Appendix 3.11-C

Visual Impact Assessment of Revised Layout on Multiple Historic Properties

TECHNICAL REPORT

CAPE WIND ENERGY PROJECT
VISUAL IMPACT ASSESSMENT
OF REVISED LAYOUT ON MULTIPLE HISTORIC PROPERTIES:
FINAL ENVIRONMENT IMPACT REPORT

Nantucket Sound:
Cape Cod, Martha's Vineyard, and Nantucket, Massachusetts

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MANAGEMENT ABSTRACT

Cape Wind Associates, LLC (CWA) is proposing to develop the Cape Wind Energy Project, an offshore wind park on Horseshoe Shoal in Nantucket Sound, Massachusetts. This report entitled *Visual Impact Assessment of Revised Layouts on Multiple Historic Properties, Cape Wind Energy Project, Nantucket Sound, Cape Cod, Martha's Vineyard, and Nantucket, Massachusetts* has been prepared for the Final Environmental Impact Report. It supplements the *Visual Impact Assessment* that was completed for the Draft Environmental Impact Statement/Draft Environmental Impact Report (DEIS/DEIR) in June 2004 (PAL 2004). It also incorporates information resulting from the filing of a Notice of Project Change (NPC) under the Massachusetts Environmental Policy Act in June 2005. The project change involves the relocation of 10 WTGs from state waters to federal waters because of changes in the state territorial 3-mile limit as determined by the federal Minerals Management Service (MMS) following a survey in February 2005. Twenty other WTGs proposed in the DEIS/DEIR were relocated to avoid or minimize impacts identified through studies or agency/public comment. The change also involves the new inclusion of one mile of 115 kV submarine cable system, formerly within federal waters, and now within Massachusetts territorial waters because of the state boundary shift. The total number of WTGs remains at 130.

The project has undertaken analyses and consideration of alternatives to respond to both of the Massachusetts Secretary of Environmental Affair's Certificates, and to comments received from review agencies, including the Massachusetts Historical Commission, and the public about the visual and cultural impacts of the project. These include preparation of new daytime and nighttime simulations showing the revised layout, and completion of a visual impact assessment on multiple historic properties in the viewshed. The analysis of information from the NPC for the FEIR concluded that under Section 106 of the National Historic Preservation Act of 1966 as amended and its regulations at 36 CFR 800, the Cape Wind Energy Project will result in a finding of "No Historic Properties Affected" (or "No Effect") for two National Historic Landmark (NHL) properties (Flying Horses Carousel and Wesleyan Grove – Martha's Vineyard Camp Meeting Association), one historic district, and three individual properties; as well as findings of "Adverse Effect" for two NHL properties (Kennedy Compound and Nantucket Historic District), four historic districts, and 10 individual properties. Measures for avoidance, minimization and/or mitigation of adverse effects are proposed. These recommendations can form the basis for consultation leading to a Memorandum of Agreement (MOA) for the Cape Wind Energy Project among the MMS, the Massachusetts State Historic Preservation Office, and other consulting parties.

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CHAPTER ONE

INTRODUCTION

Cape Wind Associates, LLC (CWA) is proposing to develop the Cape Wind Energy Project (the project), an offshore wind park on Horseshoe Shoal in Nantucket Sound, Massachusetts. This report supplements the *Visual Impact Assessment of Multiple Historic Properties, Cape Wind Energy Project, Nantucket Sound, Cape Cod, Martha's Vineyard, and Nantucket, Massachusetts* prepared by PAL in June 2004 (PAL 2004). This document has been prepared for the Final Environmental Impact Report (FEIR). The 2004 study concluded that there will be "No Effect" for one National Historic Landmark (NHL) property (Flying Horses Carousel), one historic district, and two individual properties. Findings of "Adverse Effect" were made for two NHL properties (Kennedy Compound and Nantucket Historic District), four historic districts, and 10 individual properties.

The adverse effect finding is due to the proposed introduction of visual elements [i.e. the visible offshore wind turbine generators (WTGs) and structures] that may constitute an alteration of the historic character, setting, and viewsheds of the historic property that make it eligible for listing in the National Register of Historic Places (National Register). Historic properties are listed or eligible for listing in the National Register, and/or are designated as NHLs. These findings were made under Section 106 of the National Historic Preservation Act of 1966 and the regulations of the Advisory Council on Historic Preservation (36 CFR 800), and under Massachusetts General Laws Chapter 9, Sections 26-27C as amended by Chapter 254 of the Acts of 1988 (950 CMR 71.00).

The results of that analysis were presented in the project's Draft Environmental Impact Statement/Draft Environmental Impact Report (DEIS/DEIR) of November 2004. The project as described in the DEIS/DEIR involved the development of 130 WTGs arranged in a 0.34 nautical mile (nm) (629 meters) by 0.54 nm (1,000 meters) grid pattern in the Nantucket Sound area known as Horseshoe Shoal (as shown in Figure 1-1). The project also included associated underground transmission cables and an Electrical Service Platform (ESP) located near the center of the wind park grid. The project will generate up to 454 megawatts of renewable power. Each of the WTGs was described in the DEIS/DEIR as having a maximum height of 246 feet above mean lower low water (MLLW), with a total overall height up to 417 feet above MLLW when rotor blades reach their maximum vertical position. The Massachusetts Secretary of Environmental Affairs (the Secretary) issued a Certificate on the DEIR on March 3, 2005.

CHAPTER TWO

NOTICE OF PROJECT CHANGE

Subsequently, in June 2005 CWA filed a Notice of Project Change (CWA NPC 2005) under the Massachusetts Environmental Policy Act (MEPA). The project change involves the relocation of 10 WTGs from state waters to federal waters because of changes in the state territorial 3-mile limit as determined by the federal MMS following a survey in February 2005. Twenty other WTGs proposed in the DEIS/DEIR were relocated to avoid or minimize impacts identified through studies or agency/public comment. The array as revised for the FEIR is shown in Figure 2-1 (from CWA NPC 2005 Figure 4). The change also involves the new inclusion of one mile of 115 kV submarine cable system, formerly within federal waters, and now within Massachusetts territorial waters because of the state boundary shift. The total number of WTGs remains at 130. The Massachusetts Historical Commission (MHC) commented on the NPC in a letter dated July 21, 2005 (see Attachment D). The Secretary issued a Certificate on the NPC on August 8, 2005.

The project has undertaken analyses and consideration of alternatives to respond to both of the Secretary's Certificates, and to comments received from review agencies, including the MHC, and the public about the visual and cultural impacts of the project. These include preparation of new daytime and nighttime simulations showing the revised layout (see Attachments A through C), and completion of a visual impact assessment on multiple historic properties in the viewshed, as presented in this report.

CHAPTER THREE

VISUAL IMPACTS OF REVISED LAYOUT ON MULTIPLE HISTORIC PROPERTIES

With respect to visual impacts, the WTG relocations presented in the NPC for the FEIR result in modification of the overall footprint of the project and changes in the closest WTG distances from shore. A comparison of the revised array with those previously proposed in the Environmental Notification Form and the DEIS/DEIR is shown in Figures 3-1 and 3-2 (from CWA NPC 2005 Figures 5 and 6). The following 23 WTGs in the southern and eastern portion of the array as proposed in the DEIS/DEIR (and depicted in Figure 3-1) have been relocated and serve to narrow the field of view from portions of Cape Cod and Nantucket: B13; D14; F15; J1, 2, 3, 4, 5, and 6; K1, 2, 3, 4, 11, 12, 13; and L1, 2, 3, 4, 11, 12, and 13. Twenty of these moved to the north and west of the previously proposed array, two moved along the eastern edge, and one moved along the southern edge. An additional seven WTGs moved within the array itself and did not result in a narrowing of the field of view from any onshore location (CWA letter to MHC dated July 29, 2005, Attachment D).

As stated in the NPC, the visual impacts of the revised wind park layout described above are likely to be the same or less than that in the DEIS/DEIR as the result of a combination of factors. While some WTGs will be closer to land in certain locations, the field of view of the WTGs as seen from locations on the Cape Cod mainland looking generally southward has been significantly narrowed, and the field of view of the WTGs as seen from Nantucket has also been narrowed (see Figure 3-2 from CWA NPC 2005 Figure 6).

This visual impact assessment for the layout revised in the FEIR is based upon the information in the NPC and on simulations and renderings prepared by EDR using the same methodology as presented in the DEIS/DEIR. The assessment included review and analysis of:

- Day and night visual simulations of the revised WTG array and comparison of those prepared for the DEIS/DEIR from the same viewpoints;
- Day time renderings prepared from the six most distant viewpoints using generic seascape photographs, and comparison with the simulations constructed using site-specific photographs;
- Seascape and Shoreline Visibility Assessment report (EDR 2006);
- Effects to two National Register-listed properties in Tisbury (Ritter House and William Street Historic District), as requested by the MHC in their letter dated July 21, 2005 (see Attachment D);

- MHC files and the State Register of Historic Places (includes National Register historic properties) dated January 4, 2006 (MHC 2006); and

- Visual effects of the revised WTG array, including the slight increase in WTG height and width.

No new State Register listings were identified in the January 2006 edition of the Massachusetts State Register of Historic Places. However the Martha's Vineyard Campground Historic District in Oak Bluffs, which was listed in the State and National Registers in 1978, recently received an additional designation as the Wesleyan Grove – Martha's Vineyard Camp Meeting Association NHL on April 5, 2005. The boundaries of the three designations are identical.

Figure 3-2 (from CWA NPC 2005 Figure 6) shows the changes in the overall WTG layout footprint since the ENF and the DEIS/DEIR, and now as they will be presented in the FEIR. Formerly, the project components nearest to historic properties in the DEIS/DEIR layout were located approximately 5.7 miles from Cape Cod at the Wianno Club and Wianno Historic District, Osterville, Town of Barnstable; 5.4 miles from Martha's Vineyard at Cape Poge Light, and 10.4 miles from Nantucket at Tuckernuck Island (see Table 3-1). The FEIR wind park area will be located a minimum of approximately 5.3 miles from Cape Cod (Wianno Club and Wianno Historic District, Osterville, Town of Barnstable), 5.6 miles from Martha's Vineyard (Cape Poge Light), and 10.3 miles from Nantucket (Tuckernuck Island).

The WTG dimensions are revised slightly since the NPC. The height to the hub of each WTG is now proposed to be 257 feet above MLLW, with a total height of 440 feet above MLLW when the rotors reach maximum verticality. Since the DEIS/DEIR and the NPC, this is an increase of 11.5 feet to the height of the hub, and an increase of 23 feet to the top of the rotor blades. The rotor diameter has also increased 23 feet, from 341 to 364 feet. Thus, each WTG in the wind park will be slightly taller and wider. These dimensional increases in WTG and rotor height and in rotor diameter represent an increase of between approximately five and seven percent from the measurements in the DEIS/DEIR and the NPC. These relatively modest increases in scale of the individual WTGs are not likely to significantly intensify the visual effect of the overall array, although review and comparison of the earlier and current simulations suggests that the WTGs will be slightly more visible and the array will look somewhat denser, due to narrowing the field of view.

Information about the proposed lighting scheme for the FEIR indicates that there will be no daytime lighting (previously there were white daytime lights on all WTGs). In addition, night lighting has been reduced. Previously, every WTG would be lit by two red lights at night, flashing randomly. Now, only the 50 perimeter WTGs and the eight WTGs located directly adjacent to the ESP will be lit at night. Every other perimeter WTG will be lit by a single, medium intensity red light at night, with each alternating perimeter WTG lit by a single, low intensity red light. This is reduced from two red lights on each WTG lit at night, as was presented in the DEIS/DEIR. The remainder of the 72 interior WTGs will not be lit with red lighting at night. This revised lighting design complies with the new Federal Aviation Administration (FAA) guidelines.

The red lights on the perimeter WTGs will now be synchronized to flash in unison rather than randomly as proposed in the DEIS/DEIR. The currently proposed flash rate of 20 flashes per minute is the slowest rate requested by the FAA. The reduced red lighting will flash on for one second, with no lighting for two seconds.

As proposed in the DEIS/DEIR, the United States Coast Guard (USCG) lighting for all the perimeter and interior WTGs will be two flashing amber lenses. These amber lights will be mounted on the access platforms on lower portions of the WTG towers, approximately 32 feet above MLLW. The USCG lights are unlikely to be visible from land, based upon manufacturer specifications that state the perimeter amber lights will be visible up to 2 nautical miles (nms), and the interior amber lights will be visible up to 0.5 nms.

CHAPTER FOUR

FINDINGS

The historic properties analyzed for this visual impact analysis are listed in Table 3-1 and correspond to those in the 2004 Visual Impact Analysis Tables 3-1 and 4-1. Table 3-1 also includes updated information about State and National Register-listed properties, as well as the addition of the two National Register properties requested by MHC in their July 21, 2005 letter.

The analysis of the changes in the daytime and nighttime visual simulations between the PAL 2004 DEIS/DEIR visual impact assessment and the daytime and nighttime visual simulations, dated July 2006 (Attachments A and B) for the project as revised for the FEIR are summarized in Table 3-1. Information on each viewpoint or location is compared between the DEIS/DEIR and the FEIR, including the closest distance to the nearest WTG and the finding of effect for each viewpoint. A comment on how the wind park layout has been revised with respect to views from each viewpoint is also included.

The analysis included review of new daytime photo-renderings from six viewpoints around Nantucket Sound using generic seascapes, in order to address reviewers comments on the DEIS/DEIR that far-field site-specific photographs were hazy.

The six potential views of generic seascapes provide clear renderings of daytime views of the WTGs and confirm the extent that the WTGs will be visible in each of these locations. The views are located in Attachment C. In response to EOEA comments and data requests on the DEIS/DEIR, EDR calculated the visible seascape horizon that would be occupied by the visible components of the proposed wind park at each of the viewpoints. Additionally, the percent of the visible seascape horizon and the arc (in degrees) occupied by the proposed project from each viewpoint were calculated. The results show that as distance increases, the portion of the visible seascape horizon that would be occupied by the proposed project decreases, and views were variable where shoreline is variable (EDR 2006).

The distances from the nearest WTGs in the revised array to four historic properties are slightly increased. The nearest WTGs in the revised array are somewhat closer to 11 historic properties. The distances from the nearest WTGs in the revised array to two historic properties remains unchanged. The WTGs will not be visible from six historic properties. There has been some reconfiguring of the edges of the wind park area, resulting in narrowing of the breadth of visual impact, particularly when viewed from the Cape Cod mainland (except for the Nobska Lighthouse areas) and Nantucket. The impact of lighting is reduced, as daytime lighting has been omitted. Nighttime small lighting will be reduced, which will lessen nighttime visibility of the WTGs. However, the daytime view of the complete WTG array is the primary visual impact (see Attachments A and B).

Consideration of this information in conjunction with a comparison of the DEIS/DEIR day and night simulations with the simulations and renderings prepared for the FEIR (see Attachments A, B, and C) shows, in summary:

- Due to the relocation of WTGs to the northwest corner of the array, the wind park will be 0.7 mile closer and slightly more visible in Falmouth from Nobska Lighthouse.

- Due to the relocation of WTGs to the northwest corner and along the north edge of the wind park area, views will be 0.1 to 0.4 mile closer, but the field of view will be narrower (particularly in the west edge of the viewshed) in Barnstable from the Cotuit Historic District, Col. Charles Codman Estate, Wianno Historic District, Wianno Club, Hyannis Port Historic District, and Kennedy Compound.

- Due to the relocation of WTGs away from the east edge of the wind park area, and the north edge and southeast corner of the wind park area, the wind park will be 0.6 mile farther away, but the overall field of view will be slightly wider, in Chatham from Monomoy Point Lighthouse.

- Due to the relocation of WTGs to the northwest corner and along the north edge of the wind park area, views will be between 0.1 and 0.3 mile closer on Martha's Vineyard in Tisbury at West Chop Light Station, and in Oak Bluffs at East Chop Light and the Dr. Harrison A. Tucker Cottage.

- Due to the relocation of WTGs to the northwest corner of the wind park area and/or stepped back along the south edge of the wind park area, views will be between 0.1 and 0.2 mile farther on Martha's Vineyard in Edgartown at Edgartown Village Historic District, Edgartown Harbor Lighthouse, and Cape Poge Light.

- Due to the relocation of WTGs to the northwest corner of the wind park area and/or stepped back along the south edge of the wind park area, the view from Nantucket will be the same or 0.1 mile closer in the Nantucket NHL Historic District at Nantucket Cliffs, Great Point Light, and Tuckernuck Island.

- The WTGs will not be visible from these historic properties near the eastern shoreline of Martha's Vineyard: Ritter House and William Street Historic District in Tisbury; Martha's Vineyard Campground Historic District / Wesleyan Grove – Martha's Vineyard Camp Meeting Association, Flying Horses Carousel, The Arcade, and Oak Bluffs Christian Union in Oak Bluffs.

The changes in the configuration of the 130 WTGs and the reduction in lighting reduce or modify the Cape Wind Energy Project's visual impacts to a certain degree. These changes are partially offset by the increased height and rotor width of the WTGs. Overall, however, the revisions to the wind park design from the DEIS/DEIR to the NPC and the FEIR do not create a visual experience that is qualitatively different from the previous configuration. Therefore there is no change in the finding of effect to historic properties under Section 106 from the conclusions of the PAL 2004 visual impact assessment.

This analysis of information from the NPC for the FEIR, including the State Register update review, concluded that the Cape Wind Energy Project will result in a finding of "No Historic Properties Affected" (or "No Effect") for two NHL properties (Flying Horses Carousel and Wesleyan Grove – Martha's Vineyard Camp Meeting Association), one historic district, and three individual properties. These changes are because of the recent additional designation of Wesleyan Grove – Martha's Vineyard Camp Meeting Association as an NHL (formerly designated as the National Register-listed Martha's Vineyard Campground Historic District), and the addition of the William Street Historic District and the Ritter House to the analysis. Note that these findings were previously stated as "No Effect"; however, the findings are restated here with the correct terminology under the Section 106 regulations at 36 CFR 800 for the lowest level finding, which is "No Historic Properties Affected." Findings of "Adverse Effect" remain unchanged for two NHL properties (Kennedy Compound and Nantucket Historic District), four historic districts, and 10 individual properties. The effect findings are summarized in Table 3-1.

CHAPTER FIVE

RESOLUTION OF ADVERSE EFFECTS

This report addresses the effects of the revised layout of the Cape Wind Energy Project on Horseshoe Shoal to aboveground historic properties from visual impacts caused by the introduction of 130 WTG structures to the Nantucket Sound horizon. The revised layout, the historic properties and the conclusions about the effects of the Cape Wind Energy Project on these resources are discussed in previous chapters. The alternatives analysis that led to the selection of Horseshoe Shoal as the Preferred Alternative was included in the Cape Wind Energy Project's DEIS/DEIR that was submitted to the Army Corps of Engineers. The revised layout was presented in the NPC filed by CWA in June 2005 under MEPA.

This report has been prepared as part of the ongoing coordination among the MMS, SHPO and other consulting parties. Following the formal determination of effect by the MMS under Section 106, the Council's regulations, and the concurrence with that finding by the SHPO, further consultation will occur to resolve adverse effects (36 CFR 800.6). The consultation process will evaluate alternatives or modifications that could avoid, minimize, or mitigate adverse effects on historic properties. The results of these negotiations will form the basis for the Cape Wind Energy Project's MOA or Programmatic Agreement (PA).

A variety of measures to minimize and/or mitigate adverse effects to historic properties are commonly considered by Federal agencies, SHPOs, and consulting parties. All or many of the most typically applied measures will likely be reviewed and evaluated for the Cape Wind Energy Project.

Measures commonly used to minimize adverse visual effects to historic properties include the introduction of vegetation, fences, or other forms of screening to shield or interrupt the view from the historic property to the project area. The applicability or feasibility of these types of screening, however, is likely to be low for the Cape Wind Energy Project given the broad scale of the horizon views. Materials and paint color that harmonize with the historic property and the surroundings often provide a way of reducing the visual impact of project elements. While the construction material itself is likely not a critical factor for the Cape Wind Energy Project, the WTGs will be painted an off-white color in order to minimize their visibility and allow them to blend in with the sky and water.

In order to mitigate visual or other categories of adverse effects, archival photographic and narrative documentation of historic properties and their setting prior to any changes is often required. The documentation is filed in the State Archives and a designated local repository and forms a permanent record of each historic property's appearance for future scholars and the general public. Mitigation can include ongoing review by the MMS, SHPO, and consulting parties of project plans as they are developed. Sometimes mitigation measures are identified that are "off site", that may not specifically respond to the

project's actual effects, but may provide certain benefits to the affected historic properties. The enhancement of the historic character of the historic properties can thus partially offset the adverse effects of the project.

Only a selection of possible measures is presented here. Opportunities for minimizing and mitigating the adverse effects of the Cape Wind Energy Project that will reduce the visual impact of the project on historic properties will continue to be explored as the consultation process goes forward.

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Table 3-1. Section 106 Finding of Effect for Aboveground Historic Properties within the Visual Area of Potential Effect for the Revised Layout Cape Wind Energy Project, Horseshoe Shoal.

Town	Name/Location Historic Designation	Viewpoint (VP)		Closest VP Distance/ Direction to Wind Park		Section 106 Effect		Layout Revision for FEIR
		DEIR	FEIR	DEIR	FEIR	DEIR	FEIR	
Cape Cod								
Falmouth	Nobska Point Light Station Woods Hole S/NRHP	VP 1	VP 1 and 1B	14.1 miles ESE	13.4 miles ESE	Adverse Effect	Adverse Effect	WTGs relocated to northwest corner of wind park area
Barnstable	Cotuit Historic District Cotuit S/NRHP	VP 5	VP 5	6.1 miles SE	5.7 miles SE	Adverse Effect	Adverse Effect	WTGs relocated to northwest corner and along north edge of wind park area
	Col. Charles Codman Estate 43 Ocean Avenue Cotuit S/NRHP	VP 5	VP 5	6.1 miles SE	6.0 miles SE	Adverse Effect	Adverse Effect	WTGs relocated to northwest corner and along north edge of wind park area
	Wianno Historic District Osterville S/NRHP	VP 6	VP 6	5.7 miles SSE	5.3 miles SSE	Adverse Effect	Adverse Effect	WTGs relocated to northwest corner and along north edge of wind park area
	Wianno Club 107 Sea View Avenue Osterville S/NRHP	VP 6	VP 6	5.7 miles SSE	5.3 miles SSE	Adverse Effect	Adverse Effect	WTGs relocated to northwest corner and along north edge of wind park area
	Hyannis Port Historic District Hyannis Port S/NRHP	VP 8	VP 8	6.2 miles S	6.0 miles S	Adverse Effect	Adverse Effect	WTGs relocated to northwest corner and along north edge of wind park area
	Kennedy Compound Hyannis Port NHL	VP 8	VP 8	6.2 miles S	6.0 miles S	Adverse Effect	Adverse Effect	WTGs relocated to northwest corner and along north edge of wind park area

Table 3-1. Section 106 Finding of Effect for Aboveground Historic Properties within the Visual Area of Potential Effect for the Revised Layout Cape Wind Energy Project, Horseshoe Shoal.

Town	Name/Location Historic Designation	Viewpoint (VP)		Closest VP Distance/ Direction to Wind Park		Section 106 Effect		Layout Revision for FEIR
		DEIR	FEIR	DEIR	FEIR	DEIR	FEIR	
Chatham	Monomoy Point Lighthouse Monomoy S/NRHP	VP 26	VP 26 and 26B	13.9 miles WSW	14.5 miles WSW	Adverse Effect	Adverse Effect	WTGs relocated away from east edge of wind park area
Martha's Vineyard								
Tisbury	West Chop Light Station West Chop Road S/NRHP	None	None	11.0 miles ENE	10.8 miles ENE	Adverse Effect	Adverse Effect	WTGs relocated to northwest corner and along north edge of wind park area
	Ritter House Beach Street S/NRHP	None	None	n/a	n/a	n/a	No Historic Properties Affected*	WTGs not visible
	William Street Historic District William Street to Woodlawn Avenue S/NRHP	None	None	n/a	n/a	n/a	No Historic Properties Affected*	WTGs not visible
Oak Bluffs	East Chop Light Lighthouse Road S/NRHP	None	None	9.5 miles ENE	9.4 miles ENE	Adverse Effect	Adverse Effect	WTGs relocated to northwest corner and along north edge of wind park area
	Martha's Vineyard Campground Historic District S/NRHP; Wesleyan Grove – Martha's Vineyard Camp Meeting Association NHL	None	None	n/a	n/a	No Effect	No Historic Properties Affected*	WTGs not visible

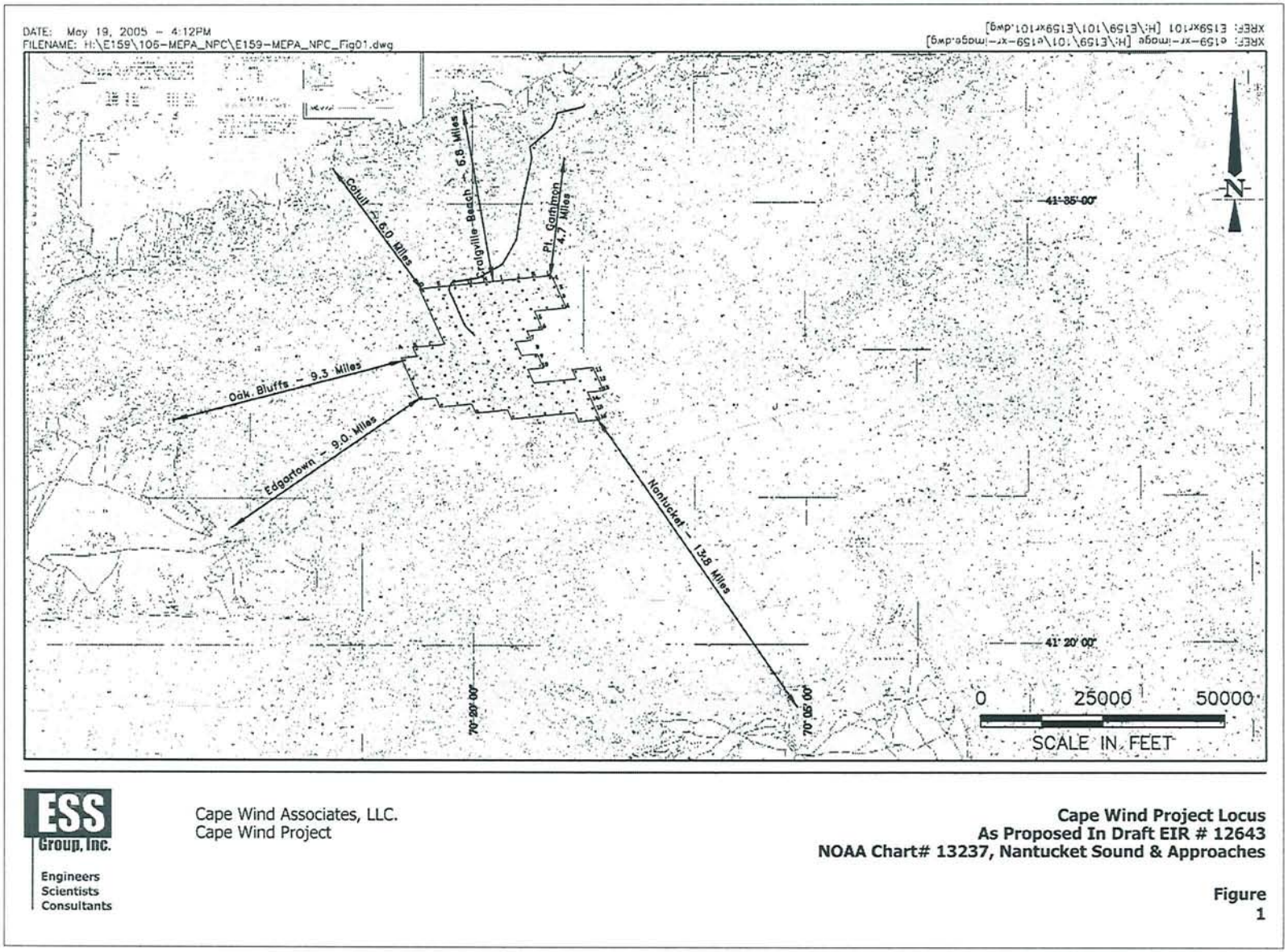
Table 3-1. Section 106 Finding of Effect for Aboveground Historic Properties within the Visual Area of Potential Effect for the Revised Layout Cape Wind Energy Project, Horseshoe Shoal.

Town	Name/Location Historic Designation	Viewpoint (VP)		Closest VP Distance/ Direction to Wind Park		Section 106 Effect		Layout Revision for FEIR
		DEIR	FEIR	DEIR	FEIR	DEIR	FEIR	
	Flying Horses Carousel 33 Oak Bluffs Avenue NHL	None	None	n/a	n/a	No Effect	No Historic Properties Affected*	WTGs not visible
	The Arcade 31 (formerly 134) Circuit Avenue S/NRHP	None	None	n/a	n/a	No Effect	No Historic Properties Affected*	WTGs not visible
	Dr. Harrison A. Tucker Cottage 42 Ocean Avenue S/NRHP	VP 21	VP 21	9.4 miles ENE	9.3 miles ENE	Adverse Effect	Adverse Effect	WTGs relocated to northwest corner of wind park area
	Oak Bluffs Christian Union Chapel Narragansett, Circuit, and Kennebec Avenues and Grove Street S/NRHP	None	None	n/a	n/a	No Effect	No Historic Properties Affected*	WTGs not visible
Edgartown	Edgartown Village Historic District S/NRHP	VP 20	VP 20 and 20B	8.8 miles NE	8.9 miles NE	Adverse Effect	Adverse Effect	WTGs relocated to northwest corner of wind park area
	Edgartown Harbor Lighthouse S/NRHP	VP 20	VP 20 and 20B	8.8 miles NE	8.9 miles NE	Adverse Effect	Adverse Effect	WTGs relocated to northwest corner of wind park area
	Cape Poge Light S/NRHP	VP 19	VP 19	5.4 miles NE	5.6 miles NE	Adverse Effect	Adverse Effect	WTGs relocated to northwest corner and stepped back along the south edge of wind park area

Table 3-1. Section 106 Finding of Effect for Aboveground Historic Properties within the Visual Area of Potential Effect for the Revised Layout Cape Wind Energy Project, Horseshoe Shoal.

Town	Name/Location Historic Designation	Viewpoint (VP)		Closest VP Distance/ Direction to Wind Park		Section 106 Effect		Layout Revision for FEIR
		DEIR	FEIR	DEIR	FEIR	DEIR	FEIR	
Nantucket								
Nantucket	Nantucket Historic District: Nantucket Cliffs NHL; S/NRHP	VP 22	VP 22 and 22B	13.6 miles NNW	13.6 miles NNW	Adverse Effect	Adverse Effect	WTGs relocated to northwest corner and stepped back along the south edge of wind park area
	Nantucket Historic District: Nantucket (Great Point) Light NHL; S/NRHP	VP 23	VP 23 and 23B	11.2 miles NW	11.2 miles NW	Adverse Effect	Adverse Effect	WTGs stepped back along the south and east edges of wind park area
	Nantucket Historic District: Tuckernuck Island NHL	VP 24	VP 24 and 24B	10.4 miles N	10.3 miles N	Adverse Effect	Adverse Effect	WTGs relocated to northwest corner and stepped back along the south edge of wind park area

* "No Historic Properties Affected" is equivalent to "No Effect" in the VIA (PAL 2004) for DEIS/DEIR.
S/NRHP – State and National Register of Historic Places
NHL – National Historic Landmark
VP= Viewpoint
VPB series= photo renderings



ESS Group, Inc.
Engineers
Scientists
Consultants

Cape Wind Associates, LLC.
Cape Wind Project

Cape Wind Project Locus
As Proposed In Draft EIR # 12643
NOAA Chart# 13237, Nantucket Sound & Approaches

Figure
1

Figure 1-1. Cape Wind Project Locus As Proposed in Draft EIR (Source: CWA NPC 2005, Figure 1).

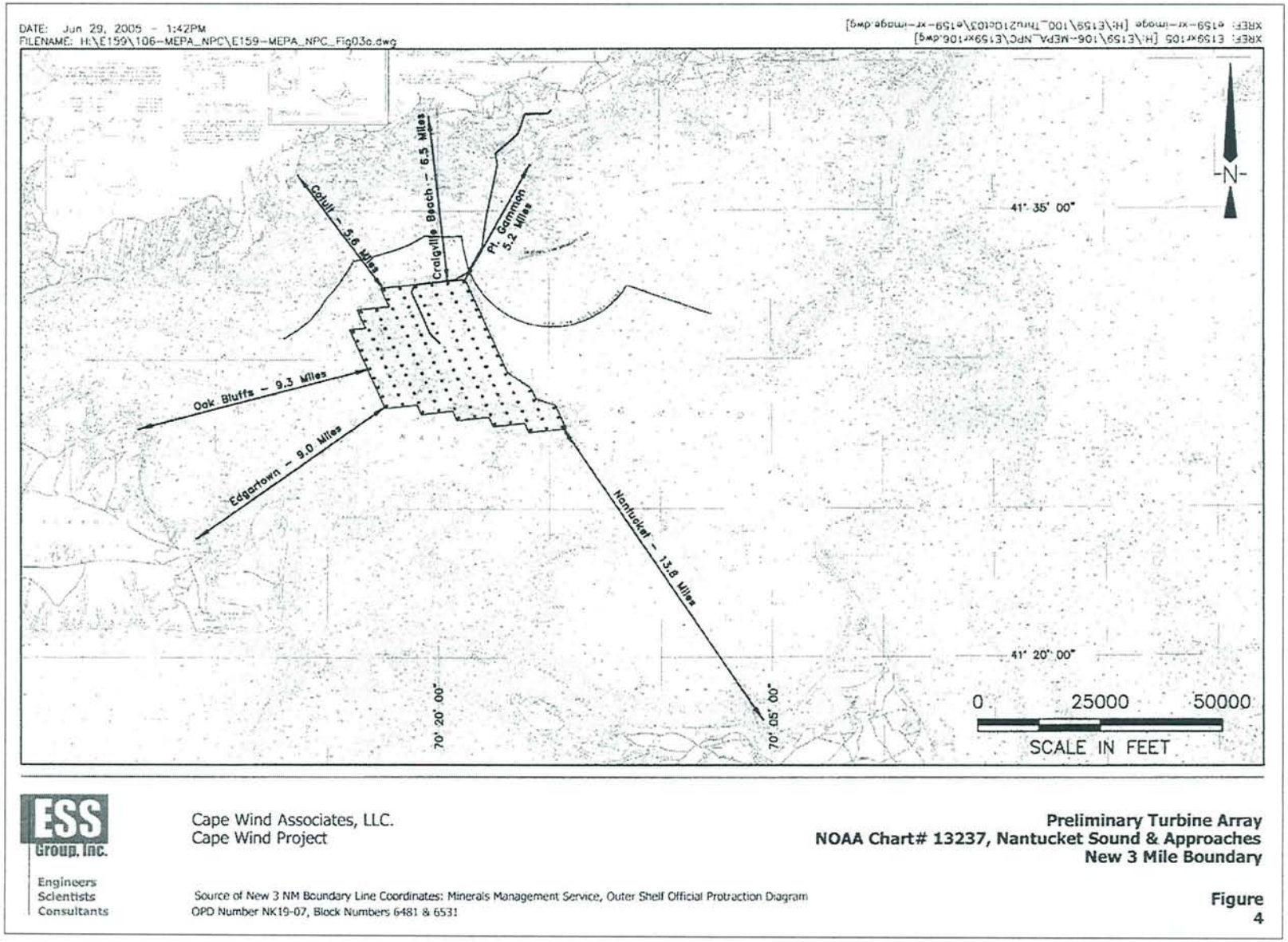


Figure 2-1. Revised Turbine Array, New 3 Mile Boundary (Source: CWA NPC 2005, Figure 4).

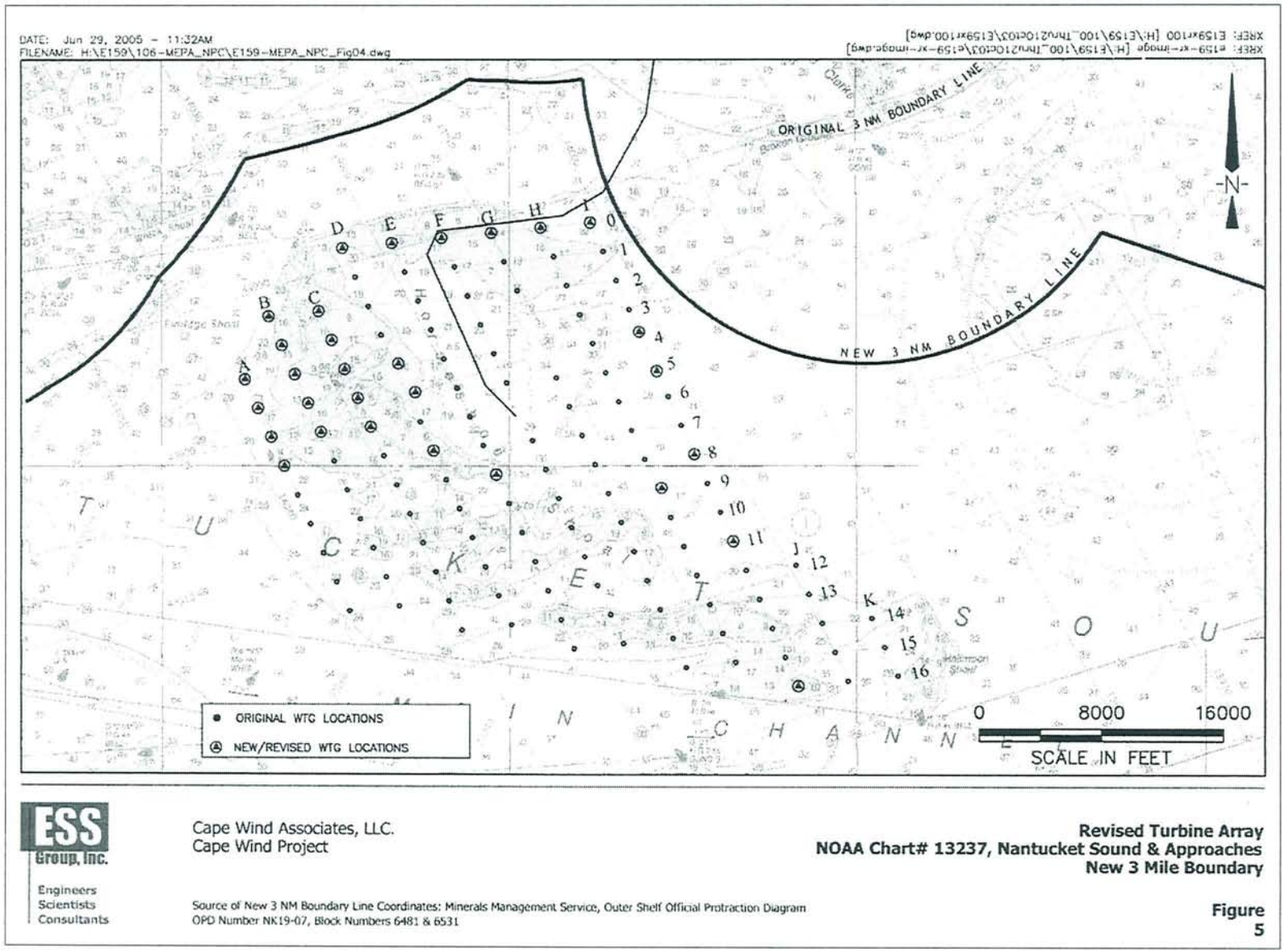


Figure 3-1. Revised Turbine Array Detail New 3 Mile Boundary (Source: CWA NPC 2005, Figure 5).

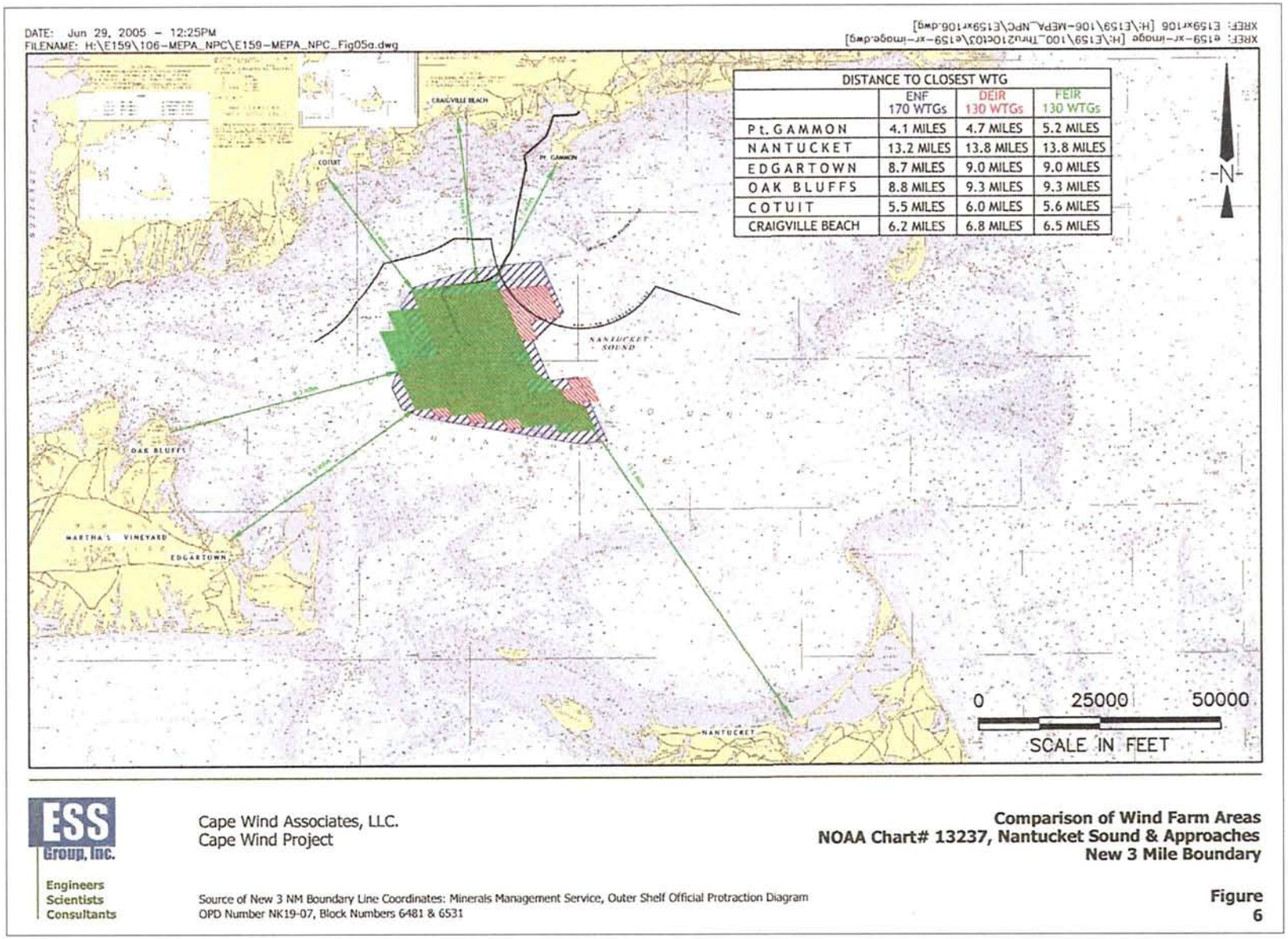


Figure 3-2. Comparison of Wind Park Areas, New 3 Mile Boundary (Source: CWA NPC 2005, Figure 6).

Appendix A

DAYTIME VISUAL SIMULATION OF PROPOSED WIND PARK: REVISED LAYOUT, (FIGURE 3.12-1) SHEETS 1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12 OF 12, DATED JULY 2006

INFORMATION

Viewpoint Specific Data

Viewpoint Name	Nobska Lighthouse
Viewpoint #	1
Viewpoint Location	41° 30' 56.80"N 70° 39' 18.28"W
Percentage of Total Turbines Visible	100%
Date Taken	1/22/2003
Time	11:53 AM
Temperature & Visibility	-7° C 19° F Clear
Direction of View	3° South of East
Field Of View	40.115°
Focal Length[1]	49.3mm
Closest Turbine	13.40 miles
Furthest Turbine	21.84 miles
Camera Elevation	55.74'

Please note that at distances over 3 miles (for viewers at sea level) the bases of the turbines would fall below the visible horizon due to curvature of the earth. However, refraction could potentially counter the screening effects of the earth's curvature. Therefore, turbines are shown at the visible horizon line in the simulations, which may create minor exaggerations in turbine height.

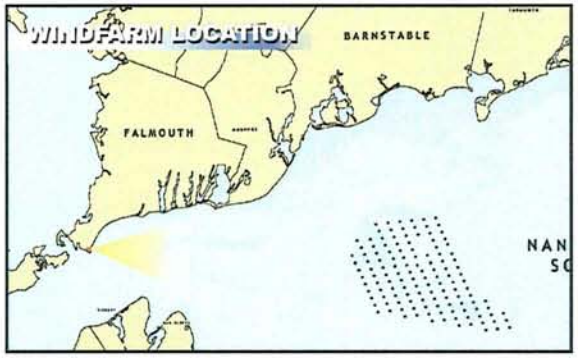
[1]Displayed in 35mm equivalent * MLLW = Mean Lower Low Water

Model Dimensions and Data

Proposed Color of Turbine	Off White (5 Percent Grey)
Height to Hub	257'
Hub Diameter	14'
Bounding Dimensions of Nacel (LxWxH)	48' X 48' X 27'
Maximum Width of Tower	16' dia
Minimum Width of Tower	11' dia
Rotor Diameter	364'
Maximum Rotor Blade Width	12'
Maximum Height above MLLW[1]	440'
Wind Direction	SW
Height of Turbine Platform above MLLW[1]	30'
Bounding Dim. of ESP (LxWxH)	100' X 200' X 100'
Aviation Warning Lights	NA
Coast Guard Warning Lights	NA

Plan

Front Elevation Side Elevation



Viewpoint 1

Nobska Lighthouse

Falmouth, Cape Cod

July 2006

Prepared By:

EDR

Figure 3.12-1 Sheet 1 of 12

Daytime Visual Simulation of Proposed Wind Park: Revised Layout

Prepared For:

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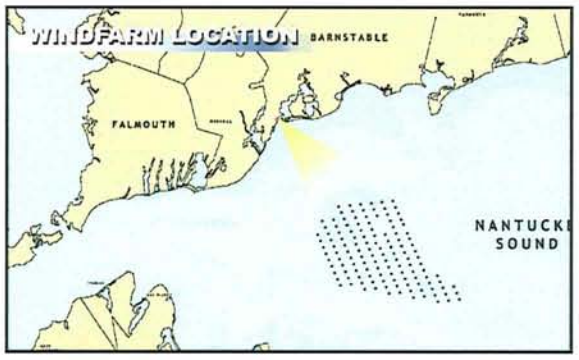
Energy for Life.

PROPOSED VIEW

EXISTING VIEW

VIEWPOINT LOCATION

WINDFARM LOCATION



INFORMATION

Viewpoint Specific Data

Viewpoint Name	Cotuit
Viewpoint #	5
Viewpoint Location	41° 36' 22.64"N 70° 26' 13.78"W
Percentage of Total Turbines Visible	100%
Date Taken	1/22/2003
Time	1:47pm
Temperature & Visibility	-7° C 19° F Clear
Direction of View	41° East of South
Field Of View	40.72°
Focal Length[1]	48.5mm
Closest Turbine	5.70 miles
Furthest Turbine	14.25 miles
Camera Elevation	9.80'

Please note that at distances over 3 miles (for viewers at sea level) the bases of the turbines would fall below the visible horizon due to curvature of the earth. However, refraction could potentially counter the screening effects of the earth's curvature. Therefore, turbines are shown at the visible horizon line in the simulations, which may create minor exaggerations in turbine height.

[1] Equivalent in 35mm equivalent [2] MLLW - Mean Lower Low Water

Model Dimensions and Data

Proposed Color of Turbine	Off White (5 Percent Gray)
Height to Hub	257'
Hub Diameter	14'
Rounding Dimensions of Nacel (LxWxH)	48' X 40' X 27'
Maximum Width of Tower	15' dia
Minimum Width of Tower	11' dia
Rotor Diameter	364'
Maximum Rotor Blade Width	12'
Maximum Height above MLLW [2]	440'
Wind Direction	SW
Height of Turbine Platform above MLLW [2]	30'
Rounding Dim. of ESP (LxWxH)	100' X 200' X 100'
Aviation Warning Lights	NA
Coast Guard Warning Lights	NA

Plan

Front Elevation Side Elevation

Viewpoint 5

Cotuit Barnstable, Cape Cod

July 2006

Prepared By:

EDR

Figure 3.12-1 Sheet 2 of 12

Daytime Visual Simulation of Proposed Wind Park: Revised Layout

Prepared For:

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INFORMATION

Viewpoint Specific Data

Viewpoint Name	Wianno
Viewpoint #	6
Viewpoint Location	41° 37' 01.10"N 70° 22' 12.67"W
Percentage of Total Turbines Visible	82%
Date Taken	1/22/2003
Time	4:28pm
Temperature & Visibility	-10° C 14° F Clear
Direction of View	20° East of South
Field Of View	39,966
Focal Length[1]	49.5mm
Closest Turbine	5.34 miles
Furthest Turbine	12.63 miles
Camera Elevation	28.58'

Please note that at distances over 3 miles (for viewers at sea level) the bases of the turbines would fall below the visible horizon due to curvature of the earth. However, refraction could potentially counter the screening effects of the earth's curvature. Therefore, turbines are shown at the visible horizon line in the simulations, which may create minor exaggerations in turbine height.

[1] Displayed in 35mm equivalent [2] MLLW = Mean Lower Low Water

Model Dimensions and Data

Proposed Color of Turbine	Off White (5 Percent Gray)
Height to Hub	257'
Hub Diameter	14'
Bounding Dimensions of Nacel (LxWxH)	48' X 40' X 27'
Maximum Width of Tower	16' dia
Minimum Width of Tower	11' dia
Rotor Diameter	364'
Maximum Rotor Blade Width	12'
Maximum Height above MLLW [2]	440'
Wind Direction	SW
Height of Turbine Platform above MLLW [2]	30'
Bounding Dim. of ESP (LxWxH)	100' X 200' X 100'
Aviation Warning Lights	NA
Coast Guard Warning Lights	NA

Plan

Front Elevation Side Elevation

Viewpoint 6

Wianno Barnstable, Cape Cod

July 2006

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Figure 3.12-1 Sheet 3 of 12

Daytime Visual Simulation of Proposed Wind Park: Revised Layout

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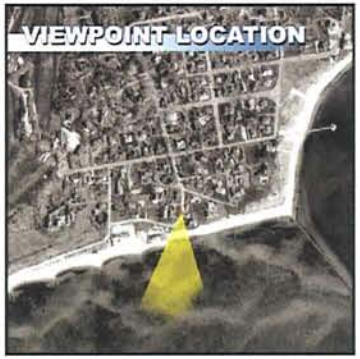

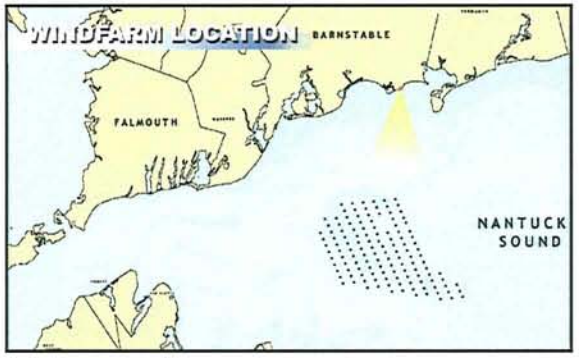

INFORMATION

Viewpoint Specific Data

Viewpoint Name	Hyannis Port
Viewpoint #	8
Viewpoint Location	41° 37' 46.66"N 70° 18' 14.59"W
Percentage of Total Turbines Visible	88%
Date Taken	1/21/2003
Time	11:12am
Temperature & Visibility	-7° C 19° F Clear
Direction of View	3° West of South
Field Of View	42.323°
Focal Length[1]	46.5mm
Closest Turbine	5.97 miles
Furthest Turbine	12.02 miles
Camera Elevation	22.44'

Please note that at distances over 3 miles (for viewers at sea level) the bases of the turbines would fall below the visible horizon due to curvature of the earth. However, refraction could potentially counter the screening effects of the earth's curvature. Therefore, turbines are shown at the visible horizon line in the simulations, which may create minor exaggerations in turbine height.

[1] Displayed in 35mm equivalent [2] MLLW = Mean Lower Low Water

Model Dimensions and Data

Proposed Color of Turbine	Off White (5 Percent Gray)
Height to Hub	257'
Hub Diameter	14'
Bounding Dimensions of Nacell (LxWxH)	48' X 40' X 27'
Maximum Width of Tower	16' dia
Minimum Width of Tower	11' dia
Rotor Diameter	364'
Maximum Rotor Blade Width	12'
Maximum Height above MLLW [2]	440'
Wind Direction	SW
Height of Turbine Platform above MLLW [2]	30'
Bounding Dim. of ESP (LxWxH)	100' X 200' X 100'
Aviation Warning Lights	NA
Coast Guard Warning Lights	NA


Plan


Front Elevation Side Elevation

Viewpoint 8

Hyannis Port Barnstable, Cape Cod

July 2006

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Figure 3.12-1 Sheet 5 of 12

Daytime Visual Simulation of Proposed Wind Park: Revised Layout

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INFORMATION

Viewpoint Specific Data

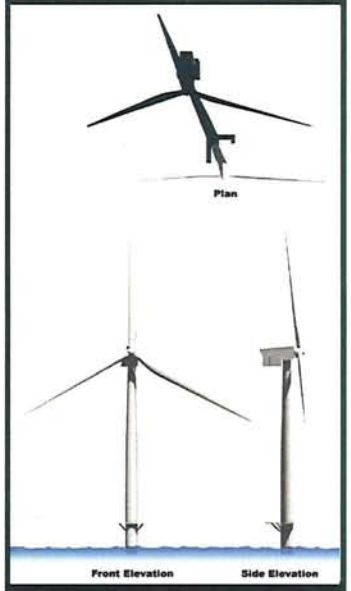
Viewpoint Name	Monomoy
Viewpoint #	26
Viewpoint Location	41° 33' 32.57"N 69° 59' 31.48"W
Percentage of Total Turbines Visible	99%
Date Taken	6/10/2003
Time	10:12am
Temperature & Visibility	21° C 70° F Clear
Direction of View	5° South of West
Field Of View	40.7°
Focal Length[1]	48.5mm
Closest Turbine	14.48 miles
Furthest Turbine	21.20 miles
Camera Elevation	30.03'

Please note that at distances over 3 miles (for viewers at sea level) the bases of the turbines would fall below the visible horizon due to curvature of the earth. However, refraction could potentially counter the screening effects of the earth's curvature. Therefore, turbines are shown at the visible horizon line in the simulations, which may create minor exaggerations in turbine height.

[1]Displayed in 35mm equivalent [2]MLLW - Mean Lower Low Water

Model Dimensions and Data

Proposed Color of Turbine	Off White (5 Percent Grey)
Height to Hub	257'
Hub Diameter	14'
Bounding Dimensions of Nacel (LxWxH)	48' X 40' X 27'
Maximum Width of Tower	16' dia
Minimum Width of Tower	11' dia
Rotor Diameter	364'
Maximum Rotor Blade Width	12'
Maximum Height above MLLW[2]	440'
Wind Direction	SW
Height of Turbine Platform above MLLW[2]	39'
Bounding Dim. of ESP (LxWxH)	180' X 200' X 100'
Aviation Warning Lights	NA
Coast Guard Warning Lights	NA



Viewpoint 26

Monomoy Chatham, Cape Cod

July 2006

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Figure 3.12-1 Sheet 6 of 12

Daytime Visual Simulation of Proposed Wind Park: Revised Layout

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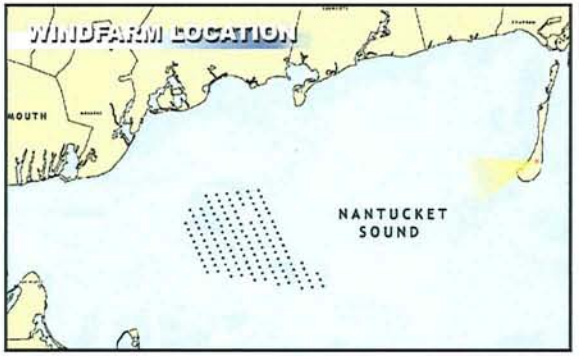
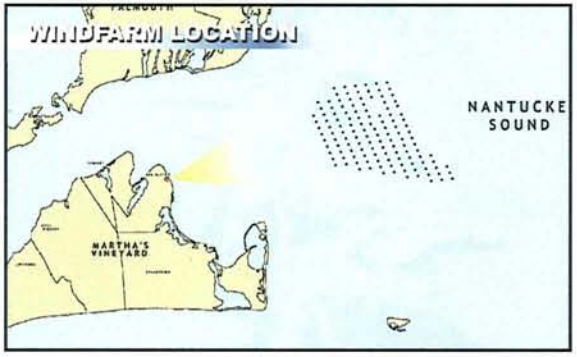


PROPOSED VIEW

EXISTING VIEW

VIEWPOINT LOCATION

WINDFARM LOCATION



INFORMATION

Viewpoint Specific Data

Viewpoint Name	Oak Bluffs
Viewpoint #	21
Viewpoint Location	41° 27' 20.09"N 70° 33' 23.92"W
Percentage of Total Turbines Visible	100%
Date Taken	2/6/2003
Time	3:53pm
Temperature & Visibility	-2° C 28° F Clear
Direction of View	76° East of North
Field Of View	40.65°
Focal Length[1]	48.6mm
Closest Turbine	9.26 miles
Furthest Turbine	16.43 miles
Camera Elevation	54.40'

Please note that at distances over 3 miles (for viewers at sea level) the bases of the turbines would fall below the visible horizon due to curvature of the earth. However, refraction could potentially counter the screening effects of the earth's curvature. Therefore, turbines are shown at the visible horizon line in the simulations, which may create minor exaggerations in turbine height.

[1] Displayed in 35mm equivalent [2] MLLW - Mean Lower Low Water

Model Dimensions and Data

Proposed Color of Turbine	Off White (5 Percent Grey)
Height to Hub	257'
Hub Diameter	14'
Bounding Dimensions of Nacel (LxWxH)	48' X 40' X 27'
Maximum Width of Tower	16' dia
Minimum Width of Tower	11' dia
Rotor Diameter	364'
Maximum Rotor Blade Width	12'
Maximum Height above MLLW[2]	440'
Wind Direction	SW
Height of Turbine Platform above MLLW[2]	39'
Bounding Dim. of ESP (LxWxH)	180' X 200' X 199'
Aviation Warning Lights	NA
Coast Guard Warning Lights	NA

Plan

Front Elevation Side Elevation

Viewpoint 21

Oak Bluffs Martha's Vineyard

July 2006

Prepared By:

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Figure 3.12-1 Sheet 7 of 12

Daytime Visual Simulation of Proposed Wind Park: Revised Layout

Prepared For:

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INFORMATION

Viewpoint Specific Data

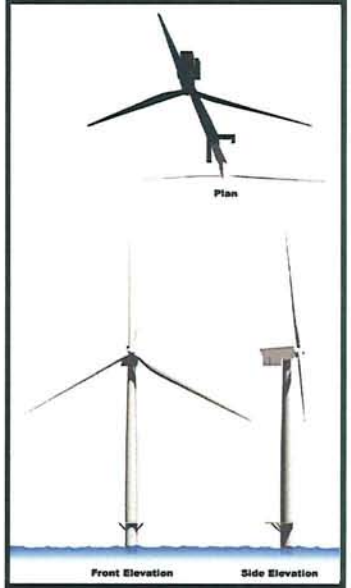
Viewpoint Name	Edgartown
Viewpoint #	20
Viewpoint Location	41° 23' 26.27"N 70° 30' 11.29"W
Percentage of Total Turbines Visible	95%
Date Taken	2/8/2003
Time	10:49am
Temperature & Visibility	2° C 35° F Clear
Direction of View	53° East of North
Field Of View	41.35°
Focal Length[1]	47.2mm
Closest Turbine	8.92 miles
Furthest Turbine	14.52 miles
Camera Elevation	35.85'

Please note that at distances over 3 miles (for viewers at sea level) the bases of the turbines would fall below the visible horizon due to curvature of the earth. However, refraction could potentially counter the screening effects of the earth's curvature. Therefore, turbines are shown at the visible horizon line in the simulations, which may create minor exaggerations in turbine height.

[1]Displayed in 35mm equivalent * MLLW - Mean Lower Low Water

Model Dimensions and Data

Proposed Color of Turbine	Off White (5 Percent Grey)
Height to Hub	257'
Hub Diameter	14'
Bounding Dimensions of Nacel (LxWxH)	48' X 40' X 27'
Maximum Width of Tower	16' dia
Minimum Width of Tower	11' dia
Rotor Diameter	364'
Maximum Rotor Blade Width	12'
Maximum Height above MLLW[1]	440'
Wind Direction	SW
Height of Turbine Platform above MLLW[1]	20'
Bounding Dim. of ESP (LxWxH)	100' X 200' X 100'
Aviation Warning Lights	NA
Coast Guard Warning Lights	NA



Viewpoint 20

Edgartown Martha's Vineyard

July 2006

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Figure 3.12-1 Sheet 8 of 12

Daytime Visual Simulation of Proposed Wind Park: Revised Layout

Prepared For:

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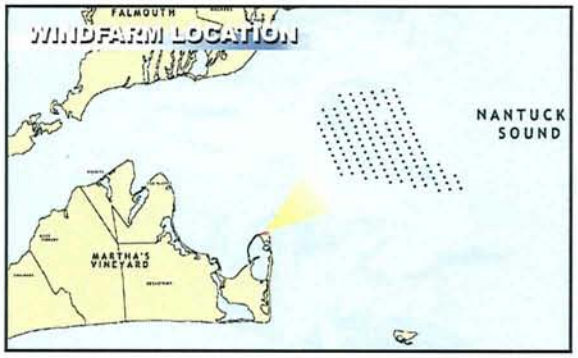
PROPOSED VIEW

EXISTING VIEW

VIEWPOINT LOCATION

WINDFARM LOCATION



INFORMATION

Viewpoint Specific Data

Viewpoint Name	Cape Poge
Viewpoint #	19
Viewpoint Location	41° 25' 12.64"N 70° 27' 4.57"W
Percentage of Total Turbines Visible	83%
Date Taken	2/5/2003
Time	2:14pm
Temperature & Visibility	3° C 37° F Clear
Direction of View	52° East of North
Field Of View	40.646°
Focal Length[1]	48.6mm
Closest Turbine	5.55 miles
Furthest Turbine	11.33 miles
Camera Elevation	56.7'[2]

Please note that at distances over 3 miles (for viewers at sea level) the bases of the turbines would fall below the visible horizon due to curvature of the earth. However, refraction could potentially counter the screening effects of the earth's curvature. Therefore, turbines are shown at the visible horizon line in the simulations, which may create minor exaggerations in turbine height.

[1] Displayed in 35mm equivalent [2] MLLW - Mean Lower Low Water

Model Dimensions and Data

Proposed Color of Turbine	Off White (5 Percent Grey)
Height to Hub	257'
Hub Diameter	14'
Bounding Dimensions of Nacel (LxWxH)	48' X 40' X 27'
Maximum Width of Tower	16' dia
Minimum Width of Tower	11' dia
Rotor Diameter	364'
Maximum Rotor Blade Width	12'
Maximum Height above MLLW[1]	440'
Wind Direction	SW
Height of Turbine Platform above MLLW[2]	20'
Bounding Dim. of ESP (LxWxH)	100' X 200' X 100'
Aviation Warning Lights	NA
Coast Guard Warning Lights	NA

Plan

Front Elevation Side Elevation

Viewpoint 19

Cape Poge Martha's Vineyard

July 2006

Prepared By:

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Figure 3.12-1 Sheet 9 of 12

Daytime Visual Simulation of Proposed Wind Park: Revised Layout

Prepared For:

Cape Wind™
Energy for Life.

INFORMATION

Viewpoint Specific Data

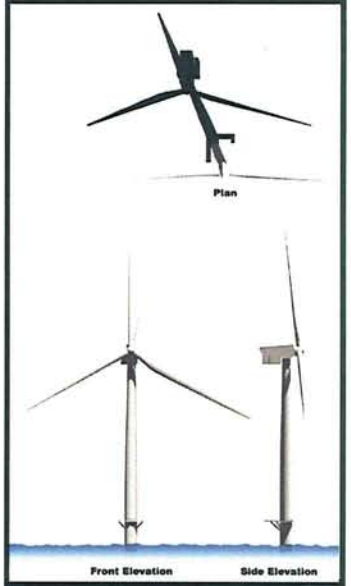
Viewpoint Name	Nantucket Cliffs
Viewpoint #	22
Viewpoint Location	41° 17' 14.18"N 70° 07' 8.40"W
Percentage of Total Turbines Visible	100%
Date Taken	3/19/2003
Time	11:01am
Temperature & Visibility	2° C 36° F Clear
Direction of View	47° West of North
Field Of View	44°
Focal Length[1]	44.5mm
Closest Turbine	13.82 miles
Furthest Turbine	21.83 miles
Camera Elevation	44.61'

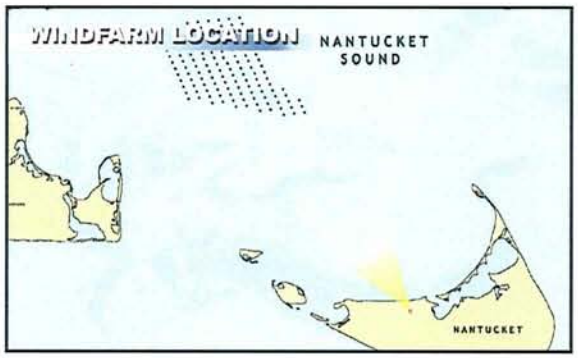
Please note that at distances over 3 miles (for viewers at sea level) the bases of the turbines would fall below the visible horizon due to curvature of the earth. However, refraction could potentially counter the screening effects of the earth's curvature. Therefore, turbines are shown at the visible horizon line in the simulations, which may create minor exaggerations in turbine height.

[1] Displayed in 35mm equivalent. [2] MLLW = Mean Lower Low Water

Model Dimensions and Data

Proposed Color of Turbine	Off White (5 Percent Grey)
Height to Hub	257'
Hub Diameter	14'
Bounding Dimensions of Nacel (LxWxH)	48' X 40' X 27'
Maximum Width of Tower	16' dia
Minimum Width of Tower	11' dia
Rotor Diameter	364'
Maximum Rotor Blade Width	12'
Maximum Height above MLLW [2]	440'
Wind Direction	SW
Height of Turbine Platform above MLLW [2]	30'
Bounding Dim. of ESP (LxWxH)	100' X 200' X 100'
Aviation Warning Lights	NA
Coast Guard Warning Lights	NA





Viewpoint 22

Nantucket Cliffs — Nantucket

July 2006

Prepared By:

EDR

Figure 3.12-1 Sheet 10 of 12

Daytime Visual Simulation of Proposed Wind Park: Revised Layout

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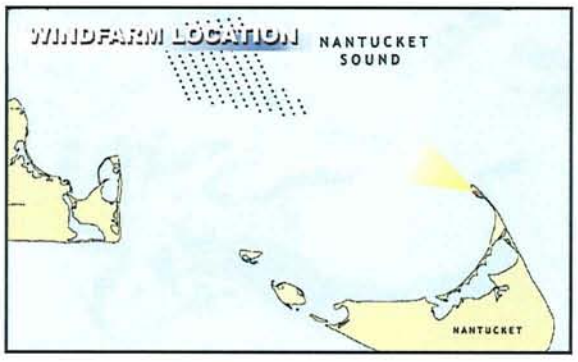


INFORMATION

Viewpoint Specific Data

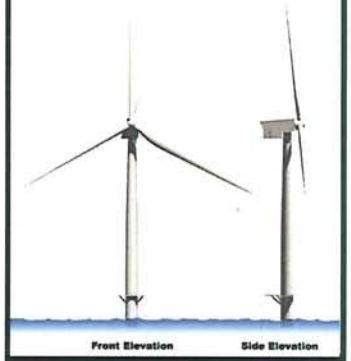
Viewpoint Name	Great Point
Viewpoint #	23
Viewpoint Location	41° 23' 22.95"N 70° 02' 52.17"W
Percentage of Total Turbines Visible	100%
Date Taken	3/19/2003
Time	2:55pm
Temperature & Visibility	2° C 35° F Clear
Direction of View	29° North of West
Field Of View	40.7°
Focal Length[1]	48.5mm
Closest Turbine	11.18 miles
Furthest Turbine	20.18 miles
Camera Elevation	18.20'

Please note that at distances over 3 miles (for viewers at sea level) the bases of the turbines would fall below the visible horizon due to curvature of the earth. However, refraction could potentially counter the screening effects of the earth's curvature. Therefore, turbines are shown at the visible horizon line in the simulations, which may create minor exaggerations in turbine height.

[1]Displayed in 35mm equivalent. * MLLW = Mean Lower Low Water

Model Dimensions and Data

Proposed Color of Turbine	Off White (5 Percent Grey)
Height to Hub	257'
Hub Diameter	14'
Bounding Dimensions of Nacel (LxWxH)	48' X 40' X 27'
Maximum Width of Tower	16' dia
Minimum Width of Tower	11' dia
Rotor Diameter	364'
Maximum Rotor Blade Width	12'
Maximum Height above MLLW*	440'
Wind Direction	SW
Height of Turbine Platform above MLLW*	39'
Bounding Dim. of ESP (LxWxH)	100' X 200' X 100'
Aviation Warning Lights	NA
Coast Guard Warning Lights	NA



Viewpoint 23

~~Great Point~~ Nantucket

July 2006

Prepared By:

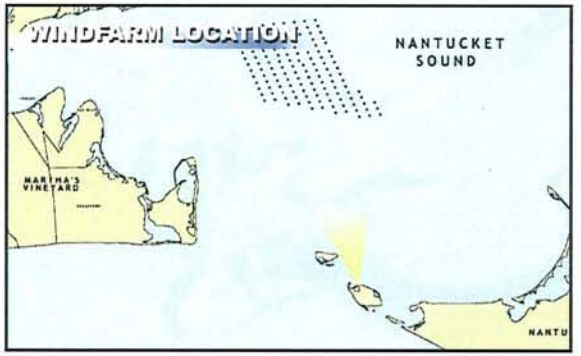
EDR

Figure 3.12-1 Sheet 11 of 12

Daytime Visual Simulation of Proposed Wind Park: Revised Layout

Prepared For:

Cape Wind™
Energy for Life.



INFORMATION

Viewpoint Specific Data

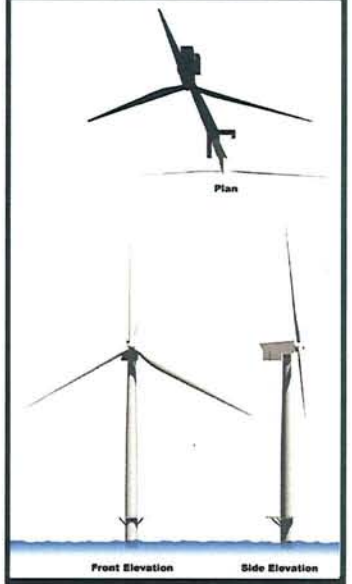
Viewpoint Name	Tuckernuck Island
Viewpoint #	24
Viewpoint Location	41° 18' 39.41"N 70° 15' 44.85"W
Percentage of Total Turbines Visible	100%
Date Taken	5/20/2003
Time	7:27 PM
Temperature & Visibility	13° C 56° F Partly Cloudy
Direction of View	11° West of North
Field Of View	38.7°
Focal Length[1]	51.2 mm
Closest Turbine	10.31 miles
Furthest Turbine	16.76 miles
Camera Elevation	23.95

Please note that at distances over 2 miles (for viewers at sea level) the bases of the turbines would fall below the visible horizon due to curvature of the earth. However, refraction could potentially counter the screening effects of the earth's curvature. Therefore, turbines are shown at the visible horizon line in the simulations, which may create minor exaggerations in turbine height.

[1] Achieved on 35mm equivalent * MLLW = Mean Lower Low Water

Model Dimensions and Data

Proposed Color of Turbine	Off White (5 Percent Gray)
Height to Hub	257'
Hub Diameter	14'
Bounding Dimensions of Nacel (LxWxH)	48' X 40' X 27'
Maximum Width of Tower	16' dia
Minimum Width of Tower	11' dia
Rotor Diameter	364'
Maximum Rotor Blade Width	12'
Maximum Height above MLLW [2]	440'
Wind Direction	SW
Height of Turbine Platform above MLLW [2]	39'
Bounding Dim. of ESP (LxWxH)	100' X 200' X 100'
Aviation Warning Lights	NA
Coast Guard Warning Lights	NA



Viewpoint 24

Tuckernuck Island Nantucket

July 2006

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EDR

Figure 3.12-1 Sheet 12 of 12

Daytime Visual Simulation of Proposed Wind Park: Revised Layout

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Appendix B

NIGHTTIME VISUAL SIMULATION OF PROPOSED WIND PARK: REVISED LAYOUT, (FIGURE 3.12-2) SHEETS 1, 2, 3, 5, 6, 7, 8, 9, 10, 11 OF 11, DATED JULY 2006

Simulated Nighttime View

EXISTING VIEW

VIEWPOINT LOCATION

WINDFARM LOCATION

INFORMATION

Viewpoint Specific Data

Viewpoint Name	Nobska Lighthouse
Viewpoint #	1
Viewpoint Location	41° 30' 56.80"N 70° 39' 18.28"W
Percentage of Total Turbines Visible	100%
Date Taken	1/22/2003
Time	6:15 PM
Temperature & Visibility	-10° C 15° F Clear
Direction of View	3° South of East
Field Of View	40.115°
Focal Length[1]	49.3mm
Closest Turbine	13.40 miles
Furthest Turbine	21.84 miles
Camera Elevation	55.74'

Note: At long exposures, film reacts to light differently than the eye. This photo simulation has been modified to more accurately present lights as they would be perceived by the human eye.

[1]Displayed in 35mm equivalent [2] MLLW = Mean Lower Low Water

Model Dimensions and Data

Proposed Color of Turbine	Off White (5 Percent Gray)
Height to Hub	257'
Hub Diameter	14'
Bounding Dimensions of Nacel (LxWxH)	48' X 40' X 27'
Maximum Width of Tower	16' dia
Minimum Width of Tower	11' dia
Rotor Diameter	364'
Maximum Rotor Blade Width	12'
Maximum Height above MLLW [2]	440'
Wind Direction	SW
Height of Turbine Platform above MLLW [2]	30'
Bounding Dim. of ESP (LxWxH)	100' X 200' X 100'
Aviation Warning Lights	FAA L864 and L810
Coast Guard Warning Lights	Dual Amber USCG Lights

Plan

Front Elevation Side Elevation

Viewpoint 1

Nobska Lighthouse

Falmouth, Cape Cod

July 2006

Prepared By:

EDR

Figure 3.12-2 Sheet 1 of 11

Nighttime Visual Simulation of Proposed Wind Park: Revised Layout

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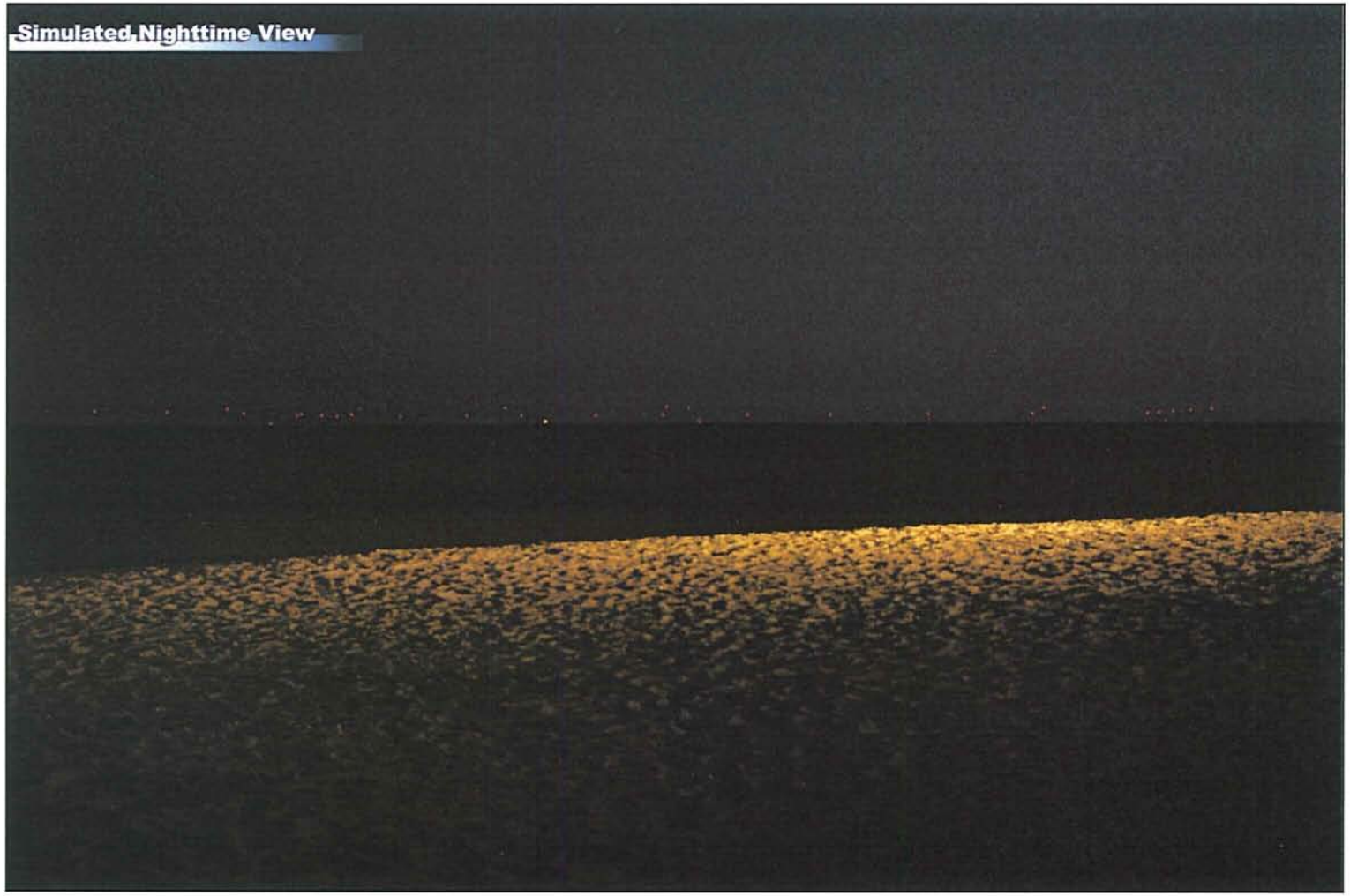
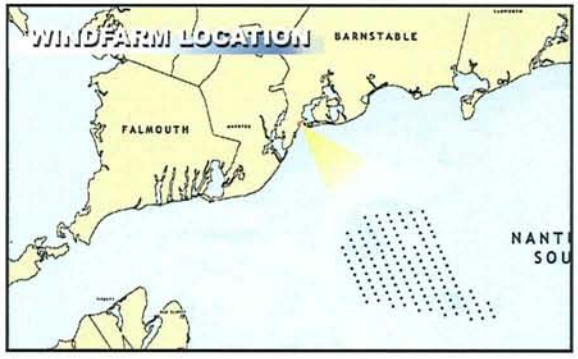
Simulated Nighttime View



EXISTING VIEW

VIEWPOINT LOCATION

WINDFARM LOCATION



INFORMATION

Viewpoint Specific Data

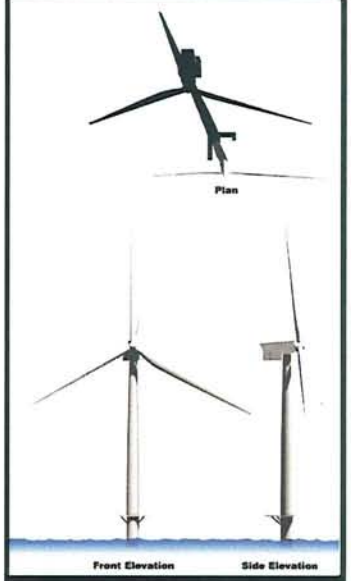
Viewpoint Name	Cotuit
Viewpoint #	5
Viewpoint Location	41° 36' 22.64"N 70° 26' 13.78"W
Percentage of Total Turbines Visible	100%
Date Taken	6/9/2003
Time	9:29 PM
Temperature & Visibility	15° C 65° F Clear
Direction of View	41° East of South
Field Of View	48.878°
Focal Length[1]	48.3mm
Closest Turbine	5.70 miles
Furthest Turbine	14.25 miles
Camera Elevation	9.99'

Note: At long exposures, film reacts to light differently than the eye. The photo simulation has been modified to more accurately present lights as they would be perceived by the human eye.

[1] Displayed in 35mm equivalent * MLLW = Mean Lower Low Water

Model Dimensions and Data

Proposed Color of Turbine	Off White (5 Percent Gray)
Height to Hub	257'
Hub Diameter	14'
Bounding Dimensions of Nacel (LxWxH)	48' X 40' X 27'
Maximum Width of Tower	16' dia
Minimum Width of Tower	11' dia
Rotor Diameter	364'
Maximum Rotor Blade Width	12'
Maximum Height above MLLW[2]	440'
Wind Direction	SW
Height of Turbine Platform above MLLW[2]	30'
Bounding Dim. of ESP (LxWxH)	100' X 200' X 100'
Aviation Warning Lights	FAA L864 and L810
Coast Guard Warning Lights	Dual Amber USCG Lights



Viewpoint 5

Cotuit Barnstable, Cape Cod

July 2006

Prepared By:

EDR

Figure 3.12-2 Sheet 2 of 11

Nighttime Visual Simulation of Proposed Wind Park: Revised Layout

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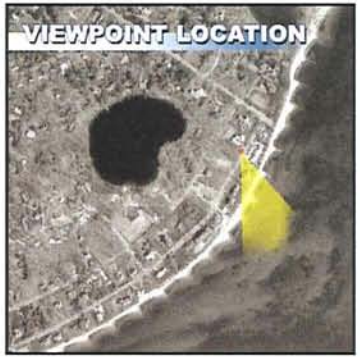


INFORMATION

Viewpoint Specific Data

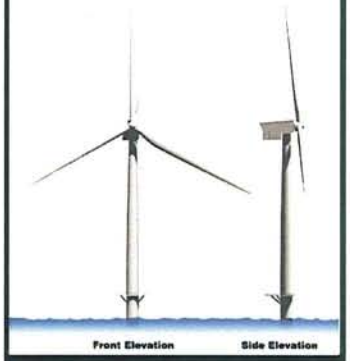
Viewpoint Name	Wianno Area
Viewpoint #	6
Viewpoint Location	41° 37' 91.10"N 70° 22' 12.67"W
Percentage of Total Turbines Visible	82%
Date Taken	1/22/2003
Time	9:43 PM
Temperature & Visibility	-13° C 8° F Clear
Direction of View	20° East of South
Field Of View	39.966°
Focal Length[1]	49.5mm
Closest Turbine	5.34 miles
Furthest Turbine	12.63 miles
Camera Elevation	29.58'

Note: At long exposures, film reacts to light differently than the eye. This photo simulation has been modified to more accurately present lights as they would be perceived by the human eye.

[1] expressed in 35mm equivalent * MLLW = Mean Lower Low Water

Model Dimensions and Data

Proposed Color of Turbine	Off White (5 Percent Gray)
Height to Hub	257'
Hub Diameter	14'
Bounding Dimensions of Nacel (LxWxH)	48' X 40' X 27'
Maximum Width of Tower	16' dia
Minimum Width of Tower	11' dia
Rotor Diameter	364'
Maximum Rotor Blade Width	12'
Maximum Height above MLLW[1]	440'
Wind Direction	SW
Height of Turbine Platform above MLLW[2]	30'
Bounding Dim. of ESP (LxWxH)	180' X 200' X 100'
Aviation Warning Lights	FAA L864 and L810
Coast Guard Warning Lights	Dual Amber USCG Lights



Viewpoint 6

Wianno Barnstable, Cape Cod

July 2006

Prepared By:

EDR

Figure 3.12-2 Sheet 3 of 11

Nighttime Visual Simulation of Proposed Wind Park: Revised Layout

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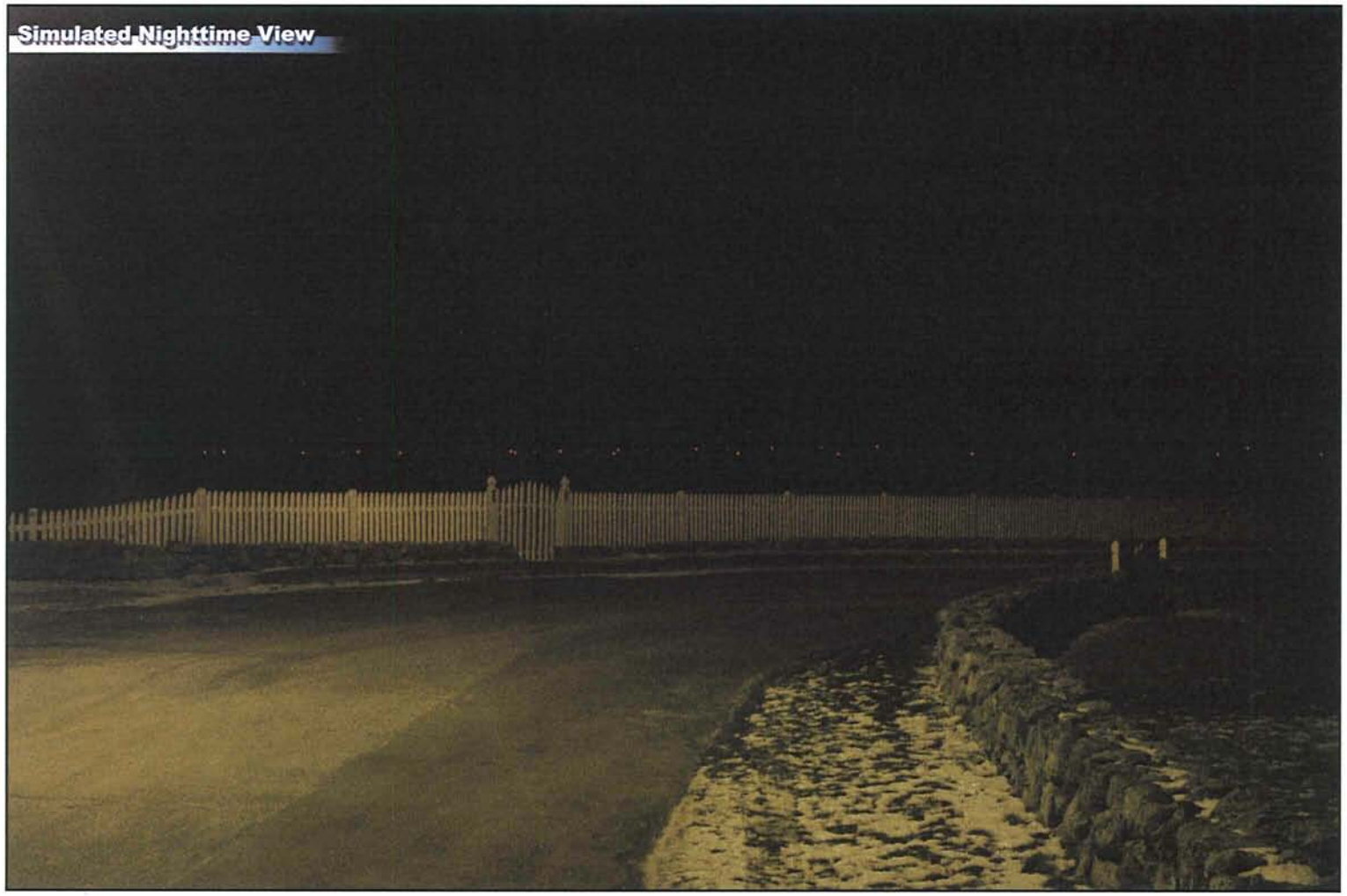
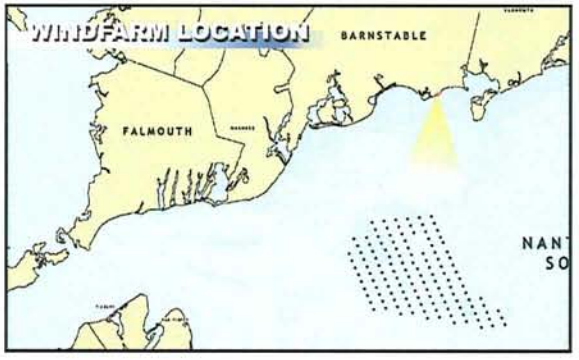




INFORMATION

Viewpoint Specific Data

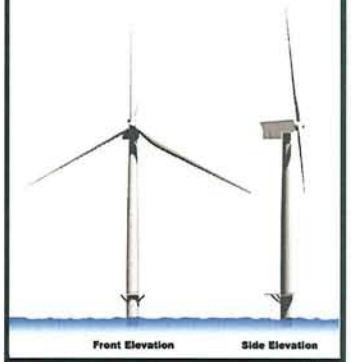
Viewpoint Name	Hyannis Area
Viewpoint #	8
Viewpoint Location	41° 37' 46.68"N 70° 18' 14.59"W
Percentage of Total Turbines Visible	88%
Date Taken	1/21/2003
Time	10:12 PM
Temperature & Visibility	-12° C 10° F Clear
Direction of View	3 West of South
Field Of View	48.341°
Focal Length[1]	49.0 mm
Closest Turbine	5.97 miles
Furthest Turbine	12.02 miles
Camera Elevation	22.44'

Note: At long exposures, film reacts to light differently than the eye. This photo simulation has been modified to more accurately present lights as they would be perceived by the human eye.

[1] Displayed in 35mm equivalent [2] MLLW - Mean Lower Low Water

Model Dimensions and Data

Proposed Color of Turbine	Off White (5 Percent Gray)
Height to Hub	257'
Hub Diameter	14'
Bounding Dimensions of Nacel (LxWxH)	48' X 40' X 27'
Maximum Width of Tower	16' dia
Minimum Width of Tower	11' dia
Rotor Diameter	364'
Maximum Rotor Blade Width	12'
Maximum Height above MLLW[2]	440'
Wind Direction	SW
Height of Turbine Platform above MLLW[2]	30'
Bounding Dim. of ESP (LxWxH)	100' X 200' X 100'
Aviation Warning Lights	FAA L864 and L810
Coast Guard Warning Lights	Dual Amber USCG Lights



Viewpoint 8

Hyannis Port Barnstable, Cape Cod

July 2006

Prepared By:

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Figure 3.12-2 Sheet 5 of 11

Nighttime Visual Simulation of Proposed Wind Park: Revised Layout

Prepared For:

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INFORMATION

Viewpoint Specific Data

Viewpoint Name	Oak Bluffs
Viewpoint #	21
Viewpoint Location	41° 27' 29.08"N 70° 33' 23.92"W
Percentage of Total Turbines Visible	100%
Date Taken	2/6/2003
Time	6:46pm
Temperature & Visibility	-3° C 26° F Clear
Direction of View	76° East of North
Field Of View	40.646°
Focal Length[1]	48.6mm
Closest Turbine	9.26 miles
Furthest Turbine	16.43 miles
Camera Elevation	54.40'

Note: At long exposures, film reacts to light differently than the eye. This photo simulation has been modified to more accurately present lights as they would be perceived by the human eye.

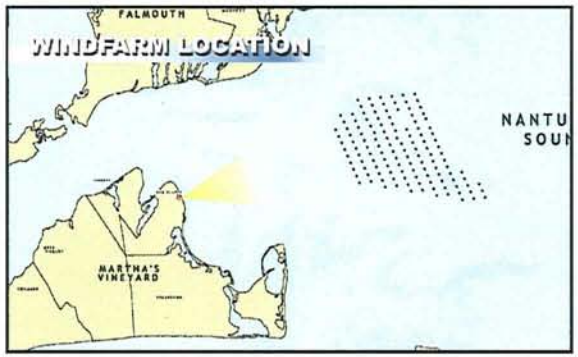
[1] Equivalent to 35mm equivalent [2] MLLW - Mean Lower Low Water

Model Dimensions and Data

Proposed Color of Turbine	Off White (5 Percent Grey)
Height to Hub	257'
Hub Diameter	14'
Bounding Dimensions of Nacel (LxWxH)	48' X 40' X 27'
Maximum Width of Tower	16' dia
Minimum Width of Tower	11' dia
Rotor Diameter	364'
Maximum Rotor Blade Width	12'
Maximum Height above MLLW[2]	440'
Wind Direction	SW
Height of Turbine Platform above MLLW[2]	30'
Bounding Dim. of ESP (LxWxH)	100' X 200' X 100'
Aviation Warning Lights	FAA L864 and L810
Coast Guard Warning Lights	Dual Amber USCG Lights

Plan

Front Elevation Side Elevation



Viewpoint 21

Oak Bluffs Martha's Vineyard

July 2006

Prepared By:

EDR

Figure 3.12-2 Sheet 6 of 11

Nighttime Visual Simulation of Proposed Wind Park: Revised Layout

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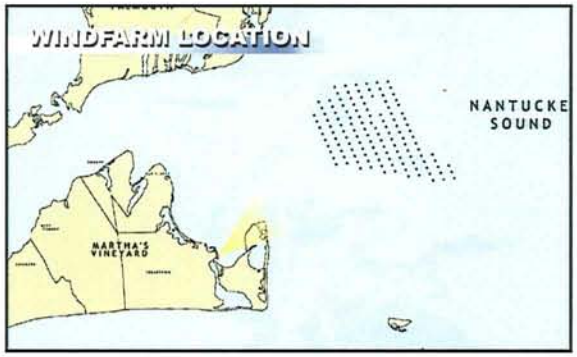

INFORMATION

Viewpoint Specific Data

Viewpoint Name	Edgartown
Viewpoint #	20
Viewpoint Location	41° 23' 26.27"N 70° 30' 11.29"W
Percentage of Total Turbines Visible	86%
Date Taken	2/6/2003
Time	8:14 PM
Temperature & Visibility	-3° C 26° F Overcast
Direction of View	53° East of North
Field Of View	41.1°
Focal Length[1]	47.3mm
Closest Turbine	8.92 miles
Furthest Turbine	15.52 miles
Camera Elevation	35.85'

Note: At long exposures, film reacts to light differently than the eye. This photo simulation has been modified to more accurately present lights as they would be perceived by the human eye.

[1] 80-210 - Mean Lower Water

Model Dimensions and Data

Proposed Color of Turbine	Off White (5 Percent Gray)
Height to Hub	257'
Hub Diameter	14'
Bounding Dimensions of Nacel (LxWxH)	48' X 40' X 27'
Maximum Width of Tower	16' dia
Minimum Width of Tower	11' dia
Rotor Diameter	364'
Maximum Rotor Blade Width	12'
Maximum Height above MLLW[2]	440'
Wind Direction	SW
Height of Turbine Platform above MLLW[2]	30'
Bounding Dim. of ESP (LxWxH)	100' X 200' X 100'
Aviation Warning Lights	FAA L864 and L810
Coast Guard Warning Lights	Dual Amber USCG Lights

Plan

Front Elevation Side Elevation

Viewpoint 20

Edgartown

Martha's Vineyard

July 2006

Prepared By:

EDR

Figure 3.12-2 Sheet 7 of 11

Nighttime Visual Simulation of Proposed Wind Park: Revised Layout

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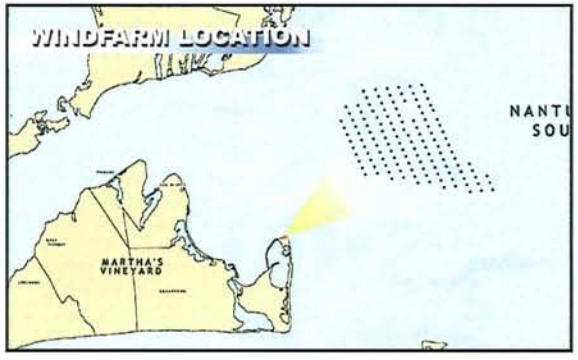
Simulated Nighttime View

EXISTING VIEW

VIEWPOINT LOCATION

WINDFARM LOCATION



INFORMATION

Viewpoint Specific Data

Viewpoint Name	Cape Poge
Viewpoint #	19
Viewpoint Location	41° 25' 12.64"N 70° 27' 4.57"W
Percentage of Total Turbines Visible	83%
Date Taken	2/5/2003
Time	6:36 PM
Temperature & Visibility	-2° C 28° F Clear
Direction of View	52° East of North
Field Of View	40.646°
Focal Length[1]	48.6mm
Closest Turbine	5.55 miles
Furthest Turbine	11.33 miles
Camera Elevation	56.77'

Note: At long exposures, film reacts to light differently than the eye. This photo simulation has been modified to more accurately present lights as they would be perceived by the human eye.

[1] Displayed in 35mm equivalent [2] MLLW - Mean Lower Low Water

Model Dimensions and Data

Proposed Color of Turbine	Off White (5 Percent Gray)
Height to Hub	257'
Hub Diameter	14'
Bounding Dimensions of Nacel (LxWxH)	48' X 40' X 27'
Maximum Width of Tower	16' dia
Minimum Width of Tower	11' dia
Rotor Diameter	364'
Maximum Rotor Blade Width	12'
Maximum Height above MLLW [2]	440'
Wind Direction	SW
Height of Turbine Platform above MLLW [2]	30'
Bounding Dim. of ESP (LxWxH)	100' X 200' X 100'
Aviation Warning Lights	FAA L864 and L810
Coast Guard Warning Lights	Dual Amber USCG Lights

Plan

Front Elevation Side Elevation

Viewpoint 19

Cape Poge — Martha's Vineyard

July 2006

Prepared By:

EDR

Figure 3.12-2 Sheet 8 of 11

Nighttime Visual Simulation of Proposed Wind Park: Revised Layout

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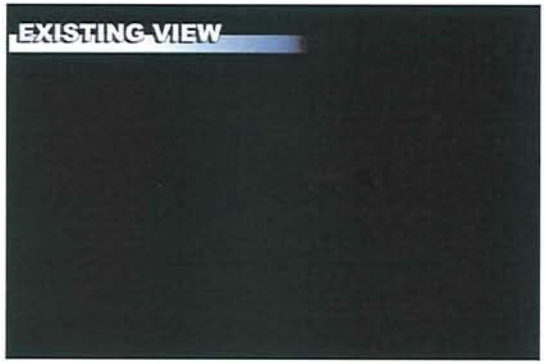
Simulated Nighttime View

EXISTING VIEW



VIEWPOINT LOCATION

INFORMATION

Viewpoint Specific Data

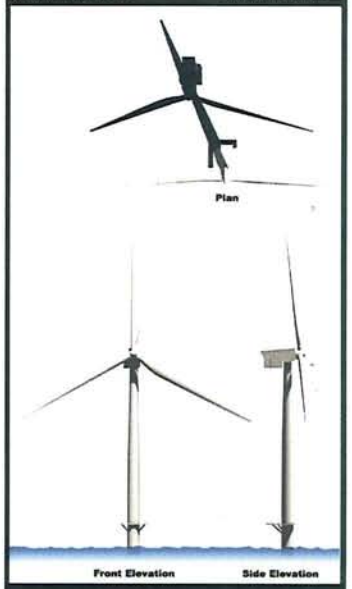
Viewpoint Name	Nantucket Cliffs
Viewpoint #	22
Viewpoint Location	41° 46' 58.15"N 70° 52' 17.79"W
Percentage of Total Turbines Visible	100%
Date Taken	5/19/2003
Time	10:43 PM
Temperature & Visibility	Clear
Direction of View	47° West of North
Field Of View	44°
Focal Length[1]	44.5mm
Closest Turbine	13.62 miles
Furthest Turbine	21.83 miles
Camera Elevation	44.6'

Note: At long exposures, film reacts to light differently than the eye. This photo simulation has been modified to more accurately present lights as they would be perceived by the human eye.

[1]Displayed in 35mm equivalent [2] MLLW - Mean Lower Low Water

Model Dimensions and Data

Proposed Color of Turbine	Off White (5 Percent Grey)
Height to Hub	257'
Hub Diameter	14'
Bounding Dimensions of Nacel (LxWxH)	48' X 40' X 27'
Maximum Width of Tower	16' dia
Minimum Width of Tower	11' dia
Rotor Diameter	364'
Maximum Rotor Blade Width	12'
Maximum Height above MLLW[2]	440'
Wind Direction	SW
Height of Turbine Platform above MLLW[2]	30'
Bounding Dim. of ESP (LxWxH)	100' X 200' X 100'
Aviation Warning Lights	FAA L864 and L810
Coast Guard Warning Lights	Dual Amber USCG Lights



Viewpoint 22

Nantucket Cliffs — Nantucket

July 2006

Prepared By:

EDR

Figure 3.12-2 Sheet 9 of 11

Nighttime Visual Simulation of Proposed Wind Park: Revised Layout

Prepared For:

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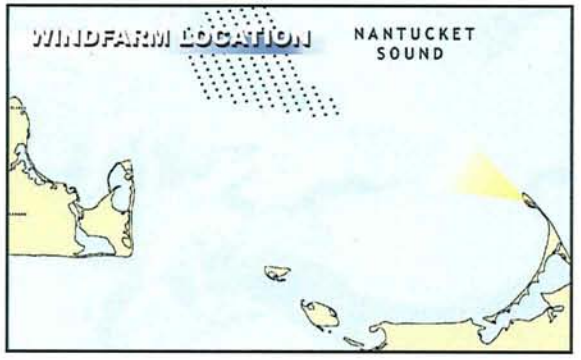
Simulated Nighttime View

EXISTING VIEW

VIEWPOINT LOCATION

WINDFARM LOCATION



INFORMATION

Viewpoint Specific Data

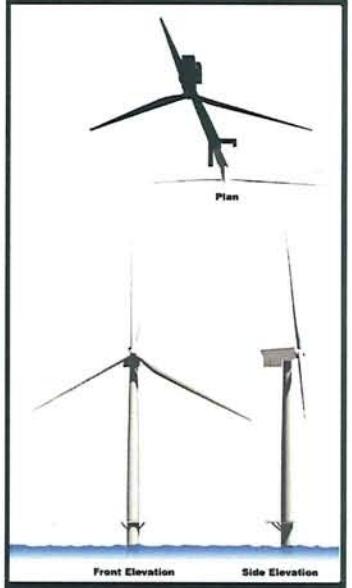
Viewpoint Name	Great Point
Viewpoint #	23
Viewpoint Location	41° 50' 10.03"N 70° 43' 32.14"W
Percentage of Total Turbines Visible	100%
Date Taken	5/19/2003
Time	7:35 PM
Temperature & Visibility	Clear
Direction of View	29° North of West
Field Of View	40.723°
Focal Length[1]	48.5mm
Closest Turbine	11.18 miles
Furthest Turbine	20.09 miles
Camera Elevation	18.2'

Note: At long exposures, film reacts to light differently than the eye. This photo simulation has been modified to more accurately present lights as they would be perceived by the human eye.

[1] Expressed in 35mm equivalent [2] MLLW = Mean Lower Low Water

Model Dimensions and Data

Proposed Color of Turbine	Off White (5 Percent Gray)
Height to Hub	257'
Hub Diameter	14'
Bounding Dimensions of Nacel (LxWxH)	48' X 40' X 27'
Maximum Width of Tower	16' dia
Minimum Width of Tower	11' dia
Rotor Diameter	364'
Maximum Rotor Blade Width	12'
Maximum Height above MLLW[2]	440'
Wind Direction	SW
Height of Turbine Platform above MLLW[2]	39'
Bounding Dim. of ESP (LxWxH)	100' X 200' X 100'
Aviation Warning Lights	FAA L864 and L810
Coast Guard Warning Lights	Dual Amber USCG Lights



Viewpoint 23

Great Point — Nantucket

July 2006

Prepared By:

EDR

Figure 3.12-2 Sheet 10 of 11

Nighttime Visual Simulation of Proposed Wind Park: Revised Layout

Prepared For:

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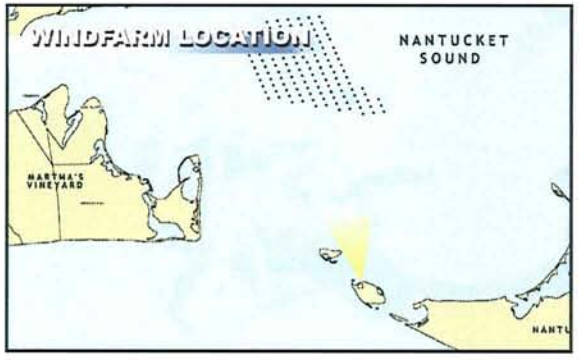
Simulated Nighttime View

EXISTING VIEW

VIEWPOINT LOCATION

WINDFARM LOCATION



INFORMATION

Viewpoint Specific Data

Viewpoint Name	Tuckernuck Island
Viewpoint #	24
Viewpoint Location	41° 18' 39.41"N 70° 15' 44.85"W
Percentage of Total Turbines Visible	100%
Date Taken	5/20/2003
Time	7:55 PM
Temperature & Visibility	13° C 56° F Overcast
Direction of View	35° West of North
Field Of View	38.05°
Focal Length[1]	52.2 mm
Closest Turbine	10.31 miles
Furthest Turbine	16.76 miles
Camera Elevation	23.95

Note: At long exposures, film reacts to light differently than the eye. This photo simulation has been modified to more accurately present lights as they would be perceived by the human eye.

[1] Displayed in 35mm equivalent [2] MLLW = Mean Lower Low Water

Model Dimensions and Data

Proposed Color of Turbine	Off White (5 Percent Gray)
Height to Hub	257'
Hub Diameter	14'
Bounding Dimensions of Nacel (LxWxH)	48' X 40' X 27'
Maximum Width of Tower	16' dia
Minimum Width of Tower	11' dia
Rotor Diameter	364'
Maximum Rotor Blade Width	12'
Maximum Height above MLLW [2]	440'
Wind Direction	SW
Height of Turbine Platform above MLLW [2]	30'
Bounding Dim. of ESP (LxWxH)	100' X 200' X 100'
Aviation Warning Lights	FAA L864 and L810
Coast Guard Warning Lights	Dual Amber USCG Lights

Plan

Front Elevation Side Elevation

Viewpoint 24

Tuckernuck Island Nantucket

July 2006

Prepared By:

EDR

Figure 3.12-2 Sheet 11 of 11

Nighttime Visual Simulation of Proposed Wind Park: Revised Layout

Prepared For:

Cape Wind™
Energy for Life.

Appendix C

DAYTIME PHOTO – RENDERING OF PROPOSED WIND PARK FROM SIX DISTANT VIEWPOINTS (FIGURE 3.12-3) SHEETS 1–6, DATED JULY 2006

INFORMATION

Photo-Rendering Data

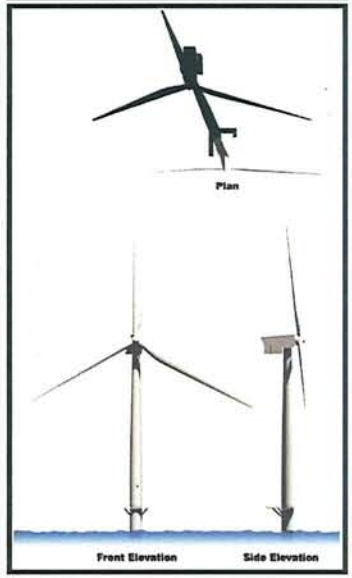
Viewpoint Name	Nobska Lighthouse
Viewpoint #	1B
Viewpoint Location	41° 30' 56.80"N 70° 39' 18.28"W
Percentage of Total Turbines Visible in F.O.V.	100%
Date Parameter	8/1/2005
Time Parameter	8:00 AM
Temperature & Visibility	NA
Direction of View	4° South of East
Field Of View (F.O.V)	40.115°
Focal Length1	49.3mm
Closest Turbine in F.O.V.	13.40 miles
Furthest Turbine in F.O.V.	21.84 miles
Camera Elevation	55.74'

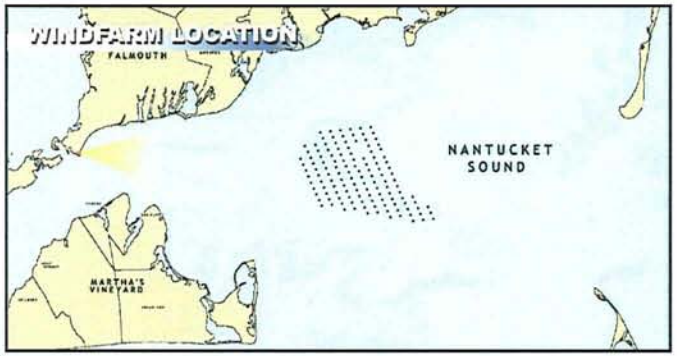
* Please note that this photo rendering uses a generic waterfront image that is intended to represent conditions as seen from previously simulated views in the DEIS/DEIR.
* This rendering is a representation of the revised scale, layout, color, and lighting of the proposed wind park, as perceived from the referenced viewpoint location.

[1] Displayed in 35mm equivalent [2] MLLW - Mean Lower Low Water

Model Dimensions and Data

Proposed Color of Turbine	Off White (5 Percent Grey)
Height to Hub	257'
Hub Diameter	14'
Bounding Dimensions of Nacel (LxWxH)	48' X 40' X 27'
Maximum Width of Tower	16' dia
Minimum Width of Tower	11' dia
Rotor Diameter	364'
Maximum Rotor Blade Width	12'
Maximum Height above MLLW [2]	440'
Wind Direction	SW
Height of Turbine Platform above MLLW [2]	39'
Bounding Dim. of ESP (LxWxH)	100' X 200' X 100'
Aviation Warning Lights	NA
Coast Guard Warning Lights	NA





Nobska Lighthouse

Falmouth

Viewpoint 1B

Daytime Photo-Rendering of Proposed Wind Park from Six Distant Viewpoints **Figure 3.12-3 Sheet 1 of 6**

Potential View of Revised Layout from Falmouth, Cape Cod *

Prepared By: EDR

July 2006

Prepared For: Cape Wind™ Energy for Life.

INFORMATION

Photo-Rendering Data

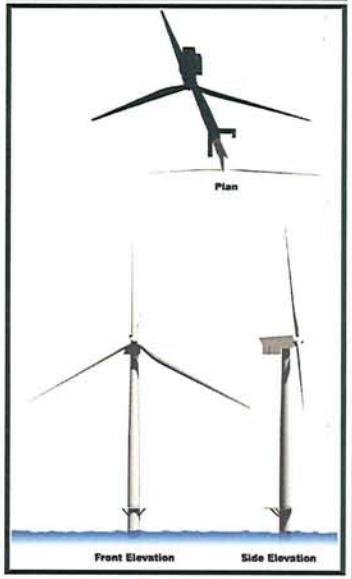
Viewpoint Name	Monomoy
Viewpoint #	26B
Viewpoint Location	41° 33' 32.57"N 69° 59' 31.48"W
Percentage of Total Turbines Visible in F.O.V.	100%
Date Parameter	8/10/2005
Time Parameter	3:12pm
Temperature & Visibility	NA
Direction of View	S South of West
Field Of View (F.O.V)	48.7°
Focal Length1	48.5mm
Closest Turbine in F.O.V.	14.48 miles
Furthest Turbine in F.O.V.	21.29 miles
Camera Elevation	30.03'

* Please note that this photo rendering uses a generic waterfront image that is intended to represent conditions as seen from previously simulated views in the DEIS/DEIR.
* This rendering is a representation of the revised scale, layout, color, and lighting of the proposed wind park, as perceived from the referenced viewpoint location.

Displayed in 35mm equivalent ² MLLW - Mean Lower Low Water

Model Dimensions and Data

Proposed Color of Turbine	Off White (5 Percent Gray)
Height to Hub	257'
Hub Diameter	14'
Rounding Dimensions of Nacel (LxWxH)	48' X 48' X 27'
Maximum Width of Tower	16' dia
Minimum Width of Tower	11' dia
Rotor Diameter	364'
Maximum Rotor Blade Width	12'
Maximum Height above MLLW ²	440'
Wind Direction	SW
Height of Turbine Platform above MLLW ²	39'
Rounding Dim. of ESP (LxWxH)	100' X 200' X 100'
Aviation Warning Lights	NA
Coast Guard Warning Lights	NA



Monomoy

Chatham

Viewpoint 26B

Daytime Photo-Rendering of Proposed Wind Park from Six Distant Viewpoints

Figure 3.12-3 Sheet 2 of 6

Potential View of Revised Layout from Chatham, Cape Cod *

Prepared By:

EDR

July 2006

Prepared For:

Cape Wind™
Energy for Life.

INFORMATION

Photo-Rendering Data

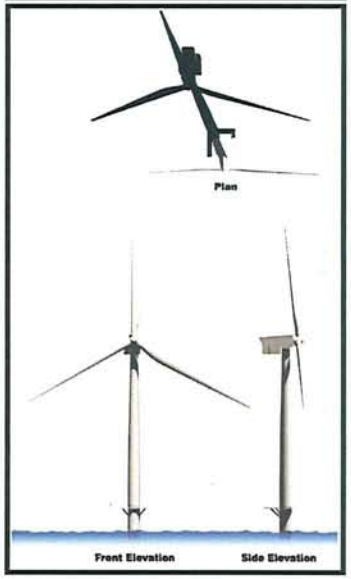
Viewpoint Name	Edgartown
Viewpoint #	20B
Viewpoint Location	41° 23' 26.27"N 70° 30' 11.29"W
Percentage of Total Turbines Visible in F.O.V.	97%
Date Parameter	8/1/2005
Time Parameter	7:45 AM
Temperature & Visibility	NA
Direction of View	54° East of North
Field Of View (F.O.V)	41.35°
Focal Length[1]	47.7mm
Closest Turbine in F.O.V.	8.92 miles
Furthest Turbine in F.O.V.	14.52 miles
Camera Elevation	35.85'

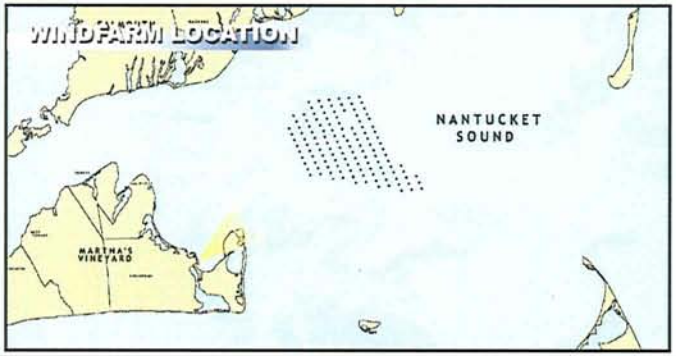
* Please note that the photo rendering uses a generic waterfront image that is intended to represent conditions as seen from previously simulated views in the DEIS/DEIR.
* This rendering is a representation of the revised scale, layout, color, and lighting of the proposed wind park, as perceived from the referenced viewpoint location.

[1] Displayed in 35mm equivalent [2] MLLW - Mean Lower Low Water

Model Dimensions and Data

Proposed Color of Turbine	Off White (5 Percent Gray)
Height to Hub	257'
Hub Diameter	14'
Bounding Dimensions of Nacel (LxWxH)	48' X 40' X 27'
Maximum Width of Tower	16' dia
Minimum Width of Tower	11' dia
Rotor Diameter	364'
Maximum Rotor Blade Width	12'
Maximum Height above MLLW [2]	440'
Wind Direction	SW
Height of Turbine Platform above MLLW [2]	39'
Bounding Dim. of ESP (LxWxH)	100' X 200' X 100'
Aviation Warning Lights	NA
Coast Guard Warning Lights	NA





Edgartown

Martha's Vineyard

Viewpoint 20B

Daytime Photo-Rendering of Proposed Wind Park from Six Distant Viewpoints **Figure 3.12-3 Sheet 3 of 6**

Potential View of Revised Layout from Edgartown, Martha's Vineyard *

Prepared By: EDR

July 2006

Prepared For: Cape Wind™ Energy for Life.

INFORMATION

Photo-Rendering Data

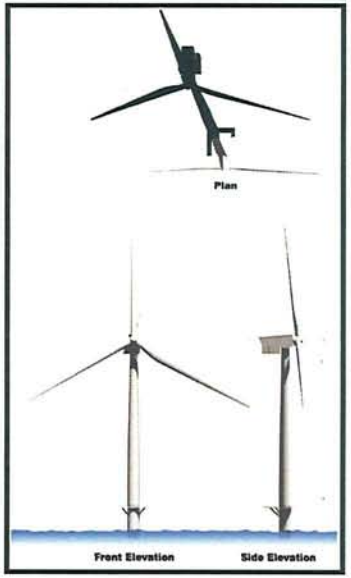
Viewpoint Name	Nantucket Cliffs
Viewpoint #	22B
Viewpoint Location	41° 17' 14.18"N 70° 07' 8.48"W
Percentage of Total Turbines Visible in F.O.V.	100%
Date Parameter	3/19/2003
Time Parameter	10:00am
Temperature & Visibility	NA
Direction of View	47° West of North
Field Of View (F.O.V)	44°
Focal Length1	44.5mm
Closest Turbine in F.O.V.	13.62 miles
Furthest Turbine in F.O.V.	21.83 miles
Camera Elevation	44.61'

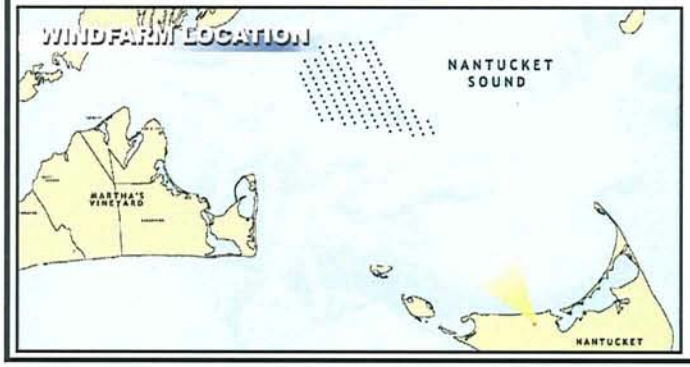
* Please note that the photo rendering uses a generic waterfront image that is intended to represent conditions as seen from previously simulated views in the DEIS/DEIR.
* The rendering is a representation of the revised scale, layout, color, and lighting of the proposed wind park, as perceived from the referenced viewpoint location.

Displayed at 35mm equivalent [3] MLLW - Mean Lower Low Water

Model Dimensions and Data

Proposed Color of Turbine	Off White (5 Percent Gray)
Height to Hub	257'
Hub Diameter	14'
Rounding Dimensions of Nacel (LxWxH)	48' X 40' X 27'
Maximum Width of Tower	16' dia
Minimum Width of Tower	11' dia
Rotor Diameter	364'
Maximum Rotor Blade Width	12'
Maximum Height above MLLW [3]	440'
Wind Direction	SW
Height of Turbine Platform above MLLW [3]	39'
Rounding Dim. of ESP (LxWxH)	100' X 200' X 100'
Aviation Warning Lights	NA
Coast Guard Warning Lights	NA





Nantucket Cliffs

Nantucket

Viewpoint 22B

Daytime Photo-Rendering of Proposed Wind Park from Six Distant Viewpoints **Figure 3.12-3 Sheet 4 of 6**

Potential View of Revised Layout from Nantucket Cliffs, Nantucket *

Prepared By: EDR

July 2006

Prepared For: Cape Wind™ Energy for Life.

INFORMATION

Photo-Rendering Data

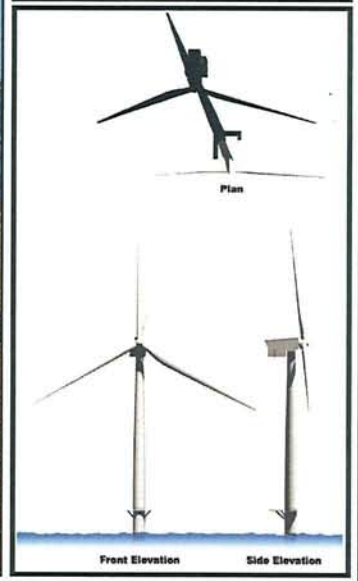
Viewpoint Name	Great Point
Viewpoint #	23B
Viewpoint Location	41° 23' 22.95"N 70° 02' 52.17"W
Percentage of Total Turbines Visible in F.O.V.	100%
Date Parameter	8/1/2005
Time Parameter	3:00 PM
Temperature & Visibility	NA
Direction of View	29° North of West
Field Of View (F.O.V)	40.7°
Focal Length1	48.5mm
Closest Turbine in F.O.V.	11.18 miles
Furthest Turbine in F.O.V.	20.09 miles
Camera Elevation	18.29'

* Please note that this photo rendering uses a generic waterfront image that is intended to represent conditions as seen from previously simulated views in the DEIS/DEIR.
* The rendering is a representation of the revised scale, layout, color, and lighting of the proposed wind park, as perceived from the referenced viewpoint location.

[1] Displayed in 35mm equivalent [2] MLLW - Mean Lower Low Water

Model Dimensions and Data

Proposed Color of Turbine	Off White (5 Percent Grey)
Height to Hub	257'
Hub Diameter	14'
Rounding Dimensions of Nacel (LxWxH)	48' X 40' X 27'
Maximum Width of Tower	16' dia
Minimum Width of Tower	11' dia
Rotor Diameter	364'
Maximum Rotor Blade Width	12'
Maximum Height above MLLW [2]	440'
Wind Direction	SW
Height of Turbine Platform above MLLW [2]	39'
Rounding Dim. of ESP (LxWxH)	100' X 200' X 100'
Aviation Warning Lights	NA
Coast Guard Warning Lights	NA



Great Point

Nantucket

Viewpoint 23B

Daytime Photo-Rendering of Proposed Wind Park from Six Distant Viewpoints **Figure 3.12-3 Sheet 5 of 6**

Potential View of Revised Layout from Great Point, Nantucket *

Prepared By: EDR

July 2006

Prepared For: Cape Wind™ Energy for Life.

INFORMATION

Photo-Rendering Data

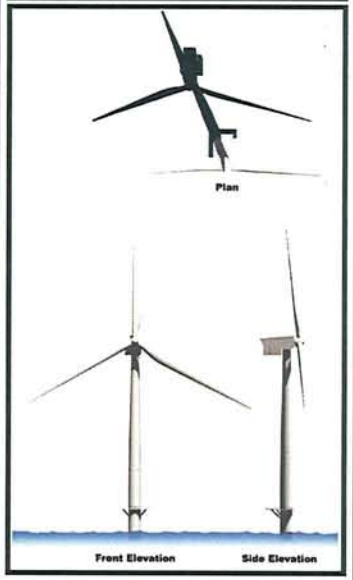
Viewpoint Name	Tuckernuck Island
Viewpoint #	24B
Viewpoint Location	41° 18' 39.41"N 70° 15' 44.85"W
Percentage of Total Turbines Visible in F.O.V.	100%
Date Parameter	12/1/2005
Time Parameter	10:00 PM
Temperature & Visibility	NA
Direction of View	11° West of North
Field Of View (F.O.V)	38.7°
Focal Length[1]	51.2 mm
Closest Turbine in F.O.V.	10.31 miles
Furthest Turbine in F.O.V.	10.76 miles
Camera Elevation	23.95'

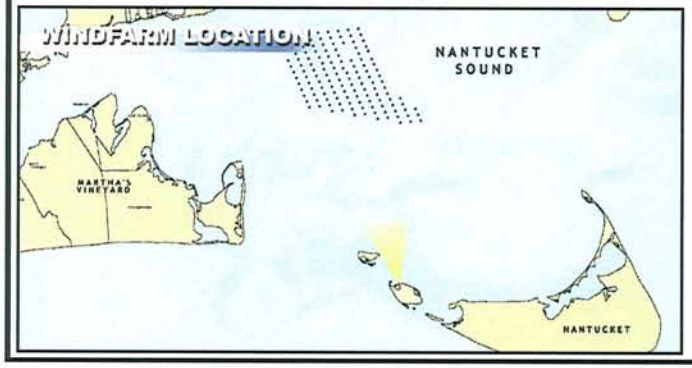
* Please note that this photo rendering uses a generic waterfront image that is intended to represent conditions as seen from previously simulated views in the DEIS/DEIR.
* This rendering is a representation of the revised scale, layout, color, and lighting of the proposed wind park, as perceived from the referenced viewpoint location.

[1] displayed in 35 mm equivalent [2] MLLW = Mean Lower Low Water

Model Dimensions and Data

Proposed Color of Turbine	Off White (5 Percent Gray)
Height to Hub	257'
Hub Diameter	14'
Rounding Dimensions of Nacel (LxWxH)	48' X 40' X 27'
Maximum Width of Tower	16' dia
Minimum Width of Tower	11' dia
Rotor Diameter	364'
Maximum Rotor Blade Width	12'
Maximum Height above MLLW [2]	440'
Wind Direction	SW
Height of Turbine Platform above MLLW [2]	39'
Rounding Dim. of ESP (LxWxH)	100' X 200' X 100'
Aviation Warning Lights	NA
Coast Guard Warning Lights	NA





Tuckernuck Island

Nantucket

Viewpoint 24B

Daytime Photo-Rendering of Proposed Wind Park from Six Distant Viewpoints

Figure 3.12-3 Sheet 6 of 6

Potential View of Revised Layout from Tuckernuck Island, Nantucket *

Prepared By: EDR

July 2006

Prepared For: Cape Wind™ Energy for Life.

Appendix D

REGULATORY CORRESPONDENCE

The Commonwealth of Massachusetts
William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

July 21, 2005

Secretary Stephen Pritchard
Executive Office of Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114-2524

Attn.: Anne Canaday, MEPA Analyst

RE: Cape Wind Energy Project. MHC #RC.29785. COE-NAE-2004-338-1. **EOEA #12643.**

Dear Secretary Pritchard:

Staff of the Massachusetts Historical Commission (MHC), the office of the State Historic Preservation Officer, have reviewed the Notice of Project Change for the proposed project referenced above. The project change consists of the relocation of 30 turbines.

MHC understands that PAL (the project cultural resources consultant) continues to analyze proposed project changes in relation to previously surveyed areas, and are undertaking supplemental marine reconnaissance archaeological survey to evaluate the new project configurations. MHC looks forward to reviewing the results of the supplemental archaeological investigations in consultation with the US Army Corps of Engineers.

Regarding the visual impacts to historic properties, MHC has the following comments. The MHC is concerned about the proponent's statement in the NPC that the re-arrangement of turbines is unlikely to have an impact on the visual effects of the project. MHC disagrees with this assumption and is concerned that the relocation may have a greater visual impact on Nantucket, which as you are aware, is a National Historic Landmark. The MHC believes that the effect to this National Historic Landmark, as evidenced by earlier visual analysis, is a direct effect on the historic resource rather than an indirect effect as the Army Corps has determined. In addition, it appears that the relocation may have greater visual effects on the historic properties on Cape Cod and Martha's Vineyard.

As MHC stated in comments to MHC requests that additional study of the visual impacts of the alternatives be required of the proponent. While it is already apparent that the proposed project will have an adverse effect on the character and setting of historic properties, it remains unclear how this effect can be substantively minimized or mitigated. Visual representations of alternative clusters, such as contemplated in the current Notice of Project Change, should be a part of the alternatives analysis as a whole, in order to determine whether or not variations on the placement at the preferred and alternative sites will minimize or mitigate the overall adverse effect.

220 Morrissey Boulevard. Boston, Massachusetts 02125
(617) 727-8470 • Fax: (617) 727-5128
www.sec.state.ma.us/mhc

Furthermore, the MHC notes that the Alliance to Protect Nantucket Sound's comments on the DEIS/DEIR reveal that there are additional National Register-listed properties within the project's area of potential effect that will be affected by the project. These properties include: the William Street National Register Historic District (Tisbury) and the Ritter House (Tisbury) and should be added to the visual effect studies.

These comments are offered to assist in compliance with Section 106 and 110 of the National Historic Preservation Act of 1966 as amended (36 CFR 800), MGL c. 9, ss. 26-27C (950 CMR 70-71), MEPA (301 CMR 11). Please contact Edward L. Bell or Ann Lattinville of my staff if you have any immediate questions.

Sincerely,

Brona Simon

Brona Simon
State Archaeologist
Deputy State Historic Preservation Officer
Massachusetts Historical Commission

xc:
Cape Wind Associates, LLC
Tom McCullouch, Advisory Council on Historic Preservation
Karen Kirk Adams, USACOE-NED Regulatory
Kate Atwood, USACOE-NED
Rebecca Watson, DOI/Land and Minerals
Conrad C. Lautenbacher, Jr. NOAA
John S. Wilson USFW
Cheryl Andrews-Maltais, THPO, Wampanoag Tribe of Gay Head (Aquinnah)
Massachusetts Coastal Zone Management
Victor Mastone, EOEA, Board of Underwater Archaeological Resources
Massachusetts Commission on Indian Affairs
Cape Cod Commission
Falmouth Historical Commission
Yarmouth Historical Commission
Mashpee Historical Commission
Barnstable Historical Commission
Nantucket Historical Commission
Edgartown Historical Commission
Oak Bluffs Historical Commission
Chatham Historical Commission
Alliance to Protect Nantucket Sound
Clean Power Now
Terry Orr, Environmental Science Services, Inc.
Deborah C. Cox, PAL

Cape Wind
Energy for Life.

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www.cape-wind.org

July 29, 2005

Brona Simon
State Archaeologist
Deputy State Historic Preservation Officer
Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, Massachusetts 02125

Attn: Ann Lattinville

Re: **Cape Wind Associates; Reply to Massachusetts Historical Commission Comments to Notice of Project Change ("NPC"), MHC #RC.29785; COE-NAE-2004-338-1; EOEA #12643**

Dear Ms. Simon,

Cape Wind Associates, LLC ("CWA") hereby responds to the comments filed by the Massachusetts Historical Commission ("MHC") on July 21, 2005, which discuss the visual impact on Nantucket of the revised wind turbine generator ("WTG") array. While we believe that the comments may misinterpret the extent of the visual impacts on Nantucket of the revised WTG array, CWA recognizes the concerns raised by MHC. Although the proposed WTG array is located outside of Massachusetts, CWA will fully analyze and depict the visual impacts of the revised WTG array in the forthcoming FEIR.

In the meantime, additional information may help clarify the limited extent of the visual impact of the revised WTG array on Nantucket. The breadth of the visual impacts from the revised WTG array on the view shed from Nantucket has, in fact, been narrowed by the relocation of turbine sites. In addition, while the distance to Nantucket from the closest turbine remains the same as that proposed in the DEIR, NPC Figure 6 clearly indicates a reduction in the turbines visible from Nantucket.[1] Thus, the revised WTG array is substantially reduced on the sides that are most visible from Nantucket (i.e. the southern and eastern sides).

[1] More specifically, 23 turbines in the southern and eastern portions of the WTG array proposed in the DEIR have been relocated; 20 to the north and west of the previously proposed array, 2 along the eastern edge, and only 1 on the southern edge. The following turbines shown on the grid depicted in Figure 3 in the NPC have been relocated: B13; D14; F15; J1, 2, 3, 4, 5, and 6; K1, 2, 3, 4, 11, 12, 13; and L1, 2, 3, 4, 11, 12 and 13.

Further, our cultural resource consultant, PAL, is currently analyzing the proposed project changes and such cultural analysis will be presented in the FEIR. CWA and PAL would also be happy to meet with you and your staff at this time to further clarify the modifications to the WTG array.

Sincerely,

Craig Olmsted

Craig Olmsted

CDO/abm

cc:
Secretary Stephen Pritchard
Executive Office of Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114-4524

Attn: Anne Canaday, MEPA Analyst

Karen Kirk Adams
US Army Corps of Engineers
New England District Office
696 Virginia Road
Concord, MA 01742-2751