

## **8.0 CAPE COD COMMISSION DEVELOPMENT OF REGIONAL IMPACT**

### **8.1 Regional Policy Plan Consistency Statement**

The Cape Wind Project has been sited and designed, and will be constructed and operated, in a manner that is consistent with the Regional Policy Plan. The Applicant's primary objective throughout the siting, design, and development of the Project, has been to avoid and minimize impacts to environmental and coastal resources. The following is the Project's consistency with the Goals and Minimum Performance Standards from the Cape Cod Commission 1996 Regional Policy Plan.

#### **LAND USE/GROWTH MANAGEMENT**

##### **1.1 Goal**

*To encourage sustainable growth and development consistent with the carrying capacity of Cape Cod's natural environment in order to maintain the Cape's economic health and quality of life, and to encourage the preservation and creation of village centers and downtown areas that provide a pleasant environment for living, working and shopping for residents and visitors.*

##### **Minimum Performance Standards:**

*1.1.1 Compact forms of development such as cluster development, redevelopment within certified growth/activity centers, and, where appropriate, mixed-use residential/commercial development shall be encouraged in order to minimize further land consumption and protect open space.*

**Response:** This MPS is not applicable.

*1.1.2 All residential subdivisions of five or more lots shall submit a cluster development preliminary plan for consideration by towns or the Commission as appropriate during the development review process.*

**Response:** This MPS is not applicable.

*1.1.3 Extension or creation of new roadside "strip" commercial development outside of certified growth/activity centers shall be prohibited.*

**Response:** This MPS is not applicable.

*1.1.4 Development and redevelopment shall be directed away from Significant Natural Resource Areas as illustrated on the Cape Cod Significant Natural Resource Area Map dated September 5, 1996, as amended.*

**Response:** According to the Cape Cod Significant Natural Resource Area Map dated September 5, 1996, the proposed upland transmission line route is located within or adjacent to the following Significant Natural Resources:

- Four rare wetland wildlife habitat and priority sites for rare species and natural communities from NHESP and from APCC Atlas;
- Unfragmented forest habitat;
- A wetland resource area located at the landfall location;
- A public water supply wellhead protection area and potential public water supply area; and
- One critical upland area as identified by the APCC Atlas

Please refer to Section 5.6 for a detailed discussion on terrestrial ecology within the Project Area. Since the publication of the Cape Cod Significant Natural Resource Area Map in 1996, NHESP has modified the extent of rare species habitat in the vicinity of the Project. According to communications with NHESP and the updated 2003 Natural Heritage Atlas, the upland transmission line route now crosses three rare

species polygons which may contain or be utilized by nine state-listed plant species and five state-listed wildlife species (see Figure 5.6-1 and Appendix 5.6-A). The majority of the upland route will be installed within existing paved roadways and will therefore not influence wildlife corridors. A small portion of the route will occur in the existing NSTAR Electric ROW, which is likely a wildlife corridor. Work within this area is temporary; the upland transmission line will be installed below-grade, trenches will be backfilled and restored to original conditions, and sediment and erosion controls will be removed upon vegetative stabilization. Therefore, the upland transmission line will have no long-term effect on wildlife migration.

The 2003 Natural Heritage Atlas has also mapped all of Nantucket Sound in the vicinity of the submarine transmission line route as habitat for the Roseate tern (*Sterna dougallii*) and Common tern (*Sterna hirundo*). Additional information on potential impacts to state- and federally-listed species in the Project Area is provided in Section 5.5 (Protected Marine Species), Section 5.6 (Terrestrial Ecology) and Section 5.7 (Avian).

Wetland resource areas located within the Project Area are discussed in Section 5.8 and shown on Figures 5.8-2 through 5.8-4. Areas potentially subject to federal, state, or local jurisdiction within 200 feet of the upland transmission line route were field investigated in October 2001, August 2002, and December 2002. Wetlands were delineated in December 2002 in accordance with criteria established by the USACE (Environmental Laboratory, 1987), MADEP (MADEP, 1995), and the Yarmouth Wetlands Protection Regulations (Town of Yarmouth Conservation Commission, 1997). Field investigations have confirmed that the wetland resource area located on the Cape Cod Significant Natural Resource Map is not located within the upland transmission line route.

Please refer to Minimum Performance Standard response 2.1.1.3 for a discussion on public water supply areas.

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## 1.2 Goal:

*To preserve and enhance agricultural uses that are environmentally compatible with the Cape's natural resources in order to maintain opportunities to enjoy the traditional occupations, economic diversity, and scenic resources associated with agricultural lands.*

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## Minimum Performance Standards:

1.2.1 *New development adjacent to lands in active agricultural production shall maintain or provide a thickly vegetated buffer of sufficient width to prevent conflicts between the development and existing agricultural uses. New agricultural operations in developed residential areas shall also provide a buffer to minimize impacts on these adjoining areas.*

**Response:** This MPS is not applicable.

## NATURAL RESOURCES

### 2.1 WATER RESOURCES

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#### 2.1.1 Goal

*To maintain the overall quality and quantity of Cape Cod's ground water to ensure a sustainable supply of untreated high quality drinking water and to preserve and restore the ecological integrity of marine and fresh surface waters.*

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#### Minimum Performance Standards:

*Classification System and Minimum Performance Standards: The Regional Policy Plan establishes a water resources classification system to manage and protect Cape Cod's water resources. The water resources*

*classification system recognizes four primary resource areas and their respective recharge areas: wellhead protection areas, fresh water recharge areas, marine water recharge areas and potential water supply areas. The classification system also recognizes areas where water quality may have been impaired from existing development. Where these impaired areas overlap with any of the resource areas above, improvement of water quality is a major goal.*

*2.1.1.1 Except as otherwise specified in the classification system below, all development and redevelopment shall not exceed a 5 ppm nitrogen loading standard for impact on ground water based on the methodology contained in Cape Cod Commission Nitrogen Loading Technical Bulletin 91-001.*

**Response:** This MPS is not applicable.

*2.1.1.2 All development and redevelopment shall comply with the minimum performance standards outlined in the following water resources classification system. If a property is located where two classifications overlap, the more stringent standards shall apply. The water resources classification system is illustrated on the Cape Cod Water Resources Classification Maps I and II, dated September 5, 1996, as amended and described below:*

*A. Wellhead Protection Areas: Consist of areas that contribute ground water to existing public and community water supply wells. These areas shall be delineated by a consistent method and recognized by the Commission in conjunction with state standards for Zone IIs (as defined in 310 CMR 22.02).*

*A.1: The maximum loading standard for nitrogen impact on ground water shall be 5 ppm for development and redevelopment unless a cumulative impact analysis indicates a more stringent loading standard is necessary.*

*A.2: Commercial and industrial development and redevelopment that involves the use, treatment, generation, storage or disposal of hazardous wastes or hazardous materials, with the exception of household quantities, shall not be permitted.*

*A.3: Public and private sewage or septage treatment facilities shall not be permitted in these areas, except as provided in subsection E.2 below and subject to 2.1.2.1 through 2.1.2.7.*

*A.4: All Developments of Regional Impact within Wellhead Protection Areas shall use DEP approved alternative systems with enhanced nitrogen removal, unless a cumulative nitrogen loading assessment of the recharge area indicates that nitrogen loading from Title 5 systems is acceptable.*

*A.5: Uses prohibited in Zone II by state regulations shall not be permitted in these areas.*

**Response:** Portions of the upland transmission line route will be located within an "Identified Wellhead Protection Area" according to the Cape Cod Water Resources Classification Map I dated November 6, 1996. However, the Project will not result in any nitrogen loading to this area nor will the project result in the placement of any public and/or private sewage or septic treatment facilities. Therefore, the Project is consistent with this MPS.

*B. Fresh Water Recharge Areas: Consist of recharge areas to fresh water ponds as mapped by a method acceptable to the Commission.*

*B.1: In order to limit phosphorus inputs, no subsurface disposal systems shall be permitted within 300 feet of mean high water of fresh water ponds unless the applicant demonstrates by a ground water study that the site is not within the Fresh Water Recharge Area.*

*B.2: Developments of Regional Impact that generate over 2000 gpd of sewage effluent may be required to delineate the ground water recharge areas to potentially affected fresh water*

*ponds and conduct a phosphorous loading assessment in order to identify and mitigate adverse impacts.*

*B.3: Public and private sewage treatment facilities may be used within Fresh Water Recharge Areas subject to subsection E.2 and 2.1.2.1 through 2.1.2.7 below.*

**Response:** This MPS is not applicable since the upland transmission line route does not pass through a Freshwater Recharge Area according to the Cape Cod Water Resources Classification Map I dated November 6, 1996.

*C. Marine Water Recharge Areas: Consist of recharge areas to marine embayments as mapped by the Commission, on Cape Cod Water Resources Classification Map II dated September 5, 1996, as amended:*

*C.1: Except as specified in subsection C.2 below, development and redevelopment shall not exceed identified critical nitrogen loading standards for impact on marine ecosystems. For watersheds where the critical nitrogen load has not been determined, Developments of Regional Impact shall be required to make a monetary contribution to determine the flushing rate of the embayment in order to calculate the critical nitrogen loading rate. In watersheds to embayments where the critical nitrogen loading rate has been identified, Developments of Regional Impact may be required to make a monetary contribution towards the development or implementation of appropriate nitrogen management strategies.*

*C.2: Where existing watershed development exceeds identified critical loading standards for a marine recharge area or where there are documented marine water quality problems in the associated embayment, development and redevelopment shall maintain or improve existing levels of nitrogen loading.*

*C.3: All Developments of Regional Impact within Marine Water Recharge Areas shall use DEP approved alternative systems with enhanced nitrogen removal, unless a Commission-approved cumulative nitrogen loading assessment of the embayment and recharge area indicates that nitrogen loading from a standard Title 5 system is acceptable.*

*C.4: Public and private sewage treatment facilities may be used within Marine Water Recharge Areas subject to subsection E.2 and 2.1.2.1 through 2.1.2.7 below.*

**Response:** Lewis Bay and the entire upland transmission line route are located within a Marine Water Recharge Area according to the Cape Cod Water Resources Classification Map II dated November 6, 1996. The Marine Water Recharge Area for this Project is located within watersheds where critical load has not been determined. However, the Project will not result in any nitrogen loading to this area nor will the project result in the placement of any public and/or private sewage or septic treatment facilities. Therefore, the Project is consistent with this MPS.

*D. Impaired Areas: Consists of areas where ground water may have been degraded by point and nonpoint sources of pollution, including but not limited to areas with unsewered residential developments where lots, on average, are less than 20,000 sq ft; landfills, septage and wastewater treatment plant discharge sites; high density commercial and industrial areas and those downgradient areas where the ground water may have been degraded by these sources. For the purpose of these standards, all certified growth/activity centers shall be classified as Impaired Areas.*

*D.1: Development shall generally meet a 5 ppm nitrogen loading standard for impact on ground water, but may increase to a 10 ppm nitrogen loading standard where it can be demonstrated to the permitting authority that such increase will cause no significant adverse impact on ponds, wetlands, marine waters, public or private drinking water supply wells and potential water supply wells as identified in Section F below.*

*D.2: Where existing development exceeds the 10 ppm nitrogen loading standard, development and redevelopment of that property shall not increase existing levels of nitrogen loading.*

*D.3: Public and private sewage treatment facilities, as well as other remediation measures such as community systems and DEP approved alternative systems with enhanced nitrogen removal shall be encouraged in Impaired Areas. Public and private sewage treatment facilities shall be subject to 2.1.2.1 through 2.1.2.7 below.*

*D.4: The development of public or community water supply systems shall be encouraged for areas serviced by private wells in Impaired Areas.*

**Response:** Portions of the upland transmission line route will pass through Water Quality Impaired Areas by development according to the Cape Cod Water Resources Classification Map I dated November 6, 1996. However, the Project will not result in any nitrogen loading to this area nor will the project result in the placement of any public and/or private sewage or septic treatment facilities. Therefore, the Project is consistent with this MPS.

*E. Water Quality Improvement Areas: Consist of Impaired Areas that are located within Wellhead Protection Areas, Fresh Water and Marine Water Recharge Areas. In such areas improvement of water quality is a major goal.*

*E.1: Development shall not exceed a 5 ppm nitrogen loading standard or an identified marine water quality standard as applicable. Where existing development exceeds the identified loading standard or where there are documented marine water quality problems, development and redevelopment shall improve existing levels of nitrate-nitrogen loading.*

*E.2: Use of public and private sewage treatment facilities shall be as follows: within Water Quality Improvement Areas that are in Wellhead Protection Areas public and private sewage treatment facilities may be used only to remediate existing problems; within Water Quality Improvement areas that are in Fresh Water and/or Marine Water Recharge Areas public and private sewage treatment facilities may be used in conjunction with any development or redevelopment. All such facilities shall be subject to 2.1.2.1 through 2.1.2.7 below.*

**Response:** Portions of the upland transmission line route will pass through Water Quality Improvement Areas according to the Cape Cod Water Resources Classification Map I dated November 6, 1996. However, the Project will not result in any nitrogen loading to this area nor will the project result in the placement of any public and/or private sewage or septic treatment facilities. Therefore, the Project is consistent with this MPS.

*F. Potential Public Water Supply Areas: Consist of potential public water supply areas that have been identified by the Commission on the Cape Cod Water Resources Classification Map I dated September 5, 1996, as amended, and future well sites and their associated recharge areas that have been identified by towns, water districts or private water companies.*

*F.1: No development shall be permitted within 400 feet of an identified future well site.*

*F.2: Within an identified Potential Public Water Supply Area, the same standards apply as in Wellhead Protection Areas above.*

**Response:** Portions of the upland transmission line route will pass through areas identified as Potential Public Water Supply Areas according to the Cape Cod Water Resources Classification Map I dated November 6, 1996. However, there are no projected impacts to groundwater or public water supply wells associated with the intended installation or future maintenance of the transmission line or associated infrastructure. The transmission line will be installed using typical open trench methods, and it is anticipated that the transmission line will be located above the groundwater table. The transmission line will not contain any fluids, petroleum, oils, or lubricants. As such, there is no

threat to groundwater or the public water supply wells from the installation, presence, or future maintenance of the transmission line and/or associated infrastructure.

*2.1.1.3 Development and redevelopment shall identify their proposed wells and existing private wells on abutting properties within 400 feet and assess the impact of the development on the water quality of these wells. Septic systems and other sources of contamination shall be sited so as to avoid contamination of existing or proposed wells.*

**Response:** The preferred route for the transmission line to the intersection with the NSTAR Electric ROW crosses through the Zone I wellhead areas of three public water supply wells. These wells are Yarmouth Water Department ("YWD") Numbers 1, 2 and 17. The Zone I area for these wells is defined as the area within a 400-foot radius about the public water supply wells, assuming the approved yields of the wells are greater than 100,000 gallons per day. The upland transmission line is approximately 42 feet inside the Zone I boundary of YWD 1; approximately 170 feet inside the Zone I boundary of YWD 2; and approximately 25 feet inside the Zone I boundary of YWD 17. The preferred transmission line route within the NSTAR Electric ROW will not be located within a MADEP-approved Zone I. The preferred upland transmission line route, including the portion in the NSTAR Electric ROW, also crosses through MADEP-approved Zone II boundaries for several public water supply wells. However, there are no projected impacts to groundwater or public water supply wells associated with the intended installation or future maintenance of the transmission line or associated infrastructure. The transmission line will be installed using typical open trench methods, and it is anticipated that the transmission line will be located above the groundwater table. The transmission line will not contain any fluids, petroleums, oils, or lubricants. As such, there is no threat to groundwater or the public water supply wells from the installation, presence, or future maintenance of the transmission line and/or associated infrastructure.

*2.1.1.4 Conversion from seasonal to year-round uses in FEMA A flood zones or within 100 feet of wetlands shall not be permitted unless the proponent installs a DEP approved alternative system with enhanced nitrogen removal. The proponent must also demonstrate that the project will not have other adverse impacts on ground water or adjacent surface water areas and wetlands.*

**Response:** This MPS is not applicable.

*2.1.1.5 Developments of Regional Impact that withdraw over 30,000 gallons of water per day shall be required to evaluate impacts on the water table and surface water bodies.*

**Response:** This MPS is not applicable.

*2.1.1.6 New direct discharge of untreated stormwater, parking lot runoff and/or wastewater into marine and fresh surface water and wetlands shall not be permitted. Stormwater shall be managed and disposed of on site. Development and redevelopment shall use best management practices such as vegetated swales, to minimize runoff and maximize water quality treatment. A maintenance schedule shall be developed for all drainage structures. Stormwater drainage should be based on projected 25 year-24 hour storm unless more conservative figure are required by town zoning bylaws.*

**Response:** This MPS is not applicable

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## 2.1.2 Goal

*To encourage the use of public and private sewage treatment facilities in appropriate areas where they will provide environmental or other public benefits and where they can be adequately managed and maintained.*

**Response:** This Goal is not applicable to the proposed Project. The Project, located within the 3-mile jurisdiction, involves the installation of a 115 kV submarine and upland transmission line.

## 2.2 COASTAL RESOURCES

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### 2.2.1 Goal

*To protect the public interests in the coast and rights for fishing, fowling, and navigation, to preserve and manage coastal areas so as to safeguard and perpetuate their biological, economic, historic, maritime, and aesthetic values, and to preserve, enhance and where appropriate, expand public access to the shoreline.*

**Response:** The proposed submarine transmission system will have no permanent adverse impacts on navigation and fishing within Nantucket Sound and Lewis Bay since the submarine cables will be buried a minimum of 6 feet below the seabed. The proposed submarine cable system may have associated temporary impacts to navigation during the installation period. Following construction, the public rights of fishing, fowling, and navigation within Commonwealth and Private Tidelands will remain completely unobstructed and open to free on-foot public passage.

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### 2.2.2 Goal:

*To limit development in areas subject to coastal storm flowage, particularly high hazard areas in order to minimize the loss of life and structures and the environmental damage resulting from storms, flooding, erosion and relative sea level rise.*

**Response:** Approximately 1,100 linear feet of the upland transmission line route will be constructed within existing paved areas mapped as Land Subject to Coastal Storm Flowage by FEMA. The flood elevation varies from 13 feet NGVD at the landfall on New Hampshire Avenue to elevation 11 NGVD just beyond the intersection of Berry Avenue and Broadway. Open trench construction activities for the transmission line are temporary in nature and once installed will not alter any existing elevations or the ability of the land to provide storm damage prevention or flood control. Existing paving will be restored over the installed transmission line.

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### Minimum Performance Standards:

*2.2.2.1 Except as specified in Section 2.2.2.5, no development or redevelopment shall be permitted within FEMA V-flood zones. Existing structures may be reconstructed or renovated provided there is no increase in floor area or intensity of use. As an exception, where there is no feasible alternative, water-dependent structures and uses may be permitted subject to the approval of all permitting authorities.*

**Response:** Zone V15 (elevation 13 NVGD) is mapped by FEMA at the landfall location. No structures are proposed within this zone. The construction activities are limited to installation of the landfall transition vault beneath the existing pavement in New Hampshire Avenue.

*2.2.2.2 In order to accommodate possible relative sea level rise and possible increased storm intensity, ensure human health and safety, and protect the integrity of coastal landforms and natural resources, all new buildings, including replacements, or substantial improvements to existing structures within FEMA A-zones shall be designed to accommodate the documented relative sea level rise rate in Massachusetts of at least one foot per 100 years, except as provided in Section 2.2.2.11, and in V-zones shall be designed to accommodate a relative sea level rise rate of two feet per 100 years.*

**Response:** The Project does not currently foresee the construction of any new buildings, therefore this MPS is not applicable.

*2.2.2.3 Except as specified in Section 2.2.2.5, no new development or redevelopment shall be permitted on barrier beaches and coastal dunes as defined by the Wetlands Protection Act and associated regulations and policies. Existing structures may be reconstructed or renovated, provided there is no increase in floor area or intensity of use, or conversion from seasonal to year round use.*

- A. *If the reconstruction/renovation is greater than 50% of the market value of a structure, and is located within a V-zone, the lowest horizontal structural member shall be elevated at least two feet above the 100 year flood elevation. If the structure is located in the A-zone, the lowest floor shall be elevated at least one foot above the 100 year flood elevation, except as provided in Section 2.2.2.11. On a barrier beach or coastal dune and in either the V- or A-zone, the structure shall be on open pilings, to allow for storm flowage and beach and dune migration.*
- B. *If the structure is on a barrier beach or dune and is outside the 100 year coastal floodplain, and is proposed to be reconstructed/renovated greater than 50% of its market value before reconstruction and renovation, it shall be elevated at least two feet above grade on open pilings to allow dune migration.*

*Water-dependent public recreational facilities in these locations may be developed providing that it can be demonstrated that the proposed development will not compromise the integrity of coastal resources, and are appropriately elevated on pilings or floodproofed.*

**Response:** The upland transmission line route will not encounter any barrier beaches or coastal dunes. Field investigations revealed the nearest potential coastal dune to be approximately 200 feet away from the construction activities. MCZM has not mapped a barrier beach at the landfall location. Furthermore, there is no salt marsh and/or lagoon or estuary behind the coastal beach at the landfall location.

*2.2.2.4 Development and redevelopment on or within 100 feet landward of a coastal bank or dune shall be designed to have no adverse effect on the height, stability, or the use of the bank or dune as a natural sediment source. In areas where banks or dunes are eroding, the setback for all new buildings and septic systems to the top of the coastal bank or dune crest shall be at least 30 times the average annual erosion rate of the bank or dune. This rate shall be determined by averaging the erosion over the previous 30-year period at a minimum. In instances where shoreline erosion rates are indicative of bank/dune erosion rates, MCZM shoreline change maps may be used in determining the setback.*

**Response:** No construction is proposed on a coastal dune or bank. The landfall transition vault is proposed within existing pavement approximately 50 feet from the coastal bank at New Hampshire Avenue. This coastal bank consists of a concrete revetment and does not serve as a sediment source for coastal beaches or coastal dunes. It provides a vertical buffer that is significant for storm damage prevention and flood control, and will not be altered during the HDD installation/cable transition.

*2.2.2.5 Where fire, storm, or similar disaster has caused damage to or loss of buildings in FEMA A- and V-zones, on barrier beaches, coastal banks or coastal dunes of greater than 50 percent of their market value, all reconstruction shall be in compliance with current applicable regulations and shall be designed in accordance with Sections 2.1.1.4, 2.2.2.2, 2.2.2.4, 2.2.3.1 and 2.2.3.2. Any reconstruction shall not enlarge or expand the use of an existing structure.*

**Response:** Construction activities within the FEMA A- and V-zones involve the subsurface installation of the transmission lines beneath existing pavement. No structures or construction activities are proposed on barrier beaches, coastal banks or coastal dunes.

*2.2.2.6 Except as provided in Section 2.2.2.11, no new public infrastructure or expansion of existing infrastructure shall be made in flood hazard zones (FEMA A- and V-zones) unless it is shown that there is an overriding public benefit provided, and provided that such infrastructure will not promote new growth and development in flood hazard areas.*

**Response:** The infrastructure being installed is for the purpose of providing clean renewable energy for the New England region which is an overriding public benefit. Furthermore, the Energy Facility Siting Board in its tentative approval of the transmission line found that Cape Wind, upon receipt of permits to construct the wind farm, will have demonstrated the need for this transmission line. In the Matter of the

Petition of Cape Wind Associates, LLC and commonwealth Electric Company, d/b/a NSTAR Electric; EFSB 02-2 Tentative Decision (NSTAR Decision)(July 2, 2004).

*2.2.2.7 Where land subject to coastal storm flowage is significant to the interests of flood control and storm damage prevention, no activity shall increase the elevation or velocity of flood waters or increase flows due to a change in drainage or flowage characteristics on the subject site, adjacent properties, or any public or private way.*

**Response:** Approximately 1,100 linear feet of the upland transmission line route will be constructed within existing paved areas mapped as Land Subject to Coastal Storm Flowage by FEMA. The flood elevation varies from 13 feet NGVD at the landfall on New Hampshire Avenue to elevation 11 NGVD just beyond the intersection of Berry Avenue and Broadway. Open trench construction activities for the transmission line is temporary in nature and once installed will not alter any existing elevations or the ability of the land to provide storm damage prevention or flood control. Existing paving will be restored over the installed transmission line.

*2.2.2.8 Within the 10 year floodplain no activity shall impede the landward migration of other resource areas within this area of the floodplain. Relative sea level rise and the landward migration of resource areas in response to relative sea level rise shall be incorporated into the design, construction, and location of structures and other activities proposed.*

**Response:** Existing conditions in the 10 year floodplain prohibit the landward migration of other resource areas due to the dense residential development and roadways within this zone. No structures are proposed that will impede landward migration of other resource areas since all construction is proposed beneath existing paved roadways.

*2.2.2.9 New structures, additions to existing structures, solid foundations, new or proposed expansions of roads, driveways, or parking lots, or impermeable paving of existing ways, new or proposed expansions of coastal engineering structures, and new septic systems shall be prohibited within the V-zone of a beach, dune, barrier beach, or coastal bank where they will result in alterations to vegetative cover, interruptions in the supply of sediment to other wetland resources, and/or changes to the form or volume of a dune or beach.*

**Response:** This MPS is not applicable.

*2.2.2.10 Notwithstanding Sections 2.2.2.6, 2.2.2.7, 2.2.2.8, and 2.2.2.9, the following activities may be permitted provided the applicant demonstrates that best available measures are utilized to minimize adverse impacts on all critical characteristics of land subject to coastal storm flowage, and provided that all other performance standards for underlying resource areas are met: beach, dune, and bank nourishment and restoration projects, including fencing and other devices to increase dune development and plantings compatible with natural vegetative cover; elevated pedestrian walkways and elevated decks with appropriate height and spacing between planks to allow sufficient sunlight penetration; boat launching facilities, navigational aids, piers, docks, wharves and moorings; improvements necessary to maintain the structural integrity/stability of existing coastal engineering structures; projects that will restore, rehabilitate or create a saltmarsh or freshwater wetlands; projects that are approved, in writing, or conducted by the Division of Marine Fisheries that are specifically intended to increase the productivity of land containing shellfish, including aquaculture, or to maintain or enhance marine fisheries, and projects that are approved, in writing, or conducted by the Division of Fisheries and Wildlife that are specifically intended to enhance or increase wildlife habitat.*

**Response:** This MPS is not applicable.

*2.2.2.11 In order to allow alternative means of reducing flood hazard risks in areas where there are serious concerns about protecting the character of historic villages, the following shall apply in certified Village Growth/Activity centers located in FEMA A-zones for which a Flood Hazard Mitigation Plan has been prepared and adopted by the town and has been found by the Cape Cod Commission to be consistent*

*with state coastal policies and regulations. Notwithstanding Sections 2.1.2.5, 2.2.2.2 2.2.2.3 A, and 2.2.2.6, the following standards shall apply to such certified Village Growth/Activity centers located within FEMA A-zones:*

*a. Development and redevelopment shall be subject to the requirements of the adopted Flood Hazard Mitigation Plan and any related policies and regulations.*

*b. Public infrastructure and private sewage treatment facilities (PSTFs) may be constructed in FEMA A-zones (but not within a V- or an AO- zone) provided that these facilities are consistent with the Flood Hazard Mitigation Plan and the certified Local Comprehensive Plan; further provided that the infrastructure is itself flood-resistant; and provided that such infrastructure will not promote new growth and development outside such certified Growth/Activity center.*

*c. All new buildings or substantial improvements to existing structures in the FEMA A-zone shall comply with FEMA and State Building Code regulations for elevation and flood-proofing.*

**Response:** This MPS is not applicable.

### **2.2.3 Goal:**

*To maintain and improve coastal water quality to allow shellfishing and/or swimming in all coastal waters as appropriate, and to protect coastal ecosystems which support shellfish and finfish habitat.*

**Response:** The proposed method of installation of the submarine cable system is by hydraulic jet plow embedment. Jet plow embedment methods for submarine cable installations are considered to be the most effective and least environmentally damaging when compared to traditional mechanical dredging and trenching operations. This method of laying and burying the cables simultaneously ensures the placement of the submarine cable system at the target burial depth with minimum bottom disturbance and with the fluidized sediment settling back into the trench. For these reasons it is the installation methodology that appears to be preferred by state and federal regulatory agencies based on review of past precedent setting projects. The transition of the interconnecting 115 kV submarine cable system from water to land will be accomplished through the use of HDD methodology in order to minimize disturbance within the intertidal zone and near shore area. The EFSB's tentative approval of the project is based on the hydraulic jet plow and HDD methodologies for cable installation (NSTAR Decision) (July 2, 2004).

### **Minimum Performance Standards:**

*2.2.3.1 Within FEMA V-zones new mounded septic systems shall be prohibited except to upgrade existing substandard septic systems where such systems pose a demonstrated threat to public health, water quality or natural resources. Unless otherwise demonstrated, if feasible, solid components of the septic system shall be elevated above the 100 year flood level.*

**Response:** This MPS is not applicable.

*2.2.3.2 No new direct, untreated stormwater discharges shall be permitted into any coastal waters or wetlands, including discharges above or below the mean high water level.*

**Response:** This MPS is not applicable.

*2.2.3.3 The design and construction of stormwater management systems proposed in V-zones shall incorporate the historic rate of relative sea level rise in Massachusetts of two feet per 100 years. For systems proposed in A-zones, the historic rate of relative sea level rise in Massachusetts of one foot per 100 years shall be incorporated into the project design and construction.*

**Response:** This MPS is not applicable.

2.2.3.4 *In order to avoid loss of shellfish habitat and minimize impacts on wetlands, construction of community docks and piers, rather than separate structures serving individual lots, shall be required wherever possible. In significant shellfish habitat areas, as identified and documented by the Division of Marine Fisheries and/or local shellfish officials, the construction or expansion of docks and piers shall not be permitted. Docks and piers more than 50% damaged or destroyed by storms may be replaced in accordance with federal, state and local regulations, except in areas identified and documented as significant shellfish habitat.*

**Response:** This MPS is not applicable.

2.2.3.5 *New marinas of 10 or more slips, moorings, or active landward storage berths, and expansions of existing marinas by 10 or more slips, moorings, or berths shall provide or contribute to the provision of adequate boat sewage pump-out facilities in each harbor and shall provide restrooms for their patrons. Such marinas shall also provide or contribute to provision of adequate collection facilities for solid waste and waste oil for their patrons.*

**Response:** This MPS is not applicable.

2.2.3.6 *New dredging projects or expansion of existing dredging projects shall not occur unless a substantial public benefit can be demonstrated including but not limited to enhancement of fish or shellfish habitat, improvements to the flushing capacity of nitrogen sensitive embayments, or necessary improvements to navigational safety.*

**Response:** This MPS is not applicable. The submarine cable system will be installed via hydraulic jet plow embedment which is considered a non-jurisdictional activity under Sections 401 and 404 (Pers. comm., USACE-NED Regulatory Branch and MADEP), therefore the installation of the submarine cable system is not considered dredging.

2.2.3.7 *Undisturbed buffer areas of at least 100' width surrounding coastal wetlands and/or landward of the mean high water mark of coastal waterbodies shall be protected as specified in Section 2.3.1.2.*

**Response:** Undisturbed buffer zones of at least 100 feet are not present due to the existing residential development abutting salt marsh, and the mean high water mark of coastal waterbodies. Work proposed within the 100 foot Buffer Zone of coastal resources will occur within existing paved roadways, and will be temporary in nature. Sediment and erosion control devices will be utilized to protect the resources, and the trench will be backfilled to preexisting contours and repaved. Please refer to Section 5.8 and Figures 5.8-2 through 5.8-4.

## 2.3 WETLANDS

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### 2.3.1 Goal:

*To preserve and restore the quality and quantity of inland and coastal wetlands on Cape Cod.*

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### Minimum Performance Standards:

2.3.1.1 *Wetland alteration shall not be permitted except as provided herein and in Minimum Performance Standard 2.3.1.3. As an exception, where there is no feasible alternative, water-dependent projects involving wetland alteration with appropriate mitigation may be permitted subject to the approval of all permitting authorities. Such permission may be granted subject to a finding that there is no feasible alternative location for the project and that any necessary alteration is the minimum necessary to accomplish the goals of the project. Appropriate mitigation shall not include wetland creation or replication.*

**Response:** The submarine cable system route will result in temporary alterations to the following state-regulated resource areas: Land Under the Ocean, Land Containing Shellfish, and Land Subject to Coastal Storm Flowage. In addition, temporary work is proposed within paved portions of the 100-foot Buffer Zone to Land Under the Ocean, Coastal Bank, Coastal Beach, and Salt Marsh, as established under the MWPA. Direct impacts to Coastal Bank, Coastal Beach, and Land Subject to Tidal Action will be avoided by the use of HDD at the landfall. No inland wetlands or regulated culverts will be impacted by the proposed upland transmission line. The project will result in negligible impacts to Riverfront Area and the 100-foot Buffer Zone to Bank and Bordering Vegetated Wetland. Work within Riverfront Area and Buffer Zone is limited to temporary construction within existing paved roadways for the installation of the proposed upland transmission line route. Wetland permits will be sought from local, state, and federal regulatory authorities.

*2.3.1.2 Vegetated, undisturbed buffer areas of at least 100' width shall be maintained and/or provided from the edge of coastal and inland wetlands including isolated wetlands, to protect their natural functions. This policy shall not be construed to preclude pedestrian access paths, vista pruning, or construction and maintenance of water-dependent structures within the buffer area, any of which may be permitted at the discretion of permitting authorities where there is no feasible alternative to their location. The Commission and local Conservation Commissions shall require a larger buffer area where necessary to protect sensitive areas or where site conditions such as slopes or soils suggest that a larger buffer area is necessary to prevent any adverse impact to wetlands and associated wildlife habitat. In making this determination, the Commission shall use the Wetland Buffer Methodology, Technical Bulletin 96-004 as guidance. Where a buffer area is already altered such that the required buffer cannot be provided without removal of structures and/or pavement, this requirement may be modified by the permitting authority, provided it makes the following findings: 1) that the proposed alteration will not increase adverse impacts on that specific portion of the buffer area or associated wetland and, 2) that there is no technically demonstrated feasible construction alternative.*

**Response:** Undisturbed buffer zones of at least 100 feet are not present due to the existing residential development abutting salt marsh, and the mean high water mark of coastal waterbodies. Work proposed within the 100 foot Buffer Zone of coastal resources will occur within existing paved roadways, and will be temporary in nature. The majority of the proposed work within the 100 foot Buffer Zone to inland wetlands will occur within existing roadways. Sediment and erosion control measures will be utilized to protect the resources, and the trench will be backfilled to preexisting contours and restored to preexisting conditions with either repaving or revegetation. Please refer to Section 5.8 and Figures 5.8-2 through 5.8-4.

*2.3.1.3 Disturbance of wetlands and buffer areas for operation and maintenance of underground and overhead utility lines (electrical, communication, sewer, water, and gas lines) may occur. Installation of new utility lines through these areas may occur where the permitting authority finds that the proposed route is the best environmental alternative for locating such facilities. In all instances, disturbance of wetland and buffer areas shall be minimized and surface vegetation, topography and water flow shall be restored substantially to the original condition.*

**Response:** The proposed Project will preserve the quality and quantity of inland and coastal wetland resources of Cape Cod. The Project will require only minor temporary impacts to coastal wetland resource areas. Potential effects from the construction of the submarine cable system within wetland jurisdictional areas at the landfall location will meet the performance standards established within the Massachusetts Wetlands Protection Act Regulations and the Town of Yarmouth and Barnstable Wetland Protection Regulations. The Project will not adversely affect the coastal bank with respect to wave action or the movement of sediment. The proposed submarine cable system will be installed beneath the coastal bank by horizontal directional drilling so as to avoid open excavation that could be exposed to wave action and potential erosion. No effects on the productivity of the salt marsh are expected since this area is located approximately 200 feet to the west of the landfall location. Construction activities will not occur within the salt marsh, and will be limited to adjacent areas that are already paved or previously altered. Erosion and sedimentation control measures will be installed at the boundary of the salt marsh prior to construction to preclude siltation within the salt marsh. The upland transmission line route will

not have any direct impacts on wetland resources listed under the Yarmouth and Barnstable Wetland Regulations, since the transmission line route will be routed entirely within an upland paved road and shoulders and existing maintained NSTAR Electric ROW. A NOI filing to the Yarmouth and Barnstable Conservation Commission will be prepared for work within 100 feet of wetlands along the submarine and upland transmission line route. Orders of Conditions approving the project will be obtained prior to construction.

*2.3.1.4 Stormwater management plans for new development shall preclude direct discharge of untreated stormwater into natural wetlands and waterbodies. New stormwater discharges shall be located a minimum of 100' from wetlands and waterbodies.*

**Response:** Erosion and sedimentation controls will be in place along the work corridor upslope of wetland resource areas within 100 feet of the work area, and will be routinely monitored and maintained during construction. The work area will be restored and stabilized prior to the removal of erosion control measures. The work area will be restored and repaved or revegetated, as appropriate, and monitored after construction to ensure its stability.

## 2.4 WILDLIFE AND PLANT HABITAT

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### 2.4.1 Goal

*To prevent loss or degradation of critical wildlife and plant habitat, to minimize the impact of new development on wildlife and plant habitat and to maintain existing populations and species diversity.*

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#### Minimum Performance Standards:

*2.4.1.1. Applications for Developments of Regional Impact that propose to alter undeveloped areas shall contain a natural resources inventory. Such inventory shall identify the presence and location of wildlife and plant habitat, including vernal pools, and serve as a guide for the layout of the development. Developments shall be planned to minimize impacts to wildlife and plant habitat. Natural resources inventories shall be prepared in accordance with the Plant and Wildlife Habitat Assessment Guidelines, Technical Bulletin 92-002.*

**Response:** The upland transmission line installation, from the transition vault manhole at the landfall to the Barnstable Switching Station, will involve burial of the transmission line in underground splicing vaults and ductbanks within existing public ways and rights-of-way. The installation of the transmission line within the NSTAR Electric ROW will be located within an existing maintained ROW. All excavation will be performed with standard machinery, including excavators and backhoes. All work will be performed in accordance with local, state, and/or federal safety standards. The Applicant will coordinate with the Yarmouth and Barnstable Conservation Commission, the Massachusetts Department of Environmental Protection (MADEP), and NHESP as appropriate to ensure that no impacts to listed species will occur as part of the Project.

*2.4.1.2. Clearing of vegetation and alteration of natural topography shall be minimized, with native vegetation planted as needed to enhance or restore wildlife habitat. Standing specimen trees shall be protected. The permitting authority may require designation of building envelopes (for structures, driveways, lawns, etc.), where appropriate, to limit removal of vegetation.*

**Response:** Upon completion of the installation of the upland transmission line within the existing ROW, the work area will be restored to pre-construction contours and revegetated using a suitable upland seed mixture. Since that area is dominated by pioneer shrub and sapling vegetation, it is expected to recolonize with these species within one to two growing seasons following completion of construction.

*2.4.1.3 Fragmentation of wildlife and plant habitat shall be minimized by the establishment of greenways and wildlife corridors of sufficient width to protect not only edge species, but species that inhabit the interior forest, as well as by the protection of large unfragmented areas, and the use of open space or cluster*

*development. Wildlife shall be provided with opportunities for passage under or across roads and through developments where such opportunities will maintain the integrity of wildlife corridors. Fencing shall not be constructed so as to interfere with identified wildlife migration corridors.*

**Response:** The majority of the upland transmission line will be installed within existing paved roadways, therefore will not influence wildlife corridors. A small portion of the route will occur in the NSTAR Electric ROW which is likely a wildlife corridor. Sediment and erosion controls are temporary installations and will be removed upon vegetative stabilization. The installed transmission line will be below grade and will not impede wildlife migration.

*2.4.1.4. The Natural Heritage program has agreed to review Developments of Regional Impact proposed within Critical Wildlife and Plant Habitat Areas. These areas consist of habitat areas of rare (threatened or endangered) plant and wildlife species and species of special concern as generally identified and mapped by the Natural Heritage and Endangered Species Program and other critical habitat areas as identified and mapped by the Association for the Preservation of Cape Cod's "Cape Cod Critical Habitats Atlas," or local authorities. Developments of Regional Impact that would adversely affect habitat of local populations of rare wildlife and plants shall not be permitted. Development may be permitted where the proponent can demonstrate that such development will not adversely affect such habitat. A wildlife and plant habitat management plan may be required as a condition of approval when development or redevelopment is permitted in critical wildlife and plant habitat areas.*

**Response:** Impacts to the natural communities from installation and operation along the proposed upland transmission line route should be minimal, as all of the upland portion of the transmission line system will be located within existing roadways and maintained ROWs. The proposed upland transmission line will be located below grade within existing public roadways and ROW to the Barnstable Switching Station. The Applicant will coordinate with the Yarmouth and Barnstable Conservation Commission, the Massachusetts Department of Environmental Protection (MADEP), and NHESP as appropriate to ensure that no impacts to listed species will occur as part of the Project. Site and species specific habitat requirements will be incorporated into the construction methods for the proposed route in order to avoid an adverse effect on the rare plant or animal. Please refer to Section 5.6 for more details.

*2.4.1.5 Development shall be prohibited in vernal pools (as defined herein) and within a minimum 100' buffer around these areas. This buffer area may be increased to up to 350' based on the guidelines contained in the Wetland Buffer Methodology, Technical Bulletin 96-004. These areas shall not be used for stormwater management.*

**Response:** The proposed transmission line will not be located in or within 100-feet of a vernal pool.

## 2.5 OPEN SPACE PROTECTION AND RECREATION

### 2.5.1 Goal

*In order to preserve and enhance the availability of open space on Cape Cod and provide wildlife habitat, recreation opportunities, and protect the natural resources, scenery, ground water quality, air quality and character of Cape Cod, Barnstable County shall strive to protect at least 50% of its remaining developable land as open space.*

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### Minimum Performance Standards:

*2.5.1.1 Development or redevelopment within Significant Natural Resource Areas, as illustrated on the Cape Cod Significant Natural Resource Area Map dated September 5, 1996, as amended, shall be clustered away from sensitive resources and maintain a continuous corridor to preserve interior wildlife habitat. Where a property straddles the boundary of an area shown on this map, development shall be clustered outside the boundary. The primary function of these areas is the provision of ground water recharge, wildlife habitat, open space, scenic roadways, appropriate recreational opportunities, and protection of the Cape's natural character.*

**Response:** The upland transmission line installation, from the transition vault manhole at the landfill to the Barnstable Switching Station, will involve burial of the transmission line in underground splicing vaults and ductbanks within existing public ways and ROWs. All excavation will be performed with standard machinery, including excavators and backhoes. All work will be performed in accordance with local, state, and/or federal safety standards. Excavated soil from the trench and vaults will be temporarily stored adjacent to the worksite or transported off-site if on-site storage is not possible. Where soil is stored at the site, it will be stabilized with erosion and sedimentation controls. Following the completion of the installation of the transmission line, the excavation will be backfilled and repaved. Stormwater erosion and sedimentation controls will be in place prior to the initiation of construction activities. Once construction is completed, all equipment and construction debris will be removed from the site and the area will be returned to its original condition. Upon completion of the installation of the upland transmission line route within the ROW, the work area will be restored to pre-construction contours and revegetated using a suitable upland seed mixture. Since that area is dominated by pioneer shrub and sapling vegetation, it is expected to recolonize with these species within one to two growing seasons following completion of construction.

*2.5.1.2 Preserved open space within proposed developments shall be designed to be contiguous and interconnecting with adjacent open space, and shall be subject to permanent conservation restrictions. Towns may develop bonus provisions through their local bylaws to allow increased density for preservation of additional high quality open space. Additional guidance on dedication of open space for Developments of Regional Impact can be found in the Guidelines for Calculation and Provision of Open Space in Developments of Regional Impact, Technical Bulletin 94-001.*

**Response:** This MPS is not applicable.

*2.5.1.3 Residential, commercial and industrial development which qualifies as a Development of Regional Impact shall provide permanently-restricted upland open space in accordance with one of the following methods described below (Method A or Method B). Where appropriate, credit may be obtained for set aside of off-site open space or a contribution of funds may be made to the town, state or a land trust for open space acquisition at a per point rate to be specified in the Guidelines for Calculation and Provision of Open Space in Developments of Regional Impact, Technical Bulletin 94-001.*

*Open space shall be designed to protect those portions of the site with the highest natural resource values as identified by a natural resources inventory. Within open space areas the maximum amount of natural vegetation shall be maintained. No credit may be obtained for land that is dedicated on a residential lot on which a dwelling exists or may be built, unless the lot is at least 3 acres in size. Where development consists of more than one type or is located in more than one area, open space totals shall be determined for each area and added together. No credit may be obtained for areas that have been dedicated as open space prior to the date of application. Where new development is proposed within Significant Natural Resources Areas, open space shall be provided within these Areas. The requirements for Significant Natural Resource Areas shall apply to any certified growth centers that are located within a Significant Natural Resource Area.*

**Response:** This MPS is not applicable.

*2.5.1.4 Residential, commercial and industrial redevelopment which qualifies as a Development of Regional Impact shall maintain the existing percentage of open space on the lot (up to an amount that would otherwise be required by the point system above) or shall provide off-site open space or make a cash contribution toward open space which offsets by an equal amount, any reduction in open space resulting from redevelopment. In addition, redevelopment in Significant Natural Resource Areas shall provide a minimum of 30% of the upland area of the lot as open space or an equivalent cash or off-site contribution.*

**Response:** This MPS is not applicable.

*2.5.1.5 In the design of developments, significant natural and fragile areas including critical wildlife and plant habitat, water resources such as lakes, rivers, aquifers, shorelands and wetlands, historic, cultural and archaeological areas, significant scenic roads and views, unfragmented forest (as mapped by the Cape Cod Commission) and significant landforms shall be protected.*

**Response:** The proposed Project will not result in a loss of significant natural and fragile areas. The upland transmission line route from the landfall location to the intersection of the NSTAR Electric ROW will be located within existing public ways and once the route enters the NSTAR Electric ROW the transmission line will continue to be located underground within the existing maintained ROWs. All public ways and ROWs will be returned to pre-existing conditions following installation of the line.

*2.5.1.6 Where development is proposed adjacent to land held for conservation and preservation purposes, the development shall be configured so as to prevent adverse impacts to these lands and in a manner that maximizes contiguous open space.*

**Response:** The installation of the transmission line will not result in the loss of open space.

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## 2.5.2 Goal

*To preserve and enhance opportunities for passive and active recreation in the natural environment to meet the needs of both residents and visitors.*

**Response:** This goal is not applicable to the Project. The installation of the transmission line will not impact recreational resources in the upland area, nor will it preclude or prohibit traditional uses of the watershed area of Lewis Bay.

## 2.6 AIR QUALITY

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### 2.6.1 Goal

*To maintain and improve Cape Cod's air quality so as to ensure a safe, healthful, and attractive environment for present and future residents and visitors.*

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#### Minimum Performance Standards:

*2.6.1.1 Developments of Regional Impact shall be in compliance with the Massachusetts State Implementation Plan (SIP) and DEP's Air Pollution Control Regulations, 310 CMR 7.00.*

**Response:** The proposed Project will be in compliance with all applicable SIP and other MADEP regulations related to air quality. The portion of the Project subject to the Cape Cod Commission's purview is an underground transmission line which will not result in any air emissions, beyond the limited and temporary emissions associated with construction equipment and related excavation and backfilling.

## ECONOMIC DEVELOPMENT

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### 3.1 Goal

*To promote businesses that are compatible with Cape Cod's environmental, cultural, and economic strengths in order to ensure balanced economic development.*

**Response:** The Project will be providing construction, maintenance and operations jobs, as well as local supply of services (see Section 5.16 for a more complete discussion of the economic impacts of the Project).

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### 3.2 Goal

*To locate development so as to preserve the Cape's environment and cultural heritage, minimize adverse impacts, and enhance the quality of life.*

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#### Minimum Performance Standards:

3.2.1 *As specified in other sections of the Regional Policy Plan, the following incentives shall be provided to encourage development and redevelopment to locate in certified growth/activity centers:*

- *The nitrogen standard for ground water may be increased to 10 ppm where such increase will cause no significant adverse impact on specific identified resources.*
- *Developments of Regional Impact (DRIs) are required to mitigate all year-round and seasonal transportation impacts created by such development where the project traffic is expected to add 25 new vehicle trips or more during the project's typical peak hour. For road links and intersections within certified growth/activity centers, this threshold is increased to 50 trips or more during the project's typical peak hour.*
- *Public and private sewage treatment facilities may be used.*

**Response:** The proposed upland transmission line will not result in any nitrogen loading to groundwater and therefore will not cause any significant adverse impacts on specific identified resources. Furthermore, the proposed installation of the submarine and upland cable will not result in the use of public and/or private sewage treatment facilities.

The installation of the upland transmission line will be performed during the off-season in the winter months. The upland transmission line once constructed will not result in the addition of new vehicle trips.

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### 3.3 Goal

*To encourage the creation and diversification of year-round employment opportunities.*

**Response:** The Project will create year-round employment opportunities related to operations and maintenance.

## COMMUNITY FACILITIES AND SERVICES

### 4.1 TRANSPORTATION

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#### 4.1.1 Goal

*To establish and maintain a multimodal transportation system on Cape Cod for present and future year-round and seasonal needs which is safe, convenient, accessible, effective, economical and consistent with the Cape's historic, scenic and natural resources, and land use development and growth management policy.*

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#### Minimum Performance Standards:

4.1.1.1 *Developments of Regional Impact (DRIs) shall mitigate all year-round and summer transportation impacts created by such development at all regional intersections and on all regional road links where the project traffic is expected to add 25 new vehicle trips or more during the project's typical peak hour. For road links and intersections within certified growth/activity centers, this threshold is increased to 50 trips or more during the project's typical peak hour. Traffic operations at all locations meeting or exceeding these*

*thresholds shall be made no worse as a result of the development, based on the performance indicators stated in MPS 4.1.1.4.*

**Response:** Transportation impacts associated with the installation of transmission line facilities for upland work will be temporary in nature. Installation of the ductbanks for the upland transmission line will require limiting the roadway to approximately 18-22 feet and will progress along the route at a rate of approximately 150 feet per day. Crossing major intersections (state owned roadways) will require more space and longer duration of disturbance in these areas since this work will require the use of trenchless technologies. The proponent has met with the MHD to discuss installation and maintenance, and MHD has noted in their letter of December 14, 2001 to Secretary Durand that "We believe that the traffic impacts associated with maintenance activities will be minimal, and we recommend that no further environmental review be required based on traffic issues."

*4.1.1.2 The regional road system for Cape Cod shall include all roads with a functional classification higher than local roads, as adopted by the Cape Cod Metropolitan Planning Organization. Increases in traffic volumes on the regional road system, above the thresholds established in MPS 4.1.1.1, shall be considered to have significant regional impacts. The functional classification of highways may be amended from time to time by the Cape Cod Metropolitan Planning Organization. The functional classification of highways, as adopted by the Cape Cod Metropolitan Planning Organization, is adopted as an official part of the Regional Policy Plan. The map entitled "Functional Classification of Cape Cod Highways" dated September 5, 1996, shows the classification of Cape Cod roads as of that date.*

**Response:** This MPS is not applicable to this Project.

*4.1.1.3 For the purposes of determining impacted locations and measuring traffic impacts, a 20% reduction in project traffic shall be included in such determination when Minimum Performance Standard 4.1.2.1 is met.*

**Response:** This MPS is not applicable to the Project.

*4.1.1.4 Transportation impacts shall be identified and the adequacy of mitigation shall be evaluated using performance indicators such as level-of-service, intersection delay, volume to capacity ratio and other measures as defined in the Highway Capacity Manual. The Cape Cod Commission Guidelines for Traffic Impact Assessment, Technical Bulletin 96-003 shall be followed.*

**Response:** This MPS is not applicable to the Project.

*4.1.1.5 Regardless of project size or traffic generation, measured sight distances at access/egress locations with public ways for all Developments of Regional Impact shall, at a minimum, meet Massachusetts Highway Department (MHD) and American Association of State Highway Transportation Officials (AASHTO) standards for safe stopping sight distance.*

**Response:** This MPS is not applicable to the Project.

*4.1.1.6 Regardless of project size or traffic generation, access/egress onto public ways shall follow accepted access management practices, guidelines and policies. All new driveways on the regional road system for Developments of Regional Impact shall operate at Level-of-Service C (or Level-of-Service D in certified growth/activity centers) or better as defined in the Highway Capacity Manual, based on the appropriate design hour traffic volume as described in MPS 4.1.1.9.*

**Response:** This MPS is not applicable to the Project.

*4.1.1.7 Regardless of project size or traffic generation, there shall be no degradation in public safety as a result of a Development of Regional Impact.*

**Response:** The installation, and operation and maintenance of the transmission line will not result in the degradation of public safety. During the installation of the transmission line, the Applicant will coordinate with local police and fire department.

*4.1.1.8 Transportation mitigation measures required by/of Developments of Regional Impact to meet Minimum Performance Standards shall be consistent with community character and shall not degrade historic, scenic or natural resources.*

**Response:** This Standard is not applicable to the proposed Project. The Project, located within the 3-mile jurisdiction, involves the installation of a 115 kV submarine cable system buried approximately 6 feet below the seafloor and the installation of a 115 kV underground upland transmission line.

*4.1.1.9 In recognition of the seasonal change in Cape Cod traffic, road widening, intersection widening and signalization is warranted as mitigation for a Development of Regional Impact only if the improvement will have substantial benefit to the transportation system throughout most of the year. The Cape Cod Commission shall determine the appropriate design hour traffic volume. Peak summer traffic impacts shall be mitigated through strategies in 4.1.1.10, sections a) through c).*

**Response:** This MPS is not applicable to the Project.

*4.1.1.10 Permissible mitigation strategies for Developments of Regional Impact shall be as follows, and must also be consistent with Minimum Performance Standards 4.1.1.8 and 4.1.1.9 as well as local and regional transportation plans:*

- a) Travel Demand Management strategies including the development and use of transit, park & ride lots, bicycle facilities, pedestrian facilities, car/van pooling, and employee incentive programs that reduce automobile trips.*
- b) Transportation Systems Management strategies that preserve the capacity of existing facilities and increase the efficiency of existing facilities. These strategies include shift change schedules to reduce impacts of peak hour site traffic, the application of real-time information-based technologies, signage, changes to pavement markings, signal timing optimization and coordination of existing traffic signals, turn restrictions, changes in traffic patterns, and limited removal of obstructions to provide safe sight distances.*
- c) Access Management strategies such as curb cut consolidation, joint access, connections between adjacent parcels, and conflict point reduction.*
- d) Road widening, intersection widening and new traffic signalization, as stipulated in 4.1.1.11.*

**Response:** This MPS is not applicable to the Project.

*4.1.1.11 The widening of public ways or intersections or new traffic signalization shall be allowed as mitigation for a Development of Regional Impact only if all of the following conditions are met:*

- The road widening, intersection widening or new signalization is necessary to mitigate year-round increases in travel demand resulting from the Development of Regional Impact. Solely peak season travel demands shall not be mitigated by road widening, intersection widening or new traffic signalization, and*
- The road widening, intersection widening or new traffic signalization is not within local or regional historic districts, on any road designated by a government agency as a Scenic Road or Scenic/Historic Byway because of the historic, scenic or natural resources of the area, and*

- *Alternatives to road widening, intersection widening and traffic signalization, as described in 4.1.1.10, sections a) through c), have been considered and are determined to be inadequate to mitigate impacts, and*
- *The road widening, intersection widening or new traffic signalization is consistent with community character and will not have an adverse impact on historic, scenic or natural resources.*

**Response:** This MPS is not applicable to the Project.

*4.1.1.12 Necessary transportation improvements shall occur concurrently with the project development. A payment of funds commensurate with project impacts may be allowed if a the Commission, the Town in which the project is proposed or the appropriate state transportation agency agrees to accept responsibility for the advancement of the project. Such payment shall be determined based on the Cape Cod Commission's fair-share guidelines and an appropriate escrow agreement shall be required.*

**Response:** This MPS is not applicable to the Project.

*4.1.1.13 Existing transportation rights-of-way shall be preserved for transportation uses.*

**Response:** The upland transmission line route from the landfall location to the intersection of the NSTAR Electric ROW will be located below grade within existing public ways and once the route enters the NSTAR Electric ROW the transmission line route will continue to be located underground within the maintained ROWs. All public ways and ROWs will be returned to pre-existing contours, conditions and uses.

*4.1.1.14 Developments of Regional Impact shall provide adequate parking. Where compatible uses are within close proximity, the Commission shall encourage shared parking to minimize pavement coverage.*

**Response:** This MPS is not applicable to the Project.

*4.1.1.15 To support successful travel demand strategies and to reduce the environmental and aesthetic impacts of large paved areas, parking facilities created for Developments of Regional Impact shall be limited to the needs identified in a Commission approved traffic study or the requirements of local communities, whichever is greater.*

**Response:** This MPS is not applicable to the Project.

*4.1.1.16 Adjacent commercial uses shall share access points and provide connections between parcels so as to minimize curb cuts, driveways, and vehicular turning maneuvers, where appropriate. A credit for reduced travel demand on the adjacent road system shall be granted for shared driveways or connections between parcels, as described in the Traffic Impact Assessment guidelines.*

**Response:** This MPS is not applicable to the Project.

*4.1.1.17 Internal site circulation and access/egress shall be designed to minimize impacts on the adjacent road system.*

**Response:** This MPS is not applicable to the Project.

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## 4.1.2 Goal

*To decrease dependence on private automobiles, address demonstrated public needs for convenient, accessible, economical alternatives to private automobiles, and promote energy efficiency and reduced pollution by developing and integrating alternate modes (e.g., rail, bus, ferry, air, bicycle and pedestrian) into the transportation system and by promoting substitutes for transportation such as telecommunications.*

**Response:** This goal is not applicable to the proposed Project. The Project, located within the 3-mile jurisdiction, involves the installation of a 115 kV submarine cable system buried approximately 6 feet below the seafloor and the installation of a 115 kV underground upland transmission line.

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#### 4.1.3 Goal

*To support transportation solutions which preserve and enhance Cape Cod's character by considering the interrelationship between land use and transportation.*

**Response:** This goal is not applicable to the proposed Project. The Project, located within the 3-mile jurisdiction, involves the installation of a 115 kV submarine cable system buried approximately 6 feet below the seafloor and the installation of a 115 kV underground upland transmission line.

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### 4.2 SOLID AND HAZARDOUS WASTE MANAGEMENT

#### 4.2.1 Goal

*To manage solid waste using an integrated solid waste management system that includes waste reduction, recycling, composting, incineration and landfilling, and to divert 30% of municipal solid waste from incinerator and landfill facilities through recycling and composting programs by 2000; and 40% by 2005.*

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#### Minimum Performance Standards:

*4.2.1.1 Developments of Regional Impact shall address how the quantities and types of solid waste to be generated will be handled using the following integrated solid waste management system: The highest priority, and thus the most preferred method of waste management, is to reduce as much as possible the amount of solid waste created. The second priority is to recycle or compost waste which cannot be avoided. The third priority is to incinerate waste that cannot be recycled or composted, and finally, to landfill only those wastes that cannot be recycled, composted or burned.*

**Response:** The material to be removed from the HDD excavation pit will be trucked to an approved upland disposal site or for beneficial reuse. The material will be released to the disposal site via dump truck.

*4.2.1.2 Development and redevelopment shall allocate adequate storage space for interim storage of materials to be recycled.*

**Response:** The material to be removed from the HDD excavation pit will be trucked to an approved upland disposal site or for beneficial reuse. The material will be released to the disposal site via dump truck.

*4.2.1.3 Construction and demolition debris from development and redevelopment shall be removed from construction sites and disposed of in accordance with the integrated solid waste management system in Section 4.2.1.1.*

**Response:** The material to be removed from the HDD excavation pit will be trucked to an approved upland disposal site or for beneficial reuse. The material will be released to the disposal site via dump truck.

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#### 4.2.2 Goal

*Hazardous wastes generated by Cape Cod households and businesses shall be disposed of in an environmentally sound manner.*

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**Minimum Performance Standards:**

4.2.2.1 *Development and redevelopment shall make reasonable efforts to minimize their hazardous waste generation through source reduction, reuse, material substitution, employee education and recycling.*

**Response:** This MPS is not applicable to the Project.

4.2.2.2 *Development and redevelopment shall be in compliance with Massachusetts Hazardous Waste Regulations, 310 CMR 30.00.*

**Response:** This MPS is not applicable to the Project.

4.2.2.3 *Commercial and industrial development and redevelopment that involves the use, treatment, generation, storage or disposal of hazardous wastes or hazardous materials, with the exception of household quantities, shall not be allowed within Wellhead Protection Districts.*

**Response:** This MPS is not applicable to the Project.

**4.3 CAPITAL FACILITIES AND INFRASTRUCTURE**

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**4.3.1 Goal**

*To provide adequate community and regional facilities to meet community and regional needs consistent with the goals and policies established in Local Comprehensive Plans and the Regional Policy Plan.*

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**Minimum Performance Standards:**

4.3.1.1 *Approval of development and redevelopment which increases the intensity of use shall be based on existing infrastructure and system capability or on a development's ability to provide for or contribute to the infrastructure and services necessary to support it. The provision of infrastructure and services should be consistent with the minimum performance standards in the Regional Policy Plan and consistent with the town's Local Comprehensive Plan and Capital Improvements Plan. Installation of necessary infrastructure shall be timed to meet the need generated by the development or a contribution of funds toward the necessary improvements shall be provided.*

**Response:** This MPS is not applicable to the Project.

4.3.1.2 *Development of new infrastructure shall occur only after an analysis of the impacts of this infrastructure with regard to land use, traffic, water quality, natural resources, historic preservation and community character as well as other applicable issue areas noted in the Regional Policy Plan and shall be consistent with the town's Local Comprehensive Plan and Capital Improvements Plan.*

**Response:** This MPS is not applicable to the Project.

4.3.1.3 *Privately provided infrastructure to service development and redevelopment shall be consistent with the Local Comprehensive Plans and, when constructed off-site, shall receive formal approval from the town prior to construction.*

**Response:** This MPS is not applicable to the Project.

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**4.3.2 Goal**

*To encourage the provision of adequate and appropriately-sited telecommunications facilities so as to promote economic development and preserve the quality of life and visual character of the Cape.*

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**Minimum Performance Standards:**

*4.3.2.1 Wherever feasible, new telecommunications facilities shall be required to co-locate with existing facilities in order to minimize their visual impacts.*

**Response:** This MPS is not applicable to the Project.

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**4.4 ENERGY**


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**4.4.1 Goal**

*To encourage energy conservation and improved energy efficiency, to encourage and stimulate investment in energy conservation and renewable energy resources and to manage land uses to maximize energy efficiency.*

**Response:** The renewable energy delivered by the transmission line from the proposed Wind Park will make a meaningful contribution to the stated energy goals of the Commonwealth by providing a commercial scale, renewable energy resource for Massachusetts and New England. These goals include reducing air quality impacts associated with providing electrical energy, lower electricity prices, reducing exposure to fuel price volatility, and increasing Massachusetts-based renewable energy.

In addition, the proposed transmission line will ensure that the citizens of the Commonwealth benefit from improved regional air quality, reductions in greenhouse gas emissions, reduced reliance on foreign fuel, lower energy prices, and a long-term hedge against increasing fuel prices. Furthermore, the transmission line will improve the reliability and diversity of the region's energy supply.

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**AFFORDABLE HOUSING**


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**5.1 Goal**

*To promote the provision of fair, decent, safe, affordable housing for rental or purchase that meets the needs of present and future Cape Cod residents. At a minimum each town shall seek to raise its affordable housing stock to 10% of all year-round units by the year 2015.*

**Response:** This Goal is not applicable to the proposed Project. The Project, located within the 3-mile jurisdiction, involves the installation of a 115 kV submarine and upland transmission line.

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**HERITAGE PRESERVATION/COMMUNITY CHARACTER**


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**6.1 Goal**

*To protect and preserve the important historic and cultural features of the Cape landscape and built environment that are critical components of Cape Cod's heritage and economy.*

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**Minimum Performance Standards:**

*6.1.1 Additions or alterations to historic structures shall be consistent with the building's architectural style and shall not diminish its historic and architectural significance. The Massachusetts Historical Commission (MHC) shall review any projects which require a state or federal license, permit or funding as defined by the National Historic Preservation Act for their conformance to the Secretary of the Interior's rehabilitation guidelines and for their effects on the historic significance of the property and district. The MHC will also assist the Commission in reviewing projects which will affect buildings listed on the State or National Registers of Historic Places.*

**Response:** This MPS is not applicable to the proposed Project. The Project, located within the 3-mile jurisdiction, involves the installation of a 115 kV submarine cable system approximately 6 feet below the seafloor and the installation of an underground 115 kV upland transmission line. It does not involve the addition to, or alteration of, any historic structure.

6.1.2 *The distinguishing, original qualities of an historic building, structure, landscape or site and its setting shall be preserved. The needless destruction, removal or alteration of historic material or architectural features shall be avoided unless the applicable local authority (historical commission or historic district commission) determines that such removal will not substantially alter or damage the integrity of the building or the site (see Guidelines for Referral of Historic Structures, Technical Bulletin 96-002.).*

**Response:** This MPS is not applicable to the proposed Project.

6.1.3 *Where development is proposed on or adjacent to prehistoric or historic archaeological sites or sites with high archaeological sensitivity as identified by the Massachusetts Historical Commission or local historic commissions during the review process, it shall be configured so as to maintain and/or enhance such resources where possible. A pre-development investigation of such sites shall be required before a final design proposal is submitted. This will minimize difficulties and expense should the site be of archaeological or historic importance.*

**Response:** Both a marine archaeological sensitivity assessment and marine archaeological geophysical reconnaissance survey were conducted by the Project's marine archaeologist (PAL) for the offshore portion of the cable route within state coastal waters. Based on these assessments, no submerged potential prehistoric or historic archaeological resources were identified and no additional archaeological investigations were recommended by PAL.

*No significant prehistoric or historic archaeological resources have been identified along the upland transmission line route, based upon the results of a terrestrial archaeological intensive survey, completed by PAL under permit from the State Archaeologist. PAL has recommended no further archaeological investigations of the upland transmission line route.*

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## 6.2 Goal

*To encourage redevelopment of existing structures as an alternative to new construction, and to ensure that future development and redevelopment respects the traditions and character of historic village centers and outlying rural areas so as to protect and improve, where necessary, the visual character of Cape Cod consistent with Designing the Future to Honor the Past, Design Guidelines for Cape Cod, Technical Bulletin 96-001.*

**Response:** This goal is not applicable to the Project. The Project, located within the 3-mile jurisdiction, involves the installation of a 115 kV submarine cable system approximately 6 feet below the seafloor and the installation of an underground 115 kV upland transmission line.

## 8.2 Response to Development of Regional Impact Scope

This section addresses the Cape Cod Commission subcommittee comments raised in their April 5, 2002 letter. This Section responds to those questions raised by the Cape Cod Commission as it relates to those portions of the Project that are within their jurisdiction (located within the state 3-mile territorial sea limit).

### 8.2.1 General

G1: *Clarify that both the DEIR and FEIR are required and that the scope and mitigation measures must be implemented on a mandatory basis.*

**Response:** The Secretary of EOE has stated in the ENF Certificate that those portions of the Project that are subject to MEPA do not meet or exceed any mandatory EIR thresholds. However, the Secretary of EOE

has found that the Project has potentially significant environmental impacts and has thus exercised his discretion in requiring an EIR for the Project.

*G2: A complete EIR should be prepared addressing the project in its entirety, including portions of the project outside Massachusetts' territorial waters.*

**Response:** The MEPA office is the product of state law and regulations, and therefore MEPA jurisdiction does not extend beyond the state 3-mile territorial sea limit. However, the Applicant has agreed to the development of a combined EIS/EIR document which will present information for the entire Project.

*G3: DEIR should describe the potential for renewable energy in the region and project its market share potential. It should also identify what future potential exists for off-shore wind parks in the waters surrounding Massachusetts and New England. Furthermore, stipulate the future goals of CWA, especially concerning the company's intentions for operation of the facility and the potential for future sale of the facility once constructed and permitted.*

**Response:** Please refer to Section 3.3.2 for a detail discussion on renewable alternatives. The Applicant intends to operate the facility with best industry practices and has no plans for sale.

*G4: Provide a complete alternatives analysis that assesses the feasibility of all reasonable alternatives including smaller installations, different locations onshore and offshore and other generating technologies.*

**Response:** The Applicant has conducted a thorough investigation and evaluation of alternative technologies and sites to establish a commercial scale WTG facility that can interconnect with the regional northeast power grid. The alternatives analysis, as discussed in detail in Section 3.0 of this document, includes the no-action alternative, an assessment of alternative energy generating technologies, an assessment of renewable energy technologies, an assessment of upland and offshore wind park sites, a detailed analysis of a variety of alternatives, and an assessment of submarine and upland cable routes.

*G5: The DEIR should provide details on the SMS equipment and how the data collected will be utilized throughout the project*

**Response:** The SMDS is located in federal waters and outside the purview of the Cape Cod Commission. The SMDS is not discussed in the DEIR. However, the data to be collected by the SMDS are primarily intended to evaluate wind, wave, tide and current conditions in the geographic area of Nantucket Sound and Horseshoe Shoal environs. Complete information on the SMDS can be found in the USACE file for permit # 199902477 and real time data can be viewed at [www.capewind.org](http://www.capewind.org).

*G6: Provide a project timeline that gives an overview of the anticipated schedule as well as details on the expected staging areas to be used during construction. Describe contingencies for delays, the equipment and its function and the vessels to be used during construction. Provide details of all hazardous materials to be used in construction and a thorough spill control plan.*

**Response:** The proposed Project must be completed in sufficient time to commission the offshore electric service platform (ESP) prior to the installation of the first group of wind turbine generators (WTGs). The following critical tasks define the construction portion of the schedule located within the 3-mile limit:

1. 115 kV Submarine Cable System Installation – 2-4 weeks
2. Horizontal Directional Drilling (HDD) – 2-4weeks
3. Upland Cable Installation
  - 3.1. Installation of duct banks – 5 months
  - 3.2. Cable pulling joining and termination – 5 months
4. Cable System Testing – 1-2 weeks

It bears noting that many of these tasks can be accomplished independently or concurrently. The order in which they would occur is dictated to a degree by what time of the year the wind park suppliers and contractors are given a formal notice to proceed. For example, the upland cable installation beneath public roads would have to avoid the height of the tourist season. In-water construction of the submarine cable

system would attempt to avoid installation in winter months due to generally poor weather and sea state conditions.

Based on a wind park notice to proceed early in 2005, installation of the duct banks would be installed during the winter of 2005-2006. In this same time frame, the HDD landfall transition installation would be completed. Upland cable pulling could be finished approximately one month after completion of the duct banks.

By this time, more favorable weather and sea state conditions are anticipated to facilitate the jet plow embedment of the 115 kV submarine cable system which is projected to take approximately two to four weeks. Allowing one to two weeks to test the cable and eight weeks to commission the offshore Electrical Service Platform (ESP), the proposed project would be able to transmit wind-generated electricity by November of 2006. This is consistent with the construction scheduling of the offshore project components.

Work on the NSTAR Electric Switching Station in Barnstable would be performed in conjunction with other upland construction activities to ensure its completion in advance of the final commissioning of the offshore ESP.

Factors that would affect the construction milestones described above include equipment delivery dates, weather-related delays, environmental time-of-year restrictions, and seasonal timing of the notice to proceed.

Please refer to Section 4.3 of this document for details on construction of the proposed Project. Section 4.6 describes the materials to be used in construction and operations of the Wind Park and Section 4.7 describes the spill control plan.

*G7: Provide data and analysis on anticipated structural fatigue and replacement schedules based on experience with the structures and components to be utilized.*

**Response:** Please refer to Section 4.4 for a detailed discussion on the operation and maintenance of the proposed Project.

*G8: Provide information on the anticipated maintenance schedule for the facilities. Include the number of scheduled maintenance visits as well as contingencies for emergency repairs, the number of trips, duration, means of transport and personnel. Outline what contingency has been made for emergency maintenance in bad weather and what potential exists for catastrophic failure of the turbines. Provide the location and arrangements for all on-shore infrastructure for maintenance vessels/equipment.*

**Response:** Please refer to Section 4.4 for a detailed discussion on the operation and maintenance of the proposed Project.

*G9: Provide further details relating to the decommissioning of the facility and reinstatement of the Shoal. Outline what financial contingency exists for removal of the WTGs in the event the proponent's business becomes financially insolvent, specifically whether bonds will exist to pay for removal.*

**Response:** Please refer to Section 4.5 for a detailed discussion on the decommissioning plan for the proposed Project.

*G10: Include a discussion of the issues relating to use of State and Federal Waters by for-profit entities. For example, outline the project's standing as it relates to Chapter 91 licensing and its compatibility with the Massachusetts Ocean Sanctuaries Act. Detail how the project might comply or conflict with these statutes. Outline how the project fits Federal and State statutes controlling the use of public trust areas.*

**Response:** Please refer to Section 7.0 for a detailed discussion on regulatory review and Appendix 7.0-A.

*G11: Describe the ESP in greater detail, especially the uses anticipated to be accommodated on the platform, materials to be stored on the structure, measures for security, floor plan and uses of all areas, and anticipated length of occupancy.*

**Response:** The ESP will be located in federal waters and outside the purview of the Cape Cod Commission. However for details on the ESP, please refer to Sections 4.1.4, 4.3.2, and 4.6.2.

*G12: Discuss the potential impacts of turbines on aircraft navigation. Outline what potential exists for collisions given that the FAA lights are located on the nacelle and not on the ends of the rotors. Assess the potential for the facility to interfere with radar navigation and telecommunications of both aircraft and boats in the vicinity.*

**Response:** The Wind Park is located in federal waters and outside the purview of the Cape Cod Commission. However, the FAA has conducted an aeronautical study of the proposed turbine locations and issued a "Determination of No Hazard to Air Navigation". Please refer to Section 5.12.4.1 and Appendix 5.12-A. Please refer to Section 5.14 for a discussion on telecommunications.

*G13: All materials needed for a complete DRI application. The following shall be submitted with the DRI:*

- *Development Plans including a locus map with the outline of the entire property clearly shown (two copies in 24" x 36" format, plus a reduced set to fit 11" x 17" paper);*
- *Fee payable by certified check to Barnstable County treasure to be submitted to Cape Cod Commission only;*
- *Deed or Purchase and Sales Agreement for all involved parcels (or easement agreements and documentation for permission to use federal water sheet area);*
- *Acknowledgement of filing completed applications with all relevant municipal agencies*
- *Proof of receipt of Project Notification Form by the Massachusetts Historical Commission;*
- *Documentation regarding the project's consistency with the Regional Policy Plan's Minimum Performance Standards (MPS); and*
- *All plans shall include the information listed in Section B, part 2, of the Cape Cod Commission's DRI Application Form dated September 7, 2001.*

**Response:** Development Plans are included as Figure 8-1. A fee payable in the amount of \$4,776.00 was provided to the Cape Cod Commission on October 11, 2002. The relevant municipal agencies have received copies of the combined ENF/DRI application and will receive copies of the combined DEIS/DEIR/DRI application. Please refer to Appendix 8.0-A for a copy showing proof of receipt that the Massachusetts Historical Commission has received a Project Notification Form. Documentation regarding the Project's consistency with the Regional Policy Plan's Minimum Performance Standards is provided in Section 8.1 above.

## **8.2.2 Natural Resources**

### **Water Resources**

*NR1: Details on the trenching of the upland cable need to show relationship of the cable depth to maximum high groundwater.*

**Response:** The upland cable is designed to be impervious and will not affect the groundwater table.

*NR2: Describe the living quarters on the ESP in further detail and outline provisions made for treatment of all wastes associated with platform.*

**Response:** The ESP will be located in federal waters and outside the purview of the Cape Cod Commission. However for details on the ESP, please refer to Sections 4.1.4.

### **Coastal Resources/Marine Environment**

*NR3: Describe in detail all equipment and techniques to be employed in laying the underground and submarine cables.*

**Response:** The proposed method of installation of the submarine cable system is by hydraulic jet plow embedment. This method involves the use of a positioned cable barge and a towed hydraulically-powered jet plow device that simultaneously lays and embeds the submarine cable in one continuous trench from the landfall Horizontal Directional Drilling (HDD) area to the ESP in Nantucket Sound. This process will be conducted twice (once for each circuit). Jet plow embedment methods for submarine cable installations are considered to be the most effective and least environmentally damaging when compared to traditional mechanical dredging and trenching operations. This method of laying and burying the cables simultaneously

ensures the placement of the submarine cable system at the target burial depth with minimum bottom disturbance and with the fluidized sediment settling back into the trench. For these reasons it is the installation methodology that appears to be preferred by state and federal regulatory agencies based on review of past precedent setting projects. For detailed discussion on jet plow embedment please refer to Section 4.3.4.

The upland transmission line installation, from the transition vault manhole at the landfall to the Barnstable Switching Station, will involve burial of the transmission line in underground splicing vaults and ductbanks within existing public ways and ROWs. All excavation will be performed with standard machinery, including excavators and backhoes. All work will be performed in accordance with local, state, and/or federal safety standards. For a detailed discussion on the upland installation please refer to Sections 4.3.5 and 4.3.6.

*NR4: Provide additional information regarding the proposal's effects on both protected and federally managed avian species and mammals.*

**Response:** Please refer to Section 5.5 for a detailed discussion on protected marine mammals and Section 5.7 for a detailed discussion on protected and federally managed avian species located within the 3-mile limit.

*NR5: Provide supporting data to substantiate the hypothesis that the distribution of avian species may be delineated based on elevation within the air column, or that such an assessment would be consistent across seasons, different meteorological conditions and sea states.*

**Response:** Please refer to Section 5.7 for a detailed discussion on avian studies.

*NR6: Provide additional information on species and abundance of shellfish and other living resources in the area that may be effected by installation of the cable. Delineate the coastal resources at the landfall site and provide plans for mitigation of alterations associated with the installation of the cable. Also provide additional information on the underground station.*

**Response:** Please refer to Section 5.3 for a detailed discussion on the benthic resources present within the 3-mile limit of the submarine cable system. Please refer to Section 5.8 and Figures 5.8-1 through 5.8-8 for the coastal resources present within the 3-mile state territorial sea limit. Please refer to Section 4.3.5 for more details on the landfall transition vault (underground station).

*NR7: Provide an analysis of the temporary construction impacts at sea level and to the submerged habitat characteristics within the affected area as well as information regarding the structural loading analysis performed to determine pile diameter and depth. In addition, provide estimation of total biomass likely to be displaced and indicate how construction might be timed to avoid impacts on spawning, nursery, and migratory periods for fish.*

**Response:** The Wind Park is located within federal waters and outside the purview of the Cape Cod Commission. However, please refer to Sections 4.0, 5.3, 5.4, and 5.8 for more information.

*NR8: Assess cumulative and secondary effects of "fish aggregating devices". In addition, provide analysis of the potential for collisions of birds attracted to the Shoal to forage on the artificial reef.*

**Response:** The Wind Park is located within federal waters and outside the purview of the Cape Cod Commission. However, please refer to Sections 5.3, 5.4, and 5.7 for more information.

*NR9: Provide information about the expected use of marine growth inhibitors or the protocol for the management of biological organism on structural elements of the project, and any mechanisms that maybe employed to manage corrosion such as cathodic devices.*

**Response:** The Wind Park is located within federal waters and outside the purview of the Cape Cod Commission. However, the only components of the Project that would come into regular contact with seawater and be subject to potential interactions between water, encrusting organisms, and sediment are the welded steel monopile foundations. The transition piece of the WTG's, which will be located on top of the monopile at the waterline/splash zone, will be coated with a product equal or similar to Interzone® 954. The portions of the structural steel and steel surfaces not directly exposed to sea water, such as the tower above

the transition piece, will be coated with an epoxy-polyamide. In addition, a cathodic protection system utilizing a galvanic (sacrificial) aluminum anode system will be utilized (refer to Section 5.9.4).

*NR10: Provide a more comprehensive assessment and explanation of how the project will not impact fishing and recreational boating. Address the potential for icing of the rotor blades, contingencies for accidental collisions. This should include owner liability as well as ability of the structures to withstand these forces. Also developed an emergency response plan that should be incorporated into the DEIR.*

**Response:** The Wind Park is located within federal waters and outside the purview of the Cape Cod Commission. However, a navigational risk assessment is provided in Appendix 5.12-A and the potential for icing is addressed in Section 4.0. The wind park will have an insurance plan. Please refer to Section 4.8 and 4.9 for a discussion on emergency response plan.

*NR11: Additional description of efforts to minimize alteration from underwater cable installation should be included in the DEIR.*

**Response:** The use of the jet plow embedment technology and the horizontal directional drilling at the landfall location will minimize the alteration of the seafloor bed.

*NR12: Provide information regarding shading, alterations to current, scouring, sediment transport, structural habitat alteration, and influences on wave climate.*

**Response:** Those portions of the Project located within the 3-mile limit (the submarine cable system and the upland cable system) will not result in shading, alterations to currents, scouring, sediment transport, structural habitat alteration, and/or influences on wave climate. Please refer to Section 5.2 and Appendices 4-A, 5.2-A, 5.2-B and 5.2-C for more information.

### **Wildlife**

*NR13: Provide plans showing proposed work within the 100-foot buffer to wetlands and estimated rare species habitat. Including construction plans, and mitigation measures.*

**Response:** Please refer to Section 5.8 for a detailed discussion on wetland resources in the Project Area and Figures 5.8-1 through 5.8-11 for the wetland delineations. Please refer to Section 5.6 for a detailed discussion of terrestrial ecology in the Project Area and Figure 5.6-1 for the locations of estimated rare species habitats.

### **Air Quality**

*NR14: Address in more detail how the proponents believe the wind park would displace existing air emissions from existing sources.*

**Response:** The Wind Park is located within federal waters and outside the purview of the Cape Cod Commission. However, the proposed Wind Park will not emit air pollutants and will therefore have no negative air quality related impacts. Rather, the Project would allow for a significant regional air emissions reduction and create opportunities for improved air quality in the region. Please refer to Section 5.15 for detailed discussion on air quality and Appendix 5.16-B.

*NR15: Model the expected degree and the extent of improvements in air quality to justify the claims made in the ENF of measurable improvements in air quality.*

**Response:** Please refer to Section 5.15.

### **Noise**

*NR16: Provide a complete acoustical analysis (tailored to the ocean environment) of all noise generated in the course of the construction and operation of the project, inclusive of the marine and land-based facilities.*

**Response:** Please refer to Section 5.11 and Appendix 5.11-A for a detailed discussion on noise.

## **8.2.3 Economic Development**

### **Trade Area**

*ED1: Provide a thorough break down of the trade area(s), into primary, secondary, and tertiary markets. Indicate the percentage of sales/customers served that would be draw from each of these three market areas and should include the market area purchasing power and market share.*

**Response:** The question does not appear to be relevant to this Project. See Section 5.16 for economic effects.

#### **Sales/Cost of Service**

*ED2: Provide break down on the projected sales/cost of service into a dollar amount and a percentage for each market area in table format.*

**Response:** The question does not appear to be relevant to this Project. See Section 5.16 for economic effects.

#### **Employment**

*ED3: Provide numbers of workers and types of positions for construction, manufacturing, assembly jobs as well as full-time and part-time employees, including approximate salary ranges and benefits.*

**Response:** Please refer to Section 5.16.

#### **Fiscal Impact**

*ED4: Present a detailed fiscal analysis showing benefits to the Town of Yarmouth and the region and provide a summary of costs to the Town for the provision of services.*

**Response:** Please refer to Section 5.16.

#### **Health Impacts**

*ED5: Provide a detailed discussion of the anticipated health impacts and associated costs/benefits of the project*

**Response:** Please refer to Section 5.16.

#### **General**

*ED6: Provide detailed background information and studies that illustrate both negative and positive impacts to the tourist industry.*

**Response:** Please refer to Section 5.16.

*ED7: Provide information on the experience and credentials of the proponents in the field of wind energy development.*

**Response:** The Applicant has developed, owned and operated several power plants in the New England Area, as detailed on its website at [www.capewind.org](http://www.capewind.org).

*ED8: Address the Development Review Policies and Other Development Review Policies.*

**Response:** Please refer to Section 8.1 above.

### **8.2.4 Community Facilities**

#### **Transportation**

*CF1: Provide a thorough outline of all aspects of construction, including staging areas, transportation routes, and ports to be used. Also detail the transportation infrastructure for servicing and maintenance of the facility.*

**Response:** Please refer to Section 4.0 for a detailed discussion on all aspects of construction and operation and maintenance of the proposed Project.

*CF2: Address mitigation for the overland laying of the cable by limiting when work will occur.*

**Response:** The installation of the upland cable will occur outside of the summer tourist season.

*CF3: Provide more detail on how the roads, sidewalks, vegetation, and shoulders are restored to their original condition or improved.*

**Response:** The installation of the upland cable will be located within existing roadways and within the existing maintained NSTAR Electric ROW. The roadways will be returned to pre-existing conditions upon completion of the installation. After the installation of the transmission line is complete within the ROW, the excavation will be backfilled to the original grade and the area will be seeded with an erosion control seed mixture for stabilization.

### **Solid and Hazardous Waste Management**

*CF4: Describe in detail the activities, both construction and operational, that will involve the generation of construction demolition waste materials for both the marine and land-based facilities.*

**Response:** There will be no demolition waste associated with the installation of the submarine portion of the cable within the 3-mile limit and the upland transmission line route installation.

*CF5: Describe in detail what construction and post-construction activities will involve hazardous materials or generate hazardous wastes, for both the marine and land-based facilities.*

**Response:** There will be no hazardous materials for the installation of the submarine portion of the cable within the 3-mile limit and the upland transmission line route installation.

### **Capital Facilities and Infrastructure**

*CF6: Address the provision of infrastructure as it relates to the Regional Policy Plan and also refer to the Yarmouth Draft Local Comprehensive Plan and the Capital Improvements Plan.*

**Response:** The Project will not result in any new infrastructure.

### **Energy**

*CF7: Provide a very detailed overview of the electricity supply market, and of "green power" in particular and provide an analysis and assumptions supporting the rationale for claiming \$800 million savings to New England ratepayers will occur.*

**Response:** Please refer to Section 5.16 and Appendices 5.16-A and 5.16-B.

*CF8: Discuss how the project will encourage and improve energy efficiency and conservation programs which would have the added effect of providing a more tangible local benefit of the project.*

**Response:** Please refer to Section 5.16 for a discussion on how the Project will help raise public awareness and other educational opportunities.

*CF9: Describe in the DEIR the difference between the physical flow of electrons and the contract path for electric sales, with particular attention to how a contract path is necessary to the achievement of self-sufficiency. Also discuss the difference between firm and non-firm energy supply including the related requirements for contracted capacity and back-up for non-firm energy supply to meet demand.*

**Response:** Electrons follow the path of least resistance, generally toward the Cape Cod load centers. The Project will contract to sell its energy capacity and "green" attributes to qualified purchasers on a both firm and non-firm basis. Please refer to ISO-NE definitions for the difference between firm and non-firm energy supply.

*CF10: The comments made by Cape Light Compact should be incorporated into the DEIR.*

**Response:** As with other comments received during the DEIS-DEIR process, these comments will be given due consideration.

*CF11: Provide an overview of current technology in the field of renewable energy, particularly a discussion of what alternative generation devices could be utilized.*

**Response:** Please refer to Section 3.3.2 for a detailed discussion on alternative renewable technologies.

## **8.2.5 Historic Preservation / Community Character**

### **Archaeological/Cultural Resources**

*HP1: Describe more thoroughly PAL's role and indicate what MHC's role will be in evaluating the data they have collected. Provide the results to date in the DEIR. Detail the jurisdictional responsibilities of the state and federal agencies with purview of these kinds of resources.*

**Response:** Please refer to Section 5.10 for a detailed discussion on visual, cultural and archaeological resources and to Section 7.0 for jurisdictional responsibilities.

### **Community Character**

*CC1: Perform a complete and comprehensive visual impact analysis.*

**Response:** Please refer to Section 5.10 for a discussion on the visual analysis.

*CC2: Complete a full lighting analysis that fully illustrates the potential impacts of the proposed lighting.*

**Response:** A lighting design has been proposed to make proposed structures sufficiently conspicuous to pilots and mariners in order to ensure aeronautical and marine safety, while minimizing visual impacts to land-based viewsheds and potential attraction impacts to avian communities. Each of the individual WTGs will be lighted by two flashing red lights on the nacelle and two flashing amber lights on the lower access platform. Lights will vary in intensity depending on the specific location of the individual turbine, with perimeter WTGs generally lit at a higher intensity than those located within the interior of the Wind Park. The lighting design has been developed based on the following:

- Consultations with FAA New England Region staff;
- Review of FAA guidelines (Chapter 8 of FAA AC 70/7460-1);
- Consultations with USCG Private Aids to Navigation – District One staff;
- Review of regulations for Private Aids to Navigation ;
- Consultations with USACE;
- USFWS recommendations (September 14, 2000 Memo: Service Guidance on the Siting, Construction, Operation and Decommissioning of Communications Towers);
- International Association of Marine Aids to Navigation and Lighthouse Authorities recommendations for marking offshore wind parks;
- Cape Wind Associates Scientific Measurement Devices Station (SMDS) approved lighting design;
- Avian consultant (Dr. Paul Kerlinger);
- Lighting contractor (Automatic Power Inc.); and
- European wind park experience (Horns Rev).

Please refer to Section 5.10 which presents representative nighttime simulations which include the proposed lighting design.