



Chapter 5 Consultation, Coordination, and Regulatory Compliance

CHAPTER 5: CONSULTATION, COORDINATION, AND REGULATORY COMPLIANCE

5.1 INTRODUCTION

This chapter describes the interagency consultation and stakeholder involvement that occurred during development of the Herring River Restoration Environmental Impact Statement / Environmental Impact Report (EIS/EIR). One focus of interagency consultation in this planning effort is to identify the regulatory and permitting requirements that must be met before restoration activities can be undertaken. This chapter also includes a description of the public involvement process and a list of the recipients of the draft EIS/EIR. Details regarding other applicable laws, policies, and regulations that do not involve special consultation or compliance processes are listed in “Appendix D: Applicable Laws, Policies, and Regulations.”

5.2 THE SCOPING PROCESS

The project proponents used internal and public scoping to identify issues related to restoration of the Herring River. Internal scoping involved discussions among the Herring River Restoration Committee (HRRC) regarding the purpose of and need for management actions, issues, potential management alternatives, mitigation measures, the analysis boundary, appropriate level of documentation, available references and guidance, and other related topics. The HRRC also sought agency input from a variety of federal, state, and local entities in developing the restoration plan.

Public scoping is the early involvement of the interested and affected public in the planning and environmental analysis process. The public scoping process helps ensure that people are given an opportunity to comment and contribute early in the decision-making process. For this EIS/EIR, project information was distributed to individuals, agencies, and organizations early in the scoping process, and people were given a variety of opportunities to express concerns or views and identify important issues or other alternatives or elements of that should be considered.

Taken together, internal and public scoping are essential elements of the National Environmental Policy Act (NEPA) and Massachusetts Environmental Policy Act (MEPA) planning process. The following sections describe the various ways internal and public scoping was conducted for this project.

5.2.1 INTERNAL SCOPING: STAKEHOLDER GROUPS

Town of Wellfleet/Town of Truro Memorandum of Understanding I

In 2005, a Memorandum of Understanding (MOU I) between the National Park Service (NPS) and the Town of Wellfleet was signed to evaluate the proposed Herring River Restoration Project. The purpose of the MOU was to establish a process and framework to determine whether a restoration of the Herring River was technically feasible and subsequently to develop a conceptual plan of the restoration goals and objectives to meet stakeholder needs should restoration be deemed appropriate. The MOU created the Herring River Technical Committee (HRTC) to review the scientific literature and determine the feasibility of restoration.

Herring River Technical Committee

The HRTC included representatives from the following local commissions and boards/agencies:

- Cape Cod National Seashore (the Seashore)
- Wellfleet Conservation and Health Agent
- Wellfleet Open Space Committee
- Wellfleet Shellfish Advisory Committee
- Wellfleet Shellfish Constable
- Wellfleet Herring Warden
- Wellfleet Natural Resource Advisory Committee
- Chequessett Yacht and Country Club (CYCC)
- Town of Truro Selectmen
- Massachusetts Wetland Restoration Program
- U.S. Fish and Wildlife Service (USFWS)
- Natural Resources Conservation Service (NRCS)
- Cape Cod Cooperative Extension Service
- National Oceanic and Atmospheric Administration's (NOAA's) Restoration Center

In 2007, the HRTC developed the *Herring River Conceptual Restoration Plan* (CRP) based on a review of the scientific and technical information on the Herring River system, as well as community input. The CRP concluded that tidal restoration for the Herring River was feasible and in the public interest and recommended moving forward with development of a more detailed plan and environmental review documents.

Memorandum of Understanding II

Upon approval of the CRP by the Seashore and Wellfleet Board of Selectmen, a second MOU (MOU II) between the Towns of Wellfleet and Truro and Cape Cod National Seashore (the Seashore) was signed in 2007, thus disbanding the HRTC and creating the HRRC. MOU II charged the HRRC with development of a detailed restoration plan and oversight of the environmental review process under NEPA and MEPA. Under MOU II, the towns serve as co-applicants for the MEPA process and the Seashore serves as lead agency for the NEPA process.

Herring River Restoration Committee

The HRRC is a multi-agency group comprised of representatives from Wellfleet, Truro, the Seashore, the USFWS, Massachusetts Division of Ecological Restoration (formerly Coastal Zone Management's Wetland Restoration Program), the NOAA's Restoration Center, and the NRCS. The HRRC also has the authority to conduct additional planning, seek funding, and complete environmental compliance for a detailed restoration plan. When complete the plan would be ratified by the parties under a final MOU (MOU III) for project implementation.

Technical Working Group

The Herring River Technical Working Group (TWG) was established under a 2008 MEPA Certificate to identify and address environmental management and permitting issues associated with the Herring River restoration. The TWG met quarterly throughout the preparation of this draft EIS/EIR to assist in developing appropriate study methodologies and protocols and to ensure that the EIS/EIR adequately addresses the analysis and data requirements of required permits and approvals.

Memorandum of Understanding III

A third MOU (MOU III) between the Towns of Wellfleet and Truro, the Seashore, and potentially other entities, would be developed to document the agreement between the entities for project implementation. MOU III would address partner relationships, roles and responsibilities, decision authority, financial obligations and governing structure for the design, permitting, construction and operation and management activities.

Friends of Herring River

The Friends of Herring River is a non-profit organization formed in 2008 to “promote education, research and public awareness of the Herring River estuary as one of critical environmental concern, to preserve the native environmental integrity of the river and estuary, to ensure habitat protection and retention of the native biological diversity and productivity of the river and estuary, to retain and enhance public access to the river and estuary, to preserve natural and historic sites, and to promote public awareness.” Friends of Herring River is independent of the HRRC but works closely with the HRRC to promote the restoration of the Herring River Estuary.

5.2.2 PUBLIC SCOPING

Two public scoping meetings held in August and September 2008 in the Town of Wellfleet gave the public the opportunity to learn about the planning process and provide input. Both meetings were open-house style sessions with short presentations that allowed the public to ask HRRC members questions and provide input in an informal atmosphere. NPS representatives at the meeting recorded public comments. Following the meeting, a 60-day comment period gave the public the opportunity to submit additional comments through the mail or on-line through the NPS Planning, Environment, and Public Comment (PEPC) website.

Forty-two items of correspondence containing 288 comments were received during the public comment period. Topics raised by the public and agencies ranged widely – from concerns about impacts to private lands to compliance with commonwealth and local permitting requirements. However, several topics received more than 20 comments each (NPS 2008):

- **Potential Impacts to Adjacent Properties and Landowners** (30 comments)—Commenters expressed concerns about wells, septic systems, vegetation on private property, and impacts to the CYCC. Mitigation and compensation were commonly cited in these comments.
- **Consultation and Coordination** (29 comments)—Commenters included agencies and other stakeholder groups, with requests that the NEPA/MEPA compliance document address all appropriate requirements.

- **CYCC Golf Course** (30 comments)—The CYCC made several comments specific to this topic that capture concerns and requests for further information regarding options for the golf course.
- **Purpose and Need for the Plan** (25 comments)—Commenters raised various issues to be analyzed in this draft EIS/EIR. Commenters specifically mentioned the following resource and impact topics: wetlands, fisheries, water quality, wildlife/aquatic habitats, sea level rise, public rights, public health and safety, soils, species of special concern, and adjacent lands. Other commenters noted that the draft EIS/EIR should include a thorough listing of mitigation measures.
- **Coastal Resources** (21 comments)—The Cape Cod Commission (CCC) submitted several comments specific to wildlife and plant habitat and the Regional Policy Plan, including minimum performance standards, comments to focus the analysis, and information requested.

5.3 COMPLIANCE WITH FEDERAL, STATE, AND LOCAL REGULATORY AGENCIES

5.3.1 PROPOSED STRATEGY FOR REGULATORY PERMITTING

This section explains the proposed strategy for regulatory permitting over the duration of project implementation. This strategy was developed in consultation with the Herring River TWG that was established in accordance with the November 7, 2008 MEPA EIR scope and includes representatives from federal, state, regional, and local regulatory authorities that have jurisdiction over proposed project activities. The TWG acknowledges that the unique and complex nature of this project warrants development of a coordinated and comprehensive permitting strategy that facilitates efficient review, accommodates a long-term and dynamic implementation program, and ensures proper environmental protection and public input throughout the process.

The project would require multiple permits and approvals from several federal, state, county, and municipal regulatory agencies. These approvals would need to encompass the project's several year implementation period and allow for flexibility if project needs extend beyond this time frame. Restoration activities would proceed in an incremental and phased approach that would be guided by, and adjusted in response to, the adaptive management plan. To accommodate the unique characteristics of this project, a tailored regulatory permitting strategy is proposed with the following core components.

5.3.2 COMPREHENSIVE LONG-TERM PERMITS

Following publication of the NPS Record of Decision (ROD) and a Final EIR Certificate from MEPA, but prior to initiation of restoration activities, project proponents would apply for one comprehensive set of permits and approvals from all federal, state, and local regulatory authorities. Permit applications would address all possible project elements grouped into two classes:

Class 1—Elements that are required for initial project implementation and are certain to occur (e.g., reconstruction of the main dike, construction of the dike at Mill Creek under alternative D, and elevation of low-lying roads); and flood proofing or other mitigation to impacted structures.

Class 2—Elements that may or may not be implemented, or have an uncertain extent of implementation (e.g., channel modifications, grading, and vegetation management), and that would

be determined by future monitoring and adaptive management decisions based on system response to incremental increases in tidal exchange.

Primary construction elements and other activities that fall into Class 1 would be addressed with detailed plans, data, and narratives in the initial permit applications. Other project elements that fall into Class 2 would be covered more broadly with lesser detail in the initial permit applications, and would be further considered in greater detail by regulatory authorities if and/or when they are proposed for implementation based on adaptive management analysis as tidal restoration progresses over time. All activities in both classes would be initially proposed with the maximum possible alterations to ensure that the initial applications and permits encompass the greatest potential amount of anticipated impacts. Permits and approvals would be requested for the longest allowable time frame.

5.3.3 STANDING REGULATORY OVERSIGHT COMMITTEE

As a successor to the TWG established by MEPA, a standing Regulatory Oversight Committee is proposed with participation, as necessary, from representatives of regulatory authorities having jurisdiction over project activities. After initial dike construction is complete and the project begins the adaptive management phase, committee representatives would have authority to review and approve substantial project design changes to Class 1 elements, and more detailed design plans, methodologies, and specific restoration management actions related to Class 2 elements. Committee deliberations would be informed and guided by the approved adaptive management plan.

Committee members would meet at least annually to review monitoring results in relation to the adaptive management plan and consider proposed changes and/or refinements to project designs and management activities. Each representative would determine for their respective jurisdictional authority whether implementation of proposed Class 1 changes and/or Class 2 refinements may proceed under the original permit authorization or require a formal proposal for amendment of said permit. If formal review is deemed necessary, the project proponent would submit an application for permit amendment in compliance with the applicable regulations and procedures. Individual agencies would also decide how provisions for public review periods and potential appeals would be factored into this process.

Committee meetings would be open to the public and would be noticed in advance via the Massachusetts Environmental Monitor and the Town of Wellfleet website. Copies of materials to be reviewed by the Committee would also be made available to the public in advance of each meeting. The public would have opportunity to submit written comments for consideration by Committee members. Committee deliberations and decisions regarding proposed changes would be documented in official meeting minutes and published in the Massachusetts Environmental Monitor and the Town of Wellfleet website.

5.3.4 FEDERAL AGENCY REGULATION AND CONSULTATION

Endangered Species Act Section 7 Consultation

The USFWS has jurisdiction over terrestrial special-status species while USFWS and National Marine Fisheries Service (NMFS), a branch of NOAA, share jurisdiction over marine threatened and endangered species. No species currently protected under the Endangered Species Act occur in the Herring River restoration project area (see USFWS Section 7 consultation letter in appendix A). Therefore, this draft EIS/EIR does not include analysis of impacts to federally listed special status species. However, on November 1, 2011, NMFS determined that an August 5, 2011 petition to list

alewife and blueback herring (together referred to as river herring) under the Endangered Species Act presents enough scientific and commercial information to warrant further review. As a result, the agency is conducting a formal review of river herring population status and trends. NMFS is considering information contained in the petition, published literature, and other information about the historic and current range of river herring, their physical and biological habitat requirements, population status and trends, and threats. Within 12 months of receipt of the petition, NMFS is required to make a determination of whether alewife and blueback herring should be listed as endangered or threatened, or not at all. If NMFS determines that a listing is appropriate, the agency would publish a proposed rule and take public comment before publishing a final decision. However, if NMFS determines that that listing these species is not appropriate, the process is closed.

Compliance with the Endangered Species Act

If river herring are listed during the NEPA/MEPA compliance process, a Section 7 analysis of impacts to these species would be undertaken and included in the final EIS/EIR.

Magnuson-Stevens Fishery Conservation and Management Act Consultation

The Magnuson-Stevens Fishery Conservation and Management Act is the primary law governing marine fisheries management in United States waters (NOAA 2009; 16 USC 1801, et seq.; 50 CFR 601, et seq.). Under the Magnuson-Stevens Act, essential fish habitat (EFH) areas are designated by regional fisheries councils and managed under regional fisheries management plans. The act authorizes NMFS to evaluate programs and projects that are proposed, permitted, or licensed by federal agencies that may adversely affect marine, estuarine, or anadromous species (e.g., herring), or the habitats of these species. Adverse impacts may be direct (e.g., physical disruption of habitat) or indirect (e.g., loss of prey species). NMFS may make recommendations regarding how to avoid, minimize, or compensate those adverse impacts. Federal agencies are required to consult and cooperate with NMFS.

Compliance with the Magnuson-Stevens Fishery Conservation and Management Act

Because restoration of the Herring River estuary would result in short- and long-term changes in water quality, sediment distribution, and estuarine habitats, this draft EIS/EIR includes an analysis of impact to EFH. In accordance with NMFS requirements and guidelines, the physical components of EFH in the project area (physical, chemical, and biological characteristics; sediments; hard substrates; and related biological communities [NOAA 2004]) necessary to fish for spawning, breeding, feeding, or growing to maturity) are described in chapter 3 and appendix F and impacts to these resources associated with the proposed alternatives are described in chapter 4, section 4.6 and appendix F.

This draft EIS/EIR, and EFH finding contained herein, will be reviewed by NMFS representatives and their comments and recommendations included in the final EIS/EIR.

Clean Water Act

The Clean Water Act of 1972 (CWA) (33 USC 1344 et seq.), as amended, is the primary federal law governing water integrity. The goal of the CWA is to “restore and maintain the chemical, physical, and biological integrity of the nation’s water.” Waters of the United States generally include tidal waters, lakes, ponds, rivers, streams (including intermittent streams), and wetlands.

Section 404 of the Clean Water Act and Section 10 of Rivers and Harbors Act

Section 404 of the CWA authorizes the U.S. Army Corps of Engineers (USACE) to issue permits to project applicants for the “discharge of dredged and/or fill material in waters of the U.S.” and is the primary federal authority for the protection of wetlands. USACE jurisdiction for waters of the United States is based on the definitions and limits contained in 33 CFR 328, which encompasses all navigable waters, their tributaries, and adjacent wetlands, and includes ocean waters within three nautical miles of the coastline. Projects involving the discharge of dredged and/or fill material into waters of the United States require authorization from the USACE. The USACE may only permit discharges of dredged or fill material into waters of the United States that represent the least environmentally damaging practicable alternative, if the alternative does not have other significant adverse environmental consequences. Practical alternatives must be presented and evaluated during the permit process so the USACE can determine which alternative would have a less adverse impact on aquatic ecosystems. The USACE also administers Section 10 of the Rivers and Harbors Act of 1899, which is required for all work including structures seaward of the annual high water (AHW) line in navigable waters of the United States. Compliance with CWA Section 404 would be pursued jointly with Section 10 of the Rivers and Harbors Act, as described below. Applications are submitted to the USACE, which in turn issues a Public Notice and initiates a comment period. The USACE evaluates comments, public interest criteria, and compliance with the CWA, and lastly issues a permit if deemed appropriate.

Compliance with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act

Several components of the Herring River Restoration Project would include unavoidable impacts to wetlands under federal jurisdiction, primarily through the discharge of fill into waters of the United States. Actions that would result in such impacts include but are not limited to the reconstruction of the Chequessett Neck Road Dike, potential construction of a dike at Mill Creek (under alternatives C or D only), work to elevate or otherwise flood proof low-lying roadways, and potential fill placed in low-lying areas of the CYCC golf course. These impacts are described in more detail in section 5.3.5. Given the nature and extent of these impacts on wetlands under USACE jurisdiction, it is anticipated that compliance under Section 404 and Section 10 would require the filing of an Individual Permit versus being eligible for review under the Massachusetts General Permit. A permit application for the discharge of dredged and/or fill material in waters of the United States is evaluated using the Environmental Protection Agency’s (USEPA) Section 404(b) (1) guidelines. The Section 404 (b) (1) guidelines are designed to avoid unnecessary filling of waters and wetlands. For the guidelines to be satisfied:

- There must be no practicable alternatives available which would have less adverse impact on the aquatic ecosystem and which do not have other significant adverse environmental consequences;
- The activity must not violate federal or state water quality standards or threaten a federally listed endangered species;
- There must be no significant degradation of water and wetlands; and
- All reasonable steps must be taken to minimize adverse impacts to the aquatic environment.

All the project alternatives seek to comply with the requirements of Section 404 of the CWA and the Section 404(b) (1) guidelines.

Practicable Alternatives—This draft EIS/EIR includes several practicable project alternatives which to varying degrees meet the purpose of and need for the restoration project. The process of evaluating these alternatives considers impacts to the built and natural environment.

Water Quality/Threatened and Endangered Species—All of the action alternatives would include adequate stormwater management measures to mitigate for potential impacts to water quality by removing pollutants from the stormwater runoff discharging from reconstructed roadways to surface water resources. The proposed project would be designed to comply with the Massachusetts Stormwater Standards for redevelopment activities. Due to the proposed unavoidable impacts to state-designated Outstanding Resource Waters and wetlands under state and town jurisdiction, the proposed project would require a variance from the CWA Section 401 Water Quality Certification, the Massachusetts Wetlands Protection Act, and the Town of Wellfleet Environmental Protection bylaw (see section 5.3.5). The proposed project would not affect any federally listed endangered species because there are currently none within the project area.

No Significant Degradation—The proposed construction and associated restoration actions would not significantly degrade any water or wetlands. In fact, over the long-term, the planned restoration would improve flushing and is expected to reduce or eliminate the current “impaired” listing under Section 303(d) of the CWA (see section 4.3). Measures to protect and avoid adverse impacts to wetlands and water resources would be incorporated into the design and construction process for the preferred alternative. Construction best management and resource protection practices would be implemented in accordance with state and federal guidelines to protect unnecessary impacts to wetland and water resources.

Reasonable Steps to Minimize Adverse Impacts—To the extent practicable, adverse impacts to wetland resources would be avoided, minimized, and mitigated. Because reconstruction of the Chequessett Neck Road Dike is the fundamental and minimum action necessary to begin restoring tidal range and salinity to the Herring River, avoidance of all direct wetland impacts is not possible if any of the action alternatives are implemented. Specific measures incorporated into the design process to incorporate avoidance and minimization of adverse impacts to wetlands, such as roadway realignments and steepened embankment slopes, would be considered in the design of the preferred alternative.

Mitigation—Typically, infrastructure improvement projects with impacts to wetlands would provide wetland mitigation in the form of enhancement, restoration, creation, or preservation to offset lost wetland area as well as lost functions and values. However, as the HRRC is proposing to restore hundreds of acres of native tidal wetland habitat to large portions of the Herring River flood plain by re-establishing tidal exchange and the benefits of the project far outweigh the relatively minor adverse impacts, no additional mitigation requirements to offset wetland impacts are anticipated.

Section 401 of the Clean Water Act

Section 401 of the CWA requires that any applicant for a Section 404 (dredge and fill) permit also obtain a water quality certification from the state. The purpose of the certification is to confirm that the discharge of fill materials would comply with the state’s applicable water quality standards. Section 401 gives the authority to the states either to concur with USACE approval of a Section 404 permit or to place special conditions on the approval, or deny the activity by not issuing a 401 certification. Compliance with Section 401 is addressed below in the section titled “Massachusetts 401 Water Quality Certification.”

Section 402 of the Clean Water Act

Under Section 402 of the CWA, stormwater discharges from construction activities that disturb one or more acres, are regulated by the National Pollutant Discharge Elimination System stormwater program. Prior to discharging stormwater, construction operators must obtain coverage under a National Pollutant Discharge Elimination System permit, which in Massachusetts is administered by the USEPA. It is anticipated that the construction-related stormwater discharges would be permitted under the Construction General Permit. The Construction General Permit requires compliance with effluent limits and other permit requirements, such as the development of a Stormwater Pollution Prevention Plan. Typically, the contractor is responsible for filing a Notice of Intent (NOI) along with the Stormwater Pollution Prevention Plan certifying that the work has met the permit's eligibility conditions and that they would comply with the permit's effluent limits.

Protection of Wetlands and Floodplain Management

Executive Order 11990: Protection of Wetlands and Executive Order 11988: Floodplain Management describes the executive branch policy on impacts to wetlands and floodplains as a result of taking a federal action. Executive Order 11990 requires agencies "...to avoid to the extent possible the long and short term adverse impacts associate with destruction or modification of wetlands..." among other tenets. The NPS policies related to wetland protection are outlined in NPS Director's Order 77-1 and Procedural Manual 77-1. Executive Order 11988 has similar requirements when it comes to actions proposed in the floodplain. Appendix G provides a Statement of Findings related to the potential impacts to wetlands and floodplains in the project area.

National Historic Preservation Act and Massachusetts Historical Commission

Section 106 of the National Historic Preservation Act of 1966 (NHPA) requires federal agencies to take into account the effects of their undertakings on historic properties, and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment. Historic properties are properties that are included in the National Register of Historic Places (National Register) or that meet the criteria for the National Register. If so, it must identify the appropriate State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Officer (THPO) to consult with during the process. The lead federal agency, in consultation with the appropriate preservation officer, assesses adverse effects on the identified historic properties based on criteria found in Advisory Council on Historic Preservation's regulations. If they agree there would be no adverse effect, the lead federal agency proceeds with the undertaking and any agreed-upon conditions.

Compliance with National Historic Preservation Act Section 106 Requirements

For the Herring River Restoration Project, the NPS has taken the lead in consulting with the Massachusetts Historical Commission, which must review any projects that require funding, licenses, or permits from any commonwealth agency in compliance with Massachusetts General Law (MGL) Chapter 9, Sections 26–27C. In July 2008, the Massachusetts Historical Commission responded to the environmental notification form (ENF) for the Herring River Restoration Project requesting consultation with the NPS under Section 106, development of an environmental assessment or EIS for the project (this document), and a site investigation conducted under a State Archeologist's permit. A Phase IA Archeological Sensitivity Assessment (Herbster and Heitert 2011) has been conducted within the area of potential effect (APE) and consultation between the NPS and Massachusetts Historical Commission regarding the scope of additional archeological investigations is ongoing. To facilitate the long-term implementation of the project and the adaptive management approach, NPS has proposed to execute a Programmatic Agreement (PA) with Massachusetts

Historical Commission to address Section 106 compliance. A draft PA is currently under review with Massachusetts Historical Commission. The revised PA will be made available for public review and comment, and a final PA will be signed prior to the signing of a Record of Decision.

National Historic Preservation Act and Tribal Consultation

The NHPA, amended in 1992, is the basis for the tribal consultation provisions in Advisory Council on Historic Preservation regulations. The two amended sections of NHPA that have a direct bearing on the Section 106 review process are Section 101(d)(6)(A), which clarifies that historic properties of religious and cultural significance to Indian tribes may be eligible for listing in the National Register, and Section 101(d)(6)(B), which requires Federal agencies, in carrying out their Section 106 responsibilities, to consult with any Indian tribe that attaches religious and cultural significance to historic properties that may be affected by an undertaking. Advisory Council on Historic Preservation regulations incorporate these provisions and reflect other directives about tribal consultation from executive orders, presidential memoranda, and other authorities.

Compliance with the National Historic Preservation Act Consultation Requirements

In 2008, the NPS contacted the Mashpee Wampanoag Tribe and the Wampanoag Tribe of Gay Head-Aquinnah to share information about the proposed Herring River Restoration Project and request input from the tribes. Areas of concern were identified as a result of consultation with these tribal groups including onsite meetings with the Mashpee Wampanoag Tribe in April 2011 and the Wampanoag Tribe of Gay Head-Aquinnah in January 2012. These concerns were primarily focused on (but not limited to) potential impacts to the uplands within the CYCC property (per Option 1: Relocation). Consultation with these tribal groups and the Massachusetts Historical Commission is ongoing, and as specific impacts become defined as the ground-disturbing activities related to the project are finalized, potential impacts to cultural resources will be identified and resolved through the development of a PA between the project proponents and the consulting parties.

5.3.5 COMMONWEALTH OF MASSACHUSETTS REGULATION AND CONSULTATION

In addition to meeting the requirements of NEPA and MEPA, this draft EIS/EIR addresses a variety of other regulatory and compliance needs of the project. Brief summaries of these requirements, and how they will be met during the permitting process, are presented below. Copies of relevant correspondence are included in appendix A.

Massachusetts Wetlands Protection Act

The Massachusetts Wetlands Protection Act and its implementing regulations (310 CMR 10.00 et seq.) provide protection for both inland and coastal wetland resource areas as well as 100-foot buffer zones. The Massachusetts Rivers Protection Act likewise regulates activity within 200 feet of perennial rivers (Riverfront Area). Any proposed alteration to a wetland resource area (defined as a change in vegetation, hydrology, or water quality) is reviewed for compliance with performance standards established for each resource area. The Wetlands Protection Act also requires compliance with the Massachusetts Department of Environmental Protection (MassDEP) Stormwater Management Policy. City- or Town-appointed Conservation Commissions have delegated statutory authority to administer the Wetlands Protection Act and to issue Orders of Conditions for most alterations to wetland resource areas. However, given the magnitude of certain unavoidable impacts and inability to comply with certain performance standards, the Herring River Restoration Project is expected to **require a variance from the Wetlands Protection Act** which can only be issued by the Commissioner of MassDEP. In this case, the Wellfleet and Truro Conservation Commissions would

serve in an advisory capacity to MassDEP on the variance proceedings and be responsible for administering their own local environmental protection bylaws (see section 5.3.5).

The Wetlands Protection Act regulations list eight functions and values, defined as significant interests, provided by wetland resource areas:

- Protection of public and private water supply
- Protection of ground water supply
- Flood control
- Storm damage prevention
- Prevention of pollution
- Protection of land containing shellfish
- Protection of fisheries
- Protection of wildlife habitat.

The regulations presume that each wetland resource area is significant to some or all of these interests. These presumptions are rebuttable under the regulations in cases where the resource area has been altered by development or other human activities.

Wetland resource areas as defined in the Wetlands Protection Act and regulations that occur within the project limits include the following:

Coastal Wetlands

- Land Under the Ocean
- Coastal Beaches (Tidal Flats)
- Coastal Banks
- Salt Marshes
- Land Containing Shellfish
- Fish Runs
- Land Subject to Coastal Storm Flowage.

Inland Wetlands

- Bordering Vegetated Wetlands (BVW)
- Bank
- Land Under Waterbodies and Waterways
- Riverfront Area

This section discusses the proposed project's compliance with the performance standards established for each resource area [except for Land Subject to Coastal Storm Flowage for which

there are no performance standards] and the need for a variance to proceed with the project. Under existing conditions, wetland resource areas below the Chequessett Neck Road Dike and within the extent of tidal influence above the dike (Lower Herring River sub-basin) are considered coastal wetlands and compliance with performance standards is addressed accordingly. The remaining portions of the Herring River flood plain (with two exceptions) are considered inland wetlands. The western extent of the Duck Harbor basin is an area of overwash from the barrier beach system and is considered a coastal dune. Also, the extent of the 100-year flood plain (“AH” zone on the Flood Insurance Rate Maps prepared by the National Flood Insurance Program) is considered Land Subject to Coastal Storm Flowage (coastal) and not Bordering Land Subject to Flooding (the inland wetland counterpart) because the 100-year flood plain is determined by a coastal storm surge event. This section does not address the fact that, over time, implementation of the restoration project would change much of the inland wetlands within Herring River flood plain to coastal wetlands.

Impacts to Coastal Wetland Resource Areas

Land Under the Ocean

For work proposed within Land Under the Ocean, the following performance standards apply:

- Improvement or maintenance dredging for navigational purposes shall be designed and carried out using the best available measures so as to minimize adverse impacts.
- Any project shall not cause adverse impacts by altering the bottom topography so as to increase storm damage or erosion of coastal beaches, coastal banks, coastal dunes, or salt marshes.
- Water-dependent projects shall be designed and constructed, using best available measures, so as to minimize adverse impacts, and if non-water-dependent, have no adverse impacts on marine fisheries habitat or wildlife habitat.
- No project may be permitted which would have any adverse impacts on specified habitat sites of rare vertebrate or invertebrate species.

Activity Impacting this Resource Area—The reconstruction of the Chequessett Neck Road Dike would include short- and long-term impacts to a 3.2-acre area comprised primarily of land under the ocean (lands below mean low water). This area also contains small inclusions of inter-tidal coastal beach (tidal flat), coastal bank, and salt marsh.

How Activity Meets Performance Standards—The Herring River Restoration Project does not include improvement or maintenance dredging for navigational purposes. The reconstruction of the Chequessett Neck Road Dike would be designed and constructed, using best available measures to minimize short-term adverse impacts to marine fisheries and wildlife habitat. Over the long term, the restoration project would benefit subtidal habitat conditions by improving water circulation and water quality and promoting more natural sediment transport. No direct losses of eelgrass or widgeon grass beds are anticipated. With the implementation of a Habitat Management Plan, no adverse impacts to state-listed rare, threatened, and endangered species are expected (see the “Compliance with Massachusetts Endangered Species Act” subsection). A variance would not be required for work within Land Under the Ocean.

Coastal Beaches (Tidal Flats)

For work proposed within tidal flats, the following performance standards apply:

- Any project on a coastal beach...shall not have an adverse impact by increasing erosion, decreasing the volume or changing the form of any such coastal beach or an adjacent or downdrift coastal beach.
- Any groin, jetty, solid pier, or other such solid fill structure which will interfere with littoral drift...shall be the minimum length and height necessary to maintain beach form and volume, shall be filled to entrapment capacity with compatible sediment, shall contain a sand by-pass system to ensure that downdrift or adjacent beaches are not starved of sediments.
- Beach nourishment with clean sediment of a grain size compatible with that on the existing beach may be permitted.
- A project on a tidal flat shall if water-dependent be designed and constructed, using best available measures, so as to minimize adverse impacts, and if non-water-dependent, have no adverse impacts, on marine fisheries and wildlife habitat.
- No project may be permitted which will have any adverse impact on specified habitat sites or rare vertebrate or invertebrate species.

Activity Impacting this Resource Area—The reconstruction of the Chequessett Neck Road Dike would include short- and long-term impacts to a **3.2-acre area** comprised primarily of Land Under the Ocean (lands below mean low water). This area also contains small inclusions of inter-tidal Coastal Beach (Tidal Flat), Coastal Bank, and Salt Marsh. These impacts would be temporary in nature, associated with the construction of cofferdams.

How Activity Meets Performance Standards—The restoration project would not involve changing the form of any coastal beach, interfere with littoral drift or involve beach nourishment. The reconstruction of the Chequessett Neck Road Dike shall be designed and constructed, using best available measures to minimize short-term adverse impacts to marine fisheries and wildlife habitat. Over the long term, the restoration project would benefit tidal flat habitat conditions by improving water circulation and water quality and promoting more natural sediment transport. With the implementation of a Habitat Management Plan, no adverse impacts to state-listed rare, threatened, and endangered species are expected (see the “Compliance with Massachusetts Endangered Species Act” subsection). A variance would not be required for work within tidal flats.

Coastal Bank

For work proposed within a coastal bank, the following performance standards apply:

- No new bulkhead, revetment, seawall, groin or other coastal engineering structure shall be permitted... except when required to prevent storm damage to buildings constructed prior to the effective date of the Wetlands Protection Act provided that the structure minimizes adverse impacts on nearby coastal beaches due to changes in wave action, and the applicant demonstrates that no method of protecting the building is feasible.
- Any project on a coastal bank or within 100 feet landward of the top of a coastal bank shall not have an adverse impact due to wave action on the movement of sediment from the coastal bank to coastal beaches or land subject to tidal action.

- Any project on a coastal bank or within 100 feet landward of the top of a coastal bank shall have no adverse impacts on the stability.
- Bulkheads, revetments, seawalls, groins or other coastal engineering structures may be permitted on a coastal bank except when such bank is significant to storm damage prevention or flood control because it supplies sediment to coastal beaches, coastal dunes, and barrier beaches.
- No project may be permitted which will have any adverse impact on specified habitat sites or rare vertebrate or invertebrate species.

Activity Impacting this Resource Area—Reconstruction of the Chequessett Neck Road Dike is the only proposed activity anticipated to impact Coastal Bank along the dike itself and where it ties into the natural land forms at either end. This activity could alter up to **750 linear feet** of Coastal Bank on the seaward side of the dike. While the Lower Herring Basin is subject to tidal action, the fringing coastal wetlands are bounded by freshwater wetlands, and there is no Coastal Bank behind it (Coastal Zone Management Office 1978 A Guide to Coastal Wetland Regulations).

How Activity Meets Performance Standards—This work would be constructed in a manner consistent with current design guidelines above the destructive capability of waves and storms. The new structure would not impact sediment supplies to coastal beaches, coastal dunes, and barrier beaches or impact coastal beaches due to changes in wave action. With the implementation of a Habitat Management Plan, no adverse impacts to state-listed rare, threatened, and endangered species are expected (see the “Compliance with Massachusetts Endangered Species Act” subsection). A variance would not be required for work within Coastal Bank.

Coastal Dune

For work proposed within a coastal dune, the following performance standards apply:

- Any alteration of, or structure on, a coastal dune or within 100 feet of a coastal dune shall not have an adverse impact on the coastal dune by: affecting the ability of waves to remove sand from the dune; disturbing the vegetative cover so as to destabilize the dune; causing any modification of the dune form that would increase the potential for storm or flood damage; interfering with the landward or lateral movement of the dune; causing removal of sand from the dune artificially; or interfering with mapped or otherwise identified bird nesting habitat.
- A project (excluding coastal engineering structures) accessory to the existing building may be permitted, provided that such work, using the best commercially available measures, minimizes the adverse impact on the coastal dune.
- The following projects may be permitted: pedestrian walkways; fencing and other devices designed to increase dune development; and/or plantings compatible with the natural vegetative cover.
- No project may be permitted which will have any adverse impact on specified habitat sites or rare vertebrate or invertebrate species.

Activity Impacting this Resource Area—The western extent of the Duck Harbor basin is a **less than 2-acre** area of overwash from the barrier beach system and is considered a Coastal Dune. Alteration to this resource area may result from the reintroduction of tidal flow into the basin.

How Activity Meets Performance Standards—No direct impacts from infrastructure improvements are anticipated. With the implementation of a Habitat Management Plan, no adverse impacts to state-listed rare, threatened, and endangered species are expected (see the “Compliance with Massachusetts Endangered Species Act” subsection). A variance would not be required for this alternation to coastal dune.

Salt Marshes

In the Herring River, most of the area of salt marsh which is jurisdictional under the Wetlands Protection Act occupies a relatively narrow band between open water and brackish marsh dominated by *Phragmites*. This 50-acre area includes 13 acres of salt marsh comprised of typical native salt marsh vegetation (discussed in chapters 3 and 4). According to the Wetlands Protection Act, the extent of spring tides is the landward extent of a jurisdictional Salt Marsh [310 CMR 10.32(2)]. The definition further states “dominant plants within a salt marsh are salt meadow cord grass (*Spartina patens*) and/or salt marsh cord grass (*Spartina alterniflora*).” However, much of the vegetated marsh below the extent of spring tides within the Herring River is dominated by *Phragmites*. In a 2010 appeals decision (Van Loan Docket No. WET-2009-067), MassDEP found that the distinction between coastal and freshwater wetlands does not rely exclusively on vegetation and wetlands located below the extent of spring tides which are dominated by *Phragmites* are to be considered salt marsh. Therefore, the aerial estimate of jurisdictional salt marsh in the Herring River system also includes *Phragmites*-dominated brackish marsh and is larger than the vegetation cover type estimate based solely on existence of typical salt marsh plant species.

For work proposed within a salt marsh, the following performance standards apply:

- A proposed project in a salt marsh, on lands within 100 feet of a salt marsh, or in a body of water adjacent to a salt marsh shall not destroy any portion of the salt marsh and shall not have an adverse impact on the productivity of the salt marsh.
- A small project within a salt marsh, such as an elevated walkway or other structure which has no adverse impacts other than blocking sunlight from the underlying vegetation for a portion of each day, may be permitted
- A project which will restore or rehabilitate a salt marsh, or create a salt marsh, may be permitted.
- No project may be permitted which will have any adverse impact on specified habitat sites or rare vertebrate or invertebrate species.

Activities Impacting this Resource Area—The reconstruction of the Chequessett Neck Road Dike would include short- and long-term impacts to a **3.2-acre area** comprised primarily of Land Under the Ocean. This area also contains small inclusions of inter-tidal Coastal Beach (Tidal Flat), Coastal Bank, and Salt Marsh. A total of less than **0.5 acres** of salt marsh occurring adjacent to the Chequessett Neck Road Dike could be impacted during reconstruction by coffer dams or other dewatering operations. The majority of the approximately **50 acres** of *Phragmites*-dominated salt marsh upstream of the dike would be permanently altered by restoration of tidal flow. In addition, very small patches of *Phragmites*-dominated Salt Marsh totaling **less than 0.25 acres** occurring within the Mill Creek sub-basin could be permanently lost by construction of a new Mill Creek Dike (alternatives C and D only).

How Activity Meets Performance Standards—The reconstruction of the Chequessett Neck Road Dike would require improvements along the entire length of the dike and may result in impacts to

salt marsh areas bordering the Herring River shoreline. In addition, a portion of the *Phragmites*-dominated marsh below the extent of spring tides along the Chequessett Neck Road Dike as well as within the limits of the proposed Mill Creek Dike could be directly impacted. The majority of these impacts would be temporary in nature and associated with the construction of coffer dams. Disturbed vegetated marsh would be restored following dike construction. **While the alteration to salt marsh may be permitted under the exemption for salt marsh restoration [310 CMR 10.32(5)], preliminary consultation with MassDEP indicates the scale of the projects alterations cannot be permitted without a variance to these performance standards.**

Land Containing Shellfish

For work proposed within land containing shellfish, the following performance standards apply:

- Any project on land containing shellfish shall not adversely affect such land or marine fisheries by a change in the productivity of such land.
- Projects which temporarily have an adverse impact on shellfish productivity but which do not permanently destroy the habitat may be permitted if the Land Containing Shellfish can and will be returned substantially to its former productivity in less than one year.
- Except in Areas of Critical Environmental Concern (ACEC), the issuing authority may, after consultation with the Shellfish Constable, permit the shellfish to be moved from such area, in order to permit a proposed project on such land.
- Projects specifically intended to increase the productivity of land containing shellfish may be permitted.
- No project may be permitted which will have any adverse impact on specified habitat sites or rare vertebrate or invertebrate species.

Activities Impacting this Resource Area—While the Herring River within the vicinity of the Chequessett Neck Road Dike is currently closed to shellfishing due to elevated fecal coliform levels, the reconstruction of the Chequessett Neck Road Dike would result in impacts to Land Containing Shellfish occurring downstream of the dike.

How Activity Meets Performance Standards—The reconstruction of the Chequessett Neck Road Dike would be designed and constructed, using best available measures, so as to minimize short-term adverse impacts to shellfish habitat. Over the long term, the restoration project would benefit subtidal habitat conditions by improving water circulation and water quality (including salinity, dissolved oxygen, nutrients, temperature, and pollutant levels). Typically, projects specifically intended to increase the productivity of Land Containing Shellfish may be permitted under an exemption contained in 310 CMR 10.34(7). **However, the impacts Land Containing Shellfish would occur within the Wellfleet Harbor ACEC and may require the issuance of a variance.**

Fish Runs

For work proposed within fish runs, the following performance standards apply:

- Any project on such land or bank shall not have an adverse impact on the anadromous or catadromous fish run by: impeding or obstructing the migration of the fish; changing the volume or rate of flow of water within the fish run; or impairing the capacity of spawning or nursery habitats necessary to sustain the various life stages of the fish.

- Dredging, disposal of dredged material or filling in a fish run shall be prohibited between March 15th and June 15th in any year.
- No project may be permitted which will have any adverse impact on specified habitat sites or rare vertebrate or invertebrate species.

Activities Impacting this Resource Area—Reconstruction of the Chequessett Neck Road Dike and culvert replacements at High Toss Road and Bound Brook Road could result in temporary impacts to migrating river herring and American eels.

How Activity Meets Performance Standards—The proposed work at the Herring River crossings would be designed and constructed using best available measures to minimize short-term adverse impacts to marine fisheries through effective dewatering and erosion control measures as well as time-of-year restrictions on in-water work. Over the long term, the restoration project would benefit anadromous or catadromous fish passage by improving stream crossing conditions, removing obstructions within the channel and improving water quality. With the implementation of a Habitat Management Plan, no adverse impacts to state-listed rare, threatened, and endangered species are expected (see the “Compliance with Massachusetts Endangered Species Act” subsection). A variance would not be required for work within fish runs.

Impacts to Inland Wetland Resource Areas

Bordering Vegetated Wetlands

Although formerly tidally-influenced coastal marsh prior to construction of the Chequessett Neck Road Dike, the majority of the Herring River project area is considered BVW for the purposes of MA Wetlands Protection Act jurisdiction. This includes all existing vegetated wetlands upstream of High Toss Road (**approximately 900 acres**) and wetlands in the Lower Herring River and Mill Creek sub-basins above the reach of mean high spring tide (**approximately 195 acres**).

For work proposed within BVW, the following performance standards apply:

- Any proposed work in a BVW shall not destroy or impair any portion of the said area
- The issuing authority may issue an Order of Conditions permitting work which results in the loss of up to 5,000 square feet of BVW when said area is replaced in accordance with the following general conditions and any additional, specific conditions the issuing authority deems necessary to ensure that the replacement area would function in a manner similar to the area that would be lost
- No project may be permitted which would have any adverse impact on the specified habitat sites of rare vertebrate or invertebrate species
- Any proposed work shall not destroy or otherwise impair any portion of a BVW that is within an ACEC designated by the Secretary of Environmental Affairs.

Activities Impacting this Resource Area—Any of the proposed alternatives would result in the loss of well over 5,000 square feet of BVW and would include loss of BVW within state-designated estimated and priority habitat for rare, endangered, and threatened species and within the Wellfleet Harbor ACEC. Direct BVW losses could include the following:

Fill for Mill Creek Dike (alternatives C and D only)	Up to 12,500 square feet (also includes small areas of salt marsh, see above)
Flood proofing CYCC Golf Course (alternatives B and D only)	Up to 360,000 square feet (most of BVW maintained as golf course)
Elevation of High Toss Road	Up to 13,000 square feet
Elevation of Pole Dike/Bound Brook/ Old County Roads	Up to 4,000 square feet
Other restoration and flood proofing activities	TBD upon further project design, adaptive management plan implementation, and land owner consultation

In addition to these direct wetland losses, virtually all of the BVW within the Herring River project area will be altered to some degree by restoring tidal exchange. As discussed in chapter 4, vegetation change throughout large areas of the flood plain will be extensive as native salt marsh plant species replace *Phragmites* and other brackish and freshwater species. In some locations, primarily along the periphery of the project area and in upper sub-basins, higher levels of tidally-influenced freshwater would promote a die-off of upland trees and shrubs which have invaded the drained flood plain and promote the establishment of freshwater emergents and palustrine shrub species. Temporary indirect impacts to BVW would also occur throughout the project to facilitate construction and on-marsh adaptive management activities such as clearing vegetation and removing spoil berms.

How Activity Meets Performance Standards—While the regulations include exemptions for some of the proposed activities, the total anticipated alteration to BVW does not conform to the Wetlands Protection Act performance standards and **would not be permitted without a variance.**

Bank

Any proposed work on a bank shall not impair the following:

- The physical stability of the bank
- The water carrying capacity of the existing channel within the bank
- Ground water and surface water quality
- The capacity of the bank to provide breeding habitat, escape cover and food for fisheries
- The capacity of the bank to provide important wildlife habitat functions.

Activities Impacting this Resource Area—Within the Herring River flood plain natural banks occur along the mainstem of the river and its tributaries. In addition, the edges of roads crossing the

flood plain are considered jurisdictional Banks for purposes of the Wetlands Protection Act. These occur primarily along High Toss, Pole Dike Creek, Bound Brook, and Old County Roads. Alteration of banks along these roads would be unavoidable to elevate them above restored high tides or, in the case of High Toss Road, potentially removing the road to facilitate tidal circulation. Naturally occurring banks could be impacted by overtopping resulting from restored tide flow. In some areas, artificial spoil berms deposited along banks during mosquito ditch maintenance would be proposed for breaching and/or removal to further promote tidal circulation within interior marshes.

How Activity Meets Performance Standards—Specific impacts to banks would be identified and calculated more specifically in later design phases. Permanent impacts would be minor and associated with roadway stream crossings. The proposed work would not alter the carrying capacity of the channel, the water quality, or wildlife habitat. Some of the losses would occur within areas of protected habitat for rare or special-status species, however with the implementation of a Habitat Management Plan, no adverse impacts to state-listed rare, threatened, and endangered species are expected (see the “Compliance with Massachusetts Endangered Species Act” subsection). Each of the alternatives can be constructed in conformance with the performance standards and would not require a variance.

Land Under Waterbodies and Waterways

For work proposed within Land Under Waterbodies and Waterways, the following shall not be impaired through proposed work:

- The carrying capacity within the defined channel, which is provided by said land in conjunction with the banks
- Ground and surface water quality
- The capacity of said land to provide breeding habitat, escape cover and food for fisheries
- The capacity of said land to provide important wildlife habitat functions as defined by altering 10 percent or 5,000 square feet, whichever is less.

Activities Impacting this Resource Area—Small areas of Land Under Waterbodies and Waterways within the Herring River project area would be impacted by construction of the Mill Creek dike (under alternatives C and D only) and culvert replacements at High Toss, Pole Dike Creek, Bound Brook, and Old County Roads. At each of these locations, the magnitude of the impact would be limited to the foot print of the new structure within the stream channel which range from **less than 100 square feet** at the smaller crossings to approximately **900 square feet** at High Toss.

How Activity Meets Performance Standards—Specific impacts to Land Under Waterbodies and Waterways would be identified and calculated more specifically in later design phases. The proposed work would not alter the carrying capacity of the channel, the water quality, or wildlife habitat. Some of the losses would occur within areas of protected habitat for rare or special-status species, however with the implementation of a Habitat Management Plan, no adverse impacts to state-listed rare, threatened, and endangered species are expected (see the “Compliance with Massachusetts Endangered Species Act” subsection). Each of the alternatives can be constructed in conformance with the performance standards and would not require a variance.

Riverfront Area

For work proposed in Riverfront Area, the following performance standards apply:

- The applicant shall prove by a preponderance of the evidence that there are no practicable and substantially equivalent economic alternatives to the proposed project that would have less adverse impacts on the interests identified and that the work, including proposed mitigation, would have no significant adverse impact on the riverfront area to protect the interests identified in the Wetlands Protection Act
- The work shall meet the performance standards of all other resource areas within the Riverfront Area
- No project may be permitted which would have any adverse impact on the specified habitat sites of rare vertebrate or invertebrate species.

Activities Impacting this Resource Area—The Riverfront Area in the Herring River system includes the zone within 200 feet of all perennial streams and thus encompasses large portions of the watershed, including the tributary streams of Mill Creek, Snake Creek, Pole Dike Creek, and Bound Brook. Most construction activities would impact Riverfront Area, along with the other resource areas previously described. However, it is possible that some activities needed to protect specific properties from tidal flood impacts (e.g., work on some upland areas of the CYCC golf course) could solely affect Riverfront Area while not impacting any other jurisdictional wetland resources. These impacts will be identified and described more specifically during project and permitting and in close consultation with landowners.

How Activity Meets Performance Standards—Work within Riverfront Area is unavoidable under each of the proposed action alternatives due to the location of perennial stream crossings. Portions of work proposed within Riverfront Area would occur within habitat of protected or rare species. In addition, the alternatives are likely not to meet the performance standards of all other resource areas within the Riverfront Area and would therefore **not be permitted without a variance from the Commissioner of MassDEP**.

Massachusetts 401 Water Quality Certification

MassDEP administers regulations relating to the discharge of dredged or fill material, dredging, and dredged material disposal activities in waters of the United States within the Commonwealth of Massachusetts that require federal licenses or permits and that are subject to Massachusetts water quality certification under Section 401 of the federal CWA. For work in USACE jurisdiction involving a discharge to waters of the United States, MassDEP must provide or waive certification before work can proceed. Section 401 review ensures that a proposed dredge and/or fill project that can result in the discharge of pollutants complies with Massachusetts Surface Water Quality Standards, the Massachusetts Wetlands Protection Act, and otherwise avoids or minimizes individual and cumulative impacts to Massachusetts waters and wetlands.

Compliance with Massachusetts Water Certification

MassDEP is required to issue water quality certificates for projects that result in discharge or fill, pursuant to the Massachusetts CWA (MGL c. 21 §§ 26-53) and Section 404 of the Federal CWA. The Herring River Restoration Project **would require the issuance of an Individual Water Quality Certificate variance from MassDEP** as wetland resource area impacts would be greater than 5,000 square feet.

There are seven criteria for the evaluation of applications for discharge of dredge or fill material (314 CMR 9.06):

- No discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem
- No discharge of dredged or fill material shall be permitted unless appropriate and practicable steps have been taken which would minimize potential adverse impacts to the Bordering or Isolated Vegetated Wetlands or Land Under Waterbodies and Waterways, including a minimum of 1:1 restoration or replication of Isolated or Bordering Wetlands
- No discharge of dredged or fill material shall be permitted to state-designated Outstanding Resource Waters, except for the activities specified in 314 CMR 9.06(3)(a) through (I), which remain subject to an alternatives analysis and other requirements of 314 CMR 9.06
- Discharge of dredged or fill material to an Outstanding Resource Waters specifically identified in 314 CMR 4.06(1)(d) is prohibited as provided therein unless a variance is obtained under 314 CMR 9.08
- No discharge of dredged or fill material is permitted for the impoundment or detention of stormwater for the purposes of controlling sedimentation or other pollutant attenuation
- Stormwater discharges shall be provided with best management practices (BMPs) to attenuate pollutants and provide a set back from receiving water or wetland
- No discharge of dredged or fill material shall be permitted in the rare circumstances where the activity meet the criteria for evaluation but would result in substantial adverse impacts to the physical, chemical, or biological integrity of surface waters of the Commonwealth.

Variance Justification Summary

Because the project area is included within the Wellfleet Harbor ACEC, the discharge of fill material into an Outstanding Resource Waters would be required. In accordance with Massachusetts Surface Water Quality Standards, the action is prohibited unless a variance is obtained (314 CMR 9.08). In addition, construction elements of the restoration project which cannot meet the performance standards for each wetland resource area impacted would require a variance from the Massachusetts Wetlands Protection Act. A variance would be required for impacts to **Salt Marsh, Land Containing Shellfish, Bordering Vegetated Wetland and Riverfront Area**. The variance regulations stipulate that the MassDEP Commissioner may waive the application of any regulation in 310 CMR 10.00 provided that the following three conditions are met:

1. There are no reasonable conditions or alternatives that would allow the project to proceed in compliance with the regulations

This draft EIS/EIR includes several practicable project alternatives which to varying degrees meet the purpose of and need for the restoration project. The process of evaluating these alternatives considers impacts to the built and natural environment. None of the alternatives studied in this draft EIS/EIR could meet the project purpose and need while complying with all the performance standards for each resource area. All of the alternatives considered seek to avoid and minimize impacts to regulated resource areas.
2. That the variance is necessary to accommodate an overriding community, regional, state, or national public interest; or that it is necessary to avoid an order that so restricts the use of property as to constitute an unconstitutional taking without compensation

The overriding public interest of the Herring River Restoration Project has been clearly demonstrated. The purpose of this restoration project is to develop and implement actions for the restoration of self-sustaining coastal habitats on a large portion of the 1,100-acre Herring River estuary in the Towns of Wellfleet and Truro. While the ecological goal is to restore the full natural tidal range in as much of the Herring River flood plain as practicable, tidal flooding in certain areas must be controlled to protect existing land uses. Tidal exchange would be increased incrementally, over time, using an adaptive management approach, to achieve desired conditions for native salt marsh habitats. The Herring River's wetland resources and natural ecosystem functions have been severely altered and damaged by 100 years of tidal restriction and salt marsh drainage. Adverse ecological impacts include the following:

- Lack of tidal inflow and outflow – tidal range restriction
- Plant community changes, including loss of salt marsh vegetation and increase in non-native, invasive species
- Loss of estuarine habitat and degradation of water quality
- Elimination of natural sediment processes and salt marsh surface subsidence
- Nuisance mosquito production
- Impediments to river herring migration

Over the past several years, local, state, and federal partners and non-governmental organizations have expressed growing support for restoring the Herring River estuary. The process has not only encompassed many years of scientific and engineering investigations but also has included a public review process to ensure that all concerns and interests are recognized and considered.

3. That mitigating measures are proposed that will allow the project to be conditioned so as to contribute to the protection of the interests identified in the Massachusetts Wetland Protection Act

Although the project would result in minor impacts to some wetlands, the proposed elements with each of the alternatives would not significantly degrade any water or wetlands. In fact, the planned restoration would improve tidal flushing and is expected to reduce or eliminate the current “impaired” listing under Section 303(d) of the CWA. Measures to protect and avoid adverse impacts to wetlands and water resources will be incorporated into the design process for the preferred alternative. Construction practices would be implemented in accordance with state and federal guidelines to protect unnecessary impacts to wetland and water resources. Typically, infrastructure improvement projects with impacts to wetlands would provide wetland mitigation in the form of enhancement, restoration, creation or preservation to offset lost wetland area as well as lost functions and values. However, as the HRRC is proposing to restore several hundred acres of native tidal wetland habitat to large portions of the Herring River flood plain by re-establishing tidal exchange, the benefits of the project far outweigh the relatively minor impacts and therefore no additional mitigation requirements to offset wetland impacts are anticipated.

Massachusetts Public Waterfront Act, Chapter 91 (Massachusetts Waterways Licensing Program)

Chapter 91 is a collection of early ordinances and subsequent statutes designed to preserve and protect the public's rights in tidelands by ensuring that such lands are only used for water-dependent

uses or otherwise serve a proper public purpose. Compliance with Chapter 91 is administered by MassDEP through the Waterways Regulations at 310 CMR 9.00. These regulations establish procedures for the issuance of licenses for activities and structures located within jurisdictional areas. Maintenance, repair and minor modifications to existing structures within jurisdictional area may be permitted without a new license or license amendment under the procedures at 310 CMR 9.22. Within the Herring River project area, Chapter 91 jurisdiction potentially extends to the placement of fill and the new construction, substantial alteration, or expansion of existing structures below the historic (pre-Chequessett Neck Dike) mean high water line. No structures or fill in the Herring River flood plain (with the exception of the Bound Brook Road culvert) currently have Chapter 91 licenses, thus new license applications would need to be submitted for all fill and structures below historic mean high water.

While the original dike was initially authorized by an Act of the Massachusetts Legislature in 1906, a key condition of that authorization was “that the dike shall contain a proper fishway which shall be approved in writing by the commissioners on Fisheries and Game.” No evidence can be found that this approval was ever sought or granted.

Massachusetts Stormwater Management Standards

The proposed project requires work within Wetland Resource Areas and buffer zones as defined and regulated under the Wetlands Protection Act and the Wetlands Protection Regulations (310 CMR 10.00). Projects that fall under the jurisdiction of the Wetlands Protection Act must comply with the Massachusetts Stormwater Management Standards (310 CMR 10.05(6)). The Stormwater Management Standards define the requirements for proper stormwater management for new or redeveloped sites in Massachusetts. The reconstruction of the Chequessett Neck Road Dike and elevating of local roadways within their current alignments would be treated as redevelopment where certain standards only need to be met to the maximum extent practicable. Relocated roadways and a new dike at Mill Creek would likely not qualify as redevelopment and would need to meet all the stormwater management standards. The stormwater management designs for all components of the preferred alternative would be refined and analyzed in future design and permitting phases to demonstrate compliance with the Massachusetts Stormwater Management Standards.

Massachusetts Endangered Species Act

The Massachusetts Endangered Species Act (MESA) (MGL c.131A and regulations 321 CMR 10.00) protects rare species and their habitats by prohibiting the "taking" of any plant or animal species listed as endangered, threatened, or species of special concern by the Massachusetts Division of Fisheries and Wildlife. Taking includes the harassing, killing, trapping, collecting of species as well as the disruption of nesting, breeding, feeding, or migratory activity, including habitat modification or destruction. Three types of filings under MESA are coordinated through the Natural Heritage and Endangered Species Program (NHESP) at the Division of Fisheries and Wildlife: (1) MESA information request for rare species information; (2) MESA project review; and (3) the Conservation and Management Permit Application. Projects resulting in a “take” of state-listed rare species may be eligible for a Conservation and Management Permit (321 CMR 10.23). A rare species habitat assessment or survey may be required as part of the Conservation and Management Permit process.

Compliance with Massachusetts Endangered Species Act

In October 2008, the Massachusetts Division of Fisheries and Wildlife responded to the ENF for the Herring River project by providing a full list of state-listed species with the potential to occur in the project area. Of these species, four have been recorded within the Herring River project area:

- northern harrier (*Circus cyaneus*): threatened
- diamondback terrapin (*Malaclemys terrapin*): threatened
- eastern box turtle (*Terrapene c. carolina*): species of special concern
- water-willow stem borer (*Papaipema sulphurata*): threatened

In addition, in subsequent consultations, Massachusetts NHESP has also asked for information about the status of and potential impacts to American bittern (*Botaurus lentiginosus*) and least bittern (*Ixobrychus exilis*), which are both listed as endangered.

Chapter 3 (section 3.7) describes the species and their potential occurrence in the project area and chapter 4 (sections 4.7.2 through 4.7.4) describes the anticipated impacts to these species that would result from implementation of the proposed alternatives. Although tidal restoration could result in some displacement of habitat for listed species, the project could be exempted from MESA under 321 CMR 10.14(15) with approval by Massachusetts NHESP of a written Habitat Management Plan. Given the relatively long implementation time and uncertainties surrounding the outcomes of the Herring River Restoration project, this is a logical approach for complying with MESA. Such a plan would be closely linked to the adaptive management plan and would describe in the detail a plan for monitoring the response of key listed species to tidal restoration along with measures to balance the objectives for maximizing tidal exchange while minimizing adverse impacts to regulated species and their habitats. The HRRC will continue to consult with Massachusetts NHESP and other stakeholders on this issue through the review of this draft EIS/EIR and will develop a Habitat Management Plan during the subsequent permitting phase.

Areas of Critical Environmental Concern

The ACEC Program is administered by the Department of Conservation and Recreation. The ACEC Regulations (301 CMR 12.00) describe the procedures for the nomination, review, and designation of ACECs. The project area is included within the Wellfleet Harbor ACEC which was designated in 1989 because of the area's extraordinary natural resources. The ACEC regulations also direct the agencies of the Executive Office of Energy and Environmental Affairs to take actions, administer programs, and revise regulations in order to preserve, restore, or enhance the natural and cultural resources of ACECs through a variety of state agency programs and regulations. Regulations administered by the MassDEP, MEPA, and the Massachusetts Office of Coastal Zone Management contain specific provisions regarding ACECs. Compliance with these provisions is addressed under the relevant regulations in this chapter.

Coastal Zone Management Act Consistency and Massachusetts Coastal Zone Management

In response to the federal Coastal Zone Management Act, enacted in 1972, the Commonwealth of Massachusetts developed its coastal zone management (CZM) program to help “preserve, protect, develop, and where possible, restore and enhance the resources of the nation's coastal zone.” The Coastal Zone Management Act provides states with the ability to review federal activities and ensure

that such activities are consistent, to the maximum extent practicable, with their CZM plans. The review process is used to make a “consistency determination.” If a proposed action is inconsistent with the requirements of the state’s approved program, the applicant and federal agency are prohibited from conducting the activity unless certain significant additional procedures are followed.

The Massachusetts program was approved by NOAA in 1978 and is implemented and monitored by CZM. The Massachusetts Office of Coastal Zone Management Policy Guide (October 2011) is the current official statement of the Massachusetts coastal program policies and legal authorities. Under the CZM program, all MEPA projects are reviewed for consistency with the management principles of CZM, which are intended as guidance for any activities proposed in the Coastal Zone. The overall goal of CZM is to protect coastal resources from contamination or degradation, prevent the creation of coastal hazards, and maximize the public use and benefit of coastal areas. Specific policies applicable to the Herring River Restoration Project are outlined below.

Compliance with Massachusetts Coastal Zone Management Policies

Coastal Hazards – Policy 1—*Preserve, protect, restore, and enhance the beneficial functions of storm damage prevention and flood control provided by natural coastal landforms, such as dunes, beaches, barrier beaches, coastal banks, land subject to coastal storm flowage, salt marshes, and land under the ocean.*

CZM recognizes that natural landforms in coastal zone provide important protection from coastal storms, flooding, and erosion relative sea level rise. The ability of the former Herring River flood plain to serve in this capacity was severely limited by the construction of the Chequessett Neck Road Dike. The Herring River Restoration Project would gradually restore the beneficial functions of storm damage prevention and flood control provided by natural landforms above the dike. The goal of the restoration project is to balance tidal restoration objectives with flood control by allowing the highest tide range practicable while also ensuring flood proofing and protection of vulnerable properties including domestic residences, low lying roads, wells, and private property such as the CYCC. Effective protection would be achieved by the reconstruction of the Chequessett Neck Road Dike above the destructive capability of storm waves, floods and projected sea level rise and reduce the potential for storm-related damage consistent with current Federal Emergency Management Agency (FEMA) design guidelines. The habitat restoration would also improve the ability of the subsided marsh plain to keep pace with sea level rise.

Coastal Hazards – Policy 2—*Ensure that construction in water bodies and contiguous land areas will minimize interference with water circulation and sediment transport. Flood or erosion control projects must demonstrate no significant adverse impacts on the project site or adjacent or downcoast areas.*

The Herring River Restoration Project seeks to restore natural physical coastal processes including water circulation and sediment transport to the extent possible. One of the more important hydrologic functions of tidal flushing and wetlands is water quality improvement. Degraded water quality conditions led the MassDEP to list the Herring River as “impaired” under the federal CWA Section 303(d) for low pH and high metal concentrations. Poor water quality in the river has also led to fish kills and closure of shellfish beds at the river’s mouth. The planned restoration would improve tidal flushing and is expected to eliminate problematic acidity in the estuary as well as resaturate wetland soils with salt water and reverse the chemical processes that have mobilized toxic metals into the water column. Restored tidal flows would lead to higher sediment transport and deposition onto the wetland surface, as sediment-carrying flood tides would again flood over creek banks and onto the subsided marsh platform. However, the proposed gradual opening of adjustable

sluice gates would incrementally increase the tidal range avoiding unexpected or sudden irreversible changes to the river and Wellfleet Harbor and allow monitoring of the system so that unexpected and/or undesirable responses could be detected and appropriate remedial actions taken.

Coastal Hazards – Policy 3—*Ensure that state and federally funded public works projects proposed for location within the coastal zone will:*

- Not exacerbate existing hazards or damage natural buffers or other natural resources
- Be reasonably safe from flood and erosion-related damage
- Not promote growth and development in hazard-prone or buffer areas, especially in velocity zones and ACECs
- Not be used on Coastal Barrier Resource Units for new or substantial reconstruction of structures in a manner inconsistent with the Coastal Barrier Resource/Improvement Acts.

This policy is primarily aimed at ensuring the soundness of public investment for public works projects in hazardous coastal areas. The proposed structural improvements needed to restore the Herring River flood plain would be designed to promote habitat restoration and functioning of natural processes to the extent possible. Newly constructed infrastructure would replace existing infrastructure that is over 40 years old, thereby minimizing future costly storm-related repair and maintenance. The majority of the project is within the boundary of the Seashore and therefore not anticipated to encourage new development in high risk areas, stimulate new or expanded development, or induce pressure for additional federal or commonwealth subsidies in hazardous coastal areas. Protecting existing properties is a critical part of all action alternatives. Flood protection would be realized either by controlling tides in specific sub-basins or by flood proofing individual properties. FEMA is likely to change the base flood elevation for the 100-year coastal storm event; this change is independent from the Herring River Restoration Project, and is already under review as part of FEMA's flood plain mapping update for Barnstable County.

Habitat - Policy 1—*Protect coastal, estuarine, and marine habitats—including salt marshes, shellfish beds, submerged aquatic vegetation, dunes, beaches, barrier beaches, banks, salt ponds, eelgrass beds, tidal flats, rocky shores, bays, sounds, and other ocean habitats—and coastal freshwater streams, ponds, and wetlands to preserve critical wildlife habitat and other important functions and services including nutrient and sediment attenuation, wave and storm damage protection, and landform movement and processes.*

Cape Cod has long been recognized as an extraordinary and diverse resource. Congress recognized that the Outer Beach of the Cape Cod peninsula was nationally significant for ecological, historical, and cultural reasons with the establishment of the Seashore with the intent to preserve the nationally significant and special cultural and natural features, distinctive patterns of human activity, and ambience that characterize the outer Cape. Most of the river's flood plain (approximately 80 percent) is within the boundary of the Seashore. Integral to the restoration plan is the restoration and long-term preservation of critical wildlife habitat and other important functions and services including nutrient and sediment attenuation, wave and storm damage protection, and landform movement and processes. The restoration of tidal flow would increase salinity and inundation, resulting in changes to vegetation and ultimately wildlife species and their habitats. Wetlands in the project area would be restored from degraded habitats influenced by freshwater to tidal marsh habitats influenced by salt water. Increased salinity would eliminate freshwater and upland plants and allow for colonization of native salt marsh plants.

Habitat - Policy 2—*Advance the restoration of degraded or former habitats in coastal and marine areas.*

The Herring River (along with its flood plain, tributary streams, and associated estuarine habitats within Wellfleet Harbor) was the largest tidal river and estuary complex on the Outer Cape. The HRRC proposes to restore native tidal wetland habitat to large portions of the Herring River flood plain in and adjacent to the Seashore by re-establishing tidal exchange in the river basin and its connected sub-basins. Tidal exchange would be increased incrementally, over time, using an adaptive management approach, to achieve desired conditions for native salt marsh habitats.

Protected Areas - Policy 1—*Preserve, restore, and enhance coastal ACECs, which are complexes of natural and cultural resources of regional or statewide significance.*

The restoration project is consistent with CZM's intent to preserve, restore, and enhance recognized complexes of marine resources by restoring degraded intertidal wetlands while ensuring the components of the restoration plan avoid or minimize adverse impacts. The project area is included within the Wellfleet Harbor ACEC. The Wellfleet Harbor ACEC was designated in 1989 because of the area's extraordinary natural resources. Portions of the area have been designated by the Department of Conservation and Recreation as containing visual landscapes and cultural resources that place it in the top 5 percent of all landscapes in Massachusetts (1982 Massachusetts Scenic Landscape Inventory). Important habitats within the ACEC boundary include largely unaltered barrier beaches, islands, marsh systems, salt and fresh water ponds, rivers, bays, and tidal flats. These areas provide flood control, storm damage prevention, improved water quality, wildlife habitat, and recreation opportunities to surrounding communities.

Protected Areas - Policy 3—*Ensure that proposed developments in or near designated or registered historic places respect the preservation intent of the designation and that potential adverse impacts are minimized.*

An objective of the project is to restore the expansive marshes and tidal waters that were once a principal maritime focus of both Native Americans and European settlers of outer Cape Cod in a manner that preserves the area's important cultural resources. Cultural resources consist of archeological resources and archeologically sensitive areas (below-ground resources), historic structures, properties, or objects (above-ground resources) and ethnographic resources. No historic (above-ground) resources were identified within the APE for the study (Herbster and Heitert 2011). No documented ethnographic resources are known to be located within the project APE, but consultation regarding the presence of ethnographic resources in the Herring River estuary is ongoing. No impacts to archeological resources or archeologically sensitive areas are expected to occur due to the gradual increase in tidal elevations. There is a potential for construction activities to adversely affect archeological resources within the APE. Prior to any construction, additional archeological assessment and/or survey should be conducted where ground-disturbing activities are to be conducted to determine if these areas contain archeological sites that are eligible for inclusion in the National Register.

Water Quality - Policy 2—*Ensure the implementation of nonpoint source pollution controls to promote the attainment of water quality standards and protect designated uses and other interests.*

Several road segments, primarily at stream crossings, are vulnerable to restored tidal flooding, most notably along High Toss, Pole Dike, Bound Brook, and Old County Roads. As a result, low-lying portions of these roadways may be elevated in place, removed, or relocated. The reconstruction of roadways and associated stormwater management systems would meet Department of

Environmental Protection redevelopment stormwater management standards as applicable. All construction areas would maintain stormwater BMPs to comply with commonwealth and federal non-point source pollution requirements to the maximum extent practicable while still achieving the project purpose of estuary restoration.

Massachusetts Division of Marine Fisheries

Massachusetts Marine Fisheries has broad legal authority within the Commonwealth of Massachusetts to provide suitable passage for anadromous fish coming into fresh water to spawn. This includes the authority to examine dams and other obstructions to passage in brooks, rivers, and streams, which flow into coastal waters to decide if fishways are needed and determining whether existing fishways are suitable and sufficient for the passage of fish. The emphasis of their work is on fishway maintenance, reconstruction and replacement of fishway passage facilities with more advanced designs.

Compliance with the Massachusetts Division of Marine Fisheries

It is anticipated that the final design of the Chequessett Neck Road and Mill Creek dikes would be reviewed by the Massachusetts Division of Marine Fisheries to ensure that adequate fish passage is made available for migration of herring, and other anadromous and catadromous species, prior to project implementation. The project team would also rely on the Massachusetts Division of Marine Fisheries to specify construction constraints to avoid impacts to these important species.

Massachusetts Department of Transportation

Under Chapter 85 Section 35 of the Massachusetts General Laws, any structure (culvert, bridge or other) measured 10 feet or over along the roadway centerline (or 8 feet measured square to the abutments) is considered a “bridge” for the purpose of review by the Massachusetts Department of Transportation (MassDOT). By this law, MassDOT has been charged the task of reviewing all bridges along a public way (state maintained or otherwise). Under this review, MassDOT’s Bridge Section ensures new or replacement bridges would be designed to American Association of State Highway and Transportation Officials specifications and that the structure would be safe for the anticipated design loading. Also upon review of these structures, MassDOT would assign all structures with spans 10 feet or greater a BIN (bridge identification number) to help maintain a statewide inventory of such structures.

Compliance with Chapter 85 Section 35 would be achieved later in the design of the preferred alternative where the preliminary design of stream crossing structures spanning 10 feet or greater with roads will be reviewed by MassDOT’s Bridge, Geotechnical and Hydraulic Sections. Formal approval by MassDOT’s Bridge Section would be required when the final plan set and specifications documents are prepared.

5.3.6 LOCAL AND REGIONAL AND CONSULTATION

Cape Cod Commission – Development of Regional Impact

The CCC was created in 1990 by an Act of the Massachusetts General Court (the state legislature), and it was confirmed by a majority of Barnstable County voters. The CCC reviews projects that present regional issues identified in the Act, including water quality, traffic flow, historic values, affordable housing, open space, natural resources, and economic development.

The law requires a Development of Regional Impact (DRI) review if a project exceeds a specific threshold. Examples of projects that need to go through mandatory DRI review by the CCC are those involving development of multiple residential or commercial properties, transportation facilities, changes to historic structures, bridge, ramp, or road construction providing access to several types of water bodies and wetlands, and site alterations generating disturbance greater than 2 acres. In addition, any proposed development for which an EIR is required under MEPA is deemed to be a DRI.

Compliance with Cape Cod Regional Policy Plan Standards

The Herring River Restoration Project meets the threshold for a DRI review because it requires an EIR under MEPA. The CCC responded to the 2008 ENF for the project with a letter and matrix of regional planning issues to be addressed in this EIR. Therefore, this draft EIS/EIR will be reviewed by members of the CCC to ensure compliance with regional development requirements and guidelines. Responses to the specific issues identified in the ENF comments will be addressed as part of the DRI application.

Wellfleet Environmental Protection Bylaw

The Wellfleet Conservation Commission protects the natural resources and wetlands existing in the Town of Wellfleet by controlling activities deemed to have a significant or cumulative adverse impact upon environmental values. The local bylaw incorporates and expands upon the Massachusetts Wetlands Protection Act and regulations with several notable additions including:

- Stricter controls over work within the 100-foot buffer zone and a 50-foot filter strip
- Impacts to freshwater wetlands are prohibited whether they are bordering or not
- More detailed filing requirements for coastal engineering structures
- Performance standards for the Land Subject to Coastal Storm Flowage within the Wellfleet Harbor ACEC.

The Wellfleet Environmental Protection Bylaw considers the AH zone on the Flood Insurance Rate Maps to be significant for storm damage prevention. This ponding generally occurs as a result of overwash from coastal floodplains. The placement of fill within these areas may increase flood levels on adjacent properties. Any activity proposed on Land Subject to Coastal Storm Flowage or within the Wellfleet Harbor ACEC shall not:

- Reduce the ability of the resource to absorb and contain flood waters
- Reduce the ability of the resource to buffer more inland areas from flooding and wave damage
- Displace or divert flood waters to other areas
- Cause or create the likelihood of damage by debris to other structures on land within the flood plain
- Cause ground, surface or saltwater pollution triggered by coastal storm flow
- Reduce the ability of the resource to serve as a wildlife habitat and migration corridor.

Compliance with the Wellfleet Environmental Protection Bylaw

Similar to compliance with the Wetlands Protection Act, the proposed elements of the restoration project cannot meet the performance standards established within the Wellfleet Environmental Protection Bylaw and would **require a variance from the Wellfleet Conservation Commission**. Under the bylaw, the Commission may grant a variance upon clear and convincing proof that the proposed work, or its impacts and impacts, would not adversely affect the public interests and environmental values protected by the bylaw. Criteria for a variance are similar to those under the Massachusetts Wetlands Protection Act, previously described.

Truro Conservation Bylaw

The Truro Conservation Bylaw is administered by the Truro Conservation Commission and mirrors the Massachusetts Wetlands Protection Act and regulations. If the Commission, after a public hearing, determines that the activities are likely to have a significant individual or cumulative impact upon the resource area values protected by this bylaw, the Commission shall issue an Order of Conditions, permitting the activities requested or denying the application. The bylaw does not establish thresholds on the extent of work that can be authorized under an Order of Conditions issued by the Commission. Applicants aggrieved by a Commission's order may appeal to MassDEP and to an appropriate court. It is anticipated that the proposed change in water levels in Bound Brook would trigger the need to file a NOI under this bylaw. The HRRC intends to submit a NOI concurrently to both towns for rebuilding the Chequessett Neck Road Dike and if any subsequent direct work is deemed necessary in the Town of Truro, (e.g., a small culvert replacement) a separate NOI would be submitted to the Truro Conservation Commission.

5.4 LIST OF RECIPIENTS

The following list includes government, stakeholder groups, and regulators who received this draft EIS/EIR for review or were directly notified of its availability for review and comment.

Congressional Delegates

Senator John Kerry

Senator Scott Brown

Rep. William Keating, Massachusetts Congressional District 10

National Park Service

Environmental Protection Agency

U.S. Army Corps of Engineers

U.S. Fish and Wildlife Service

National Atmospheric and Oceanic Administration

Natural Resources Conservation Service

Federal Emergency Management Agency

Advisory Council on Historic Preservation

Commonwealth of Massachusetts

Commonwealth of Massachusetts Legislators

Sarah K. Peake, 4th District Barnstable (House)

Daniel A. Wolf, Cape and Islands District (Senate)

Massachusetts Environmental Policy Act Office, MEPA Unit

Massachusetts Department of Environmental Protection, Southeast Regional Office

Massachusetts Department of Environmental Protection, Boston Headquarters

Massachusetts Department of Conservation and Recreation, Areas of Critical Environmental Concern Program

Massachusetts Office of Coastal Zone Management

Massachusetts Division of Marine Fisheries

Massachusetts Natural Heritage & Endangered Species Program

Massachusetts Department of Transportation

Massachusetts Emergency Management Agency

Massachusetts Historical Commission

Barnstable County

Cape Cod Commission

Cape Cod Conservation District

Barnstable County Department of Health and the Environment

Town of Wellfleet

Board of Selectman

Board of Health

Conservation Commission

Department of Public Works

Shellfish Advisory Board

Town Planner

Open Space Committee

Natural Resources Advisory Board

Town of Truro

Board of Selectman
Board of Health
Conservation Commission
Department of Public Works
Shellfish Advisory Committee
Town Planning Board
Open Space Committee
Natural Resources Advisory Board

Federally Recognized Indian Tribes

Mashpee Wampanoag Tribe
Wampanoag Tribe of Gay Head Aquinnah

Libraries

Other Organizations and Businesses

5.5 LIST OF PREPARERS AND CONTRIBUTORS

National Park Service Project Team

Staff Member	Position
Mark Adams	GIS Specialist, Cape Cod National Seashore
Bill Burke	Chief, Cultural Resources, Cape Cod National Seashore
Shelley Hall	Chief, Natural Resources, Cape Cod National Seashore
Jim Harmon	Archeologist, National Park Service
Mark Husbands	Project Manager, Environmental Quality Division
Lauren McKean	Planner, Cape Cod National Seashore
Charles Roman	Research Coordinator, National Park Service
Tim Smith	Restoration Ecologist, Cape Cod National Seashore

Herring River Restoration Committee

Members	Position/Affiliation
Steve Block	Habitat Restoration Specialist, National Oceanic and Atmospheric Administration
Eric Derleth	Biologist, U.S. Fish and Wildlife Service
Hunt Durey	Deputy Director, Massachusetts Division of Ecological Restoration
Hillary Greenberg	Health and Conservation Agent, Town of Wellfleet
Charleen Greenhalgh	Assistant Town Administrator/Planner, Town of Truro
Gary Joseph	HRRC Chair, Town of Wellfleet
Steve Spear	Conservation Planner, Natural Resources Conservation Service
Tim Smith	Restoration Ecologist, Cape Cod National Seashore
HRRC Technical Support	Position/Affiliation
Nathan Dill	Numerical Modeler, Woods Hole Group, Inc.
Mitch Eaton	Assistant Professor, Cornell University, USGS Cooperative Fish and Wildlife Research Unit
Margo Fenn	Project Coordinator, Association to Preserve Cape Cod
Don Palladino	Friends of Herring River
John Portnoy	Friends of Herring River
Kirk Bosma	Coastal Engineer, Woods Hole Group, Inc.
Jeff Oakes	Engineer, Coast Line Engineering, Inc.
Holly Herbster	Archeologist, Public Archeology Lab, Inc.

Contractors

Staff Member	Position
The Louis Berger Group, Inc.	
Holly Bender	Economist
Jacklyn Bryant	Project Manager
Chris Dixon	Environmental Planner
Alynda Foreman	Ecologist/Deputy Project Manager
Dell Gould	Cultural Resource Specialist
Bernward Hay	Environmental Scientist
Michael Mayer	Project Manager/Senior Regulatory Specialist
Joshua Schnabel	Environmental Planner
Spence Smith	Environmental Scientist
Pat Weslowski	Deputy Project Manager
Craig Wood	Environmental Scientist



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GLOSSARY

accretion—The act of adding material, such as from the deposition and accumulation of waterborne particles.

Action Alternative—An alternative that proposes a different management action or actions to address the purpose, need, and objectives of the plan; one that proposes changes to the current management. Alternatives B and C are the action alternatives in this planning process. See also: “No-Action Alternative.”

Adaptive Management—A systematic management paradigm that assumes natural resource management policies and actions are not static but are adjusted based on the combination of new scientific and socio-economic information in order to improve management by learning from the ecosystems being affected. A collaborative adaptive management approach incorporates and links knowledge and credible science with the experience and values of stakeholders and managers for more effective management decision-making.

Affected Environment—A description of the existing environment that may be affected by the proposed action (40 CFR 1502.15).

algae—Simple rootless plants that grow in bodies of water (e.g., estuaries) at rates dependent on sunlight, temperature and the amounts of plant nutrients (e.g., nitrogen and phosphorus) available in water.

alluvial—Relating to the deposits made by flowing water; washed away from one place and deposited in another; as, alluvial soil, mud, accumulations, deposits.

amphibian—A cold-blooded, smooth-skinned vertebrate animal of the class Amphibia, such as a frog or salamander, that typically hatches as an aquatic larva with gills. The larva then transforms into an adult having air-breathing lungs.

amphipods—A small freshwater or marine crustacean with a thin body and without a carapace.

anadromous—Fish species that spend their lives in the ocean, but return to freshwater streams, rivers, and ponds to spawn.

anaerobic—Not containing oxygen or not requiring oxygen.

anoxic—Without oxygen; water that contains no dissolved oxygen.

anthropogenic—Involving the impact of humans on nature; induced, caused, or altered by the presence and activities of humans, as in water and air pollution.

aquifer—Underground rock or soil layer yielding groundwater for wells and springs, etc.

astronomic tides— The periodic rise and fall of a body of water resulting from gravitational interactions between the Sun, Moon and Earth.

attenuation—Reduction.

base flood—A flood having a one percent chance of being equaled or exceeded in any given year.

bathymetry—Of or relating to measurements of the depths of water bodies, such as oceans, estuaries or lakes.

berm—A mound or bank of earth, used especially as a barrier.

biota—The combined flora and fauna of a region.

biotic—Pertaining to life or living things, or caused by living organisms.

bog—A wetland that has poorly-drained, acidic peat soil dominated by sedges and sphagnum moss.

brackish water—Water containing a mixture of seawater and fresh water; contains dissolved materials in amounts that exceed normally acceptable standards for municipal, domestic, and irrigation uses.

brackish—A mixture of fresh and saltwater typically found in estuarine areas; of intermediate salinity.

buffer zone—A barrier between sensitive wildlife habitat and land uses such as agriculture or urban development. A transitional zone intended to provide for compatibility of nearby dissimilar uses.

candidate species (federal definition)—A species for which the U.S. Fish and Wildlife Service has on file sufficient information to support a proposal to list the species as endangered or threatened, but for which proposed rules have not yet been issued.

catadromous—Fish species that spend their lives in freshwater streams, rivers, and ponds, but return to the ocean to spawn.

Council on Environmental Quality (CEQ)—Established by Congress within the Executive Office of the President with passage of the National Environmental Policy Act of 1969. CEQ coordinates federal environmental efforts and works closely with agencies and other White House offices in the development of environmental policies and initiatives.

datum—A base elevation used as a reference from which to reckon heights or depths.

ebb tide—The tide defined when the movement of the tidal current is away from the shore or down a tidal river or estuary.

ecosystem—A basic functional unit of nature comprising both organisms and their nonliving environment, intimately linked by a variety of biological, chemical, and physical processes.

ecotone—A transition zone between two ecosystems.

endangered (federal definition)—Any species which is in danger of extinction throughout all or a significant portion of its range.

EIS/EIR—Environmental Impact Statement/Environmental Impact Report.

essential fish habitat—Waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.

estuarine—Of, relating to, or found in an estuary.

estuary—The wide part of a river where it meets the sea; where fresh and salt water mix in a semi-enclosed body of water.

eutrophication—Having waters rich in mineral and organic nutrients that promote a proliferation of plant life, especially algae, which reduces the dissolved oxygen content and often causes the extinction of other organisms.

exotic species—Any introduced plant or animal species that is not native to the area and that may be considered a nuisance. See also invasive species.

fauna—Animals, especially the animals of a particular region or period, considered as a group.

Flood plain—An area adjacent to a lake, stream, ocean or other body of water lying outside the ordinary banks of the water body and periodically filled by flood flows. Often referred to as the area likely to be filled by the 100-year flood (base flood).

flora—Plants considered as a group, especially the plants of a particular country, region, or time.

groundwater—Water that penetrates the earth's surface from precipitation and from infiltration from streams; water present below ground from ponds and lakes; water that flows or ponds underground.

habitat—The range of environmental factors at a particular location supporting specific plant and animal communities.

halophyte—Salt-tolerant vegetation.

hydraulic—Of or involving a fluid, especially water, under pressure.

hydrodynamic modeling—The modeling of the flow field, circulation, and water surface elevations within a water body driven by external conditions, including tides, winds, inflows, outflows.

hydrology—The scientific study of the properties, distribution, and effects of water on the earth's surface, in the soil and underlying rocks, and in the atmosphere.

intertidal habitat—The tidal area between the mean lower low water (MLLW) and mean higher high water (MHHW) which is alternately exposed and covered by water twice daily.

inundation—Covered by a flood.

invasive species—A species that is 1) non-native (exotic) to the ecosystem under consideration and 2) whose introduction causes or is likely to cause economic or environmental harm or harm to human health.

invertebrate—A animal without a backbone.

jurisdictional wetlands—Wetlands which meet the criteria of “waters of the United States” and are thereby under the jurisdiction of the Corps and the USEPA. The definition developed by the Corps considers as wetlands those areas which “...are inundated or saturated by surface or ground water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” Under this definition, all three of the following conditions must be present: a) a dominance of wetland plants; b) hydric soils (soils with low oxygen concentrations in the upper layers during the growing season); and c) wetlands hydrology.

mammal—Any of various warm-blooded vertebrate animals of the class Mammalia, including humans, characterized by a covering of hair on the skin and, in the female, milk-producing mammary glands for nourishing the young.

marsh—A common term applied to describe treeless wetlands characterized by shallow water and abundant emergent, floating, and submerged wetland flora. Typically found in shallow basins, on lake margins, along low gradient rivers, and in calm tidal areas. Marshes may be fresh, brackish or saline, depending on their water source(s).

Massachusetts Environmental Policy Act (MEPA)—The Act articulates the state law that requires that state agencies study the environmental consequences of their actions, including permitting and financial assistance. It also requires them to take all feasible measures to avoid, minimize, and mitigate damage to the environment. MEPA jurisdiction is broad in scope and extends to all aspects of the project that may cause damage to the environment as defined in the MEPA regulations. These include water quality, wetlands, coastal/marine resources, rare species habitat, and cultural resources.

mean sea level—The arithmetic mean of hourly heights observed over the National Tidal Datum Epoch.

MHW—Mean High Water, the average height of all the high tides.

MHWS—Mean High Water Spring, the average height throughout the year of two successive high waters during those periods of 24 hours when the range of the tide is at its greatest.

migratory—Moving regularly or occasionally from one region or climate to another; as, migratory birds.

MLW—Mean Low Water, the average height of all low water heights.

National Environmental Policy Act (NEPA)—The Act as amended articulates the federal law that mandates protecting the quality of the human environment. It requires federal agencies to systematically assess the environmental impacts of their proposed activities, programs, and projects including the “no-action” alternative of not pursuing the proposed action. NEPA requires agencies to consider alternative ways of accomplishing their missions in ways which are less damaging to the environment.

National Historic Preservation Act of 1966 (16 USC 470 et seq.)—An Act to establish a program for the preservation of historic properties throughout the nation, and for other purposes, approved October 15, 1966 [Public Law 89-665; 80 STAT. 915; 16 USC. 470 as amended by Public Law 91-243, Public Law 93-54, Public Law 94-422, Public Law 94-458, Public Law 96-199, Public Law 96-244,

Public Law 96-515, Public Law 98-483, Public Law 99-514, Public Law 100-127, and Public Law 102-575].

native species—Species which have lived in a particular region or area for an extended period of time.

navigation channel—The buoyed, dredged, and policed waterway through which ships proceed, especially in general shallow areas.

nonpoint source—A diffuse source of pollution that cannot be attributed to a clearly identifiable, specific physical location or a defined discharge channel. This includes the nutrients that run off the ground from any land use (e.g., croplands, feedlots, lawns, parking lots, streets, forests, etc.) and enter waterways. It also includes nutrients that enter through air pollution, through the groundwater, or from septic systems.

North American Vertical Datum (NAVD)—All elevations presented in this EIS/EIR are based on the NAVD88. NAVD88 replaced National Geodetic Vertical Datum of 1929 (NGVD 29) as a result of greater accuracy and the ability to account for differences in gravitational forces in different areas based on satellite systems. NAVD88 is 0.86 feet lower in elevation than NGVD 29.

permeability—The degree to which something (e.g., an earthen structure) can be penetrated by a liquid.

pH—Measure of the acidity or alkalinity (basicity) of water (pH 7 is neutral, increasing values indicate alkalinity and decreasing value indicate acidity).

restoration—The return of an ecosystem to a close approximation of its condition prior to disturbance.

saline—Of, relating to, or containing salt; salty.

salinity—A measure of the salt concentration of water; higher salinity means more dissolved salts.

salt marsh—A coastal habitat consisting of salt-resistant plants residing in an organic-rich sediment.

sedimentation—The deposition or accumulation of sediment.

spawn—The act of reproduction of fishes and certain marine invertebrates.

special status species—Collective term for endangered species, threatened species, species of concern and species of special concern.

species of concern (federal definition)—An informal term that refers to those species which USFWS believes might be in need of concentrated conservation actions. (Formerly known as Category 1 or 2 Candidate).

spring tides—The tides resulting when the gravitational forces exerted on the earth by the sun and moon are acting in the same direction.

submerged—Below water.

submerged aquatic vegetation (SAV)—Aquatic vegetation that cannot tolerate dry conditions and because of this, live with their leaves at or below the water surface.

subsidence—The motion of a surface (usually, the Earth's surface) as it shifts downward relative to a datum such as sea level.

subtidal habitat—Areas below mean lower low water (MLLW) that are covered by water most of the time.

swamp—A seasonally flooded bottomland with more woody plants than a marsh and better drainage than a bog.

threatened (federal definition)—Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

tidal flushing—The action of saltwater entering an estuary during high tides. It renews the salinity and nutrients to the estuary and removes artificially introduced toxins in the environment.

tidal marsh—Wetlands with fresh water, brackish water, or salt water along tidal shores.

tidal prism—The volume of water that flows into and out of a marsh.

topography—The general configuration of a land surface, including its relief and the position of its natural and man-made features.

toxic—The property of being poisonous, of causing death or severe temporary or permanent damage to an organism.

toxicity—The degree to which a substance is *toxic*.

turbidity—The relative clarity of water, which depends in part on the material in suspension in the water.

upland—Ground elevated above the lowlands along rivers or shorelines.

vector—An insect or other organism that transmits a pathogenic fungus, virus, bacterium, etc.

watershed—An area of land where all of the ground water and surface water drains to the same water body (typically a river or creek).

Wetlands—The U.S. Army Corps of Engineers (Federal Register, 1982) and the Environmental Protection Agency (Federal Register, 1980) jointly define wetlands as: Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

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