

**FINAL  
RESTORATION PLAN  
AND  
ENVIRONMENTAL ASSESSMENT  
FOR THE  
ISLAND END RIVER  
FORMER COAL TAR PROCESSING FACILITY**

**EVERETT, MASSACHUSETTS**

**Final  
August 2015**

*Prepared by the:*  
**National Oceanic and Atmospheric Administration**

## EXECUTIVE SUMMARY

This Restoration Plan and Environmental Assessment (RP/EA) has been prepared by the National Oceanic and Atmospheric Administration (NOAA) of the U.S. Department of Commerce to address natural resource injuries caused by releases of hazardous substances at or from the Former Coal Tar Processing Facility Superfund Site located in Everett, Massachusetts (the Site). Pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), NOAA and the Commonwealth of Massachusetts Executive Office of Energy and Environmental Affairs (EEA) share trusteeship authority over the natural resources affected by releases at or from the Site and are collectively referred to as the Natural Resource Trustees (“the Trustees”). See, 42 USC § 9607(f)(2).

Under CERCLA, the Trustees are authorized to act on behalf of the public to assess and recover damages for injury to, destruction of, or loss of natural resources caused by the release, or threatened release, of hazardous substances, and to hold responsible parties liable for those damages including the costs of assessing the damages (42 USC 9607). Natural resource trustees ensure that funds recovered from responsible parties are used to, “restore, replace or acquire the equivalent,” of the natural resources that were injured and ecological services that were lost. See, 42 USC § 9607(f) (1).

The Island End River is an approximately 29-acre tidally influenced tributary to the Mystic River which runs into Boston Harbor. The Island End River Former Coal Tar Processing Facility operated on the filled tidelands for over 70 years between the late 1890’s and the 1960’s during which time wastewater was discharged directly into the river. Remediation at the site took place between 2006 – 2007 and included extensive dredging of contaminated sub-tidal sediments and the filling of 1.81 acres of the river.

The principal responsible parties for the site are KeySpan Energy Inc. (Keyspan), Honeywell International Inc. (Honeywell), and Beazer East, Inc. (Beazer East). Under CERCLA, Keyspan, Honeywell and Beazer East have joint and several liability and are working together to comply with the requirements of this statute.

NOAA and EEA worked together to investigate and assess potential natural resource injuries attributable to releases at or from the landfill. The Trustees determined that natural resources in the Island End River ecosystem were injured by the release of hazardous substances at or from the Site. The primary natural resource impacts were to subtidal benthic habitat and aquatic species utilizing the water column.

In December 2008, NOAA and the Responsible Parties (RPs) – Keyspan, Honeywell and BeazerEast- entered into Settlement Agreements to resolve the Trustees’ NRDA claims under CERCLA relating to the existence, release, or threat of release of hazardous substances at or from the Site. In exchange for the payments of \$100,000 each, the RP’s received a release from liability for natural resource damages at the site from the Trustees in the form of a NOAA administrative settlement agreement and a letter from the Commonwealth as Trustee indicating that the Commonwealth will take no further action as a Trustee relative to natural resource damages for this site. These payments are to cover NOAA’s assessment and restoration costs for

the Site. The RP's have also voluntarily expanded the design, plan and permitting for mitigations to be undertaken on a parcel of land at Oak Island so that, should the Trustee's deem it appropriate and feasible, additional work could be done at Oak Island with the settlement funds to accomplish restoration.

NOAA has identified and evaluated a range of compensatory restoration alternatives to enhance estuarine fish habitat in the area including: a No Action alternative; salt marsh restoration in the Oak Island section of the Rumney Marsh in Revere; and several potential projects in the Mystic and Malden River watersheds. In this document NOAA presents an analysis and evaluation of the restoration alternatives and their potential impact on the surrounding environment. NOAA presents the agency's preferred alternative, restoration of 1.2 acres of the Oak Island salt marsh at an estimated cost of \$260,000, and invited public review and comment.

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## **1.0 Introduction**

### **1.1 Purpose and Need for Restoration**

The purpose of the proposed action is to restore natural resources injured, lost or destroyed at the Island End River Former Coal Tar Processing Facility (FCTPF) Superfund Site and a portion of the surrounding properties in Middlesex County, Everett, Massachusetts, as a result of releases of hazardous substances at and from the Site and subsequent response actions to address the releases. The need to pursue such actions is based upon the implementing regulations of CERCLA. Under CERCLA, the Trustees are authorized to assess liability for the injury to, destruction of, or loss of natural resources caused by releases of hazardous substances and to pursue damages for those injuries. Damages recovered for injury to and loss of natural resources must be used to restore, replace, rehabilitate or acquire equivalent natural resources or services, in accordance with a restoration plan developed by designated natural resource trustees.

In February 2009, NOAA and the Commonwealth of Massachusetts (Trustees) reached a cooperative settlement for natural resource injuries with the Responsible Parties (RPs). Under the settlement, the RPs provided \$300,000 to the Trustees for restoration and to reimburse Trustee damage assessment costs. The RPs have also voluntarily expanded the design, plan and permitting for mitigation actions to be undertaken on a parcel of land on Oak Island so that, should the Trustees deem it appropriate and feasible, additional work could be done at Oak Island with the settlement funds to accomplish NRD restoration. The Trustees are proposing to use these restoration funds, and in-kind services to restore, replace, rehabilitate or acquire equivalent natural resources or services as described in the proposed alternatives in this document.

### **1.1 Overview and History of the Site**

The Island End River Former Coal Tar Processing, also known as Eastern Gas and Fuel, is situated on the tidally influenced Island End River in Everett, Massachusetts, approximately 0.5 miles north of the confluence of the Mystic and Island End Rivers. The FCTPF property is located in an industrial area of Everett; across the river in Chelsea there is an active marina. The property encompasses 8.2 acres with approximately 500 feet of Island End River frontage.

The area that the FCTPF occupied was once a tidal marsh. During the 1890's the area was filled and developed. For approximately 70 years, companies located in this area processed, stored, and distributed coal tar products. Koppers, later renamed Beazer Materials and Industrial Properties and then Beazer East Inc., operated at the site through the Eastern Gas and Fuel Company (Eastern Enterprises) from 1936 to 1960. Barrett Manufacturing, later taken over by Allied-Signal, Inc. was a third major party at the site. During this time, crude coal tar from the gasification plant was brought to the plant where it was stored until processed. The crude coal tar was then moved from the storage area and processed in the distillation stills into creosote, chemical oils and pitch, with waste water discharged to the river. In 1960, the facility was closed by Koppers and demolished.

In 1984 the Coast Guard responded to a complaint of an oil sheen on the Mystic and Island End Rivers. Subsequently, the Commonwealth of Massachusetts Department of Environmental Protection (MassDEP) investigated the site and issued a Notice of Responsibility to the Eastern Gas and Fuel Company. In 1989, MassDEP classified the Site as a Priority Site under 310 CMR 40.544, as specified by Section 3(c)2 of Chapter 21E. This designation resulted in several short-term remedial measures including the placement of a boom, the removal of a subsurface tank, excavation of approximately 438 cubic yards of tar deposits from the shoreline, and installation of slope protection.

### **1.1.1 Contaminants of Concern**

Since 1988, several studies have been conducted and approximately 120 surficial sediment and core samples have been collected and analyzed for various contaminants, particularly total Polycyclic Aromatic Hydrocarbons (PAHs) with a coal tar signature. Reports show that concentrations of total PAHs in surficial sediments in the area adjacent to the FCTPF were as high as 6,000 mg/kg, and dropped at the culvert outfall to the north and the convergence of the Mystic River to the southwest to 300 mg/kg and 200 mg/kg, respectively. In addition, the vertical profiling (i.e., cores) results indicated that the thickness of PAH contamination was greatest in those cores collected closest to the FCTPF. Contaminated sediment was up to approximately 12 feet thick in this area with PAH concentrations exceeding 100,000 mg/kg (i.e., 10%). As with the surficial sampling, PAH concentrations at depth decreased with distance from the FCTPF. Within New England, this site showed the highest concentrations of PAHs found in an estuarine or aquatic environment. The concentrations overwhelmed a modest sediment screening concentration, the Effects-Range Medium of approximately 45 mg/kg that is defined as a probable threshold for benthic toxicity (Long et al., 1998).

NOAA and the Commonwealth of Massachusetts are the designated natural resource trustees for the natural resources actually or potentially impacted by the Site. The Trustees believe the Site has adversely impacted NOAA trust resources, including alewife, winter flounder, striped bass, and benthic species. The Trustees used a Habitat Equivalency Analysis model and using available information and best professional judgement, determined that releases at and from the FCTPF Site injured approximately 13.29 acres of intertidal and subtidal habitat.

### **1.1.2 Responsible Parties**

Various corporate mergers, acquisitions, restructuring and name changes occurred over the years. The principal responsible parties for the site now include KeySpan Energy Inc. (Keyspan), Honeywell International Inc. (Honeywell), and Beazer East, Inc. (Beazer East). Under CERCLA, Keyspan, Honeywell and Beazer East have joint and several liability and are working together to comply with the requirements of the state. The RPs joined the Trustees in a cooperative assessment and restoration planning process. In February Of 2009, the RPs agreed to resolve their environmental liability for the Site cooperatively and entered into administrative settlement agreements whereby each RP agreed to pay \$100,000 to the Trustees. Additionally, the RP's voluntarily expanded the design, plan and permitting actions for mitigation actions they have been undertaking on a parcel of land on Oak Island so that, should the Trustees deem it appropriate and feasible, additional work could be done at Oak Island with the settlement funds to accomplish NRD restoration.

## **1.2 Summary of Response Actions**

Following short-term remediation described in the site history above, in 2007, under a voluntary agreement with the MassDEP, the responsible parties constructed a Release Abatement Measure (RAM) to address sub-aqueous and intertidal sediment contamination. This action addressed contamination in an approximately 4.2 acre area of the Island End River adjacent to the FCTPF. The RAM involved the construction of shoreline barriers and a 1.81 acre Confined Disposal Facility (CDF) within the river, combined with dredging, stabilization, and on- and off-site disposal of contaminated sediments located outside the footprint of the proposed CDF. Most of the dredged contaminated sediments were placed behind the CDF. The cost of the project was approximately 47 million dollars. The remedy eliminated the chronic release of coal tar from the site and eliminated much of the sediment contamination and tar mats but high concentrations of PAHs remain in the sediment downstream of the facility. An approximately 4.38 acre wetland restoration compensatory mitigation project at Oak Island for the remediation related impacts on wetland values was constructed in the fall of 2013.

## **1.3 Legal Authority**

This RP/EA was prepared by NOAA pursuant to the agency's respective authority and responsibility as a natural resource trustee under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. § 9601 *et seq.*; the Federal Water Pollution Control Act, 33 U.S.C. § 1251, *et seq.* (also known as the Clean Water Act or CWA), and other applicable federal laws, including Subpart G of the National Oil and Hazardous Substances Contingency Plan (NCP), at 40 C.F.R. §§ 300.600 through 300.615, and DOI's CERCLA natural resource damage assessment regulations at 43 C.F.R. Part 11 (NRDA regulations), which provide guidance for the natural resource damage assessment and restoration planning process under CERCLA.

## **1.4 Public Coordination/Participation**

On behalf of the Trustees, NOAA prepared a Draft RP/EA for public review and comment, and it was made available for a period of 30 days, but the Trustees received no comments. In this Final RP/EA, NOAA presents information regarding: the role and authority of natural resource trustees, the natural resource damage assessment process, the natural resource injuries and service losses attributable to the Site, the restoration alternatives that NOAA identified and considered, NOAA's evaluation of the restoration alternatives and the potential environmental impacts on the surrounding environment that could result from implementing the various restoration alternatives, and NOAA's proposed preferred alternative for implementation, including the rationale behind its selection. Public review of the Draft RP/EA was the means by which NOAA sought comment on the restoration action the agency proposes to implement to restore the impacted environment and compensate the public for the natural resources injuries and services losses. As such, it is an integral and important part of the Natural Resource Damage Assessment (NRDA) process and is consistent with all applicable state and federal laws and regulations, including the National Environmental Policy Act (NEPA) and its implementing



regulations, and the regulations guiding assessment and restoration planning under CERCLA at 43 C.F.R. Part 11.

### **1.5 Administrative Record**

NOAA has maintained records documenting the information considered and actions taken by the trustee agency during this assessment and restoration planning process. These records collectively comprise NOAA's administrative record (AR) supporting this RP/EA. The AR records are available for review by the public. Interested persons can access or view these records at the NOAA/National Marine Fisheries Service, Northeast Regional Office, at the following address:

Mr. Eric Hutchins  
NOAA Restoration Center  
55 Great Republic Drive  
Gloucester, MA 01930  
Email: [Eric.Hutchins@noaa.gov](mailto:Eric.Hutchins@noaa.gov)  
Fax: 978-281-9301

Arrangements must be made in advance to review or obtain copies of these records by contacting the person listed above. Access to and copying of these records is subject to all applicable laws and policies including, but not limited to, laws and policies relating to copying fees and the reproduction or use of any material that is copyrighted.

## **2.0 Injury and Service Loss Evaluation**

This section of the RP/EA describes the Trustees' assessment of natural resource injuries resulting from the release of hazardous substances at or from the FCTPF.

The evaluation and estimate of potential natural resource injuries presented in this section was developed by NOAA and the Commonwealth of Massachusetts, within a Trustee and RP technical workgroup formed as part of a cooperative NRDA process. Although developed cooperatively within the workgroup, the assessment approach and resource injury and loss evaluation presented in this section is that of the Trustees, as the Trustees are solely responsible for ensuring that this assessment plan and its outcome are consistent with the goals of the NRDA process.

### **2.1 Scope of Injury Assessment**

This section includes a description of the Trustees' assessment strategy, including the approach used to evaluate injuries to natural resources affected by hazardous substance releases from the Site. NOAA undertook assessment activities to: reliably identify the nature and extent of natural resource injuries and service losses attributable to releases of hazardous substances into the natural environment from the FCTPF; identify additional injuries arising from response actions

planned or undertaken at the Site; quantify the resulting resource and ecological service losses<sup>1</sup>; and, provide the technical basis for determining the need for, type of, and amount of restoration appropriate to compensate the public for those losses. In the remainder of this section NOAA discusses the Trustees' assessment strategy for the Site, including the approaches used to evaluate potential injuries to specific resources, quantify associated losses, and identify the preferred restoration alternative proposed in Section 5 of this document.

## 2.2 Pathway to Trust Resources

A contaminant *pathway* is defined as the route or medium (for example, water or soil) through which hazardous substances are transported from the source of contamination to the natural resource of concern (43 C.F.R. § 11.14).

The Former Coal Tar Processing Facility lies on the banks of the Island End River, approximately one half mile north of the confluence of the Mystic River and the Island End River. The Mystic River joins Boston Harbor and the Chelsea River 0.6 miles east of the Island End River. This point in Boston Harbor is 13.9 miles from the Atlantic Ocean. The river and connected waterways provide spawning and nursery habitat for fish such as alewife (*Alosa pseudoharengus*), winter flounder (*Pseudopleuronectes americanus*), striped bass (*Morone saxatilis*), and benthic species.

Contamination from the Former Coal Tar Processing Facility has adversely impacted natural resources, including NOAA trust resources using the Island End River, Mystic River and Boston Harbor. The primary pathways of contaminant migration from the Site are direct release into the Island End River, as well as groundwater discharge and surface water runoff. A hydrogeologic connection existed between the groundwater and the Island End River adjacent to the FCTPF. The tidal fluctuations affected the hydraulic gradient in the area of the bulkhead and the dock; a steep hydraulic gradient at low tide caused the seep of coal tar-contaminated groundwater from behind the bulkhead to the IER. A sheetpile wall was installed in late 1992 to replace the timber bulkhead to cease the interchange of contaminated groundwater on the property with the IER, but seepage was ongoing until the remediation project was completed in 2007.

The 1991 Ecological Risk Assessment states that “the conditions in this area have impacted a local food supply for winter flounder and other demersal fish species, hence such fish will tend to avoid the area because of the lack of food and the because of the oily nature of the sediments.” A report completed by the Woods Hole Oceanographic Institute shows numerous internal and external tumors caused by Site-related PAH contamination in local forage fish (killifish). It is therefore very likely that recreational fishery resources and supporting habitat in the Mystic River have been adversely affected by historic releases from the Site.

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<sup>1</sup> *Ecological services* means the “physical and biological functions performed by the resource including the human uses of those functions. These services are the result of the physical, chemical, or biological quality of the resource”. (43 C.F.R. § 11.14(nn)).

## 2.3 Evaluation of Injury and Natural Resource Damage Settlement

In order to quantify the injury caused by the discharge of an undetermined volume of oil seeping from upland soils of the Former Coal Tar Processing Facility into the tidal waters, subtidal sediments and intertidal sediments of Island End River, the Trustees utilized a Habitat Equivalency Analysis (HEA)<sup>2</sup> model.

The Trustees determined that 13.29 acres of the 29.0-acre Island End River sediments were adversely impacted by PAHs from the Facility. The total area of injured sediment was divided into three subgroups as follows:

- 1) Intertidal sediments (7.21 acres),
- 2) Subtidal sediments – not dredged (1.88 acres), and
- 3) Subtidal sediments - dredged (4.20 acres),

Utilizing sediment and biota data from the site in question and the best professional judgment, the Trustees estimate that 13.29 acre area experienced 100% service loss.

Through cooperative negotiations, the Trustees and PRPs agreed that each PRP would pay \$100,000 to the Trustees to resolve their liability for the Site.

### 2.3.1 *Scaling of the Restoration*

Utilizing the HEA model, the Trustees initially determined that 25.09 acres of salt marsh would need to be created to compensate for the sediment habitat injury due to the release from the Former Coal Tar Processing Facility.

However, the PRPs contested the HEA findings on both legal and scientific grounds. The Trustees agreed to revise the HEA and proposed a settlement to the PRPs, which was signed in February of 2009. Under the terms of the negotiated settlement, the Trustees recovered \$300,000 to be used to reimburse the Trustees' past assessment costs and restore the injured natural resources. The Trustees will use the restoration funds for restoration planning, implementation, monitoring and oversight costs.

Although primarily subtidal habitat in the Island End River was injured, due to the developed nature and current industrial activity at the Site, the Trustees believe that resolving natural

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<sup>2</sup>Habitat Equivalency Analysis, or HEA, (NOAA, 2000) is an accounting procedure that allows parties to identify "debits" (estimating habitat injuries or other resource service losses) due to exposure to hazardous substances, and to identify the scale of restoration required to compensate for assessed injuries or losses. It also allows the "debits" to be balanced against the ecological services to be gained (credited as 'compensation') from proposed habitat restoration projects. The scale, or size, of a restoration project should be such that it provides enough ecological service gains to offset the total of the losses.

The ecological service losses quantified using a HEA are used to identify the restoration requirements needed to compensate for injuries (generally in the form of habitat acreage). In this context, restoration is scaled to provide comparable habitat resources and ecological services (equivalency) between the lost and restored habitat resources and ecological services, adjusted through discounting to account for the difference in time when services gained through restoration are delivered. HEA also applies discounting to make losses occurring in different time periods comparable, resulting in a determination of "discounted service-acre-years", or DSAYs, lost.

The Trustees consider the HEA procedure to be an appropriate analytical tool for use to assess benthic resource losses for this Site. To quantify losses using the HEA method, information or estimates of ecological service losses used to define the resource injuries are needed.

resource damage liability by instead restoring the nearby Oak Island salt marsh would be both ecologically beneficial and cost efficient. By coupling the natural resource damage restoration project with the proposed mitigation project associated with the remediation of the Island End River Site, a larger area of salt marsh can be restored and time and equipment mobilization can be reduced. Further, the experience that the Trustees have with salt marsh restoration in the state of Massachusetts is documented and highly successful. Therefore, instead of restoring the injured habitats ‘in-kind’ (*i.e.*, restoring injured benthic habitat with benthic habitat), the trustees believe it would be most ecologically beneficial and cost efficient to restore the injured habitats ‘out-of-kind’ (*i.e.*, restoring injured benthic habitat with salt marsh).

To scale an ‘out-of-kind’ restoration project to the injured habitat, the Trustees proposed primary production to equate one habitat to the other. For this HEA, the Trustees asserted that primary production of salt marsh is on the order of 2.5 times more productive than subtidal sediment, and therefore, which resulted in the initial calculation of 25.09 acres of restored salt marsh would be required. However, as mentioned above the settlement resulted in a \$300,000 cash settlement rather than funds for a specific number or restored wetland acres.

### **3.0 Affected Environment**

This chapter presents a brief description of the physical, biological, and cultural environment for the waterways and ecosystems adjacent to the Former Coal Tar Processing Facility Site as required by NEPA (42 U.S.C. Section 4321, et seq.). Natural resource injuries occurred within the Mystic River basin. Restoration activities would occur within the same area or nearby coastal watershed with similar conditions.

#### **3.1 The Physical Environment**

The Island End River lies adjacent to the FCTPF. It has an area of 29 acres and a length of 0.5 miles. Freshwater flows into the Island End River via stormwater runoff including an upstream outfall pipe that catches much of the city’s drainage. The west bank of the river (where the FCTPF was located) is primarily surrounded by industrial facilities, and most of the shoreline is hardened. The east bank consists primarily of intertidal mudflats.

#### **3.2 The Biological Environment**

While there is limited information on the fisheries usage of the Island End River, it is potentially habitat for all species found in the Mystic River, since species using the Mystic River could travel up the Island End River. Alewife (*Alosa pseudoharengus*) migrates up the Mystic River each year in April and May, and spawns in the Mystic Lakes. Winter flounder (*Pseudopleuronectes americanus*), bluefish (*Pomatomus saltatrix*), striped bass (*Morone saxatilis*), and possibly juvenile lobster (*Homarus americanus*) may, on occasion, move into the Island End River. Presently, the benthic community is very stressed relative to other Boston Harbor areas; hence, most of these fish may avoid the Island End River due to the resulting lack of food. The Island End River has soft-shell clam beds that have been closed due to bacterial contamination. There are limited areas of wetland remaining along the Island End and Mystic

Rivers. The area is inhabited by invertebrates including shellfish which provide food for transitory finfish species.

### **3.3 The Cultural and Human Environment**

The Island End River houses a marina on the Chelsea side of its shores, and supports recreational boating and occasional fishing. The Island End River is not generally used for recreational fishing because the numbers of fish are low. These reduced numbers reflect the subtidal sediment contamination caused by the FCTPF site. Winter flounder and other fish tend to avoid the area because of the lack of food (reduced benthic animal populations) and because of the oily nature of the sediments.

The Island End River adjacent to the FCTPF site is part of the Mystic River Designated Port Area. The area has been subject to extensive development and industrialization, and is not known to contain any historic resources.

### **3.4 Threatened and Endangered Species**

There are no known threatened or endangered species in the Island End River (NHESP, 2003).

### **3.5 Essential Fish Habitat**

The Magnuson-Stevens Act (including 1996 amendments) strengthened the ability of the National Marine Fisheries Service (NMFS) and the New England Fishery Management Council, Mid-Atlantic Fishery Management Council, and South Atlantic Fishery Management Council to protect and conserve the habitat of marine, estuarine, and anadromous finfish, mollusks, and crustaceans. This habitat is termed "essential fish habitat" and is broadly defined by NMFS to include "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The Act requires the Councils to describe and identify the essential habitat for the managed species, minimize to the extent practicable adverse effects on EFH caused by fishing, and identify other actions to encourage the conservation and enhancement of EFH. The Act also establishes measures to protect EFH. The NMFS must coordinate with other federal agencies to conserve and enhance EFH, and federal agencies must consult with NMFS on all actions or proposed actions authorized, funded, or undertaken by the agency that may adversely affect EFH. Additionally, NMFS must provide recommendations to federal and state agencies on such activities to help conserve EFH. These recommendations may include measures to avoid, minimize, mitigate, or otherwise offset adverse effects on EFH resulting from actions or proposed actions authorized, funded, or undertaken by that agency.

The Island End River is a tidal tributary of the Mystic Harbor, which is part of the Boston Inner Harbor system. Boston Inner Harbor has been designated as Essential Fish Habitat (EFH) for 26 commercially-important fishery species (NMFS, 2005), as defined under the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801 et seq.). The shallow water areas of the Island End River serve as important spawning, foraging, shelter and juvenile development habitat areas for species such as winter flounder (*Pseudopleuronectes americanus*), bluefish (*Pomatomus saltatrix*), striped bass (*Morone saxatilis*), and alewife (*Alosa pseudoharengus*).

## **4.0 The Restoration Planning Process**

The objective of the restoration planning process is to identify restoration alternatives to restore, rehabilitate, replace or acquire natural resources and their services equivalent to natural resources injured or lost as a result of the release of hazardous substances. The restoration planning process may involve two components: primary restoration and compensatory restoration.

Primary restoration actions are actions designed to assist or accelerate the return of resources and services to their pre-injury or baseline levels. In contrast, compensatory restoration actions are actions taken to compensate for interim losses of natural resources and services, pending return of the resources and their services to baseline levels.

For the Island End River injury, remedial actions undertaken at the Site should protect natural resources in the vicinity of the Site from further or future harm and allow natural resources to return to pre-injury or baseline conditions within a reasonable period of time. Since appropriate on-site restoration and mitigation was performed as part of the remedial actions at the Site, it was unnecessary for the Trustees to plan for primary restoration. Accordingly, this RP/EA addresses only compensatory restoration.

### **4.1 Restoration Alternatives**

Because contaminants from the FCTPF potentially impacted commercially and recreationally important fishery species and their habitat in the Island End River, NOAA sought restoration alternatives that would benefit these species and their habitat within the same region. The fish habitat injury (*i.e.*, injury to the surface waters and sediments of the Island End River) began at the time of Site releases and continued until remedial actions at the Site were completed. Compensatory restoration will serve to make the public whole for resources lost between the time the injury began and completion of the remedial actions at the Site. Restoring the same or ecologically similar resource within the same region as the injured communities can provide compensation for the interim loss of ecological services.

In order to identify sites and evaluate restoration alternatives, NOAA conducted a site selection process using the best available information from local, state and federal sources. Eight restoration alternatives have been identified based on the selection criteria, including a No Action alternative, as required under NEPA. The preferred restoration alternative is described in section 5.1. Details of the projects considered by the Trustees, but deemed not appropriate or not feasible, are listed in Appendix A of this document. These alternatives were considered in conjunction with the alternatives analysis conducted as part of the RAM mitigation process, in order to take advantage of economies of scale. With the No Action alternative, NOAA would take no direct action to restore the natural resource injuries or compensate for lost services pending environmental recovery, and so would rely only on natural recovery and resource management conditions to occur. The No Action Alternative is the restoration alternative that all other alternatives are compared to. NOAA must decide if the cost and effort of undergoing compensatory restoration is more beneficial to the injured resource than simply allowing the injured area to recover on its own.

## 4.2 Evaluation Criteria

Consistent with the NRDA regulations, the following criteria were used to evaluate restoration project alternatives and identify the project preferred for implementation under this plan:

*The extent to which each alternative is expected to meet the Trustees' restoration goals and objectives:* The primary goal of any compensatory restoration project is to provide a level and quality of resources and services comparable to those lost due to the assessed injuries. In meeting that goal, the Trustees consider the potential relative productivity of the habitat to be restored and whether the habitat is being created or enhanced. Proximity to the injury and future management of the restoration site are also considered because management issues can influence the extent to which a restoration action meets its goals.

*The cost to carry out the alternative:* The benefit of a project relative to its cost is a primary factor in evaluating restoration alternatives. Factors that can affect and increase the costs of implementing the restoration alternatives may include project timing, access to the restoration site (e.g., with heavy equipment or for public use), acquisition of state or federal regulatory permits, acquisition of land necessary to complete a project, measures necessary to provide for long-term protection of the restoration site, and the potential liability from project construction.

*The likelihood of success of each project alternative:* Trustees consider technical factors that represent risk to successful project construction, project function, or long-term viability and sustainability of the restored habitat. Alternatives that are susceptible to future degradation or loss through contaminant releases or erosion are considered less or non-viable. Trustees also consider whether difficulties in project implementation are likely and whether any long-term maintenance of project features is likely to be necessary and/or feasible.

*The extent to which each alternative will avoid collateral injury to natural resources as a result of implementing the alternative:* Restoration actions should not result in additional losses of natural resources and should minimize the potential to affect surrounding resources during implementation. Projects with no or minimal potential to adversely impact surrounding resources are generally viewed more favorably. Compatibility of the project with the surrounding land use and potential effects on endangered species are also considered.

*The extent to which each alternative benefits more than one natural resource or service:* This criterion addresses the inter-relationships among natural resources, and between natural resources and the services they provide. Projects that provide benefits to more than one resource and/or yield more beneficial services overall, are viewed more favorably. For example, although recreational benefits are not an explicit objective in this DARP/EA, the potential for a restoration project to enhance recreational use of an area (e.g., recreational fishing or wildlife photography) is considered favorably.

*The effect of each alternative on public health and safety:* Projects that would negatively affect public health or safety are not appropriate.

The NRDA regulations give Trustees discretion to prioritize these criteria and to use additional criteria as appropriate. In developing this RP/EA, NOAA gave the first two criteria listed primary consideration since they are paramount to ensuring that the restoration action will compensate the public for the injuries attributable to Site releases.

## 5.0 Evaluation of Reasonable Range of Restoration Alternatives

The Trustees' review of restoration alternatives considered both geography and habitat type with the goal of replacing wetland functions and values in relatively close proximity to the area of impact in the Island End River. The analysis initially focused on restoration opportunities in the IER and then expanded geographically. Where on-site or adjacent sites lacked opportunity, the search was expanded to the watershed. When applicable sites were not available in the watershed, a review was conducted in immediately adjacent watersheds.

The following section provides information on those restoration alternatives which were originally vetted by the Trustees, using the evaluation criteria described in section 4.2. Although the Trustees deemed the following alternatives unsuitable as the preferred restoration alternative, they are presented here for comparison purposes. The table below summarizes the alternatives analysis and significantly more detail about the alternatives analysis can be found in Appendix A.

**Table 1. Summary of restoration alternatives considered**

Alternative	Attributes	Conclusion
Island End River	Developed shoreline, maritime industrial uses	No feasible sites
Tidal Mystic River	Developed shoreline, maritime industrial uses	No feasible sites
Monsanto Site	Contaminated soils, privately owned	Not feasible
Earhart Dam Locking Protocol	Owned and operated by DCR, restricts tidal and salt flow upstream	Not feasible due to ownership; does not mitigate for winter flounder
Malden River Sites	Freshwater wetlands, fill, buried streams, <i>Phragmites</i>	Potentially feasible but will not mitigate for winter flounder; likely to create more <i>Phragmites</i> without long-term maintenance
Inner Boston Harbor	Developed shoreline, maritime industrial uses	No feasible sites
No Action	Would not result in compensation for lost aquatic functions and values	Deemed inappropriate because the Trustees recovered funds which must be used to restore, replace or acquire aquatic



		resources.
Oak Island (preferred)	Hydrology constraints to salt marsh function and value	Feasible resulting in restoration of winter flounder nursery habitat

Potential sites in the Mystic River watershed are either infeasible due to contamination (e.g., Monsanto Site) or pose serious implementation problems due to the presence of the Earhart Dam. The Massachusetts Department of Conservation and Recreation determines operating and locking protocols at the Earhart Dam, which may facilitate the passage of anadromous fish, but not marine species such as winter flounder. While the Malden River sites may be feasible, they do not present opportunities to restore winter flounder habitat. The No Action alternative was deemed inappropriate because the settlement funds were explicitly targeted at restoring, acquiring or replace wetland habitat.

With extensive detail provided in Appendix A, the alternatives review evaluated opportunities in the Island End River/Mystic River, Malden River, and adjacent coastal watersheds. Identifying restoration alternatives in this heavily developed and industrialized area is a challenge. No meaningful mitigation opportunities for replacing the affected habitat were identified in or along the Island End River itself. Therefore the preferred restoration alternative is “offsite”. Opportunities for replacing marine habitat functions and values in the watershed are limited due to the extensively developed and heavily utilized shoreline downstream and the abrupt termination of marine habitats upstream as the result of the Amelia Earhart Dam. Restoration opportunities exist in the Malden River upstream of the dam; however, these opportunities are not representative of the marine habitats impacted by the injury. Significant opportunities for replicating marine habitats do exist in the nearby Rumney Marsh, which has been impacted historically by a variety of transportation and development-related activities. While out of the watershed, wetland restoration in the Rumney Marshes Area of Critical Environmental Concern (ACEC) is most appropriate for replacing the marine wetland functions and values that were impacted by the release. This alternatives analysis was completed by the RP in a cooperative process with the Trustees in association with their need to identify compensatory mitigation for the impacts associated with their remedial actions and is applicable to the needs of this RP/EA.

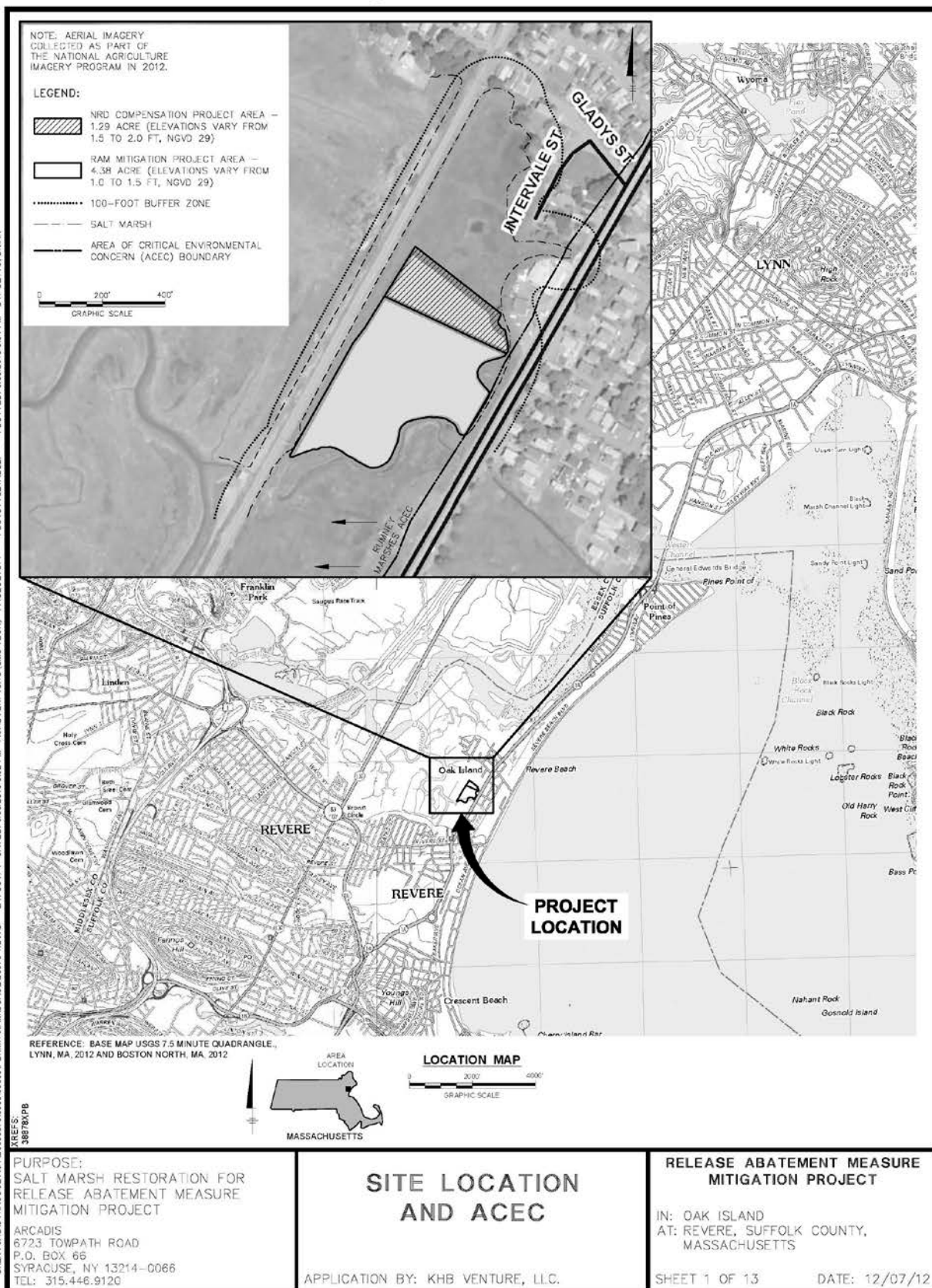
## **5.1 Preferred Restoration Alternative: Oak Island Salt Marsh Restoration, Revere, MA**

This alternative is a project to restore salt marsh habitat to address winter flounder and other fish species injuries resulting from Site releases. Details about the preferred alternative as well as considered but rejected alternatives can be found in Section 5.1.2 and Appendix A.

### **5.1.1 Restoration Site Location and Characteristics**

Oak Island site is a 20-acre site (See Figure #1) located in the city of Revere, Massachusetts, which abuts Everett to the northeast. It is part of the 2,600 acre Rumney Marshes Area of

Figure 1



Critical Environmental Concern (ACEC), an area historically dominated by vegetated wetlands that has been degraded due to filling, dumping and ditching. Rumney Marsh has been the focus of targeted restoration supported by a variety of local, state and federal agencies, and has been identified by the U.S. Fish and Wildlife Service as one of the most significant coastal areas of biodiversity in Massachusetts. A fisheries survey of Rumney Marsh conducted by the Massachusetts Division of Marine Fisheries in 1968-69 documented 20 fish species in the marsh and associated waterways (Chesmore et al., 1972). Estuarine species such as Atlantic silversides, mummichogs, striped killifish and threespine stickleback were most abundant, but anadromous fish including alewives and rainbow smelt were also present. In addition, significant numbers of immature winter flounder were collected, indicating that the Rumney Marsh ACEC is an important nursery area for immature winter flounder.

The Oak Island site, located on the eastern edge of the ACEC between the MBTA railroad tracks and Route 1A, has been targeted as a restoration priority because it has several large areas of salt marsh to which tidal flow has been restricted due to the roadway and railroad crossings. Such tidal flow restriction has led to proliferation of the common reed (*Phragmites australis*), an invasive plant that negatively impacts natural salt marsh habitats. Historic filling has increased the marsh elevation, further contributing to growth of the common reed which prefers less saline habitats. The combined impacts of restricted flow, artificially high marsh elevation and presence of common reed have led to a decline in the quantity and quality of habitat available for estuarine fish species.

In 2004, the City of Revere, assisted by state and federal agencies, installed a self-regulating tidegate and new culvert under the MBTA railroad tracks to enhance tidal flow into the upstream salt marsh. During the spring and summer of 2005, minor adjustments were made to the tidegate to maximize flooding elevation in the marsh without flooding nearby private property. The increased tidal flow allowed some additional flooding of the upstream salt marsh, but the benefits have been limited by the presence of historic fill. In addition, not long after installation, the 2004 tidegate malfunctioned and was subject to vandalism. A redesigned electrically-operated tidegate was installed in the fall of 2010.

Approximately 4.38 acres of the Oak Island site north of Diamond Creek was restored in the fall of 2013 as mitigation for EFH impacts sustained during the construction of the RAM in Island End River. The EFH mitigation project involved excavating some of the historic fill to reestablish a natural marsh elevation and allow the marsh surface to be flooded by the incoming tide on a regular basis.

The Trustees propose to commit the restoration funds towards the completion of approximately 1.2 acres of salt marsh restoration adjacent to Oak Island in Revere, Massachusetts. As mitigation for the impact to the environment resulting from necessary remedial activities at the FCTPF site, the RPs restored 4.38 acres of salt marsh in an adjacent parcel, so planning, designing, and obtaining permits for the mitigation and the proposed restoration activities as one project allowed the parties to take advantage of the efficiencies of scale. Keyspan, Honeywell, and Beazer East, voluntarily expanded the scope of their planning, project design, and permitting efforts for the Oak Island compensatory mitigation project to include the adjacent 1.2 acres to be

used for the purposes of the NRD restoration. Construction designs, permits and approvals are all in place for completion of the preferred alternative.

### **5.1.2 Restoration Action Description**

The preferred restoration alternative involves the removal of fill from approximately 1.2 acres of the north parcel of Oak Island (See Figure #2). The fill removal and re-grading of the marsh platform would expand the area subject to tidal flow and increase the salinity to the detriment of common reed and the benefit of natural salt marsh vegetation. These actions would in turn benefit estuarine fish and wildlife species that depend on tidal flow and a diversity of marsh vegetation zones. Once the fill is removed, the water level would be further controlled through an existing tide gate to ensure adequate tidal flushing. Planting is not required, since *Spartina alterniflora* is already present at the site and would quickly re-establish once the necessary elevation is restored.

### **5.1.3 Evaluation of the Alternatives**

Oak Island is the nearest and most appropriate site for performing restoration, and takes advantage of economies of scale by building upon the adjacent restoration taking place as EFH mitigation for remediation activities at the FCTPF. This restoration would restore approximately 1.2 acres of tidal wetlands benefiting a diversity of fish species, including anadromous species and winter flounder that were impacted in the Island End River, while also providing for increased flood storage capacity. This would alleviate the current frequent flooding of nearby homes and infrastructure. The newly-installed tide gate at the downstream end of the site would provide an additional means of regulating water levels in the marsh to maximize ecological benefits.

The No Action Alternative would involve no excavation of sediment and soils to lower the surface of the salt marsh to an elevation which allows sufficient tidal flooding to promote the growth of salt marsh grasses. Under this alternative, the salt marsh would continue to be dominated by the invasive *Phragmites* vegetation which has very low habitat value. No benefit to the larger Rumney Marsh would be realized. The newly-installed tide gate would continue at the current water levels, which do not support salt marsh vegetation at the current soil elevations of the marsh. Public benefits derived from salt marsh colonization by native salt marsh grasses and intertidal mud flats (such as enhanced microhabitat diversity, improved water quality, recolonization of native salt marsh grasses, fisheries improvements, greater flood storage capacity etc.) would not be realized.

# Project Design

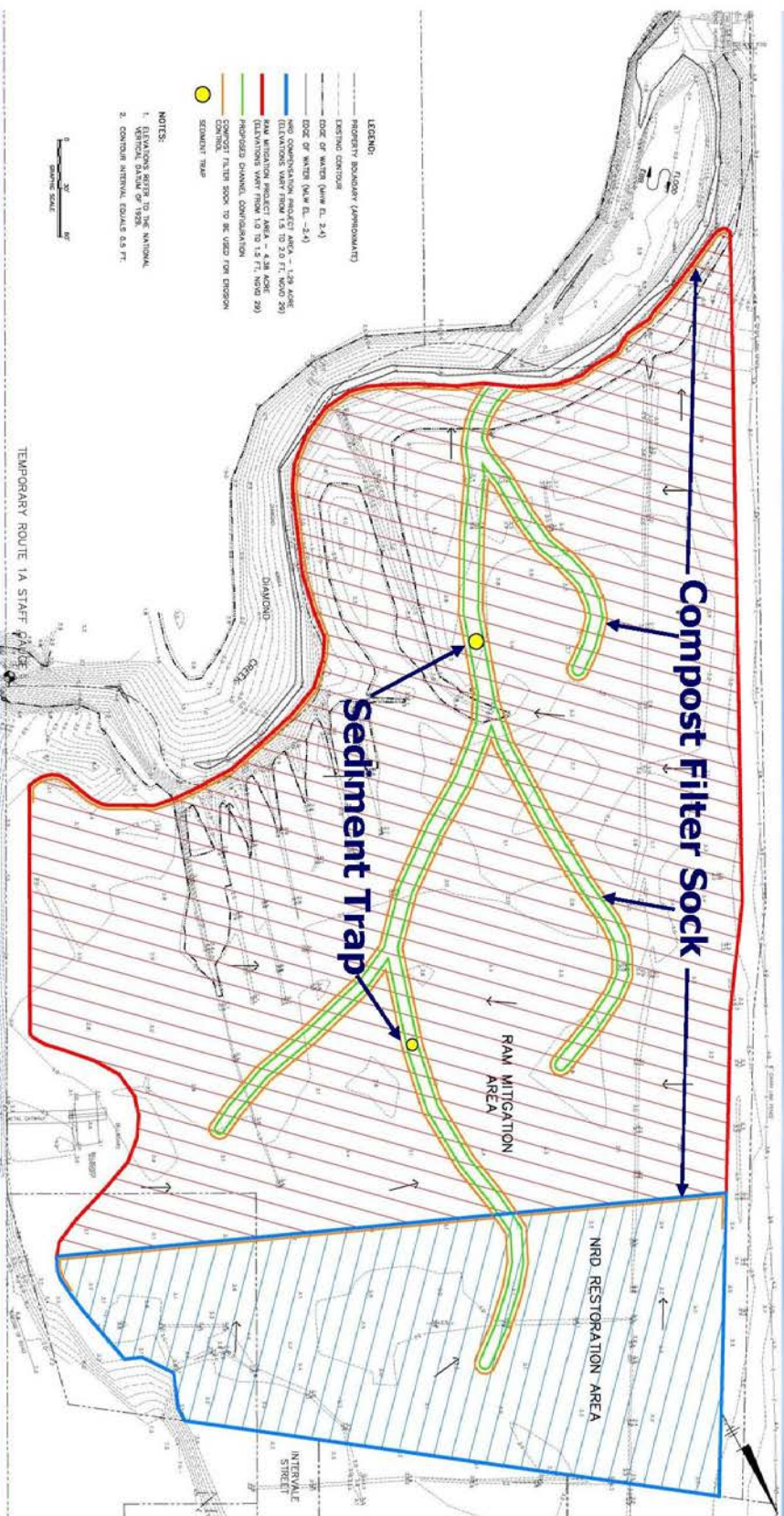


Figure 2

## **6.0 Environmental Consequences**

Federal agencies preparing an EA must consider the direct effects of all components of a proposed action as well as indirect and cumulative effects.

### *Direct*

According to the CEQ NEPA Regulations, direct effects are caused by the action and occur at the same time and place as the action. 40 C.F.R. 1508.8(a).

### *Indirect*

According to the CEQ NEPA Regulations, indirect effects are caused by the action but “occur later in time or are farther removed in distance but are still reasonably foreseeable” Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate. 40 C.F.R. 1508.8(b).

### *Cumulative*

According to the CEQ NEPA Regulations, cumulative effects are those effects that result from incremental impacts of a proposed action when added to other past, present, and reasonably foreseeable future actions, regardless of which agency or person undertakes such actions.

The Trustees evaluated the potential for the preferred restoration alternative to impact the natural environment, the built environment and public health and safety.

*Water Quality:* In the short term, during the period of construction, earth moving activities would increase turbidity in the immediate vicinity of the marsh grading, though actions during construction will minimize this effect. These conditions may affect fish and filter feeders in the local area, by clogging gills, increasing mucus production and smothering organisms found in the shallow open-water area. Mobile fish and invertebrates would probably not be affected, since these would most likely leave the area, and return after project completion. After construction is completed, the sediments should generally be stable and there would be no long term water quality impact resulting from the proposed action

*Water Resources:* During the construction phase of this project, short-term and localized adverse impacts would occur. However, completion of this project would result in approximately 3-acre feet of additional flood storage area. There are well over 100 residential properties located in the watershed upstream of the Oak Island tide gate and any additional flood storage would minimize flood elevations and subsequent infrastructure damage during storm events.

*Air Quality:* Minor temporary adverse impacts would result from the proposed construction activities. Exhaust emissions from earth-moving equipment contain air pollutants, but these emissions would only occur during the construction phase of the project, the amounts would be



small, and should be quickly dissipated by prevailing winds. There would be no long-term negative impacts to air quality.

*Noise:* Noise associated with earth-moving equipment represents a short-term adverse impact during the construction phase. It may periodically and temporarily disturb wildlife in the immediate vicinity of the site, or cause movement of wildlife away from the site to other ecologically suitable areas. Similarly, recreating humans may avoid this area due to noise during construction, but as with wildlife, such disruption would be limited to the construction phase. Increased noise levels due to the operation of earth-moving equipment would also cause mobile fish to leave the area until operations (the source of the noise) end. No long-term effects would occur as a result of noise during construction.

*Geology:* None of the components of the preferred restoration alternative includes activities with the potential to directly or indirectly affect, positively or negatively, the geology of the area.

*Recreation:* The noise and increased turbidity of surface waters arising from earth-moving activities during project construction are expected to discourage and decrease recreational activities in the vicinity of the site during construction. Any such affect would be limited to the period of construction and should be minor. Over the longer term, the preferred restoration alternative would increase the quality, productivity and quantity of fish and wildlife in this area. The improvement in site conditions would enhance opportunities for, and quality of, a variety of recreational uses.

*Traffic:* Traffic would occur or increase at the site during the period of construction. The area and constituents most affected by the traffic would be the residents and owners of the buildings adjacent to the construction staging area. Because of the extensive traffic already present along Route 1A, increased traffic associated from the restoration efforts would likely go un-noticed.

*Precedential Effects of Implementing the Project:* Regrading projects are regularly implemented along the North Atlantic coast to address previous wetland filling, and have been used as a means of compensating the public for other natural resource damage claims arising in New England and Northern Atlantic. Therefore, the proposed project does not in and of itself represent or create a precedent for future settings of a type that would significantly affect the quality of the human environment.

***Cumulative Impacts :*** Project effects would be cumulative in the sense that the re-establishment of tidal flushing and diverse salt marsh vegetation at this site will provide ecological services into the future. The proposed project is not expected to have a significant cumulative effect on the human environment since it alone, or in combination with other salt marsh restoration projects in the vicinity, should not change the larger current pattern of hydrologic discharge, economic activity or land-use in the watershed. The project proposed is intended to compensate the public, *i.e.*, make the public and the environment whole, for resources injuries caused by releases of hazardous substances into nearby waters. The preferred restoration alternative is not part of any systematic or comprehensive plan for salt marsh restoration in Massachusetts or the larger Southern New England coast.

## **6.1 Non-Preferred Restoration Alternative: No Action**

NEPA requires NOAA to evaluate a No Action Alternative, and it is also an option that can be selected under CERCLA. With the No Action alternative, NOAA would take no direct action to restore the natural resource injuries or compensate for lost services pending environmental recovery, and so would rely only on natural recovery and resource management conditions to occur. While natural recovery would occur over varying time scales for the various injured estuarine resources, the interim losses incurred would not be compensated for under the No Action Alternative. This alternative would cost the least because no action would be taken, but such savings must be weighed against the potential for recovering loss.

### **6.2.1 Evaluation of No Action Alternative**

NOAA's responsibility to seek compensation for interim losses pending environmental recovery is clearly set forth in CERCLA, and cannot be addressed through a No Action Alternative. The No Action Alternative would not in result restored natural resources or compensate for the lost services pending environmental recovery, and would only result in natural recovery and resource management conditions to occur. While natural recovery would occur over varying time scales for various estuarine resources, the interim losses incurred would not be compensated for under the No Action Alternative. The No Action Alternative is rejected for compensatory restoration since substantial interim losses occurred during the period of recovery of the Site contamination. Technically feasible and cost-effective alternatives exist to compensate for these losses, and have been addressed through the project alternatives as discussed in Section 6.1.

Under the Consent Decree, the Trustees were paid \$300,000 for assessment and restoration costs, which must be directed towards natural resource damage restoration.

## **6.3 Other Non-Preferred Alternatives Considered**

A number of restoration alternatives were explored and evaluated in the Island End River and in the tidal areas downstream of the Amelia Earhardt dam on the Mystic River. Reconnaissance for restoration projects took place in the Island End River, the lower and upper segments of the Mystic River, Chelsea Creek and Boston Harbor. Due to the extensive industrial development, contaminated soils existing industrial use for this region, no viable projects were identified in this area. The details about these non-preferred restoration alternatives and their associated environmental consequences and comparisons are found in Appendix A.

## **7.0 Environmental Compliance**

### ***Anadromous Fish Conservation Act***

The Anadromous Fish Conservation Act (16 USC 757a *et seq.*) provides authority to conserve and enhance anadromous fishery resources.

**Compliance:** The preferred alternative will directly conserve, develop, and enhance anadromous fishery resources.

### ***Archeological Resources and Historical Preservation***



Numerous acts afford protection to antiquities, abandoned shipwrecks, archeological resources, historic buildings and historic sites. These include the Abandoned Shipwreck Act of 1987 (43 USC 2102 *et seq.*), the Archeological Resources Protection Act of 1979 (16 USC 470, *et seq.*), the Historic Sites Act of 1935 (16 USC 461-467), the Historical and Archeological Data Preservation Act (16 USC 469-469c), and the National Historic Preservation Act of 1966 as amended (16 USC 470-470t, 110). Any proposed action that may potentially affect any property with historic, architectural, archeological, or cultural value that is listed on or eligible for listing on the National Register of Historic Places (NRHP) must comply with the procedures for consultation and comment issued by the Advisory Council on Historic Preservation, usually through consultation with the state historic preservation officer.

**Compliance:** As part of the state and federal project permitting process NOAA coordinated with the Massachusetts Historical Commission (MHC) to identify any properties that may be affected by the preferred restoration alternative that are listed or eligible for listing on the NRHP. The proposed project was determined by NOAA to not affect any properties listed or eligible under the NHPA.

#### ***Clean Air Act***

The Clean Air Act (42 USC 7401 *et seq.*) directs USEPA to set limits on air emissions to ensure basic protection of health and the environment.

**Compliance:** Public notice of the availability of this RP/EA to the Environmental Protection Agency is required for compliance pursuant to Sections 176C and 309 of the Act. The EPA was provided copy of the RP/EA on May 15, 2015. The EPA did not provide any comments with regard to this request. All construction activity would be done with conventional equipment in compliance with all local ordinances.

#### ***Clean Water Act***

The Clean Water Act (33 U.S.C. § 1251, *et seq.*) is the principal law governing pollution control and water quality of the Nation's waterways. Section 404 of the law authorizes a permit program for the beneficial uses of dredged or fill material in navigable waters. The U.S. Army Corps of Engineers (USACE) administers the program.

**Compliance:** Coordination with the Army Corps of Engineers has been completed pursuant to Section 404 of this Act. All joint federal/state permits have been obtained for this project. All construction activity would be done in compliance with Section 404 of the law.

#### ***Coastal Zone Management Act***

The goal of the federal Coastal Zone Management Act (CZMA) (16 U.S.C. § 1451, *et seq.*, 15 C.F.R. Part 923) is to preserve, protect, develop and, where possible, restore and enhance the Nation's coastal resources. The federal government provides grants to states with federally approved coastal management programs. Section 1456 of the CZMA requires any federal action inside or outside of the coastal zone that affects any land or water use or natural resources of the coastal zone to be consistent, to the maximum extent practicable, with the enforceable policies of approved state management programs. It states that no federal license or permit may be granted without giving the State the opportunity to concur that the project is consistent with the State's coastal policies. The regulations outline the consistency procedures.

**Compliance:** The Trustees believe the preferred restoration alternative is consistent with Massachusetts CZMA programs. Consistency has been determined/obtained for the project as part of the Army Corps permitting process

### ***Endangered Species Act***

The federal Endangered Species Act (16 USC 1531, *et seq.*, 50 CFR Parts 17, 222, 224) directs all federal agencies to conserve endangered and threatened species and their habitats and encourages such agencies to utilize their authority to further these purposes. Under the Act, both the National Marine Fisheries Service (NMFS) and USFWS publish lists of endangered and threatened species. Section 7 of the Act requires that federal agencies consult with these two agencies to minimize the effects of federal actions on endangered and threatened species.

**Compliance:** Except for occasional transient individuals, no federally listed or proposed endangered or threatened species are known to exist in the restoration project areas. In addition, no habitat in the project impact areas is currently designated or proposed as "critical habitat" in accordance with provisions of the Endangered Species Act (87 Stat. 884, as amended; 16 USC 1531 *et seq.*). This project underwent Endangered Species Act review by the USFWS and NMFS as part of the Clean Water Act permit process by the Army Corps of Engineers. Therefore, no Biological Assessment or further Section 7 consultation under the Endangered Species Act is required. Should project plans change, or if additional information on listed or proposed species or critical habitat becomes available, this determination may be reconsidered.

### ***Estuary Protection Act***

The Estuary Protection Act (16 USC 1221-1226) highlights the values of estuaries and the need to conserve natural resources. It authorizes the Secretary of the Interior, in cooperation with other federal agencies and the states, to study and inventory estuaries of the US, to determine whether such areas should be acquired by the Federal Government for protection, to assess impacts of commercial and industrial developments on estuaries, to enter into cost-sharing agreements with states and subdivisions for permanent management of estuarine areas in their possession, and to encourage state and local governments to consider the importance of estuaries in their planning activities related to federal natural resource grants.

**Compliance:** The restoration activities would enhance estuarine, marine, and anadromous fish populations and thus benefit estuarine resources.

### ***Fish and Wildlife Conservation Act***

The Fish and Wildlife Conservation Act of 1980 (16 USC 2901 and 50 CFR 83) provides for the consideration of impacts on wetlands, protected habitats and fisheries.

**Compliance:** The Trustees believe the restoration project would enhance habitats and survivorship, thereby benefiting natural resources. Coordination with FWS, NMFS and MA fish and wildlife agencies signifies compliance with this Act.

### ***Fish and Wildlife Coordination Act***

The Fish and Wildlife Coordination Act (16 USC 661, *et seq.*) states that wildlife conservation shall receive equal consideration with other features of water-resource development. The Act requires federal permitting and licensing agencies to consult with NMFS, USFWS, and state wildlife agencies before permitting any activity that in any way modifies any body of water to minimize the adverse impacts of such actions on fish and wildlife resources and habitat.

**Compliance:** NOAA has worked cooperatively with the USFWS and MA Department of Fish and Game to evaluate various restoration projects and in selecting the preferred alternative. The

preferred alternative is not expected to have any long-term adverse effects on fish and wildlife resources habitat and is expected to result in long-term or permanent beneficial impacts to fish and wildlife resources by enhancing marine, estuarine and anadromous fish populations. Coordination with the NMFS was completed as part of the federal Clean Water Act permitting process by the Army Corps of Engineers.

#### ***Magnuson-Stevens Fishery Conservation and Management Act***

The Magnuson-Stevens Fishery Conservation and Management Act (16 USC 1801, *et seq.*) as amended and reauthorized by the Sustainable Fisheries Act (Public Law 104-297), established a program to promote the protection of essential fish habitat (EFH) in the review of projects conducted under federal permits, licenses, or other authorities that affect or have the potential to affect such habitat. After EFH has been described and identified in fishery management plans (FMPs) by regional Fishery Management Councils, federal agencies are obligated to consult with the Secretary of the U.S. Department of Commerce with respect to any action authorized, funded, or undertaken or proposed to be authorized, funded, or undertaken, by such agency that may adversely affect any EFH.

**Compliance:** The Trustees evaluated and coordinated restoration designs with the NMFS Greater Atlantic Region to comply with the EFH provisions of the MSA. Construction related impacts were considered minimal and no formal EFH recommendations were provided as part of the Clean Water Act permitting process other than a time of year restriction to minimize turbidity impacts to juvenile winter flounder.

#### ***Marine Mammal Protection Act***

The Marine Mammal Protection Act (16 USC 1361, *et seq.*) establishes a moratorium on the taking and importation of marine mammals and marine mammal products, with exceptions for scientific research, allowable incidental taking, subsistence activities by Alaskan natives, and hardship. The Act provides authority to manage and protect marine mammals, including maintenance of the ecosystem.

**Compliance:** No interaction with marine mammals in the area of the proposed restoration is expected. The proposed restoration project would have no adverse effects on marine mammals.

#### ***Migratory Bird Treaty Act***

The Migratory Bird Treaty Act (16 USC 715, *et seq.*) provides for the protection of migratory birds. The Act does not specifically protect the habitat of these birds but may be used to consider time of year restrictions for remedial activities on sites where it is likely migratory birds may be nesting and/or to stipulate maintenance schedules that would avoid the nesting seasons of migratory birds.

**Compliance:** Consultation with the USFWS constitutes compliance with this Act. If restoration construction activities are deemed to adversely impact migratory birds, time of year restrictions would be issued for these activities. As part of the Army Corps of Engineers permit review process the USFWS was provided with a copy of the permit application in January of 2013. The USFWS did not provide any comments with regard to the Migratory Bird Treaty Act.

#### ***National Environmental Policy Act***

The purpose of the proposed action is to restore natural resources injured, lost or destroyed within the Former Coal Tar Processing Facility Superfund Site and a portion of the surrounding

properties in Middlesex County, Everett, Massachusetts, due to releases of hazardous substances and subsequent response actions to address the releases. The need to pursue such action is based upon the implementing regulations of CERCLA. CERCLA establishes liability for the injury to, destruction of, or loss of natural resources caused by releases of hazardous substances. Damages recovered for those losses must be used to restore, replace, rehabilitate or acquire equivalent natural resources or services, in accordance with a restoration plan developed by designated natural resource trustees.

Congress enacted the National Environmental Policy Act (NEPA; 42 USC 4321 *et seq.*) in 1969 to establish a national policy for the protection of the environment. NEPA applies to federal agency actions that affect the human environment. Federal agencies are obligated to comply with NEPA regulations adopted by the Council on Environmental Quality (CEQ). NEPA requires that an Environmental Assessment (EA) be prepared in order to determine whether the proposed restoration actions will have a significant effect on the quality of the human environment. If an impact is considered significant, then an Environmental Impact Statement (EIS) will be prepared. If the impact is considered not significant, then a Finding of No Significant Impact (FONSI) is issued.

**Compliance:** NOAA has integrated this Restoration Plan and Environmental Assessment to summarize current environmental conditions, describe the purpose and need for a restoration action, identify alternative restoration activities, assess their applicability and environmental consequences, and summarize opportunities for public participation on the decision-making process.

#### ***Rivers and Harbors Act***

The Rivers and Harbors Act (RHA; 33 USC 401, *et seq.*) regulates development and use of the nation's navigable waterways. Section 10 of the Act prohibits unauthorized obstruction or alteration of navigable waters and vests the USACE with authority to regulate discharges of fill and other materials into such waters.

**Compliance:** Restoration actions that require Section 404 Clean Water Act permits are likely also to require permits under Section 10 of the RHA. However, a single permit usually serves for both. Therefore, NOAA can ensure compliance with the RHA through the same mechanism. These restoration activities were addressed under Rivers and Harbors Act permit issued by the Army Corps of Engineers.

#### ***Executive Order 11514 Protection and Enhancement of Environmental Quality, as amended by Executive Order 11911 Relating to Protection and Enhancement of Environmental Quality***

Executive Orders 11514 and 11911 require that federal agencies monitor, evaluate and control their activities to protect and enhance the quality of the Nation's environment to sustain and enrich human life; inform the public about these activities; share data gathered on existing or potential environmental problems or control methods; and cooperate with other governmental agencies.

**Compliance:** Releasing the draft restoration plan and environmental assessment for public comment fully addresses the intent of the Executive Order.

#### ***Executive Order 11988 Floodplain Management***

Executive Order 11988 is a flood-hazard policy requiring federal agencies to take action to reduce the risks of flood losses; to restore and preserve the natural and beneficial values served by floodplains; and to minimize flood impacts on human safety, health, and welfare.

**Compliance:** Floodplain impacts have been considered prior to the selection of the preferred restoration alternative and their implementation is not expected to have any adverse impacts on floodplains.

#### ***Executive Order 11990 Protection of Wetlands***

Executive Order 11990 (40 CFR 6392 (a) and Appendix A) requires federal agencies to avoid the adverse impacts associated with the destruction or loss of wetlands, to avoid new construction in wetlands if alternatives exist, and to develop mitigative measures if adverse impacts are unavoidable.

**Compliance:** The preferred restoration activities would result in the restoration of high quality wetlands once dominated by the invasive plant *Phragmites* and largely cut off from regular tidal flushing. The preferred restoration alternative is in compliance with, and fully addresses, the intent of the Executive Order.

#### ***Executive Order 12898 Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations and Executive Order 12948 Amendment to Executive Order No. 12898***

Executive Orders 12898 and 12948 require each federal agency to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority and low-income populations.

**Compliance:** NOAA has concluded that no low income or ethnic minority communities would be adversely affected by implementing the preferred restoration activities.

#### ***Executive Order 12962 Recreational Fisheries***

Executive Order 12962 requires that federal agencies, to the extent permitted by law and where practicable, and in cooperation with states and tribes, improve the quantity, function, sustainable productivity, and distribution of the Nation's aquatic resources for increased recreational fishing opportunities.

**Compliance:** The preferred restoration activities would enhance marine, estuarine and anadromous fish populations, and contribute to improving recreational fisheries.

#### ***Executive Order Number 13112 Invasive Species***

The purpose of Executive Order 13112 is to prevent the introduction of invasive species and provide for their control, and to minimize the economic, ecological, and human health impacts that invasive species cause.

**Compliance:** The preferred restoration project includes the removal of the invasive wetland plant *Phragmites* through earth moving and regrading of the marsh surface. Construction activities would not cause or promote the introduction or spread of invasive species. The lowering of the marsh elevation and increased tidal flushing would additionally control the spread of *Phragmites*.

## **8.0 Literature Cited**

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Long, E.R., L.J. Field, and D.D. MacDonald. 1998. Predicting toxicity in marine sediments with numerical sediment quality guidelines. Environmental Toxicology and Chemistry 17: 714-727.

Natural Heritage and Endangered Species Program (NHESP). 2003. Massachusetts Natural Heritage Atlas. 11<sup>th</sup> Edition. Part 1 – Eastern Massachusetts. July 1, 2003.

National Marine Fisheries Service (NMFS). 2005. Designation of Essential Fish Habitat. <http://www.nero.noaa.gov/hcd/index2a.htm>

## **9.0 Agencies, Organizations and Parties Consulted**

City of Revere, Revere, MA

MA Department of Conservation and Recreation, Boston, MA

MA Department of Ecological Restoration, Boston, MA

USEPA, Boston, MA

MA Historic Commission, Boston, MA

MA DEP, Boston, MA

NOAA/ NMFS, Office of Habitat Conservation, Gloucester, MA

NOAA Restoration Center, Gloucester, MA

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## **Appendix A: Additional Restoration Alternatives Initially Vetted**

**Finding of No Significant Impact  
for the  
Final Restoration Plan and Environmental Assessment  
for the  
Island End River Former Coal Tar Processing Facility  
Everett, Massachusetts**

**National Marine Fisheries Service**

**Background**

The National Oceanic and Atmospheric Administration (NOAA) is the lead Federal agency responsible for ensuring that any Federal action related to the proposed preferred restoration alternative described in the *Final Restoration Plan and Environmental Assessment for the Island End River Former Coal Tar Processing Facility* (RP/EA) complies with the requirements of the National Environmental Policy Act (NEPA). As such, NOAA has prepared this Finding of No Significant Impact (FONSI) for the attached RP/EA. NOAA developed this RP/EA in cooperation with the Commonwealth of Massachusetts (acting through the Executive Office of Energy and Environmental Affairs). NOAA and the Commonwealth are cooperating natural resource trustees (the Island End River Trustees or “the Trustees”) for this Site.

NOAA’s proposed action is implementation of the preferred restoration alternative as described in the RP/EA. An allocation of approximately \$300,000 in natural resource damage settlement funds will be used to implement project construction, monitoring and Trustee oversight. These settlement funds resulted from an agreement reached between the Island End River Trustees and the Responsible Parties to resolve the Trustees’ claims for injuries to lost shoreline and aquatic resources. The terms of the settlement agreement are set forth in a Consent Decree finalized on December 23, 2008.

As described in the RP/EA, the Trustees identified and evaluated a range of compensatory restoration alternatives to enhance estuarine fish habitat in the area including: a No Action alternative; salt marsh restoration in the Oak Island section of Rumney Marsh in Revere; and several potential projects in the Mystic and Malden River watersheds. In the RP/EA the Trustees presented an analysis and evaluation of the restoration alternative and the potential impact on the surrounding environment. The Trustees presented their preferred alternative, which is the restoration of 1.2 acres of Oak Island salt marsh at an estimated construction cost of \$260,000. The Trustees have sufficient funding available, taking into account a portion of the settlement funds that the Trustees have set aside for addressing administrative costs, to fund implementation of this project. This project has been fully evaluated by the Trustees and environmental review of the projects under NEPA is complete. The FONSI applies to the implementation of this single project along with associated monitoring and oversight.

NOAA Administrative Order 216-6 (May 20, 1999) specifies criteria for determining the significance of the impacts of a proposed action. In addition, the Council on Environmental Quality (CEQ) regulations at 40 C.F.R. §1508.27 state that the significance of an action should be analyzed both in terms of “context” and “intensity.” Each criterion listed below is relevant to making a FONSI decision and has been considered individually, as well as in combination with

the others. The significance of this action is analyzed based on the following NOAA Administrative Order 216-6 criteria and CEQ's context and intensity criteria.

1. *Can the proposed action reasonably be expected to cause substantial damage to the ocean and coastal habitats and/or essential fish habitat as defined under the Magnuson-Stevens Act and identified in FMPs?*

**Response:**

No. The Oak Island marsh restoration project is intended to result in aquatic restoration that will restore and increase biodiversity and ecosystem function with localized insignificant benefit. The proposed action is intended to result in the restoration of approximately 1.2 acres intertidal mud flat and salt marsh habitat. The proposed action is not reasonably expected to cause substantial damage to ocean and coastal habitats.

2. *Can the proposed action be expected to have a substantial impact on biodiversity and/or ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships)?*

**Response:**

No. The Oak Island marsh restoration project is intended to result in aquatic restoration that will restore and increase biodiversity and ecosystem function with localized insignificant benefit. Benefits would include increasing plant and animal species diversity in rehabilitated salt marsh, increasing populations of shellfish and other benthic organisms within the project areas, and improving habitats in the vicinity of the project areas where populations are enhanced. While this restoration would have minor, localized, and temporary adverse impacts within the project footprint areas, the adverse effects of this project would not be long term or of substantial magnitude.

3. *Can the proposed action reasonably be expected to have a substantial adverse impact on public health or safety?*

**Response:**

No. There are no substantial adverse public health or safety impacts expected from the proposed action. Short-term public health and safety impacts associated with any necessary construction at the project sites would be minimized through the implementation of various best management practices, including establishing stabilized construction entrances. Human health risks potentially associated with the excavation of slightly contaminated sediments would be minimized by the management actions specified in the RP/EA, including testing sediments as the project proceeds and implementing a rigorous construction safety plan to exclude public access from the project site during construction. Public health and safety would be benefited by the project with the removal of contaminated sediments, reduction of fire hazards and reduction of local mosquito populations.

4. *Can the proposed action reasonably be expected to adversely affect endangered or threatened species, their critical habitat, marine mammals, or other non-target species?*



***Response:***

No. There are no endangered or threatened species, or designated critical habitat areas, in the project area that would be adversely affected by the proposed action. The proposed action is not expected to jeopardize the sustainability of any non-target species.

5. *Are any significant social or economic impacts interrelated with natural or physical environmental effects expected?*

***Response:***

No. There are no significant negative social or economic impacts interrelated with natural or physical environmental effects expected to result from the implementation of this proposed action. The proposed action is designed to benefit injured natural resources and is expected to have minor social benefits through increased public access and use of coastal areas and resources, as well as improved opportunities for birdwatching and enhanced recreational fishing.

6. *Are the effects on the quality of the human environment likely to be highly controversial?*

***Response:***

No. The Responsible Parties in this case recently implemented a similar 4.4 acre project adjacent to where this much smaller project is proposed, and the general public and abutters were supportive of the project. No comments were received that identified any outstanding issues from the general public, abutters or local officials. This proposed restoration action will benefit both the injured natural resources and the human population (local communities) in the vicinity of the project sites.

7. *Can the proposed action reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers, essential fish habitat, or ecologically critical areas?*

***Response:***

No. The projects included in the proposed restoration action are not expected to result in any substantial impacts to unique areas such as park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas. The proposed project has been carefully planned and designed to avoid such impacts during implementation. The marsh restoration project would be constructed at low tide and/or by adjusting the downstream tide gate to prevent tidal water from reaching the site during construction. This would limit essential fish habitat (EFH) impacts to only a brief and minor disturbance, with no substantial effects to EFH.

8. *Are the effects on the human environment likely to be highly uncertain or involve unique or unknown risks?*

**Response:**

No. The proposed restoration action will employ well-established construction practices and restoration techniques. There are no foreseeable uncertain, unique, or unknown risks posed to the human environment from the proposed action.

9. *Is the proposed action related to other actions with individually insignificant, but cumulatively significant impacts?*

**Response:**

No. The expected benefits from implementing the restoration would contribute to increasing the overall environmental health and quality of the project areas, and uses of coastal resources by the public. However, this effect would be localized and not substantial at the ecosystem level. Although cumulative benefits would result from additive effects of the restoration project combined with other restoration already implemented in the area, this would not be significant due to the small scale and very localized benefits.

10. *Is the proposed action likely to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources?*

**Response:**

No. There are no expected adverse impacts to historic resources listed in the National Register of Historic Places or to significant scientific, cultural, or historical resources. The project was reviewed by the Massachusetts Historic Commission as part of the Massachusetts Environmental Protection Act review process, which concurred with this finding of no impact.

11. *Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?*

**Response:**

No. Conversely, the project has been proposed to reduce cover of, and control the spread of, non-native, invasive plant species. Specific care would be taken to ensure that nonindigenous species are not used or introduced as a result of the implemented projects.

12. *Is the proposed action likely to establish a precedent for future actions with significant effects or does it represent a decision in principle about a future consideration?*

**Response:**

No. The proposed restoration action is of a small scale and would utilize well-established habitat restoration techniques and best management practices that have been used effectively in numerous other projects. Therefore it is not expected to establish a precedent for future actions with significant effects. However, the extent of success of the individual projects would be

monitored closely for project performance, and the approach and design may be applied, adopted, or modified for other future restoration projects in the region.

13. *Can the proposed action reasonably be expected to threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment?*

***Response:***

No. Consultation and close coordination have occurred with federal, state, and local (conservation commission) regulatory authorities and all appropriate authorizations and conditions are currently in hand or would be obtained before implementation proceeds.

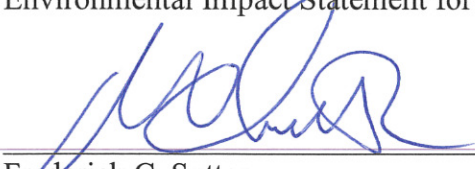
14. *Can the proposed action reasonably be expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species?*


***Response:***

No. This proposed restoration action is designed to address shoreline, aquatic, and natural resource use injuries resulting from releases of hazardous substances at and from the Island End River former coal tar processing facility. Completion of the proposed action would result in a net benefit to injured shoreline and aquatic resources and provide beneficial natural resource use services to the project area. No cumulative adverse effects are expected, and no significant impacts to plants or animals would result.

**Determination**

In view of the information presented in this document and the analysis contained in the RP/EA, it is hereby determined that the funding and implementation of the proposed restoration action will not significantly affect the quality of the human environment as described above and in the RP/EA. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, the preparation of an Environmental Impact Statement for this action is not necessary.

  
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Frederick C. Sutter  
Director, Office of Habitat Conservation

  
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Date