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**Minerals Management Service  
Documentation of Section 106  
Finding of Adverse Effect  
(Revised)**

**Prepared for Submission to  
Massachusetts Historical Commission  
Pursuant to 36 CFR 800.6(a)(3)  
for the Cape Wind Energy Project**

**This report was prepared for the Minerals Management Service (MMS) under contract No. M08-PC-20040 by Ecosystem Management & Associates, Inc. (EM&A). Brandi M. Carrier Jones (EM&A) compiled and edited the report with information provided by the MMS and with contributions from Public Archaeology Laboratory, Inc. (PAL), National Park Service Determination of Eligibility, as well as by composing original text.**

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**Brandi M. Carrier Jones, Compiler and Editor  
Ecosystem Management & Associates, Inc.**

## REPORT AVAILABILITY

Copies of this report can be obtained from the Minerals Management Service at the following addresses:

U.S. Department of the Interior  
Minerals Management Service  
381 Elden Street  
Herndon VA, 20170

<http://www.mms.gov/offshore/AlternativeEnergy/CapeWind.htm>

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## LIST OF ABBREVIATIONS, SYMBOLS, AND ACRONYMS

Term	Abbreviation, Symbol, or Acronym
Area of Potential Effects .....	APE
Automated Wreck and Obstruction Information System.....	AWOIS
Before Present .....	B.P.
Draft Environmental Impact Statement .....	DEIS
Ecosystem Management and Associates, Inc. ....	EM&A
Electrical Service Platform .....	ESP
Feet.....	ft
Finding of Adverse Effect .....	FAE
Kilometer(s) .....	km
Massachusetts Board of Underwater Archaeological Research .....	MBUAR
Massachusetts Environmental Policy Act office .....	MEPA
Massachusetts Historical Commission .....	MHC
Meter(s).....	m
Mile(s).....	mi
Minerals Management Service .....	MMS
National Historic Landmark .....	NHL
National Historic Preservation Act .....	NHPA
National Register of Historic Places .....	NRHP
Public Archaeology Laboratory, Inc.....	PAL
Right of Way.....	ROW
State Historic Preservation Officer .....	SHPO
Traditional Cultural Property.....	TCP
United States Army Corps of Engineers.....	USACE
View Point (in Visual Simulation).....	VP
Wind Turbine Generators .....	WTGs





# 1.0 Introduction

The purpose of this report is to analyze the potential adverse effects of the Cape Wind Energy Project on historic properties under the Criteria of Adverse Effect (36 CFR Part 800.5(a)(1)) for compliance with Section 106 of the National Historic Preservation Act (NHPA). The report contains information provided by the Minerals Management Service (MMS) and references field surveys conducted by PAL and a Determination of Eligibility made by the Keeper of the National Register of Historic Places (NPS), in addition to summary analysis provided by EM&A.

The MMS, in applying the Criteria of Adverse Effect (36 CFR Part 800.5(a)(1)), initiates further consultation with the State Historic Preservation Officer (SHPO) at the Massachusetts Historical Commission (MHC), the Wampanoag Tribe of Gay Head (Aquinnah) and Mashpee Wampanoag Tribe for the purpose of resolving the adverse effects described in this Finding of Adverse Effect (FAE) related to the construction, operation, and decommissioning of the Cape Wind Energy Project pursuant to 36 CFR 800.5(d)(2). The proposed project will have an indirect adverse visual effect for the 25-year life of the project on twenty-eight above-ground historic properties, and will impact the culture and the traditional religious and ceremonial practices of the Wampanoag Tribe of Gay Head (Aquinnah) and Mashpee Wampanoag Tribe (collectively, the Wampanoag Tribes). This includes visual intrusion into six specific Traditional Cultural Properties (TCPs) and physical intrusion into one TCP identified to the MMS by the Wampanoag Tribes.

## **2.0 Description of the Undertaking**

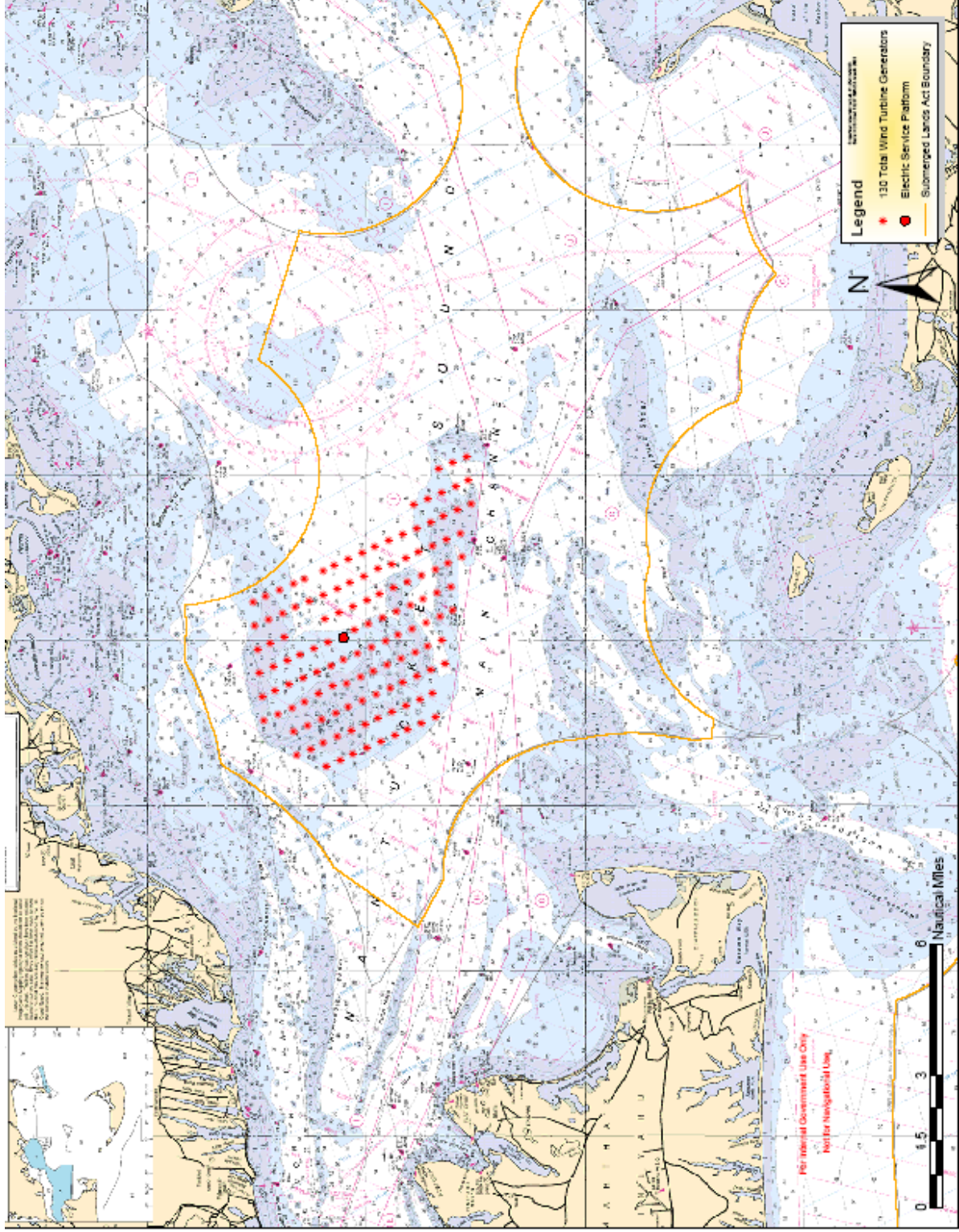
The proposed project entails the construction, operation, and decommissioning of 130 Wind Turbine Generators (WTGs) located in a grid pattern on and near Horseshoe Shoal in Nantucket Sound, Massachusetts, as well as an Electrical Service Platform (ESP), inner-array cables, and two transmission cables (USDOI MMS 2008; Figure 2.1). Each of the 130 WTGs will generate electricity independently of each other. Solid dielectric submarine inner-array cables from each WTG will interconnect with the grid and terminate at the ESP; the ESP would serve as the common interconnection point for all of the WTGs. The proposed submarine transmission cable system is approximately 20.1 kilometers (km; 12.5 miles [mi]) in length extending from the ESP to the landfall location in Yarmouth, MA. Of the 20.1 km, 12.2 km (7.6 mi) are located within the Massachusetts territorial line (approximately 5.6 km [3.5 mi] from shore). The two submarine transmission cables would travel north to northeast through Nantucket Sound and into Lewis Bay, passing by the western side of Egg Island and making landfall at New Hampshire Avenue, in Yarmouth (USDOI MMS 2008). The Minerals Management Service (MMS) is the lead federal agency for the project, as the issuer of the lease for offshore alternative energy production.

### **2.1 Definition of the Area of Potential Effect (APE)**

The Area of Potential Effect (APE) for the onshore component of the proposed project includes onshore and offshore areas where physical ground disturbance would occur during construction, operation and maintenance, and decommissioning (e.g., the seabed of Horseshoe Shoals and the areas along the overland route to the Barnstable Switching Station where the transmission cable will tie-in), as well as those areas within view of the site of the proposed project (e.g., historic properties on Cape Cod, Martha's Vineyard, and Nantucket from which open views of the visible components of the proposed project, e.g. WTGs would be possible). The APE for offshore archaeological resources includes the footprints of the WTG structures on the sea floor; the work area around each WTG where marine sediments may be disturbed; the jet plowed trenches for installation of the inner-array cables connecting the WTGs to the ESP; the jet plowed trenches for the transmission cable system from the ESP to the landfall site; and associated marine work areas such as anchor drop areas (USDOI MMS 2008)

The Wampanoag Tribe of Gay Head (Aquinnah) suggested that the APE be expanded to include areas that could potentially be affected by oil spills and the transit route to the project site (Aquinnah letter to ACHP November 16, 2009; Appendix B). The Narragansett Tribe has suggested that there might be cultural resources that could be adversely affected by activities proposed for the construction staging area located at the port of Quonset Point, Rhode Island, and that the APE should be expanded to include this staging area (telephone communication). The MMS has determined in both cases that expansion of the APE is not warranted (MMS letter December 26, 2009; Appendix C) and, at least with respect to the oil spill issue, the ACHP has concurred (the probability of a spill from an oil delivery boat is 1 in 500,000 years, [so small that] “the potential for oils spills of a magnitude that might affect historic properties... cannot be considered to be reasonably foreseeable”) (ACHP letter to MMS December 11, 2009; Appendix B). With regard to the staging area at the port of Quonset Point, Rhode Island, the FEIS explains that no improvements, expansions, deepening of the port or other ground disturbing activities are

necessary or proposed for either the onshore or offshore areas of the port. Quonset point is already a developed deepwater port where loading of industrial cargo has been common. Any visual effects would be temporary (occupying only the time required for construction) and customary. Thus, no historic properties in the vicinity will experience adverse effects. Both the oil spill probability issue and the activities and impacts at the port of Quonset Point, Rhode Island have been fully described and analyzed in the FEIS for the proposed project (US DOI 2009).



**Figure 2.1 Map Depicting Location of Proposed Project Area.**

## **3.0 Efforts to Identify Historic Properties**

### **3.1 Onshore Cultural Resources**

#### **3.1.1 Onshore Archaeological Resources**

Pursuant to 36 CFR 800.4(b) and through consultation with the MHC, an archaeological survey was conducted to identify any historic and prehistoric archaeological sites that may be located within the proposed project's APE along the onshore portion of the transmission cable route (Report No. 4.3.5-1). No onshore historic or prehistoric archaeological sites were identified in the proposed project's APE. In a letter dated April 22, 2004, MHC indicated their concurrence with the report findings by accepting the report as final and requesting a copy of the final document (see Appendix B).

#### **3.1.2 Above-Ground Historic Resources**

Given that the proposed location of the onshore electric transmission cable system is beneath existing public roads and the within the NSTAR Right Of Way (ROW), there would be no physical impacts to historic structures. Therefore the effects to above-ground historic resources are indirect and result from visual intrusions of the project to the surrounding viewshed, that is, views from the above-ground historic resources toward the offshore proposed project site (USDOI MMS 2008). The APE describes the area subject to alterations in visual setting. Due to the generally level topography, mature wooded vegetation, and intervening structures found on the Cape and Islands, it was found during field surveys that open views were generally limited to historic resources along the coast, usually within approximately 91 meters (m; 300 feet [ft]) of the shoreline (Report No. 4.3.5-1).

##### **3.1.2.1 Properties Identified by the USACE through Section 106 Consultation**

The initial inventory of historic resources within the APE followed the United States Army Corps of Engineers' (USACE) regulations, which required inclusion of only properties that were already listed on the NRHP or those that had been determined formally eligible for the NRHP (Report No. 4.3.5-1). Permitting for projects involving structures attached to the sea floor (not related to oil and gas extraction) was under the jurisdiction of the Corps prior to the passage of the Energy Policy Act of 2005 (EPAAct) (see Outer Continental Shelf Lands Act Section 5(e), via permitting authority).

Known historic resources in communities within potential visual range of the offshore turbines were compiled based upon a review of available databases and records at MHC. Historic structures and districts were identified in the Towns of Barnstable, Falmouth, Yarmouth, Dennis, Harwich, Chatham, Nantucket, Oak Bluffs, Tisbury and Edgartown. In addition, two National Historic Landmarks (NHLs) were among the listed properties that were found by the USACE to be within the APE. As two of the affected above-ground historic properties are NHLs, the National Park Service (NPS) reviewed the effects of the proposed project on these two properties. The effects to those NHLs are described in Section 5.

In response to comments received on the proposed project, the USACE expanded the inventory to include properties listed in the MHC's *Inventory of Historic and Archaeological Assets of the Commonwealth*, the State Register of Historic Places, including local historic districts, and properties identified through public comments (e.g., Ritter House and William Street Historic District on Martha's Vineyard) that had been determined eligible for listing on the NRHP by the MHC (USDOJ MMS 2008).

The USACE found that sixteen above-ground historic properties would have unobstructed views of the altered visual setting, and thus would be adversely affected by the proposed project (USACE letter to MHC July 14, 2004). These properties included Nobska Point Light Station (Falmouth); the Cotuit Historic District, the Col. Charles Codman Estate, the Wianno Historic District, the Wianno Club, the Hyannis Port Historic District, and the Kennedy Compound (all in Barnstable); the Monomoy Point Lighthouse (Chatham); the West Chop Light Station (Tisbury); the East Chop Light Station and the Edgartown Harbor Lighthouse, and the Cape Poge Light (Edgartown); and the Nantucket Great Point Light and the Nantucket National Historic Landmark District (Nantucket).

MHC concurred with this finding via letter (MHC letter to USACE August 11, 2004) by stating that "the adverse effect includes the introduction of visual elements that are out of character with the historic properties and alteration of the setting of the historic properties (36 CFR 800.5(a)(2)(iv and v))." These properties and the effects of the undertaking to them are described in USACE DEIR Appendix 5.10-F; see also Appendix E of this document.

### **3.1.2.2 Visual Simulation Locations**

In order to assess visual impacts to historic structures, twelve simulation locations were selected in consultation with the MEPA and MHC as representative worst-case visual impacts to historic structures from the proposed project. A description of the visual character and setting at each of the twelve visual simulation locations is presented below, and is based upon field reconnaissance, background research, and a review of the NRHP Inventory Nomination Forms, where available, as well as other documentation in MHC files (Report No. 4.3.5-1). The geographic locations themselves are depicted in Figures 3.1-3.4. As a result of initial visual simulations, the USACE found that sixteen historic above-ground properties, including two National Historic Landmarks [NHLs], four historic districts, and ten individual properties, would be adversely affected by the proposed project (USDOJ MMS 2008).

In no particular order, narrative descriptions of the twelve locations chosen in consultation with the MEPA and MHC to support visual simulations are described below. The locations were chosen so that the visual simulations based upon the viewshed from the twelve locations represented the worst-case-scenario visual impact from the proposed project. All descriptions are compiled from data presented in Report 4.3.5-1 and in USDOJ MMS 2008.

#### **Nobska Point Light Station, Woods Hole, Falmouth (VP-1 in Figures 3.1-3.4)**

The Nobska Point Light Station complex dates from 1876, when the existing white cylindrical tower was constructed to replace a navigational light atop a keeper's dwelling that had operated since 1828. The light is a major navigational aid located on a rocky headland near





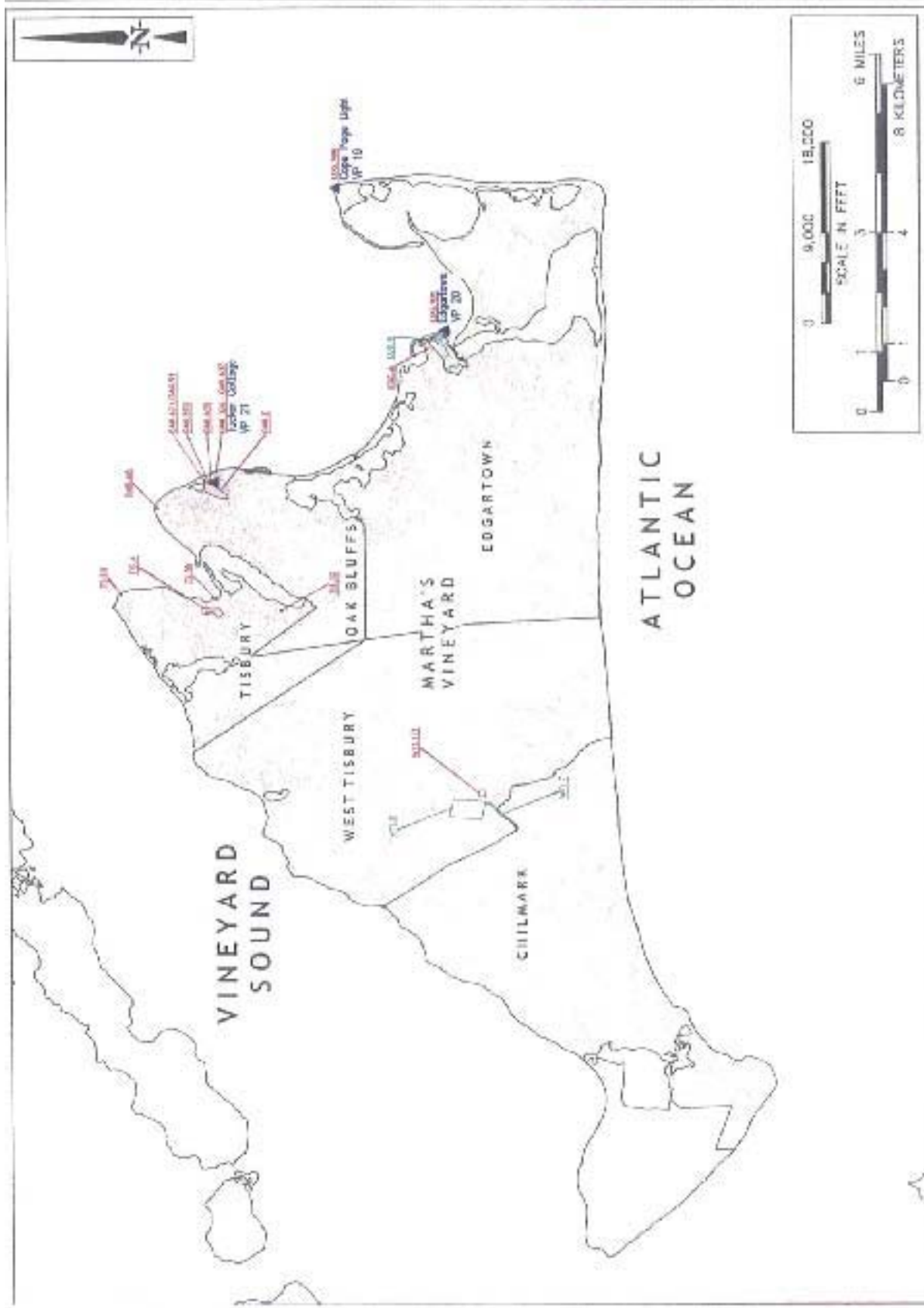


Figure 3.2 Map Depicting Location of View Points Used in Visual Simulations

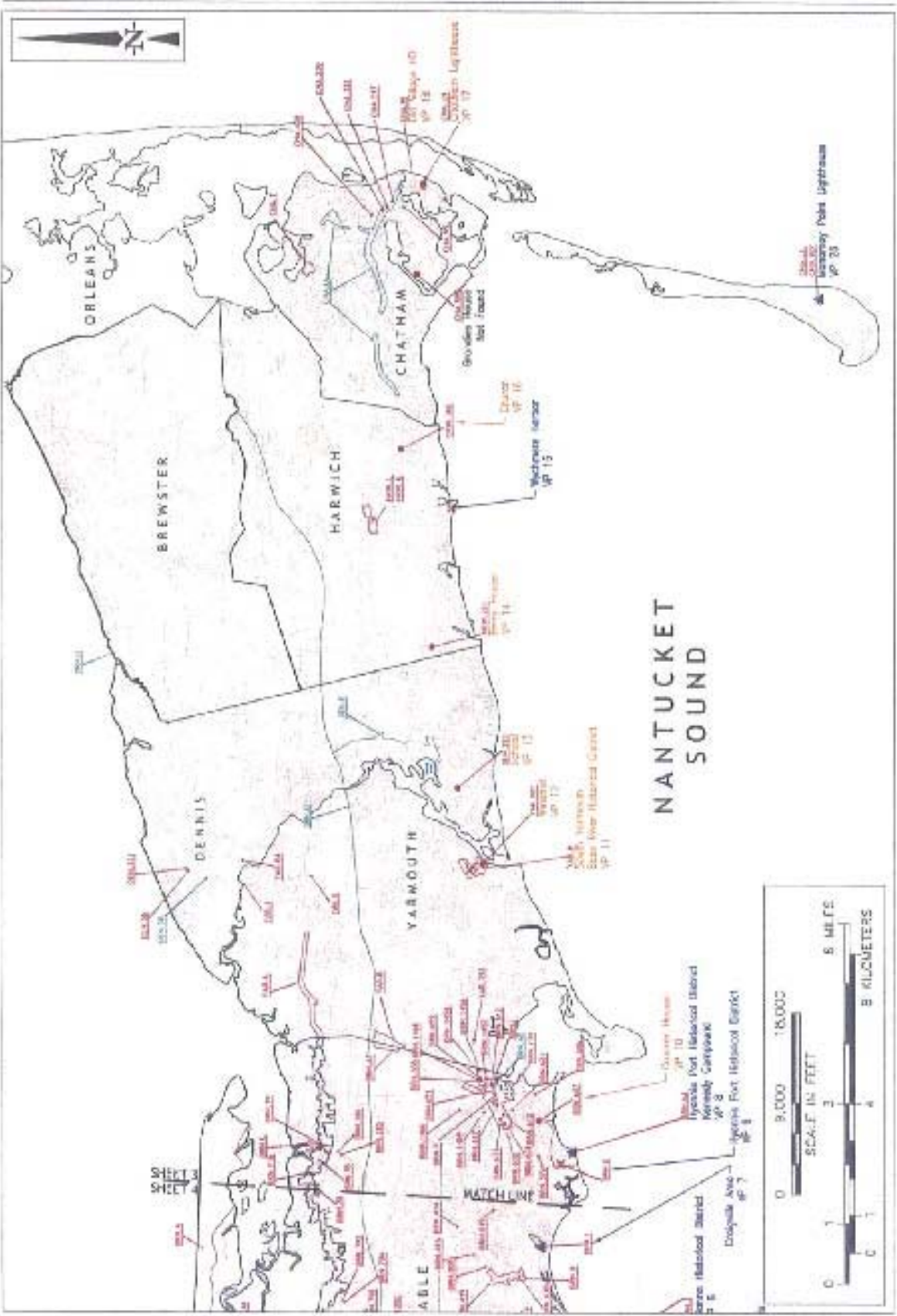


Figure 3.3 Map Depicting Location of View Points Used in Visual Simulations



the entrance to Woods Hole Harbor. The complex consists of the 12.2-m (40-ft) high light tower with entry porch (1876), two keeper's dwellings (1876, 1990) connected by a porch, a brick oil house (1876), paint lockers (1876), garage (1931) and a radio beacon building (1937). The light has been unmanned and automated since 1985.

The Light Station complex is listed on the NRHP as part of the Lighthouses of Massachusetts Thematic Group. The 8,538 m<sup>2</sup> (2.11-acre) site is largely bare of vegetation and the white tower can be seen clearly from all directions. According to MHC's Lighthouse Information Form (MHC, 1981) "the Light possesses integrity of location, design, setting, materials and workmanship as well as significant associations with the development of aids of navigation in Massachusetts. It is important for its scenic qualities, sited on a bluff overlooking Vineyard Sound, and for its strategic location. The complex meets criteria A and C of the NRHP on the state level."

Visitors to the historic lighthouse are presented with open views of Nantucket Sound from the southeast to the southwest, including views of Martha's Vineyard. The base of the light is publicly accessible, and a plaque provides historic information to visitors that park at a small adjacent lot. The area is generally characterized by low to medium-density residential land use, with commercial use in the village of Woods Hole to the northwest. Large homes are generally scattered along winding roads among low wooded hills. Views toward the water from most roads

and residences are generally well screened by trees. Open views eastward toward the site of the proposed project are available from Fay Road, and are expected from the eastward- and southeastward-facing upper stories of area homes. Open views of the site of the proposed project were not found in Woods Hole village.

- *Other areas visited nearby that were not selected for simulation:*

The location of VP-2 was the only ground-level location found within this district that had some view of Nantucket Sound toward the site of the proposed project. The view is partially blocked by the point of land at Nobska Light and by Martha's Vineyard.

VP-3 at the Woods Hole School shows no view of Nantucket Sound at this interior historic property.

No ground-level views of Nantucket Sound toward the site of the proposed project were found from VP-4 in the locally designated East Falmouth Historic District.

#### Cotuit Historic District (VP-5 in Figures 3.1-3.4), Town of Barnstable

The Village of Cotuit Historic District is included in the Town of Barnstable Multiple Resource Area (MRA), which was listed on the NRHP on November 10, 1987. Other Barnstable MRAs in the viewshed of the site of the proposed project and described in this section include historic districts in Wianno, Craigville, Centerville, and Hyannis Port.

The Cotuit Historic District, westernmost of the villages in Barnstable, occupies a neck of land surrounded by Popponesset Bay to the west, Nantucket Sound to the south, and Osterville Harbor to the east. Most of the 107 buildings in the district are residential, although some commercial and institutional buildings have also been designated in the village's colonial center.

Public access to and views of the shoreline and to the south-southwest toward the site of the proposed project are limited. Street level views toward the water are generally broken or partially screened by vegetation and other structures. However, views in the direction of the site of the proposed project are likely available from many of the large homes situated along the shoreline, particularly from the upper stories.

The National Register Criteria Statement found the Cotuit Historic District significant as a major collection of 19<sup>th</sup> and early 20<sup>th</sup> century buildings related to the maritime industries and summer resort activities. The district was determined to possess integrity of location, design, setting, materials, workmanship, feeling and association, and to meet criteria A, B, and C of the NRHP (MHC, Village Summary Sheet: Cotuit, 1987).

Cotuit was first settled in the early 1700s in the interior Santuit area, near what is now Route 28, to utilize fertile lands and early transportation corridors. As local economies shifted from land-based activities to the maritime industries in the early 19<sup>th</sup> century, the settlement shifted to the shore along the west side of Cotuit Bay. Key maritime activities included oystering, fishing, shipbuilding, coastal trade, and salt making. Many of the houses in the district were built by ship captains, and reflected their wealth. As the maritime trades ebbed in the late 19<sup>th</sup> century, summer residents discovered the village. Federal and Greek Revival architectural styles represent the district's early seafaring heritage, while later Italianate, Second Empire, Gothic Revival, Queen Anne, and Colonial Revival structures reflect the area's later evolution into a quiet summer resort.

Most buildings are surrounded by mature wooded vegetation. Cotuit has retained a quiet, settled atmosphere due to its location several miles from busy main routes. Its small harbor offers moorings for many boats, and the village has an active local sailing program. The village is traditionally known for its oysters, which continue to be harvested in Cotuit Bay. Oyster Harbors, a gated community of large seasonal homes, is located across Cotuit Bay to the east and is not included in the Barnstable MRAs.

#### Wianno Historic District (VP-6 in Figures 3.1-3.4)

The Wianno Historic District in the Village of Osterville is comprised of 28 main buildings and 13 outbuildings on approximately 0.16 km<sup>2</sup> (40 acres) along Sea View Avenue and Wianno Avenue. The lands were originally assembled in the late 19<sup>th</sup> century by a consortium of businessmen and developed as a summer colony. The large well-kept lots on either side of Sea View Avenue along Nantucket Sound contain grand Shingle Style and Colonial Revival style summer houses, most of which were constructed between the late 19<sup>th</sup> century and World War I.

The focal point of the Wianno Historic District is the Wianno Club on Sea View Avenue, a massive three-story shingled main building and two-story rear ell, both with mansard roofs. The Wianno Club was designed by architect Horace Frazer of Boston (who also designed a

number of private residences in the district). The Club overlooks Nantucket Sound on almost 305 m (1,000 ft) of beach frontage. The building is described as architecturally extremely significant, as much of its original and interior detailing survives. The structure was individually listed in the NRHP in 1979, and was listed as a Barnstable MRA in 1987.

On the Sound side of Sea View Avenue, which runs parallel to the shore, the structures are regularly spaced with open well-maintained lawns and unobscured views toward the site of the proposed project to the south. Across Sea View Avenue, views toward the site of the proposed project are limited to areas between intervening structures. Mature trees and large hedges also would effectively screen views.

The National Register Criteria Statement found the Wianno Historic District in excellent condition, and possessing integrity of location, design, setting, materials, workmanship, feeling and association. It is significant as one of three well-preserved summer resort colonies developed in Barnstable in the late 19<sup>th</sup> century, and contains an extraordinary collection of Colonial Revival and Shingle Style architecture. The district is also significant for its association with a notable Boston architect and many prominent seasonal residents. The district meets criteria A, B, and C of the NRHP (MHC, Wianno Historic District Form B, 1986).

- *Other areas visited nearby that were not selected for simulation:*

No views toward the water to the south were found in the Village of Osterville.

#### Craigville, Town of Barnstable (VP-7 in Figures 3.1-3.4)

Craigville is located at the center of a large crescent-shaped, sandy beach system bordered on the west by headlands at Wianno in Osterville and on the east by Squaw Island in Hyannis Port. Open views of Nantucket Sound to the south are available from this large beach system. The busy shorefront area contains popular public, semi-private, and private beaches as well as associated parking areas. The most open and extensive southerly views toward the water and the site of the proposed project are from Craigville Beach, the bluff above the apex of Craigville Beach, and shorefront homes on Long Beach Road in Centerville.

The Craigville Historic District includes 33 buildings and one park within the larger village of Craigville. The southernmost boundary of the historic district is 0.4 km (0.25 miles) north and topographically low compared to the bluff overlooking Nantucket Sound, from which VP-7 was taken. The historic district is limited to the central core of the original development consisting of the earliest buildings associated with a camp meeting ground developed by the New England Convention of Christian Churches in the 1870s. Although most of the structures in the district are now privately owned summer homes, the Craigville Conference Center owns the Craigville Inn and runs religious retreats. The district is within the interior portions of Craigville, does not extend to the bluff above Craigville Beach, is well vegetated and has no open views of Nantucket Sound. The structures on the bluff at VP-7 have not been determined eligible for listing on the NRHP.

The focus of the Craigville camp meeting ground was the Tabernacle, a simple wooden church constructed in 1887 at the head of a triangularly shaped park. The Craigville Historic

District was determined to possess integrity of location, design, materials, workmanship and feeling, and meets criteria A and C of the NRHP. It was found to be significant for its association with the Christian camp meeting movement of the 19<sup>th</sup> century, and contains a well-preserved collection of associated buildings (MHC, 1985).

The religious campground settlement was similar to other earlier Methodist camp meetings in Eastham, Yarmouth, and Martha's Vineyard and drew lay people and ministers who journeyed by train and then carriage or barge for summer services. The architecture is very similar to the Yarmouth Camp Ground Historic District (MHC No. YAR.B), which is located in an interior wooded location just south of the mid-Cape Highway (Route 6) at Exit 7 and several miles north of Nantucket Sound. The Yarmouth Camp Ground Historic District also has no open views of Nantucket Sound.

- *Other areas visited nearby that were not selected for simulation:*

The Centerville Historic District, which contains 49 buildings and one object along Main Street, does not offer ground-level views of Nantucket Sound toward the site of the proposed project.

#### Hyannis Port, Town of Barnstable (VP-8 in Figures 3.1-3.4)

The summer community in the Hyannis Port Historic District is characterized by large, well-maintained colonial and shingled Victorian beach homes. The district contains 127 buildings on 4.0 km<sup>2</sup> (1,000 acres), and is roughly bounded by Massachusetts Avenue and Edgehill Road, Hyannis Avenue, Hyannis Harbor, and Scudder Avenue. Open views of the water to the south-southwest are available along the shorefront, and intervening structures and vegetation provide broken views from the road and near coastal locations. Public access to the shoreline is very limited.

The Kennedy Compound is located along the shore within the Hyannis Port Historic District and is also represented by VP-8. The Compound was listed as a National Historic Landmark in 1972. The Compound contains approximately 24,300 m<sup>2</sup> (6 acres) of waterfront property on Nantucket Sound, and includes the white clapboard residences that formerly housed Kennedy family patriarch Joseph P. Kennedy and his sons Robert F. Kennedy and John F. Kennedy (U.S. Department of the Interior (USDIO, 1972). The largest structure in the Compound is the Joseph P. Kennedy house, where the family summered starting in 1926, and where Rose Kennedy, the family matriarch, lived until her death in 1995. The smaller houses were purchased by the sons for their families, and together comprise the Kennedy Compound. The Compound was the base of John F. Kennedy's presidential campaign in 1960, and served as the Summer White House in 1961. Subsequent presidential summer stays were nearby at Squaw Island, which provided better security and privacy. Although the Compound itself was not visited during the field reconnaissance, observations from adjacent locations indicate that open views of the site of the proposed project would be available from the Kennedy Compound.

- *Other areas visited nearby that were not selected for simulation:*

Other historic districts and properties were visited during field reconnaissance in Hyannis, Yarmouth, Dennis, Harwich, and Chatham. These locations either did not have open views of Nantucket Sound, or were not designated historic properties, and were therefore not selected for simulation.

#### Monomoy Point Lighthouse, Town of Chatham (VP-26 in Figures 3.1-3.4)

The Monomoy Point Lighthouse is located at the southern end of Monomoy Island, a coastal, barrier, beach island extending approximately 16.1 km (10 mi) south of the Cape's elbow at Chatham. The island is an uninhabited coastal dune and marsh complex, and comprises most of the Monomoy National Wildlife Refuge managed by the U. S. Fish and Wildlife Service. The island is accessible only by boat, and little human disturbance or development is evident except for footpaths and the historic lighthouse and its associated buildings. The land form is characterized by rolling dunes and bluffs with beach grass and sparse, scattered woody vegetation. Marshes and open water dominate views near the shoreline.

Wildlife such as gulls, terns, and seals are abundant and add to the remote and undeveloped character of the island. The island has been a federally designated Wilderness Area since 1970, although the parcel that contains the lighthouse is not included in that designation. The lighthouse has occupied the site since 1823, and the MAS has owned the parcel since 1977. The present lighthouse was constructed around 1871. The lighthouse complex is unmanned, and includes a brick light tower and a two-story keeper's house, both of which have deteriorated. The complex was determined significant in the areas of engineering, exploration and settlement, and transportation.

#### Oak Bluffs, Martha's Vineyard (VP-21 in Figures 3.1-3.4)

This island village area is characterized by fairly high-density residential and commercial land use. Topography is relatively flat, except for a steep shoreline bluff. The combination of a lack of topographic relief and abundant structures along the shoreline tend to screen views toward the water from the interior of the area. The most open easterly-northeasterly views toward the site of the proposed project are available along East Chop Avenue, Sea View Avenue and Ocean Avenue, as well as from residences along these roads, and from the East Chop Lighthouse. Ocean Park on Ocean Avenue (the selected viewpoint) also offers unobscured views toward the site of the proposed project.

The VP-21 is representative of open views from East Chop Lighthouse and the Dr. Harrison A. Tucker Cottage (hereinafter, Tucker Cottage) at 65 (formerly 42) Ocean Avenue in Oak Bluffs, both of which are listed on the NRHP.

The Tucker Cottage was originally built in the American Stick Style in 1872, and then was substantially altered into a large Queen Anne summer house in 1877. The house and carriage house is part of the Ocean Park neighborhood of large, late 19<sup>th</sup> century summer homes, near the Methodist camp meeting ground at Wesleyan Grove (see Martha's Vineyard Campground Historic District, below).



The street pattern of Ocean Park is a curvilinear series of narrow streets around Ocean Park, a 0.03 km<sup>2</sup> (7 acre) semi-circular green space that faces Sea View Avenue and the Sound beyond. The Tucker Cottage overlooks the bandstand at Ocean Park on Ocean Avenue, the innermost crescent along the Park. The Tucker Cottage was determined to retain integrity of location, design, materials, workmanship, feeling, and association, and meets Criteria B and C of the NRHP (USDOJ, 1990).

The East Chop Lighthouse is located on the highest bluff on East Chop Avenue, on the east side of Vineyard Haven Harbor. The cast-iron lighthouse was constructed in 1878, to replace a private lighthouse that was destroyed by fire. Open views toward the site of the proposed project are available from this structure.

The West Chop Lighthouse, on the western side of Vineyard Haven Harbor, was originally constructed in 1817, replaced with the present brick tower in 1838, and was moved back from the sea in 1848 and 1891. Views toward the site of the proposed project are screened by a line of white pines along the roadside by the West Chop Light, which is posted private property. Ground level views from the property itself are expected to be screened by the trees, although open views from atop the lighthouse are anticipated. Both East Chop and West Chop lighthouses have guided mariners entering Vineyard Haven Harbor since Colonial times, and both are listed on the NRHP's multiple listing of lighthouses on Martha's Vineyard.

- *Other areas visited nearby VP-8 that were not selected for simulation:*

Several other historic properties or districts in Oak Bluffs have more limited views of Nantucket Sound in the direction of the site of the proposed project, due to screening provided by mature vegetation, such as shade trees, and intervening structures. These include the Martha's Vineyard Campground Historic District in Oak Bluffs (also called Wesleyan Grove), which contains 306 19<sup>th</sup> century cottages and 6 public buildings on 0.14 km<sup>2</sup> (34 acres). The district is located close to, but does not border, Nantucket Sound. No ground level views of Nantucket Sound were found within this district. The campground was founded in 1835 as a summer Methodist meeting area; the first participants stayed in tents that were later replaced by small cottages. The focal points of the camp are the iron Tabernacle and the Trinity Methodist Church, both located on Trinity Park near the center of the campground. The typical campground cottage is a simple 1.5-story rectangular structure, approximately 4.6 m (15 ft) wide by 6.1 m (20 ft) deep. Porches, typically late 19<sup>th</sup> century additions, are heavily ornamented with trim. Much of the historic district is shaded with mature trees and other vegetation. The Martha's Vineyard Campground is significant for its unique architecture, state of preservation, and its association with 19<sup>th</sup> century religious practices (USDOJ, 1978).

Religious activity in the 19<sup>th</sup> century caused the campground to grow rapidly. The original week-long religious meeting in August evolved as people began arriving earlier in the summer, sparking the resort development of the adjacent area. The resulting town of Cottage City was created in 1880, and was renamed Oak Bluffs in 1907.

The Oak Bluffs Christian Union Chapel (known as Union Chapel) is west of Ocean Park and close to the Methodist campground of Wesleyan Grove. The chapel was built in 1870 in the

American Stick Style. The mature vegetation around the church partially obscures the chapel from contiguous streets, and fully screens the chapel from views of Nantucket Sound. The chapel exhibits integrity of location, design, materials, workmanship, feeling and association, and meets Criteria A and C of the NRHP (USDOJ, 1990).

The Flying Horses Carousel at 33 Oak Bluffs Avenue is located in the business district of Oak Bluffs. It is listed on the NRHP, and has also been listed as a National Historic Landmark since 1987. The carousel of 20 prancing horses and four chariots has operated at this location since 1889, and is indicative of the late 19<sup>th</sup> century interest in amusements and recreation at summer resorts such as Oak Bluffs. The Flying Horses Carousel possesses integrity of location (since 1889), design, material, workmanship and association, and is significant as the oldest platform carousel operating in the United States (USDOJ, 1979). No open views were available from this structure.

The Arcade at 31 (formerly 134) Circuit Avenue is a commercial building listed on the NRHP. No ground level views of the site of the proposed project are available from this building, which is surrounded by other commercial buildings and shops along this busy street in downtown Oak Bluffs.

Limited views to the north-northeast are available from West Chop, a residential area in Tisbury. Views toward the site of the proposed project are not generally available from the center of Vineyard Haven.

### Edgartown, Martha's Vineyard (VP-20 in Figures 3.1-3.4)

This island colonial village area has relatively high-density residential and commercial land use, with well-maintained large homes, small shops, inns, and restaurants connected by narrow streets. Public views toward the water from the village area are generally partially or fully screened by intervening structures and vegetation. Views toward the site of the proposed project to the northeast are available from shoreline residences and associated private beaches. The only publicly accessible, open, northeasterly views are from Water Street and Lighthouse Beach. The selected viewpoint VP-20 is the most open view from a historic site (the Edgartown Lighthouse at the entrance to Edgartown Harbor). Almost all other views toward the site of the proposed project from Edgartown are partially blocked by Chappaquiddick Island.

The Edgartown Village Historic District comprises approximately 0.6 km<sup>2</sup> (150 acres) along the west side of Edgartown Harbor. The district contains approximately 500 contributing buildings (constructed pre-1933), consisting mostly of wood frame houses of the 19<sup>th</sup> and early 20<sup>th</sup> centuries. A smaller, locally designated district (the Edgartown Local Historic District) is contained within the NRHP District. The village's two major periods of significance relate to late 18<sup>th</sup> to 19<sup>th</sup> century whaling activities, and late 19<sup>th</sup> century to present day summer tourism. Architectural styles vary from First Period Colonial (circa 1650's to 1750), late Georgian and Federal sea captains' homes, Greek Revival, Victorian, and Colonial Revival. The boundaries of the historic district do not extend to Nantucket Sound except at Edgartown Light (also called the Harbor Light Lighthouse), but views of the Sound to the east and northeast are available from easternmost structures within the district.

The Edgartown Lighthouse is located on a rock breakwater off a spit along the northeastern side of Edgartown Harbor. The original lighthouse at the eastern end of the Harbor was built in 1828 and destroyed following the Hurricane of 1938. This structure was replaced by a cast-iron lighthouse that originally stood at Crane's Beach in Ipswich, and was disassembled and moved by barge to Edgartown in 1939. The structure is part of the Lighthouses of Massachusetts multiple listing on the NRHP, and is one of five lighthouses included on the listing within Martha's Vineyard.

### Cape Poge, Edgartown, Martha's Vineyard (VP-19 in Figures 3.1-3.4)

This largely natural area on the north side of Chappaquiddick Island is protected by the Massachusetts Trustees of Reservations, a private land and property conservation organization. The area contains dunes and low coastal vegetation bordered in places by a steep 6.1 to 9.1 m (20 to 30 ft) high sandy bluff at the ocean shoreline. The area is undeveloped other than perhaps 5 to 10 large homes and several unimproved sand roads. Cape Poge offers expansive views at and near the shoreline. Once away from the shoreline, including at the base of the lighthouse discussed below, the dunes and dune vegetation effectively screen most views toward the water and the site of the proposed project.

The Cape Poge Lighthouse at VP-19 is one of the five lighthouses on Martha's Vineyard listed on the NRHP. Built in 1922 on the northeastern tip of Chappaquiddick, the present wood-shingled lighthouse replaced several earlier decaying towers, the earliest of which was constructed in 1802. Encircling the top of the tower is a simple cast iron balustrade. The windows and doorway are pedimented.

### Nantucket Cliffs along Cliff Road, North of Nantucket Village Center (VP-22 in Figures 3.1-3.4)

Nantucket Village is a densely settled, classic colonial, New England maritime community on the western side of Nantucket Harbor. The entire island, including Muskeget and Tuckernuck islands to the west, comprises a property registered on the NRHP and was also designated as a National Historic Landmark in 1966. Muskeget Island was designated as a National Natural Landmark in 1980 as the only known locality where the Muskeget vole is found and the southernmost area where the gray seal breeds (National Registry of Natural Landmarks, 1999).

The historic character of the village is defined by the clean pious lines of the houses of former sailors, fishermen and clergy as well as the grand federal-style mansions of former ship captains and owners. These varied structures are linked by cobblestone streets and shaded with large trees along the street. Views of the northwest toward the site of the proposed project are not available at ground level within Nantucket village itself (although views may be available from the upper stories of some buildings) or from the docks and wharfs along the western side of Nantucket Harbor.

Upon leaving the village area and heading to the northwest, narrow roads traverse a landscape of rolling dunes and low-density residential development. The dunes and vegetation tend to block views toward the water. An open area atop the shore-facing bluff along Cliff Road

(the selected VP-22) offers the first open views toward the site of the proposed project. The beach below also offers unobscured views. The beach continues to the west to the Eel Point conservation area at Madaket. Homes located along the north shore and associated private beaches also have open views toward the site of the proposed project, as does the shorefront area off Cliff Road to the east to Jetties Beach at West Jetty. Public access to the north-facing beaches is generally limited, and as one moves inland, views of the water and toward the site of the proposed project quickly disappear.

### Great Point, Nantucket (VP-23 in Figures 3.1-3.4)

Great Point is a unique undeveloped beach area that forms the northeastern most part of Nantucket, and separates the Atlantic Ocean to the east from Nantucket Sound to the west. Characterized by crashing surf, rolling sand dunes, low beach grass, and tidal marsh, the area is a remote and wild setting. The point is managed by the Trustees of Reservations, and is accessible only by four-wheel drive vehicle along a sandy track. The Nantucket Light (also called Great Point Light or Sandy Point Light) and the immediately surrounding land constitute the historic property. Lighthouses have operated at Great Point since 1789. The existing unmanned masonry structure was constructed in 1818, and is one of the oldest existing lighthouse structures in the state.

Great Point Light was determined to possess integrity of location, design, setting, materials and workmanship, as well as significant associations with the development of aids to Massachusetts navigation. The tower is the first landfall on Nantucket seen from the Atlantic Ocean, and meets criteria A and C of the NRHP.

The Nantucket Conservation Foundation protects areas of barrier beach south of the Great Point area. The area is remote and is characterized by ocean surf, sand dunes, and salt marshes. The area is largely undeveloped with only one or two private homes, a sand road, and the Great Point lighthouse, which is a visual focal point. Panoramic open views in all directions are available from many locations on Great Point, as well as along the sand access road, except for places screened by dunes. The viewpoint from Great Point is representative of open views toward the site of the proposed project from the Wauwinet area of Nantucket.

### Tuckernuck Island (VP-24 in Figures 3.1-3.4)

Tuckernuck Island is roughly 3.2 km (2 mi) long and 1.6 km (1 mi) wide, and is located approximately 1.6 km (1 mi) west of Nantucket Island and 12.9 km (8 mi) east of Martha's Vineyard. This sparsely settled island off the western tip of Nantucket is accessible only by boat. The island is composed of moraine deposits (in the rocky northwestern portion of the island), sandy outwash plains along the south, and sand dunes.

The island contains about 30 to 40 seasonal cottages and larger homes, and a network of sand roads. The historic houses on Tuckernuck are clustered within two groupings, one around North Pond (on the northwest side of the island) and one around East Pond, and consist of wood-frame shingle-clad structures that generally reflect early fishing, hunting, and livestock grazing economies. Topography is generally flat and vegetation consists of low to medium height shoreline scrub. Vegetation is taller and denser in the interior of the island, and more open and

sparse near the shoreline. As a result of the level topography and scrub vegetation, views toward the site of the proposed project are concentrated near the shoreline and from private residences.

### **3.1.2.4 Additional Properties Identified by MMS through Section 106 Consultation**

Passage of the EPO Act transferred jurisdiction for consideration and permitting of offshore alternative energy projects from the USACE to MMS in 2005. After review, MMS decided to re-initiate the NEPA and other reviews including Section 106 consultation. Unlike the USACE, MMS lacked NHPA counterpart regulations, and was required to make a good faith effort to identify and make eligibility determinations for affected properties within the APE. MMS attempted to integrate the Section 106 process with the NEPA process from the time it received authority for reviewing and approving the Cape Wind project application in 2005. However, in comments to the Draft EIS (which contained MMS's list of eligible properties and methodology for assessing adverse effects to historic properties), the consulting parties contended that the identification of historic properties and methodology were not adequate. In response to these comments, MMS decided to re-start the identification process under 36 CFR 800.4 with a new contractor acceptable to the parties (PAL, the USACE's original contractor), who would follow the USACE's original methodology for determining an appropriate zone for evaluating visual effects.

During its formal Section 106 consultation process, MMS also requested that all consulting parties (see Appendix E) identify additional historic properties they believed the MMS should include in the analysis of potential adverse effects for the proposed project. As a result of this request, the consulting parties identified an additional 22 specific historic properties that had not yet been evaluated for National Register eligibility that were potentially within the visual APE of the proposed project. These properties are located in the communities of Falmouth, Yarmouth, Harwich, Chatham, Oak Bluffs, and Tisbury. MHC inventory forms for the identified properties were collected and reviewed, and site visits were conducted to view the existing conditions of each of the individual properties and districts, evaluate the National Register eligibility based on existing inventory information and exterior visual factors, and assess the visibility of the proposed project in Nantucket Sound. Of these, 18 were evaluated as eligible for inclusion in the NRHP. Each eligible property is described below, along with an assessment of the view from each property toward the site of the proposed project. The visual impact assessment found that twelve of the additional eligible properties identified by the consulting parties have a view towards the site of the proposed project and therefore lie within the APE and are subject to indirect adverse visual effect (PAL Technical Memorandum, November 14, 2008) (Appendix F). The complete listing of historic properties that will be adversely affected appears in Table 4.1.

Another eight properties (five of which lie within the South Yarmouth/Bass River National Register Historic District, and three of which have not yet been evaluated for National Register eligibility) were identified by the Town of Yarmouth as possibly having a view of the proposed project. Field visits were conducted for these properties, but none has a view of the project (PAL letter to MMS, November 24, 2008) (Appendix F). Therefore, because they are outside of the project's APE, they were not evaluated for NRHP eligibility. It was also determined that there was no vantage-point from which any property within the South Yarmouth/Bass River National Register Historic District had a view of the proposed project.

At the request of the consulting parties, PAL prepared a technical supplement to better explain its methodology (see Appendix A). This supplement also explained that historic properties would not be adversely affected by viewing the project and a historic district simultaneously from a third vantage point due to the five mile minimum distance of the proposed project from shore. MMS determined that, from a third vantage point, a person could not see the qualifying characteristic that made a property eligible for the National Register. Therefore, even if the project affected the general context for historic properties with a view of the project in the Sound, it did not realistically affect the experience of those historic properties from a third party view point.

### Falmouth Heights Historic District, Falmouth

The summer residential community of Falmouth Heights was the town's first planned summer resort community. Designed originally by noted Worcester architect Elbridge Boyden and developed between 1870 and 1930 on a high bluff, the district includes approximately 500 properties, curvilinear streets, parks, and broad views of Vineyard Sound. The Falmouth Heights Historic District is entered into the MHC inventory as FAL.I and was previously determined eligible for the NRHP by the MHC. The Falmouth Heights Historic District is eligible for listing in the NRHP and meets criteria A and C.

The views of Nantucket Sound and the site of the proposed project are unobstructed from the bluffs of the Falmouth Heights Historic District. It is approximately 5.6 km (3.5 mi) northeast of VP-1, closer to the site of the proposed project, so erected wind turbines would be more visible from this historic property than from VP-1. The project would alter the viewshed experienced from this property.

### Maravista Historic District, Falmouth (see Figures 3.1-3.4)

The Maravista (meaning "view of the sea") area is defined by a cluster of approximately 25 well-preserved early 20<sup>th</sup> century summer cottages on Vineyard Sound that developed beginning in 1906 at one of the prime shoreline areas of Falmouth. The Maravista Historic District is entered into the MHC inventory as FAL.K, is potentially eligible for listing in the NRHP, and meets criteria A and C.

Maravista Historic District is approximately 6.4 km (4.0 mi) northeast of VP-1, so erected wind turbines would be more visible from this historic property than from VP-1. Views of Nantucket Sound and the site of the proposed project are unobstructed from the shoreline areas of the district. The project would alter the visual setting from this property.

### Menahaunt Historic District, Falmouth (see Figures 3.1-3.4)

The Menahaunt (meaning "Island Place") area consists of approximately 25 well-preserved summer cottages from the 1870s and 1880s surrounded by coastal ponds and Vineyard Sound. The Menahaunt Historic District is entered into the MHC inventory as FAL.J, is potentially eligible for listing in the NRHP, and meets criteria A and C.

Views of Nantucket Sound and the site of the proposed project are unobstructed from the shoreline areas of the Menahaunt Historic District. The district is located approximately 9.7 km (6.0 mi) northeast of VP-1; thus, erected wind turbines would appear larger on the horizon from this historic property than they would from VP-1. The project would alter the visual setting from this property.

#### Church Street Historic District, Falmouth (see Figures 3.1-3.4)

Located east of Little Harbor, the Church Street Historic District occupies the spit of land called Nobska Point, which contains Nobska Light (NRHP-Listed) at its highest point. The approximately 25 buildings range from the circa 1685 Abner Davis Tavern to the Church of the Messiah built in 1888, and include several large summer estates. The area was associated with 19<sup>th</sup> century shipping lanes and settlement at Woods Hole and later summer resort development. The Church Street Historic District is entered into the MHC inventory as FAL.M, is potentially eligible for listing in the NRHP, and meets criteria A and C.

Views of Nantucket Sound and the site of the proposed project are unobstructed from the Nobska Point bluff looking east, although most of the Church Street Historic District faces west towards Little Harbor. Views from this resource are represented by VP-1. The project would alter the visual setting from this property.

#### Stage Harbor Lighthouse, Chatham (see Figures 3.1-3.4)

Stage Harbor Lighthouse is located in low sand dunes and scrub growth at the southeast tip of Harding's Beach at the entrance to Stage Harbor. The intact complex consists of the cast iron lighthouse, erected and commissioned in 1880, attached shingle-clad keeper's house, boat shed, and outhouse in an undeveloped marine setting. The lantern and lens were removed when the lighthouse was decommissioned in 1935; otherwise, the Stage Harbor Light remains essentially intact from the 19<sup>th</sup> century. Stage Harbor Lighthouse is entered into the MHC inventory as CHA.917 and was previously recommended as eligible for the NRHP. Stage Harbor Light is potentially eligible for listing in the NRHP and meets criteria A and C.

The Stage Harbor Lighthouse's location provides an unobstructed and panoramic view of Nantucket Sound and the location of the site of the proposed project. The Lighthouse is located approximately 6.4 km (4 mi) east of VP-15. Because reduced visibility increases with distance due to atmospheric interference, the views of the erected wind turbines would be smaller and less visible than those views found in VP-15. The project would alter the visual setting from this property.

#### Captain Joshua Nickerson House, 190 Bridge Street, Chatham (see Figures 3.1-3.4)

Set well back from the south side of Bridge Street on a knoll overlooking the Mitchell River, the Captain Joshua Nickerson House at 190 Bridge Street is a large and elegant two-story Federal period dwelling with a hip roof, rear wall chimneys, and a rear ell. The house was built about 1810 and has associations with 19<sup>th</sup> century Chatham's maritime history, starting with retired sea Captain Joshua Nickerson, and with summer resort activities in the 20<sup>th</sup> century. The Captain Joshua Nickerson House is entered into the MHC inventory as CHA.260 and was

previously recommended as eligible for the NRHP. The Captain Joshua Nickerson House is potentially eligible for listing in the NRHP and meets criteria A and C.

The Captain Joshua Nickerson House façade faces south; however, the intervening land mass of Stage Island obstructs views toward the site of the proposed project. The visual setting of this property will not be altered by the proposed project.

#### Jonathan Higgins House, 300 Stage Neck Road, Chatham (see Figures 3.1-3.4)

The Deacon Jonathan Higgins House at 300 Stage Neck Road is a traditional five-bay Cape Cod dwelling that was originally erected in Wellfleet about 1760. It was dismantled and re-assembled at its current site overlooking Oyster Pond River in 1939, under the guidance of architect George Forsyth, to be the summer home of Chief Justice Louis Brandeis of the U.S. Supreme Court. The Deacon Jonathan Higgins House is entered into the MHC inventory as CHA.419. The house is potentially eligible for inclusion in the NRHP for its associations with the Colonial Revival period in the early 20<sup>th</sup> century and meets NRHP criteria A and C. In 1999, the MHC requested additional information in order to determine eligibility.

There are no views towards the site of the proposed project from the Deacon Jonathan Higgins House because the land mass of Harding's Beach lies between the house and Nantucket Sound. The visual setting of this property will not be altered by the proposed project.

#### Stage Harbor Road Historic District, Chatham (see Figures 3.1-3.4)

The Stage Harbor Road area extends from the Oyster Pond shoreline at Champlain Road northwards along Stage Harbor Road. A monument commemorates Samuel de Champlain's three week visit to Stage Harbor in 1606, which marked the first European exploration of the Chatham area. The approximately 50 properties in the area include Cape Cod cottages, Federal, Greek Revival, and Italianate style houses and barns that attest to the area's agricultural history, and more importantly, it's connection to maritime industries and the sea in the 18<sup>th</sup>, 19<sup>th</sup>, and 20<sup>th</sup> centuries. The Stage Harbor Road area is entered into the MHC inventory as CHA.K and was previously recommended as eligible for the NRHP. The Stage Harbor Road Historic District is potentially eligible for listing in the NRHP and meets criteria A and C.

Due to the configuration of the Stage Harbor Road Historic District extending away from the shore and the presence of Harding's Beach and the dike that create Stage Harbor, the visibility of the site of the proposed project is limited to a narrow view through the harbor mouth. The visual setting of this property will not be altered by the proposed project.

#### Champlain Road Historic District, Chatham (see Figures 3.1-3.4)

Approximately 25 historic Cape Cod and Greek Revival style cottages from the 18<sup>th</sup> through 20<sup>th</sup> centuries are positioned on a bluff along Champlain Road above Stage Harbor, where Samuel de Champlain anchored for three weeks in 1606. A yacht club and boatyard are set at the shoreline. The Champlain Road Historic District is entered into the MHC inventory as CHA.J. The Champlain Road Historic District is potentially eligible for listing in the NRHP and meets criteria A and C.



Views of Nantucket Sound and the site of the proposed project beyond the intervening land spits that frame the entrance to Stage Harbor are available from the Champlain Road Historic District due to its relatively high elevation. The district is located approximately 6.4 km (4 mi) east of VP-15. Because reduced visibility increases with distance due to atmospheric interference, the views of erected wind turbines would be smaller and less visible than those views found in VP-15. The project would alter the visual setting from this property.

#### Hithe Cote, 32 Snow Inn Road, Harwich (see Figures 3.1-3.4)

Stewart Church, a doctor from Brooklyn New York, built this two-story frame summer residence about 1890. Hithe Cote occupies the crest of a prominent hill above Vineyard Sound near Wychmere Harbor that was developed by Church and others as a summer resort. Hithe Cote is entered into the MHC inventory as HAR.211. The house is potentially eligible for inclusion in the NRHP and meets NRHP criteria A and C.

Although a more recent house has been constructed nearby, Hithe Cote's location continues to provide an unobstructed and panoramic view of Vineyard Sound and the site of the proposed project. This view is represented by VP-15. The project would alter the visual setting from this property.

#### Ocean Grove Historic District, Harwich (see Figures 3.1-3.4)

Modestly-scaled and well-preserved Victorian cottages set along narrow streets characterize the Ocean Grove Historic District which began as a Spiritualist campground in the 1880s. In addition to approximately 100 houses, prominent topographical features include the Grove, which is formed in a natural bowl, and the Beach along Nantucket Sound. In the early 20<sup>th</sup> century use of the area shifted from spiritualist gatherings to summer recreation, which continues today. The Ocean Grove Historic District is entered into the MHC inventory as HAR.L and was previously evaluated as eligible for the NRHP by the MHC. The Ocean Grove Historic District is eligible for listing in the NRHP and meets criteria A and C.

Open views of Nantucket Sound and the site of the proposed project are present from the Ocean Grove Historic District properties and the beach along the shoreline. This resource is close to VP-15, so views to the project from this historic resource are represented by VP-15. The project would alter the visual setting from this property.

#### 205 South Street, Yarmouth (see Figures 3.1-3.4)

The residence at 205 South Street is a three-quarter Cape Cod cottage built circa 1770. Its original site is unknown and it was apparently moved to its current location in the shore community near Bass River in the early to mid 20<sup>th</sup> century. Despite the move, which was not uncommon in that era, the house appears to be largely intact from the 18<sup>th</sup> century. 205 South Street is entered into the MHC inventory as YAR.365. The house is potentially eligible for inclusion in the NRHP and meets NRHP criteria A and C.

Views of Nantucket Sound and the site of the proposed project are obstructed from 205 South Street. The visual setting of this property will not be altered by the proposed project.

### Park Avenue Historic District, Yarmouth (see Figures 3.1-3.4)

The Park Avenue area includes approximately 25 modest summer residences from the late 19<sup>th</sup> and early 20<sup>th</sup> centuries. The district runs parallel to the water in a Lewis Bay shoreline resort neighborhood just west of Hyannis Inner Harbor. The area was not previously entered into the MHC inventory. The Park Avenue Historic District is potentially eligible for inclusion in the NRHP and meets NRHP criteria A and C.

Views of Nantucket Sound and the site of the proposed project are present through the mouth of Lewis Bay. This resource is located approximately 4.0 km (2.5 mi) northeast of VP-8, which approximates the view one might have through the mouth of Lewis Bay. The project would alter the visual setting from this property.

### Massachusetts Avenue Historic District, Yarmouth (see Figures 3.1-3.4)

The Massachusetts Avenue area extends from the Lewis Bay shoreline northward away from the water and encompasses approximately 25 modest summer residences from the late 19<sup>th</sup> and early 20<sup>th</sup> centuries. The area was not previously entered into the MHC inventory. The Massachusetts Avenue Historic District is potentially eligible for inclusion in the NRHP and meets NRHP criteria A and C.

There are no views of Nantucket Sound and the site of the proposed project due to the intervening presence of Great Island. The visual setting of this property will not be altered by the proposed project.

### Cottage City Historic District, Oak Bluffs (see Figures 3.1-3.4)

Cottage City is a sprawling district of approximately 386 19<sup>th</sup> and 20<sup>th</sup> century summer cottages and houses, many of which are highly ornate, on the bluff overlooking Nantucket Sound. Two large focal parks, Central Park and Waban Park on the water, and several other parks are dispersed within the district. Cottage City is a local historic district and is entered into the MHC inventory on multiple area forms. The Cottage City Historic District is potentially eligible for inclusion in the NRHP and meets NRHP criteria A and C.

Views of Nantucket Sound and the site of the proposed project are unobstructed from Cottage City, and are represented by VP-21. The project would alter the visual setting from this property.

### Vineyard Highlands, Oak Bluffs (see Figures 3.1-3.4)

Vineyard Highlands was the third major area developed on Oak Bluffs, and was an effort in 1870 to establish a new camp meeting area with a wharf, hotel, and residences. Although development was slow, the area did emerge as a popular tourist and summer residence center by 1900. Curved streets, small parks, and approximately 300 cottages with a curving road along the high bluff at Nantucket Sound are defining characteristics. The Vineyard Highlands Historic District is entered into the MHC inventory as OAK.B. The Vineyard Highlands Historic District is potentially eligible for inclusion in the NRHP and meets NRHP criteria A and C.

Views of Nantucket Sound and the site of the proposed project are unobstructed from the bluff of the Vineyard Highlands Historic District, and are represented by VP-21. The project would alter the visual setting from this property.

#### Seaman's Reading Room, Tisbury (see Figures 3.1-3.4)

The Seaman's Reading Room on West Chop Road/Main Street in Tisbury is a traditional Cape Cod cottage built about 1711 and is one of the oldest remaining houses on Martha's Vineyard. The house was moved from Hatch Road in 1918 and added on to in the 20<sup>th</sup> century. The Seaman's Reading Room is entered into the MHC inventory as TIS.135 and was determined eligible by consensus for individual listing in the NRHP.

There are no views of Nantucket Sound and the site of the proposed project from the Seaman's Reading Room due to intervening buildings. The visual setting of this property will not be altered by the proposed project.

#### West Chop Historic District, Tisbury (see Figures 3.1-3.4)

The West Chop Historic District, Tisbury, is an enclave of early 20<sup>th</sup> century Shingle style houses, club buildings, recreational facilities, and shoreline beaches at the northern tip of West Chop in Nantucket Sound. The West Chop Historic District is entered into the MHC inventory as TIS.D and was listed in the NRHP in 2008. The West Chop Historic District meets NRHP criteria A and C.

There are panoramic views from West Chop eastward in Nantucket Sound to the site of the proposed project. This resource is located approximately 2.5 miles northwest of VP-21, which provides a representative view from this district. The project would alter the visual setting from this property.

#### **3.1.2.5 Summary**

As a result of initial visual simulations, sixteen historic structures and districts that were already listed, or eligible for listing on the NRHP, and that may suffer an adverse visual effect from the proposed project, were identified by the USACE within the proposed project's APE on Cape Cod, Martha's Vineyard, and Nantucket (Report No. 4.3.5-1). As a result of comments from consulting parties during the Section 106 consultation process, an additional twelve properties not previously considered, nor previously evaluated for National Register eligibility, were identified by MMS as both being potentially eligible for the National Register and as having a view of the proposed project (see Appendix B). Therefore, these twelve properties were added to the list of properties that may suffer an indirect adverse visual effect from the proposed project. In total, therefore, twenty-eight existing historic structures and districts were identified as having an adverse effect due to the proposed introduction of visual elements that may constitute an alteration of the character, setting and viewshed of the historic property's significant features that make it eligible for listing on the National Register. These historic structures and the effect of the project on these properties are discussed below, in Section 4.

### **3.1.3 Traditional Cultural Properties (TCPs) Identified by MMS through Section 106 Consultation**

Section 106 and government-to-government consultation efforts and site visits have been made with various Native American Tribes within the general vicinity of the proposed project. Lands belonging to the Wampanoag tribes are located in the immediate vicinity of the proposed project, in Aquinnah (Gay Head) on the western end of the island of Martha's Vineyard in Dukes County and in Mashpee, in Barnstable County, Massachusetts. As a result of these consultations and site visits, the MMS has been made aware that an unobstructed view of the eastern horizon from the locations used for the practice of their traditional religious beliefs is sacred to the Wampanoag Tribes. Several properties having traditional religious and cultural importance to the tribes are located within the proposed project's APE.

During government to government consultations and the Section 106 consultation process, the MMS was made aware of a property having religious and cultural importance to the Mashpee Wampanoag Tribe, off tribal land, from which there would be a view of the proposed project. This property is potentially eligible for inclusion in the NRHP under Criterion D. Further description of this property is being held confidential at the request of the Tribe. Nearby visual simulations show that the wind turbines would be visible along the eastern horizon from the site. According to the Mashpee, the altered view of the eastern horizon that would result from construction of the proposed project would be a significant adverse effect. This TCP has been added to the list of historic properties that are within the APE and would suffer adverse indirect visual effects from the proposed project.

During government to government consultations with the Mashpee Wampanoag Tribe and the Wampanoag Tribe of Gay Head (Aquinnah), and subsequent site visits held between the Tribes and the MMS (August 3-5, 2009), the MMS was made aware of sixteen additional sites off tribal land. Fourteen sites visited by the MMS were affiliated with the Wampanoag Tribe of Gay Head (Aquinnah). Of those fourteen Aquinnah sites, only three had a view of the proposed project and were therefore within the APE of the project. Two of these three sites within the APE are potentially eligible for listing on the NRHP under Criterion A. An additional two sites visited by the MMS were affiliated with the Mashpee Wampanoag Tribe. Both were located within the project APE and are potentially eligible for listing on the NRHP under Criterion A; one of the two may also be eligible under Criterion D. These two Mashpee Wampanoag TCPs and two Wampanoag Tribe of Gay Head (Aquinnah) TCPs have been added to the list of historic properties that would suffer adverse visual effects from the proposed project. All five of the individual eligible properties are used for cultural and ceremonial practices and share an unobstructed east-facing view over the Sound.

On January 4, 2010, in a Determination of Eligibility (Keeper of the National Register of Historic Places [NPS]), the Keeper of the National Register found that Nantucket Sound is “part of a larger, culturally significant landscape treasured by the Wampanoag tribes and inseparably associated with their history and traditional cultural practices and beliefs, as well as with the Native American exploration and settlement of Cape Cod and the Islands.” Nantucket Sound as a TCP is eligible for listing in the NRHP under all four criteria as “a contributing feature of a larger historic and archaeological district.

## **3.2 Offshore Cultural Resources**

A marine sensitivity assessment of approximately 62.15 km<sup>2</sup> (15,360 acres) of Nantucket Sound seafloor comprising the proposed project study area, as well as along the 115 kV transmission cable system route to the Yarmouth landfall, was conducted in 2003 (Report No. 4.3.5-2). Based on this assessment, a marine archaeological reconnaissance survey was conducted in the offshore study area in 2004 (Report No. 4.3.5-3). A follow-up marine archaeological reconnaissance survey was performed in 2006?? after the location of the WTG array was revised to be located wholly on the Outer Continental Shelf. (Report No. 4.3.5-4).

### **3.2.1 Offshore Historic Archaeological Resources**

The Marine Archaeological Sensitivity Assessment conducted for the Cape Wind Energy Project by PAL (June 2003) indicated that there were 45 ships reported lost within the general vicinity of the project area. The dates of the vessels lost range from 1841 to 1963; however, 19 of the vessels had no date of loss given in the source databases used by PAL. The primary sources of shipwreck data used in the PAL analysis were the Massachusetts Board of Underwater Archaeological Research (MBUAR), the Northern Shipwreck Database, and the NOAA Automated Wreck and Obstruction Information System (AWOIS) database. A listing of these reported shipwrecks is found in PAL Report No. 4.3.5-2).

A subsequent compilation of reported shipwreck losses by J.F. Jenney (Jenney 2007) produced a list of 95 shipwrecks reported lost in the general vicinity of the project area; the dates of loss ranging from 1744 to 1990. The sources used by Jenney included those used by PAL, as well as local sources of information such as newspapers and family genealogical reports. Only thirteen vessels could be directly correlated by name between the PAL report and the list compiled by Jenney. This discrepancy is probably due in large part to the additional primary sources used in compiling Jenney’s list. Compilation of shipwreck data is very problematic, and there are many additional reasons that such discrepancies may exist between shipwreck listings for a given area (e.g. the extent of the geographic area included in the search; uncertainty about the exact location of loss; multiple listings for the same ship with variations in the details given, including alternate spellings of the vessel name; listings indicated as unidentified vessel, or unidentified date of sinking; and listings of obstructions that may be shipwrecks, but which have not been verified). Other considerations in relating lists of shipwreck losses to actual shipwreck sites within a given geographic area are that some vessels were burned or otherwise destroyed, and many were salvaged with no record of the salvage having taken place.

A marine archaeological survey was completed in June and July 2003 by PAL in water depths greater than 0.9 m (3 ft) to locate any evidence of potential archaeological sites within the offshore portion of the proposed project area. This survey recorded 154 magnetic anomalies and 109 side-scan sonar contacts. Of the combined 263 magnetic anomalies and side-scan sonar contacts, all but 29 were determined to have a source that was non-cultural in nature or, based on their remote sensing signatures, were interpreted as isolated modern debris, and, therefore, were eliminated from further consideration. Survey data for the remaining 29 anomalies were post-processed and additional analyses were completed.

Analyses of the post-processed data associated with the 29 anomalies of interest and additional data collected during September 2003 produced three targets with moderate probability of representing historic period submerged cultural resources. All are in the vicinity of Horseshoe Shoal. Locations were provided to MHC and the Massachusetts MBUAR, but are not publicly distributed to protect the integrity of these potentially significant sites.

### **3.2.2 Offshore Prehistoric Archaeological Resources**

The Marine Archaeological Sensitivity Assessment conducted for the Cape Wind Energy Project (Report No. 4.3.5-2)) states that much of the offshore project area would have been exposed and available for human habitation from about 12,500 to 7,000 B.P. As sea level continued its post-glacial rise, the Sound would have become inundated, but with smaller areas of topographic highs remaining above sea level until as late as about 1,000 B.P. During these periods of lower sea level, the area that is now Nantucket Sound would have been dry land and available to aboriginal populations for habitation and subsistence activities.

A marine archaeological reconnaissance survey was conducted in March 2004 (Report No. 4.3.5-3) to locate any areas having potential for preserved prehistoric archaeological deposits within the offshore project area. Although the survey data indicate that the majority of the proposed project area has been extensively reworked and disturbed by marine transgressive processes, the subbottom profiler and vibracore data identified undisturbed deposits of organic material in limited areas within the easternmost portion of the WTG array. Subsequent laboratory analysis of these vibracores indicated that the organic material was from well-preserved terrestrial deposits indicative of former deciduous forest, freshwater wetland, and lake settings. These are types of environments that aboriginal populations would most likely have used for settlement and subsistence activities, and the state of preservation of these former terrestrial deposits also indicates that any archaeological remains present within these areas also would most likely still be preserved. No actual cultural material was identified within the vibracore samples; however, the turbine array of the proposed project has been adjusted to avoid these potential prehistoric aboriginal site areas.

### **3.2.3 Offshore Traditional Cultural Resources**

According to the Keeper of the National Register (NPS), as described in the National Register Determination of Eligibility (4 January 2010; p 2), and in agreement with the opinion of the Massachusetts SHPO, Nantucket Sound is eligible for listing in the National Register as a TCP and also as an historic and archaeological district associated with, and that has yielded and

has the potential to yield, important information about the Native American exploration and settlement of Cape Cod and the Islands. The Sound is eligible as an integral, contributing feature of a larger district, whose boundaries have not been precisely defined, under all four criteria of eligibility.

In addition to alterations of the visual setting that would be experienced by the Tribes were the proposed action to be constructed, the physical disturbance of the seabed will adversely impact the integrity of setting, feeling, and association and will forevermore undermine the undefiled nature of this TCP of the Wampanoag Tribes in a direct and physical manner. Therefore, the proposed project will have a direct adverse effect on the integrity of the Sound as a contributing factor to the larger – and also NRHP eligible – cultural landscape and district.

## 4.0 Description of Affected Historic Properties

Three categories of cultural resources discussed in this section will be adversely affected by the proposed undertaking: the viewsheds of twenty-eight above-ground historic properties and five traditional cultural properties of the Wampanoag Tribe of Gay Head (Aquinnah) and Mashpee Wampanoag Tribe will be indirectly adversely affected; furthermore, Nantucket Sound as a traditional cultural property of the Wampanoag Tribe of Gay Head (Aquinnah) and Mashpee Wampanoag Tribe will be directly adversely affected by the proposed project.

### 4.1 Twenty-Eight Above-Ground Historic Properties, Including Two National Historic Landmarks

The land area surrounding the site of the proposed project has a variety of historic properties that would be in view of the proposed project. There are both individual homes on and eligible for listing on the NRHP, and larger historic districts on the NRHP that would have a view of the proposed project, including the island of Nantucket which is designated a National Historic District. Based on visual simulations and reconnaissance survey, twenty eight properties in total will be indirectly adversely affected by the proposed undertaking. These properties are presented in Table 4.1, below. The factors contributing to their National Register eligibility are discussed above in the Section 3.1.2 Above Ground Historic Resources.

### 4.2 Five Onshore Traditional Cultural Properties

Government-to-government consultations and site visits between the MMS and the Tribal Historic Preservation Offices of the Wampanoag Tribe of Gay Head (Aquinnah) and the Mashpee Wampanoag Tribe raised concerns that changes to the visual setting caused by the proposed project would result in adverse effects to their culture, history and religion, particularly to religious ceremonies held at particular locations of practice.

At the March 13, 2008, Cape Wind public hearing at the University of Massachusetts in Boston, the Chairwoman of the Wampanoag Tribe of Gay Head (Aquinnah) expressed concern that the right to practice their religious ceremony, from historic locations, in the traditional manner will be forever denied by the proposed project. The Chairwoman stated *“as the People of the First Light, one of the most important aspects and fundamental components of their religious and cultural beliefs and practices is their ability to experience, embrace, and give ceremony and prayers of thanksgiving to the first light. These ceremonies and spiritual and religious practices are dependent upon maintaining the ability to view the first light, the eastern horizon vista and viewshed. Additionally, there will be other impacts, such as the celestial and solstice ceremonies, which will also be adversely impacted.”* In a subsequent Section 106 Consultation meeting with the Wampanoag Tribe of Gay Head (Aquinnah) and Mashpee Wampanoag Tribe, Bettina Washington, Tribal Historic Preservation Officer for the Wampanoag Tribe of Gay Head (Aquinnah), stated that by the alteration of their tribal members’ ability to conduct their religious ceremonies with an unobstructed view of the rising sun on the eastern horizon, *“... you're asking me to give up my identity”*.



At the March 10, 2008, Cape Wind public hearing in West Yarmouth, the Tribal Historic Preservation Officer of the Mashpee Wampanoag Tribe, Mr. George “Chuckie” Green Jr., stated *“historical, cultural, religious values that we place on the Sound are immense. Our celestial ceremonies are held (on the Sound). The blocking of those views, of that sunrise, would be an issue to the tribe.”* In addition, in their letter of comment on the DEIS, Mr. Green states, *“The Mashpee are members of the Great Wampanoag Nation (the People of the First Light). Our name defines who we are...”* The letter goes on to state that the Mashpee have a significant cultural and religious need to have a clear unobstructed view of the southeast horizon.

During government to government and Section 106 consultation, the MMS was made aware of a TCP of the Mashpee Wampanoag Tribe off tribal land, also determined to be eligible under Criterion D, from which there would be a view of the proposed project. Further description of this property is being held confidential at the request of the Tribe. Nearby visual simulations show that the wind turbines would be visible along the eastern horizon from the site. According to the Mashpee, the altered view of the eastern horizon that would result from construction of the proposed project would be a significant adverse effect. This TCP has been added to the list of historic properties that would suffer adverse indirect visual effects from the proposed project.

During government to government consultations with the Mashpee Wampanoag Tribe and the Wampanoag Tribe of Gay Head (Aquinnah), and subsequent site visits held between the Tribes and the MMS (August 3-5, 2009), the MMS was made aware of four individual onshore sites (two affiliated with the Mashpee Wampanoag Tribe and two (East Chop and Leyland Beach) with the Wampanoag Tribe of Gay Head (Aquinnah) that are located within the project APE and are eligible for inclusion to the NRHP. According to the Mashpee, the altered view of the eastern horizon that would result from construction of the proposed project would be a significant adverse effect. As an unobstructed view of the rising eastern sun is a contributing element to the integrity of setting, feeling, and association of the properties, these four Mashpee Wampanoag TCPs have been added to the list of historic properties that would suffer adverse indirect visual effects from the proposed project. The exact location and descriptions of these TCPs are being kept confidential at the request of the Tribes.

### **4.3 Description of Nantucket Sound**

Nantucket Sound is defined as the roughly triangular area of the continental shelf that lies between the southern shore of Cape Cod (between Monomoy and Mashpee), and the islands of Martha’s Vineyard and Nantucket...Nantucket Sound constitutes a small, shallow marine basin whose edges are formed by the islands of Nantucket, Martha’s Vineyard and Monomoy, the submerged shoals associated with these islands, and by the Cape... At its western end, Nantucket Sound merges with Vineyard Sound.

The Sound is part of a larger, culturally significant landscape treasured by the Wampanoag tribes and inseparably associated with their history and traditional cultural practices and beliefs, as well as with the Native American exploration and settlement of Cape Cod and the Islands. The Wampanoag consider the entirety of Nantucket Sound to be ancestral lands, based on their oral traditions which hold that the Wampanoag people have inhabited the land from the

western shore of Narragansett Bay to the Neponset estuaries since time immemorial, even the land now called Horseshoe Shoals.

In a letter dated 17 September 2009, Tribal Historic Preservation Officer Washington, of the Wampanoag Tribe of Gay Head (Aquinnah), writes that “our oral history proclaims that we walked across this expanse of land, now covered by water... This is the path the Aquinnah Wampanoag people took to arrive at our present location and *defines our relationship* to the rest of the Wampanoag Nation and other American Indian tribes in New England and beyond. Our history has been, and continues to be, defined by this unique placement on Mother Earth” (emphasis mine). Furthermore, THPO Washington writes that the area has remained “undefiled... since time immemorial and it defines our place in the indigenous world.”

According to the Keeper of the National Register, and in agreement with the opinion of the Massachusetts SHPO, Nantucket Sound (the Sound) is:

“eligible for listing in the National Register as a TCP and as an historic and archaeological property associated with and that has yielded and has the potential to yield important information about the Native American exploration and settlement of Cape Cod and the Islands. The Sound is eligible as an integral, contributing feature of a larger district, whose boundaries have not been precisely defined, under:

- Criterion A for its associations with the ancient and historic period Native American exploration and settlement of Cape Cod and the Islands, and with the central events of the Wampanoags’ stories of Maushop and Squant/Squannit;
- Criterion B for its association with Maushop and Squant/Squannit;
- Criterion C as a significant and distinguishable entity integral to Wampanoag folklife, traditions, practices, cosmology, religion, material cultural, foodways, mentoring, and narratives; and
- Criterion D for the important cultural, historical, and scientific information it has yielded and/or may be likely to yield through archaeology, history, and ethnography about access to resources, patterns of settlement, mobility, and land use prior to and after 6,000 years ago as a result of the inundation of the Sound. It is also important for the significant information it provides and can provide about the cultural practices and traditions of the Native Americans of Cape Cod and the Islands in relationship with other peoples since ancient times.” (Keeper of the National Register of Historic Places (NPS) Determination of Eligibility for Nantucket Sound, p. 2).

36 CFR Part 800.4(c)(1) recognizes the special expertise of Native Americans in “assessing the eligibility of historic properties that may possess religious and cultural significance to them,” and both Tribes have indicated not only the unique importance of the Sound, but also that the proposed undertaking will undermine their cultural practices and identity if built as proposed.

The Sound is a unique and “key definer of the Wampanoag Tribes’ place on and relationship with the earth.” Moreover, according to the Keeper of the National Register (NPS) in the National Register Determination of Eligibility (p. 4), the Sound itself maintains a high degree of overall integrity as an integral part of – and contributing factor to – a larger NRHP-eligible district that includes areas in proximity to the Sound. Although there are some modern navigational devices and measurable changes to the seabed over time, its value to the Wampanoag Tribes and its integrity of setting, feeling, and association are intact.

**Table 4.1 Historic properties determined to be adversely affected by the proposed project.**

<b>Town</b>	<b>Property Name</b>	<b>Property Type</b>	<b>Adverse Effect</b>
Barnstable	Col. Charles Codman Estate	Individual Property	Indirect Visual
	Cotuit Historic District	Historic District	Indirect Visual
	Hyannis Port Historic District	Historic District	Indirect Visual
	Kennedy Compound	Historic Landmark	Indirect Visual
	Wianno Club	Individual Property	Indirect Visual
Chatham	Wianno Historic District	Historic District	Indirect Visual
	Champlain Road Historic District	Historic District	Indirect Visual
	Monomoy Point Lighthouse	Individual Property	Indirect Visual
Edgartown	Stage Harbor Light	Individual Property	Indirect Visual
	Cape Poge Light	Individual Property	Indirect Visual
	Edgartown Harbor Lighthouse	Individual Property	Indirect Visual
Falmouth	Edgartown Village Historic District	Historic District	Indirect Visual
	Church Street Historic District	Historic District	Indirect Visual
	Falmouth Heights Historic District	Historic District	Indirect Visual
	Maravista Historic District	Historic District	Indirect Visual
	Menahaunt Historic District	Historic District	Indirect Visual
Harwich	Nobska Point Light Station	Individual Property	Indirect Visual
Nantucket	Hithe Cote	Individual Property	Indirect Visual
Oak Bluffs	Nantucket (Great Point) Light	Individual Property	Indirect Visual
	Nantucket Historic District: Nantucket Cliffs	Historic Landmark	Indirect Visual
	Cottage City Historic District	Historic District	Indirect Visual
	Dr. Harrison A. Tucker Cottage	Individual Property	Indirect Visual
Ocean Grove	East Chop Light	Individual Property	Indirect Visual
	Vineyard Highlands Historic District	Historic District	Indirect Visual
Tisbury	Ocean Grove Historic District	Historic District	Indirect Visual
Yarmouth	West Chop Historic District	Historic District	Indirect Visual
	West Chop Light Station	Individual Property	Indirect Visual
Confidential	Park Avenue Historic District	Historic District	Indirect Visual
	Mashpee Wampanoag Site	TCP/Individual Property	Indirect Visual
	Mashpee Wampanoag Site	TCP/Individual Property	Indirect Visual
	Mashpee Wampanoag Site	TCP/Individual Property	Indirect Visual
	Wampanoag Tribe of Gay Head (Aquinnah) East Chop Site	TCP/Individual Property	Indirect Visual
	Wampanoag Tribe of Gay Head (Aquinnah) Leyland Beach Site	TCP/Individual Property	Indirect Visual
	Nantucket Sound	TCP/Historic District	Direct Physical

## **5.0 Description of the Undertaking's Effects on Historic Properties**

Impacts to onshore Above-Ground Historic Resources and to onshore individual TCPs will involve indirect visual effects of the wind turbine array. Impacts to the seabed of Nantucket Sound would involve the direct physical effects of drilling and construction activities, which, in turn would diminish the integrity of the elements of feeling and association that the tribe as well as the potential to disturb and destroy archaeological resources. The ocean is an important component of the setting for all of the historic properties within the APE. Many of the historic buildings and districts were designed as seasonal resort communities to take advantage of the coastal setting, or lighthouses designed to warn watercraft of navigational hazards. An uninterrupted view of the rising eastern sun for religious purposes, as well as the integrity of the physical setting of the seabed of Nantucket Sound, are defining features of Wampanoag Tribal culture, history, and religion. In cases where the setting of the property is affected in such a way as to diminish the integrity of the property's significant historic or cultural features, the proposed project is considered to have an adverse effect on the historic property or TCP.

### **5.1 Effects to Onshore Historic Properties**

#### **5.1.1. Archaeological Sites**

Based on the results of the terrestrial archaeologically-intensive survey, no significant historic archaeological resources have been identified within the Project's APE for ground disturbance along the onshore transmission cable system route. Therefore, the proposed project is expected to have no effects on onshore historic or prehistoric archaeological sites.

#### **5.1.2 Above-Ground Historic Resources**

No known or designated historic structures or districts have been identified within the Project's APE for ground disturbance on land, which consists of paved roadway and cleared NSTAR ROW. Thus, there would be no physical effects to onshore historic structures and districts.

The visual alteration to the historic Nantucket Sound setting caused by the WTGs and related structures would constitute an adverse visual effect, as the character, setting, and viewshed of the twenty-eight historic properties listed in Table 4.1 would be altered in an indirect manner.

As two of the affected above-ground historic properties are NHLs, The National Park Service (NPS) reviewed the effects of the proposed project on these two properties. It concluded, consistent with MMS's position, that the adverse effect on the two NHLs results solely from the visual intrusiveness of the wind turbines, that it does not diminish the significance of either NHL, and that the effect in this particular case is therefore indirect. The proposed project will have no direct adverse effect within or immediately adjacent to the boundaries of either NHL. In both cases, adverse effects will be limited to the partial obstruction of long-distance, open to the horizon views historically associated with the resources (NPS letter to MMS October 16, 2009).

### **5.1.3 Onshore Individual Traditional Cultural Properties**

Analysis of visual transects run from Gay Head/Aquinnah to the proposed project location indicates that no portions of the offshore turbines in the array would be visible to the viewers at Gay Head/Aquinnah. The MMS was made aware of five TCPs of the Wampanoag Tribes, off tribal land, from which there would be a view of the proposed project and that also are eligible for listing on the NRHP. Nearby visual simulations show that the wind turbines would be visible along the eastern horizon from the sites.

The altered view of the eastern horizon across Nantucket Sound that would result from operation of the proposed project would be a significant adverse effect to the Tribe's culture and to their traditional ceremonial and religious practices. As stated in Resolution No. 2009:026 of the United South and Eastern Tribes (USET) February 12, 2009, the proposed action "will forever change the physical integrity of the Sacred Site; and will ruin the eastern vista viewshed, essential to maintaining the Tribal identity of the Wampanoag people and their spiritual wellbeing."

The visual alteration to the traditional historic Nantucket Sound setting caused by the WTGs and related structures would constitute an adverse visual effect, as the character, setting, and viewshed of the five TCPs listed in Table 4.1 would be altered in an indirect manner.

## **5.2 Effects to Offshore Historic Properties**

### **5.2.1 Effects to Historic Archaeological Resources**

Three targets with moderate probability of representing historic shipwrecks were identified in the vicinity of Horseshoe Shoal. The MMS would require that these three potential shipwreck locations be avoided by all bottom-disturbing activities during all proposed project construction, maintenance, and decommissioning activities; therefore, the effects of construction and decommissioning activities to offshore historic archaeological resources are expected to be negligible. If avoidance is not possible, the MMS would require further investigation of the potential shipwreck sites in consultation with MHC and MBUAR. The MBUAR and MHC concurred with these recommendations (see letters dated May 11, 2004 and May 19, 2004, respectively, Appendix B).

### **5.2.2 Effects to Prehistoric Archaeological Resources**

The archaeological analysis of the subbottom profiler and vibrocore data collected within the area of the proposed project identified organic material interpreted as paleosols (ancient land surfaces) in limited areas within the easternmost portion of the WTG array. The wind turbine array has been modified to avoid the areas where intact paleosols have been identified (see USDOJ MMS FEIS). No other areas having a high probability for prehistoric site occurrence were identified from marine remote sensing data and no evidence of material culture associated with prehistoric Native American occupation was identified within the site of the proposed project.

Despite the lack of direct evidence of archaeological resources identified during analysis, the National Park Service (NPS) Determination of Eligibility indicates that Nantucket Sound is eligible for listing in the National Register not only as a traditional cultural property but as an historic and archaeological property. According to the NPS, Nantucket Sound is associated with, has yielded, and has the potential to yield important information about the Native American exploration and settlement of Cape Cod and the Islands. While the archaeological reconnaissance survey conducted in the project area did not identify any prehistoric archaeological sites, there is the potential for undiscovered submerged archaeological sites and archeobotanical materials to exist. Therefore, these undiscovered submerged archaeological sites and archeobotanical material could be adversely impacted by the proposed undertaking.

### **5.2.3 Seabed of Nantucket Sound**

The Wampanoag consider the entirety of Nantucket Sound to be ancestral lands, based on their oral traditions which hold that the Wampanoag people have inhabited the land from the western shore of Narragansett Bay to the Neponset estuaries since time immemorial, including the submerged lands now called Horseshoe Shoals. The marine remote sensing survey data and vibracores that were collected to locate preserved prehistoric archaeological sites (discussed in the previous section) identified some limited areas within the easternmost portion of the WTG array where ancient land surfaces were still preserved. In areas where the ancient land surface has survived marine transgression and remained relatively intact, there is also the possibility that prehistoric cultural material remains (i.e. sites of ancestral tribal activities) could be preserved in those areas. Analysis of the vibracores collected at these locations contained no evidence of material culture. However, to minimize any possibility of impacting ancestral sites that might be present within these limited areas of preserved ancient land surface, the wind turbine array was modified to avoid these areas. The MMS would also include a “Chance Finds Clause” as a part of any lease document, which would require the lessee to halt operations and notify the MMS if any unanticipated archaeological discovery is made during Lease activities. This clause is included in all MMS lease and permit documents.

In the view of the tribes, the construction of WTGs, as proposed, would constitute a direct physical intrusion into a potentially undisturbed landscape therefore adversely affecting the integrity of setting, feeling, and association of the Sound. The proposed project will have a direct adverse physical affect on the integrity of the seabed of the Sound, as a contributing factor to the larger – and also NRHP eligible – cultural landscape and district.

The Tribes have expressed concern that the mitigation measures described in Section 6.4 (Actions to Avoid, Minimize, or Mitigate Adverse Effects) may not be sufficient for the proposed bottom-disturbing activities. In his letter of comment on the DEIS, George “Chuckie” Green, Jr., Tribal Historic Preservation Officer for the Mashpee Wampanoag, commented, “... *if remains were found in 20-60 feet of water, who would know? Between the depth and turbulence, who would see? Furthermore, who would care?*” The “Chance Finds Clause” is useful in providing a legal basis for prosecution if a lessee or permittee knowingly disturbs an archaeological site and does not report it; however, in practicality it is entirely possible that unanticipated archaeological sites (e.g. tribal ancestral sites) could be inadvertently disturbed during lease activities and it would neither be recognized nor reported. It is for this reason that the MMS takes a very conservative approach by requiring avoidance or further investigation of

all areas that are determined to have any potential for archaeological resources when permitting OCS activities.

According to the Keeper of the National Register (Determination of Eligibility 4 January 2010; p 2), and in agreement with the opinion of the Massachusetts SHPO, Nantucket Sound is eligible for listing in the National Register as a TCP and as an historic and archaeological property associated with and that has yielded and has the potential to yield important information about the Native American exploration and settlement of Cape Cod and the Islands. The Sound is eligible as an integral, contributing feature of a larger district, whose boundaries have not been precisely defined, under all four criteria of eligibility. Although the precise boundary for this district has not been precisely defined, it is clear that the proposed project will have an adverse indirect visual impact on Nantucket Sound as a TCP as well as on the associated landscape comprising the cultural sites of the Tribes. Furthermore, the proposed project will have an adverse direct physical impact on the submerged landscape under the waters of Nantucket Sound, which is also culturally and historically significant to the Wampanoag, and is discussed below.

According to the tribes, the physical intrusion caused by the construction of the proposed project will adversely impact the integrity of setting, feeling, and association during construction and will permanently undermine the undefiled nature of this TCP of the Wampanoag Tribes in a direct manner. Therefore, the construction portion of the project will diminish the integrity of the Sound as a contributing factor to the larger – and also NRHP eligible – cultural landscape and district and upon the Wampanoag cultural identity.

### **5.3 Summary**

Based on cultural resource surveys conducted to date and through continued coordination with MBUAR and MHC, and compliance with any other future requests for further analysis and or mitigation, the effects of the proposed undertaking on above-ground historic properties and on onshore TCPs are expected to be minor, as they constitute indirect visual effects that will be reversed after the project's decommissioning. For the seabed of Nantucket Sound, the effects of the proposed undertaking on the Wampanoag Culture are expected to be major, as the physical intrusion will permanently alter the undefiled nature of the TCP. MMS will require that all archaeologically sensitive areas identified during the surveys either be avoided or that additional investigations be conducted before the approval of any construction, operation, or decommissioning activities on the lease. If any archaeological resources are encountered during construction, operation, and decommissioning, MMS will require that operations be halted immediately within the area of the discovery and the discovery reported to the MMS Regional Director.



## 6.0 Application of the Criteria of Adverse Effect

The *Criteria of Adverse Effect* under Section 106 [36 CFR 800.5(a)(1)] states that an undertaking has an adverse effect on a historic property:

*...when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.... Adverse Effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative (36 CFR 800.5(a)(1)).*

According to regulation, Adverse Effects on historic properties include, but are not limited to (36 CFR 800.5(a)(2)):

- 1) Physical destruction, damage, or alteration of all or part of the property, including rehabilitation, repair, hazardous material remediation, provision of handicapped access or any other alteration not consistent with the Secretary's Standards for the treatment of Historic Properties (36 CFR 68);
- 2) Removal of a property from its historic location;
- 3) Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- 4) Introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting;
- 5) Neglect of a property resulting in its deterioration or destruction; and
- 6) Transfer, lease, or sale of property without legally enforceable preservation restrictions or conditions.

Three categories of cultural resources will be adversely affected by the proposed undertaking. The viewshed of twenty-eight above-ground historic properties and five traditional cultural properties of the Wampanoag Tribe of Gay Head (Aquinnah) and Mashpee Wampanoag Tribe will be indirectly affected. Furthermore, Nantucket Sound, a TCP of the Mashpee Wampanoag Tribe and Wampanoag Tribe of Gay Head (Acquinnah) will be physically altered by the proposed undertaking.

## **6.1 The Viewshed of Twenty-Eight Above-ground Historic Properties, Including Two National Historic Landmarks**

The undertaking constitutes an indirect, adverse visual effect for twenty-eight above-ground historic properties (see Table 4.1) under conditions 3 and 4 above, in that the undertaking will change the character of the properties' setting that contributes to their historic significance; and the undertaking introduces visual elements that are out of character with the historic setting of the properties. However, due to the distance and open viewshed the integrity of the properties would not be so diminished as to disqualify any of them for NRHP eligibility (see NPS letter to MMS October 16, 2009). The adverse effects to the viewshed of the above-ground historic properties are considered temporary, since they will only occupy the space for approximately 30 years, but unavoidable for reasons discussed below.

## **6.2 The Viewshed of Five Traditional Cultural Properties**

The undertaking constitutes an indirect, adverse visual effect for five TCPs of the Wampanoag Tribe of Gay Head (Aquinnah) and Mashpee Wampanoag Tribe under conditions 3 and 4 above, in that the undertaking will change the character of the property's physical features from a location where the southeastern horizon is unimpeded, to one in which the horizon is partially obstructed. Furthermore, the undertaking will introduce visual elements that are out of character with the ceremonial use of the property. The adverse effects to these five TCPs of the Wampanoag Tribe of Gay Head (Aquinnah) and Mashpee Wampanoag Tribe are considered temporary, since they will only occupy the space for approximately 30 years, but unavoidable for reasons discussed below.

## **6.3 Nantucket Sound**

The undertaking constitutes a direct, physical effect on the seabed of Nantucket Sound, a TCP of the Wampanoag Tribe of Gay Head (Aquinnah) and Mashpee Wampanoag Tribe under 1, 3, and 4 above. Not only will the undertaking introduce visual elements that are out of character with the property and alter its setting, but it will also change of the character of the property's physical features that contribute to its historic and cultural significance to the Tribes. Furthermore, the undertaking constitutes physical destruction, damage, and alteration of part of the seabed of Nantucket Sound which, according to the Tribes, cannot be mitigated nor reversed once done. The adverse effects to this TCP are considered permanent and unavoidable for reasons discussed below.

## **6.4 Actions to Avoid, Minimize, or Mitigate Adverse Effects**

### **6.4.1 Visual Resources Mitigation**

The following is a comprehensive summary of the proposed mitigation for adverse visual effects to historic properties and Tribal areas of Traditional Cultural and Religious importance that would result from the proposed project. Visibility of the Turbine array will be minimized by the following measures:

- Daytime FAA lighting on the WTGs has been omitted, unless the U.S Coast Guard decides that some “day beacons” would be required to ensure navigation safety.
- Potential nighttime visual impacts have been lessened by the reduction in FAA nighttime lighting.
- Revisions to the layout have narrowed the breadth of the visual impact as seen from certain areas around the Sound.
- The WTGs will be an off-white color, to reduce contrast with the sea and sky (yet remain visible to birds).
- The upland transmission route will be located entirely below ground within paved roads and existing utility ROWs to avoid visual impacts and impacts to potential unidentified archaeological resources.

Further mitigation will be considered during the formal Section 106 consultation process to include the SHPO at MHC and will culminate in a final Memorandum of Agreement (MOA) spelling out the mitigation measures that the consulting parties and the signatories agree to. To comply with the NHPA, MMS will continue to consult in good-faith effort with the SHPO at MHC and other consulting parties to address and resolve issues concerning potential visual effects on historic properties.

### **6.3.2 Mitigation of Effects to Offshore Submerged Historic/Archaeological Resources**

The following is a comprehensive summary of the proposed mitigation for potential impacts to historic properties as a result of the Cape Wind Project.

- All areas identified during the marine archaeological remote-sensing and vibracore investigations of the proposed project area as having any potential for preserved prehistoric archaeological sites (i.e. aboriginal cultural sites and remains) have been avoided by redesign of the proposed project, including the relocation of eight WTGs and associated cable arrays. (Analysis of the vibracores collected at these locations contained no evidence of material cultural remains. However, to minimize any possibility of impacting ancestral sites that might be present within these limited areas of preserved ancient land surface, the wind turbine array was modified to avoid these areas.)
- MMS will apply a 60 m (200 ft) no-activity buffer zone around the three potential historic resources (i.e. potential shipwreck sites) identified during the marine archaeological remote-sensing survey of the proposed project area. The no-activity zones will be demarcated on project plans provided to contractors and detailed in construction specifications; compliance will be overseen by an environmental inspector. If the potential shipwreck sites cannot be avoided, the MMS will require additional investigations of the locations prior to the approval of any bottom-disturbing activities in the area to determine whether they are, in fact, shipwreck sites, and, if so, to evaluate their historic significance.

- The MMS will include a “Chance Finds Clause” as a part of the lease document which requires the lessee to halt operations and notify the MMS if any unanticipated archaeological discovery is made during Lease activities. This clause is included in all MMS lease and permit documents.
- The proposed undertaking has been redesigned to minimize visual impacts to the extent feasible and allowable under U.S. Coast Guard and Federal Aviation Administration (FAA) regulations, including reducing lighting on the WTGs and revising the layout such that the breadth of visual impact of the array as seen from certain areas is reduced (see Section 6.3.4).

### **6.3.3 Project Mitigation of Effects to TCPs**

According to the tribes, mitigation of effects of visual intrusion on ceremonial practices is ineffective, and the only avoidance of such impacts is relocation of the project. The visual intrusion on ceremonial practices may be minimized somewhat by adoption of measures to reduce visibility of the WTGs, however, the tribes have explained that these measures are not satisfactory, as their eastern viewshed would remain partially obstructed.

According to the tribes, the damage done by the physical intrusion of the turbines into the seabed to the Wampanoag religion, history, and cultural identity would be irreversible and could not be mitigated.

MMS evaluated nine alternative geographic locations along the coast from Maine to Rhode Island, three non-geographic alternatives and the proposed action, and the no action alternative. In addition, the MMS considered onshore, near shore and dispersed sites and other forms of alternative energy production. All alternatives, including the proposed action, were subject to screening criteria which included meeting the purpose and need statement, economic viability and technological feasibility. Technological feasibility was determined by MMS considering existing technology utilized successfully on a commercial scale. This was then used to describe the physical criteria within which a project can be constructed, operated and maintained. The application of technological feasibility eliminated seven alternative sites from further application to screening criteria and, in accordance with CEQ § 1502.14, were not subject to detail analysis within the EIS.

The geographical and non-geographical alternatives that met the described criteria were subjected to further detailed environmental analysis with the proposed project and no action alternative. Detailed results of these analyses are presented in the MMS Draft Environmental Impact Statement for the Cape Wind Energy Project (USDOJ/MMS, 2008). Alternatives to the proposed action subject to detailed analysis in the FEIS were found to have comparable or greater environmental impacts than the proposed action, depending upon the resource category considered. In respect to Northern Right Whale Critical Habitat, the location of the Monomoy Shoals alternative resulted in a greater likelihood of construction, decommissioning, and operational impacts to right whales in this area, than in the area of the proposed action. In addition, this alternative is located in proximity to Monomoy Island (including the Monomoy National Wildlife Refuge), which provides important resting, nesting and feeding habitat for migratory birds, and would therefore have greater potential impacts than the proposed action to

terrestrial, coastal, and marine birds. The South of Tuckernuck Island Alternative would require a larger area (36 versus 25 square miles) than the proposed action and due to water depths, would require a higher capital outlay to install different types of turbine support structures. This alternative would also be located close to Nantucket and the east end of Martha's Vineyard and would have visual impact from those locations.

The results of the analysis of the project alternatives indicated that the proposed action is most feasible and least detrimental when considering multiple environmental, technical, economic and social factors. MMS has taken every possible action to avoid and minimize adverse effects to historic resources through detailed planning carried out as part of the NEPA process. The adverse effects to the viewshed of twenty-eight historic properties, five onshore TCPs of the Wampanoag Tribe of Gay Head (Aquinnah) and Mashpee Wampanoag Tribe, and Nantucket Sound are considered unavoidable.

## **7.0 Summary of Consulting Parties' and Public Views**

Public notice of availability of a Draft Environmental Impact Statement (DEIS) was presented in Federal Register Vol. 73, No. 13 on Friday, January 18, 2008. Comments from federal, state, and local government agencies as well as other interested parties were requested.

The main content of the consulting parties' comments concerns a previously applied distinction between the USACE's and MMS's approach to evaluating adverse visual effects to historic properties and the scope of historic properties considered in terms of their National Register status. That distinction has now been nullified as MMS has adopted the USACE's approach to assessing adverse visual effects and their findings, and used the USACE's consultant to conduct additional analysis on historic properties not previously considered but brought to MMS's attention through consultation. Consulting parties also expressed concerns regarding potential impacts to the viewshed of TCPs not located within Tribal grounds and to submerged ancestral sites within Nantucket Sound. The consideration of the impacts of the project on the twenty-eight above ground historic structures, five onshore TCPs, and Nantucket Sound have culminated in the preparation of this document. All comments have been taken into consideration and efforts have been made to avoid, minimize, and mitigate against adverse effects.

A comment matrix summarizing the views presented by the consulting parties as a result of the Section 106 consultation process is presented as Appendix A; copies of these and other correspondence are provided as Appendices B – D. Contact information for the consulting parties is presented as Appendix E, and Appendix F presents internal technical memoranda between MMS and its consultants.