAS, North Babylon, NY.

United States Geological Survey (USGS). 1904. *Moriches, NY*. 1:62,500-scale Topographic Quadrangle. USGS, Department of the Interior, Washington, D.C.

USGS. 1926. *Moriches, NY*. 1:62,500-scale Topographic Quadrangle. USGS, Department of the Interior, Washington, D.C.

USGS. 1947. *Bellport, NY*. 1:24,000-scale Topographic Quadrangle. USGS, Department of the Interior, Washington, D.C.

USGS. 1956. *Bellport, NY*. 1:24,000-scale Topographic Quadrangle. USGS, Department of the Interior, Washington, D.C.

USGS. 1957. *Moriches, NY*. 1:24,000-scale Topographic Quadrangle. USGS, Department of the Interior, Washington, D.C.

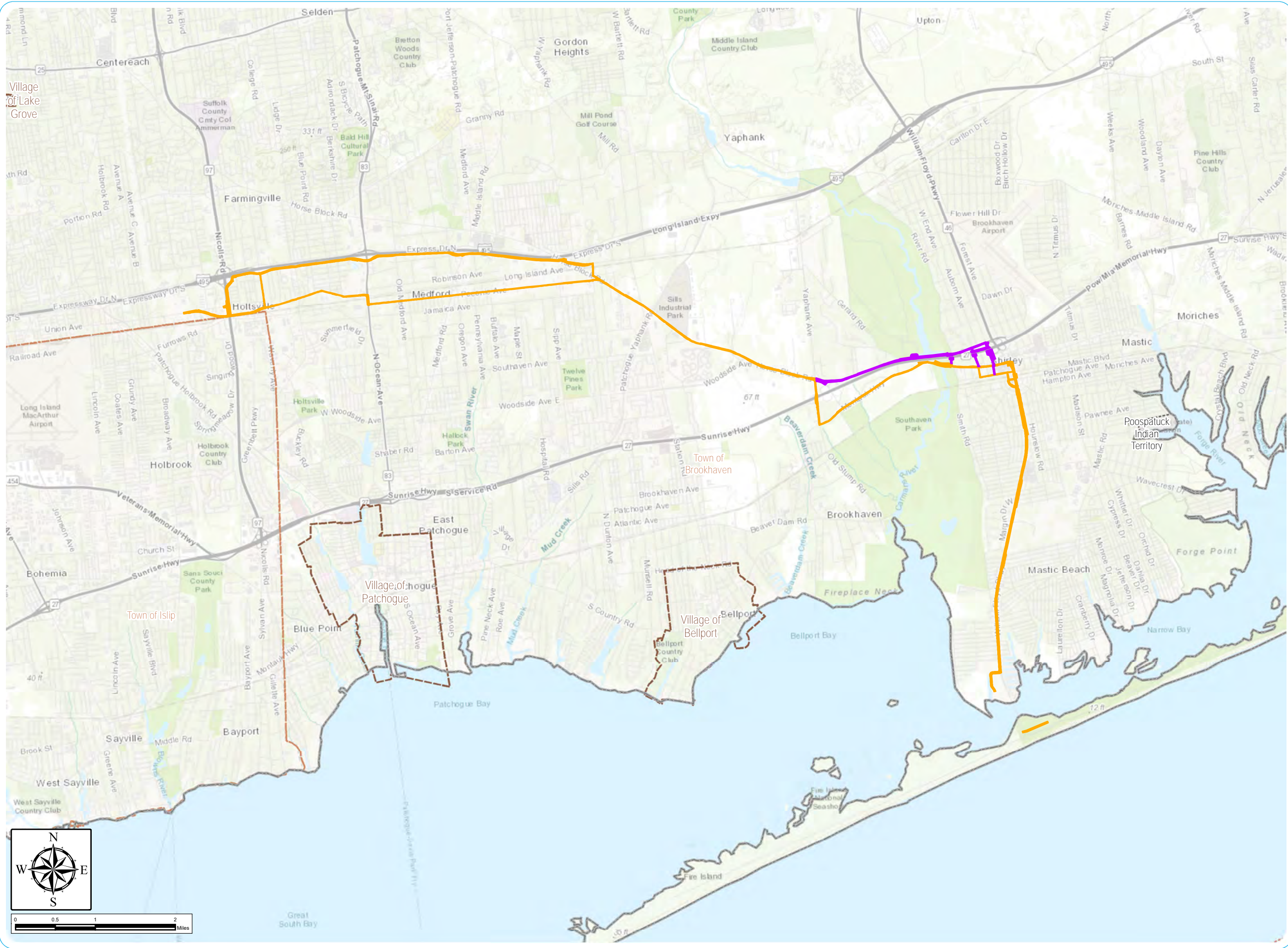
USGS. 1967a. *Bellport, NY*. 1:24,000-scale Topographic Quadrangle. USGS, Department of the Interior, Washington, D.C.

USGS. 1967b. *Moriches, NY*. 1:24,000-scale Topographic Quadrangle. USGS, Department of the Interior, Washington, D.C.

Wunderlich, R. 2005. "Suffolk County." In *The Encyclopedia of New York State*. Peter Eisenstadt, ed. Syracuse, NY: Syracuse University Press. pp. 1497-1501.

## Figures



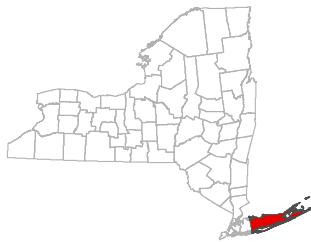


## Sunrise Wind Farm

Town of Brookhaven, Suffolk County, New York

Figure 1.2-1: Regional Onshore Facilities Location

- Onshore Transmission Cable - Victory Avenue Segment Corridor
- Onshore Transmission Cable Corridor



Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" map service. 2. This map was generated in ArcMap on March 26, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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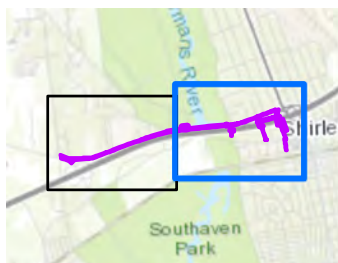
## Sunrise Wind Farm

Town of Brookhaven, Suffolk  
County, New York

Figure 1.2-2: Proposed  
Onshore Facilities

Sheet 1 of 2

- Onshore Transmission Cable
- Victory Avenue
  - Revilo Avenue
  - Candido Avenue
  - Smith/Old River Road
- Trenchless Footprint
- Onshore Transmission Cable -  
Victory Avenue Segment Corridor



Notes: 1. Basemap: ESRI ArcGIS Online "World Imagery" map service and NYSDOP "2016" orthoimagery map service. 2. This map was generated in ArcMap on March 26, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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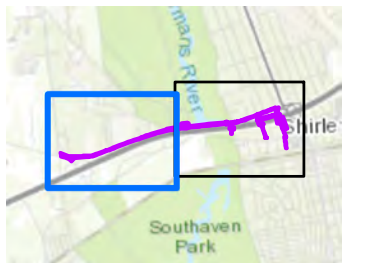
# Sunrise Wind Farm

Town of Brookhaven, Suffolk County, New York

Figure 1.2-2: Proposed Onshore Facilities

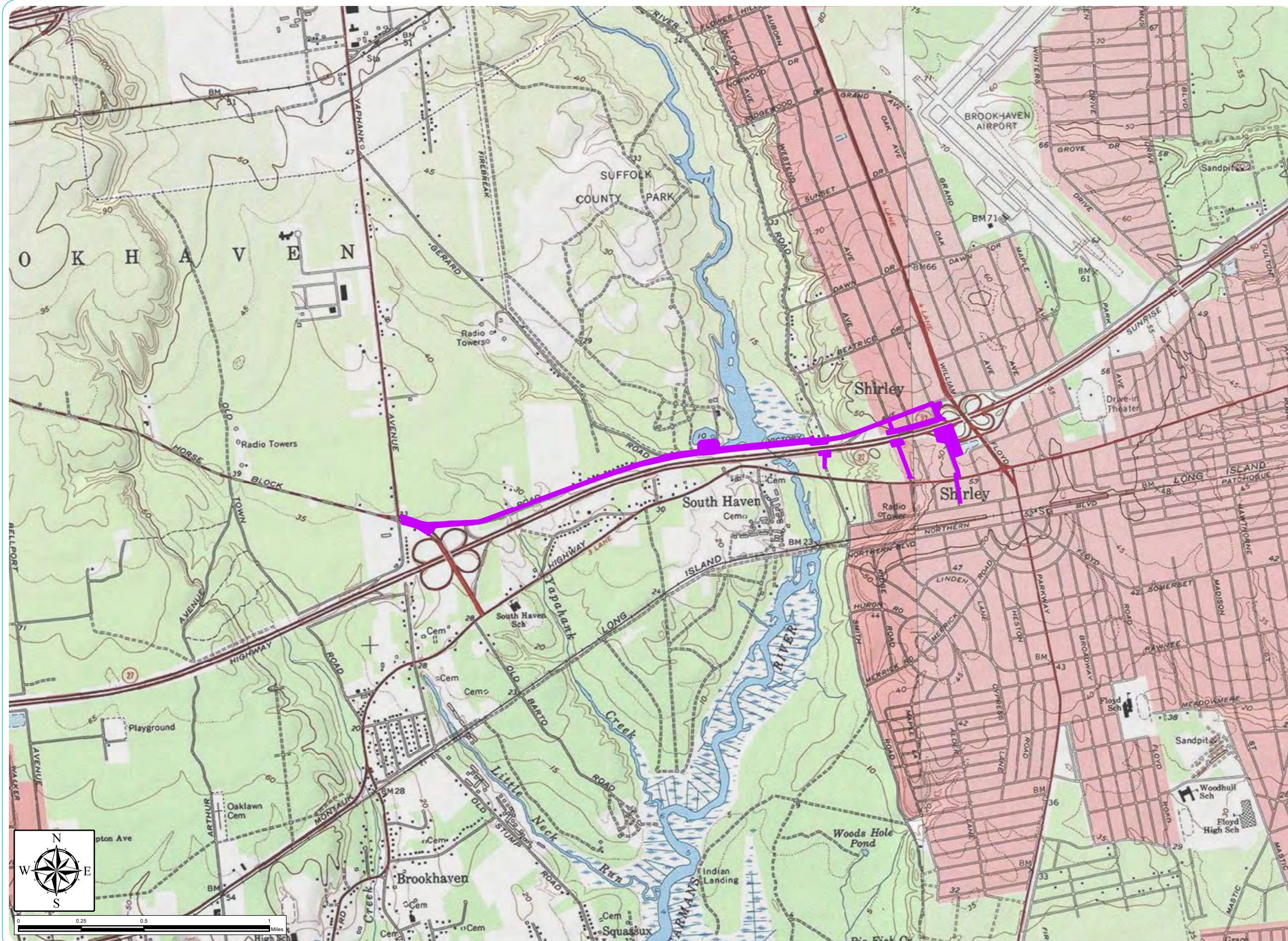
Sheet 2 of 2

- Onshore Transmission Cable
  - Victory Avenue
  - Revilo Avenue
  - Candido Avenue
  - Smith/Old River Road
- Trenchless Footprint
- Onshore Transmission Cable - Victory Avenue Segment Corridor



Notes: 1. Basemap: ESRI ArcGIS Online "World Imagery" map service and NYSDOP "2016" orthoimagery map service. 2. This map was generated in ArcMap on March 26, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.





## Sunrise Wind Farm

Town of Brookhaven, Suffolk County, New York

Figure 2.1-1: Onshore Facilities Topography

Onshore Transmission Cable -  
Victory Avenue Segment Corridor

Notes: 1. Basemap: ESRI ArcGIS Online "USA Topo Maps" map service. 2. This map was generated in ArcMap on March 26, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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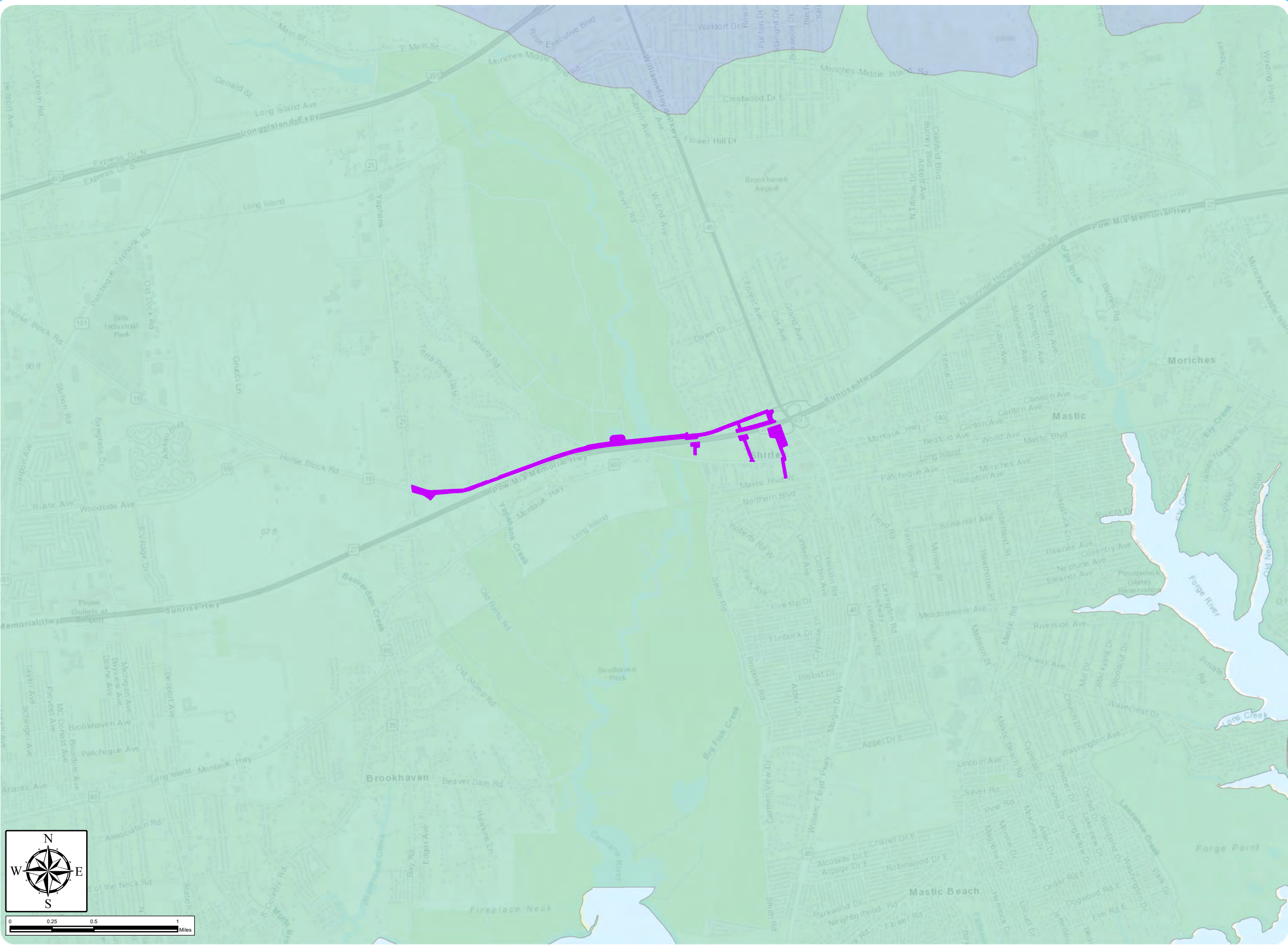
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# Sunrise Wind Farm

Town of Brookhaven, Suffolk County, New York

Figure 2.1-2: Onshore Facilities Surficial Geology



- Onshore Transmission Cable - Victory Avenue Segment Corridor
- Surficial Geology
  - Till Moraine Deposits
  - Outwash Sand and Gravel

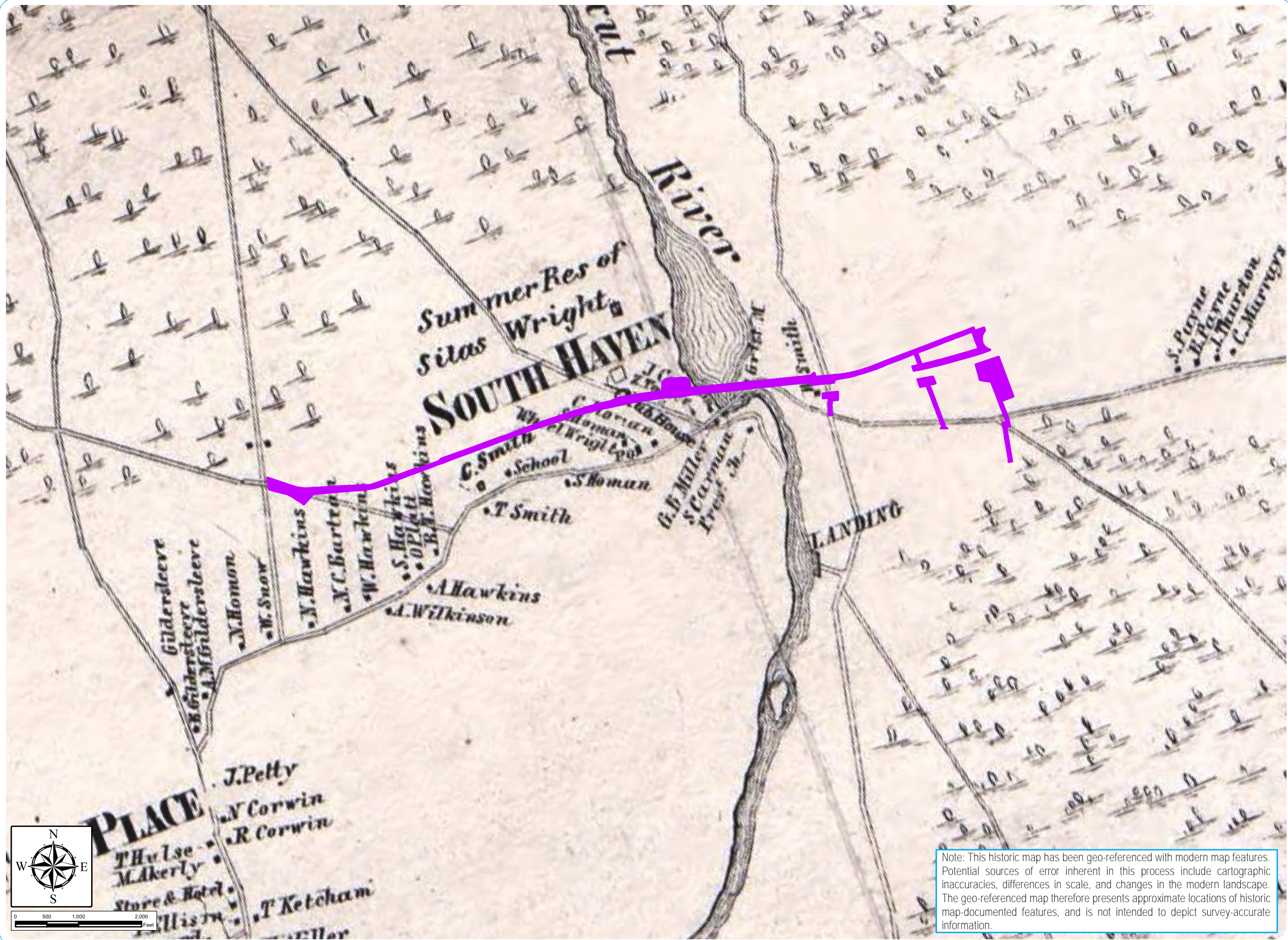
**Notes:** 1. Basemap: ESRI ArcGIS Online "World Topographic Map" map service. 2. This map was generated in ArcMap on March 26, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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## Sunrise Wind Farm

Town of Brookhaven, Suffolk County, New York

Figure 2.5-1: 1858 Chace et al. *Map of Suffolk Co., L.I., New York*

Onshore Transmission Cable - Victory Avenue Segment Corridor

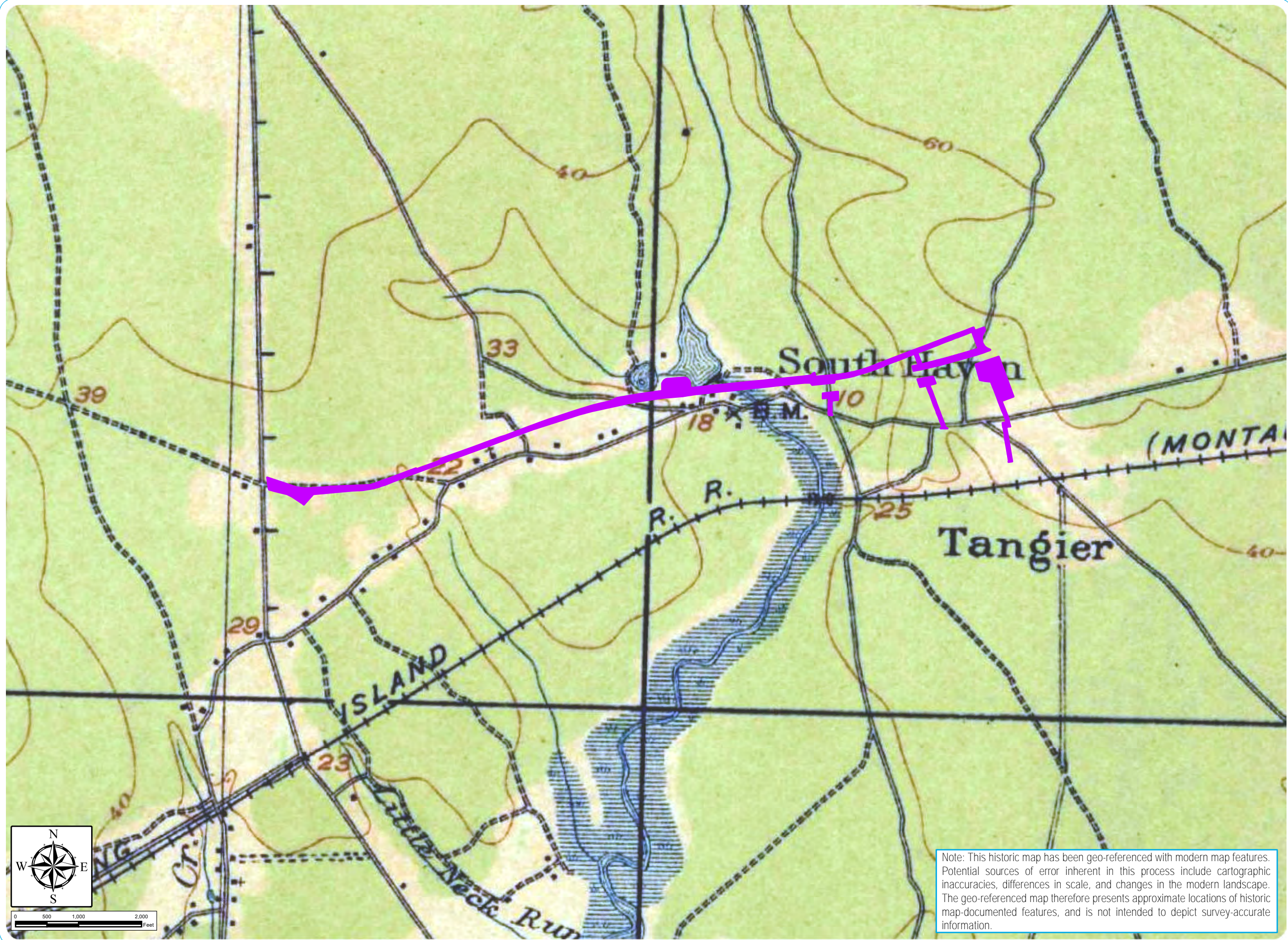
Notes: 1. Basemap: 1858 Chace et al. *Map of Suffolk Co., L.I., New York*. 2. This map was generated in ArcMap on March 26, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

Note: This historic map has been geo-referenced with modern map features. Potential sources of error inherent in this process include cartographic inaccuracies, differences in scale, and changes in the modern landscape. The geo-referenced map therefore presents approximate locations of historic map-documented features, and is not intended to depict survey-accurate information.

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## Sunrise Wind Farm

Town of Brookhaven, Suffolk County, New York

Figure 2.5-2: 1926 USGS  
*Moriches, NY* 1:62500  
Topographic Quadrangle

Onshore Transmission Cable -  
Victory Avenue Segment Corridor

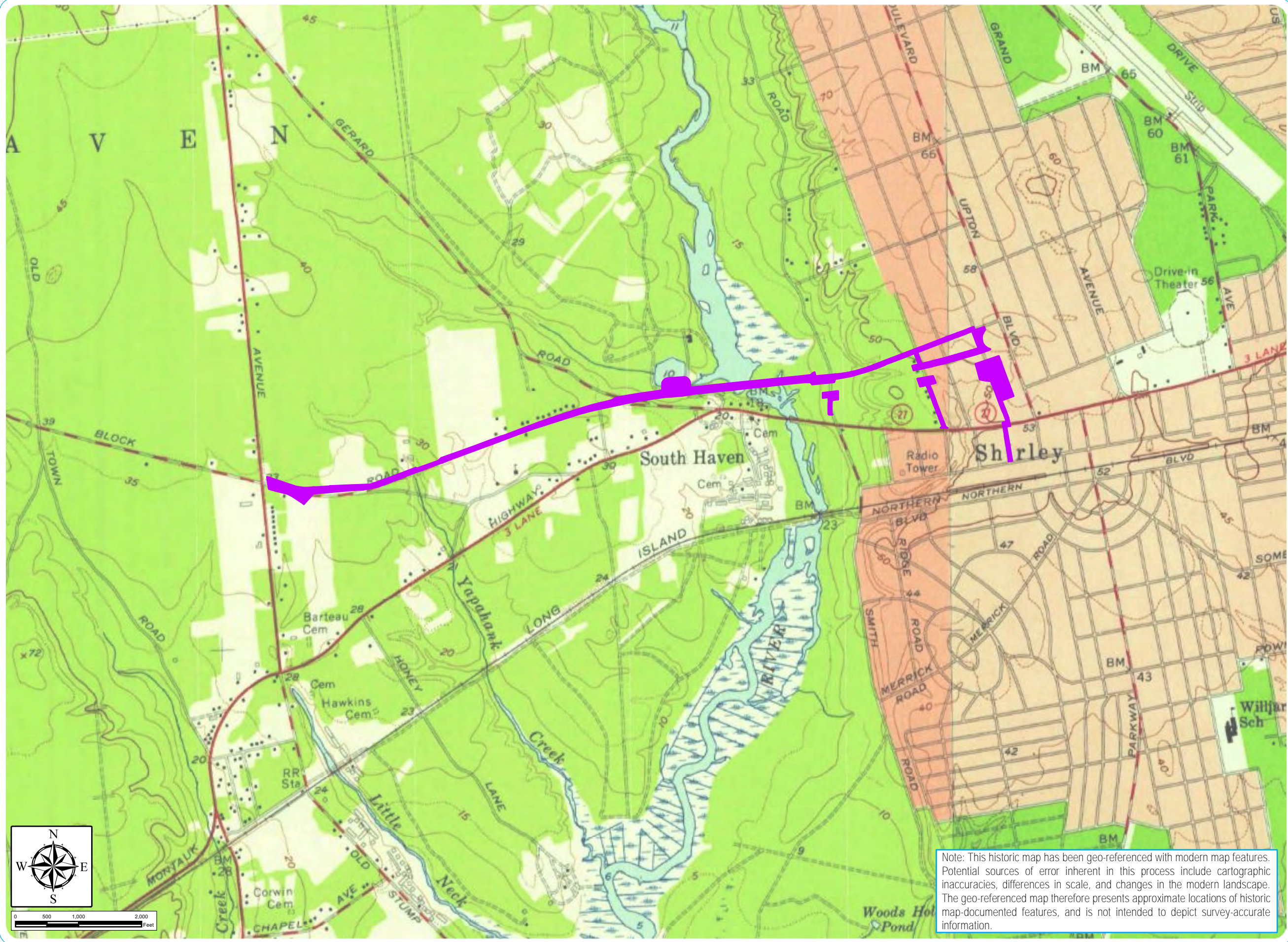
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ArcMap on March 26, 2021. 3. This is a  
color graphic. Reproduction in grayscale  
may misrepresent the data.

Note: This historic map has been geo-referenced with modern map features. Potential sources of error inherent in this process include cartographic inaccuracies, differences in scale, and changes in the modern landscape. The geo-referenced map therefore presents approximate locations of historic map-documented features, and is not intended to depict survey-accurate information.

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## Sunrise Wind Farm

Town of Brookhaven, Suffolk County, New York

Figure 2.5-3: 1956 USGS *Bellport, NY* and 1957 USGS *Moriches, NY*, 1:24000 Topographic Quadrangles

Onshore Transmission Cable - Victory Avenue Segment Corridor

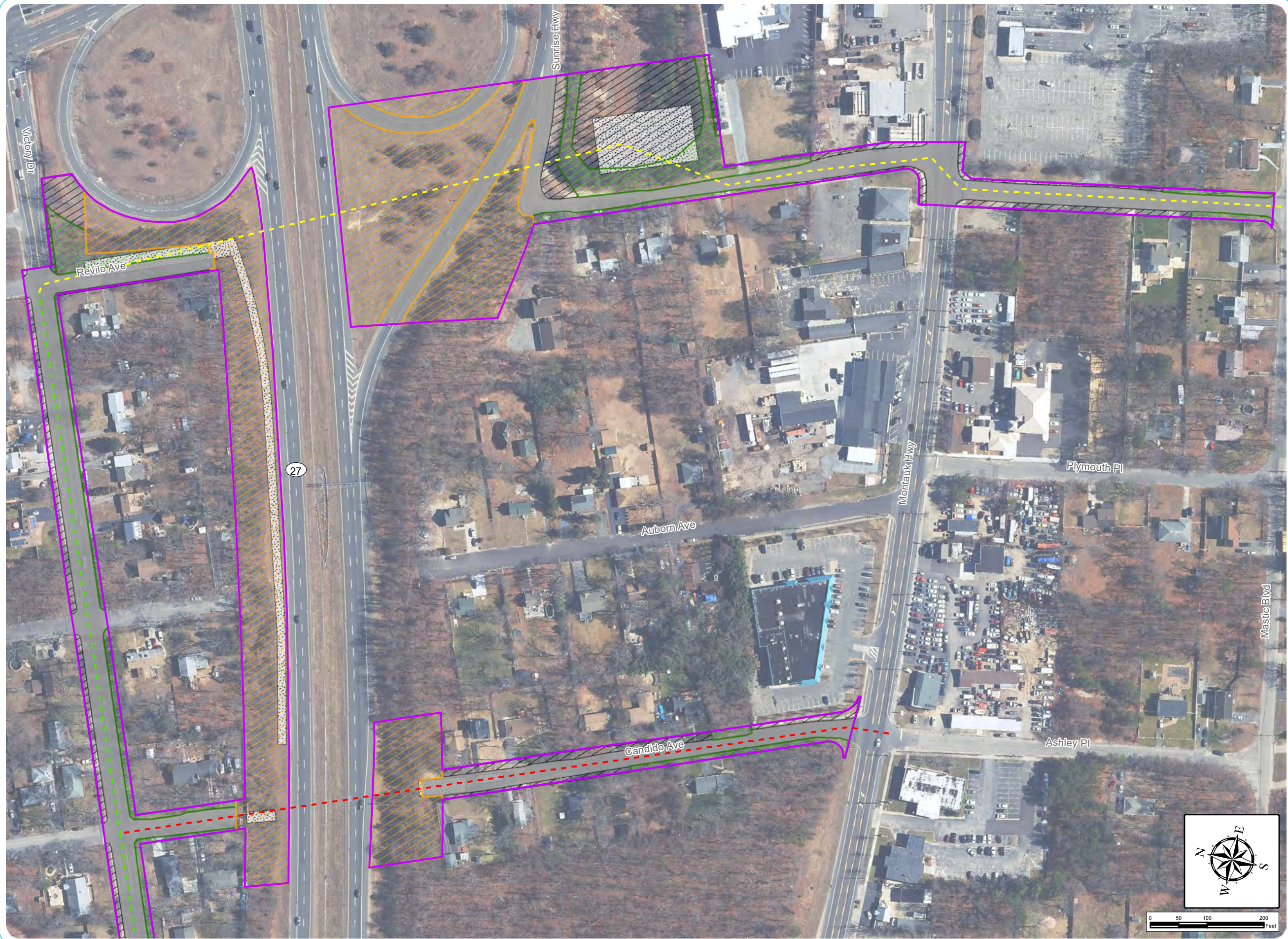
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Note: This historic map has been geo-referenced with modern map features. Potential sources of error inherent in this process include cartographic inaccuracies, differences in scale, and changes in the modern landscape. The geo-referenced map therefore presents approximate locations of historic map-documented features, and is not intended to depict survey-accurate information.

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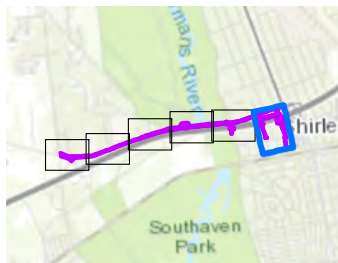
Town of Brookhaven, Suffolk County, New York

Figure 2.6-1:  
Archaeological  
Reconnaissance and  
Desktop Assessment  
Results

Sheet 1 of 6

Archaeological Reconnaissance and  
Desktop Assessment Results

- Disturbed
- Potentially Undisturbed
- Previously Tested
- DOT Roadway
- Onshore Transmission Cable
  - Victory Avenue
  - Revilo Avenue
  - Candido Avenue
- Trenchless Footprint
- Onshore Transmission Cable - Victory Avenue Segment Corridor

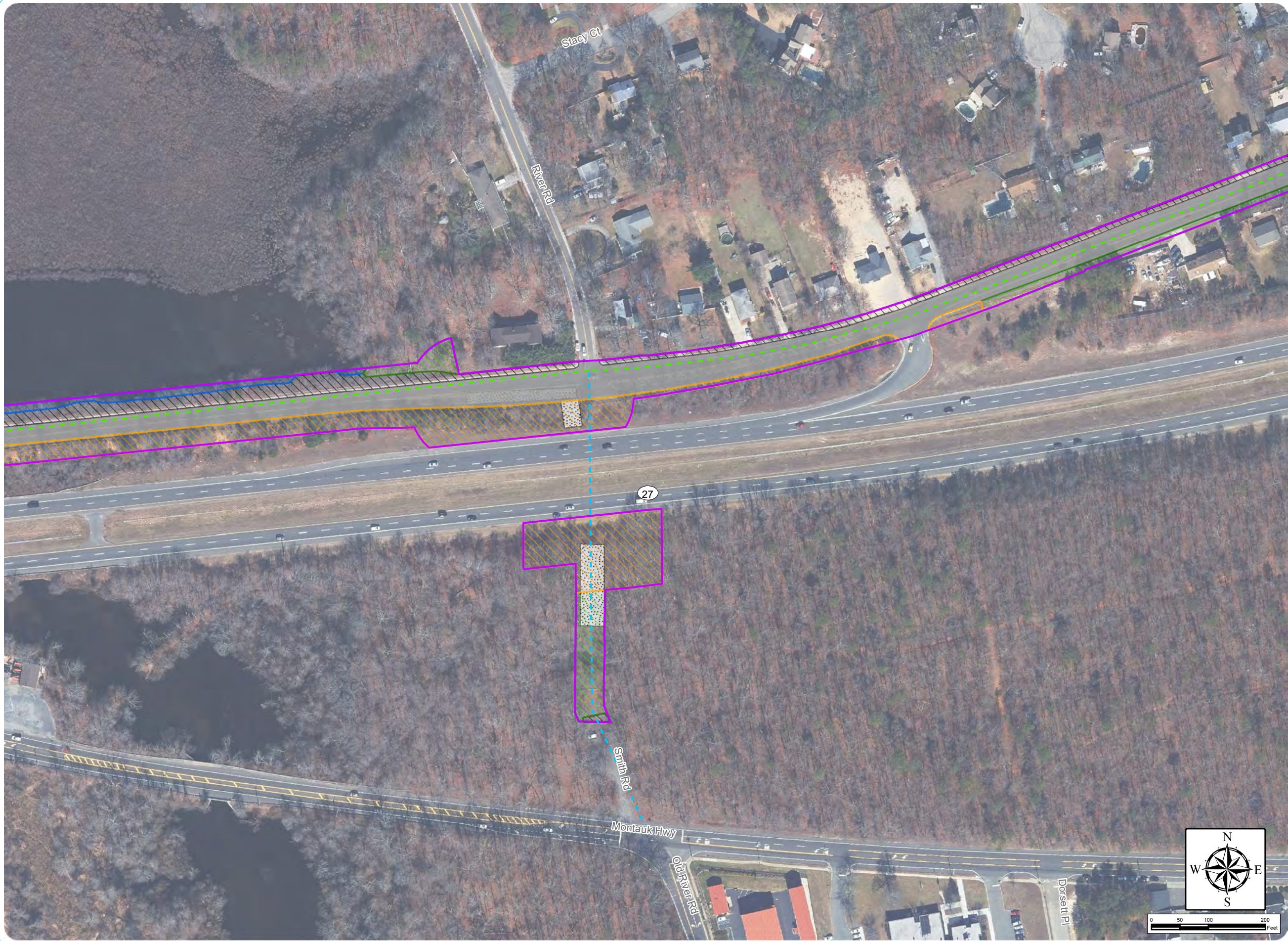


Notes: 1. Basemap: ESRI ArcGIS Online "World Imagery" map service and NYSDOP "2016" orthoimagery map service. 2. This map was generated in ArcMap on March 26, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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Wind

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# Sunrise Wind Farm

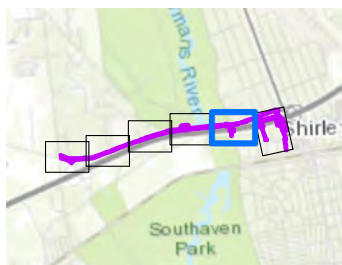
Town of Brookhaven, Suffolk County, New York

Figure 2.6-1:  
Archaeological  
Reconnaissance and  
Desktop Assessment  
Results

Sheet 2 of 6

Archaeological Reconnaissance and  
Desktop Assessment Results

- Disturbed
- Inundated
- Potentially Undisturbed
- Previously Tested
- DOT Roadway
- Onshore Transmission Cable
- Victory Avenue
- Smith/Old River Road
- Trenchless Footprint
- Onshore Transmission Cable - Victory Avenue Segment Corridor



Notes: 1. Basemap: ESRI ArcGIS Online "World Imagery" map service and NYSDOP "2016" orthoimagery map service. 2. This map was generated in ArcMap on March 26, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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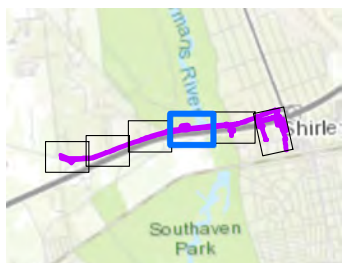
Town of Brookhaven, Suffolk County, New York

Figure 2.6-1:  
Archaeological  
Reconnaissance and  
Desktop Assessment  
Results

Sheet 3 of 6

Archaeological Reconnaissance and  
Desktop Assessment Results

- Steep Slope
- Disturbed
- Inundated
- Potentially Undisturbed
- Previously Tested
- DOT Roadway
- Onshore Transmission Cable
- Victory Avenue
- Trenchless Footprint
- Onshore Transmission Cable -  
Victory Avenue Segment Corridor



Notes: 1. Basemap: ESRI ArcGIS Online "World Imagery" map service and NYSDOP "2016" orthoimagery map service. 2. This map was generated in ArcMap on March 26, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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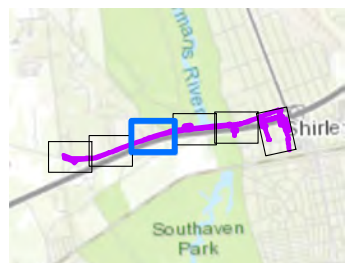
Town of Brookhaven, Suffolk County, New York

Figure 2.6-1:  
Archaeological  
Reconnaissance and  
Desktop Assessment  
Results

Sheet 4 of 6

Archaeological Reconnaissance and  
Desktop Assessment Results

- Disturbed
- Potentially Undisturbed
- Previously Tested
- DOT Roadway
- Onshore Transmission Cable
  - Victory Avenue
- Trenchless Footprint
- Onshore Transmission Cable -  
Victory Avenue Segment Corridor



Notes: 1. Basemap: ESRI ArcGIS Online "World Imagery" map service and NYSDOP "2016" orthoimagery map service. 2. This map was generated in ArcMap on March 26, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.





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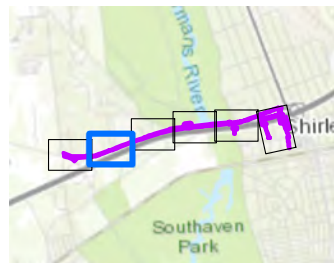
Town of Brookhaven, Suffolk County, New York

Figure 2.6-1:  
Archaeological  
Reconnaissance and  
Desktop Assessment  
Results

Sheet 5 of 6

Archaeological Reconnaissance and  
Desktop Assessment Results

- Disturbed
- Potentially Undisturbed
- Previously Tested
- DOT Roadway
- Onshore Transmission Cable
  - Victory Avenue
- Onshore Transmission Cable - Victory Avenue Segment Corridor

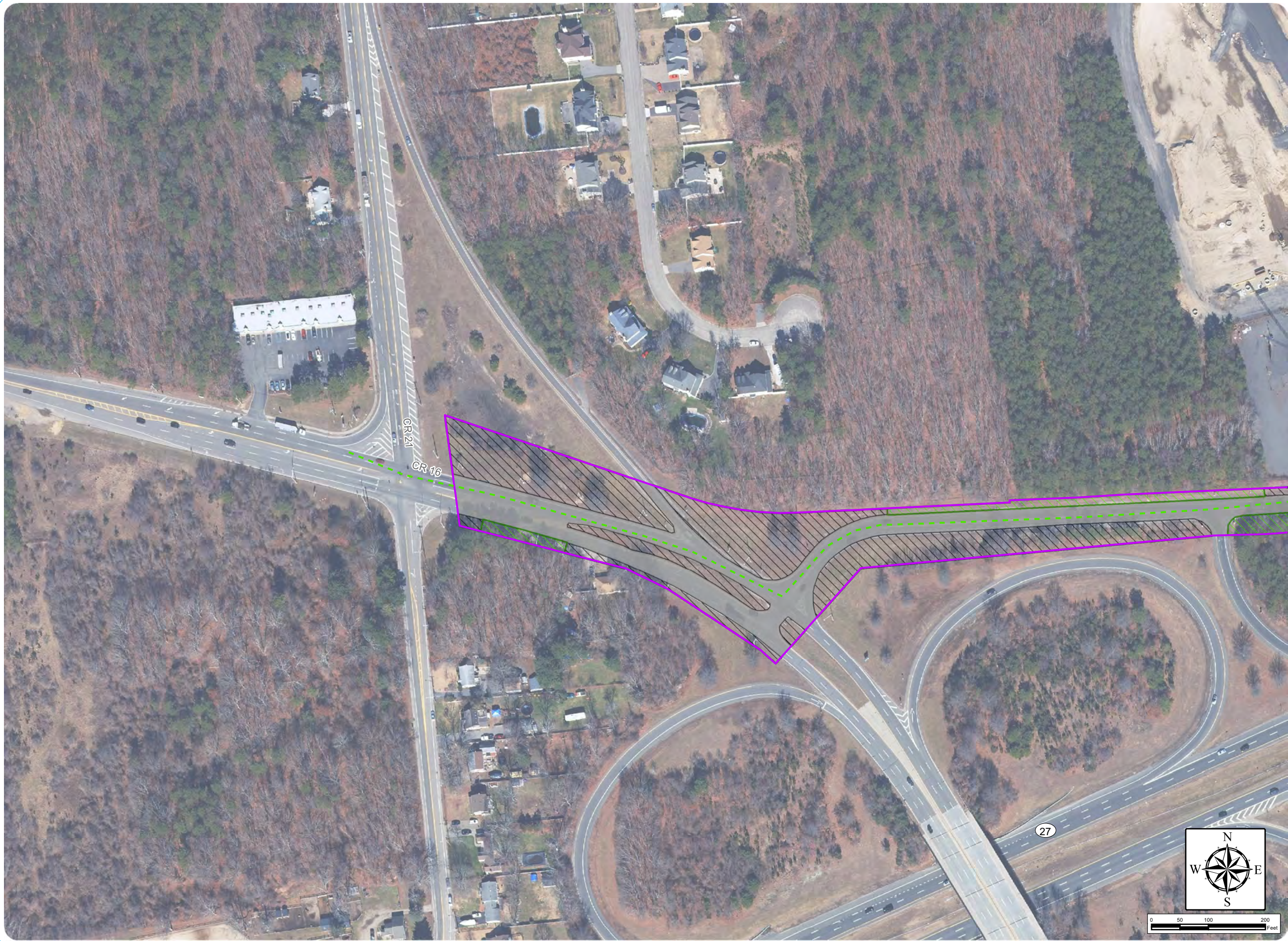


Notes: 1. Basemap: ESRI ArcGIS Online "World Imagery" map service and NYSDOP "2016" orthoimagery map service. 2. This map was generated in ArcMap on March 26, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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## Sunrise Wind Farm

Town of Brookhaven, Suffolk County, New York

Figure 2.6-1:  
Archaeological  
Reconnaissance and  
Desktop Assessment  
Results

Sheet 6 of 6

Archaeological Reconnaissance and  
Desktop Assessment Results

Disturbed

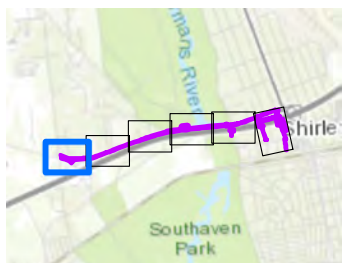
Potentially Undisturbed

DOT Roadway

Onshore Transmission Cable

Victory Avenue

Onshore Transmission Cable -  
Victory Avenue Segment Corridor



Notes: 1. Basemap: ESRI ArcGIS Online "World Imagery" map service and NYSDOP "2016" orthoimagery map service. 2. This map was generated in ArcMap on March 26, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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## **Appendix A: Photographs**



Photograph 1

Road, grading, and utility disturbance at the Sunrise Highway/Victory Avenue interchange within the Victory Avenue **Segment** PAPE. View to the west-northwest.



Photograph 2

Road cut, driveway, landscaping, and utility disturbance within the Victory Avenue **Segment** PAPE. View to the west-southwest.

## Sunrise Wind Farm Project

Town of Brookhaven, Suffolk County, New York

Appendix A: Photographs

Sheet 1 of 5

**Sunrise  
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Photograph 3

Road berm disturbance for the Carmans Rivers crossing of Victory Avenue within the Victory Avenue **Segment** PAPE. View to the east.



Photograph 4

Road cut and sidewalk disturbance within the Victory Avenue **Segment** PAPE. View to the east-northeast.





Photograph 5

Gravel parking lot disturbance within the Smith/ Old River Road Variation PAPE. View to the north-northwest.



Photograph 6

Road, sidewalk, and grading disturbance within the Candido Avenue Variation PAPE. View to the southeast.





Photograph 7

Potentially undisturbed terrain within the Victory Avenue **Segment** PAPE. View to the east-northeast.



Photograph 8

Potentially undisturbed terrain within the Victory Avenue **Segment** PAPE. View to the west.





Photograph 9

Potentially undisturbed terrain within the Smith/Old River Road Variation PAPE. View to the north.



Photograph 10

Potentially undisturbed terrain within the Candido Avenue Variation PAPE (wooded area on left). View to the north-northwest.