Oil Spill Response Plan

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BOSTON, MASSACHUSETTS

PREPARED FOR

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Project No. E159-601

April 2011

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1.0 OSRP QUICK GUIDE (OPTIONAL)

As required by the regulations at 30 CFR 254, this Oil Spill Response Plan (OSRP) has been completed for the Cape Wind project. This OSRP provides further detail on the topics addressed in the Draft OSRP that was provided as Appendix D in the FEIS. Cape Wind has included a quick guide that consists of a spill response contact list in the event of a spill. The spill response contact list includes contact information for individuals and agencies that may be required in the event of an oil spill.

Table 1.0-1 Quick Guide Spill Response Contact List

Agency / Company / Individuals	Telephone Number
Scott Metzger (Qualified Individual / Incident Commander) Clean Harbors Environmental Services 42 Longwater Drive, P.O. Box 9149 Norwell, Massachusetts 02061-9149	800-OIL-TANK 800-645-8265 (24-Hour Nationwide Emergency Response Phone Number) 781-727-1819 Mobile
National Response Center c/o United States Coast Guard (CG-5335) - Stop 7581 2100 2nd Street, SW Washington, DC 20593-0001	800-424-8802 202-267-2675

In the event of a spill at the facility Clean Harbors Environmental Services will mobilize from its Weymouth, MA field service centers to the Cape Wind Onshore Control Center as quickly as possible. Depending on the volume of the spill, resources could cascade in from surrounding Clean Harbors service centers in East Providence, RI, South Portland, ME, Bow, NH, Worcester, MA, and Bristol, CT.

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2.0 PREFACE

2.1 Record of Revisions

Table 2.1-1 Record of Revisions

Date of Review	Person Conducting Review	Reason for Review (biennial update, amendment, or modification)	Sections Affected	Date Next Review Required

2.2 Cross Reference Table (30 CFR 254)

The outline of this OSRP is consistent with the suggested format in "Contents of a Regional or Sub-regional Oil Spill Response Plan (OSRP)" in NTL02-G09. However, some readers may be more familiar with the format for drafting a response plan that is contained in 30 CFR 254.21. Consequently, the following table provides a cross-reference for the recommended sections based on 30 CFR 254, with the applicable sections in this OSRP.

Table 2.2-1 Cross Reference Table

Required Sections and Sub-sections Based on 30 CFR 254	30 CFR 254 Reference	Applicable Section(s) in this OSRP
(1) Introduction and plan contents	254.21(b)	Section 3
Facility Info. Table of Contents Record of Changes	254.22(a) 254.22(b) 254.22(c)	Sections 3d – 3e Section 2a Section 2b
(2) Spill Response Action Plan	254.21(b)	Sections 1, 4 – 11, 13 – 16, 18, and 19
Qualified Individual Spill Management Team Spill Response Operating Team Operations Center & Communication Types & Characteristics of Oil Spill Detection Spill Procedures (inc. Notification)	254.23(a) 254.23(b) 254.23(c) 254.23(d) 254.23(e) 254.23(f) 254.23(g)	Section 4a Section 4b Section 4c Sections 5a – 5b Appendix H Sections 6a – 6c Sections 1, 7a – 7e, 8a – 8c, 9, 10c – 10d, 11, 13, 14, 15, 16, 18, and 19
(3) Appendices	254.21(b)	Appendices
(i) Equipment Inventory	254.24	Appendix E
(ii) Contractual Agreements	254.25	Appendix D

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Required Sections and Sub-sections Based on 30 CFR 254	30 CFR 254 Reference	Applicable Section(s) in this OSRP
(iii) Worst Case Discharge Scenario	254.26	Section 10 and Appendix H
(iv) Dispersant Use Plan	254.27	Section 18
(v) In-site Burning Plan	254.28	Section 19
(vi) Training and Drills	254.29	Appendix B and Appendix C

2.3 Abbreviations and Acronyms

ACP	Area Contingency Plan
ASA	Applied Science Associates, Inc
BOEMRE	Bureau of Ocean Energy Management, Regulation and Enforcement
CFR	Code of Federal Regulations
COTP	Captain of the Port
CW	Cape Wind Associates, LLC
DEIS	Draft Environmental Impact Statement
DOI	Department of the Interior
EPA	Environmental Protection Agency
ESP	Electric Service Platform
FEIS	Final Environmental Impact Statement
FOSC	Federal On-scene Coordinator
GOMR	Gulf of Mexico OCS Region
IAP	Incident Action Plan
IC	Incident Commander
IO	Information Officer
MassDEP	Massachusetts Department of Environmental Protection
MMS	Minerals Management Service
NIIMS	National Interagency Incident Management System
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOS	National Ocean Service
NCP	National Contingency Plan
NTL	Notice to Lessees and Operators
OCS	Outer Continental Shelf
OSC	On Scene Coordinator
OSHA	Occupational Safety and Health Administration
OSRC	Oil Spill Response Coordinator
OSRO	Oil Spill Removal Organizations
OSRP	Oil Spill Response Plan
ROW	Right of Way
QI	Qualified Individual
SMT	Spill Management Team
SROC	Spill Response Operations Center

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SROT	Spill Response Operating Team
USACE	U.S. Army Corp of Engineers
USCG/NRC	U.S. Coast Guard / National Response Center
USFWS	U.S. Fish and Wildlife Service
WTG	Wind Turbine Generator

3.0 INTRODUCTION

3.1 Companies Covered

Cape Wind Associates, LLC (Cape Wind) is the sole developer/owner of the project, and will be the asset manager of the operating facility. Cape Wind is the holder of Renewable Energy Lease Number OCS-A-0478.

3.2 Purpose and Use

This Oil Spill Response Plan (OSRP) has been prepared in accordance with the Department of the Interior Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) regulations at 30 CFR 254, "Oil Spill Response Requirements for Facilities Located Seaward of the Coastline." These regulations require owners/operators of oil handling, storage, or transportation facilities located seaward of the coastline to submit a spill response plan to BOEMRE for approval prior to facility operation.

This OSRP does not address incidental spills associated with marine vessel operation during construction or routine maintenance of the facility. Cape Wind will ensure that construction contractors and vessel operators provide documentation of adequate training and equipment for spill containment and clean up. Contractors and subcontractors are required to provide their employees with proper training, supplies, and personal protective equipment prior to initiating work on the Cape Wind Project.

In accordance with the requirements of 30 CFR 254, this OSRP demonstrates that Cape Wind can respond quickly and effectively in the unlikely event that oil is discharged from the facility. As recommended by the BOEMRE, this OSRP is consistent with BOEMRE Notice to Lessee No. 2006-G21, dated October 26, 2006, which includes the Guidelines for Preparing Regional and Subregional Oil Spill Response Plans.

The Cape Wind facility will be in the lowest potential worst-case discharge rating (Rating A: 0 to 1,000 barrels as defined in the regulations at 30 CFR 254 and associated Guidelines). In the event of a release of oil to the ocean, Cape Wind and those providing support services (see Section 4) will refer to this OSRP to ensure that the appropriate spill response actions are taken in a timely manner to prevent impacts to sensitive receptors.

It should be noted that Cape Wind has prepared a complete OSRP in accordance with guidelines for Oil, Gas, and Sulphur leases for a Regional and Subregional Plan.

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3.3 Types of Leases and ROW Pipelines

The Cape Wind Project Area is covered by a Commercial Lease of Submerged Lands for Renewable Energy Development on the Outer Continental Shelf.

3.4 Facility Information Statement

The Cape Wind Energy Facility will consist of 130 wind turbine generators (WTGs) arranged in a grid pattern in the Horseshoe Shoal region of Nantucket Sound, Massachusetts. Solid dielectric submarine inner-array cables (33 kilovolt) from each wind turbine generator will interconnect within the grid and terminate on an electrical service platform (ESP). The electric service platform will serve as the common interconnection point for all of the wind turbine generators. The proposed submarine transmission cable system (115 kilovolt) connecting the Project to Cape Cod is approximately 12.5 miles in length (7.6 miles within the Massachusetts 3 mile territorial line) from the ESP to the landfall location in Yarmouth, Massachusetts. Only the ESP and WTGs are relevant to the Oil Spill Response Plan, given that the submarine cable systems are solid dielectric cables and do not contain oil. Additional details about the WTGs and ESP are provided in Appendix A.

3.5 Coverage Area

The Project will be located in the Horseshoe Shoals region of Nantucket Sound off the coast of Massachusetts. The following blocks or portions of blocks lying within Official Protraction Diagram Providence NK19-07 are located within the lease area and are depicted on the map below.

1. Block 6479, E1/2 of SE1/4
2. Block 6480, S1/2
3. Block 6481, that portion of the SW1/4 lying seaward of the Submerged Lands Act Boundary
4. Block 6529, NE1/4; E1/2 of SE1/4
5. Block 6530, all of block
6. Block 6531, NW1/4; S1/2; that portion of the W1/2 of NE1/4 lying seaward of the Submerged Lands Act Boundary
7. Block 6532, SW1/4 of SW1/4
8. Block 6579, NE1/4 of NE1/4
9. Block 6580, N1/2; N1/2 of SE1/4
10. Block 6581, N1/2; N1/2 of S1/2
11. Block 6582, NW1/4; SW1/4 of NE1/4; N1/2 of SW1/4; SE1/4 of SW1/4; W1/2 of SE1/4

A location plat illustrating the project area is provided in Appendix A, which includes a table with geographic coordinates for facility components.

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3.6 Contract Certification Statement

Cape Wind hereby certifies that the executed Stand-By Service Agreement between Cape Wind and Clean Harbors Environmental Services is in effect and provides immediate access to Clean Harbors spill response equipment and personnel. A copy of this agreement is provided in Appendix D.

4.0 ORGANIZATION

The chain-of-command responsibilities in the event of an oil spill, including spill team members, contractors, and outside agencies are identified below and discussed in detail in the following sections. As the owner/operator of the facility, Cape Wind is ultimately responsible for oil spill response although Clean Harbors has been designated as the Primary Oil Reponse Contractor. Clean Harbors is an experienced oil spill response contractor with adequate equipment, personnel, and resources to respond to any potential Cape Wind oil spill.

4.1 Qualified Individual

Scott Metzger (Clean Harbors) is designated as the Cape Wind Facility Qualified Individual (QI). Cape Wind will also have a second QI whose identity is to be determined.

As the QI, Mr. Metzger is available on a 24-hour basis and responsible to:

- Activate and engage the Spill Response Contractor (Clean Harbors)
- Coordinate with the federal and Massachusetts officials
- Obligate funds required to carry out response activities

Mr. Metzger has full authority to obligate funds on behalf of Cape Wind.

4.2 Spill Management Team

The Spill Management Team (SMT) is comprised of staff from Cape Wiind and Clean Harbors. In addition to serving as the QI, Scott Metzger is designated as the Oil Spill Response Coordinator (OSRC)/Incident Commander (IC). Cape Wind's second OSRC/IC is to be determined. In accordance with the National Interagency Incident Management System (NIMS) format, the following roles of the SMT may be assigned depending on the magnitude of the spill:

- Command – Sets objectives and priorities and has overall responsibility at the incident or event
- Operations – Conducts tactical operations to carry out the plan, develops tactical objectives, and directs all organizational and equipment resources
- Planning – Develops the action plan to accomplish the objectives, collects and evaluates information, and maintains the situation and resource status
- Logistics – Provides support to meet incident needs, provides resources and all other services needed to support the incident

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- Finance/Administration – Monitors cost related to the incident and provides procurement

The team member assignments will be designated by the QI and IC as necessary. The team will be event-specific and not all positions need to be filled. The size of the organization is dependent on the magnitude of the incident and will be expanded or contracted as necessary during the individual response effort.

The training required of SMT members for spill management decisionmaking is described in Appendix B "Training Information". An executed Stand-By Agreement between Cape Wind and Clean Harbors is provided in Appendix D "Contractual Agreements".

4.3 Spill Response Operating Team

The Spill Response Operating Team (SROT) is comprised of trained individuals who are available on a 24-hour per day basis. The SROT and the SMT are identical in terms of personnel and functionality, although the SROT includes the field staff and subconsultants responsible for deployment, operation, and recovery of response equipment. The following table provides the names, the duties, responsibilities, and authorities of each SROT member.

Table 4.3-1 Spill Response Operating Team

Organization	Role	Staff Available	Responsibilities
Cape Wind	Qualified Individual	▪ Assistant Project Director ▪ Environmental Coordinator ▪ Marine Coordinator ▪ H&S Coordinator	▪ Notifies external authorities (oral and written notifications) ▪ Provides daily incident reports to federal, state, and local authorities ▪ Coordinates with first responders, including response contractor ▪ Directs Cape Wind personnel during response activities ▪ Provide appropriate personal protective equipment to Cape Wind personnel ▪ Ensures security and safety during response activities ▪ Holds daily safety meetings during oil spill situations ▪ Coordinates proper cleanup, salvage, and recovery

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Organization	Role	Staff Available	Responsibilities
Clean Harbors Environmental Services. (Boston, MA Area Service Center)	Spill Response Contractor	40-Hour OSHA Trained Personnel: Supervisor: 10 Foreman: 20 Equipment Operator: 23 Field Technician: 25	▪ Work with U.S. Coast Guard and local authorities to provide proper cleanup, salvage, and recovery
Environmental Regulatory Compliance Consultant ESS Group, Inc.	▪ Provide regulatory compliance consultation	N/A	▪ Provided regulatory compliance assistance to Cape Wind, as requested
Trajectory Analysis and Modeling Firm Applied Science Associates, Inc.	▪ Provide trajectory analysis consultation	N/A	▪ Provided trajectory analysis assistance to Cape Wind, as requested
Wildlife Rehabilitation (if necessary) Tri-State Bird Rescue	▪ Provide support for rehabilitation of oiled birds	N/A	▪ Communicate with U.S. Fish and Wildlife Service, Massachusetts Division of Fisheries and Wildlife and on-scene coordinator to discuss and coordinate their role in the response. ▪ Train volunteers ▪ Establish operations control / logistics, medical husbandry and cleaning areas within the wildlife rehabilitation facility

Appendix D includes the terms and conditions of spill agreements/contracts between Cape Wind and the designated spill response contractor.

4.4 Oil Spill Removal Organizations

Clean Harbors is identified as the Primary Oil Spill Removal Organization (OSRO) and will provide oil spill response materials and supplies, equipment, and dedicated vessels in the event of a non-incidental oil spill. The supplied equipment and materials will be of sufficient quantity and recovery capacity to respond effectively to oil spills from the facilities and leases covered by the regional or Subregional OSRP. In the event that additional vessels or diving services are required, the following local subcontractors may be hired to support the oil spill recovery effort.

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Table 4.4-1 Oil Spill Removal Organizations

Emergency Response Subcontractor	Contact	Services Provided
Boston Line & Service Co. Black Falcon Cruise Terminal 1 Black Falcon Ave. Boston, MA 02210 (617) 951-9957	Barry M. Cox John J. Rinkus Tim Shea Paul Fratic	Tug, Boom & Barge Services
Boston Towing and Transportation 36 New Street East Boston, MA 02128 (617) 567-9100 (617) 567-5896 FAX	Philip K. Chase, GM	Tug Boat Services
Northeast Diving Services 28 West Narragansett Avenue Newport, RI 02840 (401) 841-0446	Eva Longobard	Diving/Recovery/Video
Harbor Ready Marine Wickford, RI (401) 295-8711	John Andrews	Kropp Rescue
Packer Marine, Inc. P.O. Box 308 Vineyard Haven, MA 02568 (508) 693-0900	Ralph Packer John Packer	Barges

5.0 SPILL RESPONSE OPERATIONS CENTER AND COMMUNICATIONS

5.1 Spill Response Operations Center

The Spill Response Operations Center (SROC), also known as the Incident Command Post (ICP) will be operated and maintained by the SMT during an incident. The Spill Response Operations Center will be initially located at the Tides Motel of Falmouth, which is located at the mouth of Falmouth Harbor. Figure 5.1-1 illustrates the location of the SROC/ICP relative to the facility.

Tides Motel of Falmouth
267 Clinton Avenue
Falmouth, Massachusetts 02540
(508) 548-3126

Mobile command sites may be established locally in the vicinity, if oil comes on shore or wildlife habitat rehabilitation efforts are required. Upon selection of a Cape Wind operations center location on Cape Cod, the SROC/ICP will be moved to that location.

Upon activation of the SROC/ICP, the IC/QI will assume control and coordination responsibility.

5.2 Communications

Communication systems such as telephones, mobile phones, radio communications, and pagers will be used during a spill event. All employees will be provided with mobile communication devices

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during work hours. Additional communication devices (telephones, fax machines, computers, etc.) will be located at the SROC and CWA staff will have direct contact with U.S. Coast Guard (USCG) through VHF radio per terms of the OCS lease.

The following table provides a resource of radio frequencies that may be useful during spill response.

Table 5.2-1 Important Radio Frequencies for Spill Response

Channel	Frequency	Use	Remarks
6	156.300	Ship to Ship Safety	Ship to ship safety and search and rescure
13	156.650	Bridge to Bridge	Communication with neighboring vessels
16	156.800	International Distress	Hailing and distress
18A	156.900 MHz	Clean Harbors Working Channel	Primary
19A	156.950 MHz	Clean Harbors Working Channel	Secondary
21A	157.500	USCG USE ONLY	
22A	157.100	USCG Communications	Communications with USCG. USCG maritime safety broadcasting
23A	157.050	USCG USE ONLY	
81A	157.075	USEPA USE ONLY	
83A	157.175	USCG ONLY	
NOAA WX1	162.550	NWS – Local Weather	Cape and Islands Local Marine Weather and Forecasts

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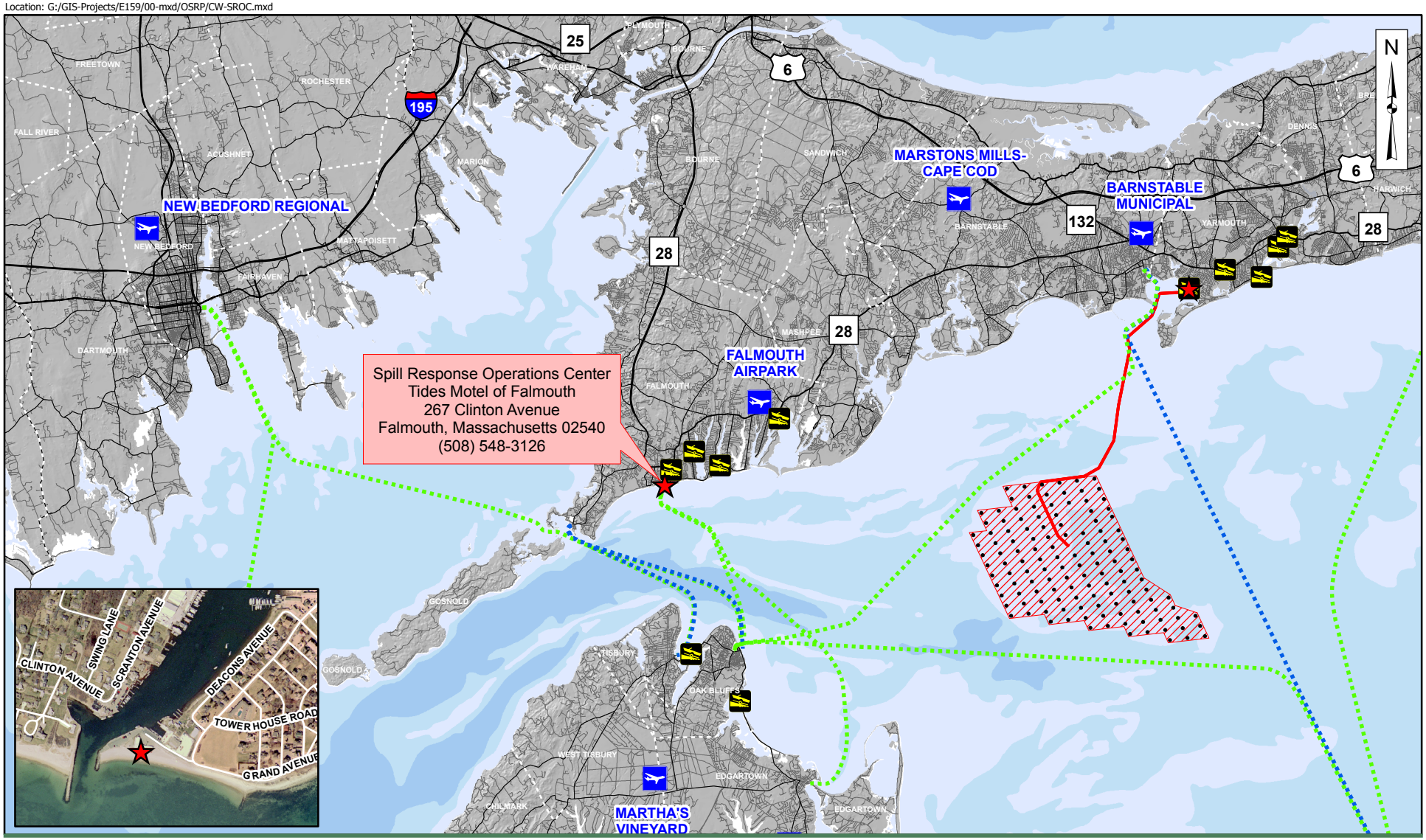
Location: G:/GIS-Projects/E159/00-mxd/OSRP/CW-SROC.mxd



ESS Group, Inc.

Engineers
Scientists
Consultants

CAPE WIND
Nantucket Sound, Massachusetts

Scale: 1" = 5 Miles

0 5 Miles

Source: 1) Base data provided by MassGIS
2) ESS, Cape Wind Project Area, 2006
3) ESS, Spill Response Data, 2011

Legend

- Cape Wind Turbine Location
- Cape Wind Project Area
- Cape Wind Submarine Cable
- Spill Response Operations Center
- Airport
- Boat Access

Ferry Types

- Passenger Service
- Passenger and Vehicle Service

Oil Spill Response Plan
Spill Response Operations Center

Figure 5.1-1

6.0 SPILL DETECTION AND SOURCE IDENTIFICATION AND CONTROL

6.1 Spill Detection

SCADA systems will monitor the WTGs and ESP for a variety of parameters, including oil levels. The WTG SCADA and ESP SCADA will be capable of fully interfacing with the wind farm SCADA system. The systems will be capable of providing real-time information on all facility data and communications to the Onshore Control Center. The facility will be monitored 24/7 in the Onshore Control Room.

In the event of an oil leak, oil level alarms will sound in the Onshore Control Room and operators will immediately shut down equipment associated to the suspected source of the leak. Maintentance staff will be immediately dispatched to investigate the potential leak, if conditions are safe to travel between the Operations Control Room and facility by boat. If maintenance staff observe oil in the water or confirm a breach in the containment system which provides a pathway for oil to reach water, the Oil Spill Response Plan will be activated in accordance with the procedures described below in Section 7.1. Inspections will be conducted during day or night, so long as working conditions are safe.

In the event of an oil level alarm, if conditions are unsuitable to travel to the facility by boat, an overflight will be conducted if the SCADA System indicates that the structural integrity of the facility has been compromised and secondary containment reservoirs may be breached. Overflight operations can be conducted day and night, and during inclement weather through the use of infrared imagery.

The following local resources are available to provide overflight services in the event of an incident:

Table 6.2-1 Local Helicopter Charter Companies

Company	Address	Phone
Heliops, LLC	226 South Meadow Road Plymouth, MA 02360	781-934-7079 (Base) 617-571-6117 (Cell)
Ryan Rotors	246 S Meadow Rd # 16 Plymouth, MA 02360-4775	508-746-3111

6.2 Pipeline Spill Detection and Location

There will be no oil-containing pipelines associated with the Cape Wind facility.

6.3 Source Control

Cape Wind will actively evaluate and conduct source control operations at the site of a release. Dive and salvage operations will be assessed if needed and a written salvage plan will be produced.

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6.3.1 WTG Fluid Containment

The WTG will utilize lubricating oil, cooling liquids, and grease, all of which will be located in the nacelle/hub or tower. The WTG has been carefully configured to contain any fluid leakage and prevent overboard discharges. The primary WTG components and the fluids contained are explained as follows:

- Nacelle/hub – Approximately 90 gallons of hydraulic oil and 220 gallons of gear oil are contained within the nacelle. In the event of leaking gear oil or a broken hose/pipe, the leaking oil will be guided through the manhole in the bottom of the bedplate and collected on the upper internal platform of the tower.

- Tower - The upper internal platform is designed and sealed in such a way that it can withhold the total amount of gearbox and hydraulic fluid until it can be transferred to containers for safe disposal. The lower tower will include a transformer located near the access door, which will contain approximately 370 gallons of transformer oil. Any oil that might leak from this transformer would be contained with in the lower section of the tower.

Oil will be loaded in the WTG components during pre-commissioning activiies onshore prior to delivery and installation at the Project Area.

6.3.2 ESP Fluid Containment

The ESP will have small amounts of lubricating oil, greases and coolants in pumps, fans, air compressors, emergency backup system and miscellaneous equipment. The ESP will also have four oil-cooled step up transformers.

The primary systems and fluid contained are as follows:

- Main Transformer - The four 110-megavolt amp (MVA) oil cooled main step up transformers will each have a capacity of approximately 10,000 gallons (37,854 liters) of dielectric cooling oil. The oil will be circulated through oil/air heat exchangers mounted on the roof of the platform. Each transformer will be mounted in a leak-proof detention area that will have the capacity of holding 150% of the volume of transformer oil. Each of the detention areas will be connected via valves to a storage tank that has the capacity to store 100% of the oil from all four transformers. The oil piping to the coolers and the coolers will be configured so that any failures will result in oil being drained to the detention area.

- Miscellaneous equipment - Various pumps, fans, and an air compressor will be installed on the platform. They will be lubricated with either grease or oil in small quantities. The equipment will be installed in such a way that any leakage will be contained on the sealed deck areas of the ESP.

The ESP will have sealed, leak-proof decks in the appropriate areas, which will act as fluid containment. In addition, spill containment kits will be available near all equipment. Oil will be

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loaded in the ESP components during pre-commissioning activiies onshore prior to delivery and installation at the Project Area.

7.0 QI, SMT, SROT, AND OSRO NOTIFICATIONS

7.1 Reporting Procedures

In the event that a non-incidental spill is confirmed at an offshore facility component (WTG or ESP), the onsite staff will notify the Cape Wind Manager on duty or delegated individual in the Operation Control Center using pre-determined radio frequency communication (see Section 5.2). The Cape Wind Manager on duty in the Operation Control Center will then notify Jack Arruda, who is responsible for notifying Clean Harbors and initiating the procedures described in the OSRP. In the event that Jack Arruda is unavailable, the Manager on duty has authority to notify Clean Harbors directly. The Reporting Procedure is illustrated in Figure 7-1.

Non-incidental spills are those that pose a hazard to human health or the environment and include the release of oil into the ocean. Incidental spills would include minor drips or leaks that are contained within bermed areas, can be easily cleaned and controlled with minimal amount of sorbents. The staff responsible for assessing potential leaks will be trained to evaluate incidental from non-incidental spills.

The SMT may be activated as a group or individually depending on the size and complexity of the incident. All notifications illustrated in Figure 7-1 will made immediately following an incident occurrence (one hour or less).

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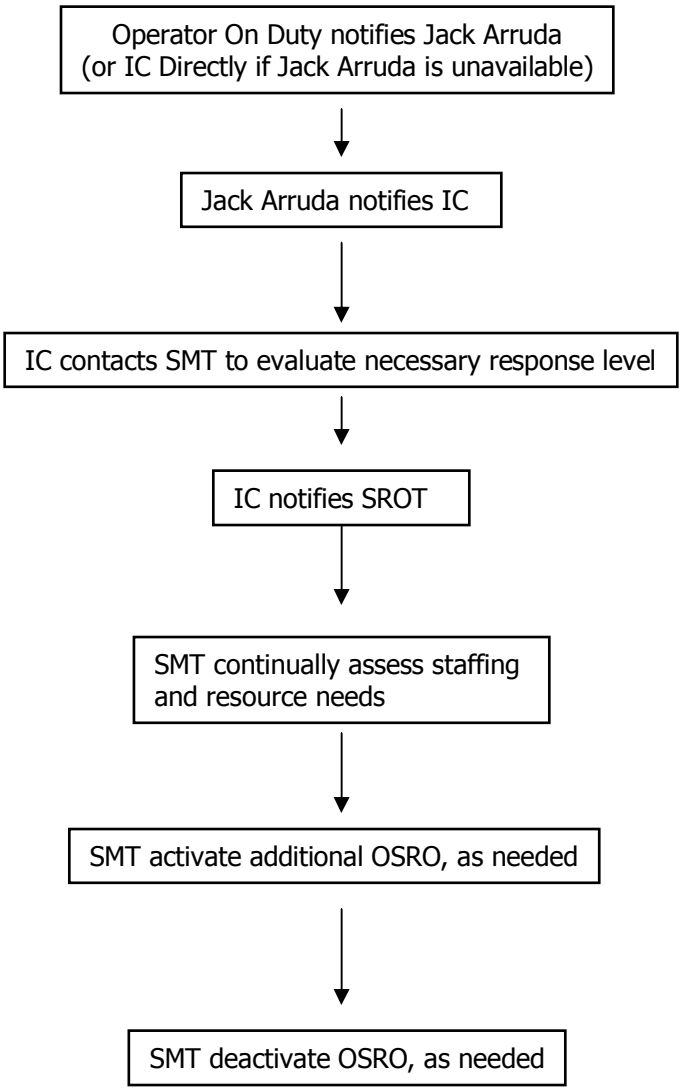
Figure 7.1-1 Internal Notification Procedure



7.2 Company Contact Information

Contact information (work address, telephone numbers, fax number, etc.) are provided below.

Table 7.2-1 Contact Information

Duty/Company	Name	Contact Information
Manager, Construction Services Cape Wind	Jack Arruda	75 Arlington Street, Suite 704 Boston, MA 02116 508-942-4078 jarruda@emienergy.com

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Duty/Company	Name	Contact Information
Oil Spill Response Contractor Clean Harbors Environmental Services	Scott Metzger	42 Longwater Drive Norwell, MA 02061 800-645-8265 24-hr emergency line 781-727-1819 mobile 781-792-5740 direct metzgers@cleanharbors.com
Environmental Site Compliance Supervisor ESS Group, Inc.	Chris Rein	401 Wampanoag Trail East Providence, RI 02915 401.330.1205 direct 401.524.4969 mobile 401.434.5560 main 401.434.8158 FAX crein@essgroup.com
Spill Trajectory Analysis Director Applied Science Associates, Inc.	Craig Swanson	55 Village Square Drive South Kingstown, RI 02879 (401) 789-6224 cswanson@asascience.com
Wildlife Rehabilitation Senior Coordinator Tri-State Bird Rescue & Research Inc.	Rebecca Dunne	110 Possum Hollow Rd. Newark, DE 19711 302-737-9543 x109 RDunne@tristatebird.org

7.3 OSRO Contact Information

Contact Information for Cape Wind's OSRO has been provided in the Quick Guide Spill Response Contact List in Section 1.0. The Emergency Response subcontractors are available to provide materials and supplies, equipment, and trajectory simulation services. Additional details regarding support services and capabilities are provided in Appendix F, "Support Services and Supplies."

7.4 Internal Spill Reporting Forms

Cape Wind will maintain records of events and response activities that occur during oil spill response activities. These records will be used to develop daily incident updates and final written release reports. The records, updates, and reports will be archived at the Operations Center and will become a part of Cape Wind's permanent environmental files.

A copy of the Internal Spill Reporting Form is provided in Appendix G, "Notification and Reporting Forms."

8.0 EXTERNAL NOTIFICATIONS

Cape Wind is responsible for notifying the National Response Center (NRC) in the event of any oil spill at the facility. If the volume of oil released is equal or greater than one barrel, Cape Wind must also notify BOEMRE. A spill notification log is provided in Appendix G.

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8.1 National Reponse Center

In the event of an incident, the QI/IC or a designee will report the incident to the NRC **immediately** (one hour or less).

National Response Center
1-800-424-8802

The following details will be requested by the NRC:

- Name, organization, and telephone number
- Name and address of the party responsible for the incident
- Date and time of the incident
- Location of the incident
- Source and cause of the discharge
- Types of material(s) discharged
- Quantity of materials discharged
- Danger or threat posed by the discharge
- Number and types of injuries (if any)
- Weather conditions at the incident location
- Other information to help emergency personnel respond to the incident

A spill reporting form for contacting the National Response Center is provided in Appendix G.

8.2 BOEMRE

8.2.1 Oral Notification

If the volume of oil released into the water is equal to or greater than one barrel (42 gallons), notify the BOEMRE Gulf of Mexico Regional Office. If the spill is 10 barrels or less, make the required notification by facsimile to the appropriate MMS GOMR District office. If the spill is more than 10 barrels, make the required notification to the appropriate MMS GOMR office by telephone.

New Orleans District
504-734-6740 (Office)
504-734-6742 (Office)
504-734-6741 (Fax)
504-615-0114 (Cell Phone)

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The following details will be requested by BOEMRE:

- Date and time of occurrence
- Operator, and operator representative's, name and telephone number
- Contractor, and contractor representative's name and telephone number (if a contractor is involved in the incident or injury/fatality)
- Lease number, OCS area, and block
- Platform/facility name and number
- Type of incident or injury/fatality
- Operation or activity at time of incident
- Description of the incident, damage, or injury/fatality

A spill reporting form for contacting BOEMRE is provided in Appendix G.

8.2.2 Written Notification

Within 15 calendar days following an incident a written follow-up report must be submitted to the BOEMRE District Office. The written report must include the following details:

- Date and time of occurrence
- Operator, and operator representative's name and telephone number;
- Contractor, and contractor representative's name and telephone number (if a contractor is involved in the incident or injury)
- Lease number, OCS area, and block
- Platform/facility name and number, or pipeline segment number
- Type of incident or injury
- Operation or activity at time of incident (i.e. , drilling, production, workover, completion, pipeline, crane etc.)
- Description of incident, damage, or injury (including days away from work, restricted work or job transfer), and any corrective action taken
- Property or equipment damage estimate (in U.S. dollars)

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8.3 State and Local Notification Requirements

In accordance with the Massachusetts Contingency Plan, Cape Wind will notify the Massachusetts Department of Environmental Protection (MassDEP) within 2 hours of a spill event.

Massachusetts Department of Environmental Protection
Emergency Response Section
1-800-304-1133

The following information will be requested by MassDEP:

- Name and telephone number of the caller
- Location of the release
- Date and time the release occurred
- Description (i.e., name) of oil
- Approximate quantity of the oil that has been released
- Source of the release
- Brief description of the release
- Name and telephone number of the owner/operator
- Name and telephone number of a contact person at the site where the release occurred
- Description of Immediate Response Actions taken or proposed to be taken in response to the release
- Names of other federal, state or local government agencies that have been notified of and/or have responded to the release
- Any other information, including without limitation, potential environmental impacts, that is relevant to assessing the degree of hazard posed by the release or threat of release

A spill reporting form for contacting MassDEP is provided in Appendix G. Following the verbal notification of the incident to MassDEP, Cape Wind will complete and submit the MassDEP Bureau of Waste Site Cleanup form BWSC103C (also provided in Appendix G).

In addition to notifying MassDEP, local fire departments of any communities at risk of oiling will be notified. The assessment of at-risk communities will be based on spill trajectory modeling (see Section 10.3).

8.4 External Spill Reporting Forms

The NRC provides an online tool for incident reporting located at http://www.nrc.uscg.mil/nrchp.html.

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9.0 AVAILABLE TECHNICAL EXPERTISE

There are a number of resources available that can provide assistance during the development and implementation of a spill response effort. Table 9.0-1 provides a summary of available federal resource agencies. Table 9.0-2 provides contact information for federal and state agency technical experts. Table 9.0-3 provides contact information for local organizations that may provide technical support. Table 9.0-4 provides contact information for local scientists and individual technical experts. The contact information provided in the tables below were provided by the "Rhode Island and Southeastern Massachusetts Area Contingency Plan" [USCG Marine Safety Office Providence, 2002].

Table 9.0-1 Overview of Federal Agencies and Resources

Resource/Agency	Information Provided
National Ocean Service (NOS) Map Finder	Images and data including coastal aerial photography, nautical charts, coastal survey maps, environmental sensitivity index atlases, hydrographic survey outlines, historical maps, water level station data, geodetic control points, and estuarine bathymetry data
National Oceanic and Atmospheric Administration National Weather Service	Weather data, forecasts, warnings, and current conditions
Weather.gov	Weather watches, warnings, forecasts, and current conditions
National Oceanic and Atmospheric Administration Marine Prediction Center	Forecasts for oceans including real-time buoy observations
NOS Center for Operational Oceanographic Products and Services	Observation and predictions of water levels and currents
MA Department of Fish and Wildlife	Assistance in sensitive receptor and resource identification for oil spills that reach shorelines
US Fish and Wildlife Service	Assistance in sensitive receptor and resource identification for oil spills that reach shorelines
National Marine Fisheries Service	Assistance in sensitive receptor and resource identification for oil spills that reach shorelines

Table 9.0-2 Contact Information for Technical Expertise: Agencies

Agency	Contact Information	Area of Expertise
USCG National Strike Force[1] ▪ USCG Atlantic Strike Team ▪ National Strike Force ▪ National Strike Force Coordination Center	 609-724-0008 609-724-0009 252-331-6000	Source of technical and managerial expertise to federal on-scene coordinators responding to oil or hazardous materials pollution incidents.
National Oceanic and Atmospheric Administration Scientific Support Coordinator	Steve Lehmann 617-223-8016 (Office) 206-526-4911 (Emergency)	Provides comprehensive solutions to environmental hazards caused by oil, chemicals, and marine debris.
Massachusetts Department of Fisheries and Wildlife (www.masswildlife.org)	508-563-1799 (Division of Marine Fisheries)	Restoration, protection and management of fish and wildlife resources.

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Agency	Contact Information	Area of Expertise
Massachusetts Coastal Zone Management (www.state.ma.us/czm)	508-362-1760 (Cape Cod and the Islands)	Coodirnation with state agencies, federal agencies, local governments, academic institutions, nonprofit groups, and the general public to promote sound management of the Massachusetts coast
Ecological Research & Development Group	302-236-5383 (Dover, DE)	Wildlife rescue organization with experience in oiled wildlife response (advisory role)
The Coalition for Buzzards Bay	508-540-6222 (Woods Hole, MA)	Designated by the MassDEP to coordinate volunteers during oil spill incidents within the Buzzards Bay area

Table 9.0-3 Contact Information for Technical Expertise: Organizations

Organization	Contact Information	Area of Expertise
Cape Wildlife Center In partnership with The Fund for Animals	508-362-0111 ext. 225 Theresa Barbo, Director	Provides emergency care and wildlife rehabilitation.
Cape Cod Stranding Network	508-743-9548 (24-hour Hotline)	Responds to live and dead stranded marine mammals; plans and conducts relcaotion and release procedures; locates rehabilitation facilities for appropriate candidates; aids in transport of animals to facilities.
New England Aquarium Marine Animal Rescue Program	617-973-5247 (Stranding Hotline) 617-973-5200 (Main Aquarium) 617-973-5213 (Tony LaCasse)	MA – Boston and South / Stranding Response & Rehabilitation Cetaceans, Pinnipeds & Sea Turtles
Wellfleet Bay Wildlife Sanctuary Massachusetts Audubon	508-349-2615 ext. 102 Bob Prescott, Director wellfleet@massaudubon.org	MA – Cape Cod / Stranding Response Sea Turtles
National Marine Life Center	508-743-9888 ext. 301 Kathy Zagzebski, Executive Director	Rehabilitation and release hospital for the treatment of stranded sea turtles and seals.
New England Aquarium Marine Animal Rescue Program Central Wharf Boston, MA 02110-3399	617-973-5200	Rehabilitation Cetaceans, Pinnipeds & Sea Turtles

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Table 9.0-4 Contact Information for Technical Expertise: Individuals

Scientist/ Expert	Affiliation	Office Location	Contact Phone Number	Area of Expertise/ Specialty
Duncan Fitzgerald, Ph. D.	Boston Univ.	MA	617-353-2530	Coastal geology
Joseph Costa, Ph.D.	Buzzards Bay Project	MA	508-291-3625	Marine biology, eel grass
Charles "Stormy" Mayo, Ph.D.	Center For Coastal Studies	MA	508-487-3623 ext. 110	Whales, marine mammals
James N.Butler, Ph.D.	Harvard University, Emeritus	MA	518-761-4051	Chemistry
Carolyn Mostello	MA Dept. of Fish & Wildlife	MA	508-389-6372	Roseate tern
Tom O'Shea	MA Dept. of Fish & Wildlife	MA	508-389-6327	Birds, wildlife
Scott Melvin, Ph.D.	MA Div. of Fisheries & Wildlife	MA	508-389-6345	Shore birds, piping plover
Neil Churchill	MA Div. of Marine Fisheries	MA	617-727-0394	Marine biology
Tom French	MA Div. of Marine Fisheries	MA	508-389-6355	State-Listed Wildlife
Scott Kraus	New England Aquarium	MA	617-973-5457	Whales, right whale
Ian Nisbet, Ph.D.	Private consultant	MA	508-564-4958	Roseate tern
Jeremy Hatch, Ph.D.	Univ. of Massachusetts	MA	617-287-6615	Roseate tern
Bruce Tripp, Ph.D.	WHOI Coastal Research Center	MA	508-289-2900	Chemist
Malcolm Spaulding, Ph. D.	URI Graduate School of Oceanography	RI	401-874-6666	Oil Spill Trajectory Modelling
Peter Cornillon, Ph. D.	URI Graduate School of Oceanography	RI	401-874-6283	Physical Oceanography
David Smith, Ph. D.	URI Graduate School of Oceanography	RI	401-874-6172	Marine Microbial Ecology

10.0 SPILL ASSESSMENT

10.1 Locating a Spill

In the event that the wind farm SCADA system indicates the potential for an oil leak, a maintenance crew will be dispatched to investigate. During the transit from the Operation Center to the WTG or ESP, the crew will monitor the water for signs of oil. If oil is detected, the crew will immediate radio Cape Wind's Assistant Asset Manager or delegated senior staff member with coordinates and details that describe the boundary of the oil spill plume.

In the event that oil is observed in the water, a helicopter will be dispatched to conduct a visual assessment of the spill extent from the air. A Cape Wind or Clean Harbors responder will be the spotter and report back to the facility manager or IC the estimate extent of the oil. Aerial photographs will be taken during the overflight to aid in assessment of the spill extent.

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10.2 Determining the Size and Volume of a Spill

Because of the type of oil used at the facility, spilled materials are expected to float and the sheen will be easily detected visually from either a boat or airplane. The aerial extent of the spill will be estimated using information provided by overflights.

Information from the SCADA system will provide a maximum possible volume of oil, released into the water. Based on pressure gauges and oil level sensors, facility operators will be able to estimate the volume of oil released into primary spill containment reservoirs within the facility component (WTG or ESP). In the event that oil is observed in the water, a spill response will be developed based on the assumption that all internal spill containment has failed and the maximum possible volume of oil was released. In the event that the SCADA system malfunctions, a spill response will be developed based on the total volume of oil contained within any affected facility component.

10.3 Predicting Spill Movement

Cape Wind will rely on Applied Science Associates, Inc. (ASA) to conduct real-time oil spill trajectory simulations using the OILMAP model in the event of an actual spill. The input variables required (e.g., wind, current, sea state, spill size) for the trajectory analysis will be obtained from local meteorological stations maintained by NOAA and Cape Wind. The National Data Buoy Center maintains a real-time montoring station in Nantucket Sound, which provides real time marine conditions as well as a link to the regional marine forecast. The information is available online at the following address:

Station 44020 (LLNR 13665) - NANTUCKET SOUND
Nantucket Sound Main Channel Lighted Gong Buoy 17
http://www.ndbc.noaa.gov/station_page.php?station=44020

Cape Wind personnel can initiate a spill trajectory model by submitting the Request Form provided in Figure 10.3-1. As shown, the following information is required to conduct a spill trajectory analysis:

- Wind Speed & Direction
- Current Speed & Direction
- Sea State
- Air & Water Temperature
- Latitude & Longitude (release point)
- Spill Volume
- Aerial extent of Spill
- Direction of Spill Movement
- Time of Next High Tide & Low Tide

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Spill Trajectory model results will be transmitted to Cape Wind and Clean Harbors personnel via email.

Figure 10.3-1 Spill Trajectory Request Form

Company Information	
Company Name:_____	
Company Contact Name:_____	
Telephone Number:_____	
Alternate Telephone Number(s):_____	
Fax Number:_____	
Email Address:_____	
Spill Site Information	
Lease Number / OCS Area / Block:_____	
Latitude: _____° _____′ _____″	Longitude: _____° _____′ _____″
Date of Incident: ___ / ___ / _____	Time of Incident: ___ : ___ (Military Time)
Type of Product Spilled:_____	API Gravity:_____
Estimated Volume of Release:_____ Barrels or Gallons (Please Circle)	
Release Rate:_____ bbls/hr or gal/hr	How Long:_____ hr
Weather Conditions	
Wind Direction (at the time of spill):_____	Wind Speed (at the time of spill): _____mph or knots (Please Circle)
Air Temperature:_____°F	Water Temperature:_____°F
High Tide: ___:___ (Military Time)	Low Tide: ___:___ (Military Time)
Weather Forecast	
Overflight Information	
Date of Overflight: ___ / ___ / _____	Time of Overflight: ___ : ___ (Military Time)
Leading Edge Location: Latitude: _____° _____′ _____″ Longitude: _____° _____′ _____″	Trailing Edge Location: Latitude: _____° _____′ _____″ Longitude: _____° _____′ _____″
Length of Spill:_____Feet / Yards / Miles	Width of Spill:_____Feet / Yards / Miles
Slick Appearance (Please estimate the length and Width)	
Barely Visible: L ___ x W ___ ____%	Silvery: L ___ x W ___ ____%
Slight Color: L ___ x W ___ ____%	Bright Color: L ___ x W ___ ____%
Dull: L ___ x W ___ ____%	Dark: L ___ x W ___ ____%

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10.4 Monitoring and Tracking Spill Movement

Vigilant monitoring of spill movement is critical to an effect response plan. Cape Wind will maintain overflights throughout the spill response along with updated spill trajectory modeling as environmental conditions change. Surveilance operations can be conducted day and night, and during inclement weather through the use of infrared imagery.

11.0 RESOURCE IDENTIFICATION

In the event of a spill, the spill trajectory model results will be compared to the MassDEP Environmental Sensitivity Maps, which were developed by MassDEP to provide access to the NOAA Environmental Sensitivity Index (ESI) data. The ESI data characterize marine and estuarine environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources. These maps will be used by the SMT and SROT to identify sensitive coastal environmental resources including recreational beaches, bird nesting locations, waterfowl habitat, anadromous fish habitat and other marine and shoreline resources.

An index map (Figure 11.0-1) is provided to quickly determine which map is applicable to a given spill trajectory model result. The four maps that encompass the area surrounding the facility are provided below (Figures 11.0-2a-d).

In addition to reviewing the ESI data, resource agencies identified in Section 9.0 will be contacted (as practicable) in order to confirm the at-risk resources and identify any additional resources not previously identified.

The following process will be implemented as part of the initial effort to develop an incident response plan in the event of a spill:

1. Access MassDEP Environmental Sensitivitiy Maps
2. Compare spill trajectory model results to maps
3. Contact resource agencies (Section 9.0) to confirm at-risk resources

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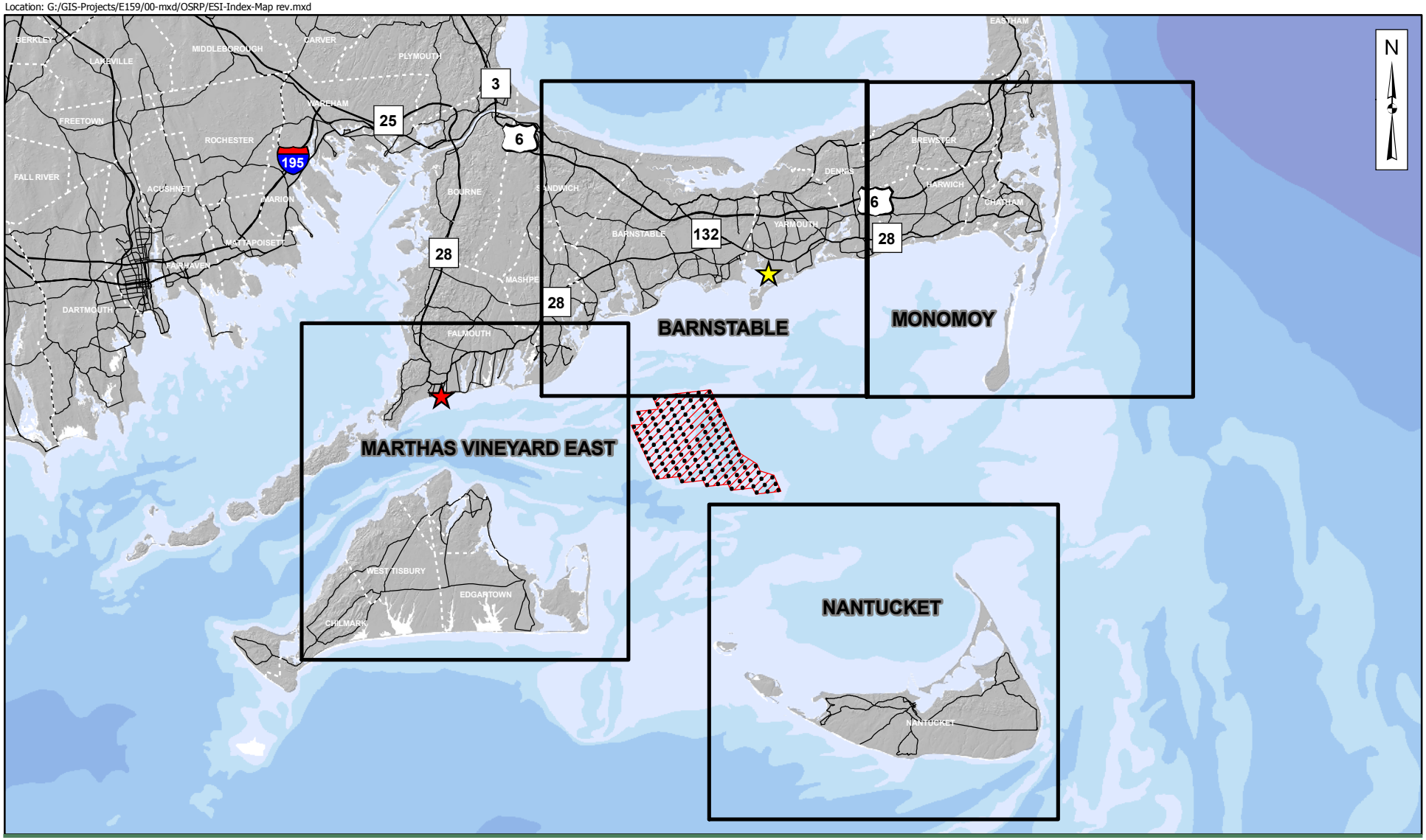
Location: G:/GIS-Projects/E159/00-mxd/OSRP/ESI-Index-Map rev.mxd



ESS Group, Inc.

Engineers
Scientists
Consultants

CAPE WIND
Nantucket Sound, Massachusetts

Scale: 1" = 8 Miles

0 8 Miles

Source: 1) Base data provided by MassGIS
2) ESS, Cape Wind Project Area, 2006
3) ESS, Spill Response Data, 2011

Legend

- Cape Wind Turbine Location
- Spill Response Operations Center
- Alternative Deployment Location
- Cape Wind Project Area
- ESI Index Map

Massachusetts Department of Environmental Protection
Environmental Sensitivity Maps Index

Figure 11.0-1

DEP Environmental Sensitivity Map

NOAA Sensitive Habitat and Biological Resources

Marthas Vineyard East

Shoreline Habitat Rankings
- Exposed man-made structures, rocky shores
- Exposed wave-cut platforms in bedrock
- Fine-med grained beaches;Steep sandy slopes
- Coarse-grained sand beaches
- Mixed sand & gravel beaches
- Gravel beaches
- Riprap
- Exposed tidal flats
- Sheltered rocky shores
- Sheltered, solid man-made structures
- Sheltered riprap
- Sheltered tidal flats;Vegetated low banks
- Salt and brackish water marshes
- Freshwater marshes
- Swamps
- Sensitive Coastline (multiple habitats)

ESI Tidal Type
- Sheltered tidal flats
- Exposed tidal flats
- Exposed wave-cut platforms in bedrock

Submersed Habitats
- Eelgrass (DEP WCP mapped)
- Fish Species (labelled)
- Anadramous Fish Stream

Bird Species
- Terns: Arctic, Common, Least, Roseate
- Shorebirds, Piping Plovers
- Other bird species (labelled)
- Bird Nesting Site

Invertebrate Species
- Crustacean
- Bivalve
- Shrimp
- Green urchin
- Northeastern beach tiger beetle

Reptile Species (Turtles)
- Diamondback terrapin (threatened)
- Kemp's ridley sea turtle (endangered)

Marine Mammal Species
- Seals
- Whales
- Atlantic white-sided dolphin

Natural Heritage Program Habitats
- NHESP Estimated Habitats of Rare Wildlife
- NHESP Certified Vernal Pool

Human Use Features
- Airport
- Access
- Aquaculture
- Beach
- Boat Ramp
- Commercial Fishing
- Coast Guard
- Ferry
- Historical Site
- Lock or Dam
- Marina
- Management Area
- Park
- Recreational Fishing
- Water Intake
- Washover Site
- Management Areas

DEP Public Water Supplies
- PWS Community Groundwater Source
- PWS Surface Water Intake
- PWS Emergency Surface Water Intake
- PWS Non-Community Groundwater Source
- Surface Water Supply Watershed (Zone C)
- DEP Interim Wellhead Protection Areas (IWPA)
- DEP Wellhead Protection Area (Zone II)
- Reservoir
- Lake/Pond/Estuary/Bay/Ocean
- Tidal Flats
- Marsh
- Wooded Swamp
- Cranberry Bogs
- Salt Marsh
- Beach Dunes
- Stream
- Intermittent Stream
- Dam
- Shoreline
- Man Made Shoreline
- Channel in water
- Limited Access Highway
- Multi-Lane Highway - Not Limited Access
- Other Numbered Highway
- Major Road - Connector
- Train Line - Active
- Municipal Boundary
- State Boundary

Threatened/Endangered Species shown in Red

Large Offshore Habitat areas shown by labels only

DATA SOURCES

ESI maps include three kinds of information, delineated on maps by color-coding, symbols, or other markings:
Shoreline Rankings: Shorelines are ranked according to their sensitivity, the natural persistence of oil, and the expected ease of cleanup. ESI shoreline rankings have been defined on the basis of factors that influence sensitivity to oiling, including substrate grain size, permeability, trafficability, and mobility; slope of the intertidal zone; relative degree of exposure of the physical setting; ease of cleanup; and biological productivity and sensitivity.
Biological Resources: Oil-sensitive animals, as well as habitats that either (a) are used by oil-sensitive animals, or (b) are themselves sensitive to spilled oil (e.g., coral reefs). Under the ESI method, these species have been classified into seven categories, each further divided into sub-categories of species similar in their sensitivity to spilled oil.
Human-Use Resources: Resources and places important to humans and sensitive to oiling, such as public beaches and parks, marine sanctuaries, water intakes, and archaeological sites.
Notes to ESI data:
The data layer ANADROMOUS FISH contains the beginning pointsof anadromous fish runs in the MA coastal zone using a digital data set provided by MASSGIS and originally developed by MA DFWELE.
The data for fish distribution, general estuarine and marine invertebrate distribution were collected and compiled by NOAA's Strategic Environmental Assessments Division with the assistance of MA DFWELE, under the Estuarine Living Marine Resources (ELMR) program. The absence of ELMR data in does not mean that important fish resources do not occur in MA coastal areas. Eelgrass included in this atlas is based on recent digital coverages provided by the MA DEP.
NOAA, National Ocean Service, Office of Response and Restoration

DEP Public Water Supplies: Generated by the Mass. Dept. of Environmental Protection using Global Positioning Satellite Data (GPS) collected by the DEP and the US Environmental Protection Agency. December 2002.
Trains: From the US Geological Survey 1:100,000-scale Digital Line Graphs. Updated by Central Transportation Planning Staff in 1998.
Towns: Digitized at MassGIS from stable based films prints of the USGS 1:25,000 scale quad sheets.
Mass. Highway Dept. Roads: Based on the 1:100000 USGS Digital Line Graphs with supplemental linework from MHD based on town-scale maps.
1:25,000 Hydrography: From USGS 1:25000 and 1:100000 Hydrography Digital Line Graphs. The DLG's were modified by adding features digitized from USGS 1:25000 topographic quad sheets.
DEP Wetlands: Interpreted from 1:12000-scale color-infrared photography by staff at UMASS Amherst. Information was field checked by the Mass. Dept. of Environmental Protection Wetlands Conservancy Program.
NHESP Data: The Estimated Habitats of Rare Wildlife (WHAB) datalayer consists of polygons representing estimations of the habitats of state-protected rare wildlife populations that occur in Resource Areas. These habitats are based on rare species records maintained in the Natural Heritage & Endangered Species Program's (NHESP) database. The Certified Vernal Pools datalayer (CVP) contains points for all vernal pools which have been certified by the Natural Heritage & Endangered Species Program (NHESP) according to the Guidelines for Certification of Vernal Pool Habitat, MA Division of Fisheries & Wildlife.

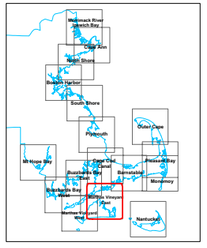
Deval Patrick
Governor
Ian Bowles
Secretary of Energy and Environmental Affairs

Massachusetts Department of Environmental Protection

Executive Office of Energy & Environmental Affairs

MASS GIS — Office of Geographic and Environmental Information
Massachusetts Executive Office of Energy & Environmental Affairs

DEP ESI Map Index



Map Extent shown in **RED**

Map Scale 1:35,000

0 0.45 0.9 1.8 2.7 3.6 Miles

The data is intended for use as an imagery backdrop to represent the charted hydrography of a given area. It is in not to be used for navigational uses.

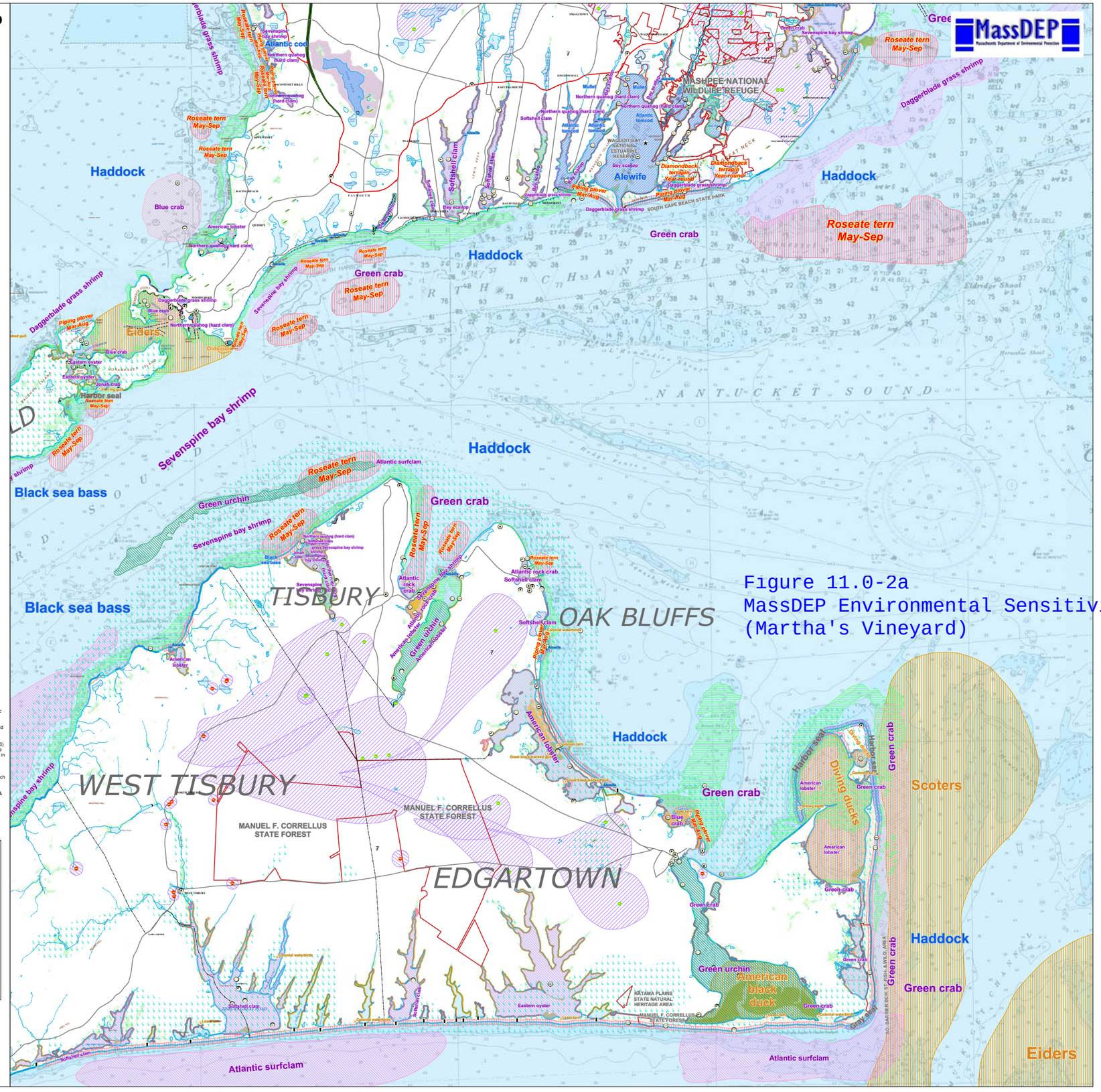


Figure 11.0-2a
MassDEP Environmental Sensitivity Maps
(Martha's Vineyard)

DEP Environmental Sensitivity Map

NOAA Sensitive Habitat and Biological Resources

Barnstable

Shoreline Habitat Rankings
- Exposed man-made structures, rocky shores
- Exposed wave-cut platforms in bedrock
- Fine-med grained beaches;Steep sandy slopes
- Coarse-grained sand beaches
- Mixed sand & gravel beaches
- Gravel beaches
- Riprap
- Exposed tidal flats
- Sheltered rocky shores
- Sheltered, solid man-made structures
- Sheltered riprap
- Sheltered tidal flats;Vegetated low banks
- Salt and brackish water marshes
- Freshwater marshes
- Swamps
- Sensitive Coastline (multiple habitats)

ESI Tidal Type
- Sheltered tidal flats
- Exposed tidal flats
- Exposed wave-cut platforms in bedrock

Submersed Habitats
- Eelgrass (DEP WCP mapped)
- Fish Species (labelled)
- Anadramous Fish Stream

Bird Species
- Terns: Arctic, Common, Least, Roseate
- Shorebirds, Piping Plovers
- Other bird species (labelled)
- Bird Nesting Site

Invertebrate Species
- Crustacean
- Bivalve
- Shrimp
- Green urchin
- Northeastern beach tiger beetle

Reptile Species (Turtles)
- Diamondback terrapin (threatened)
- Kemp's ridley sea turtle (endangered)

Marine Mammal Species
- Seals
- Whales
- Atlantic white-sided dolphin

Natural Heritage Program Habitats
- NHESP Estimated Habitats of Rare Wildlife
- NHESP Certified Vernal Pool

Human Use Features
- Airport
- Access
- Aquaculture
- Beach
- Boat Ramp
- Commercial Fishing
- Coast Guard
- Ferry
- Historical Site
- Lock or Dam
- Marina
- Management Area
- Park
- Recreational Fishing
- Water Intake
- Washover Site
- Management Areas

DEP Public Water Supplies
- PWS Community Groundwater Source
- PWS Surface Water Intake
- PWS Emergency Surface Water Intake
- PWS Non-Community Groundwater Source
- Surface Water Supply Watershed (Zone C)
- DEP Interim Wellhead Protection Areas (IWPA)
- DEP Wellhead Protection Area (Zone II)
- Reservoir
- Lake/Pond/Estuary/Bay/Ocean
- Tidal Flats
- Marsh
- Wooded Swamp
- Cranberry Bogs
- Salt Marsh
- Beach Dunes
- Stream
- Intermittent Stream
- Dam
- Shoreline
- Man Made Shoreline
- Channel in water
- Limited Access Highway
- Multi-Lane Highway - Not Limited Access
- Other Numbered Highway
- Major Road - Connector
- Train Line - Active
- Municipal Boundary
- State Boundary

Threatened/Endangered Species shown in Red

Large Offshore Habitat areas shown by labels only

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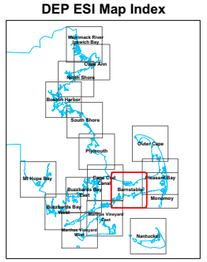
DEP ESI Map Index



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Map Scale 1:35,000

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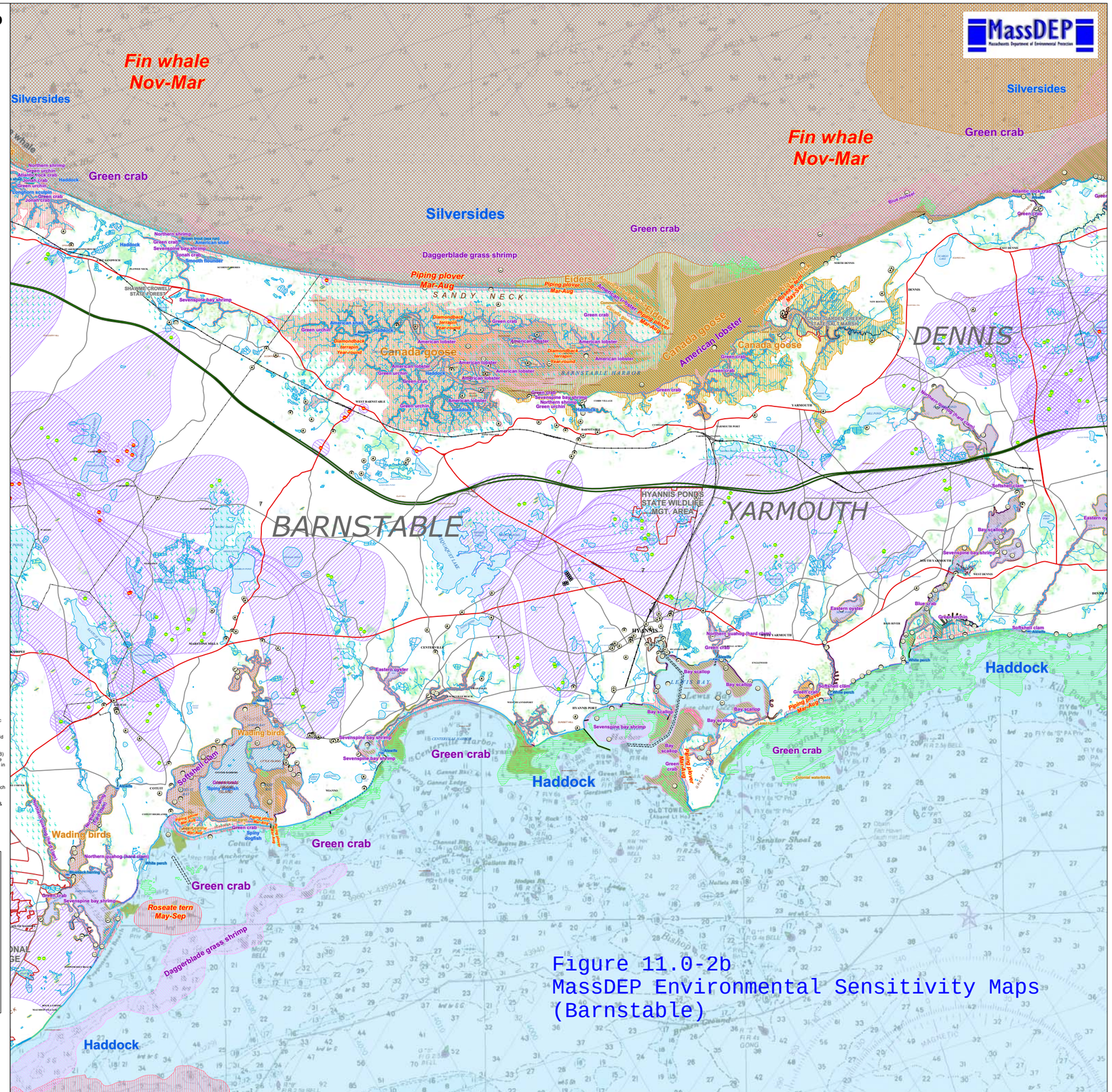

Figure 11.0-2b
MassDEP Environmental Sensitivity Maps
(Barnstable)

DEP Environmental Sensitivity Map

NOAA Sensitive Habitat and Biological Resources

Monomoy

Shoreline Habitat Rankings
- Exposed man-made structures, rocky shores
- Exposed wave-cut platforms in bedrock
- Fine-med grained beaches;Steep sandy slopes
- Coarse-grained sand beaches
- Mixed sand & gravel beaches
- Gravel beaches
- Riprap
- Exposed tidal flats
- Sheltered rocky shores
- Sheltered, solid man-made structures
- Sheltered riprap
- Sheltered tidal flats;Vegetated low banks
- Salt and brackish water marshes
- Freshwater marshes
- Swamps
- Sensitive Coastline (multiple habitats)

ESI Tidal Type
- Sheltered tidal flats
- Exposed tidal flats
- Exposed wave-cut platforms in bedrock

Submersed Habitats
- Eelgrass (DEP WCP mapped)
- Fish Species (labelled)
- Anadramous Fish Stream

Bird Species
- Terns: Arctic, Common, Least, Roseate
- Shorebirds, Piping Plovers
- Other bird species (labelled)
- Bird Nesting Site

Invertebrate Species
- Crustacean
- Bivalve
- Shrimp
- Green urchin
- Northeastern beach tiger beetle

Reptile Species (Turtles)
- Diamondback terrapin (threatened)
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- Management Area
- Park
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- Water Intake
- Washover Site
- Management Areas

DEP Public Water Supplies
- PWS Community Groundwater Source
- PWS Surface Water Intake
- PWS Emergency Surface Water Intake
- PWS Non-Community Groundwater Source
- Surface Water Supply Watershed (Zone C)
- DEP Interim Wellhead Protection Areas (IWPA)
- DEP Wellhead Protection Area (Zone II)
- Reservoir
- Lake/Pond/Estuary/Bay/Ocean
- Tidal Flats
- Marsh
- Wooded Swamp
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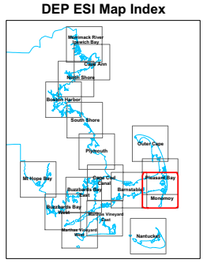
DEP ESI Map Index



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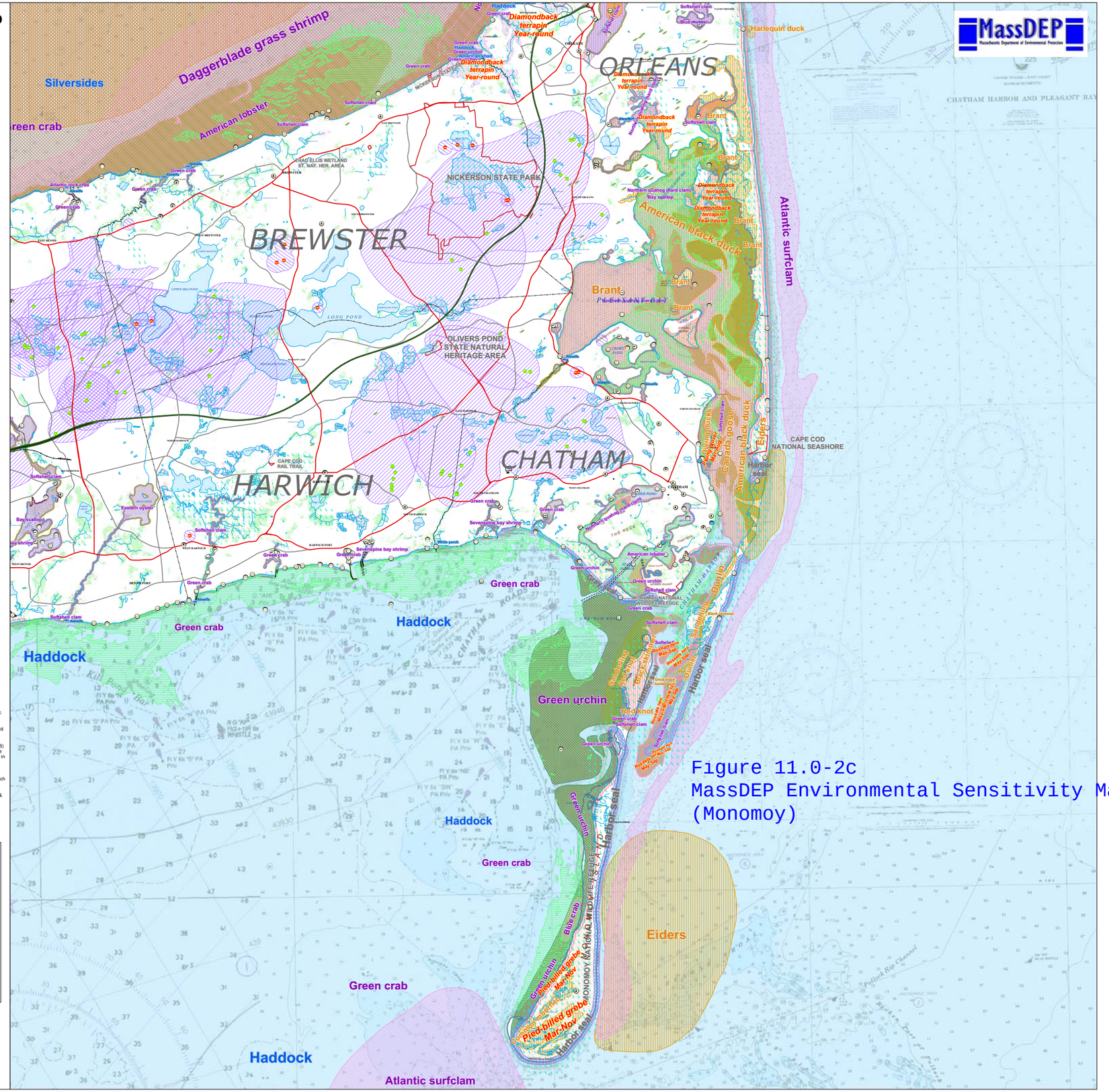

Figure 11.0-2c
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(Monomoy)

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NOAA Sensitive Habitat and Biological Resources

Nantucket

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- Marsh
- Wooded Swamp
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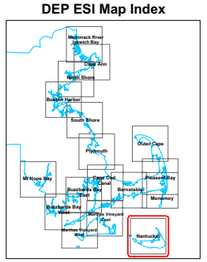

Map Extent shown in **RED**

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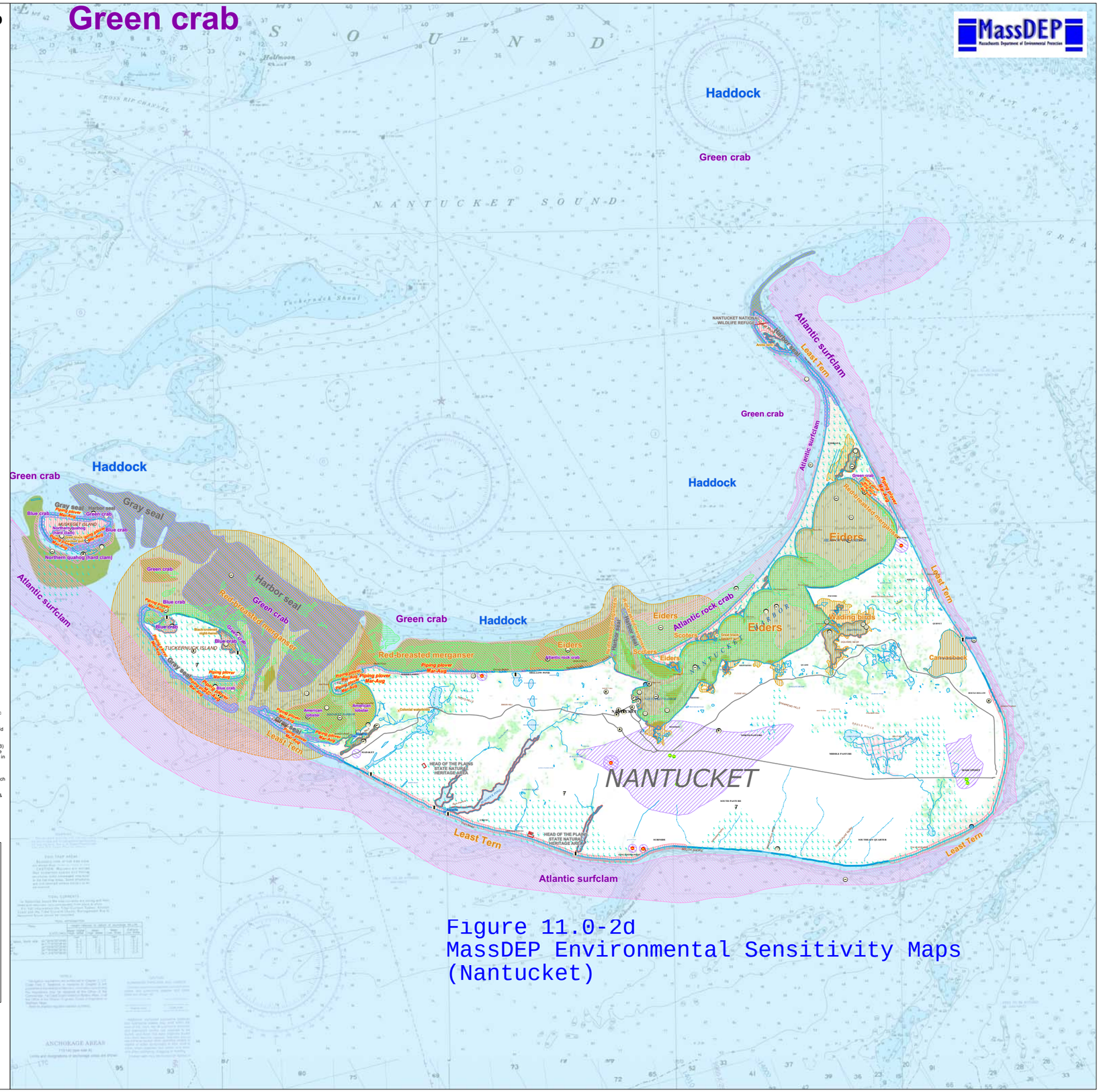

Figure 11.0-2d
MassDEP Environmental Sensitivity Maps
(Nantucket)

12.0 STRATEGIC RESPONSE PLANNING

This plan is consistent with the Area Contingency Plan for Rhode Island and southeastern Massachusetts. The Cape Wind Strategic Response to any oil spill incident will be dictated by the IC through consultation with the SMT in accordance with the following priorities:

1. Maintain safety of public and personnel responding to the incident
2. Control and/or eliminate the pathway for oil into the water
3. Manage coordinated response effort
4. Address necessary environmental resource protection
5. Contain and recover spilled oil
6. Rehabilitate Impacted Wildlife
7. Remove oil from impacted areas

An incident response plan will be developed that addresses each of the objectives above, in order. Specific methods and/or procedures to implement the priorities are provided throughout this OSRP. A list of actions is provided below for each priority and will be addressed in the response plan. Depending on the nature and extent of a spill incident, all actions listed below may not be required.

Priority 1: Maintain Safety of Public and Personnel Responding to the Incident

- Identify hazards of released material
- Establish site control (hot zone, warm zone, cold zone, and security)
- Establish vessel traffic control
- Set up decontamination stations
- Develop a Health and Safety Plan for responding personnel

Priority 2: Control and/or Eliminate the Pathway for Oil into the Water

- Complete emergency shutdown of all necessary facility components
- Initiate temporary repairs
- Conduct salvage operations as necessary

Priority 3: Manage Coordinated Response Effort

- Complete or confirm notifications
- Established a unified command organization and facility for government oversight

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- Ensure mobilization and trackling of response resources
- Account for personnel and equipment

Priority 4: Address Necessary Environmental Resource Protection

- Request/Conduct spill trajectory analysis
- Identify resources at risk of being impacted by spill
- Prioritize at risk resources for implementation of protection tactics (see below)
- Deploy resource protection equipment
- Track spill movement
- Develop/implement appropriate protection tactics

Environmental Resource Protection Strategy

A key step in the initial response actions is the determination of whether shoreline protection is required. This determination is made in consultation with the spill trajectory analysis provided by ASA and based upon estimated spill volume and environmental conditions (see Section 10.3). If landfall is predicted, responders will be directed to deploy booms and other protective measures at the potentially impacted areas.

The FWSEA Annex lists several criteria for determining which environmental resources should receive the highest priority for protection in order to provide a time-sensitive and coordinated response. The federal and state on-scene coordinators (OSC) will consult with relevant federal, state, or tribal natural trustees and managers to determine which natural resources should receive the highest priority for protection in the event of an oil spill. Some natural resources that, at any given time or location, may warrant a high level of protection include the following categories of lands and species:

a) Federally listed endangered and threatened species, their designated critical habitat, and other habitats known to be utilized by these species.

b) Migratory birds including waterfowl, wading birds, shorebirds, raptors, and songbirds.

c) State-listed endangered and threatened species and their habitats.

d) Designated areas of high quality fish and wildlife habitat such as federal and state wildlife refuges and wildlife management areas, state and federal fish hatcheries, natural area preserves, parks, and forests.

e) Surface waters in general including coastal marine, estuarine and freshwater systems and their associated wetland systems that support fish, wildlife and protected plant species and their associated wetland habitats.

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f) Other species of fish and wildlife (game and non-game) and their associated habitats.

The Cape and Island site-specific Geographic Response Plans (September 2009) are complete and have been approved by the Southeastern New England Area Committee for incorporation into the Southern Massachusetts and Rhode Island Area Plan for Oil Spills and Hazardous Materials Response. Eighteen selected sites are located on Nantucket Sound on the southern side of Cape Cod, Martha's Vineyard, and Nantucket Island (see Figure 12.0-1). The Cape and Islands GRP Site Selection Matrix lists sites in order of priority (see Table 12.0-1).

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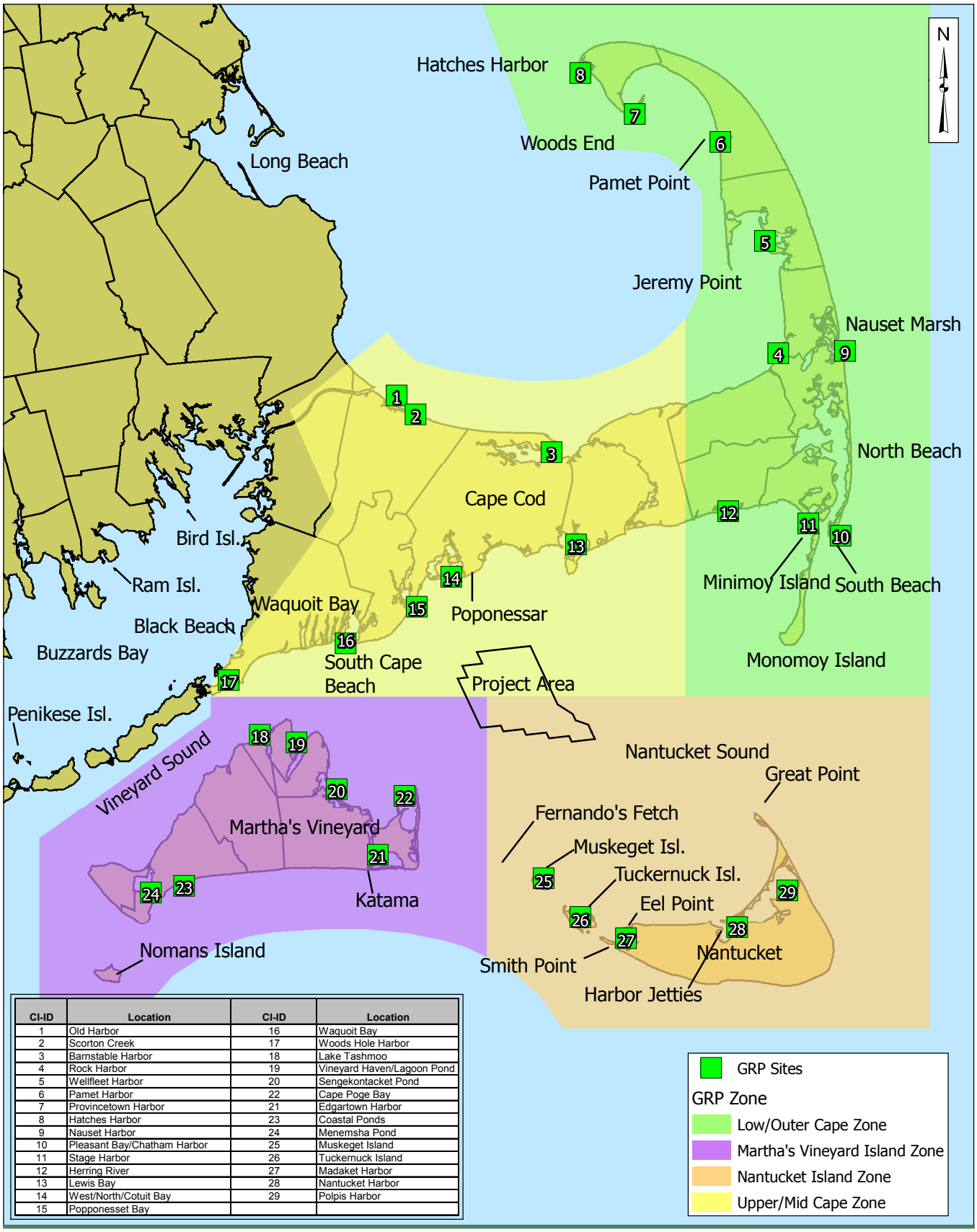

CI-ID	Location	CI-ID	Location
1	Old Harbor	16	Waquoit Bay
2	Scorton Creek	17	Woods Hole Harbor
3	Barnstable Harbor	18	Lake Tashmoo
4	Rock Harbor	19	Vineyard Haven/Lagoon Pond
5	Wellfleet Harbor	20	Sengekontacket Pond
6	Pamet Harbor	22	Cape Poge Bay
7	Provincetown Harbor	21	Edgartown Harbor
8	Hatches Harbor	23	Coastal Ponds
9	Nauset Harbor	24	Menemsha Pond
10	Pleasant Bay/Chatham Harbor	25	Muskeget Island
11	Stage Harbor	26	Tuckernuck Island
12	Herring River	27	Madaket Harbor
13	Lewis Bay	28	Nantucket Harbor
14	West/North/Cotuit Bay	29	Polpis Harbor
15	Popponesset Bay		

ESS Group, Inc.
Engineers
Scientists
Consultants

CAPE WIND
Nantucket Sound, Massachusetts

Scale: 1" = 45,000'
0 10 Miles

Cape Cod/Island GRP Zones and Sites

Figure 12.0-1

Source: 1) Massachusetts Geographic Response Plan (GRP), GRP Sites and GRP Zones, 2009

Table 12.0-1 Cape and Islands Geographic Response Plan (GRP), Sites of Concern for Cape Wind OSRP

GRP # Final	Sub-Zone	Site Name	2007 Priority	Marine Mammals	Fish	Invertebrates	Birds	Threatened/ Endangered Species	Cult Res	Subsistence	Human Use	Comm Fish	Land Mgt	Coastal Habitat
10	LO	Pleasant Bay & Chatham Harbor	H1	S		LCS, SU	Se, Sh	RT	H		B, BR/M, RF		NWR	B, D
11	LO	Stage Harbor	H1			LCS, SU	Se				B, BR/M, RF	CF	NWR	B, D
12	LO	Herring River	H1		A	LCS					B, RF			B, D
13	MU	Lewis Bay	H1		A, F	LCS, SU	Sh, Se	P		F,S	B, BR/M, RF	A, CF		TF, B, R,RR, M, D
14	MU	West, Cotuit & North Bay	H1											
15	MU	Poponesset Bay	H1		F		Se, Sh, N				B		NWR	TF, B
16	MU	Waquoit Bay	H1		A, F	SU	Se, Sh				B, RF		NERR, ACEC	TF, B, M, D
17	MU	Woods Hole Harbor	H1											
18	mv	Lake Tashmoo	H1		F	LCS, SU	Se, N	RT			B, BR/M	CF	CH	B, D, RR, R
19	mv	Vineyard Haven Harbor & Lagoon Pond	H1		A	LCS, SU	Se, N	RT	H		B, BR/M, RF	CF	CH	B, D, M, RR, R
20	mv	Sengekontacket Pond	H1				Se, Sh, N					CF		
21	mv	Edgartown Harbor & Katama Bay	H1	S	A	LCS, SU	Sh, Se, N	P	H		BR/M, RF	A	CH	B, D, M
22	mv	Cape Poge Bay	H1	S		LCS	Se		H			CF	CH	B, D
23	mv	Martha's Vineyard Coastal Ponds	H1		A?	SU	Se, Sh, N							B, D

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GRP # Final	Sub-Zone	Site Name	2007 Priority	Marine Mammals	Fish	Invertebrates	Birds	Threatened/ Endangered Species	Cult Res	Subsistence	Human Use	Comm Fish	Land Mgt	Coastal Habitat
24	mv	Menemsha Pond Complex	H1	F		LCS, SU	Sh, Se, N	P			BR/M, RF	A, CF		TF, B, D, M
25	N	Muskeget Island	H1	S		LCS	Sh, N	P					CH	TF, B, D
26	N	Tuckernuck Island	H1			LCS	Sh, Se, N	P				CF	CH	TF, B
27	N	Madaket Harbor	H1		A	LCS	Sh, Se	P			B, BR/M, RF	CF	CH	TF, B, R
28	N	Nantucket Harbor	H1	S			Se		H		BR/M	A, CF	CH	TF, B, R
29	N	Polpis Harbor	H1											

Source: Modified from GRP Site Selection Matrix, 2009, available from http://grp.nukaresearch.com/documents/071219%20SSM%20CI.pdf

Key:

Invertebrates
LCS = Lobster, crabs, shrimp
SU = Shellfish, urchins

Birds
Se = Seabirds (terns, loons, shearwaters, petrels, cormorants)
Sh = Shorebirds (plovers, sandpipers, herons, bitterns, ibises, egrets, cranes, coot, rails)
N = Nests

Human Use
B = Beach
BR/M = Boat ramp or marina
RF = Recreational fishing

Commercial Fishing
CF = Commercial fishing
A = Aquaculture

Land Management
NWR = National Wildlife Refuge
NER = National Estuarine Reserve
ACEC = Area of Critical Environmental Concern
CH = Critical Habitat (Natural Heritage Program Estimated Habitats of Rare Wildlife)

Coastal Habitat
B = Beach
D = Dunes
TF = Tide flats
R = Rocky shore
RR = Rip-rap
M = Marsh/swamp

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Priority 5 - Contain and Recover Spilled Oil

- Deploy oil containment/sorbent boom at the spill source
- Conduct open water skimming
- Develop disposal plan

Priority 6 – Rehabilitate Impacted Wildlife

- Establish oiled wildlife reporting hotline
- Conduct injured wildlife search and rescue operations
- Notify wildlife agencies and reputable wildlife rescue services and request necessary approvals to handle oiled wildlife
- Setup/Operate wildlife rehabilitation center
- Initiate and coordinate citizen volunteer efforts

Priority 7 – Remove oil from impacted areas

- Conduct necessary shoreline clean up efforts
- Clean oiled structures (piers, docks, etc.)
- Clean oiled vessels

A spill response plan and implementation strategy will be developed and regularly updated by the QI/IC and SMT throughout the spill response. Updates will address changes in the condition of the spill and tactics required to fully address the spill response.

13.0 RESOURCE PROTECTION METHODS

Cape Wind is dedicated to protecting the nearby beaches, waterfowl, wildlife, marine and shoreline resources, and other areas of special economic or environmental importance. Cape Wind consulted with U.S. Fish and Wildlife Services on February 7, 2011 as part of the development of this OSRP. Because of the type of oil used at the off-shore site, spilled materials are expected to float and will be easily contained and recoverable via mechanical methods.

Initial assessment and defensive response actions will occur immediately upon notification of an oil spill.

In accordance with the ACP, the first step taken in the event of an oil spill will be to make a determination of what action is necessary to respond to the spill. After initial information on the spill is compiled, Clean Harbors will determine the appropriate protection techniques. The response technique to be employed in a spill will depend upon the volume of material spilled, location of the spill, weather, and tidal conditions during the time of the spill. All efforts will be made to contain and clean up the spill offshore, before any shoreline impacts occur.

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Resource protection will be conducted using guidelines from the Area Contingency Plan (ACP) and the Geographic Response Plan (GRP). The GRP provides information on response priorities after a spill is first reported. The GRP contains mapping of coastal resource areas and detailed information on response techniques to be used in the event of an oil spill. Specific recovery and protection tactics, equipment and personnel requirements, directions/access to the sensitive areas are also detailed in the GRP. Protection tactics include a variety of booming types, berms and dams and animal protection measures which are selected depending on the nature of the spill.

Based on the spill trajectory model, Cape Wind and Clean Harbors will evaluate whether or not shoreline protection is required. In the unlikely event that offshore techniques are unable to contain spill movement, Clean Harbors will employ all available resources to prevent oil from reaching the shore and limit the damage to potentially affected areas. If the spill can be quickly contained or environmental conditions (wind and current) will prevent oil from reaching shore, then shoreline protection may not be necessary.

Should shoreline cleanup operations become necessary, Cape Wind will work with federal, state, and local authorities to ensure that appropriate techniques are employed in a timely and environmentally-sensitive manner. Such techniques may include:

- Natural recovery
- Manual removal
- Mechanical removal
- Collection with sorbents
- Vacuum
- Sediment reworking/tilling
- Vegetation cutting/removal
- Water washing
- Sand blasting

The response procedures established in this OSRP ensure that all releases are quickly identified, addressed, and recovered. In the unusual event that impact to sensitive areas or wildlife occur, Cape Wind will dedicate the necessary resources (with assistance from the response contractor) and will work with federal, state, and local authorities to fully remedy the impacts.

13.1 Threatened and Endangered Birds

The effects from a potential oil spill to threatened and endangered species habitat is well documented in the USFWS Biological Opinion, 2008, MMS Biological Assessment, 2008, and the MMS

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FEIS, 2009. Oil spill probability (Etkin 2006) and trajectory modeling (Knee et al. 2006) predict a very low risk to Roseate Tern and Piping Plover habitats.

Roseate terns forage at the sea surface and frequently loaf and bathe in near-shore areas around their nesting colonies, primarily in Buzzards Bay. Roseate Terns are in the project area from May to September, but are generally found on Horseshoe Shoal in low numbers in May and then again in late August through mid-September. The primary risk of an oil spill to Roseate Terns would be to foraging terns during the months of May through September.

Piping Plovers nest above the high tide line and forage along the wrack line and intertidal areas. Piping Plovers are in Nantucket Sound from March to September, but do not frequent the project area. An oil spill that reached a shoreline where plovers nest or forage could impact Piping Plovers. Sensitive tern and plover habitats are shown in Figures 13.1-1 and 13.1-2.

In the event of an oil spill, trust responsibilities for threatened and endangered birds and their habitats are given to the U.S. Fish and Wildlife Service (USFWS) through the Comprehensive Environmental Response, Compensation and Liability Act, Clean Water Act, National Oil and Hazardous Substances Pollution Contingency Plan, Migratory Bird Treat Act, and Endangered Species Act. The Commonwealth of Massachusetts also has trust responsibilities for threatened and endangered species within state waters and on land. The federal and state OSC are the only entities that have authority over bird-related response decisions. The OSC will consult with the USFWS and DFW when migratory birds may be impacted to determine appropriate response measures. For incidents that could significantly impact trust resources such as Roseate Terns or Piping Plovers, the OSC may request that an agency representative become part of the command.

A team of specialists from USFWS, Massachusetts Division of Fisheries and Wildlife (MDFW), and Tri-State Bird Rescue and Rehabilitation will be assembled that make response decisions in consultation with the federal and/or state OSC. All bird-related response activities will be detailed in the Incident Action Plan (IAP). Depending on the nature and extent of the spill, such activities may include wildlife reconnaissance, carcass recovery, hazing, wild bird capture and transport, safety and communications, and rehabilitation and release. The Incident Command must approve all migratory bird response actions. The objective of the response activities in reference to Roseate Terns and Piping Plovers will be to eliminate oil contact risk to the maximum extent practicable and rehabilitate any oiled birds.

13.2 Roseate Tern Protection

The highest probability of an oil spill would be located near the ESP in open waters and there is a 90% chance that an oil spill would be of 50 gallons or less (Etkin 2006). Oil spill response in Roseate Tern habitat during the months of May through September will be cognizant of the potential for foraging Roseate Terns in the spill area. If the spill is contained to open waters in Roseate Tern habitat, the USFWS, Tri-state Bird Rescue and Rehabilitation, and/or MDFW will assess the immediate presence or potential impact to Roseate Terns and may decide that a deterrence program should be implemented as part of the IAP.

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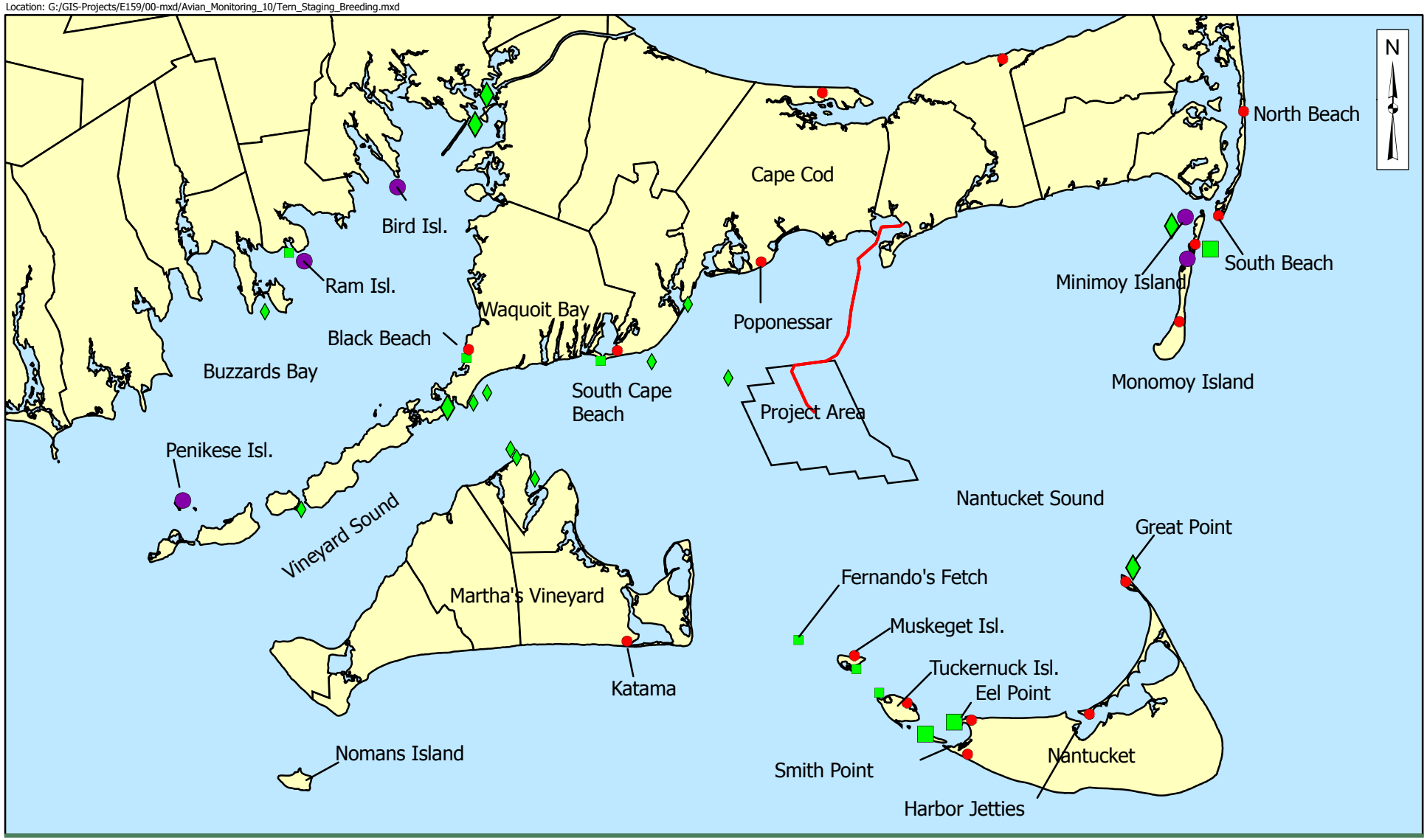
Location: G:/GIS-Projects/E159/00-mxd/Avian_Monitoring_10/Tern_Staging_Breeding.mxd



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Scale: 1" = 36,000'
0 10 Miles

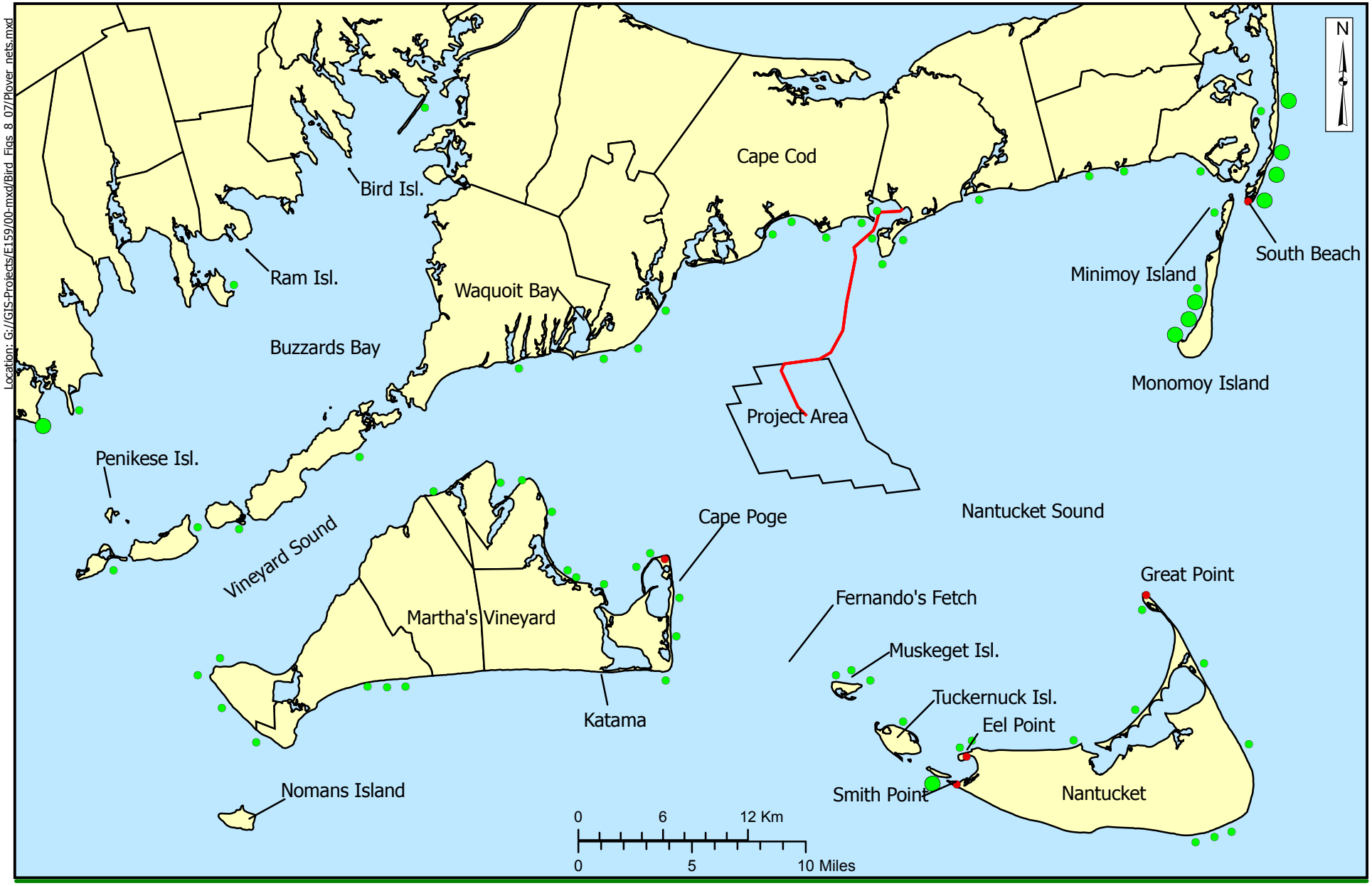
Roseate Tern Colonies
Tern Staging Areas
Submarine cable route

Resting: Major, Minor
Fixed Foraging: Major, Minor

Source: 1) Tern colony & staging locations compiled from Trull et al. 1999; MMS Biological Assessment, 2008; RTRT, 2007; MDFW-NHESP, personal communication and Jedrey et al. 2010.

Roseate Terns in Nantucket Sound and Buzzards Bay

Figure 13.1-1



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Scale: 1" = 6 miles

Source: 1) MassGIS, Town Boundary 2) ESS Cable Route, 2007
3) Monomoy shoreline digitized from MassGIS ortho, 2005,
4) Nest locations, Melvin and Mostello, 2007; MMS FEIR, 2009.

Piping Plover Nests

- 1-3
- 10

- Potential Staging Areas
- Submarine cable route

Piping Plover Nests in Nantucket Sound and Buzzards Bay

Figure 13.1-2

The deterrence program used to disperse Roseate Terns may include both auditory and visual techniques. If warranted, deterrence activities would be initiated as soon as possible following an oil spill to prevent Roseate Terns from establishing or continuing regular use patterns within the contaminated area. All deterrence activities require authorization from and oversight by the designated USFWS and/or MDFW representative. Any deterrence procedures would be consulted with the OSC to ensure compatibility and safety with other response activities. A communication line will be established by Incident Command between deterrence personnel and any Air Operations to avoid potential bird/aircraft collisions. The goal of the deterrence program will be to disperse and exclude un-oiled Roseate Terns from the contaminated area to reduce mortality.

Potential deterrence measures include cracker shells and scare cartridges, Phoneix Wailers, and propane cannons. Shell crackers and scare cartridges are fired from a 12-guage shotgun with the shell shot being replaced by a bulldog or M-80 firecracker that explodes at 100-150 yards (91-136 m). Shell crackers and scare cartridges are effective in offshore environments and have a relatively high radius of effectiveness (at least 200 m from source up to 1 km for some bird species (USFWS 2003). Phoenix Wailers broadcast loud, intermittent electronically synthesized sounds that are in the audible range of birds. Phoenix Wailers are useful in open water environments and can be deployed directly into the oil slick which maximizes bird dispersion. Propane cannons are another suitable audible dispersion mechanism for use in land or offshore spills. Deterrence measures may continue until the open water spill is cleaned-up.

If Roseate Terns are oiled, representatives from USFWS, Tri-state Bird Rescue and/or MDFW in consultation with the OCS will determine if bird capture is possible depending on the particular spill and response activities. Only authorized and trained individuals are allowed to undertake the capture and treatment of oiled birds under the direction of the Tri-state Bird Rescue. All capture activities will be developed within the Planning Section, coordinated within the Incident Command System, and must be authorized by the Incident Command in the event of an incident.

A bird capture program would be implemented as early as is safely possible in a spill response effort to increase the survival rates of Roseate Terns. Captured terns are to receive medical evaluation and preliminary treatment as quickly as possible. Bird capture techniques will be decided by representatives of USFWS and/or MDFW in consultation with Tri-state Bird Rescue. All bird carcasses that are discovered during capture will be collected to prevent secondary oiling. Capture teams will receive guidance from the USFWS regarding carcass collection protocols and how to record the location and condition of each carcass prior to collection.

All bird handling will be done in a manner that minimizes stress to the birds and ensures that the bird does not injure itself or the handler. Only authorized, permitted and trained individuals may handle oiled birds. Captured birds will be immediately placed onto containers that provide safety for both the bird and the handlers. Containers may include well-ventilated, solid-sided carriers, such as modified cardboard boxes, plastic carriers, or shipping kennels. Oil contaminated birds that are captures may require stabilization in the field prior to being transported to an on-shore rehabilitation facility.

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13.3 Piping Plover Protection

Should the spill trajectory modeling suggest that the oil spill will approach land when Piping Plovers are within the action area, protective measures for known Piping Plover beaches will be implemented as necessary. These protective measures are described in Section 13. The USFWS and/or MDFW may require shorebird monitors in known Piping Plover beaches based on the oil spill trajectory.

Should these protective measures fail, rehabilitation and clean-up of Piping Plover habitat will occur in the intertidal zone near breeding or forging areas. Cleanup procedures for beaches used by Piping Plover will be dealt with on a case-by-case bases depending on the specifics of the shoreline oiling, plover location, nesting status, and tolerance for disturbance. All surface oil will be removed under the surveillance of shorebird monitors identified by the Wildlife Unit. Should any Piping Plovers become oiled, response activities will follow those response actions listed above for Roseate Terns.

14.0 MOBILIZATION AND DEPLOYMENT METHODS

Quick mobilization is a key component to response and recovery. All efforts will be made to contain and clean up the spill offshore, before any shoreline impacts occur. In order to minimize the initial response time, Cape Wind will maintain and response equipment at the Operations Center. A mobile response trailer with 1,000′ of 18″ containment boom, anchoring systems, safety equipment and sorbent materials/skimming equipment will be staged at the operations center for immediate deployment upon notification of an oil spill at the direction of the QI/IC. The Cape Wind work boat will be available for immediate deployment of response equipment and can be on-scene at any facility component within one hour of notification that a spill has occurred.

Spill response resources beyond the equipment stored on-site at the Cape Wind Operations Center will be provided by Clean Harbors. Clean Harbors equipment is stored at local service centers and is ready for immediate deployment in the event of an incident.

In the event that mobilization of shore-side resources are required on either Martha's Vineyard or Nantucket, the SMT will contact the Steamship Authority and arrange for equipment deliveries. The Steamship Authority operates nine large transport vessels, of which four are specifically designed for supply deliveries. The Steamship Authority operates terminals in Woods Hole, Hyannis, Nantucket, and Martha's Vineyard. Arrangements can be made through the general manager:

Steamship Authority
Wayne C. Lamson, General Manager
508-548-5011 ext. 200

The transit from the Steamship Authority terminal in Falmouth to Matha's Vineyard is approximately 45 minutes. The transit from Hyannis to Nantucket is approximately 2 hours and 15 minutes. The Steamship Authority vessels are designed to accept roll-on/roll-off equipment, therefore the loading/unloading of equipment is expected to be minimal in an emergency situation.

Table 14.0-1 provides a list of the Clean Harbors Northeast Region Service Centers and the estimated time of arrival for equipment that will be mobilized from those facilities (if necessary) to the Cape Wind

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Operations Center, Martha's Vineyard, or Nantucket. In order to account for loading/unloading activities 30 minutes are factored into the ETA for Martha's Vineyard and Nantucket. The ultimate destination of the resources will depend on the nature of an actual spill event, but the table provides a useful resource to evaluate response time.

Table 14.0-1 Estimated Time of Arrival (ETA) from Regional Clean Harbors Service Centers

Clean Harbors Regional Service Centers	ETA (Hours)		
	Cape Wind Operations Center	Martha's Vineyard	Nantucket
Boston, MA 781-803-4100	1.25	2.5	4
Providence, RI 401-431-1847	1.5	2.75	4.25
Shrewsbury, MA 508-842-8014	1.75	3	4.5
Bow, NH 603-224-6626	2.5	3.75	5.25
Springfield, MA 413-827-8557	2.5	3.75	5.25
Bristol, CT 860-583-8917	3.25	4.5	6
Milford, CT 203-878-1740	3.25	4.5	6
South Portland, ME 207-799-8111	3.5	4.75	6.25
Albany, NY 518-434-0149	4	5.25	6.75
Newburgh, NY 845-566-5071	4.75	6	7.5
Edison, NJ 732-248-1997	5.25	6.5	8
Bangor, ME 207-262-9504	5.5	6.75	8.25
Philadelphia 856-467-3102	6.5	7.75	9.25
Baltimore, MD 301-939-6000	9.5	10.75	12.25
Richmond, VA 804-843-2180	12	13.25	14.75
Norfolk, VA 757-543-9240	12	13.25	14.75

In the event of a spill, the SROT will identify one or more onshore staging areas based on the spill location and direction of spill movement. Staging areas may be moved during the course of spill response depending on the movement of the plume. Four staging areas have been identified to satisfy the requirements of any conceivable spill scenario(see Figure 14.0-1). Two staging areas (Falmouth and

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Yarmouth) are identified on the south shore of Cape Cod to support small (<35 feet) trailer-able response vessels that can be on scene and fully deployed within 3 or 4 hours. Two staging areas (Boston and Fairhaven, MA) are identified to support large vessels (>100 feet), which are capable of operating in rough weather but take slightly longer to reach the facility (~6.5 hours). All staging areas will provide adequate parking, telephone, restrooms, and potable water for the response team personnel.

Table 14.0-2 provides a matrix of travel times from the Clean Harbors Service Centers to the staging areas described above and ultimated the site of an incident. Based on the Worst Case Scenario response provided in Appendix H, only response equipment from the Boston and Providence Service Centers will be required for on water operations. Travel times have been determined using the online mapping application provided by Google.com.

Cape Wind and Clean Harbors estimate that it will take approximately one to two hours to procure and mobilize the necessary equipment from the service centers to the staging areas. It will take another 30 minutes to either load the equipment onto vessels or deploy the trailer-able vessels at the staging area. The travel time between the staging area and the scene of the incident vary for each staging area, but will likely range from one to five hours. Once on-scene, Clean Harbors personnel will be immediately prepared to deploy the response equipment. Table 14.0-1 provides a summary of the response timeline for Clean Harbors to arrive on scene.

Table 14.0-2 Estimated Response Time for Clean Harbors to Incident Location

Equipment Storage Center	Staging Area	Response Times (Hours)			
		Transit to Staging Area	Loadout Time	Transit to Incident Location	Total ETA
Boston Service Center	Boston	1	0.5	5	**6.5**
	Fairhaven	1.5	0.5	3	**4.5**
	Yarmouth	1.5	0.5	1	**3**
	Falmouth	1.5	0.5	1	**3**
Providence Service Center	Boston	1.5	0.5	5	**7**
	Fairhaven	1	0.5	3	**4.5**
	Yarmouth	2	0.5	1	**3.5**
	Falmouth	2	0.5	1	**3.5**

If additional support is required, a number of agencies are available to support Clean Harbors. These agencies may include the local fire and police departments, and the local emergency response, USCG personnel, and other state agencies. Appendix F provides details for additional personnel, materials and supplies, equipment, and services available in the event of a release.

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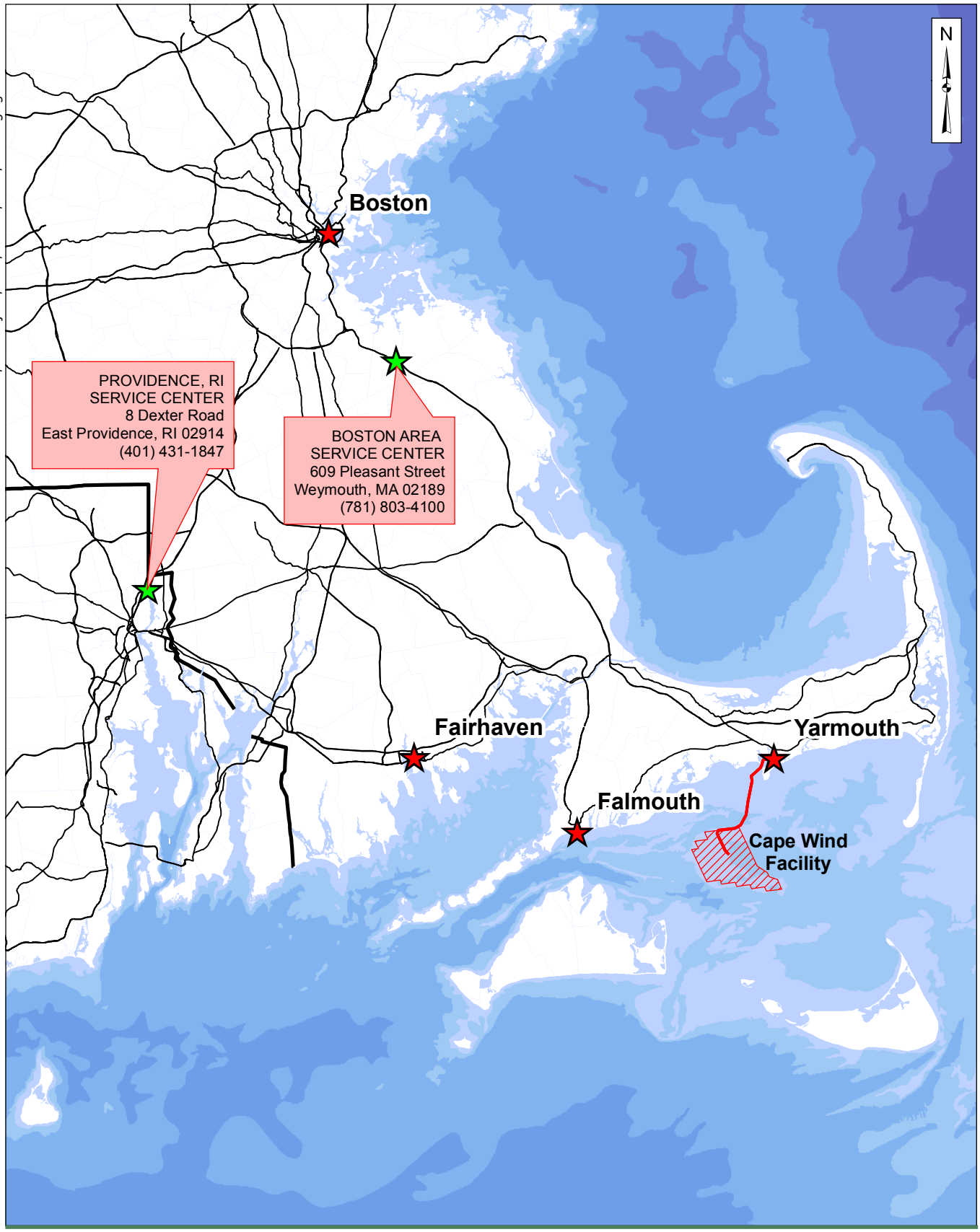

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Scale: 1" = 13 Miles
0 13 Miles

Source: 1) Base data provided by MassGIS
2) ESS, Cape Wind Project Area, 2006
3) ESS, Spill Response Data, 2011

Legend

Staging Areas

Clean Harbors Service Centers

Oil Spill Response Plan
Staging Areas

Figure 14.0-1

For offshore spills, vessels will be utilized for spill response. A vessel support unit leader will be responsible for implementing a vessel routing plan for the incident and coordinating transportation on the water and between shore resources. Since most vessels will be supported by their own infrastructure, the vessel support unit may be requested to arrange fueling, dockage, maintenance and repair of vessels on a case-by-case basis.

The response techniques employed in a spill will depend on the product spilled, quantity, location, response time, weather conditions, responder capability, and availability of response equipment. Two methods have been identified for recovering oil; booms and skimming. Booms are floating barriers that can be set around a spill source to confine leaking oil, or set to prevent oil from reaching environmentally sensitive areas. Booms may also be towed between vessels to collect and concentrate spilled oil for removal by a skimmer. Skimming is a procedure that separates oil and water and removes oil from the surface of the water. The efficiency depends on the thickness of the slick, its viscosity, sea conditions, and storage capabilities. Skimmers are utilized with booms towed behind two vessels to form a "U" or a "J" shape. The oil collected by skimmers is pumped to a vessel, a temporary storage bladder, or a barge for further separation, storage, and disposal. (Rhode Island and Southeastern Massachusetts Area Contingency Plan, December 2010).

15.0 OIL AND DEBRIS REMOVAL PROCEDURES

15.1 Offshore Procedures

A list of available response equipment is provided in Appendix E. A summary of response and containment techniques for offshore spill response are described in Table 15.1-1. Cape Wind and Clean Harbors will develop an incident-specific spill response plan using appropriate containment and disposal techniques for the scale and nature of a specific spill incident. All efforts will be made to contain and clean up the spill offshore, before any shoreline impacts occur.

Table 15.1-1 Response and Containment for Offshore Procedures

Protection Technique	Purpose / Use	Advantages	Disadvantages
Free-oil recovery	Free-oil recovery or skimming may be utilized in the offshore and nearshore environment depending on spill location and trajectory. Deploy free-oil recovery strike teams upwind and up current. Use aerial surveillance to locate incoming oil slicks.	Can be used in a large area of open waters	Responders must have experience with on-water free-oil recovery.
Exclusive Booming	Used across small bays, harbor entrances, inlets, river or creek mouths where currents are less than 1 knot and breaking waves are less than 25cm in height.	Can be used in small areas; avoid oil entering a marina	Cannot be used for currents greater than 1 knot and waves greater than 25 cm; must be tended throughout the tide

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Protection Technique	Purpose / Use	Advantages	Disadvantages
Diversion Booming	Used on inland streams where currents are greater than 1 knot; may be used across small bays, harbor entrances, inlets, river or creek mouths where currents exceed 1 knot and breaking waves are less than 25 cm, and on straight coastline areas to protect specific sites, where breaking waves are less than 25cm.	Minor disturbance to substrate at shoreline anchor points; can be used where currents are greater than 1 knot and waves exceed 25 cm.	Causes heavy shoreline oil contamination on downstream end.
Containment Booming	Used on open water to surround an approaching oil slick to protect the shoreline area where surf is present and oil slick does not cover a large area; also on inland waters where current are less than 1 knot.	Minor disturbance to substrate on in land anchor point.	No effect on open water
Sorbent Booming	Used on quiet water with minor oil contamination	Minor disturbance to shoreline at anchor points.	Cannot be used in rough waters

Oil and debris removal procedures require the deployment of containment boom, skimming devises, vacuum and fluid transfer equipment in conjunction with adequately sized oil contaminated substance storage plus marine vessels suitable for safe navigation of impacted area.

Upon notification, oil spill response equipment and trained personnel will mobilize to the release area utilizing marine vessels ranging in size from 19′ to 136′ in length. Vessels deploy with a variety of resources in support of containment booming, skimming and decontamination operations.

Containment boom is primarily utilized for oil deflection, collection and protection purposes. Containment boom is subject to marine currents, height and frequency of waves plus direction and velocity of the wind.

Containment boom is anchored in place preventing further oil and debris migration where deemed appropriate. Ancillary equipment, applicable for this operation, is typically (but not limited to) anchors and rope with tripping buoys.

Migrating oil and debris subject to wind and current requires containment boom paired with two or three maneuvering vessels employing the U, V or J containment techniques in conjunction with skimming operations to capture floating oil.

Recovery of oil is conducted by employing various types of skimming operations ranging from self propelled, dynamic or stationary methods. Efficient skimming and Effective Daily Recovery Capacity is dependant upon the type, thickness and viscosity of oil, presence of trash and debris, degree of emulsification, sea and weather conditions, plus vacuum and vessel storage capacity. The primary skimming device employed during an off shore spill would be the Oleophilic type or drum, brush, disk

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or belt skimmer. Oil and debris recovery is achieved through the use of mechanical, air and hydraulic vacuum systems and various types of transfer pumps collecting oil, water and debris in collection devices ranging from vacuum trucks and frac tanks secured to vessel decks or below deck vessel designed storage.

Collection of oil contaminated debris too large for boom and skimming strategies is manually or mechanically retrieved by maneuvering the vessel in place. Once on deck, debris is consolidated amongst like items i.e. recyclables, spent sorbents or household/industrial trash is then bagged and or containerized in DOT approved shipping containers for future on shore consolidation, transportation and recycling or disposal.

Decontamination of contaminated non-organic surfaces is achieved by application of approved cleaner, wiping or hot/cold power washing of impacted surfaces until clean. Workers utilize appropriate personal protective equipment and health and safety practices to ensure federal, state and local compliance.

15.2 Shallow Water Procedures

A list of available response equipment is provided in Appendix E. A summary of response and containment techniques for shallow waters and shoreline spill response are described in Table 15.2-1. Cape Wind and Clean Harbors will develop an incident-specific spill response plan using appropriate containment and disposal techniques for the scale and nature of a specific spill incident. All efforts will be made to contain and clean up the spill offshore, before any shoreline impacts occur.

Table 15.2-1 Response and Containment for Shallow Waters and Shoreline Procedures

Protection Technique	Purpose / Use	Advantages	Disadvantages
Beach Berms	Used on sandy, low energy beaches to protect the upper intertidal area from oil contamination.	Useful for areas that are exposed to the air at low tide and underwater at high tide	Disturbs upper 60cm of midintertidal zone
Berms and Dams	Used on shallow streams or rivers where booms are not available or cannot be deployed, or where dams are part of the hydrological control system.	May be used when booms cannot be used or not available	Disturbs stream or river bottom, adds suspended sediments to water.
Culvert Blocking	Flow of oil is excluded through a culvert leading into a river or a bay area. An inflatable culvert is used to plug in the culvert. If the inflatable plug is not available, plywood or similar sheeting material may be used with stacked sandbags against the plywood sheeting	Useful for culverts	More useful to block the culvert on the ebb tide; must be monitored frequently to ensure integrity.

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Protection Technique	Purpose / Use	Advantages	Disadvantages
Exclusion Booming	Flow of oil may be excluded from entering streams and intertidal areas; an earthen berm, an underflow dam, or a small length of boom may be deployed across the stream mouth	May be used at high tide; restrict a pollutant from contaminating an area	Must be tended throughout the tide

Shallow water procedures employ the same booming and skimming strategies as "Off Shore Procedures" only with smaller vessel resources and spill recovery equipment. Additionally, shore line or coastal clean up work involves a significantly larger labor work force and variety of additional mechanical equipment necessary for oil collection and remediation of impacted areas.

Establishing staging areas in close proximity to shore line impacted sites are critical to oil collection and site remediation efficiency. Topography plays an integral role in the success of day to day operations limiting access of personnel and resources into contaminated areas. Non-accessible shore line areas can be reached via landing craft vessels or an alternate route could be constructed by use of tracking pads to facilitate wheeled equipment movement.

Beach and sand related shore line cleanup requires the use of many personnel wearing appropriate personal protective equipment with shovels, rakes, sorbent boom and pads, pom-poms plus clear bags to assist in the waste consolidation process. Mechanical devices such as 4x4 utility vehicles, skid steers, backhoes, bucket loaders, tracked excavators and articulated dump trucks, tractors with beach cleaning trailers or people movers and vacuum units could be deployed as necessary to combat continued threat of oil washing ashore.

Heavily vegetated shoreline requires non-evasive methods. This is accomplished by limiting the amount of mechanical equipment and increasing the labor force in those areas while flushing impacted areas with large amounts of fresh water and trimming oil contaminated vegetation without removal of subsequent root system to prevent erosion. Contaminated organic matter and soil is bagged then carried out and consolidated with other like waste streams at the closest staging area. Rinsate generated during flushing operations is collected in the same manner as booming and skimming procedures identified in Section 15.1.

Rocky shore line clean up is somewhat more challenging and requires much more diligence by workers to prevent injury due to slips trips and falls. Additionally, changes in tide could adversely affect clean up operations. Oil penetrating into rock fractures and burrows created by animals are just two of the many challenges associated with rocky coastline clean up. Techniques include flushing with high volume low pressure water to release oil trapped between or under boulders. Use of rags, pom-poms, absorbent boom and pads with degreasing cleaners are the preferred choice. Aggressive methods like hot and or cold water pressure washing of non-porous surfaces may be necessary depending upon how much oil adhesion is applied to contaminated rocks. Collection of waste streams during flushing operations is the same as booming and skimming procedures identified above.

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16.0 OIL AND DEBRIS DISPOSAL PROCEDURES

Collection of oil, solids and debris requires a significantly sized staging or collection area.

Bulk oil and water captured by smaller vessel skimming operations is consolidated into larger capacity vessels with increased below deck capabilities or multiple frac tanks secured on deck of similar type vessels. Once docked, the oil water mixture is either transferred from vessel into transport tankers and delivered to one of Clean Harbors nearby permitted disposal facilities or transferred directly into a temporary collection area comprised of frac tanks or modular bulk containment resources for potential decanting operations if volume of waste is too high for sustained facility processing.

Decanting is the process of draining off recovered water from portable containers to increase the available storage capacity of recovered oil. When decanting is conducted properly, most of the oil can be removed from the water. In accordance with 33 CFR 153.301 and 40 CFR 300, decanting is considered an "incidental discharge" and does not require an additional permit or constitute a prohibited discharge. However, additional authority approval is necessary prior to decanting during oil recovery. Should decanting be deemed necessary during response operation, Clean Harbors (on behalf of Cape Wind) will request the authority to conduct such operations.

Solid wastes i.e. bagged oil contaminated soil, debris, trash, spent sorbents and personal protective equipment generated on site during shoreline clean up or off shore vessel recovery is comingled with like waste streams then bulked into multiple roll off containers for transport and disposal to permitted facility.

Should volume of oil contaminated soil increase such that it warrants separation from Solid Wastes identified above; separate roll off containers would be identified specifically for contaminated soil and both waste steams would be transported independently.

Non contaminated waste generated during clean up activities will be consolidated into staging area refuse identified roll off containers and managed separately from contaminated waste steams.

Clean Harbors is responsible for collecting and transporting any recovered materials obtained during the spill response. Clean Harbors is a permitted hazardous waste transporter capable of transporting materials both off-shore and on-shore.

Any material that is gathered during the spill response activities will be properly stored and disposed in accordance with state and federal waste regulations. The quantities of waste materials are expected to be minimal, and designated disposal locations have been identified. These facilities are authorized to accept the types of materials that are anticipated for oil spill containment and recovery operations, have adequate space for recovered materials, and are provided with secondary containment.

16.1 Designated Disposal Locations

SOLID WASTE AND DEBRIS

SEMASS Facility
141 Cranberry Road
Rochester, MA 02770

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(508) 291-4400

RECOVERED OIL OR OIL/WATER MIXTURE

Clean Harbors Wouburn Oil Facility
252 Salem Street
Woburn, MA 01801
(781) 935-9066

17.0 WILDLIFE REHABILITATION PROCEDURES

Rehabilitation of oiled wildlife is a complex crisis oriented process that requires experienced staff with veterinary, technical, and crisis management skills. Federal and state permit clearances are required and compliance with Occupation Health and Safety Administration regulations are needed to conduct comprehensive oiled wildlife response. The ultimate goal of wildlife rehabilitation is to care for injured animals and rehabilitate them so they can return to the wild. Much of the information provided in the following sections was obtained from the U.S. Fish and Wildlife *Service's Best Practices for Migratory Bird Care During Oil Spill Response* (2003).

17.1 Migratory Birds

In the event of an oil spill, trust responsibilities for migratory birds and their habitats are given to the USFWS through the Comprehensive Environmental Response, Compensation and Liability Act, Clean Water Act, National Oil and Hazardous Substances Pollution Contingency Plan, Migratory Bird Treat Act, and Endangered Species Act. Massachusetts would become part of the response team if a spill that occurs at the ESP in federal waters expands to affect state waters. The Commonwealth of Massachusetts also has trust responsibilities for threatened and endangered species within state waters. The federal and state OSC are the only entities that have authority over bird-related response decisions. The OSC will consult with the USFWS and DFW when migratory birds may be impacted to determine appropriate response measures. For incidents that could significantly impact trust resources such as Roseate Terns or Piping Plovers, the OSC may request that an agency representative become part of the Incident Command.

A team of specialists from USFWS and MDFW will be assembled to make response decisions in consultation with the federal and/or state OSC. All bird-related response activities will be detailed in the Incident Action Plan (IAP), which is prepared with spill specific details and is therefore not part of the OSRP. Depending on the nature and extent of the spill, such activities may include wildlife reconnaissance, carcass recovery, hazing, wild bird capture and transport, safety and communications, and rehabilitation and release. The Incident Command must approve all migratory bird response actions.

If warranted, Tri-state Bird Rescue will be brought in for migratory bird oil spill response. Tri-state Bird Rescue and Research is staffed 24/7, 365 days a year and can be contacted at 800-710-0695 or 800 710-0696. Tri-State will communicate with USFWS, MDFW and OSC to discuss and coordinate their role in the response. Two to five key members of the Tri-state Brid Rescue Wildlife Response Team (Tri-State Team) will be deployed to the SROC as soon as possible, following notification to

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work with USFWS and MDFW to help determine priorities for wildlife response. The Tri-Sate Team will work with USFWS and MDFW to discuss methods of preventing contamination of wildlife at risk, safety hazard, hazing, baiting, retrieval equipment and methods for handling wildlife.

Oiled Bird Capture

Only authorized individuals and trained wildlife rehabilitators with appropriate licenses in accordance with 50 CFR 21.31 will be permitted to capture oiled birds. The authorization to capture oiled birds will be obtained from the Incident Command. Bird capture will be initiated as early as possible in the spill response in order to increase the survival rates of oiled birds, if deemed necessary.

Reconaissance surveys by boat and/or overflights will be conducted to locate oiled birds. Important bird colonies, breeding areas and nesting areas will be searched for oiled birds in case a bird leaves a contaminated area and returns to their breeding or nesting colony.

A variety of bird capture methods are available; however, the primary goal of each method is to capture the bird as quickly as possible with the least amount of disturbance and noise. The most common capture techniques include the use of dip nets, net guns, and mist nets. Other techniques have been developed to target specific species groups (e.g. the use of foot traps for small shorebirds). Spotlights may be used at night to capture birds that are especially skittish and difficult to approach during the day. The capture method will be selected based on the time-of-year, tides, current weather conditions and species targeted. Bird capture will also seek to minimize safety risk to wildlife rehabilitators. The priority will be to first capture oiled birds that have beached themselves and then approach oiled birds on the water by boat.

After capture, birds will be handled and transported to the wildlife rehabilitation facility in a manner that minimizes stress. Only authorized wildlife rehabilitors will be permitted to handle oiled birds. Birds will never be handled with bare hands; instead, lightweight gloves, sheets or towels will be used. Different handling grips can be used to maintain control over a bird's head and beak so the bird does not injure itself or the handler. The appropriate handling technique will be determined based on the size and species of the bird. If necessary, birds will be stabilized in the field by clearing the mouth, nostrils and eyes, regulating the bird's temperature and providing treatment for dehydration.

Appropriate transport containers with suitable ventilation such as cardboard boxes, plastic kennels or shipping kennels will be used to transport birds to the rehabilitation center. The transport container should provide suitable room for the bird, a secure lid and should be lined with oil-aborbent towels. The container will be labeled with pertinent information on the bird species, date/time of capture and notes on any injuries.

Bird Rehabilition Facility

A suitable facility for wildlife rehabilitation that meets the guidelines specified in the Rhode Island and Southeastern Massachusetts Area Contingency Plan will be identified. The facility must be large enough so that it can be easily reconfigured to accomadate the needs of the wildlife rehabilitation process. The facility must have appropriate hot and cold water capacity, electrical and lighting

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systems, HVAC systems, communications and supplies. A local facility for bird rehabilitation that meets these requirements is the Cape Wildlife Center in Barnstable, Massachusetts, which is a licensed wildlife rehabilitators and has trained volunteers for bird rescue.

Table 17.1-1 Wildlife Rehabilitators

Organization	Contact Information	Purpose
Cape Wildlife Center 4011 Main Street Barnstable, MA 02637 In partnership with The Fund for Animals	508-362-0111 (tel) 508-362-0268 (fax) capewildlifeinfo@fundforanimals.org Theresa Barbo (Director)	Provides emergency care and wildlife rehabilitation. Full-time veterinarian licensed wildlife rehabilitators volunteers.

Operations control/logistics, medical husbandry and cleaning areas will be established within the wildlife rehabilitation facility. The facility will be stocked with veterinarian supplies, bird husbandry supplies, disinfecting/cleaning supplies and other supplies needed for bird care and rehabilitation. Established bird areas within the facility will include bird intake, holding, wash/rinse, drying, pools/outdoor caging, food preparation, hospital/isolation, morgue/necropsy and storage locations. Staff and volunteers will be supervised by qualified members of the Tri-State Team and will provide medical and rehabilitative care for the oiled birds retrieved and delivered to the wildlife rehabilitation facility. Reports will be prepared for federal and state agencies as well as the responsible party and a chain of custody will be maintained as required.

Bird Rehabilitation Procedures

Wildlife rehabilitation will only be carried out after receiving authorization from the Incident Command. A rehabilitation permit from the U.S. Fish and Wildlife Service under 50 CFR 21.31 is required prior to treating oiled birds. The goal of wildlife rehabilition is to return formerly-oiled birds back into the wild.

Volunteers and/or agency personnel will be trained, prior to initiating rehabilitation efforts. Training will include details on the extent of hazards and safety training. Those that receive training will be required to sign informed consent of release forms. Training will be conducted by authorized and licensed wildlife rehabilitators. Tri-State Bird Rescue will provide an OSHA-trained staff with supervisory and oil spill experience, including wildlife rehabilitators, wildlife veterinarians, and support staff, to manage the wildlife response. In accordance with federal regulations, a veterinarian-of-record will provide medical supervision and oversight of the wildlife rehabilitation procedures.

Operations control/logistics, medical husbandry and cleaning areas will be established within the wildlife rehabilitation facility. Staff and volunteers will be supervised by qualified members of the Tri-State Team and will provide medical and rehabilitative care for the oiled birds retrieved and delivered to the wildlife rehabilitation facility. Reports will be prepared for federal and state agencies as well as the responsible party and a chain of custody will be maintained as required.

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After arriving at the rehabilitation facility, oiled birds will first be evaluated and admitted. This process involves the collection of biomedical data and development of a plan to treat the bird. Blood samples will be collected at this time. The evaluation procedure will be conducted quickly to minimize additional stress and disturbance to the oiled bird. Priority for treatment will be given to those birds that are deemed to have the greatest chance of survival. However, an endangered species or a species of special concern may be given priority over resident waterfowl or an exotic species with the same or more critical condition.

After evaluation and admission, oiled birds willl be cleaned. Bird handlers will work in teams during cleaning, and continually monitor birds for signs of stress or instability. A non-toxic cleaning agent that is able to remove oil from the feathers without damaging them will be used. Typically, Dawn® dishwashing liquid is used as the cleaning agent.

Following cleaning, birds will be dried. An ambient background temperature of 90 to 95 degrees will be maintained using a pet dryer in the drying area. Heat lamps or brooders will be used to dry some species such as shorebirds. Birds will continue to be monitored during drying to check for stress and to ensure they do not overheat.

After drying, birds are transported to freshwater pools where they will be evaluated to determine whether they are fully "waterproofed". A bird will be considered waterproofed if it exhibits normal behavior, body temperature and buoyancy after 24 hours in a pool with no haul-outs.

Birds will be housed in pens that are designed to meet the needs of species being held. Housing will be used to keep any birds that need more time for recovery, or require additional treatment beyond oil removal. The housing area will be kept clean and disinfected as needed to minimize the likelihood of disease transmission and infections from spreading among birds.

Birds that have a low likelihood of recovery will be humanely euthanized in a designated euthanasia area. Euthanasia is appropriate for birds that will not be able to survive in the wild or are unsuitable for captivity. The euthanasia of birds will be conducted in consultation with the veterinarian-of-record and the U.S. Fish and Wildlife Service. Following euthanasia, necropsies may be conducted to provide information that could be valuable for treatment of oiled birds in the future.

Record-Keeping for Birds

Record collection enhances individual bird care, response evaluations, and the ability to accurately characterize the best practices for appropriate care. In-house records will be maintained at the rehabilitation facility and copies will be provided to the U.S. Fish and Wildlife Service. A final report that will include carcass chain-of-custodies and sample collection records will be sent to the USFWS at the end of rehabilitation activities.

The following scientific records will be kept as needed as described by the USFWS (2003):

- Resources-at-Risk Survey: provides information regarding the location of birds and other animals in relation to the spilled oil.

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- Oiled bird sightings: records andmaps for all reports of oiled birds.
- Field Retrieval Report: records for all birds collected in field.
- Live Bird Log.
- Dead Bird Log.
- Run tally: list of all in-house birds by species and case number.
- Daily Care Report: documents care for each bird or enclosure, including feedings, treatments, medications, normal/abnormal activities.
- End-of-Day Report: reports current and next day's work.
- Oiled Bird Examination Report: individual record summary of retrieval, medical exm, diagnostic results, samples collected (chemical, blood, and tissue), cleaning, treatment, evaluation, chain-of-custody, federal bird bands, and final disposition.
- Record of samples collected (chemical, blood, feather, and tissue).
- Lab Analyses Report: identifies all samples sent to labs; requested analyses; and lab results.
- Federal Bird Banding Report: lists all birds banded for release.
- Necropsy Report.

The following administrative reports associated with an oil spill response effort for entities such as the Incident Command System, USFWS Rehabilitation Permit Office of Migratory Bird Management, and law enforcement, among others will be prepared as needed:

- Incident Action Plan – ICS 200: Includes Site Safety and Health Plan.
- Communications Plan, Organizational Structure, and Group Assignments.
- Pollution Incident Daily Resource Report (USCG Daily Report).
- Chain-of-Custody Record: all migratory birds that die as a result of contact with exposed oil represent evidence of a potential violation of the Migratory Bird Treaty Act. As such, each bird carcass must be labeled with an Evidence Seizure Tag provided by the USFWS Division of Law Enforcement or other law enforcement agency, through the designated USFWS representative. The bird carcasses are then delivered to a central, secure, evidence storage area and a Chain-of-Custody record completed.
- Qualified Wildlife Responder Application.
- Some sample administrative record forms are provided in Appendix 6.

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17.2 Marine Mammals and Sea Turtles

Should the spill solely occur in federal waters, trust responsibilities for marine mammals would fall to the NOAA under the Marine Mammal Protection Act, the Endangered Species Act, and the National Contingency Plan. NOAA is authorized to manage and protect marine mammals during oil spills. NOAA and the USFWS share trustee resource responsibility for spill response as it pertains to sea turtles and their critical habitat, which would specifically involve clean up and rehabilitation. The MDFW is also a co-trustee for any wildlife in Massachusetts state waters or land.

If necessary, the trustees may initiate the Cape Cod Stranding Network (Cape Cod) and/or the New England Aquarium (Martha's Vineyard and Nantucket) to provide marine mammal response. The New England Aquarium and/or the Wellfleet Bay Wildlife Sanctuary would provide support for sea turtle response. Overall response to marine mammals and sea turtles would rely upon the local stranding programs, but may call upon the national network of responders to assist as needed. Local marine mammals and sea turtle responders are listed in Table 17.2-1 below and marine mammal and sea turtle rehabilitation facilities are listed in table 17.2-2. below. The information provided in the following sections was compiled from NOAA's *Marine Mammal Oil Spill Response Guidelines* (NOAA, 2006).

Oiled Marine Mammal and Sea Turtle Capture

Marine mammal and sea tutle capture will be conducted after receiving authorization from the Incident Command. Capture will be carried out in coordination with the USFWS and NOAA after recieiving necessary permits.

Reconnaissance for oiled marine mammals and sea turtles will be conducted based on the known extent of the spill. Beaches will be searched for any stranded marine mammals or sea turtles.

Because capture is stressful to marine wildife and can have negative consequences, capture will be limited to oiled marine mammals and sea turtles that have beached themselves. Capture will not be initiated on free-swimming marine mammals or turtles, even if they are swimming near the oil spill area. Capture will only be peformed by authorized individuals with appropriate training for capturing and transporting marine mammals.

The capture method will be selected based on the target species and site specific conditions. Long-handled dip nets, floating bag nets, and a net gun have all been used for capture. Depending on the species involved, aquatic captures may use tangle nets, float nets, or Wilson traps

After capture, the animal will be stabilized if necessary. Stabilization involves assessment of body temperature, general condition and dehydration status. If necessary, oil is removed from the eyes and nares and an electrolyte solution is provided at this time.

After capture and field stabilization, the oiled animal should be placed in a well-ventilated area on a stretcher or foam or in a transport box, airline kennel, or cage for transport. Animals should be staged in a quiet, sheltered area or moved directly into the transport vehicle. The cage should be large enough to allow the animal to lie down in a comfortable position. Animals should be monitored

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during transport and treated as necessary for hyper- or hypo-thermia. Sedation of animals is not recommended during transport to the rehabilitation center.

Marine Mammal and Sea Turtle Rehabilitation Center

The list of of marine mammal and sea turtle rehabilitators presented in Table 17.2-1 and 17.2-2 will be contacted to provide rehabilition services and a rehabilitation center on an as needed basis. The size of the spill and number of animals impacted by the spill will dictate the most appropriate facility to use for rehabilitation. The facility will include the following elements: intake/physical exam/evidence processing area; a veterinary hospital with isolation capabilities; indoor wildlife housing/caging areas; food storage and preparation facilities; animal washing and rinsing areas; drying areas; outdoor pool and pen areas; pathology facilities; volunteer training and eating areas (with restrooms); administrative offices with multiple phone/fax lines and conference space; storage; and access to a large parking area. The facility will have adequate ventilation, areas where precise environmental controls can be achieved, quarantine to isolate sick animals, adequate water supply and waste water stream to dispose to animal wastes.

Table 17.2-1 Marine Mammal and Sea Turtle Responders

Organization	Contact Information	Purpose
Cape Cod Stranding Network 290 Summer Street Yarmouth Port, MA 02675 Affiliated with IFAW	508-743-9548 (24hr Stranding Hotline) 508-744-2271 508-744-2099 (fax)	Responds to live and dead stranded marine mammals (whales, dolphins, porpoises, and seals) on the shores of Cape Cod & SE Mass. Plan and conduct relocation and release procedures; locate rehab facilities for appropriate candidates, and aid in the transport of animals to facilities. 5 FT staff ~300 trained volunteers Equipment including 2 trailers
New England Aquarium Marine Animal Rescue Program Central Wharf Boston, MA 02110-3309	617-973-5247 (Stranding Hotline) 617-973-5200	MA – Boston and South Stranding Response & Rehabilitation Cetaceans, Pinnipeds & Sea Turtles
Wellfleet Bay Wildlife Sanctuary Massachusetts Audubon 291 State Highway, Route 6 South Wellfleet, MA 02663	508-349-2615 wellfleet@massaudubon.org	MA – Cape Cod Stranding Response Sea Turtles

Table 17.2-2 Marine Mammal and Sea Turtle Wildlife Rehabilitators

Organization	Contact Information	Purpose

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National Marine Life Center 120 Main Street P.O. Box 269 Buzzards Bay, MA 02532-0269	508-743-9888 508-759-5477 (fax) nmlc@nmlc.org Kathy Zagzebski Executive Director	Rehabilitation and release hospital for the treatment of stranded sea turtles and seals, with future plans to expand to treat dolphins, porpoises, and small whales. 3FT Staff 2 Veterinarians ~36 Volunteers
New England Aquarium Marine Animal Rescue Program Central Wharf Boston, MA 02110-3309	617-973-5200	Rehabilitation Cetaceans, Pinnipeds & Sea Turtles

Marine Mammal and Sea Turtle Rehabilitation Procedures

After arriving at the rehabilitation center, the marine mammal or sea turtle will go through a standard intake process. The inake process will begin with an examination to conduct an initial health assessment and to determine whether there are any life-threatening injuries that need immediate attention. The examination will include physical exam (weight/length), flipper inspection, blood sample collection, oil sample collection and photograph, Animals will be sexed, aged and tagged for identification. Animals will be monitored throughout the entire rehabilitation process to watch for stress or other instabilities.

After the initial intake, animals will be washed in a cleaning area that has been designed to accommodate the variety of animals that will need treatment. In general, animals will be washed in teams of two to three. Seals may require teams of four or five persons because the density of their fur requires much greater effort. Large animals, aggressive animals, seals may require sedation and veterinary assistance for washing and cleaning. The dishwasing soap Dawn® is recommended for cleaning as it is non-toxic and has been shown to remove oil from the fur. The washing technique will depend on the animal. Marine mammals with denser fur may be washed with a slightly different technique than those with less dense fur. Sea turtles may be washed using different techniqes than marine mammals. Further information on washing techniques is provided in NOAA's Marine Mammal Oil Spill Response Guidelines (2006).

After being washed, marine mammals and sea turtles will continue to be monitored for signs of stress. It generally takes a minimum of seven to ten days for marine mammals fur to recover its water repellency. Any marine mammals or sea turtles that do not appear to be able to recover will be humanely euthanized in consultation with a veterinarian and NOAA. Euthanasia is appropriate for oiled animals with injuries that will render it unable to survive in the wild or unsuitable for captivity.

Necropsies may be performed concurrent with response activities to identify cause of death in order to differentiate between a natural versus pollution related mortality. This information can be valuable for developing future oil response protocols. Necropsies will be supervised by the veterinarian-of-record in consultation with NOAA.

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Record-keeping for Marine Mammals and Sea Turtles

Record collection enhances individual marine wildlife care, response evaluations, and the ability to accurately characterize the best practices for appropriate care. In-house records will be maintained at the rehabilitation facility and copies will be provided to NOAA when appropriate. A final report that will include carcass chain-of-custodies and sample collection records will be sent to NOAA at the end of rehabilitation activities.

Records collected will include:

- Field logbook - All pertinent information on field activities and sampling efforts should be recorded in a field logbook
- Animal logs - At admittance to a wildlife care and processing facility, the animal must be logged into appropriate databases
- Sample collection records
- Intake Forms – Collected during initial examination and arrival at facility
- Chain-of-custody forms
- Tissue-sampling records

17.3. Response Activities in Federal and Massachusetts-listed Roseate Tern and Piping Plover Habitats

In a spill situation, response and rehabilitation permit needs for endangered and threatened species will be determined by the USFWS on an emergency case-by-case basis administered under 50 CFR 17.21, 22, 31, and 32. Specific information with regard to obtaining a federal permit for endangered species rehabilitation will be obtained through the USFWS Region 5 Ecological Services Operations at Hadley, Massachusetts. USFWS personnel will handle all federal permit activities through the Ecological Services Field Office responsible for the area where the spill occurs. The Field Office will coordinate Migratory Bird and Endangered Species permit needs with appropriate Regional Office staff. Permitting for rehabilitation of Massachusetts-listed species would be through the Massachusetts Natural Heritage and Endangered Species Program and MDFW in Westborough, Massachusetts.

18.0 DISPERSANT USE PLAN

Use of dispersants in Nantucket Sound are not pre-approved and therefore will not be used by Cape Wind or its contractors.

19.0 IN SITU BURNING PLAN

The anticipated spill product is not conducive to in situ burning and therefore this technique will not implemented by Cape Wind or its contractors.

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20.0 ALTERNATIVE CHEMICAL AND BIOLOGICAL RESPONSE STRATEGIES

Cape Wind and its contractors do not anticipate using alternative chemcial and biological response strategies

21.0 DOCUMENTATION

Cape Wind will utilize the standard forms and supporting documents developed as part of the Incident Command System (ICS). The ICS documentation will be used to convey directions for the accomplishment of the objectives and distributing information. Table 21.0-1 provides a list and description of the standard ICS forms that will be used by Cape Wind, which are provided in Appendix G.

Table 21.0-1 Summary of ICS Reporting Forms

Standard Form Title	Description
Incident Briefing ICS 201	Provides the Incident Command/Unified Command and General Staffs with basic information regarding the incident situation and the resources allocated to the incident. This form also serves as a permanent record of the initial response to the incident.
Incident Objectives ICS 202	Describes the basic strategy and objectives for use during each operational period.
Organization Assignment List ICS 203	Provides information on the response organization and personnel staffing.
Field Assignment ICS 204	Used to inform personnel of assignments. After Incident Command/Unified Command approve the objectives, staff members receive the assignment information contained in this form.
Incident Communications Plan ICS 205	Provides, in one location, information on the assignments for all communications equipment for each operational period. The plan is a summary of information. Information from the Incident Communications Plan on frequency assignments can be placed on the appropriate Assignment form (ICS Form 204).
Medical Plan ICS 206	Provides information on incident medical aid stations, transportation services, hospitals, and medical emergency procedures.
Incident Status Summary ICS 209	Summarizes incident information for staff members and external parties, and provides information to the Public Information Officer for preparation of media releases.
Check-In/Out List ICS 211	Used to check in personnel and equipment arriving at or departing from the incident. Check-in/out consists of reporting specific information that is recorded on the form.
General Message ICS 213	Used by: ▪ Incident dispatchers to record incoming messages that cannot be orally transmitted to the intended recipients. ▪ EOC and other incident personnel to transmit messages

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Standard Form Title	Description
	via radio or telephone to the addressee. ▪ Incident personnel to send any message or notification that requires hard-copy delivery to other incident personnel.
Unit Log ICS 214	Provides a record of unit activities. Unit Logs can provide a basic reference from which to extract information for inclusion in any after-action report.
Operational Planning Worksheet ICS 215	Documents decisions made concerning resource needs for the next operational period. The Planning Section uses this Worksheet to complete Assignment Lists, and the Logistics Section uses it for ordering resources for the incident. This form may be used as a source document for updating resource information on other ICS forms such as the ICS 209.
Incident Action Plan Safety Analysis ICS 215A	Communicates to the Operations and Planning Section Chiefs safety and health issues identified by the Safety Officer.
Air Operations Summary ICS 220	Provides information on air operations including the number, type, location, and specific assignments of helicopters and fixed-wing aircraft.
General Plan ICS 226	Addresses long-term objectives approved by Incident Command/ Unified Command. These objectives are often expressed as milestones (i.e., timeframes for the completion of all and/or portions of incident response operations). A General Plan should identify the major tasks to be carried out through to the end of emergency response operations, the duration of the tasks, and the major equipment and personnel resources needed to accomplish the tasks within the specified duration.

22.0 PREVENTION MEASURES FOR FACILITIES LOCATED IN STATE WATERS

All oil bearing components of the Cape Wind Facility are located in federal water. The spill response methods and procedures described in Sections 13 through 17 may be required in state waters if the oil plume extends beyond the limit of federal water.

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Appendix A

Facility Information

APPENDIX A
Facility Information

This Oil Spill Response Plan (OSRP) addresses the entirety of the Cape Wind Energy Facility in Nantucket Sound under the jurisdication of the Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEMRE). The facility includes 130 Wind Turbine Generators (WTG) and an Electric Service Platform (ESP). A Location Plat is provided below to illustrate the geographic area of the facility. Table 1 provides detailed information for each facility component (WTGs & ESP). The distance to shore measurement was made to the nearest point of land.

According to the Rating system for potential worst case discharge the Cape Wind Facility is Rated A (Volume 0 -1,000 barrells).

Note that in Appendix A of NTL06-G21 "Contents of a Regional or Sub-regional Oil Spill Response Plan (OSRP)," BOEMRE requires owners and operators to provide information about their facilities in four different tables (Tables 1 to 4). All applicable information for the Cape Wind facility is provided in Table A-1. Although a requirement under NTL06-G21, Tables 2 through 4 are excluded from this Appendix since they are not applicable to the Cape Wind facility for the following reasons:

- Table 2 – Cape Wind will not have any oil-containing ROW pipelines
- Table 3 – Cape Wind will not have any existing production platforms or satellite structures in state waters seaward of the coastline
- Table 4 – Cape Wind will not have any oil-containing state ROW pipelines in state waters seaward of the coastline

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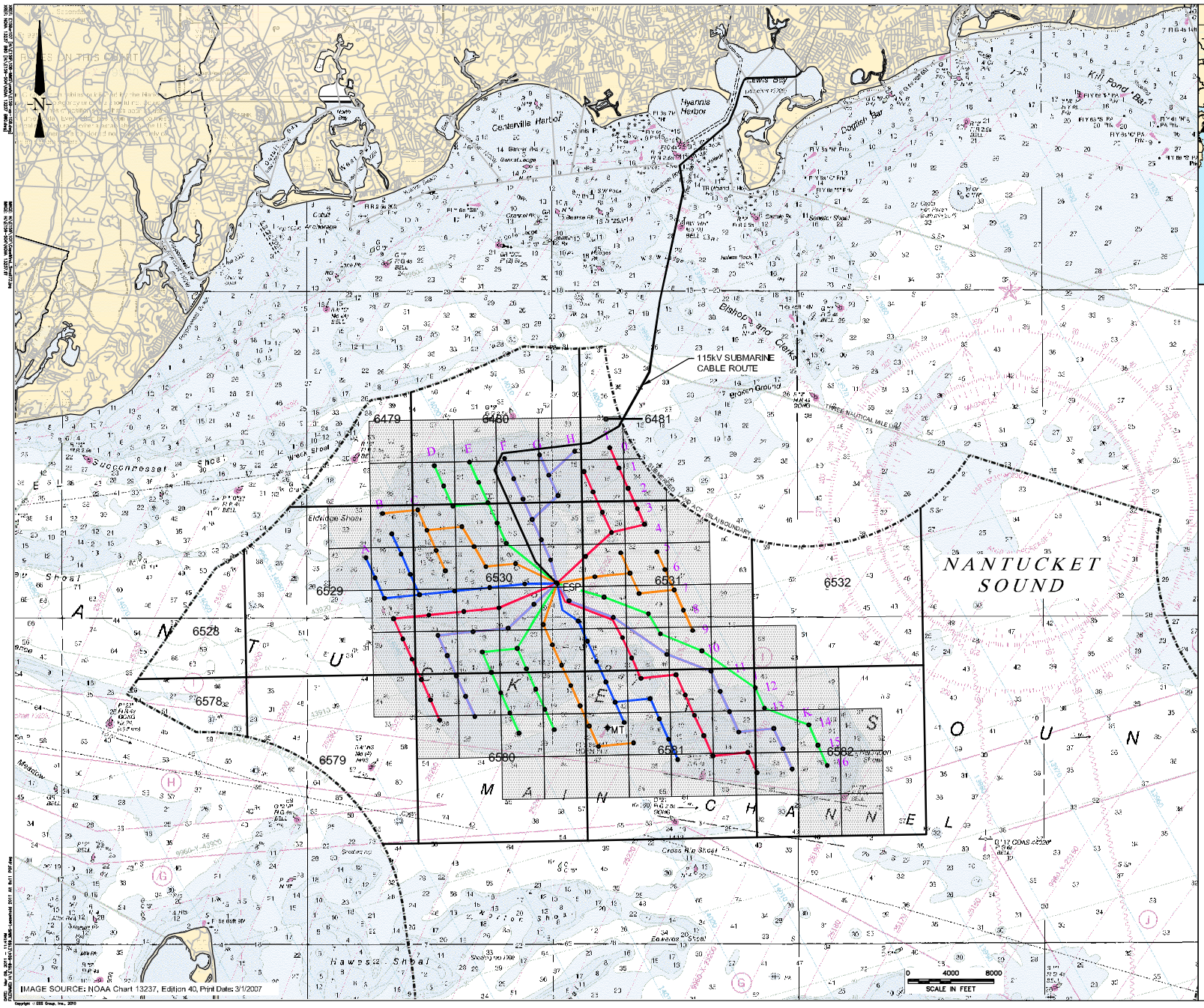

IMAGE SOURCE: NOAA Chart 13237, Edition 40, Print Date: 3/1/2007

LOCUS MAP

Scale: 1"= 12 Miles

LEGEND:

- 6580 — OCS Blocks, Official Protraction Diagram (OPD) Providence NK19-07
- Cape Wind Associates LLC Lease Area
- Submerged Land Act (SLA) Boundary
- Inner Array - 33kV Submarine Cable (Multi-colors)
- 115kV Submarine Cable
- Wind Turbine

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No.	REVISION	DATE	APP BY
DRAWN BY: KCW		CHECKED BY: PRW	
DESIGNED BY:		APPROVED BY: PRW	

Cape Wind Associates, LLC

Cape Wind Project

Location Plat

PROJECT No.: E159-904.1	DRAWING No.
DATE OF ISSUE: October 2010	1
SHEET No.: 1 of 1	
SCALE: As Shown	

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1	2	3	4	5	6	7
Area	**Block**	**Lease**	**Facility (Location) ID**	**Water Depth (MLLW feet)**	**Latitude and Longitude (deg. min. sec.)**	**Distance from Shore (miles)**
OPD Providence NK19-07	6530	OCS-A 0478	ESP[1]	28.0	41 30 31.91088 N, 70 19 54.73761 W	7.5
OPD Providence NK19-07	6529	OCS-A 0478	A4	22.9	41 30 55.77389 N, 70 23 48.35701 W	5.0
OPD Providence NK19-07	6529	OCS-A 0478	A5	25.3	41 30 37.08711 N, 70 23 37.11240 W	5.4
OPD Providence NK19-07	6529	OCS-A 0478	A6	21.8	41 30 18.40254 N, 70 23 25.83975 W	5.8
OPD Providence NK19-07	6529	OCS-A 0478	A7	25.9	41 29 59.71501 N, 70 23 14.59952 W	6.1
OPD Providence NK19-07	6529	OCS-A 0478	A8	32.1	41 29 41.02910 N, 70 23 03.33086 W	6.2
OPD Providence NK19-07	6529	OCS-A 0478	A9	24.4	41 29 22.34190 N, 70 22 52.09290 W	6.0
OPD Providence NK19-07	6580	OCS-A 0478	A10	25.0	41 29 03.65340 N, 70 22 40.85804 W	5.8
OPD Providence NK19-07	6580	OCS-A 0478	A11	27.2	41 28 44.96457 N, 70 22 29.62366 W	5.6
OPD Providence NK19-07	6580	OCS-A 0478	A12	30.2	41 28 26.27541 N, 70 22 18.39108 W	5.5
OPD Providence NK19-07	6529	OCS-A 0478	B2	28.7	41 31 36.41158 N, 70 23 27.96360 W	4.8
OPD Providence NK19-07	6529	OCS-A 0478	B3	19.8	41 31 17.72429 N, 70 23 16.71881 W	5.1
OPD Providence NK19-07	6529	OCS-A 0478	B4	14.1	41 30 59.04369 N, 70 23 05.37957 W	5.5
OPD Providence NK19-07	6529	OCS-A 0478	B5	13.7	41 30 40.36346 N, 70 22 54.04306 W	5.8
OPD Providence NK19-07	6530	OCS-A 0478	B6	16.1	41 30 21.66924 N, 70 22 42.87661 W	6.2
OPD Providence NK19-07	6530	OCS-A 0478	B7	18.0	41 30 02.98152 N, 70 22 31.63176 W	6.5
OPD Providence NK19-07	6530	OCS-A 0478	B8	23.2	41 29 44.29349 N, 70 22 20.38870 W	6.6
OPD Providence NK19-07	6530	OCS-A 0478	B9	22.2	41 29 25.60414 N, 70 22 09.15401 W	6.4

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Area	**Block**	**Lease**	**Facility (Location) ID**	**Water Depth (MLLW feet)**	**Latitude and Longitude (deg. min. sec.)**	**Distance from Shore (miles)**
OPD Providence NK19-07	6580	OCS-A 0478	B10	22.3	41 29 06.91448 N, 70 21 57.92242 W	6.2
OPD Providence NK19-07	6580	OCS-A 0478	B11	25.0	41 28 48.22449 N, 70 21 46.69130 W	6.1
OPD Providence NK19-07	6580	OCS-A 0478	B12	28.0	41 28 29.53517 N, 70 21 35.46329 W	6.0
OPD Providence NK19-07	6530	OCS-A 0478	C2	13.3	41 31 39.68764 N, 70 22 44.86759 W	5.2
OPD Providence NK19-07	6530	OCS-A 0478	C3	15.4	41 31 20.99325 N, 70 22 33.71482 W	5.6
OPD Providence NK19-07	6530	OCS-A 0478	C4	15.5	41 31 02.30340 N, 70 22 22.48232 W	5.9
OPD Providence NK19-07	6530	OCS-A 0478	C5	11.9	41 30 43.62200 N, 70 22 11.14907 W	6.3
OPD Providence NK19-07	6530	OCS-A 0478	C6	14.1	41 30 24.92663 N, 70 21 59.98588 W	6.6
OPD Providence NK19-07	6530	OCS-A 0478	C7	18.0	41 30 06.23776 N, 70 21 48.74430 W	7.0
OPD Providence NK19-07	6530	OCS-A 0478	C8	21.7	41 29 47.54856 N, 70 21 37.50450 W	7.0
OPD Providence NK19-07	6530	OCS-A 0478	C9	22.9	41 29 28.85611 N, 70 21 26.29541 W	6.9
OPD Providence NK19-07	6530	OCS-A 0478	C10	19.9	41 29 10.16530 N, 70 21 15.07364 W	6.7
OPD Providence NK19-07	6580	OCS-A 0478	C11	27.2	41 28 51.47318 N, 70 21 03.85367 W	6.6
OPD Providence NK19-07	6580	OCS-A 0478	C12	28.9	41 28 32.78172 N, 70 20 52.63548 W	6.5
OPD Providence NK19-07	6580	OCS-A 0478	C13	41.5	41 28 14.08896 N, 70 20 41.42697 W	6.5
OPD Providence NK19-07	6480	OCS-A 0478	D0	21.9	41 32 20.32366 N, 70 22 24.44582 W	4.8
OPD Providence NK19-07	6480	OCS-A 0478	D1	21.9	41 32 01.63460 N, 70 22 13.20332 W	5.2
OPD Providence NK19-07	6530	OCS-A 0478	D2	12.7	41 31 42.94522 N, 70 22 01.96262 W	5.6
OPD Providence NK19-07	6530	OCS-A 0478	D3	14.5	41 31 24.24969 N, 70 21 50.81312 W	6.0

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Area	**Block**	**Lease**	**Facility (Location) ID**	**Water Depth (MLLW feet)**	**Latitude and Longitude (deg. min. sec.)**	**Distance from Shore (miles)**
OPD Providence NK19-07	6530	OCS-A 0478	D4	14.4	41 31 05.82707 N, 70 21 36.04193 W	6.4
OPD Providence NK19-07	6530	OCS-A 0478	D5	18.5	41 30 47.38255 N, 70 21 21.57281 W	6.8
OPD Providence NK19-07	6530	OCS-A 0478	D6	17.7	41 30 28.18056 N, 70 21 17.07951 W	7.1
OPD Providence NK19-07	6530	OCS-A 0478	D7	8.9	41 30 09.49538 N, 70 21 05.77414 W	7.4
OPD Providence NK19-07	6530	OCS-A 0478	D8	23.2	41 29 50.79921 N, 70 20 54.61910 W	7.5
OPD Providence NK19-07	6530	OCS-A 0478	D9	21.1	41 29 32.10172 N, 70 20 43.46453 W	7.4
OPD Providence NK19-07	6530	OCS-A 0478	D10	21.2	41 29 13.40975 N, 70 20 32.24602 W	7.2
OPD Providence NK19-07	6580	OCS-A 0478	D11	30.3	41 28 54.71647 N, 70 20 21.02931 W	7.2
OPD Providence NK19-07	6580	OCS-A 0478	D12	24.6	41 28 36.02386 N, 70 20 09.81438 W	7.1
OPD Providence NK19-07	6580	OCS-A 0478	D13	35.3	41 28 17.33383 N, 70 19 58.55788 W	7.0
OPD Providence NK19-07	6480	OCS-A 0478	E0	18.6	41 32 23.57913 N, 70 21 41.53312 W	4.9
OPD Providence NK19-07	6480	OCS-A 0478	E1	22.2	41 32 04.88891 N, 70 21 30.29389 W	5.3
OPD Providence NK19-07	6480	OCS-A 0478	E2	22.5	41 31 46.19837 N, 70 21 19.05646 W	5.7
OPD Providence NK19-07	6530	OCS-A 0478	E3	21.9	41 31 27.50750 N, 70 21 07.82212 W	6.1
OPD Providence NK19-07	6530	OCS-A 0478	E4	22.4	41 31 08.81631 N, 70 20 56.58827 W	6.5
OPD Providence NK19-07	6530	OCS-A 0478	E5	22.6	41 30 50.12578 N, 70 20 45.35752 W	6.9
OPD Providence NK19-07	6530	OCS-A 0478	E6	22.7	41 30 31.42908 N, 70 20 34.18640 W	7.3
OPD Providence NK19-07	6530	OCS-A 0478	E7	24.1	41 30 12.73692 N, 70 20 22.95791 W	7.7
OPD Providence NK19-07	6530	OCS-A 0478	E8	13.1	41 29 54.05025 N, 70 20 11.65892 W	8.0

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Area	**Block**	**Lease**	**Facility (Location) ID**	**Water Depth (MLLW feet)**	**Latitude and Longitude (deg. min. sec.)**	**Distance from Shore (miles)**
OPD Providence NK19-07	6530	OCS-A 0478	E9	28.2	41 29 35.35260 N, 70 20 00.50761 W	7.9
OPD Providence NK19-07	6530	OCS-A 0478	E10	24.9	41 29 16.65947 N, 70 19 49.28580 W	7.8
OPD Providence NK19-07	6580	OCS-A 0478	E11	19.9	41 28 57.96601 N, 70 19 38.06447 W	7.7
OPD Providence NK19-07	6580	OCS-A 0478	E12	47.4	41 28 39.27223 N, 70 19 26.84624 W	7.6
OPD Providence NK19-07	6581	OCS-A 0478	E13	20.7	41 28 20.57067 N, 70 19 15.73175 W	7.6
OPD Providence NK19-07	6581	OCS-A 0478	E14	29.8	41 28 01.87983 N, 70 19 04.47163 W	7.6
OPD Providence NK19-07	6480	OCS-A 0478	F0	17.0	41 32 26.83015 N, 70 20 58.61924 W	5.1
OPD Providence NK19-07	6480	OCS-A 0478	F1	20.6	41 32 08.13878 N, 70 20 47.38328 W	5.5
OPD Providence NK19-07	6480	OCS-A 0478	F2	24.5	41 31 49.44708 N, 70 20 36.14910 W	5.9
OPD Providence NK19-07	6530	OCS-A 0478	F3	24.3	41 31 30.75506 N, 70 20 24.91804 W	6.3
OPD Providence NK19-07	6530	OCS-A 0478	F4	25.6	41 31 12.06271 N, 70 20 13.68744 W	6.7
OPD Providence NK19-07	6530	OCS-A 0478	F5	27.6	41 30 53.36616 N, 70 20 02.51123 W	7.0
OPD Providence NK19-07	6530	OCS-A 0478	F7	31.2	41 30 15.97986 N, 70 19 40.07476 W	7.8
OPD Providence NK19-07	6530	OCS-A 0478	F8	34.0	41 29 57.28621 N, 70 19 28.84476 W	8.2
OPD Providence NK19-07	6531	OCS-A 0478	F9	27.2	41 29 38.59323 N, 70 19 17.62310 W	8.4
OPD Providence NK19-07	6531	OCS-A 0478	F10	19.9	41 29 19.89894 N, 70 19 06.40456 W	8.3
OPD Providence NK19-07	6581	OCS-A 0478	F11	33.9	41 29 01.20141 N, 70 18 55.22328 W	8.3
OPD Providence NK19-07	6581	OCS-A 0478	F12	36.4	41 28 42.50938 N, 70 18 43.97152 W	8.2
OPD Providence NK19-07	6581	OCS-A 0478	F13	22.7	41 28 23.81027 N, 70 18 32.81614 W	8.2

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Area	**Block**	**Lease**	**Facility (Location) ID**	**Water Depth (MLLW feet)**	**Latitude and Longitude (deg. min. sec.)**	**Distance from Shore (miles)**
OPD Providence NK19-07	6581	OCS-A 0478	F14	24.6	41 28 05.11468 N, 70 18 21.60343 W	8.2
OPD Providence NK19-07	6480	OCS-A 0478	G0	15.8	41 32 30.07480 N, 70 20 15.72521 W	5.3
OPD Providence NK19-07	6480	OCS-A 0478	G1	16.2	41 32 11.38227 N, 70 20 04.49383 W	5.7
OPD Providence NK19-07	6480	OCS-A 0478	G2	17.3	41 31 52.68943 N, 70 19 53.27081 W	6.1
OPD Providence NK19-07	6531	OCS-A 0478	G5	35.3	41 30 56.61084 N, 70 19 19.56121 W	7.1
OPD Providence NK19-07	6531	OCS-A 0478	G6	38.2	41 30 37.91283 N, 70 19 08.39662 W	7.3
OPD Providence NK19-07	6531	OCS-A 0478	G7	41.7	41 30 19.21835 N, 70 18 57.17466 W	7.6
OPD Providence NK19-07	6531	OCS-A 0478	G8	42.2	41 30 00.52355 N, 70 18 45.95580 W	7.9
OPD Providence NK19-07	6531	OCS-A 0478	G9	41.2	41 29 41.82843 N, 70 18 34.73742 W	8.2
OPD Providence NK19-07	6531	OCS-A 0478	G10	19.6	41 29 23.13397 N, 70 18 23.52213 W	8.5
OPD Providence NK19-07	6581	OCS-A 0478	G11	29.7	41 29 04.43530 N, 70 18 12.34412 W	8.8
OPD Providence NK19-07	6581	OCS-A 0478	G12	33.2	41 28 45.74210 N, 70 18 01.09561 W	8.8
OPD Providence NK19-07	6581	OCS-A 0478	G13	35.0	41 28 27.04085 N, 70 17 49.94351 W	8.8
OPD Providence NK19-07	6581	OCS-A 0478	G14	22.1	41 28 08.34510 N, 70 17 38.73405 W	8.8
OPD Providence NK19-07	6581	OCS-A 0478	G15	47.6	41 27 49.64707 N, 70 17 27.53427 W	8.7
OPD Providence NK19-07	6480	OCS-A 0478	H0	21.8	41 32 33.31792 N, 70 19 32.78791 W	5.5
OPD Providence NK19-07	6481	OCS-A 0478	H1	16.4	41 32 14.62522 N, 70 19 21.55847 W	5.8
OPD Providence NK19-07	6481	OCS-A 0478	H2	17.8	41 31 55.92829 N, 70 19 10.36108 W	6.0
OPD Providence NK19-07	6531	OCS-A 0478	H3	32.4	41 31 37.23687 N, 70 18 59.10630 W	6.3

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Area	**Block**	**Lease**	**Facility (Location) ID**	**Water Depth (MLLW feet)**	**Latitude and Longitude (deg. min. sec.)**	**Distance from Shore (miles)**
OPD Providence NK19-07	6531	OCS-A 0478	H4	31.5	41 31 18.54220 N, 70 18 47.88224 W	6.5
OPD Providence NK19-07	6531	OCS-A 0478	H5	34.3	41 30 59.84722 N, 70 18 36.66128 W	6.8
OPD Providence NK19-07	6531	OCS-A 0478	H6	36.4	41 30 41.14805 N, 70 18 25.49996 W	7.1
OPD Providence NK19-07	6531	OCS-A 0478	H7	44.8	41 30 22.45242 N, 70 18 14.28126 W	7.4
OPD Providence NK19-07	6531	OCS-A 0478	H8	55.6	41 30 03.75647 N, 70 18 03.06567 W	7.7
OPD Providence NK19-07	6531	OCS-A 0478	H9	50.5	41 29 45.31893 N, 70 17 48.41865 W	8.0
OPD Providence NK19-07	6531	OCS-A 0478	H10	43.7	41 29 26.36358 N, 70 17 40.63852 W	8.3
OPD Providence NK19-07	6581	OCS-A 0478	H11	44.3	41 29 07.66764 N, 70 17 29.42698 W	8.6
OPD Providence NK19-07	6581	OCS-A 0478	H12	40.5	41 28 48.97040 N, 70 17 18.21853 W	9.0
OPD Providence NK19-07	6581	OCS-A 0478	H13	13.0	41 28 30.42276 N, 70 17 07.41467 W	9.3
OPD Providence NK19-07	6581	OCS-A 0478	H14	14.0	41 28 11.56987 N, 70 16 55.74002 W	9.1
OPD Providence NK19-07	6581	OCS-A 0478	H15	22.0	41 27 52.87190 N, 70 16 44.66697 W	8.8
OPD Providence NK19-07	6481	OCS-A 0478	I0	22.8	41 32 36.55564 N, 70 18 49.87046 W	5.2
OPD Providence NK19-07	6481	OCS-A 0478	I1	19.4	41 32 17.86079 N, 70 18 38.64429 W	5.4
OPD Providence NK19-07	6481	OCS-A 0478	I2	25.8	41 31 59.16370 N, 70 18 27.45017 W	5.7
OPD Providence NK19-07	6531	OCS-A 0478	I3	32.1	41 31 40.47112 N, 70 18 16.19865 W	6.0
OPD Providence NK19-07	6531	OCS-A 0478	I4	32.7	41 31 26.00431 N, 70 18 07.56009 W	6.2
OPD Providence NK19-07	6531	OCS-A 0478	I5	37.9	41 31 00.69969 N, 70 17 52.38729 W	6.6
OPD Providence NK19-07	6531	OCS-A 0478	I6	41.9	41 30 44.37885 N, 70 17 42.60211 W	6.9

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Area	**Block**	**Lease**	**Facility (Location) ID**	**Water Depth (MLLW feet)**	**Latitude and Longitude (deg. min. sec.)**	**Distance from Shore (miles)**
OPD Providence NK19-07	6531	OCS-A 0478	I7	45.9	41 30 25.68206 N, 70 17 31.38668 W	7.2
OPD Providence NK19-07	6531	OCS-A 0478	I8	14.7	41 30 06.98495 N, 70 17 20.17435 W	7.5
OPD Providence NK19-07	6531	OCS-A 0478	I9	48.8	41 29 48.28751 N, 70 17 08.96249 W	7.8
OPD Providence NK19-07	6531	OCS-A 0478	I10	49.5	41 29 29.58975 N, 70 16 57.75374 W	8.2
OPD Providence NK19-07	6581	OCS-A 0478	I11	16.2	41 29 10.89167 N, 70 16 46.54545 W	8.5
OPD Providence NK19-07	6581	OCS-A 0478	I12	28.7	41 28 52.19039 N, 70 16 35.38364 W	8.9
OPD Providence NK19-07	6581	OCS-A 0478	I13	25.0	41 28 33.49070 N, 70 16 24.19469 W	9.2
OPD Providence NK19-07	6581	OCS-A 0478	I14	19.4	41 28 14.79195 N, 70 16 12.99215 W	9.2
OPD Providence NK19-07	6581	OCS-A 0478	I15	17.3	41 27 56.09230 N, 70 16 01.79850 W	8.9
OPD Providence NK19-07	6582	OCS-A 0478	I16	18.4	41 27 37.39263 N, 70 15 50.60702 W	8.6
OPD Providence NK19-07	6582	OCS-A 0478	J12	47.1	41 28 55.41269 N, 70 15 52.46083 W	8.8
OPD Providence NK19-07	6582	OCS-A 0478	J13	24.1	41 28 36.70898 N, 70 15 41.31851 W	9.1
OPD Providence NK19-07	6582	OCS-A 0478	J14	25.1	41 28 18.00878 N, 70 15 30.11885 W	9.4
OPD Providence NK19-07	6582	OCS-A 0478	J15	31.8	41 27 59.30443 N, 70 15 18.98140 W	9.1
OPD Providence NK19-07	6582	OCS-A 0478	J16	39.0	41 27 40.60359 N, 70 15 07.78530 W	8.8
OPD Providence NK19-07	6582	OCS-A 0478	K14	27.3	41 28 21.22147 N, 70 14 47.24476 W	9.5
OPD Providence NK19-07	6582	OCS-A 0478	K15	30.7	41 28 02.51598 N, 70 14 36.11058 W	9.3
OPD Providence NK19-07	6582	OCS-A 0478	K16	31.9	41 27 43.81398 N, 70 14 24.91774 W	9.0

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Wind Turbine Generators

The Project will utilize pitch-regulated upwind WTGs with active yaw and a three-blade rotor. The WTG nacelle hub height will be approximately 264.1 feet (80.5 meters) from the Mean Low Lower Water (MLLW) datum (0.0 feet = MLLW). The main components of the WTG are the rotor, the transmission system, the generator, the yaw system, and the control and electrical systems, which are located within the WTGs nacelle. The WTGs nacelle will be mounted on a manufactured steel tower supported by a monopile foundation system. The main support tower will have a base diameter of either approximately 16.75 feet or 18 feet (5.1-5.5 meters) at the MLLW datum plane (depending upon water depth). At the base of the tower, a pre-fabricated access platform and service vessel landing (approximately 32 feet (9.6 meters) from MLLW) will be provided. The WTG and all its components described in this section will be designed to IEC standard 61400-1 or 61400-3 as applicable. The design is also verified by an independent Certified Verification Agent. Design criteria for the turbine and foundation system will also include the hurricane criteria as indicated in the API-RP 2A WSD considering a 100-year storm occurrence and will also be designed to the loads specified in the controlling design standards. The steel tower and nacelle will be mounted on a transition piece which is attached through a grouted connection to a welded steel monopile foundation as described in more detail below.

1) Nacelle

   The nacelle is the portion of the WTG that encompasses the drive train and supporting electromotive generating systems that produce the wind-generated energy. For offshore applications, the nacelle is specially designed to seal the interior from salt spray and moisture while providing controlled environmental conditions for its working components. The nacelle includes maintenance cranes, access hatches, and also has wind sensors located on its peak.

2) Rotor

   The WTG rotor has three blades manufactured from fiberglass-reinforced epoxy, mounted on the hub. The rotors will have an overall diameter of approximately 351 feet (107 meters). The rotor blades are pitch-regulated to continually control their pitch angle to the wind in order to optimize wind energy production with minimal noise. The blades will be pitched to prevent rotation when wind speed exceeds 55 mph (25 m/sec) and will also engage the disc brake system to positively lock the rotor. Each blade is protected against potential damage from lightning strikes by copper plates mounted in the blade tips and a grounding wire brought back to the rotor and connected to the tower by carbon brushes. This establishes a proper ground connection and will dissipate any lightning strikes. Temporary icing of a rotor blade would activate vibration sensors causing turbine shutdown in order to prevent rotor damage or hazard from flying ice.

3) Tower

   A manufactured tubular conical steel tower supports the WTG nacelle. This tower will have an internal personnel hoist as well as internal access ladders and platforms providing access to the nacelle. The tower will be designed to meet all relevant codes and standards associated with site-specific wind loads, earthquake loads, sea-state conditions, and other loading conditions. There are

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various auxiliary structures such as access platforms, ladders, and boat docking structures attached to the transition piece to allow service vessels to transfer technicians and equipment for routine maintenance of the WTGs. The tower is accessed from the platform by a galvanized steel hatch door. Access to the platform is from the boat ladder through the lockable hatch.

Each of the perimeter WTGs will be lighted with one red flashing FAA light on top of the nacelle (approximate height of 271 feet (82.5 meters) above MLLW) and all WTGs will have two flashing amber USCG lights on the lower access platform (approximate height of 35 feet (10.7 meters) above MLLW). Lights will vary in intensity depending on the specific location of the individual turbine, and all lights will be synchronized to flash simultaneously in order to effectively mark the entire wind park as one entity when viewed from the air.

4) Marine Based Design

The WTGs have been specially designed for the offshore marine environment and include a number of special features that are not found on land based WTGs. Some of the items that support the marine usage of the proposed WTGs are as follows:

- Air tight tower and nacelle
- De-humidifying system
- Heat-exchanger cooling system for gear box and generator
- Offshore corrosion protection
- Permanent crane in nacelle for smaller components

5) Configuration of WTGs

In order to generate maximum wind energy production, the WTGs will be arranged in specific parallel rows in a grid pattern to obtain an optimal energy-generating arrangement. For this area of Nantucket Sound, the wind power density analysis conducted by Cape Wind determined that orientation of the array in a northwest to southeast alignment provides optimal wind energy potential for the WTGs. This alignment will position the WTGs perpendicular to prevailing winds, which are generally from the northwest in the winter and from the southwest in the summer for this geographic area of Nantucket Sound. The WTGs will have a computer-controlled yaw system that ensures that the nacelle is always turned into the wind and perpendicular to the rotor. In addition to maximizing potential wind energy production, the WTGs must also be sufficiently spaced within the array in order to minimize power losses due to wind shear and turbulence caused by other WTGs within the array.

Other technical and economic siting criteria were established for the array design that factored into the development of the proposed WTG configuration. These include:

- Water depth criteria: a minimum water depth of 12 feet (3.6 meters) MLLW and a maximum water depth of 50 feet (15.2 meters) MLLW was established as the design criteria necessary to properly address construction techniques and pile design and cost considerations. The minimum

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water depth of 12 feet (3.6 meters) was established based upon the vessel size required for installation of the turbines and the maximum water depth was established based upon design fatigue load.

- Energy loss criteria: minimize energy losses for WTGs located within the array due to lower mean wind speeds in the wakes of upstream WTGs. By installing several WTGs in an array, each WTG will generate a wake that will affect the output from other downstream WTGs in the Wind Park.
- Maximize spacing to allow existing watersheet uses to continue.
- Minimize mechanical fatigue loads on the WTG and support tower: develop inner-array spacing of the WTGs that minimizes mechanical turbulent wakes of upstream WTGs.
- Minimize energy transmission losses: develop inner-array spacing that minimizes the amount of inner-array submarine cabling to maintain maximum energy transfer to the ESP, and minimize energy losses due to cabling lengths.

As a result of the wind energy production performance analysis for this geographic area of Nantucket Sound, including the WTG configuration and performance criteria cited above, it was determined that the optimal WTG spacing within the array is 0.34 nautical mile (629 meters) by 0.54 nautical mile (1,000 meters) between each WTG.

6) WTG Fluid Containment

The WTG will utilize lubricating oil, cooling liquids, and grease, all of which will be located in the nacelle/hub or tower. The WTG has been carefully configured to contain any fluid leakage and prevent overboard discharges. The primary WTG components and the fluids contained are explained as follows:

- Nacelle/hub – Approximately 90 gallons of hydraulic oil and 220 gallons of gear oil are contained within the nacelle. In the event of leaking gear oil or a broken hose/pipe, the leaking oil will be guided through the manhole in the bottom of the bedplate and collected on the upper internal platform of the tower.
- Tower – The upper internal platform is designed and sealed in such a way that it can withhold the total amount of gearbox and hydraulic fluid until it can be transferred to containers for safe disposal. The lower tower will include a transformer located near the access door, which will contain approximately 370 gallons of transformer oil.

Oil will be loaded in the WTG components during pre-commissioning activiies onshore prior to delivery and installation at the Project Area.

The possibility of spills may occur in two different situations: (1) during service and maintenance and (2) during operation:

- Service - During the servicing and maintenance of a WTG, a spill could happen during oil changes of hydraulic pump units or the gearbox oil conditioning system.

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- Operation failures- During WTG operation leakage may occur as the result of broken gear oil hoses/pipes, and / or broken coolant hoses/pipes. Gear oil leaks will be contained within the hub and main bed frame and/or tower as described above. Coolant leaks can occur on a number of locations within the nacelle and will be contained inside the nacelle fiberglass cover. It is also possible that a leak could develop in the transformer that would be contained within the lower section of the tower.

Electrical Service Platform (ESP)

An ESP will be installed and maintained within the approximate center of the WTG array. The ESP will serve as the common interconnection point for all of the WTGs within the array. Each WTG will interconnect with the ESP via a 33 kV submarine cable system. These cable systems will interconnect with circuit breakers and transformers located on the ESP in order to increase the voltage level and transmit wind-generated power through the 115 kV shore-connected submarine cable system. The two 115 kV submarine circuits will then ultimately connect to the existing land-based NSTAR Electric transmission system on Cape Cod.

The ESP will provide electrical protection and inner-array cable sectionalizing capability in the form of circuit breakers. It will also include voltage step-up transformers to step the 33 kV inner-array transmission voltage up to the 115 kV voltage level for the submarine cable connection to the land-based system. The service platform will also function as a helipad and as a maintenance area during periods of servicing the Wind Park equipment.

The ESP will be a fixed template type platform consisting of a jacket frame with six approximately 42-inch (106.7 centimeters) driven piles to anchor the platform to the ocean floor. The platform will consist of a steel superstructure of approximately 100 feet by 200 feet (30.5 meters by 61 meters). The platform will be placed approximately 39 feet (12 meters) above the MLLW datum plane in 28 feet (8.5 meters) of water.

The ESP will include insulated circuit breakers to protect the 33 kV system. The 33 kV circuit breakers will be arranged in four switchgear line-ups, each of which will connect to one of four transformers to increase the voltage level to 115 kV for transmission to shore. The high voltage system on the ESP will include 115 kV insulated switchgear for protection and will be connected to two 115 kV submarine transmission cable systems. Operation will be automated and remotely controlled via the electronic supervisory control and data acquisition system (SCADA). Additionally, the ESP will house the hub for the SCADA link between the WTGs and the Project's shore-based control systems.

In addition to the electrical equipment, the ESP will include fire protection, emergency battery backup system, and other ancillary systems. These systems will include ventilation, safety, communications, temporary living accommodations and required systems. The living accommodations are for emergency periods when crews cannot be removed due to weather issues. These accommodations will utilize waste storage holding tanks that will be pumped to the service vessel for proper disposal. All equipment will be contained within an enclosed weather-protected service area.

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Maintenance and service access to the ESP will normally be by service boat. A boat landing dock consisting of a fender structure with ladder is attached to the ESP to allow boat landing and transfer of personnel and equipment and temporary docking of the service craft. The ESP will have a helicopter deck to allow personnel access when conditions preclude marine transport, and for emergency evacuation. Equipment and material transfer will be by a crane mounted on the ESP.

The ESP design is based on a piled jacket/template design with a superstructure mounting on top. The platform jacket and superstructure will be fully fabricated on shore and delivered to the work site by barges.

ESP Fluid Containment

The ESP will have small amounts of lubricating oil, greases and coolants in pumps, fans, air compressors, emergency backup system and miscellaneous equipment. The ESP will also have four oil-cooled step up transformers.

The primary systems and fluid contained are as follows:

- Main Transformer - The four 110-megavolt amp (MVA) oil cooled main step up transformers will each have a capacity of approximately 10,000 gallons (37,854 liters) of dielectric cooling oil. The oil will be circulated through oil/air heat exchangers mounted on the roof of the platform. Each transformer will be mounted in a leak-proof detention area that will have the capacity of holding 150% of the transformer oil. Each of the detention areas will be connected via valves to a storage tank that has the capacity to store 100% of the oil from all four transformers. The oil piping to the coolers and the coolers will be configured so that any failures will result in oil being drained to the detention area.

- A back-up battery system will be installed on the ESP to provide power to essential auxiliary loads in the event of a loss of connection to the NSTAR transmission grid. The system will be designed for redundancy with two independent 125-volt (V) direct current (DC) systems each consisting of a stationary battery bank, battery charger and distribution panel. The batteries will be lead acid type for stationary applications. They will be sized appropriately for a 36-hour duty cycle following an emergency trip (dead bus).

- Miscellaneous equipment - Various pumps, fans, and an air compressor will be installed on the platform. They will be lubricated with either grease or oil in small quantities. The equipment will be installed in such a way that any leakage will be contained on the sealed deck of the ESP.

The ESP will have sealed, leak-proof decks where appropriate, which will act as fluid containment. In addition, spill containment kits will be available near all equipment. Oil will be loaded in the ESP components during pre-commissioning activiies onshore prior to delivery and installation at the Project Area.

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Appendix B

Training Information

APPENDIX B
TRAINING INFORMATION

Cape Wind provides a basic level of annual training for all employees, ensuring that all employees are adequately trained to maintain a safe working environment. Cape Wind employees are trained to allow defensive actions in the event of a spill.

In general, training covers spill response and notification procedures, for example:

- Locations, intended use, deployment strategies, and operational and logistical requirements of response equipment maintained at the Cape Wind Operations Center
- Spill reporting procedures
- Oil-spill trajectory analysis requirements and predicting spill movement
- Other responsibilities, as appropriate

Spill response activities beyond the training level of Cape Wind personnel are conducted by Clean Harbors. Any Clean Harbors personnel involved in spill response activities will be properly certified and trained according to all applicable regulations. Clean Harbors is responsible for training its personnel to an appropriate level, depending on the required response activities for each individual. The training records for Clean Harbors staff are maintained and archived by Clean Harbors at their facilities. At a minimum, all Clean Harbors staff are required to have the following:

- OSHA 40-Hr
- Incident Command System (ICS) Training
- Marine Operator Training

a. QI, OSRC/IC, and SMT

Scott Metzger, the designated QI and OSRC/IC, is fully certified in accordance with the Oil Pollution Act of 1990. Mr. Metzger completed Qualified Individual Training on April 12, 2011 (certificate provided below). A second qualified QI/IC will be designated prior to initiating operation of the facility. At this time, the identity of the second QI/IC has not yet been determined.

It is uncertain whether an Operations Section Chief and Planning Section Chief will be required for the SMT. If they are, Cape Wind will designate staff to receive training in spill management decision making. The training will address the requirements specified in 30 CFR 254.41(b), as applicable, and be completed before the start of construction.

b. Other SMT Members

Prior to facility operation, Cape Wind will designate staff to receive training in spill response and identify a training program that suits the needs of the facility staff. The training will address the requirements specified in 30 CFR 254.41, as applicable.

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c. SROT

Prior to facility operation, Cape Wind will designate staff to receive training in spill response and identify a training program that suits the needs of the facility staff. The training will address the requirements specified in 30 CFR 254.41(a), as applicable. All Clean Harbors personnel are fully trained and highly qualified in the deployment and operation of Clean Harbors equipment. Personnel responsible for operating spill response equipment receive annual hands-on training in deployment and operation of equipment. Clean Harbors personnel participate in a comprehensive training program that includes the following:

- 40-hour OSHA
- 8-hour refresher
- CPR
- First-aid
- Boating safety
- Monthly preventative maintenance
- Spill response equipment

d. Location of Records

Training records for all Cape Wind staff are maintained and archived at the corporate office:

Cape Wind Associates, LLC
75 Arlington Street
Boston, Massachusetts 02116
617-904-3100

Training records for Clean Harbors personnel are maintained in a Peoplesoft database, which can be accessed at all Clean Harbors service centers.

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CleanHarbors®

Certificate of Training

This is to certify that **Scott Metzger**

Satisfactorily completed training in

Qualified Individual Refresher Training

As per 33 CFR Part 154

Conducted by

CLEAN HARBORS ENVIRONMENTAL SERVICES

Date: 4/12/2011

Director of Internal Regulatory Training
Jerry Huber

Appendix C

Spill Response Drills

APPENDIX C
SPILL RESPONSE DRILLS

Cape Wind will conduct response exercises to provide response personnel an opportunity to apply applicable training, test the response plans for deficiencies, and identify any aspects of the plan that should be modified. The entire plan will be exercised at least once every three years, in accordance with 30 CFR 254.42. Exercises will be developed and conducted in order to satisfy the 15 core components of the National Preparedness for Response Exercise Program (PREP) Guidelines. Completion of the triennial exercise will be recorded on the table provided below.

In satisfying the triennial exercise requirement, the following annual exercises will be conducted:

1. Spill Management Team Tabletop Exercise

   The Cape Wind Spill Management Team (SMT) will conduct an annual tabletop exercise to ensure that team members are familiar with the OSRP and their individual roles during the response to an incident. The objective of the exercise is practice the SMT's organization, communication, and decision-making in managing a spill response. The internal tabletop exercise will be announced, however, the scenario will be unannounced. The Tabletop Exercise Report Form is provided below.

2. Deployment Exercises

   Cape Wind and Clean Harbors will annually conduct deployment exercises of equipment stored at onshore locations. During these exercises, equipment that is identified in the response plan will be deployed and operated. Each type of equipment will be exercised during each triennial period although it is not necessary to deploy each individual piece of equipment. The Deployment Exercise Report Form is provided below.

3. Notification Exercises

   Cape Wind will annually exercise and test communications between personnel staffing the onshore control center, which operates 24 hours per day, and the Qualified Individual. Information to be provided during the event of a spill will be simulated during this exercise. The Notification Exercise Reporting Form is provided below.

Records of these drills will be maintained at Cape Wind's corporate office:

Cape Wind Associates, LLC
75 Arlington Street
Boston, Massachusetts 02116
617-904-3100

In accordance with 30 CFR 254.42, Cape Wind will be prepared to respond to unannounced exercises initiated by BOEMRE. These exercises may involve Cape Wind and Clean Harbors personnel, the Qualified Individual, Spill Management Team, state and local government, and other federal agencies if BOEMRE so chooses. The exercise will require Cape Wind to respond to the spill scenario posed by BOEMRE. Records of these exercises will be maintained by BOEMRE.

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Cape Wind
Internal Exercise Documentation Form
Triennial Exercise Record

					Year																						
	CY				CY				CY																		
	Quarters				Quarters				Quarters																		
	1	2	3	4	5	6	7	8	9	10	11	12	Notification	Staff Mobilization	Operate in RMS[1]	Discharge Contained	Assessment	Containment	Recovery	Protection	Disposal	Communication	Transportation	Personnel Support	Equipment Maintenance	Procurement	Documentation
SMT Tabletop																											
Equipment Deployment																											
QI Notification																											
Gov't-initiated Unnannounced																											

For each quarter in which an exercise was completed, mark that with an "X" then mark each core component tested during an exercise.

[1] RMS: Response Management System

Cape Wind
Internal Exercise Documentation Form
Spill Management Team Tabletop Exercise

1.	Date Performed: ___ / ___ / _____
2.	Exercise or Actual Response?_____ Is exercise, announced or unannounced?_____
3.	Location of Tabletop:_____
4.	Time Stared: ____ : ____ (Military Time) Time Completed: ____ : ____ (Military Time)
5.	Response plan scenario used (check one): ☐ Average most probable discharge ☐ Maximum most probable discharge ☐ Worst case discharge Size of (simulated) spill _____ barrels or gallons
6.	Describe how the following objectives were exercised: (a) Spill Management Team's knowledge of Oil Spill Response Plan: _____ _____ (b) Proper notifications: _____ _____ (c) Communications system: _____ _____ (d) Spill Management Team's ability to access contracted oil spill removal organizations: _____ _____ (e) Spill Management Team's ability to coordinate spill response with On-Scene Coordinator, state, and applicable agencies: _____ _____ (f) Spill Management Team's ability to access sensitive site and resource information in the Area Contingency Plan: _____ _____
7.	Identify which of the 15 core components of the response plan were exercised during this particular exercise: _____ _____

8.	Attach a description of lesson(s) learned, procedures and schedule for implementation, and person(s) responsible for follow up of corrective measures.
Certification Signature: Signature:_____ Date: ___ / ___ / _____ Printed Name:_____	
Retain form for a minimum of three (3) years.	

Cape Wind
Internal Exercise Documentation Form
Equipment Deployment Exercise

1.	Date Performed: ___ / ___ / _____	
2.	Exercise or actual response?_____ If an exercise, announced or unannounced?_____	
3.	Deployment Locations: _____ _____	
4.	Time Started:	____ : ____ (Military Time)
	Time Clean Harbors called:	____ : ____ (Military Time)
	Time on-scene:	____ : ____ (Military Time)
	Time boom deployed:	____ : ____ (Military Time)
	Time recovery equipment arrives on-scene:	____ : ____ (Military Time)
	Time completed:	____ : ____ (Military Time)
5.	Equipment deployed was (check one): ☐ Cape Wind ☐ Clean Harbors_____ ☐ Both	
6.	List type and amount of all equipment (e.g. boom and skimmers) deployed and number of support personnel employed: _____ _____ _____	
7.	Describe goals of the equipment deployment and list any Area Contingency Plan strategies tested. (Attach a sketch of equipment deployments and booming strategies): _____ _____ _____	

8.	For deployment of Cape Wind equipment, was the amount of equipment deployed at least the amount necessary to respond to the most probable spill? ☐ Yes ☐ No ☐ N/A Was the equipment deployed in its intended operating environment? ☐ Yes ☐ No ☐ N/A
9.	For deployment of Clean Harbors equipment, was a representative sample (at least 1,000 feet of each boom type and at least one of each skimmer type deployed? ☐ Yes ☐ No ☐ N/A Was the equipment deployed in its intended operating environment ☐ Yes ☐ No ☐ N/A
10.	Are all Cape Wind personnel that are responsible for response operations involved in a comprehensive training program and all pollution response equipment involved in a comprehensive maintenance program? ☐ Yes ☐ No ☐ N/A If yes, describe the program: _____ _____ Date of last equipment inspection: ___ / ___ / _____
11.	Was the equipment deployed by personnel responsible for its deployment in the event of an actual spill? ☐ Yes ☐ No ☐ N/A
12.	Was all deployed equipment operational? ☐ Yes ☐ No ☐ N/A If no, describe: _____ _____

13.	Identify which of the 15 core components of your response plan were exercised during this particular exercise: _____ _____ _____ _____
Attach description of lesson(s) learned and person(s) responsible for follow up of corrective measures.	
Certification Signature: Signature:_____ Date: ___ / ___ / _____ Printed Name:_____	
Retain form for a minimum of three (3) years.	

Cape Wind
Internal Exercise Documentation Form
Notification Exercise

Notification Exercise Information	
Date: ___ / ___ / _____	
Name of person notified: _____	Is this person indentified in the response plan as IC or QI? _____
Time drill was initiated from facility (open loop): ____ : ____ (Military Time)	Time IC voice contact was made (closed loop): ____ : ____ (Military Time)
Description of Notification Procedure: _____ _____ _____	
Suggested Action Items: _____ _____ _____	
Date Completed: ___ / ___ / _____	
Certification	
I certify that this drill was completed, met the objectives stated above, and was evaluated to determine the effectiveness of the response plan components which were exercised.	
Certification Signature: Signature:_____ Date: ___ / ___ / _____ Printed Name:_____	

Appendix D

Contractual Agreements

REDACTED

Confidential business information.
Not for public disclosure.

Appendix E

Response Equipment

APPENDIX E
RESPONSE EQUIPMENT

a. Equipment Inventory

Cape Wind

Cape Wind will maintain the following response equipment at the Operations Center, for quick deployment (exact details such as size/capacities and quantities to be determined prior to operating the facility):

- One high-speed 30-foot boat for personnel emergencies and quick access
- At least one larger (~35′ to 45′) work boat for routine access and storage of initial response equipment, including:
  - Containment bladders
  - Personal protective equipment – including boots, gloves, goggles, etc.
  - Broom, shovel, sorbents, pigs, socks, and other equipment for response to minor leaks and spills
  - Spill overpack drum

Cape Wind will maintain the following response equipment at the ESP, for response to minor leaks and contained spills:

- Personal protective equipment – including boots, gloves, goggles, etc.
- Broom, shovel, sorbents, pigs, socks, and other equipment for response to minor leaks and spills
- Spill overpack drum

Cape Wind will inspect the above equipment at least once per month during a routine maintenance visit. A record for each inspection and maintenance procedure will be maintained at the Operations Center.

Oil Spill Response Contractor

Offshore resources have been identified and are available to Clean Harbors under Master Service Agreements with those providers.

The Clean Harbors Emergency Response Resource Book provides a complete catalogue of resources available to Cape Wind in the event of an incident and is available at the following web address: (http://clark.cleanharbors.com/tt/sl.ashx?z=219847c5&dataid=1271&ft=1).

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b. Inspection and Maintenance Programs

The Cape Wind and Clean Harbors equipment inspection and maintenance programs comply with by 30 CFR 254.43. Cape Wind will inspected the response equipment listed above at least monthly and maintain it as necessary, to ensure optimal performance. Records of the inspections and maintenance activities will be kept for at least 2 years and will be made available to any authorized BOEMRE representative upon request.

c. Response Procedures and Capabilities of Contractors

Each year Clean Harbors manages over three thousand environmental emergency responses or disaster recovery operations on land and water throughout North America. Clean Harbors has the capability to deal with large-scale multiphase containment and clean-up of a coastal oil spill, or damage from a hurricane. Clean Harbors is recognized as having the expertise and technical knowledge to handle emergency situations with the highest regard to the environment and health and safety (Clean Harbors 2010). Under the U.S. Coast Guard's (OSRO) Classification Program, Clean Harbors holds a Captain of the Port rating for facilities and vessels in ports in Boston and Southern New England. Clean Harbors is designated with OSRO Number 0013. Clean Harbors capabilities include the deployment of hard boom and recovery of product from water (skimmers, pumps, vacuum trucks), including temporary storage and disposal.

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Appendix F

Support Services and Supplies

APPENDIX F
SUPPORT SERVICES AND SUPPLIES

The following provides details for additional personnel, materials and supplies, equipment, and services available in the event of a release. Refer to the Spill Response Contact List in Section 1.0 of this document for specific contact information.

Private Resources

Clean Harbors – Spill Response and Cleanup Contractor

See Appendix E for an example of Clean Harbors' list of available equipment, staff, resources, and response methods. See Appendix D for the executed Stand-By agreement between Cape Wind and Clean Harbors

Otis ANGB/Air Station Cape Cod - Airstrips/Air Access

This local airport may be used for additional air services.

Corporate Air Charter, Inc. (T.F. Green Airport, Rhode Island), Ocean Wings (Nantucket, Massachusetts), and Eastern Air Charter (Norwood, Massachusetts) - Air Charter Services

These businesses provide air service charters that may be used in the event of an oil spill response. Such services may be useful for quick off-shore access, or to complete fly-over investigations. Between these facilities, a number of aircraft are available for private use.

Federal Resources/Agencies

In the event of an oil spill at the facility, federal agencies would be the primary agencies involved in oversight of response activities.

USCG/NRC - Response and Restoration

The USCG/NRC is primarily responsible for overseeing spill response activities in open water. While this agency is not expected to provide financial assistance, they would be a useful source of information for response methods and procedures. They may also provide some fire services, if necessary.

NOAA - Response and Restoration

The NOAA will likely provide oceanographic and marine species information to support the oil spill response, including suggested response methods, environmental damage remedies, coastal resources impact assessment and restoration, discharge and trajectory modeling, oceanic and atmospheric modeling, and other response measure for individually materials.

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State Resources/Agencies

Massachusetts State Police - Law Enforcement and Security

The Massachusetts State Police Department may be called upon to work in cooperation with other agencies in providing on-shore access control, crowd control, and traffic control. The State Police have adequate staff and vehicle to address any security situations that might occur at Cape Wind.

MassDEP - Response and Restoration

The MassDEP may be called upon in a spill situation to support response actions. Support services would primarily include on-shore response-related activities, such as cleanup, salvage, and recovery. Financial support would be provided by Cape Wind.

Local Resources/Agencies

Depending on the volume and extent of the spill, local agencies may assist in spill response and provide local information to help develop the spill response plan. The local agencies that may become involved in a spill response plan include natural resources, environmental, law enforcement, fire services, hospitals/EMS and LEPCs/response teams. Financial support would be provided by Cape Wind.

Boat Launches - The Falmouth Inner Harbor provides a public boat launch that may be used in the event of a release. The following are additional public boat launch locations in the area:

- Childs River, Off Rte 28
- Great Pond, Harrington Street
- Green Pond, Menauhant Road
- Megansett Harbor, County Road
- Waquoit Bay, Seapit Road
- West Falmouth Harbor, Old Dock Road
- Wild Harbor, Old Silver Beach
- Great Harbor, Woods Hole

Additional Agencies

The following agencies may also become involved in an oil spill:

- Coastal Zoning Committee
- Harbor Masters / Natural Resource Agents
- Cape Cod Commission
- Other local authorities (Nantucket, Cape Cod, Martha's Vineyard) if events warrant

The contact information for these agencies will be determined as necessary.

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Appendix G

Notification and Reporting Forms

APPENDIX G
NOTIFICATION AND REPORTING FORMS

This appendix contains reporting forms for internal communication and external reporting for regulatory compliance.

INTERNAL SPILL REPORTING FORMS

- Cape Wind Internal Incident Reporting Form

EXTERNAL SPILL REPORTING FORMS

- Notification Status Report
- Cape Wind Reporting Form – National Response Center
- Cape Wind Reporting Form – BOEMRE
- Cape Wind Reporting Form – Massachusetts Department of Environmental Protection (MassDEP)
- MassDEP Bureau of Waste Site Cleanup form BWSC103C

RESPONSE DOCUMENTATION

- Incident Command System Standard Forms

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Cape Wind Internal Incident Reporting Form

Name:_____ Date Form Filled Out:_____ Report No._____

1. DATE AND TIME OF INCIDENT:	2. LOCATION OF INCIDENT/RELEASE:

3.TYPE OF INCIDENT: (Check all that apply)	☐ Spill/Release ☐ Fire/Explosion ☐ Medical	☐ Security ☐ Natural Disaster	☐ Other (Describe)

4. TYPE OF MATERIAL INVOLVED IN INCIDENT/RELEASED (Attach MSDS):	5. QUANTITY OF MATERIAL INVOLVED:

6. PROVIDE A DESCRIPTION OF THE SOURCE OF THE INCIDENT AND FACTORS CAUSING THE INCIDENT (Include identification of all potentially responsible parties; Attach additional sheets if necessary):

7. NAME PERSON(S) WHO DISCOVERED INCIDENT AND DESCRIBE HOW IT WAS DISCOVERED:	8. TRANSPORTER INVOLVED, IF APPLICABLE: Name: Company Name: Vehicle ID/Plate #:

9. PLEASE PROVIDE ANSWERS TO THE FOLLOWING:

Did the release enter the ocean?	☐ Yes	☐ No	
Did the release result in injury or illness to personnel?	☐ Yes	☐ No	If yes, describe:
Did the incident impact other sensitive receptors?	☐ Yes	☐ No	If yes, describe:

12. INDICATE EMERGENCY PERSONNEL CONTACTED/ON SCENE:

Contacted	On Scene	
☐	☐	MA Police Dept. (specify whether local or state)
☐	☐	Spill Contractor
☐	☐	Emergency Medical
☐	☐	US Coast Guard
☐	☐	Other (Describe)

_____

14. PROVIDE A DESCRIPTION OF THE RESPONSE TO THE INCIDENT, INCLUDING A DESCRIPTION OF HOW POTENTIAL HAZARDS TO PUBLIC HEALTH, SAFETY, OR THE ENVIRONMENT WERE REDUCED OR REMEDIED (Attach additional sheets if necessary):

15. DID THE INCIDENT EXCEED A REPORTING THRESHOLD?

CIRCLE ONE: Federal State Local/Other None

Federal Reportable Quantity (RQ): _____ State RQ: _____ Local/Other RQ: _____

INDICATE AGENCIES NOTIFIED (See Emergency Contact List for phone numbers):

USCG/NRC	☐ NA	☐ Notified	Date/Time Notified _____
MassDEP	☐ NA	☐ Notified	Date/Time Notified _____
MDEP/MASERC	☐ NA	☐ Notified	Date/Time Notified _____
Other (Describe)	☐ NA	☐ Notified	Date/Time Notified _____

IF APPLICABLE, **ATTACH A RECORD OF EACH AGENCY NOTIFICATION**. RECORD MUST INCLUDE: NAME AND TELEPHONE NUMBER OF THE AGENCY NOTIFIED; NAME OF THE PERSON WHO RECEIVED THE NOTIFICATION; DATE AND TIME OF NOTIFICATION; NAME OF TECHNIC PERSONNEL MAKING THE NOTIFICATION; CASE NUMBER ASSIGNED BY AGENCY; AND ANY COMMENTS OR OTHER INFORMATION PROVIDED BY THE AGENCY.

16. DESCRIBE CORRECTIVE ACTIONS/FOLLOWUP NECESSARY:	Responsible Person	Date(s) for Completion
1)	1)	1)
2)	2)	2)
3)	3)	3)

17. ATTACH THE FOLLOWING SUPPLEMENTAL DOCUMENTATION AS APPROPRIATE FOR THE INCIDENT (AS SOON AS IT IS AVAILABLE):

a) Material Safety Data Sheet(s) (MSDSs) for material released

b) Record of interviews with Cape Wind or other personnel who caused or discovered the release, and other persons who were witnesses to the release (include name, address, and telephone number of interviewee)

c) Photographs taken at the site of the release, if available

d) Documentation of cleanup activities, such as manifests/shipping papers for soil removal, record of payment to emergency spill cleanup contractor, etc.

18. NAME AND TITLE OF PERSON COMPLETING THIS REPORT:

19. SIGNATURE:	20. DATE:

Notification Status Report								
Incident:				**Prepared by:**			**at:**	
Period:__ /__ /____ __ : __ to __ /__ /____ __ : __				**Version Name:**				
Organization Notified	**Phone**	**Date / Time Notified**	**Person Contacted**	**Email of Person Contacted**	**Case No.**	**Follow Up**	**ETA On Site**	**Notified By**
	(___) ___-____	__ / __ / ____ ___:___				☐Y ☐N	HR	
Notes:								
	(___) ___-____	__ / __ / ____ ___:___				☐Y ☐N	HR	
Notes:								
	(___) ___-____	__ / __ / ____ ___:___				☐Y ☐N	HR	
Notes:								
	(___) ___-____	__ / __ / ____ ___:___				☐Y ☐N	HR	
Notes:								
	(___) ___-____	__ / __ / ____ ___:___				☐Y ☐N	HR	
Notes:								
	(___) ___-____	__ / __ / ____ ___:___				☐Y ☐N	HR	
Notes:								
	(___) ___-____	__ / __ / ____ ___:___				☐Y ☐N	HR	
Notes:								
	(___) ___-____	__ / __ / ____ ___:___				☐Y ☐N	HR	
Notes:								
	(___) ___-____	__ / __ / ____ ___:___				☐Y ☐N	HR	
Notes:								

Cape Wind Spill Reporting Form
National Response Center

Facility and Release Information	
Name of Person Completing this Report: _____	Date and Time of Report: ___ / ___ / _____ ____ : ____ (Military Time)
Date and Time of Spill: ___ / ___ / _____ ____ : ____ (Military Time)	Date and Time of Spill was Discovered: ___ / ___ / _____ ____ : ____ (Military Time)
Operator:_____ Operator's Representative's Name:_____ Operator's Telephone Number:_____	Contractor:_____ Contractor's Representative's Name:_____ Contractor's Telephone Number:_____
Location of Facility: Latitude: _____° _____′ _____″	Longitude: _____° _____′ _____″
Spill Source:_____	Type of Material Released:_____
Release Rate:_____ bbls/hr or gal/hr	Length of Time Discharge Occurred:_____
Estimated Volume of Release:_____	Estimated Volume of Recovery:_____
Weather Condition Information	
Weather Forecast: ☐ Clear ☐ Cloudy ☐ Fog ☐ Rain	
Wind Direction (at the time of the spill):_____	Wind Speed (at the time of the spill):_____
Air Temperature :_____°F	Water Temperature:_____°F
Ceiling:_____	Wave Height:_____
Spill Information	
Did spill affect any water?_____ If yes, describe and name?_____	Size of overall spill: L _____ x W _____ Percent Coverage:_____%
Location of Oil: Latitude: _____° _____′ _____″ Longitude: _____° _____′ _____″	Description of effects of spill:_____ _____
Direction of Movement:_____	Cause of Spill:_____
Damage Estimate (U.S. Dollars)_____	Injuries:_____

Indicate emergency personnel contacted and were on scene:

Contacted	On Scene	
☐	☐	Massachusetts Police Department (specify local or state)
☐	☐	Clean Harbors
☐	☐	Emergency Medical
☐	☐	US Coast Guard
☐	☐	Other (Please Describe)_____

Additional remarks and recommendations:_____
_____

_____
Supervisor in Charge

National Response Contact Information: 1-800-424-8802

Cape Wind Spill Reporting Form
BOEMRE

Facility and Release Information			
Name of Person Completing this Report: _____	Date and Time of Report: ___ / ___ / _____ ____:____ (Military Time)		
Date and Time of Spill: ___ / ___ / _____ ____:____ (Military Time)	Date and Time of Spill was Discovered: ___ / ___ / _____ ____:____ (Military Time)		
Operator:_____ Operator's Representative's Name:_____ Operator's Telephone Number:_____	Contractor:_____ Contractor's Representative's Name:_____ Contractor's Telephone Number:_____		
Platform/Facility Name:_____ Platform/Facility Number:_____ Pipeline Segment Number:_____	Lease Number: _____	OCS Area: _____	Block: _____
Spill Information			
Operation or Activity at the Time of Incident:_____			
Description of Incident:_____			
Description of Spill:_____			
Damage Estimate (U.S. Dollars)_____			
Description of effects of spill:_____			
Injury Information			
Injuries:_____			
Days away from work:_____			
Restricted Work or Job Transfer:_____			
Corrective Actions Information			
Corrective Action Taken:_____			
Containment and cleanup measures taken:_____			
Additional remarks and recommendations:_____ _____			
_____ Supervisor in Charge			

BOEMRE New Orleans District Contact Information: 504-734-6740

Cape Wind Spill Reporting Form
MassDEP

Release Information	
Name of Caller: _____	Telephone Number of Caller: _____
Date and Time Release Occurred: ___ / ___ / _____ ____ : ____ (Military Time)	Location of Release: _____

Spill Information
Description (i.e. name) of oil:_____
Estimated Volume of Release:_____ Barrels or Gallons (Please Circle)
Source of Release:_____
Brief Description of Release:_____ _____

Facility Information	
Name of the Owner/Operator: _____	Telephone Number of the Owner/Operator: _____
Name of a Person at the site where the release occurred: _____	Telephone Number of a Person at the site where the release occurred: _____

Actions Taken
Description of Immediate Response Actions taken or proposed to be taken in response to the release: _____ _____
Indicate other federal, state, or local government agencies that have been notified of and/or have responded to the release:

Contacted	On Scene	
☐	☐	Massachusetts Police Department (specify local or state)
☐	☐	US Coast Guard
☐	☐	Other (Please Describe)_____

Any other information, including without limitation, potential environmental impacts, that is relevant to assessing the degree of hazard posed by the release or threat of release: _____ _____

MassDEP Contact Information:
Emergency Response Section
1-800-304-1133

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC103

Release Tracking Number
☐ - ☐

RELEASE NOTIFICATION & NOTIFICATION RETRACTION FORM

Pursuant to 310 CMR 40.0335 and 310 CMR 40.0371 (Subpart C)

A. RELEASE OR THREAT OF RELEASE LOCATION:

1. Release Name/Location Aid: _____

2. Street Address: _____

3. City/Town: _____ 4. ZIP Code: _____

5. UTM Coordinates: a. UTM N: _____ b. UTM E: _____

B. THIS FORM IS BEING USED TO: (check one)

☐ 1. Submit a **Release Notification**

☐ 2. Submit a **Revised Release Notification**

☐ 3. Submit a **Retraction of a Previously Reported Notification** of a release or threat of release including supporting documentation required pursuant to 310 CMR 40.0335 (Section C is not required)

(All sections of this transmittal form must be filled out unless otherwise noted above)

C. INFORMATION DESCRIBING THE RELEASE OR THREAT OF RELEASE (TOR):

1. Date and time of Oral Notification, if applicable: _____ (mm/dd/yyyy) Time: _____ (hh:mm) ☐ AM ☐ PM

2. Date and time you obtained knowledge of the Release or TOR: _____ (mm/dd/yyyy) Time: _____ (hh:mm) ☐ AM ☐ PM

3. Date and time release or TOR occurred, if known: _____ (mm/dd/yyyy) Time: _____ (hh:mm) ☐ AM ☐ PM

Check all Notification Thresholds that apply to the Release or Threat of Release:
(for more information see 310 CMR 40.0310 - 40.0315)

4. 2 HOUR REPORTING CONDITIONS

☐ a. Sudden Release

☐ b. Threat of Sudden Release

☐ c. Oil Sheen on Surface Water

☐ d. Poses Imminent Hazard

☐ e. Could Pose Imminent Hazard

☐ f. Release Detected in Private Well

☐ g. Release to Storm Drain

☐ h. Sanitary Sewer Release (Imminent Hazard Only)

5. 72 HOUR REPORTING CONDITIONS

☐ a. Subsurface Non-Aqueous Phase Liquid (NAPL) Equal to or Greater than 1/2 Inch

☐ b. Underground Storage Tank (UST) Release

☐ c. Threat of UST Release

☐ d. Release to Groundwater near Water Supply

☐ e. Release to Groundwater near School or Residence

☐ f. Substantial Release Migration

6. 120 DAY REPORTING CONDITIONS

☐ a. Release of Hazardous Material(s) to Soil or Groundwater Exceeding Reportable Concentration(s)

☐ b. Release of Oil to Soil Exceeding Reportable Concentration(s) and Affecting More than 2 Cubic Yards

☐ c. Release of Oil to Groundwater Exceeding Reportable Concentration(s)

☐ d. Subsurface Non-Aqueous Phase Liquid (NAPL) Equal to or Greater than 1/8 Inch and Less than 1/2 Inch

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC103

RELEASE NOTIFICATION & NOTIFICATION RETRACTION FORM

Release Tracking Number

☐ - ☐

Pursuant to 310 CMR 40.0335 and 310 CMR 40.0371 (Subpart C)

C. INFORMATION DESCRIBING THE RELEASE OR THREAT OF RELEASE (TOR): (cont.)

7. List below the Oils (O) or Hazardous Materials (HM) that exceed their Reportable Concentration (RC) or Reportable Quantity (RQ) by the greatest amount.

O or HM Released	CAS Number, if known	O or HM	Amount or Concentration	Units	RCs Exceeded, if Applicable (RCS-1, RCS-2, RCGW-1, RCGW-2)

☐ 8. Check here if a list of additional Oil and Hazardous Materials subject to reporting is attached.

D. PERSON REQUIRED TO NOTIFY:

1. Check all that apply: ☐ a. change in contact name ☐ b. change of address ☐ c. change in the person notifying

2. Name of Organization: _____

3. Contact First Name: _____ 4. Last Name: _____

5. Street: _____ 6. Title: _____

7. City/Town: _____ 8. State: _____ 9. ZIP Code: _____

10. Telephone: _____ 11. Ext.: _____ 12. FAX: _____

☐ 13. Check here if attaching names and addresses of owners of properties affected by the Release or Threat of Release, other than an owner who is submitting this Release Notification (required).

E. RELATIONSHIP OF PERSON TO RELEASE OR THREAT OF RELEASE:

☐ 1. RP or PRP ☐ a. Owner ☐ b. Operator ☐ c. Generator ☐ d. Transporter

☐ e. Other RP or PRP Specify: _____

☐ 2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)

☐ 3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))

☐ 4. Any Other Person Otherwise Required to Notify Specify Relationship: _____

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC103

Release Tracking Number
☐ - ☐

RELEASE NOTIFICATION & NOTIFICATION RETRACTION FORM

Pursuant to 310 CMR 40.0335 and 310 CMR 40.0371 (Subpart C)

F. CERTIFICATION OF PERSON REQUIRED TO NOTIFY:

1. I,_____ , attest under the pains and penalties of perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: _____ 3. Title: _____
Signature

4. For: _____ 5. Date: _____
(Name of person or entity recorded in Section D) mm/dd/yyyy

☐ 6. Check here if the address of the person providing certification is different from address recorded in Section D.

7. Street: _____

8. City/Town: _____ 9. State: _____ 10. ZIP Code: _____

11. Telephone: _____ 12. Ext.: _____ 13. FAX: _____

YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO $10,000 PER BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE.

Date Stamp (DEP USE ONLY:)

ICS Form 201

INCIDENT BRIEFING	1. Incident Name	2. Date Prepared	3. Time Prepared
4. Map Sketch			
ICS 201 Page 1 of 4	**5. Prepared by (Name and Position)**		

6. Summary of Current Actions

7. Current Organization

8. Resources Summary				
Resources Ordered	**Resource Identification**	**ETA**	**On Scene**	**Location/Assignment**

ICS Form 202

INCIDENT OBJECTIVES	1. INCIDENT NAME	2. DATE	3. TIME

4. OPERATIONAL PERIOD (DATE/TIME)

5. GENERAL CONTROL OBJECTIVES FOR THE INCIDENT (INCLUDE ALTERNATIVES)

6. WEATHER FORECAST FOR OPERATIONAL PERIOD

7. GENERAL SAFETY MESSAGE

8. Attachments (☑ if attached)

☐ Organization List (ICS 203)	☐ Medical Plan (ICS 206)	☐ Weather Forecast
☐ Assignment List (ICS 204)	☐ Incident Map	☐
☐ Communications Plan (ICS 205)	☐ Traffic Plan	☐

9. PREPARED BY (PLANNING SECTION CHIEF)	10. APPROVED BY (INCIDENT COMMANDER)

Organization Assignment List, ICS Form 203

ORGANIZATION ASSIGMENT LIST

1. INCIDENT NAME	2. DATE PREPARED	3. TIME PREPARED

POSITION	NAME

4. OPERATIONAL PERIOD (DATE/TIME)

5. INCIDENT COMMAND AND STAFF

INCIDENT COMMANDER	
DEPUTY	
SAFETY OFFICER	
INFORMATION OFFICER	
LIAISON OFFICER	

6. AGENCY REPRESENTATIVES

AGENCY	NAME

7. PLANNING SECTION

CHIEF	
DEPUTY	
RESOURCES UNIT	
SITUATION UNIT	
DOCUMENTATION UNIT	
DEMOBILIZATION UNIT	
TECHNICAL SPECIALISTS	

8. LOGISTICS SECTION

CHIEF	
DEPUTY	

a. SUPPORT BRANCH

DIRECTOR	
SUPPLY UNIT	
FACILITIES UNIT	
GROUND SUPPORT UNIT	

b. SERVICE BRANCH

DIRECTOR	
COMMUNICATIONS UNIT	
MEDICAL UNIT	
FOOD UNIT	

9. OPERATIONS SECTION

CHIEF		
DEPUTY		
a. BRANCH I- DIVISION/GROUPS		
BRANCH DIRECTOR		
DEPUTY		
DIVISION/GROUP		
DIVISION/ GROUP		
DIVISION/ GROUP		
DIVISION/GROUP		
DIVISION /GROUP		
b. BRANCH II- DIVISIONS/GROUPS		
BRANCH DIRECTOR		
DEPUTY		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
c. BRANCH III- DIVISIONS/GROUPS		
BRANCH DIRECTOR		
DEPUTY		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
d. AIR OPERATIONS BRANCH		
AIR OPERATIONS BR. DIR.		
AIR TACTICAL GROUP SUP.		
AIR SUPPORT GROUP SUP.		
HELICOPTER COORDINATOR		
AIR TANKER/FIXED WING CRD.		

10. FINANCE/ADMINISTRATION SECTION

CHIEF	
DEPUTY	
TIME UNIT	
PROCUREMENT UNIT	
COMPENSATION/CLAIMS UNIT	
COST UNIT	

PREPARED BY (RESOURCES UNIT)

Sample Assignment List, ICS Form 204

1. BRANCH	2. DIVISION/GROUP	ASSIGNMENT LIST

3. INCIDENT NAME	4. OPERATIONAL PERIOD DATE _____ TIME _____

5. OPERATIONAL PERSONNEL

OPERATIONS CHIEF		DIVISION/GROUP SUPERVISOR	
BRANCH DIRECTOR		AIR TACTICAL GROUP SUPERVISOR	

6. RESOURCES ASSIGNED TO THIS PERIOD

STRIKE TEAM/TASK FORCE/ RESOURCE DESIGNATOR	EMT	LEADER	NUMBER PERSONS	TRANS. NEEDED	PICKUP PT./TIME	DROP OFF PT./TIME

7. CONTROL OPERATIONS

8. SPECIAL INSTRUCTIONS

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND	LOCAL				SUPPORT	LOCAL			
	REPEAT					REPEAT			
DIV./GROUP TACTICAL					GROUND TO AIR				

PREPARED BY (RESOURCE UNIT LEADER)	APPROVED BY (PLANNING SECT. CH.)	DATE	TIME

Sample Incident Communications Plan, ICS Form 205

INCIDENT RADIO COMMUNICATIONS PLAN	1. Incident Name	2. Date/Time Prepared	3. Operational Period Date/Time

4. Basic Radio Channel Utilization

System/Cache	Channel	Function	Frequency/Tone	Assignment	Remarks

5. Prepared by (Communications Unit)

MEDICAL PLAN	1. Incident Name	2. Date Prepared	3. Time Prepared	4. Operational Period

5. Incident Medical Aid Station

Medical Aid Stations	Location	Paramedics Yes	No

6. Transportation

A. Ambulance Services

Name	Address	Phone	Paramedics Yes	No

B. Incident Ambulances

Name	Location	Paramedics Yes	No

7. Hospitals

Name	Address	Travel Time Air	Ground	Phone	Helipad Yes	No	Burn Center Yes	No

8. Medical Emergency Procedures

Prepared by (Medical Unit Leader)	10. Reviewed by (Safety Officer)

INCIDENT STATUS SUMMARY
FS-5100-11

1. Date/Time	2. Initial ☐ Update ☐ Final ☐	3. Incident Name	4. Incident Number

5. Incident Commander	6. Jurisdiction	7. County	8. Type incident	9. Location	10. Started Date/Time

11. Cause	12. Area Involved	13. % Controlled	14. Expected Containment Date/Time	15. Estimated Controlled Date/Time	16. Declared Controlled Date/Time

17. Current Threat	18. Control Problems

19. Est. Loss	20. Est. Savings	21. Injuries	Deaths	22. Line Built	23. Line to Build

24. Current Weather	25. Predicted Weather	26. Cost to Date	27. Est. Total Cost
WS Temp WD RH	WS Temp WD RH		

28. Agencies

Resources																					Totals
Kind of Resource	SR	ST	SR	ST	SR	ST	SR	ST	SR	ST	SR	ST	SR	ST	SR	ST	SR	ST	SR	ST	
ENGINES																					
DOZERS																					
CREWS Number of Crews:																					
Number of Crew Personnel:																					
HELICOPTERS																					
AIR TANKERS																					
TRUCK COS.																					
RESCUE/MED.																					
WATER TENDERS																					
OVERHEAD PERSONNEL																					
TOTAL PERSONNEL																					

30. Cooperating Agencies

31. Remarks

32. Prepared by	33. Approved by	34. Sent to: Date Time By

ICS Form 211

INCIDENT CHECK-IN LIST	1. Incident Name	2. Check-In Location (complete all that apply)					3. Date/Time
Check one: ☐ Personnel ☐ Handcrew ☐ Misc. ☐ Engines ☐ Dozers ☐ Helicopters ☐ Aircraft		☐ Base	☐ Camp	☐ Staging Area	☐ ICP Restat	☐ Helibase	

Check-In Information

4. List Personnel (overhead) by Agency & Name -OR- List equipment by the following format:					5.	6.	7.	8.	9.		10.	11.	12.	13.	14.	16.	16.
Agency	Single	Kind	Type	I.D. No/Name	Order/Request Number	Date/ Time Check-In	Leader's Name	Total No. Personnel	Manifest Yes	Manifest No	Crew or Individual's Weight	Home Base	Departure Point	Method of Travel	Incident Assignment	Other Qualifications	Sent to RESTAT Time/Int

Page ___ of ____	17. Prepared by (Name and Position) *Use back for remarks or comments*

ICS 213

GENERAL MESSAGE		
TO:	POSITION:	
FROM:	POSITION:	
SUBJECT:	DATE:	TIME:
MESSAGE:		
SIGNATURE:	POSITION:	
REPLY:		
DATE:	TIME:	SIGNATURE/POSITION:

UNIT LOG	1. Incident Name	2. Date Prepared	3. Time Prepared
4. Unit Name/Designators	5. Unit Leader (Name and Position)		6. Operational Period

7. Personnel Roster Assigned		
Name	ICS Position	Home Base

8. Activity Log	
Time	Major Events

9. Prepared by (Name and Position)

ICS Form 215

OPERATIONAL PLANNING WORKSHEET	1. Incident Name	2. Date Prepared Time Prepared	3. Operational Period (Date/Time)

4. Division/Group or Other Location	5. Work Assignments		Resource by Type (Show Strike Team as ST)																6. Reporting Location	7. Requested Arrival Time
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
		Req																		
		Have																		
		Need																		
		Req																		
		Have																		
		Need																		
		Req																		
		Have																		
		Need																		
9. Total Resources - Single		Req																		
		Have																		
		Need																		
Total Resources - Strike Teams		Req																	Prepared by (Name and Position)	
		Have																		
		Need																		

Incident Action Plan Safety & Risk Analysis Form, ICS 215A

INCIDENT ACTION PLAN SAFETY ANALYSIS	1. Incident Name	2. Date	3. Time

Division or Group	Potential Hazards								Mitigations (e.g., PPE, buddy system, escape routes)
	Type of Hazard:	Type of Hazard:	Type of Hazard:	Type of Hazard:	Type of Hazard:	Type of Hazard:	Type of Hazard:	Type of Hazard:	

Prepared by (Name and Position)

AIR OPERATIONS SUMMARY	1. Incident Name	Helibases Fixed Wing Bases	

4. Personnel and Communications	Name	Air/Air Frequency	Air/Ground Frequency	5. Remarks (Spec. Instructions, Safety Notes, Hazards, Priorities)
Air Operations Director				
Air Attack Supervisor				
Helicopter Coordinator				
Air Tanker Coordinator				

6. Location/Function	7. Assignment	8. Fixed Wing		9. Helicopters		10. Time		11. Aircraft Assigned	12. Operating Base
		No.	Type	No.	Type	Available	Commence		
13. Totals									

14. Air Operations Support Equipment	15. Prepared by *(include Date and Time)*

INDIVIDUAL PERFORMANCE RATING

INSTRUCTIONS: The immediate supervisor will prepare this form for a subordinate person. Rating will be reviewed with the individual who will sign and date the form. The completed rating will be given to the Planning Section Chief before the rater leaves the incident.

1. NAME	2. INCIDENT NAME AND NUMBER	START DATE OF INCIDENT
3. HOME UNIT ADDRESS	4. INCIDENT AGENCY AND ADDRESS	

5. POSITION HELD ON INCIDENT	6. TRAINEE POSITION	7. INCIDENT COMPLEXITY	8. DATE OF ASSIGNMENT
	☐ YES ☐ NO	☐ I ☐ II ☐ III	FROM: TO:

9. List the main duties from the Position Checklist, on which the position will be rated.

Enter X under the appropriate column indicating the individuals level of performance for each duty listed.

	PERFORMANCE LEVEL				
	Did not apply on this Incident	Unacceptable	Need to Improve	Fully Successful	Exceeds Successful
	EXPLAIN IN REMARKS				

10. REMARKS

11. THIS RATING HAS BEEN DISCUSSED WITH ME (Signature of individual being rated.)	12. DATE

13. RATED BY (Signature)	14. HOME UNIT	15. POSITION HELD ON THIS INCIDENT	16. DATE

*U.S. GPO: 1991-594-696/40141

Appendix H

Worst Case Discharge Scenarios

APPENDIX H
WORST CASE DISCHARGE SCENARIOS

a. Worst Case Discharge Scenario Selection

Cape Wind has determined that the Worst Case Discharge Scenario would be an incident resulting in a structural malfunction of the Electric Service Platform (ESP) resulting in a breach of the primary and secondary internal containment systems. According to this scenario, all contents of the ESP would be released to Nantucket Sound. The OILMAP program was used to simulate spill trajectories of the Worst Case Discharge Scenario volume (see below) for an instantaneous release of oil at the facility based upon realistic environmental conditions using historic observation data. The model was designed to evaluate oil spill trajectory over a 10-day period and assumes no spill response which maximizes the possibility of oil reaching shore. Eight hundred individual trajectory models were set up as part of the analysis.

Based on the Oil Spill Trajectory Analysis that was conducted, an incident during the winter months (Dec-Feb) is considered the worst case scenario, due to the prevailing weather conditions. This scenario is consistent with guidance provided by the BOEMRE GOMR (Mr. Rusty Wright).

b. Worst Case Discharge Scenario Discussion

(i) Facility Information

Electric Service Platform
OPD Providence NK19-07 Lease Block 6530
Water Depth: 28 feet (Mean Lower Low Water)
Distance from Shore: 7.5 miles

(ii) Volume

Based on conversations with the GOMR, and assuming all material is released from the ESP, the worst case scenario is a discharge 42,000 gallons (1,000 barrels).

(iii) Land Segment Identification

Land areas that could be potentially impacted by the discharge described herein were determined using OILMAP trajectory analysis results. The OILMAP program evaluated oil spill trajectory over a 10-day period and assumed no spill response. The OILMAP trajectory analysis indicates that a plume migrating toward Martha's Vineyard may impact the eastern most point of land within 4 hours. Given the urgency with which an oil spill response must be mounted in the event that a plume heads toward Martha's Vineyard in order to prevent oiling of the shoreline, this is identified as the Worst Case Scenario.

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(iv) Resource Identification

As outlined above, the worst case discharge scenario would occur during the winter months (December-February) and in this scenario the spilled oil would make landfall within 4 hours. According to the NOAA ESI data provided in the MassDEP Environmental Sensitivity Map for Martha's Vineyard East (see map provided in Section 11 of this OSRP), the following resources may be impacted by oil in the worst case scenario:

- Sevenspine bay shrimp
- Natural Heritage Endagered Species Program Estimated Habitat of Rare Wildlife
- Colonial waterbirds
- Alewife
- Haddock
- Harbor Seals

Certain species listed in the MassDEP Environmental Sensitivity Map for Martha's Vineyard East are not likely to be impacted during the worst case scenario. The worst case event would occur during the winter (December-Februaru) and therefore the eelgrass and some bird species identified in the Environmental Sensitivity Map would not be present in the area. The mapped benthic species (crabs and clams) may be present but the material properties of the ESP oil is such that animals on or under the seafloor are unlikely to be impacted by oil because the oil floats in a thin surface layer. The following species identified the MassDEP Environmental Sensitivity Map for Martha's Vineyard East are unlikely to be negatively affected if the worst case discharge scenario were to occur:

- Eelgrass
- Roseate Term May-Sep
- Atlantic Rock Crab
- Green Crab
- Softshell Clam
- Piping Plover Mar-Aug
- Terns: Arctic, Common, Least, Roseate
- Crustaceans

The following Geographic Response Plans for the Cape and Islands are relevant to the worst case discharge scenario:

- Vineyard Haven Harbor & Lagoon Pond (Site 19)
- Sengekontacket Pond (Site 20)
- Edgartown Harbor (Site 21)
- Cape Poge Bay (Site 22)

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(v) Response

Cape Wind will make every effort to respond to the worst case discharge scenario as effectively and quickly as possible. Quick mobilization is the key component to response and recovery. All efforts will be made to contain and clean up the spill offshore, before any shoreline impacts occur. Upon detection of a spill event, Cape Wind would initiate the procedures described in the OSRP.

Immediately upon detection of a release, Cape Wind will make its notifications in accordance with Section 7.0 (Q1, SMT, SROT, and OSRO Notifications) and Section 8.0 (External Notificatons).

Upon notification of the spill, the IC will request mobilization of equipment identified in Appendix E, including but not limited to containment boom, skimming devises, vacuum and fluid transfer equipment, oil contaminated substance storage, marine vessels, and personnel. In addition, the IC will request an overflight of the spill area to evaluate the dimensions of the plume, if conditions are acceptable.

In accordance with Priority 1 of the Strategic Response Planning (Section 12.0), an incident-specific Health and Safety Plan will be created at the start of the response with the intention to maintain the safety of public and personnel responding to the incident. Implementation of the plan will involve identification of all materials that may have been released into the environment based on available information. In addition, the Health and Safety Plan will outline the establishment of site control, vessel traffic control, and decontamination stations.

In accordance with Priority 2 of the Strategic Response Planning (Section 12.0), the emergency shutdown of the entire facility will be completed. The worst case discharge scenario assumes the entire volume of ESP transformer oil is released into the environment, which implies the fixed reservoir of oil is empty and therefore a pathway of oil into the water does not exist.

In accordance with Priority 3 of the Strategic Response Planning (Section 12.0), the SMT will focus on managing the coordinated response effort. The initial effort in managing the response will be to ensure that all necessary notifications have been made, followed by establishment of a unified command organization and facility for government oversight. As part of this effort, the SMT will monitor the mobilization and arrival of response resources and personnel to the site of the incident.

In the worst case discharge scenario, the aerial overflight observation could indicate that the plume may be approximately 0.5 miles by 0.5 miles wide one hour after the spill event. In order to chase the plume and initiate on-the-water recovery efforts, the IC would request mobilization of the following:

- M/V Scarlett Isabella (deployed from Boston)
- M/V Mathew Hughes (deployed from Fairhaven)
- 2 x chase boats (deployed from Falmouth)

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- 4 x near shore skimming vessels, JBF 420 or equivalent (deployed from Falmouth)
- 4 x workboats (26 feet or larger) (deployed from Falmouth)
- 5 miles of containment boom

The resources identified above will be divided into two teams and operated in a configuration that minimizes delays associated with offloading oil from the skimming vessels during recovery operations. Each large vessel (Scarlett Isabella / Mathew Hughes) will have a team of two near-shore skimming vessels, two workboats, and one chase boat. The two workboats are responsible for towing boom in a V-shape, while one of the near shore skimming vessels is positioned at the bottom of the V to recover the oil. The large vessel is designated as a storage facility so that when the near shore skimming vessel gets full, it disconnects from the boom (V) and travels to the large vessel to offload the oil/water mixture. In order to avoid down time on the recovery operation, the second near shore skimming vessel joins the V and starts to fill its storage tanks with recovered oil. This operation will continue during daylight hours, so long as sea conditions are safe.

Table H-1 provides the response time for each vessel along with its equipment package and temporary storage equipment. The table includes anticipated travel times needed for procurement, mobilization, transfer of equipment and personnel to spill vessels, travel time to the site, and deployment.

Based on the skimming equipment readily available, the estimated EDRC exceeds 7,000 BBLs per day. As noted in Section 14.0, response equipment can be on board a spill response vessel and transiting toward a spill in as little as 2 hours. Assuming a one-hour transit from the staging area to the scene of a spill, Clean Harbors' personnel can be on scene responding to an incident in 3 hours.

In accordance with Priority 4 of the Strategic Response Planning (Section 12.0), necessary environmental resource protection requirements will be evaluated and addressed. In order to identify what resources are at risk from oiling, spill trajectory modeling will be requested/conducted incorporating on-site observations of environmental conditions (wind, wave, and currents) and the dimension and apparent movement of the plume from the aerial spotter.

As noted above in Section b.iv, the worst case discharge scenario assumes the plume migrates toward the eastern shore of Martha's Vineyard. In this worst case, the IC requests the following resources:

- Vacuum Equipment:
  - 3 x 3,000 gallon straight trucks
  - 3 x 5,000 gallon tractor trailers trucks
- 30 pickup trucks (3 personnel per vehicle)
- 6 x 53-foot trailers full of sorbent boom and pads

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- 33 x jon boats with 25 horsepower outboard engines (delivered on a flatbed trailer)
- 12 x hotsy trailers with associated power washing equipment
- 25 miles of 18-inch containment boom
- 30 x additional boats (up to 26 feet in length) – for close shore activity
- 12 x farm tractors (90 horsepower or above with 4-wheel drive) pulling tandem axle landscape trailers
- 6 x farm tractors with portable toilets mounted
- 4 x 3-cubic yard (or greater) front end loaders
- 3 x 48-foot tractor trailers loaded with 4mm bags (DOT drum liners), assorted personal protective equipment, and miscellaneous consumable supplies
- 500 beach workers
    - 50 Clean Harbors staff
    - 450 subcontracted workers (through Clean Harbors for finance, logistics, operations, planning, health and safety)

The equipment above is intended to support a wide range of shoreline access possibilities. In some cases it is anticipated that road access to areas of impacted shoreline would be severely limited and therefore it will be more efficient to mobilize resources and personnel from small workboats or jon boats. Conversely, it may be easiest to move equipment and personnel around with large farm tractors and trailers. The equipment inventory developed above is designed to provide maximum flexibility and sufficient resources to mount a comprehensive and efficient incident response.

Table H-2 provides a summary of the anticipated arrival times for the equipment listed above. Given the great extent of resources required for the response and the isolated nature of Martha's Vineyard, the SMT will contact the Steamship Authority to arrange for a number of resource deliveries between Woods Hole and Martha's Vineyard.

In accordance with Section 11.0, the spill trajectory analysis results will be evaluated in the context of the Environmental Sensitivity Maps in order to determine a deployment strategy for booming resources as they arrive on scene. As described in Section 12.0, the SMT will work with the federal and state on scene coordinators to determine which natural resources should receive the highest priority for protection. In addition, the Geographic Response Plans for the potentially impacted areas will be consulted and implemented as necessary and appropriate.

For the worst case discharge scenario, it is anticipated that the highest priority will be to place boom across inlets to minimize or eliminate the access of oil into inland water bodies. Boom will be deployed inside inlets, as close to the mouth as feasible, with sufficient anchoring to counter any

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currents or water level changes that may be experienced. Sorbent boom will be deployed in conjunction with containment boom, to the maximum extent practicable.

Once all inlets are protected, boom will be deployed along shoreline areas that are designated as critical habitat and most at-risk of becoming oiled, based on spill trajectory modeling. Shoreline boom will be deployed from workboats, seaward of the surf zone in order to minimize the turbulence experienced by the boom. Anchoring will be used as necessary based on existing and forecasted conditions.

In accordance with Priority 5 of the Strategic Response Planning (Section 12.0), once environmental resource protection is established adequately, containment and recovery efforts will be the focus of the spill response. It is anticipated that on-water containment and recovery happens simultaneously with shoreline protection implementation. In the worst case scenario, the total volume of oil is released instantaneously and therefore source containment is not feasible. Instead, on-water vessels will be chasing the plume as it moves toward shore. As the plume makes landfall, the on-water vessels will be in close proximity to shore and will be able to continue recovering the oil/water mixture from the seaward side of the plume, while workers on shore recover oil from the landward side of the plume.

During implementation of Priority 5 a disposal plan for the recovered oil/water mixture will be developed. Temporary storage of recovered oil/water mixes will be accomplished by utilizing on-board tankage or storage tanks placed on deck depending on the engaged vessel. In addition to the temporary storage tanks available through Clean Harbors, additional resources can be obtained from Baker Tanks (1-800-Baker12) and Rain For Rent (1-800-742-7246). These tanks will be placed on deck in secondary containment pads. It is anticipated that the large vessels mobilized from Boston and Fairhaven will serve as temporary/intermediate storage facilties to support the skimmer operations and maintain their utilization during daylight hours. The large storage vessels will work in tandem such that at least one vessel is always on site, while the other heads to the mainland to offload waste at an approved and properly maintained storage facility in preparation for transportation to the final disposal location. The staging area for waste disposal is uncertain at this time, but may happen in Falmouth or Hyannis. It is anticipated that all oil/water mixtures will go for recycling at the Clean Harbors facility in Woburn, MA and all solids will be taken to the Clean Harbors waste-to-energy facility in Rochester, MA.

In accordance with Priority 6 of the Strategic Response Planning (Section 12.0), once containment and recovery operations are established and a disposal plan is in place, the SMT will focus on rehabilitating impacted wildlife. As stated in Section 17.0, rehabilitation of oiled wildlife requires experienced staff with veterinary, technical, and crisis management skills. Federal and state permit clearance will be required for any wildlife response. The worst case discharge scenario would occur during the winter months (December-February), which minimizes the amount of wildlife that may be exposed to oil. The Environmental Sensitivity Maps suggest that harbor seal populations may be present on the eastern side of Martha's Vineyard. Seals are protected by the Marine Mammal Protection Act and therefore involvement of the National Marine Fisheries Service, Office of Protected Resources would be required during development of the plan to rehabilitate wildlife. As part of the

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wildlife response, it is anticipates that Cape Wind's environmental consultant (ESS Group, Inc.) would develop and implement a monitoring program to evaluate the long-term efficacy of a spill response. It is anticipated that the environmental monitoring program could last six to nine months, given the size of the potentially impacted shoreline area in the worst case scenario.

In accordance with Priority 7 of the Strategic Response Planning (Section 12.0), the removal of oil from impacted areas will continue indefinitely until all recoverable oil has been collected and disposed of properly. On shore clean up will be accomplished using a variety of techniques including shovels and vacuum systems to collect oil/water mixtures, Given the volume of oil and areal extent of the potential shoreline impact, it is estimated that the beach cleanup effort would last approximately two months. After the first month, during which 500 personnel would be actively cleaning the beach during daylight hours for seven days a week, a transition to a smaller crew would occur as practicable.

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Table H-1 Initial Response Equipment Inventory

Recovery Team	Duty	Skimming System	Supplier & Phone	Warehouse	Skimming Package	Quantity	Recovery Rate (Barrels/Day)	Storage (Barrels)	Staging Area	Distance to Site from Staging (Nautical Miles)	Response Times (Hours)				
											Staging ETA	Loadout Time	ETA to Site	Deployment Time	Total ETA
RECOVERY TEAM 1	Oil Recovery & Temporary Oil/Water Storage	M/V Scarlett Isabella	Clean Harbors 800-645-8265	Boston	JBF VOSS DIP 400 Unit	1	2,040	900	Boston	97	1	0.5	5	0	**6.5**
					18" Boom	11,400									
					Personnel	6									
					136' Vessel	1									
	Oil Recovery	Near Shore Skimming Vessel (JBF Type)	Clean Harbors 800-645-8265	East Providence	JBF VOSS DIP 400 Unit	1	2,040	43	Yarmouth	7	2	0.5	1	0	**3.5**
					18' Boom	1,000									
					Personnel	3									
					30' Vessel	1									
	Oil Recovery	Near Shore Skimming Vessel (Landing Craft or equivalent)	Clean Harbors 800-645-8265	East Providence	Crucial 1D 18 H-36 Drum Skimmer	1	240	10	Yarmouth	7	2	0.5	1	0	**3.5**
					18' Boom	800									
					Personnel	3									
					34' Vessel	1									
	Tow Containment Boom	Work Boat (26' or larger)	Clean Harbors 800-645-8265	East Providence	Personnel	3	N/A	N/A	Yarmouth	7	2	0.5	1	0	**3.5**
	Tow Containment Boom	Work Boat (26' or larger)	Clean Harbors 800-645-8265	Boston	Personnel	3	N/A	N/A	Yarmouth	7	1.5	0.5	1	0	**3.5**
	Recon	Chase Boat	Clean Harbors 800-645-8265	Boston	Personnel	2	N/A	N/A	Yarmouth	7	1.5	0.5	1	0	**3.5**
RECOVERY TEAM 2	Oil Recovery & Temporary Oil/Water Storage	M/V Mathew Hughes	Clean Harbors 800-645-8265	Boston	Lamor Minimax Brush Skimmer	1	750	157	Fairhaven	50	1	0.5	3	0	**4.5**
					18' Boom	11,400									
					Personnel	6									
					114' Vessel										
	Oil Recovery	Near Shore Skimming Vessel (JBF Type)	Clean Harbors 800-645-8265	Boston	JBF VOSS DIP 400 Unit	1	2,040	43	Yarmouth	7	1.5	0.5	1	0	**3**
					18' Boom	1,000									
					Personnel	3									
					30' Vessel	1									
	Oil Recovery	Near Shore Skimming Vessel (Landing Craft or equivalent)	Clean Harbors 800-645-8265	Boston	Crucial 1D 18 H-36 Drum Skimmer	1	240	10	Yarmouth	7	1.5	0.5	1	0	**3**
					18' Boom	800									
					Personnel	3									
					34' Vessel	1									
	Tow Containment Boom	Work Boat (26' or larger)	Clean Harbors 800-645-8265	Boston	Personnel	3	N/A	N/A	Yarmouth	7	1.5	0.5	1	0	**3**
	Tow Containment Boom	Work Boat (26' or larger)	Clean Harbors 800-645-8265	East Providence	Personnel	3	N/A	N/A	Yarmouth	7	2	0.5	1	0	**3.5**
	Recon	Chase Boat	Clean Harbors 800-645-8265	East Providence	Personnel	2	N/A	N/A	Yarmouth	7	2	0.5	1	0	**3.5**
										Estimated Recovery Rate (BBLS/DAY)				**7,350**	
										Skimming Vessel Storage Capacity (Barrels)				**1,163**	

Table H-2 Proposed Response Equipment Inventory

	Quantity	Boston, MA Service Ctr 609 Pleasant St Weymouth, MA	Providence, RI Service Ctr 8 Dexter Rd East Providence, RI	Shrewsbury, MA Service Ctr 238 Cherry St Shrewsbury, MA	Herz Equipment Rental 45 Gerard St Boston, MA	United Equipment Rental 354 3rd St Everett, MA	ChemTex 1 Front St Cumberland, RI	ArgoTurboServe (ATC) 49 Commerce Rd Carlstadt, NJ	Trident Environmental Group 62 LaCombe St Marlboro, MA	TMC Services One William Way Bellingham, MA	Moran Environmental Recovery 100 Water St East Providence, RI	Moran Environmental Recovery 75 York Ave Randolph MA	Bow, NH Service Ctr 20 Dunklee Rd Bow, NH
Distance to Staging Area (Miles)		60	72	95	75	80	78	254	98	79	74	65	140
Time to Ferry Terminal (Hours)		1.25	1.5	1.75	1.5	1.5	1.5	4.5	2	1.5	1.5	1.5	2.5
ETA Martha's Vineyard		2	2	2	2	2	2	2	2	2	2	2	2
Estimated Response Time		**3.25**	**3.5**	**3.75**	**3.5**	**3.5**	**3.5**	**6.5**	**4**	**3.5**	**3.5**	**3.5**	**4.5**
Vessels & Marine Support Equipment													
Jon Boats	33	3	1										2
Work Boats (up to 26' in length)	30	3	3						2	1	2	1	
Motor Vehicles & Vacuum Equipment													
3,000 Gallon Straight Trucks	3	2							1				
5,000 Gallon Tractor Trailer Trucks	3	1								1		1	
50 Passenger or Greater Bus	9								4	2	1	2	
30 Pickup Trucks	30	3	2						6	2	1	2	
18" Containment Boom	25 miles	0.4	2.5	0.1					0.7	1.0	0.8	0.6	
Clean Up Equipment													
53' Trailers Full of Sorbent Boom and Pads	6						6						
Hotsy Trailers with Associated Power Washing Equipment	12	2	2										
48' Tractor Trailers Loaded with 4mm Bags (DOT drum liners), Assorted PPE, and Miscellaneous Consumable Supplies	3							3					
Farm Tractors with Trailers for Personnel Moving	12				12								
Farm Tractors with Portable Toilets Mounted	6					6							
3 yd^3 or Greater Front End Loaders	4				2	2							
Personnel													
Clean Harbors Personnel	50	15	7										
Additional Personnel (subcontracted)	450								175	110	75	90	

Table H-2 Proposed Response Equipment Inventory (Continued)

	Quantity	Springfield, MA Service Ctr 190 Brookdale Drive Springfield, MA	Bristol, CT Service Ctr 781 Middle Street Bristol, CT	Milford, CT Service Ctr 279 Woodmount Rd Milford, CT	Portland, ME Service Ctr 17 Main Street South Portland, ME	Albany, NY Service Ctr 32 Bask Rd Glenmont, NY	Newburgh, NY Service Ctr 15 Little Brook Lane Newburgh, NY	Edison, NJ Service Ctr 3 Sutton Place Edison, NJ	Bangor, ME Service Ctr 40B Carey Circle Hampden, ME	Bridgeport, NJ Philadelphia Service Ctr 2858 Route 322 Bridgeport, NJ	Laurel, MD Service Ctr 3527 Whiskey Bottom Rd Laurel, MD	Richmond, VA Service Ctr 17465 Eltham Rd West Point, VA	Norfolk VA Service Ctr 804J Industrial Ave Chesapeake, VA
Distance to Staging Area (Miles)		140	175	180	180	220	260	280	315	355	458	615	612
Time to Ferry Terminal (Hours)		2.5	3.25	3.25	3.5	4	4.75	5.25	5.5	6.5	7.5	10	10
ETA Martha's Vineyard		2	2	2	2	2	2	2	2	2	2	2	2
Estimated Response Time		**4.5**	**5.25**	**5.25**	**5.5**	**6**	**6.75**	**7.25**	**7.5**	**8.5**	**9.5**	**12**	**12**
Vessels & Marine Support Equipment													
Jon Boats	33	2	2	1	4	2	1	2		8	2	2	1
Work Boats (up to 26' in length)	30		1	1	4	2	1	1	1	4	1	1	1
Motor Vehicles & Vacuum Equipment													
3,000 Gallon Straight Trucks	3												
5,000 Gallon Tractor Trailer Trucks	3												
50 Passenger or Greater Bus	9												
30 Pickup Trucks	30		2	2	1	1	1	2	1	2	1	1	
18" Containment Boom	25 miles	0.1	0.6	0.6	4.9	0.8	0.4	0.4		9.3	1.9		
Clean Up Equipment													
53' Trailers Full of Sorbent Boom and Pads	6												
Hotsy Trailers with Associated Power Washing Equipment	12		2	2	2	1	1						
48' Tractor Trailers Loaded with 4mm Bags (DOT drum liners), Assorted PPE, and Miscellaneous Consumable Supplies	3												
Farm Tractors with Trailers for Personnel Moving	12												
Farm Tractors with Portable Toilets Mounted	6												
3 yd^3 or Greater Front End Loaders	4												
Personnel													
Clean Harbors Personnel	50		5	4	5	1	1	3	2	3	2	2	
Additional Personnel (subcontracted)	450												

Appendix I

Oceanographic and Meteorological Information for Subregional OSRP's

APPENDIX I
OCEANOGRAPHIC AND METEOROLOGICAL INFORMATION FOR SUBREGIONAL OSRP'S

Currents

An empirical analysis based on current Acoustic Doppler Current Profiler (ADCP) data and historical data was used to determine tidal current speeds and direction for the Project site. Modeling conducted by Woods Hole Group (2002) was used to determine wind-driven currents on Horseshoe Shoal.

Currents in Nantucket Sound are driven by strong, reversing, semidiurnal tidal flows. Wind-driven currents are only moderate because of the sheltering effect of Nantucket and Martha's Vineyard, however, the southwesterly winds during the summer produce eastward flow through Nantucket Sound (Wilkin, 2006). The tidal range and diurnal timing are variable because of the semi-enclosed nature of the Sound and the regional variations in bathymetry. Typical tidal heights are in the range of 1 to 4 feet (0.3 to 1.2 meters), with tidal surges of up to approximately 10 feet (3 meters) having been recorded during hurricanes (Bumpus et al., 1973; Gordon and Spaulding, 1979). Times of high and low tides vary across the Sound by up to two hours.

Tidal flow and circulation within the Sound generate complex currents, the directions of which form an ellipse during the two tidal cycles each day. The complex bathymetry of Nantucket Sound forces the tidal ellipses to take different shapes in different regions of the Sound. Just off the coast of the south shore of Cape Cod, there is a strong rectilinear, semi-diurnal tidal flow approximately parallel to the coast (Goud and Aubrey, 1985). Tides around the Nantucket Shoals produce a strong anticyclonic circulation (Wilkin, 2006). The tidal current flows to the east during the flood tide (incoming) and to the west during the ebb tide (outgoing). Peak tidal currents often exceed two knots (Bumpus et al., 1973). The intensity of tidal flow, in general, decreases from west to east. There is a slow net drift of the water mass toward the east in the Sound. The net drift is about 2,153 square feet (200 square meters) per tidal cycle, roughly five percent of the total easterly and westerly tidal flows (Bumpus et al., 1971).

To characterize site-specific tidal and wind-driven currents at the Proposed Site in Nantucket Sound, analytical models were applied (WHG, 2004), with the results summarized as follows.

- Flood currents on the shoals are generally directed easterly, with ebb currents generally directed westerly.
- Local changes in tidal current direction occur on Horseshoe Shoal due to its bathymetric features, with currents diverted slightly around the shallowest portion of the shoal.
- Flood currents are generally stronger than ebb currents, and spring tidal currents are approximately 15 to 20% stronger than mean tidal currents.
- Tidal current velocities were calculated to be approximately two feet/second (0.61 m/second) at Horseshoe Shoal.
- Wind-driven current velocities modeled at Horseshoe Shoal were found to be much lower than tidal velocities, and were found to be concentrated over the crest of the shoal.

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- Current speed and direction were found to vary more with location than water depth.

Waves

There is no extensive source of wave data within Nantucket Sound, so available wind data and analytical models were used to characterize wind-generated waves at the Proposed Site. The major factors affecting the magnitude and period of wind-generated waves in this area are: the fetch length (the distance over which wind acts on the water surface), average water depth, and wind speed. The wave model applied used these factors to estimate wave height and period under different conditions. Fundamentally, larger waves are generated as wind speed, water depth, and fetch length increase. Fetch is restricted within Nantucket Sound due to surrounding landforms including Cape Cod, Monomoy Island, Nantucket Island, and Martha's Vineyard.

Wave model simulations were performed using the USACE's *Wind Speed Adjustment and Wave Growth* model (USACE,1992) to estimate significant wave height (i.e., the average height of the highest 1/3 of waves in a sea state); peak period (i.e., the period that characterizes the majority of the waves in the sea state); and peak direction. The results represent wave conditions at the center of the Proposed Site at Horseshoe Shoal. Generally, the model indicates that Horseshoe Shoal is exposed to the largest waves from the easterly directions. Wind-generated significant wave heights generally range from less than one foot to nearly four feet (0.3 to 1.2 meters), with relatively short spectral peak wave periods (between two and four seconds). Individual wave heights can be higher, and substantially higher waves would be present during storms.

Extremal analysis was performed to estimate wave height and period characteristics for the 2-, 10-, 50-, and 100-year return periods. These were estimated for both locally generated and offshore waves using a computer model entitled "Extrm2: Extremes Program". The extreme storm wave for this Project is defined as the average height of the highest 1 percent of all waves in the spectrum (for the 50-year return the extreme storm wave at Horseshoe Shoal was estimated to be 17.3 feet (5.3 meters).

Data was collected at the Project site between April 2003 and September 2004 using an ADCP. The wave data indicated that the maximum recorded significant wave height reached 6.6 feet (2.0 meters0 while the maximum wave height reached 8.2 feet (2.5 meters). The majority of wave patterns had a significant wave height between 1 foot (0.3 meters) and 1.3 feet (0.4 meters). The wave period varied depending on whether wind-generated waves (2 to 6 second periods) or swell (6 to 12.8 seconds) determined the shape of an individual wave spectrum. The highest waves had periods of approximately six seconds, slightly longer (about one second longer) than periods predicted by wave modeling.

Typically, winds with speeds of 8.8 knots (15 m/s) generated waves with a significant wave height of 3.9 +/- 0.7 feet (1.2 +/- 0.2 meters). This relationship varied slightly, depending on water depth. Measured waves were approximately ten percent higher during periods of high water. A comparison with model results indicates that the observed wave height/wind speed relationship fits well with the results of the model. Wind and wave directions correlated well with a tendency for waves to propagate along the east-west axis of Nantucket Sound.

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Appendix J

Bibliography

APPENDIX J
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