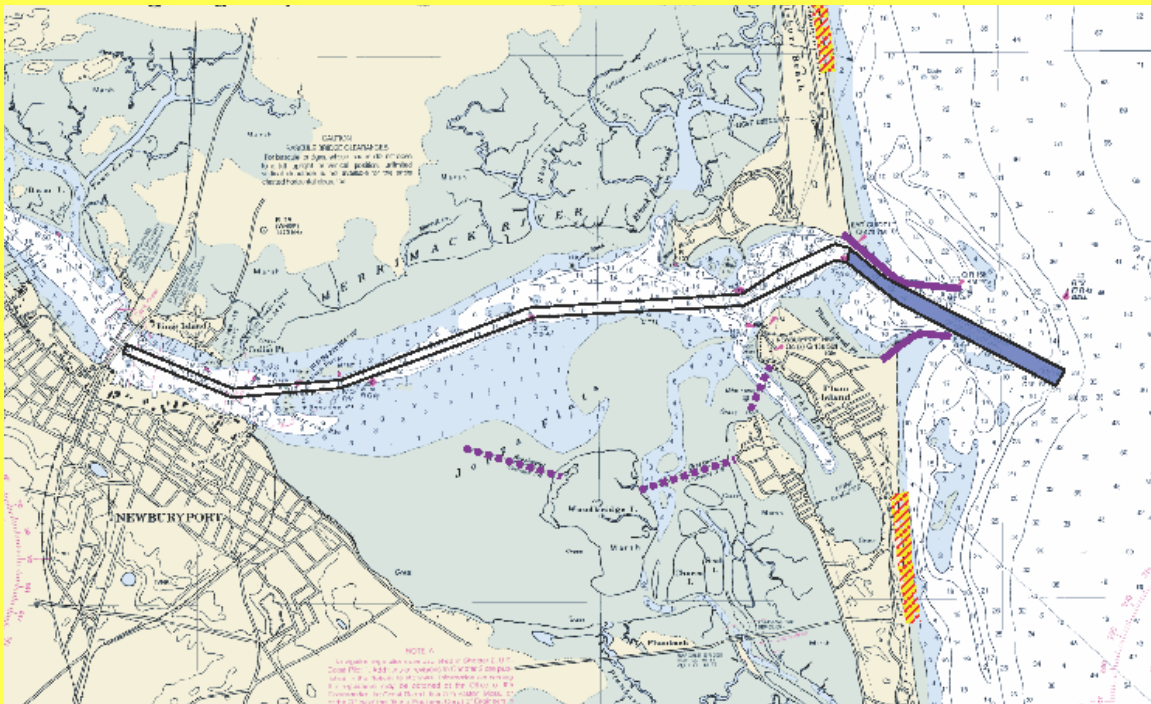

§204 Detailed Project Report and
Environmental Assessment for
Beneficial Use of Dredged Materials
From Maintenance Dredging

Newburyport Harbor, Plum Island & Salisbury Beaches Newbury, Newburyport and Salisbury, Massachusetts



US ARMY CORPS
OF ENGINEERS
New England District

September 2009

**NEWBURYPORT HARBOR
AND PLUM ISLAND AND SALISBURY BEACHES
NEWBURY, NEWBURYPORT AND SALISBURY
MASSACHUSETTS
§ 204 BENEFICIAL USE OF DREDGED MATERIAL
DETAILED PROJECT REPORT**



SEPTEMBER 2009

**U.S. Army Corps of Engineers
New England District**



EXECUTIVE SUMMARY

This Study investigated the beneficial use of dredged material to be removed from maintenance of the Federal Navigation Project for Newburyport Harbor as nourishment directly placed on both Plum Island Beach in the Town of Newbury and Salisbury State Beach in the Town of Salisbury, Massachusetts. This study is authorized by Section 204 of the Water Resources Development Act (WRDA) of 1992 (33 USC Sec. 2326), as amended. The study area and recommended plan are shown in Figure ES-1.

Plum Island and Salisbury Beaches, located south and north, respectively, of the mouth of the Merrimack River, the entrance to Newburyport Harbor, have sustained coastal storm damages and have experienced localized, acute, erosion rates along the beach face exposed to the Atlantic Ocean. The annual coastal erosion rate has been estimated at 13 feet per year at Newbury, far in excess of the long term average for this region, and about three feet annually at Salisbury Beach. The Town of Newbury, City of Newburyport, and Town of Salisbury have all expressed their concern and an interest in conducting a regional sediment management investigation and/or Section 103 study, to develop long term solutions to their erosion problems. However, the upcoming maintenance of the Newburyport entrance channel provides an opportunity for near-term relief to the most critically at risk properties while longer-term solutions are investigated through these other authorities.

The Federal Base Plan for maintenance dredging of the Federal Navigation Channel, as followed for the past several maintenance cycles, involves maintenance by mid-size seagoing hopper dredge with placement of the material in the designated areas of the bars offshore of the two adjacent beaches in 18 to 30 feet of water. This method keeps the material in the littoral system of the beaches and available for natural re-building of the beaches. By agreement between the local communities and as specified in the State's conditions to its Water Quality Certification, nearshore disposal alternates between the two beaches from one maintenance operation to the next. The maintenance operation planned for the 2009-2010 dredging season is typical of past operations, with about 160,000 cubic yards (CY) of material to be removed from the 15-foot channel including required material and a 2-foot overdepth allowance.

Three areas subject to recent erosion, one in each of the three communities, were examined. A Beachfill plan for two of these areas, in Newbury and Salisbury, is recommended for implementation in connection with the upcoming maintenance operation. The third area, in Newburyport, consisted of only about four lots, of which only one had a structure in potential near term danger. The limited area at this site made projection of beachfill longevity and thus project benefits, impractical to estimate.

At Plum Island Beach in Newbury, a beachfill area about 2,500 feet long, extending northerly from State Groin #1 at the seaward terminus of the Plum Island Turnpike, would be nourished using three-quarters of the dredged material, or about 120,000 CY. This area includes about 29 shorefront lots including 26 with buildings that would experience damage or loss within the ten year 2010-2019 period of analysis. The beachfill would be used to generally increase the elevation and width of the beach berm, with a portion of the material used to buttress the face of the dunes. The seaward slope of the fill from the berm down to the vicinity of the mean low

water elevation, would be graded to no steeper than 1:10 for shorebirds. The section of the fill would vary along the beachfill area, with a greater volume placed to the south end of the area where erosion has been most severe.

At Salisbury Beach a beachfill area about 1,200 to 1,400 feet long would be located between two prior shore protection fill areas along the State Reservation and would receive about 40,000 CY of dredged sand. This area extends generally from Murray Street (Beach Access #2) northerly to Fowler Street (Beach Access #3). This area includes about 22 shorefront lots, all with buildings that would experience damage or loss during the 2010-2019 period. The actual ends of the fill area would be determined during pre-construction surveys. As at Plum Island, the fill section at Salisbury would include increasing the berm elevation and width, seaward slopes of 1:10 and buttressing of the dune face.

Dredging would be accomplished by either a hopper dredge with direct pump-off capability that would discharge into a line moored offshore of the beaches to be filled, or by a hydraulic pipeline dredge that would pump the material from the channel through a discharge pipe run along the beaches from the jetties to the beachfill areas. Construction would take about three months during the period of 1 September to 14 March. The construction window is intended to protect shorebirds on the beaches and fisheries in the dredge area. Placement of sand at Salisbury Beach, the smaller of the two beachfill areas would occur first, followed by placement at Plum Island Beach in Newbury.

Costs for the Section 204 beneficial use project are measured as the increase in cost for direct placement of sand on the beaches over the cost of the Base Plan for placement in the nearshore bars off the beaches. The increased cost for construction of the two-beach nourishment plan, averaged for the three construction methods examined (pump-off hopper and two sizes of pipeline dredge), is estimated at \$1,802,000, including an average design cost is \$77,000, and an average construction cost of \$1,725,000. The 35 percent non-Federal share of the §204 project is estimated at \$631,000, with a Federal share of \$1,171,000, based on the three-method average.

The purpose of the Section 204 project, and the benefits produced are solely for coastal storm damage reduction. Benefits for the beachfill include delaying the loss and damage of the protected properties for the lifespan of the beachfill. The lifespan of the beachfill is estimated at 4 years for Plum Island and about 2 years for Salisbury. All of the properties to be protected at both beaches are private parcels currently developed for residential use, or in one case, a small restaurant at Plum Island.

The estimated benefits of the project at both beaches include delays in damages to structures, value of land lost, cost of demolition of damaged buildings, relocation costs for property owners, costs of emergency response and clean-up, and repairs and replacement of damaged utilities that serve the properties subject to damage. Total annualized benefits for Plum Island Beach with 120,000 CY of fill are estimated at about \$751,300. Total annualized benefits for Salisbury Beach with 40,000 CY of fill are estimated at about \$284,100, for a total for both beaches of \$1,035,400. Benefit-cost analysis for the two-beach plan yields annual costs of \$278,000, annual net benefits of \$757,400, and a benefit-cost ratio of 3.7. Both beachfill elements analyzed separately have positive benefit-cost ratios.

Implementation of the Section 204 project requires approval of this report, securing all required Federal, State and local regulatory approvals for the modified disposal plan, commitment of funds by the Federal Government and the non-Federal Sponsor, the Massachusetts Department of Conservation and Recreation, execution of a Project Partnership Agreement between the Corps and the State, provision of all required easements by the State for construction and maintenance of the beachfill and public use and access to the beaches receiving the fill, preparation of plans and specifications, solicitation of bids, award of a contract, and completion of construction.

TABLE ES-1 NEWBURYPORT HARBOR AND PLUM ISLAND AND SALISBURY BEACHES NEWBURY, NEWBURYPORT AND SALISBURY, MASSACHUSETTS SECTION 204 PROJECT FOR BENEFICIAL USE OF DREDGED MATERIALS PROJECT INFORMATION			
	Plum Island Beach at Newbury	Salisbury Beach	Combined Beaches
Length of Beachfill	2300-2500	1200 to 1400	3500 to 3900
Number of Properties with Calculated 10-Year Benefits	26	14	39
Beachfill Volume	120,000 CY	40,000 CY	160,000 CY
§204 Project Cost	\$1,285,000	\$517,000	\$1,802,000
§204 Annual Cost	\$198,200	\$79,900	\$278,000
§204 Project Benefits	\$751,300	\$284,100	\$1,035,400
Net Annual Benefits	\$553,100	\$204,100	\$757,400
Benefit-Cost Ratio	3.8	3.6	3.7
Federal Share 65%	\$835,000	\$336,000	\$1,171,000
Non-Federal Share 35%	\$450,000	\$181,000	\$631,000

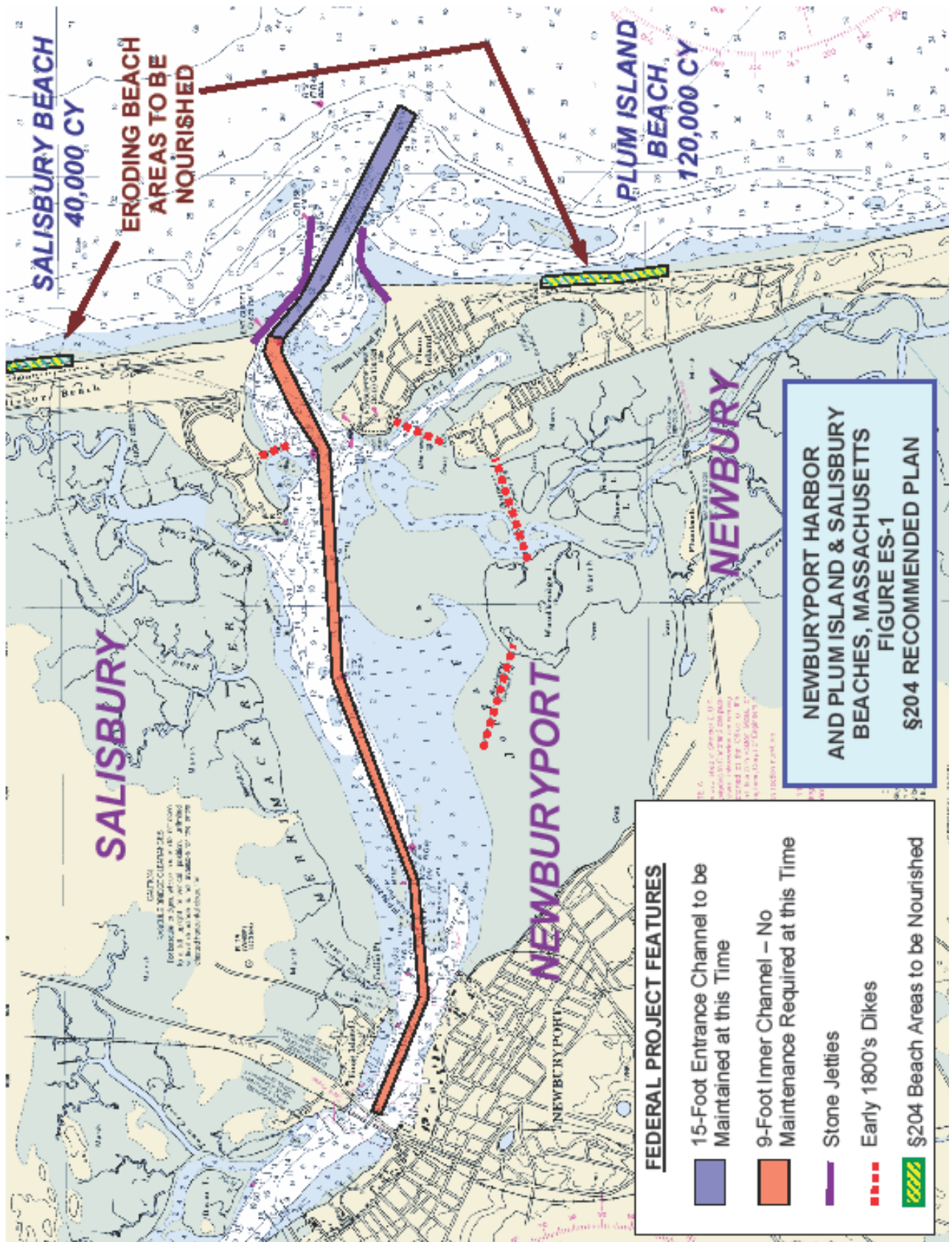


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**NEWBURYPORT HARBOR
AND PLUM ISLAND AND SALISBURY BEACHES
NEWBURY, NEWBURYPORT AND SALISBURY, MASSACHUSETTS
§ 204 BENEFICIAL USE OF DREDGED MATERIAL
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INTRODUCTION

The Corps of Engineers, New England District, at the request of the Towns of Newbury and Salisbury, and the Commonwealth of Massachusetts, has investigated the coastal storm damage problems at Plum Island and Salisbury Beaches to determine the Federal interest in participating in the cost of the beneficial use of dredged material from the Newburyport Harbor Federal Navigation Project. The least costly method of disposing of the dredged sands from maintenance of the Newburyport Harbor entrance channel is placement in the nearshore bar system offshore of the two adjacent beaches. This method allows the surf and littoral system to distribute the material along and upon the beach over time. Local interests concerned with recent severe erosion on sections of the two beaches requested that the material be placed directly on the beach to better and more immediately protect public and private property and infrastructure and ensure that the maximum amount of dredge sand gets onto the beach and remains in place for a greater period. This report examined whether the additional cost of placing sand directly on one or both of the beaches, as opposed to the nearshore bars, was economically justified and otherwise eligible for Federal participation.

Plum Island, as shown in Figure 1, is a barrier island directly exposed to the Atlantic Ocean to the east. The northern end of the Island is primarily a residential area within the political boundaries of both the Town of Newbury and City of Newburyport, while the middle and southern areas of the Island with the Towns of Newbury and Rowley are included in the Parker River National Wildlife Refuge, and a State Park at its southern tip in the Town of Ipswich. The Merrimack River inlet separates Plum Island and Newburyport from Salisbury Beach in the Town of Salisbury. The study area is located entirely within Essex County and the Massachusetts 6th Congressional District. The inlet and its entrance channel are controlled by two stone jetties, all features of the Federal Navigation Project for Newburyport Harbor, the northernmost harbor in Massachusetts, located about 32 miles north of Boston. The Town of Seabrook, New Hampshire borders Salisbury to the north.

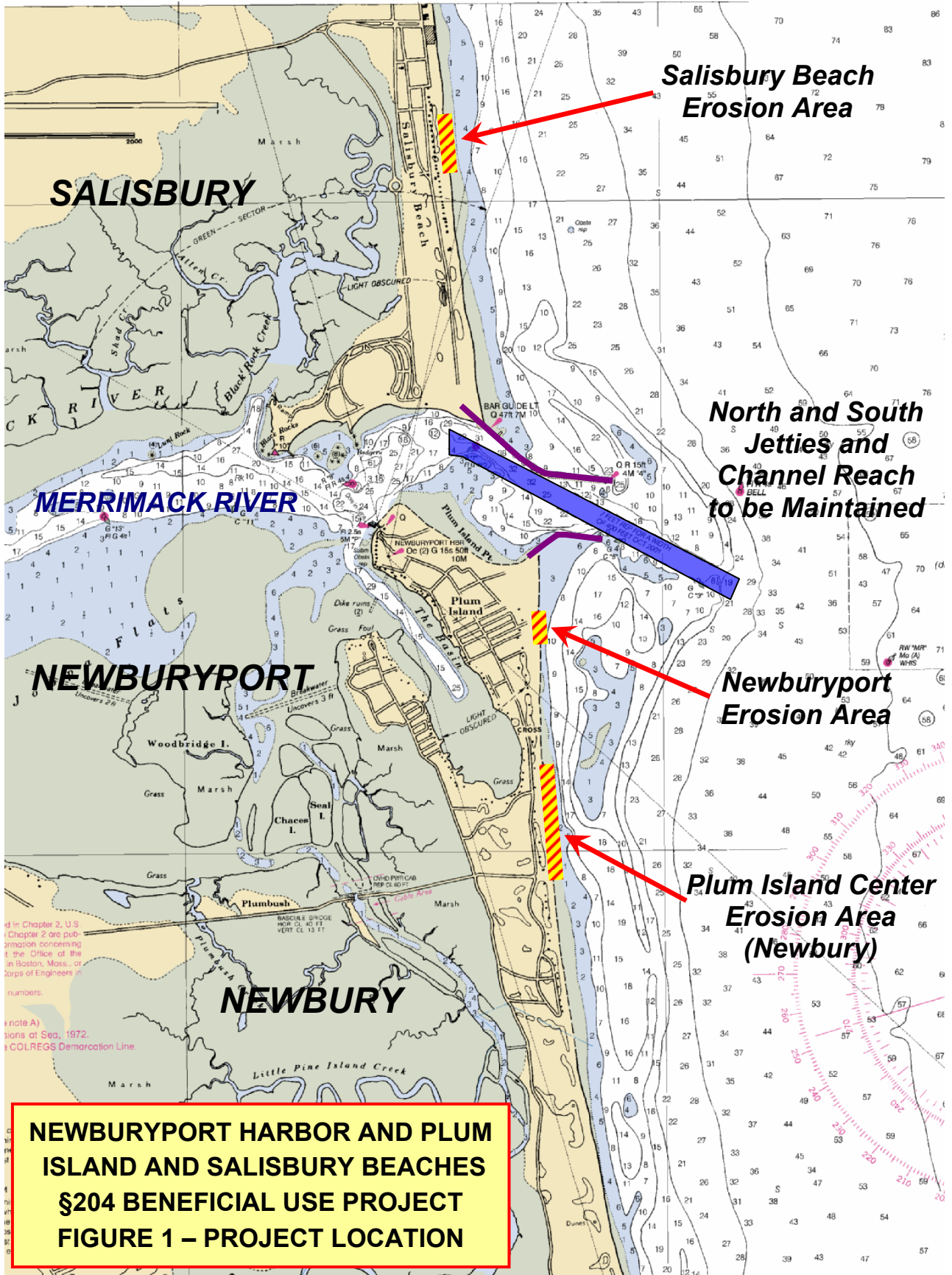
STUDY PURPOSE AND AUTHORITY

The coasts of Plum Island within the Town of Newbury and the City of Newburyport and the coast of the Town of Salisbury are experiencing severe coastal erosion. The State and the three municipalities have requested that the dredged material made available from maintenance of the Newburyport Harbor entrance channel be placed directly on the beaches. A feasibility study has investigated that request and this detailed project report documents that study, its findings concerning engineering feasibility, environmental and other impacts, economic justification, and non-Federal sponsorship. The report is the decision document for recommendations concerning Federal participation in project implementation.

Under the Continuing Authority of Section 204 of the Water Resources Development Act (WRDA) of 1992, as amended by Section 2037 of WRDA 2007, the Corps may evaluate projects for the beneficial use of dredged material from Federal navigation projects. Specifically this authority allows the Corps to study, design and implement projects to reduce hurricane and coastal storm damage to property, or for the protection, restoration, and creation of aquatic and ecologically related habitats in connection with the dredging of an authorized navigation project. Under this authority, the Corps is able to share in the costs of construction in excess of the most cost effective means of carrying out dredging of the Federal navigation project. The Corps may fund project studies and design, and may participate in project implementation costs provided a non-Federal public Sponsor agrees to provide 35 percent of those costs, provide all lands, easements and rights of way, and agree to maintain the project, among other requirements. The Commonwealth of Massachusetts, Department of Conservation and Recreation, has agreed to act as the non-Federal Sponsor for this project.

The southern end of project study area is located on the ocean shoreline of Plum Island at State Groin number 1 at the seaward extension of the terminus of the Plum Island Turnpike in the Town of Newbury, in the area known as Plum Island Center. The northern boundary is on Salisbury Beach at the Town lot at the seaward extension of Broadway, about 7300 feet north of the shore end of the north jetty. Within this area there are three sections where shorefront properties are in near term danger of damage or loss. These areas include: (1) a 2500-foot long section of Plum Island Beach in Newbury extending north from State Groin #1 at the southern end of the study area (Plum Island Turnpike) to the vicinity of 29th Street and containing about 29 shorefront lots; (2) a small 400-foot long section of beach in Newburyport located between about 4,500 and 4,900 feet north of State Groin #1 containing four shorefront lots, and (3) a 1400-foot long section of Salisbury State Beach located between Beach Access #2 (Murray Street) northerly to Beach Access #3 (Fowler Street), fronting about 22 shorefront lots. Site photos of these areas can be found in Appendix C.

The project under study will focus on the difference in the estimated cost of the Federal Base Plan (nearshore bar placement of channel maintenance materials) and the various alternatives for direct placement of that sand on the beaches. To determine economic justification that difference in cost is compared to the coastal storm damages that would be reduced by on shore placement. These benefits consist of delaying storm damages, as any beachfill volume is limited to the amount of sand generated by navigation maintenance activities and the period that material is expected to remain on the beach before storm erosion resumes threatening shore property and backshore infrastructure. Beyond any near-term solution for beneficial use of material from this maintenance operation, the study will also identify authorities for investigating potential longer-term solutions that could be effective in reducing coastal storm damages, such as the implementation of a regional sediment management measures for the littoral cell, and identification of sand sources other than navigation maintenance material.



PRIOR STUDIES AND REPORTS

Newburyport Harbor, Plum Island Beach and Salisbury Beach have all been the subject of prior Federal studies and reports. The Harbor and Plum Island Beach have also been the subject of Federal improvement projects. These past actions are described below.

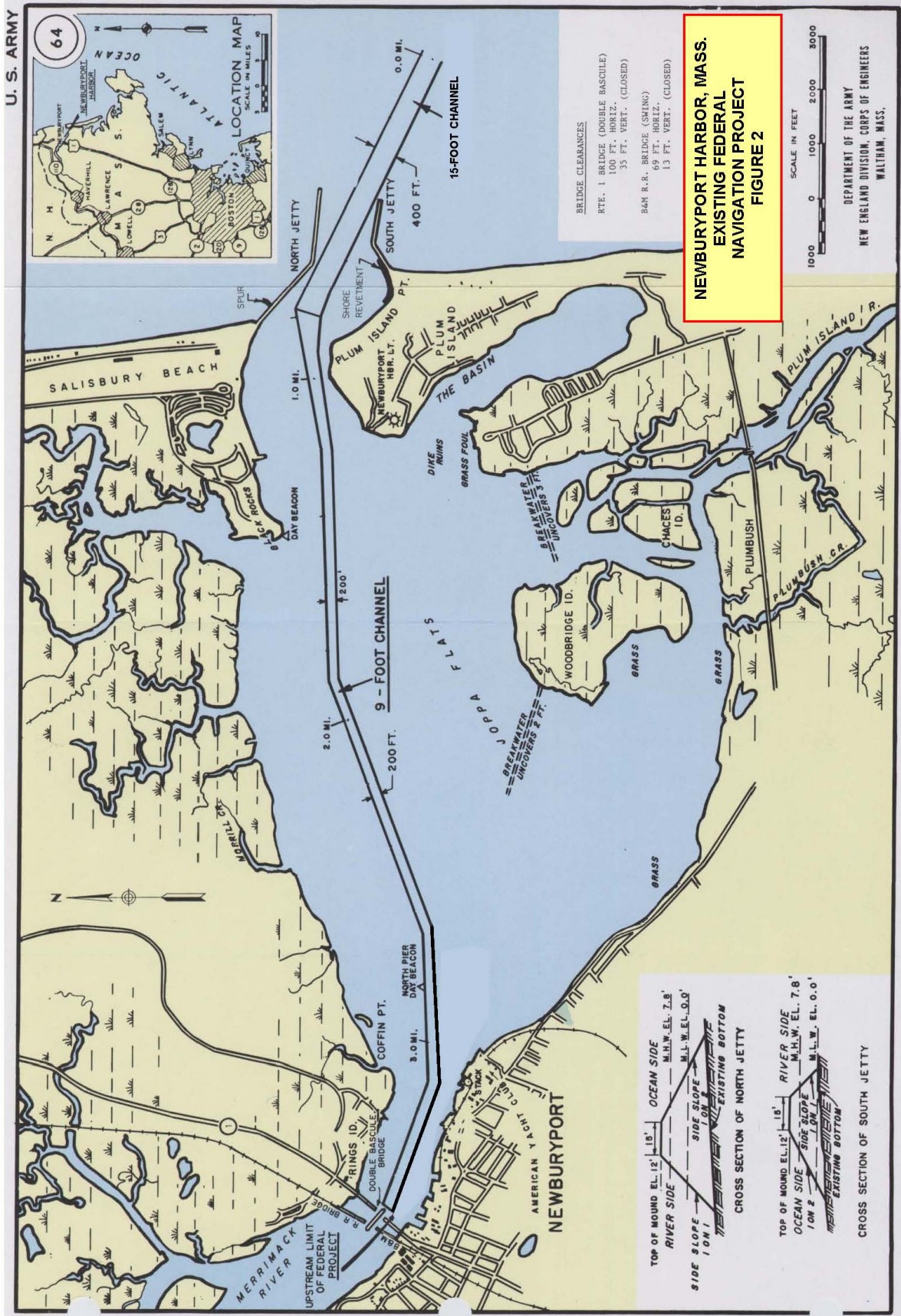
Newburyport Harbor and the Merrimack River

Newburyport Harbor has been maintained by the Federal government for navigation purposes since 1828. The earliest map of the inlet in the New England District' collection, made in preparation for constructing stabilization measures, is dated 1826. A history of construction and maintenance activities for the Newburyport Harbor Federal Navigation Project is contained in Appendix B. Early Corps projects for this location were tilted under both Merrimack River and later Newburyport Harbor. Today, based on more recent reports and projects, the area downstream of US Route 1 is considered Newburyport Harbor, including the river's mouth, and the area upstream of US Route 1 to Haverhill and areas further upstream is considered the Merrimack River project.

Initial efforts by the Corps to dredge a channel through the bars at the river's mouth in the 1820s proved unsuccessful. The 1828 Act also authorized erection of "piers and other works" to increase inlet velocities and train the river's flow to open a navigation channel through the bars. Stone dikes were constructed in the 1830s between Plum and Woodbridge Islands and west across Joppa Flats, as well as from Salisbury Point to Badgers Rocks in the inlet. Between the 1870s and 1910s a number of rocks, ledges and wrecks were removed from the channel between the inlet and the waterfront at Newburyport to various depths. In 1883 a fourth timber and stone dike was completed closing the outlet of Plum Island Basin.

Construction of the rubblestone jetties at the river's mouth began in 1881 with the converging shore arms constructed first. The seaward parallel arms were then constructed, with both structures completed by 1914 to the lengths seen today. The jetties were intended to scour a channel 17 feet deep at MLW up to 1000 feet wide. During construction the south jetty plans were amended to include a shoreward extension of the stonework up the beach and along the inlet shore with a timber core to support a sand-catch. The timber and wire sand-catch was constructed between 1884 and 1886. Dredging was still required, and a 15-foot channel was completed in 1938.

The River and Harbor Act of 1945 modified the dredged features of the project to include a 15-foot entrance channel, 400 feet wide, and a 12-foot harbor channel and basin at Newburyport (House Doc. #703, 76th Congress, 3rd Session, 23 April 1940). The channels were dredged to reduced depths of 12 feet in the inlet entrance and 9 feet in the harbor channel and basin, all completed in 1958. The entrance channel was later deepened to 15 feet in 1964, 1973, 1977 and 1981, and has been maintained to that depth since. The Water Resource Development Act of 1986 deauthorized the portions of the 1945 Act relating to deepening of the entrance channel to 15 feet and the inner project features to 12 feet. However this provision was included in a section deauthorizing only the unconstructed portion of projects. As the entrance channel had already been deepened to 15 feet before this Act, only the deepening of the inner harbor channel and basin beyond 9 feet to 12 feet was deauthorized in 1986.



A major rehabilitation of the two jetties was carried-out in the early 1970s. The Design Memorandum (Major Rehabilitation of the North and South Jetties), 29 October 1965, called for the authorized +12-foot MLW top elevation and 15-foot top width be restored with armor stone increased to up to 12 tons. A series of severe storms in 1969 cut back the beach and inlet shore at the north end of Plum Island, endangering the US Coast Guard Station and requiring modification of the South Jetty rehabilitation plans, increasing the design elevation of the jetty's shoreward section to +19 feet MLW (Special Erosion Control Study, South Shore of Merrimack River, June 1969). The jetty was extended landward another 150 feet, and along the inlet shore a 70-foot wide sand and gravel fill section was placed, protected by stone revetment, extending about 300 feet further upriver with the revetment extending another 200 feet. The jetty rehabilitation and the shore protection were completed in 1970.

Maintenance dredging of the navigation channels has been carried out periodically with the dredged sand placed by hopper offshore of the beaches in Plum Island and Salisbury on either side of the inlet. The entrance channel was maintained eight times between 1981 and 1999, with no maintenance since then due to budget constraints. The 9-foot inner channel was last maintained in 1970. The 9-foot harbor basin was deauthorized in 1992 at the City's request, leaving a 200-foot wide Federal channel along the waterfront. The existing Federal navigation project for Newburyport Harbor is shown in Figure 2. The current Environmental Assessment calls for periodic maintenance dredging of between about 50,000 cubic yards (CY) and 200,000 CY every three to five years, including the currently proposed entrance channel maintenance operation.

Plum Island Beach

The Corps first study of Plum Island Beach itself was a Beach Erosion Control Report, dated 29 August 1952, prepared at the request of the State. The principal concern at that time was the potential for overwash and breaching of the island into Plum Island Basin. At that time projects for the protection of private property were not eligible for Federal funds. A plan for protecting the beach was developed and referred to the State for implementation. The plan included raising the shore end of the south jetty with additional armor stone, and removing sand shoals from the river and the north end of the island to nourish the beach and restore the dune line. The Corps report was printed in House Doc. #243, 83rd Congress, 2d Session, 25 August 1953.

In 1966, upon a joint request by the Town of Newbury and City of Newburyport, the Corps began studies for a small beach erosion control project under the authority of Section 103 of the River and Harbor Act of 1962. A Detailed Project Report dated January 1973 recommended a project to restore the 800 to 900 feet of beach north of State Groin #1 (the Turnpike Groin). The project consisted of about 40,000 CY of beachfill, with 4,000 CY of that used as a reinforcing embankment in front of the dunes. Work was completed in April 1973, using sand dredged from the inlet along a former alignment of the channel.

The 1969-70 rehabilitation of the south jetty, as modified during construction, also benefitted the beach by raising the shore end of the south jetty, extending it shoreward, and placing a dike along the inlet shore. These actions reduced the potential for sand to be carried off the beach and into the inlet.

In response to continued erosion, a December 1976 feasibility study by the Corps considered additional measures to protect the beach and the Island's inlet shore, including an offshore stone breakwater, a nearshore stone berm to trip waves, revetment of the dune face plus sandfill, a larger 500,000 CY sandfill alone, a series of 11 stone groins along the beach plus sandfill, additional revetment and sand dikes along the inlet shore, and various combinations of these plans. Cost-benefit analysis did not support a recommendation.

Salisbury Beach

Salisbury Beach was the subject of a Corps Beach Erosion Control Report, 15 September 1961, and printed in House Doc. #2517, 87th Congress, 2d Session, 13 August 1962. The report concluded that Federal involvement was not justified as construction of seawalls and groins was not warranted due to the infrequency of damages. The report also concluded that repair of the inshore end of the north jetty would be an effective means of retaining sand on the beach. The jetty underwent a major rehabilitation in 1968-69.

EXISTING CONDITIONS

Plum Island is a barrier island directly exposed to the Atlantic Ocean to the east. The northern end of the Island is primarily a residential area within the political boundaries of both the Town of Newbury and City of Newburyport, while the southern areas of the Island are included in the Parker River National Wildlife Refuge and a small State Park at the southern end. The central and southern areas of the island lie in the Towns of Rowley and Ipswich. Plum Island is separated from Salisbury Beach to the north by the Merrimack River inlet. As described above, the entrance channel for the Newburyport Harbor Federal Navigation Project transits the inlet controlled by two rubblestone jetties. Newburyport Harbor is located at the mouth of the Merrimack River in Essex County and is the northern-most harbor on the Massachusetts coast, located about 32 miles north of Boston. Newburyport Harbor has been improved and maintained by the Federal government for navigation purposes since 1828. Federal maintenance of the navigation channels is carried out periodically with the dredged sand typically placed by hopper dredge offshore of the beaches of Plum Island and Salisbury on either side of the inlet.

The coast of Plum Island within the Town of Newbury and the City of Newburyport and the coast of the Town of Salisbury are experiencing severe coastal erosion. The State and the three communities have expressed interest in the placement of clean dredged material from maintenance of the navigation channel on their beaches. The Newburyport Harbor entrance channel is next scheduled for maintenance in the fall-winter of 2009-2010, depending on funding. The channel is typically dredged every three to five years, but has not been maintained since 1999 due to a lack of funding for small harbor maintenance.

Tidal Datum and Littoral System

New England tides are semi-diurnal, with two cycles of different ranges every 24 hours and 50 minutes (lunar orbit). The tidal elevation data for the river entrance at Plum Island and for the Newburyport waterfront at the US Coast Guard Station are shown in Table 1.

TABLE 1 NEWBURYPORT HARBOR TIDAL DATUMS AND ELEVATIONS		
	Newburyport Waterfront USCG Station	Plum Island Merrimack River Entrance
Highest Observed Water Level	10.794	
Mean Higher High Water	8.763	8.707
Mean High Water	8.327	8.297
Mean Tide Level	4.281	4.298
Mean Sea Level	4.278	4.291
Mean Low Water	0.236	0.299
Mean Lower Low Water	0.000	0.000
Lowest Observed Water Level	(1.486)	

Littoral transport in the area of the Merrimack Inlet and the northern end of Plum Island is generally south to north. Storms from the northeast temporarily reverse this flow. Prior to construction of the jetties, the northern end of Plum Island was a migrating sand spit which periodically breached and was carried northward to merge with Salisbury Point. Along the southern shores of Plum Island, and shore of Ipswich Bay, transport is to the south and southeast towards Cape Ann.

Municipal Boundaries, Federal and State Property

Plum Island is divided between four municipalities. From north to south these are Newburyport, Newbury, Rowley and Ipswich. Salisbury Beach to the north of the inlet, in the Town of Salisbury is the northern-most town on the Massachusetts coast, bordered by Seabrook, New Hampshire to the north. The study area includes only the towns of Salisbury and Newbury, and the City of Newburyport.

At Salisbury, the beach is owned and managed by the Massachusetts Department of Conservation and Recreation, as the Salisbury Beach State Reservation. At its southern third, State property extends landward to include the dunes and backshore areas in part developed for parking, visitor services, operations and maintenance facilities, and camping/RV areas. In

its northern areas the State Reservation consists solely of the beach, with private homes and business constructed atop the dunes, and in some cases north of Broadway out onto the beach.

In Newburyport, land of the former U.S. Coast Guard Station at the south jetty, was transferred to State ownership (MA DCR) and is managed by the City. The remainder of the beach in Newburyport is in City ownership, except where about 6 lots extend a slight distance seaward of the dune crest near the boundary between Newbury and Newburyport.

Property Ownership

On Plum Island, with Newbury and Newburyport, the beach is in municipal or State ownership, except for the several lots immediately north of State Groin #1 at the Plum Island Turnpike terminus where erosion has eliminated the public-owned width of the beach. Typically in Massachusetts, a shorefront property owner owns to the mean low water elevation, with public access to the intertidal portion of the property limited to fishing, fowling and navigation. However most of the land at the northern end of Plum Island was developed as a planned development by the Plum Island Beach Company, which sold lots for seasonal cottages. The development eventually included a street railway, grand hotel, dance pavilions and other facilities and amenities. The beaches remained held in common and eventually came under municipal control. All the properties evaluated for benefits at Plum Island are private residences or small retail properties.

In the area considered for beachfill at Salisbury, the beach is held by the State as the Salisbury Beach State Reservation. Depending on erosion rates between now and the time of construction, a narrow strip of property, about ten feet wide, with the private residential lots that extend out onto the dune, may lie within the beachfill area. The private residences are the source of project benefits at Salisbury Beach. Project descriptions and estimates in this report assume that a narrow easement will be required from each property fronting on the dunes for the Salisbury fill.

Parker River National Wildlife Refuge

The central and southern portions of Plum Island in the Towns of Newbury, Rowley and Ipswich are and were largely undeveloped. Private ownership consisted of farms, seasonal residential development, hunting/fishing lodges, and a summer camp for children with polio. The U.S. Lifesaving Service maintained three stations along the island. In the 1920s the Federation of Bird Clubs of New England began acquiring and aggregating properties at the Island's southern end for a wildlife reserve, established in 1929, forming the core of what would become the National Wildlife Refuge. The State also established a reservation on the island's southern tip.

The Parker River National Wildlife Refuge (PRNWR), managed by the U.S. Fish and Wildlife Service, was authorized by Congress in 1942. A map of the refuge is shown in Figure 3. The northern end of the beachfront portion of the Refuge is located about 0.6 miles south of State Groin #1. The beach within the Refuge is an important nesting habitat for threatened and endangered shorebirds and is closed to visitors from April through September when those species are present.

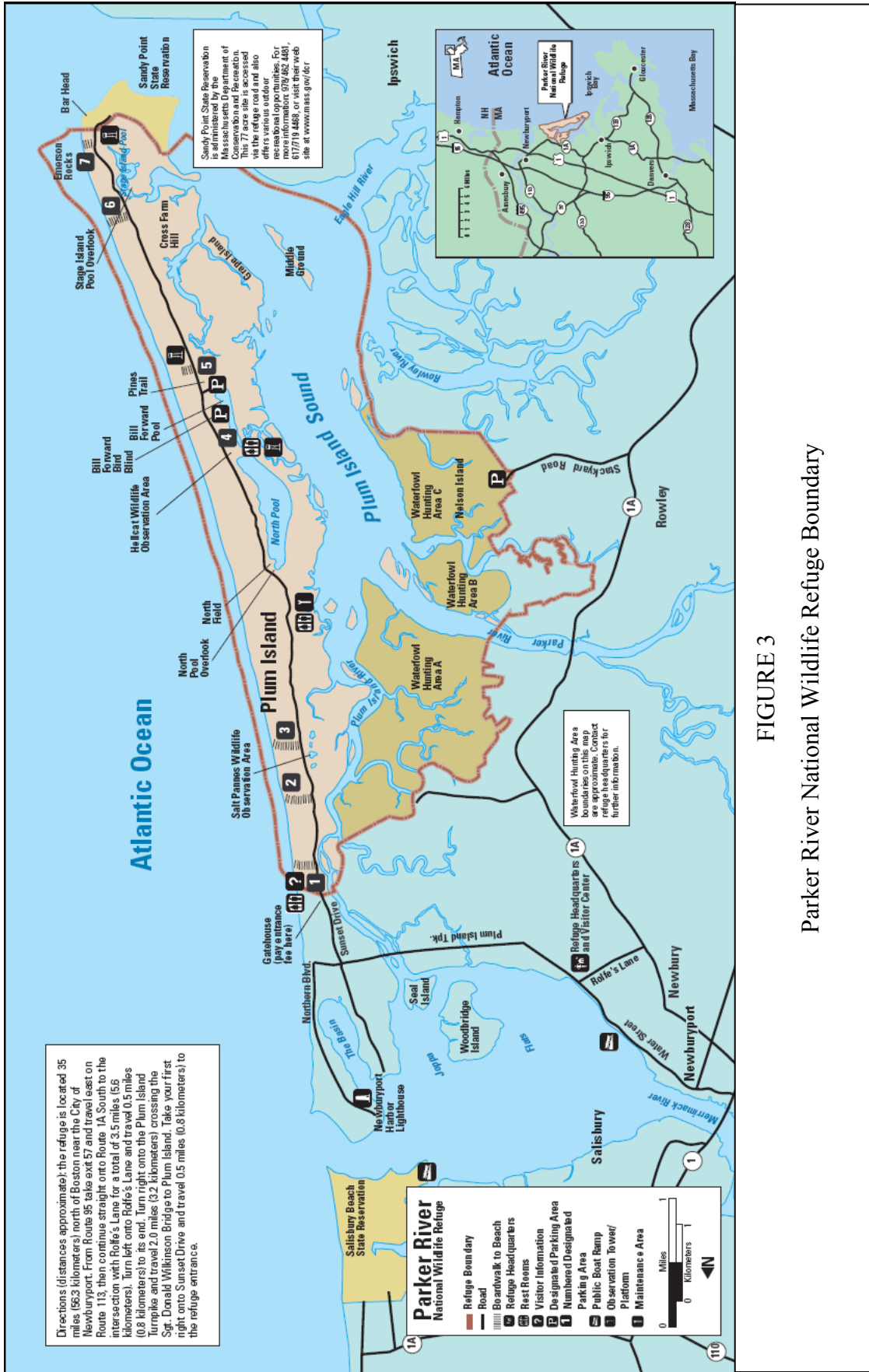


FIGURE 3
 Parker River National Wildlife Refuge Boundary

Plum Island Turnpike serves as the only thoroughfare to and from the mainland and provides the only access for any emergency services. During higher storm surges the road is awash in sections landward of the bridge and along the landward shore of the Island. The street system south of the Basin does not provide continuous access between the areas west and east of the Basin, making Northern Boulevard the only escape route for areas north of the turnpike and east of the Basin.

Utilities

Plum Island contains several utilities including power, communications, natural gas, water and sanitary sewer lines. The sewer and water system was newly constructed by Newburyport in 2007 and serves all residents on northern Plum Island within both municipalities. The sewer and water system lies beneath Northern Avenue for most of its route and is subject to saltwater infiltration during overwash events and flooding of properties tied to the system.

The beachfront neighborhoods on Salisbury Beach also contain utilities including power, communications, water and sanitary sewer lines serving those properties and the State Reservation. Power and communications service to both beaches is subject to disruption during storm events.

Environmental Resources

An Environmental Assessment, Finding of No Significant Impact, and Clean Water Act Section 404(b)(1) Evaluation were prepared in 2007 for the Newburyport Harbor entrance channel dredging using the Federal Base Plan for disposal in the nearshore bar system. The final State Water Quality Certification issued 23 January 2008 for the project required disposal of the material from this maintenance operation offshore of Plum Island Beach, with future maintenance operations to alternate disposal between Salisbury Beach and Plum Island Beach. In accordance with National Marine Fisheries Service recommendations and State requirements dredging would not occur between March 15 and June 30 under the base plan to protect diadromous fisheries, lobster and shellfish spawning.

Nesting and fledging shorebirds would require additional restrictions should the beach nourishment alternatives to be used for disposal. These birds begin arriving at area beaches on about 1 April and conclude fledging on about 30 September. Any beachfill slopes would need to be graded to at least 1:10, and the beach management plans of the State and municipalities would need to address shorebird needs and issues to protect those species. An updated Environmental Assessment adding the beach nourishment beneficial use alternatives for disposal to the project has been prepared and included with this report.

Cultural Resources

The Massachusetts Board of Underwater Archaeological Resources reviewed the EA prepared for the base plan. The MABUAR stated that a archaeological research permit was outstanding for the area north of the Salisbury nearshore placement site. As the current

maintenance dredging operation intended to use the Plum Island nearshore placement site as the Base Plan, no cultural resource impacts are expected from the dredging with the base plan. As the beachfill plan would place material atop the existing eroding beach to replace material recently lost to storm action, no cultural resource impacts are expected from adding the beneficial use feature to the project.

PLAN FORMULATION

Public Involvement

After lengthy disputes over beach management and distribution of sand for beach nourishment, the three communities, their elected representatives, and local citizens and taxpayers groups formed the Merrimack River Beach Alliance, to better cooperate on studies and solutions to the erosion problems. The Corps began participating in the Alliance's meetings on a regular basis in January 2008. A list of all meetings and site visits, as well as copies of all correspondence received and sent on the project is included in Appendix A.

A site reconnaissance and kickoff meeting for the Corps §204 study was held on April 30, 2008, and another field meeting and public meeting was held on June 17, 2008. The project team and many local stakeholders and agency representatives toured the beaches of Plum Island and Salisbury to visually assess conditions. Representatives of the Corps, State agencies, Federal and State elected officials, the three municipalities and local citizens' organizations attended the meetings. A visual survey of the site was conducted by the study team, including Dr. Nicholas Kraus and Dr. William Curtis from the USACE Engineering Research and Development Center (ERDC). During the site visit, several homes were viewed with potential for future property damages and one Plum Island beachfront restaurant was viewed that has already lost an outdoor dining deck due to damages sustained to the structure. Annotated photos from the April visit are provided in Appendix C.

Problems and Opportunities

Plum Island, Salisbury and other local beaches in the area surrounding Newburyport Harbor have sustained coastal storm damages and have experienced localized, acute, erosion rates along the beach face exposed to the Atlantic Ocean. On Plum Island several structures, including residences and one commercial building, have potential for severe future damages. The commercial structure, a Plum Island beachfront restaurant, has already lost an outdoor dining deck due to damages sustained to the structure in the spring of 2008. One residential home was also lost to erosion in December 2008. The annual coastal erosion rate in the Newbury area under consideration has been estimated at 13 feet per year, far in excess of the long term average for this region. The rate at Salisbury is about three feet annually. The Town of Newbury, City of Newburyport, and Town of Salisbury have all expressed their concern and an interest in conducting a regional sediment management investigation to develop long term solutions to their erosion problems. In the short term, all three communities have expressed an interest in using the material from the upcoming channel maintenance to address some of the most significant erosion problems, while discussion of long-term solutions continues.

Newburyport Harbor Federal Navigation Channel was last maintained in 1999 when approximately 145,000 cubic yards were removed from the channel and placed nearshore off of Plum Island. Prior to this, the channel was maintained in 1996, when approximately 130,000 cubic yards were removed and placed nearshore off Salisbury Beach. Typically this material is placed offshore as the least cost alternative, alternating between Plum Island and Salisbury Beach. The most recent condition survey results show that maintenance of the 15-foot entrance channel is expected to yield about 160,000 cubic yards of material, including required material and allowable overdepth, all suitable for direct onshore placement for coastal storm damage reduction.

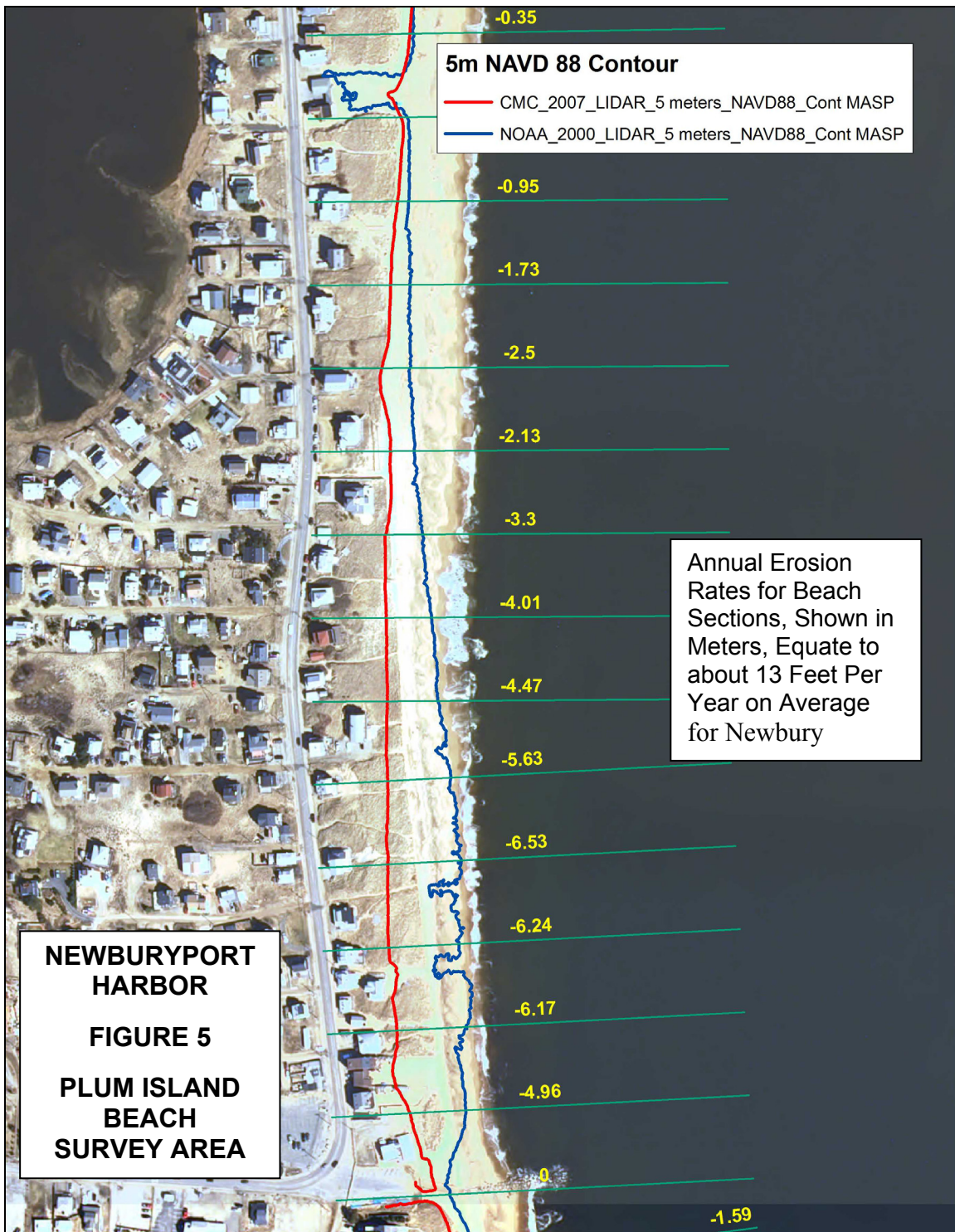
Section 204 (as modified by Section 2037 of WRDA 2008) authorizes beneficial use of sediments from construction, operations or maintenance of authorized civil works projects. The additional cost of a beneficial use project must be economically justified by damages prevented or ecosystem benefits realized. This study evaluated Federal interest in a beneficial use project for Plum Island Beach and Salisbury Beach.

Without Project Condition (Future Beach Conditions with No Federal Action)

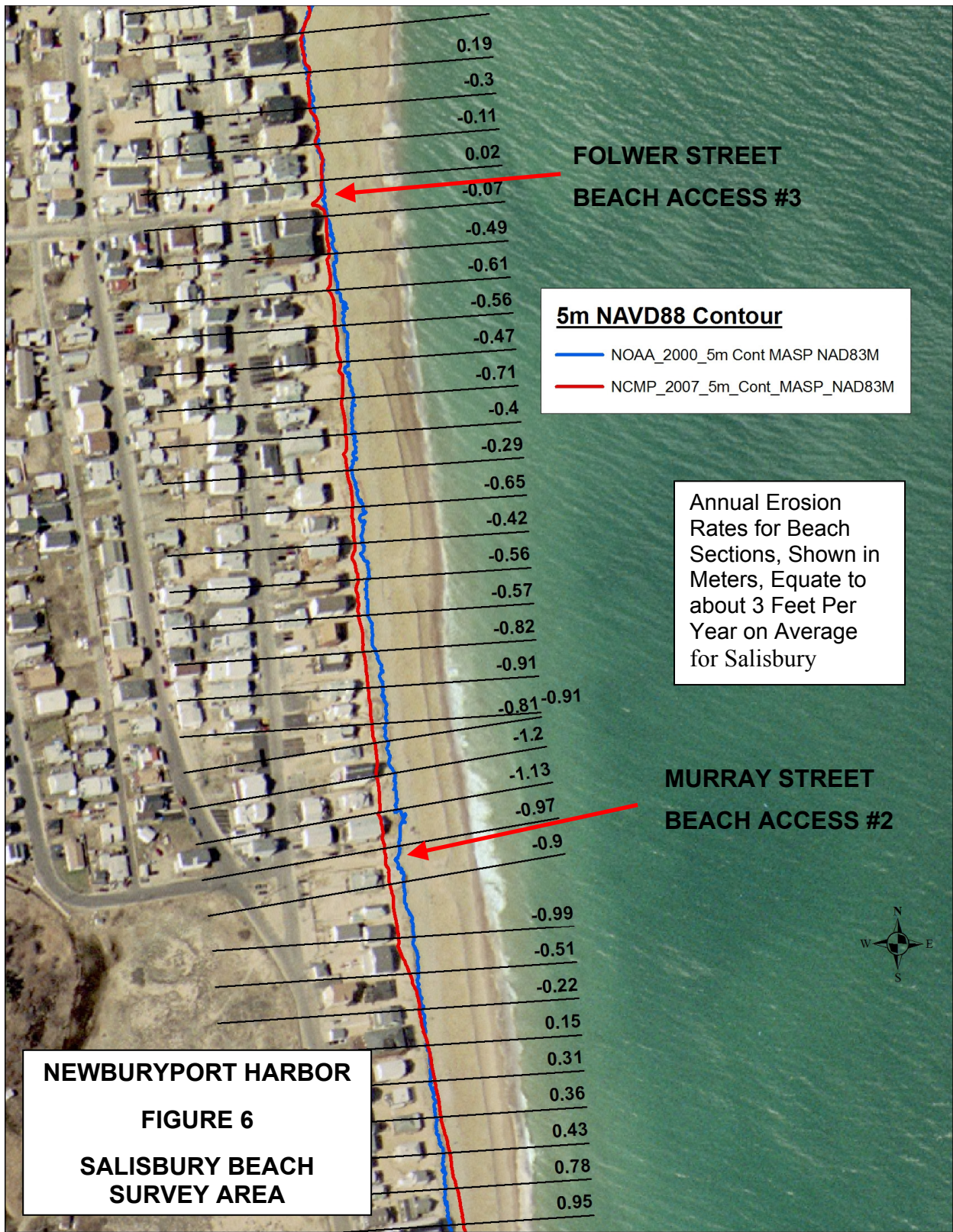
Future without-project conditions forecast the conditions expected during the period of analysis if no beneficial use beachfill project is constructed. The future without project condition provides the basis from which alternative plans are formulated and damages are assessed. This study will forecast the conditions expected at Plum Island Beach in Newbury and at Salisbury Beach over the next ten years if no material is placed directly onshore following maintenance dredging expected in the 2009-2010 dredging season. Specifically the analysis will evaluate what structures and/or other infrastructure will be affected by coastal erosion damages and when, over the ten year period, assuming the erosion rate will not change over that time. Historic shoreline erosion rates were used to project the future condition of the beach.

The severe erosion experienced on the two beaches was estimated at an annual rate of 13 feet per year at Newbury and 3 feet per year at Salisbury. Plum Island (Newbury) and Salisbury Beaches were surveyed by NOAA in 2000 using LIDAR, providing a detailed and accurate topographic map of the dry beach and dunes. The two beaches were flown again by the Corps in the summer of 2007 using both topographic and bathymetric LIDAR. Details of these surveys and the resulting retreat calculations are provided in Appendix E - Coastal Engineering. Comprehensive digital terrain models were generated from these data sets for each of the two years. To measure the beach movement between the two surveys the 5 meter contour was plotted for each survey, which was nearly the edge of the dune line, and the horizontal difference was measured between the two. To measure the recession rate, the shoreline movement package for ArcGIS that was developed by the United States Geological Service (USGS) was used. The package allows calculation of the distance between the two defined shorelines along a user defined baseline. As an example, the two shorelines, transects, and accompanying beach erosion rates between 2000 and 2007 are shown for the Newbury section of Plum Island Beach in Figure 5. As shown the recession rate is very high with rates ranging from 5.7 feet/year to 21.4 feet/year. The rates were averaged in the study area which resulted in an average beach erosion rate of about 13 feet per year.

FIGURE 5: Plum Island Shoreline Surveys, 2000 and 2007



Survey results for Salisbury Beach taken from the same two surveys were also used to establish shoreline locations and determine erosion rates. A plot of that survey area is provided in Figure 6.



Utility and Transportation Infrastructure

Appendix H shows drawings of the recently constructed water and sewer system infrastructure running underneath Northern Boulevard. These utilities would be in jeopardy from severe overwash events or a collapse of the road. If long term erosion is left unimpeded, it could eventually undermine Northern Boulevard and cause damage to the system requiring its shutdown for an extended period for repair, cleaning and rehabilitation to remove infiltrated seawater and return the system to service. At an extreme, infiltration of seawater into the Newburyport sewer system as far as the treatment plant could have substantial impact on City service beyond Plum Island. Even undamaged properties may need to be temporarily abandoned until service could be restored.

Northern Boulevard provides access to Plum Island Turnpike/Plum Island Boulevard, which is the only access for vehicles traveling to and from Plum Island. Damage to Northern Boulevard could isolate a significant portion of the population living on the northern part of Plum Island in the Newbury and Newburyport sections. Damage to Plum Island Boulevard, or the bridge and causeway, could isolate anyone on the island not evacuated prior to a storm event. It is likely that the Town of Newbury and City of Newburyport will expend funds to prevent damage from occurring to major roads. Placement of dredge material at Plum Island Beach in Newbury will delay the future expenditure of these funds.

Protection of Shorefront Property

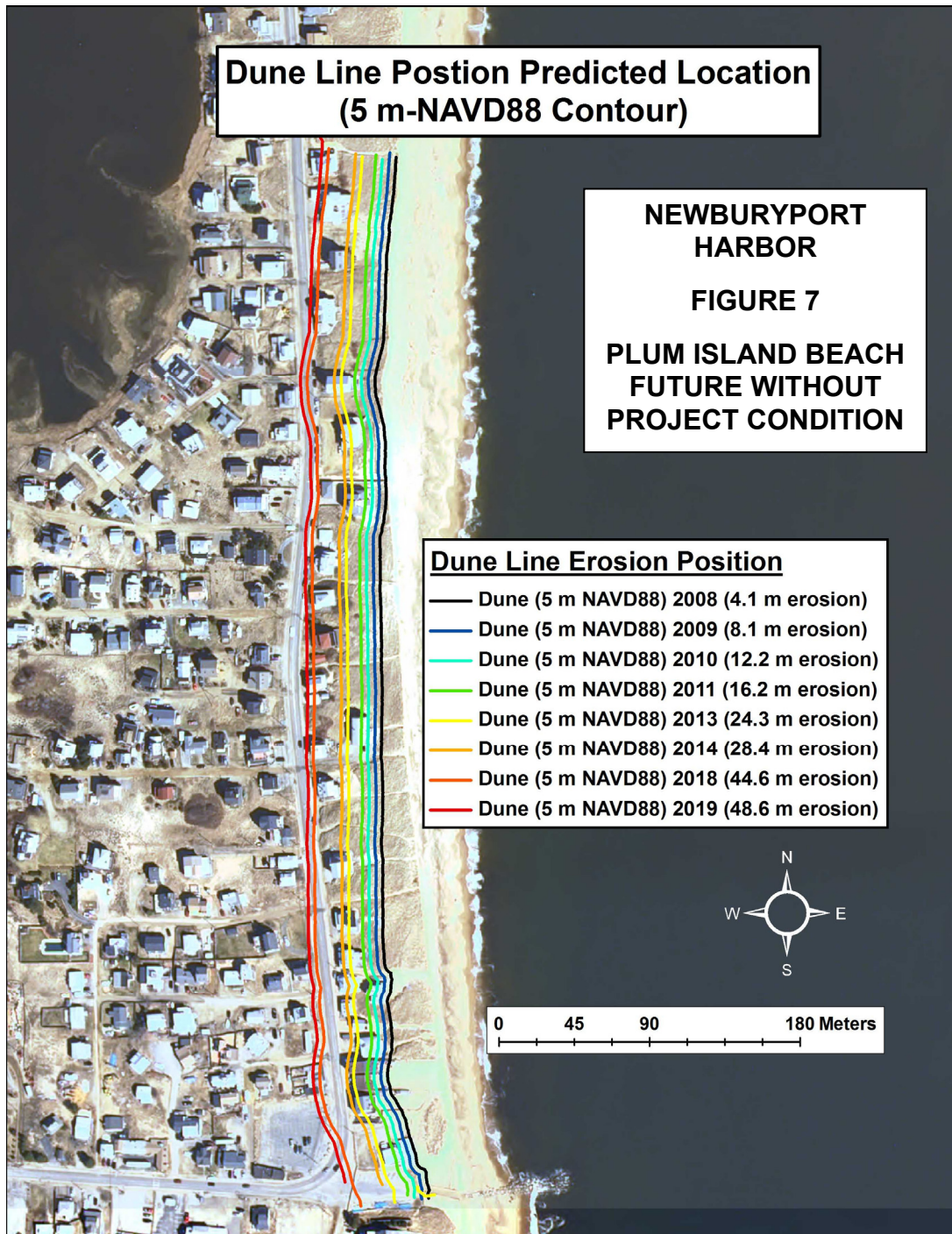
On both Plum Island Beach and Salisbury Beach shorefront properties, mainly private residences, occupy the frontal dunes in the areas exposed to severe erosion. In the without project condition these properties would continue to be in jeopardy as the beach retreats shoreward. Many residences and one restaurant have lost decks and porches in recent storms, and one home was lost in early December 2008 at Newbury. These losses will continue without measures to restore and maintain the beaches and dune system in these areas.

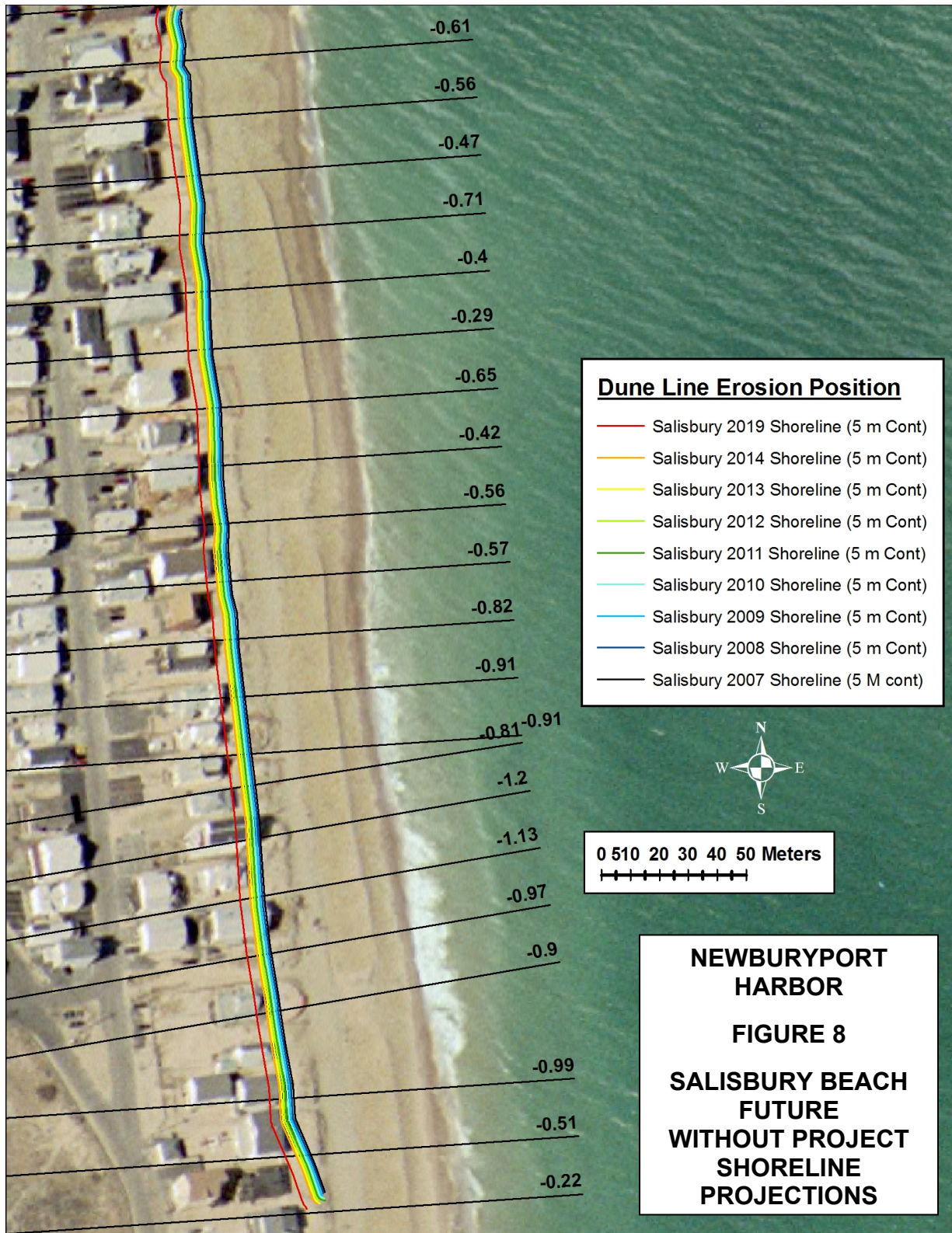
With the recent annual beach erosion rate determined, future, without project shorelines were projected. The 2007 shoreline mapped from the USACE LIDAR data was used as a baseline and then moved landward at the rate of about 13 feet per year at Newbury and 3 feet per year at Salisbury. As shown in Figure 7 for Plum Island Beach at Newbury, the years from 2008 to 2019 were plotted. It can be seen that starting in 2010, houses will be affected and by shortly after 2014 the roadway will be affected. Conditions at Salisbury Beach, shown in Figure 8, are expected to be similar for the beach area not covered by prior State and municipal beachfill and dune stabilization efforts.

With Project Condition (Future Beach Conditions with Federal Action)

Future with project conditions forecast the most likely conditions expected during the period of analysis if the selected beneficial-use project is constructed. The future with project condition provides the basis from which benefits resulting from the construction project are calculated. The primary account used to calculate benefits from a storm damage reduction project is national economic development (NED). This study forecasts the conditions expected on Plum Island and Salisbury Beaches over the next ten years if the 160,000 cubic

yards of available material is placed directly onshore, rather than in the nearshore bar system, during navigation channel maintenance dredging expected in the 2009-2010 dredging season. Specifically the analysis will evaluate how the project will either prevent or delay coastal erosion damages to structures and infrastructure over the ten year (2010-2019) period of analysis, assuming the erosion rate will not change over that time. A similar analysis was performed for the with-project (beachfill) conditions as for the without project conditions, and historic shoreline erosion rates were used to project the future condition of the beach. Figures 7 and 8 show the shoreline retreat projections for the ten-year period of analysis.





Development of Alternatives

Three alternatives have been developed: the Federal Base Plan (nearshore bar placement as planned), and two alternatives for direct placement on the beaches. For each of the two direct placement alternatives three different construction plants and methods were evaluated: a hopper dredge with direct pump-off capability, and two sizes of hydraulic pipeline dredge. The alternatives for placement of Newburyport Harbor dredged material were developed based on meeting the following goals and objectives:

- Prevent or delay coastal erosion damages to life and property, including homes, commercial structures, and public infrastructure.
- Provide an economically efficient solution. The additional cost of on shore placement of the material must outweigh the benefits of that placement.
- Provide a constructible solution. On shore placement of dredged material has many construction related challenges due to equipment availability and wave and tide activity.
- Provide an environmentally acceptable solution with minimized impacts to shoreline as regulated by Massachusetts Coastal Zone Management.

Federal Base Plan – Nearshore Bar Placement

The Federal Base Plan for maintenance dredging of Newburyport Harbor, as practiced for the past several decades, is dredging by either a medium-sized (~2,800 CY capacity) hopper dredge or a mechanical bucket dredge, with disposal in the nearshore bars off either Plum Island Beach or Salisbury Beach to keep the sand in the littoral system. By agreement with the State and local communities, the beach used alternates from one maintenance operation to the next, so that both beaches receive some benefit. The hopper dredge or dredge scows discharge their load by opening the doors in the hopper floor or scow bins at a location estimated to be approximately 2,500 feet from shore in 18 to 30 feet of water. Possible consequences of the Federal Base Plan (no-action alternative) would include continued erosion and retreat of the beaches, resulting in greater damages to structures sooner, than if the dredged sand were placed directly on the beach.

Beneficial-Use – Direct Placement on the Beaches

In response to recent erosion, the State and municipalities have requested that the dredged sand be placed directly on the beaches, rather than in the nearshore bar system. This would ensure that more of the material makes it to the beach and would provide immediate, though short-term protection to the most critically at risk sections of the beach.

In order to determine the effect of a beach placement of dredged material, a cross sectional beach fill construction design must be determined appropriate for the topography, local coastal processes, amount of material available for placement, and the length of beach to be protected. USACE LIDAR data was used to develop cross sections of the beaches at various locations along the study area. Detail on these cross sections can be found in Appendix E. About 160,000 cubic yards of material is available based upon most recent condition surveys. Alternatives were developed for placing all of this material on Plum Island Beach at Newbury

(Plan A), or for splitting the material between Plum Island and Salisbury Beaches, based on a formula agreed to by the communities and the State (Plan B).

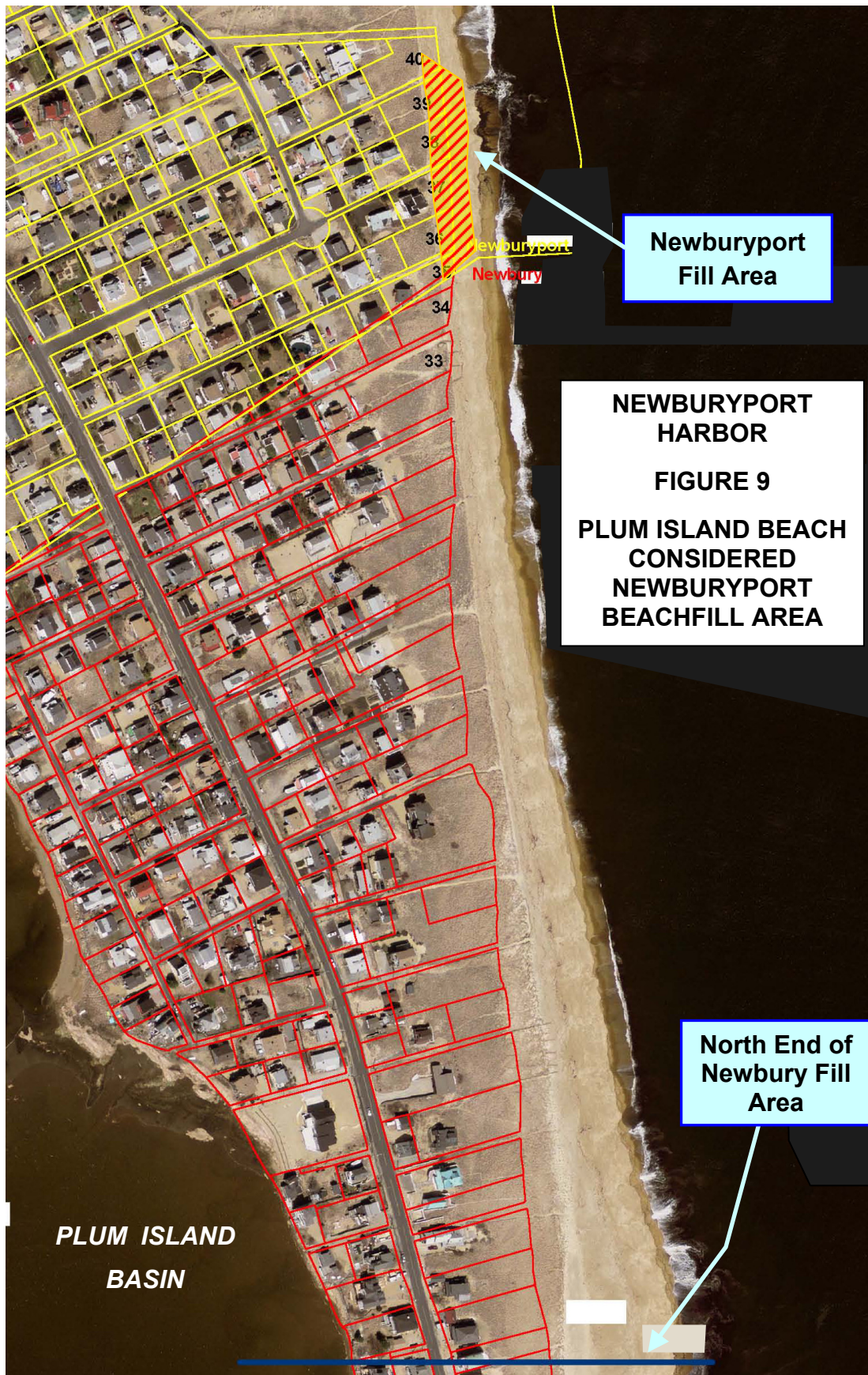
Consideration of a third plan, for placing about five percent of the available sand, or about 8,000 CY of material on Plum Island Beach in front of the southern-most lots in Newburyport was requested by the City in the Mayor's letter of 26 February 2009. This area is shown in Figure 9. The Newburyport area fronts six shorefront lots, of which two have residences, and of which only one is in some jeopardy of near-term damage. The area is only about 450 feet long. End losses from any beachfill from such a limited area would be significant relative to the volume of the fill. It would not be possible to meaningfully predict the beachfill longevity and thus project benefits for such a small area. The limited properties protected coupled with the expected rapid loss of any placed material in this location, and therefore the impracticality of estimating project benefits led to this alternative placement plan not being considered further.

The actual quantity that will be dredged is hard to determine. In the end it will depend on pre-dredging survey quantities, the dredging footprint, and the amount of pay and non-pay overdepth material actually removed by the contractor. The quantity available for dredging will likely increase beyond 160,000 CY as shoaling has continued since the last condition survey and will continue up until construction. The 160,000 CY estimate is considered a reasonable assumption for planning and design purposes.

Plan A - Plum Island Beachfill at Newbury

This alternative proposes construction of a 2,500 foot long beach fill project with a 60-foot wide berm at an elevation about 3 feet higher than the current beach in the Center Island area of Plum Island in the Town of Newbury using 160,000 cubic yards of material to be dredged for maintenance of Newburyport Harbor channel. A small portion of the material would be used to buttress the existing dune face. The new dune face would be planted with dune grass and sand fencing would be installed. Construction would involve direct placement by either a self propelled, 2800 cubic yard capacity, medium-sized pumpout-capable hopper dredge or by a large hydraulic pipeline dredge with a booster pump.

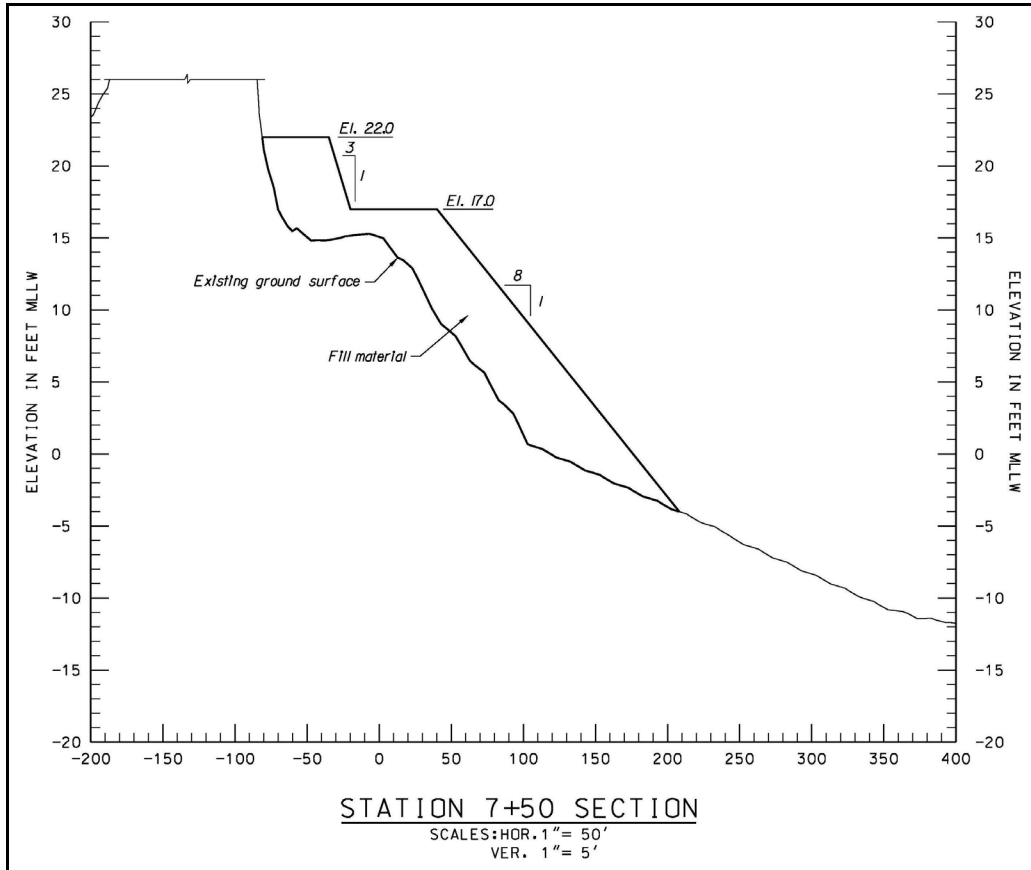
For the available volume of material, and the locations of the structures in danger of damage, it was determined that the beach fill would be most effective over a 2,500 foot long reach of beach extending northerly from State Groin #1. The area immediately north of Groin #1 is the area of the most severe erosion and current damages. The USACE software package RMAP was used to design the fill with the assumption that the material was generally compatible with the existing beach material. The resulting analysis determined that a beach berm width of approximately 60 feet would result if the entire 160,000 cubic yards were placed on the Newbury section once the beach fill equilibrated from the constructed beach fill slope. At the predicted rates of erosion, this volume of fill would delay further losses of property by about five years. The increased berm width will vary somewhat over the project area due to natural variations in the existing beach face and the tapered fill at the northern end caused by the tie in of the beach fill to the natural salient formation. A sample beach profile is shown in Figure 10A.



Data from Mass GIS: USGS Orthophoto, 2008,

The with project future beach conditions analysis assumes that the beach fill construction project will follow a maintenance dredging project in the 2009-2010 dredging season. Analysis of the beach fill longevity and future shoreline position assumed the beach fill project would be constructed in 2009. The projected shoreline for 2009 taken from Figure 7 was translated seaward the width of the beach fill berm. Futures year conditions were then projected assuming the recent average annual erosion rate of about 13 feet/year continued. The resulting with project shoreline positions have been provided as Figure 11.

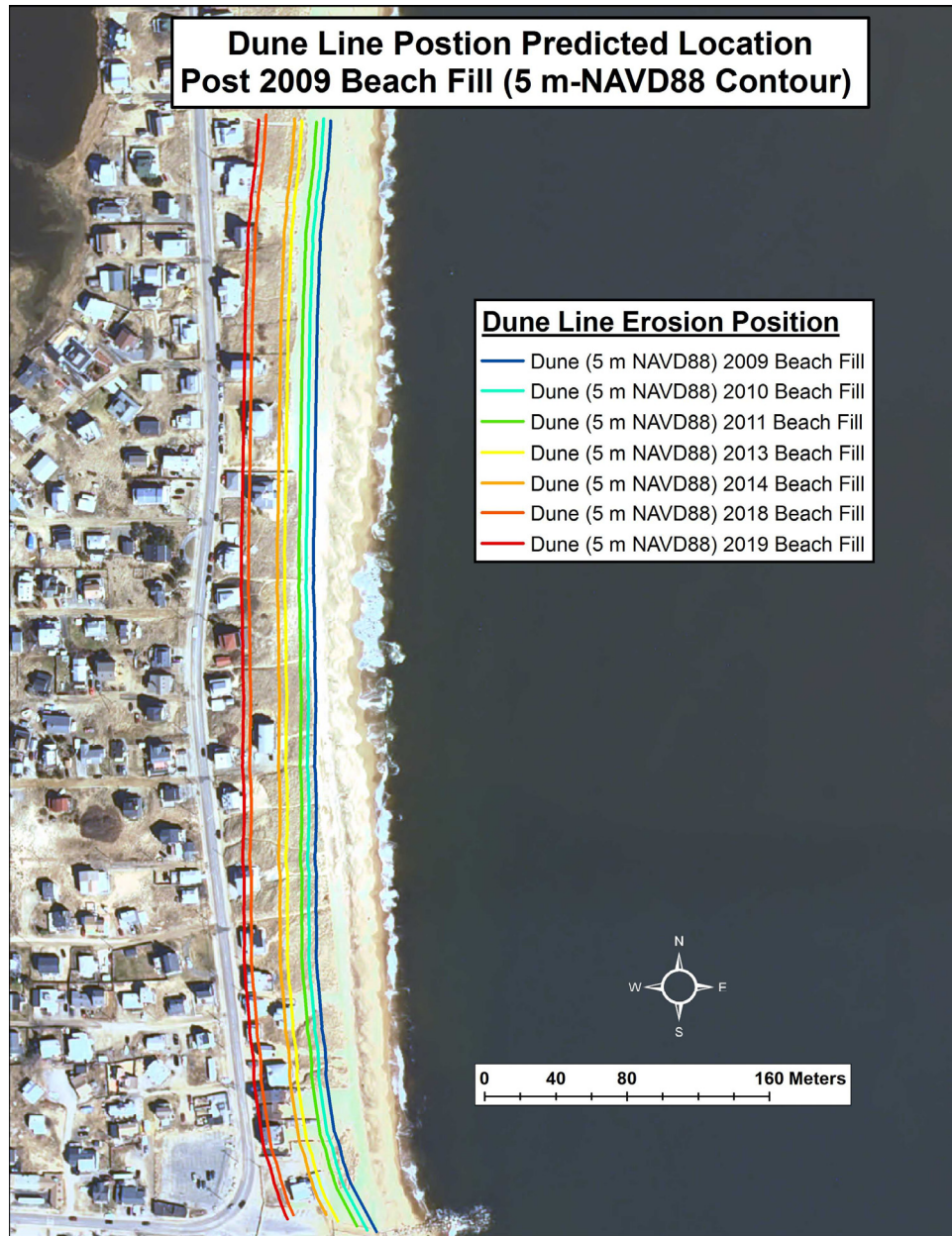
FIGURE 10A – Typical Beach Profile – Plum Island Beach at Newbury



The analysis of the erosion effects on Plum Island’s shoreline is unable to account for all the complexities of this coastal system. As an example, there is a noticeable bar formation running parallel to shore. This bar feature may help retain the beach fill in the cross shore direction by preventing the cross shore migration of the beach fill toe. Conversely, the dynamics that created such an extensive offshore bar may cause accelerated erosion of the beach fill in both the long shore and cross shore direction. Also, the anticipated end losses of the beach fill would have been difficult to determine since the fill will terminate at a naturally formed salient in the north and at a groin in the south. These features could certainly reduce erosion rates, but there is also some anecdotal evidence of the bar formation exacerbating beach loss at times. Plum Island beaches are also known to experience short term acute erosion areas that are “self” healing. An episode of erosion to the south of Groin #1 occurred in 2002 that persisted for a couple of years and then halted, with the beach returning in front.

This highlights the uncertainty associated with any analysis performed for this complex system.

Figure 11 – Future (With-Project) Beach Conditions – Plum Island Beach



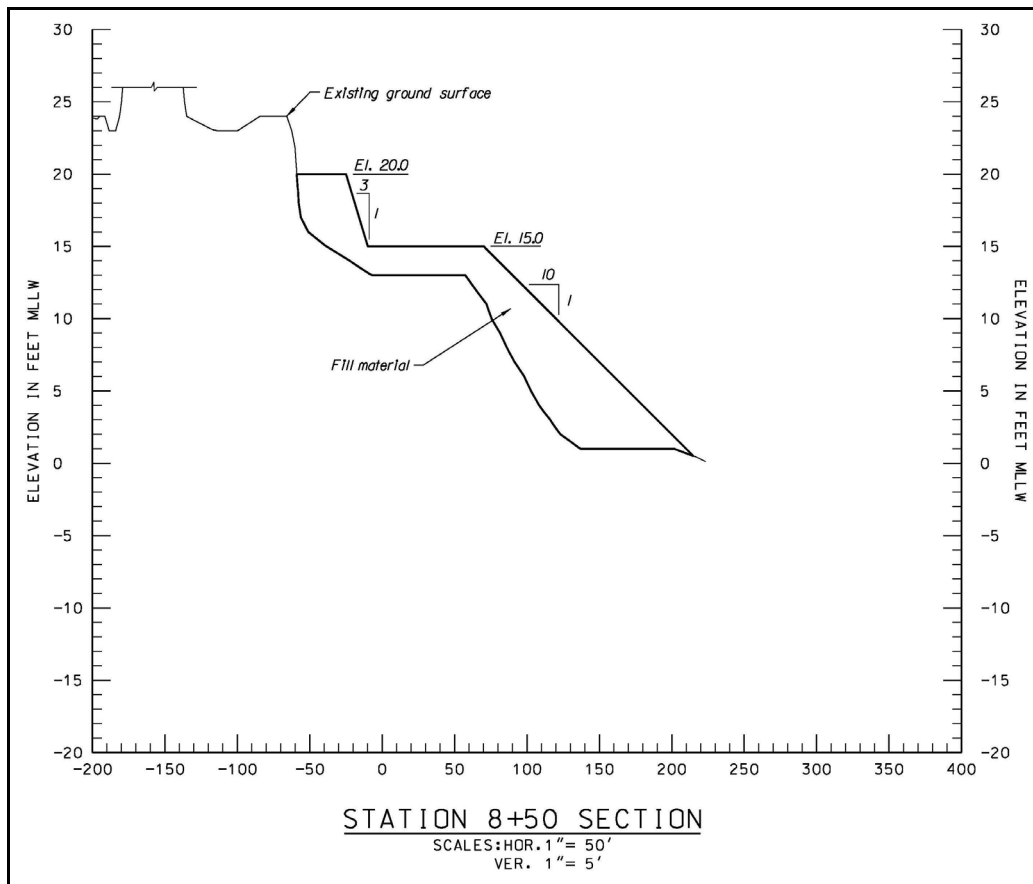
Plan B – Split Placement - Plum Island (Newbury) and Salisbury Beachfill

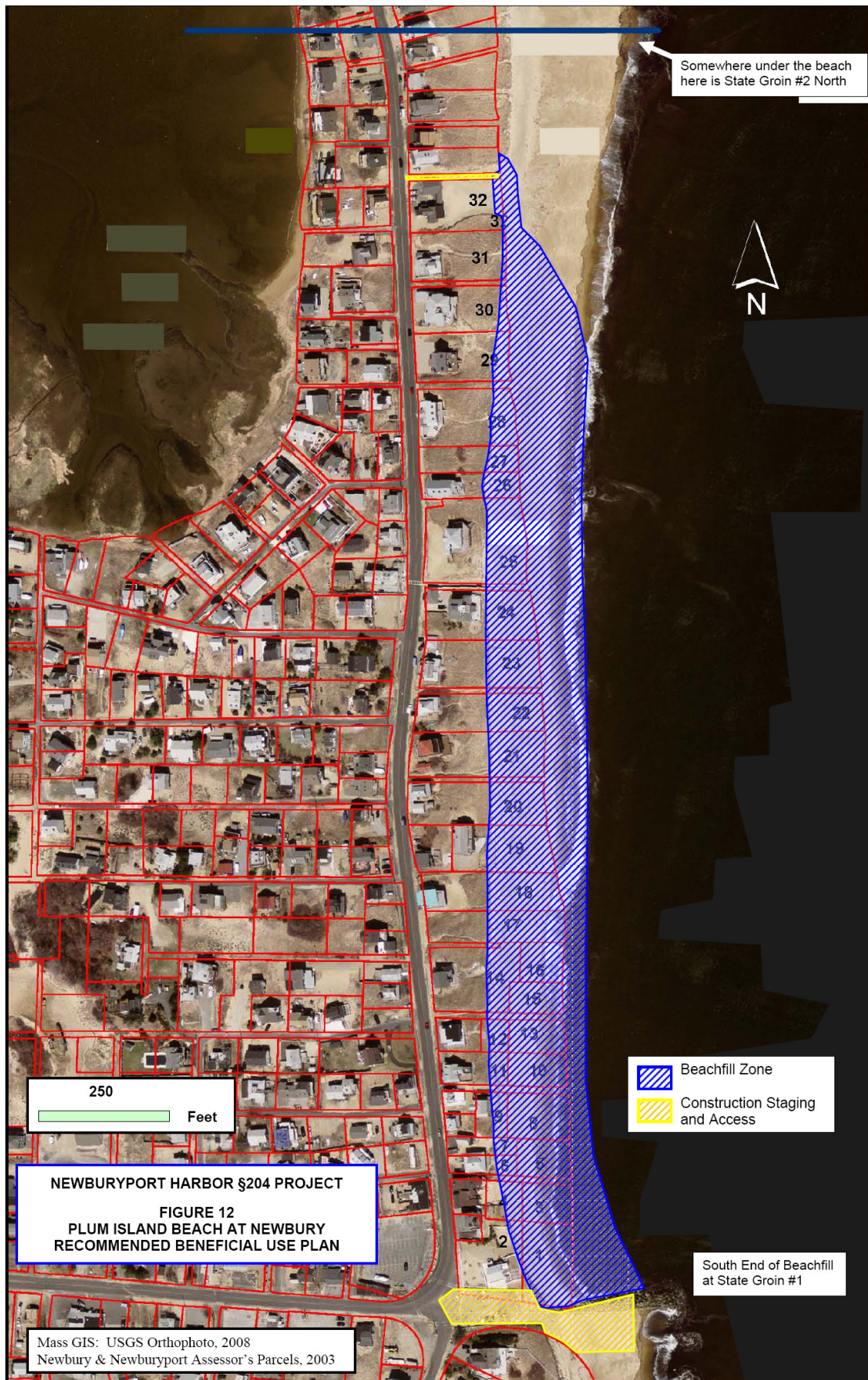
This alternative proposes construction beachfill projects at both Plum Island Beach at Newbury and at Salisbury Beach with the 160,000 CY of available beachfill split between the two beaches with 120,000 CY going to Newbury and 40,000 CY to Salisbury. At Newbury a 2,300 to 2,500 foot long beachfill with an approximately 60 to 80-foot wide berm would be formed at an elevation similar to that in Plan A (about +17 feet MLLW). The seaward slope of the fill from the berm would be about 1:8 and the seaward toe of the beachfill would extend

out to about -4 feet MLLW at the southern end where erosion has been most severe and to lesser elevations at the northern end of the beachfill area. At the northern end the beachfill and dune would be graded back into the existing beach slope and dune face. The reduced sandfill quantity would yield a fill longevity of about four years, as opposed to the five years provided by the 160,000 CY placed under Plan A.

At Salisbury, a similar beachfill section would be formed, although due to the larger volume, berm width and elevation of the existing beach, the fill section would be of lesser thickness and width allowing a smaller volume to be distributed over a proportionally larger, 1200 to 1400-foot length of beach. As in Plan A, a portion of the material would be used to buttress the existing dune faces at both beaches. The dune fill would have a top elevation of about +20 feet MLLW at Salisbury and +22 feet MLLW at Plum Island. Construction would involve direct placement on both beaches by either a self propelled, 2800 cubic yard capacity, medium-sized pumpout-capable hopper dredge, or by a large hydraulic pipeline dredge (20 to 24 inch diameter) with a booster pump. Heavy equipment would be used to place and move the pipeline, and to form and grade the beachfill. The new finished dune crest and face would be planted with dune grass and sand fences would be installed along the dune toe and laterally at intervals to discourage pedestrian access to these areas and protect the dune and plantings. The fencing would be managed in accordance with agreements with the U.S. Fish and Wildlife Service during the shorebird nesting season, with gaps opened in the toe fencing, about 10 feet wide, every 100 feet.

FIGURE 10B – Typical Beach Profile – Salisbury State Beach







PLAN EVALUATION

Cost Estimates for Alternative Plans

Cost estimates have been developed for both the Federal Base Plan and the two beneficial use alternatives evaluated in this study. The estimates were developed using the Corps of Engineers Dredge Estimating Program with inputs based on recent construction bids for work of this type in New England. Costs include construction contract costs and non-contract costs, and use January to June 2009 Price Levels. Construction contract estimates include costs for mobilization and demobilization of the construction plant, unit costs for dredging and disposal of the dredged material, and costs for planting and fencing. The contract unit costs for dredging and disposal include removal of the material from the channel, transport and placement of the material on the beach, contractor profit, overhead and bonds, and spreading and grading of the material on the beach. A contingency of 20 to 25 percent was applied to the contract costs according to the risk associated with each construction method.

For the Federal Base Plan, a medium sized hopper dredge using nearshore bar system disposal was estimated, the same construction method used for the past several decades. For the two beneficial use alternatives, three construction methods were estimated for dredging and placing the material directly on the beaches: a pump-off capable hopper dredge, a 20-inch hydraulic pipeline dredge, and a larger 24-inch hydraulic pipeline dredge. The average of cost for these three estimates was used for plan evaluation purposes. Due to a presumed higher risk of weather impacts on available dredging days for pipeline dredges in this exposed location, the contingency used was increased to 25 percent for this dredging method.

Costs for fencing and planting of the finished dune face were computed by linear feet of beachfill, assuming planting of the new dune crest and face, and fencing along both the dune crest and dune toe, and laterally at each public access way. Fencing along the dune toe would allow for elevation of the fence, or gaps in the fence line, during the shorebird season at intervals specified by the U.S. Fish and Wildlife Service (every 250 feet is used in the current design) to permit bird access to the dunes. Fencing in these areas would be lowered back to the beach surface, or reset, after the shorebird season. Signage currently exists on the beaches warning the public not to walk on the dunes. This signage would be expanded to all public access areas and would also warn against walking in bird nesting areas. The beach management plans include additional requirements for signage and measures as virtual fencing when shorebird nests are located. These measures are already in place for Salisbury Beach and the Town of Newbury has negotiated agreements with the F&W Service for their beachfill area on Plum Island, including bird monitoring in cooperation with the PRNWR.

Non-contract costs include Corps of Engineers costs for project design, engineering and supervision and administration of the contract. Design costs include preparation of Plans and Specifications, specifications surveys (hydrographic and topographic), final regulatory approvals, execution of the Project Partnership Agreement, contracting and project management costs during design. Supervision and Administration costs include costs for pre- and post-construction surveys, contract administration, supervision and inspection of construction activities, contracting and project management during construction, and close-out of the contract and project accounts.

Under Section 204 authority Feasibility costs are 100 percent Federal. Design and construction phase costs are cost-shared with the sponsor at rates based on the nature and use of the properties protected and the benefits derived. After application of charges for interest during construction, base plan costs were subtracted from the beneficial use alternatives costs to determine Section 204 project costs. As all protected properties and all identified benefits are to private lots developed for residential and small business use, Federal and non-Federal costs were apportioned at a 35/65 rate. The full project cost, including design costs, was used for computing the Section 204 project costs, annual costs, and for benefit-cost analysis. The project cost estimate summaries are provided in Table 2.

Annual Costs

In order to compare project costs with project benefits, both must be placed on an equal basis. Costs are annualized by amortizing the Section 204 project first costs over the project life and annualizing any operations and maintenance costs for the beachfill project. Cost amortization used a ten year period of analysis with a capital recovery factor of 0.12716 applied to the first cost. Annual maintenance costs include management and redistribution of the beachfill and maintenance of the dune fencing and plantings. The Town of Newbury and the State already spend about \$20,000 annually for each of the two beaches redistribute sand after storm events to maintain a stable berm and dune face. Management of the Section 204 project beachfill would increase this annual maintenance effort as more sand has been added to the beaches. Maintenance costs for both plans were computed as a function of the beachfill volume and beachfill length, using the section 204 project construction unit cost, minus the amount spent currently without the project for this effort. Maintenance costs for the dune plantings and fencing were computed as five percent of the initial placement cost, for periodic replanting, replacing damaged fence, and managing the fence elevations or gaps for shorebirds. The annual costs for the two beachfill alternatives for each of the three construction methods are shown in Table 3.

TABLE 2 - Newburyport Harbor and Plum Island Beach, Massachusetts - Project Cost Comparison & Allocation

Project Cost Estimates as of 27 March 2009 160,000 Cubic Yard Plan - All to Newbury			Federal Base Plan Near-Shore Bar Placement Off Plum Island Center	Alternative A-1 Direct Placement on Beach at Plum Island Center Using Pump-off Hopper	Alternative A-2 Direct Placement on Beach at Plum Island Center Using 24" Hydraulic Pipeline	Alternative A-3 Direct Placement on Beach at Plum Island Center Using 20" Hydraulic Pipeline	Alternative A Direct Placement of 160,000 CY on Beach at Plum Island Center Average of 3 Methods
			Total Project Cost	Total Project Cost	Total Project Cost	Total Project Cost	Total Project Cost
Construction Contract	<u>Quantity</u>						
0001	Mob & Demob	1 LS	\$486,000	\$557,000	\$831,000	\$782,000	\$723,000
0002	Dredging 15-Foot Entrance Channel - Hopper Disposal at Plum Island Center - Newbury						
0002AA	Ordinary Material - Required	100,000 CY	\$ 7.52 \$806,000	100% \$1,383,000	100% \$1,031,000	100% \$1,173,000	\$1,196,000
0002AB	Ordinary Material - Allowable	60,000 CY	\$ 7.52 \$484,000	\$830,000	\$619,000	\$704,000	\$718,000
0003	Sand Fencing and Dune Grass Planting	2500 LF	\$ 80.00 \$200,000	\$ 80.00 \$200,000	\$ 80.00 \$200,000	\$ 80.00 \$200,000	\$200,000
	Total Contract Cost		\$1,776,000	\$2,970,000	\$2,681,000	\$2,859,000	\$2,837,000
	Contingencies		20% \$355,000	20% \$594,000	25% \$670,000	25% \$715,000	\$660,000
	Total Construction	160,000 CY	\$2,131,000	\$3,564,000	\$3,351,000	\$3,574,000	\$3,496,000
	Design Phase Costs						
	Plans and Specifications		\$60,000	\$80,000	\$80,000	\$80,000	\$80,000
	Engineering & Design		\$27,000	\$44,000	\$42,000	\$44,000	\$43,000
	Environmental Coordination		\$5,000	\$12,000	\$12,000	\$12,000	\$12,000
	Project Management during Design		\$35,000	\$55,000	\$55,000	\$55,000	\$55,000
	Specifications Surveys		\$148,000 \$21,000	\$224,000 \$33,000	\$222,000 \$33,000	\$224,000 \$33,000	\$182,000
	Construction Phase Non-Contract Costs						
	Engineering During Construction		\$21,000	\$36,000	\$34,000	\$36,000	\$35,000
	Project Management during Construction		\$43,000	\$71,000	\$67,000	\$71,000	\$70,000
	Pre-Dredge and After-Dredge Surveys		\$42,000	\$66,000	\$66,000	\$66,000	\$66,000
	Contracting Division		\$6,000	\$8,000	\$8,000	\$8,000	\$8,000
	Contract Administration and Safety		\$5,000	\$6,000	\$6,000	\$6,000	\$6,000
	Supervision & Inspection		\$58,000	\$69,000	\$69,000	\$69,000	\$69,000
	Travel and Miscellaneous		\$181,000 \$6,000	\$264,000 \$8,000	\$260,000 \$10,000	\$266,000 \$10,000	\$185,000
	Total First Cost		\$2,460,000	\$4,052,000	\$3,833,000	\$4,064,000	\$3,983,000
	First Cost Plus Interest During Construction	0.04625	<1 Mo = \$0 \$2,460,000	100% \$4,060,000	100% \$3,840,000	100% \$4,072,000	100% \$3,991,000
	Difference From Base Plan - §204 Project Implen % is §204			39% \$1,600,000	36% \$1,380,000	40% \$1,612,000	38% \$1,531,000
	§204 Project - Design Costs			\$76,000	\$74,000	\$76,000	\$75,000
	§204 Project - Construction Costs			\$1,524,000	\$1,306,000	\$1,536,000	\$1,455,000
	Non-Federal Cost Share for §204 Project			35% \$560,000	35% \$483,000	35% \$564,200	35% \$536,000
	Federal Share of §204 Project - Design & Construction			\$1,040,000	\$897,000	\$1,047,800	\$995,000

TABLE 2 (Continued) - Newburyport Harbor and Plum Island & Salisbury Beaches, Massachusetts - Project Cost Comparison & Allocation

Project Cost Estimates as of 27 March 2009 160,000 Cubic Yard Plan - Direct to Beaches 120,000 CY to Newbury - 40,000 CY to Salisbury			Federal Base Plan Near-Shore Bar Placement Off Plum Island Center	Alternative B-1 Split Placement on Beaches at Plum Island (Newbury) & Salisbury State Beach Using Pump-Off Hopper	Alternative B-2 Split Placement on Beaches at Plum Island (Newbury) and Salisbury State Beach Using 24" Hydraulic Pipeline	Alternative B-3 Split Placement on Beaches at Plum Island (Newbury) and Salisbury State Beach Using 20" Hydraulic Pipeline	Alternative B Split Placement on Beaches at Plum Island (Newbury) and Salisbury State Beach Average of 3 Methods		
Construction Contract	Quantity		Total Project Cost	Total Project Cost	Total Project Cost	Total Project Cost	Total Project Cost		
0001 Mob & Demob	1 LS		\$486,000	\$557,000	\$831,000	\$782,000	\$723,000		
0002 Dredging 15-Foot Entrance Channel - Hopper Disposal at Plum Island Center - Newbury									
0002AA Ordinary Material - Required	60,000 CY	\$ 7.52	\$806,000	75% \$830,000	75% \$619,000	75% \$704,000	75% \$718,000		
0002AB Ordinary Material - Allowable Disposal at Salisbury State Beach	60,000 CY	\$ 7.52	\$484,000	\$830,000	\$619,000	\$704,000	\$718,000		
0003AA Ordinary Material - Required Relocate Pipelines and Discharge	40,000 CY			25% \$553,000	25% \$412,000	25% \$469,000	25% \$478,000		
0004 Sand Fencing and Dune Grass Planting	3900 LF			\$ 80.00 \$312,000	\$ 80.00 \$312,000	\$ 80.00 \$312,000	\$312,000		
Total Contract Cost	160,000 CY		\$1,776,000	\$3,182,000	\$2,893,000	\$3,071,000	\$3,049,000		
Contingencies		20%	\$355,000	20% \$636,000	25% \$723,000	25% \$768,000	\$709,000		
Total Construction			\$2,131,000	\$3,818,000	\$3,616,000	\$3,839,000	\$3,758,000		
Design Phase Costs									
Plans and Specifications			\$60,000	\$80,000	\$80,000	\$80,000	\$80,000		
Engineering & Design			\$27,000	\$46,000	\$44,000	\$46,000	\$45,000		
Environmental Coordination			\$5,000	\$12,000	\$12,000	\$12,000	\$12,000		
Project Management during Design			\$35,000	\$55,000	\$55,000	\$55,000	\$55,000		
Specifications Surveys		\$148,000	\$21,000	\$226,000	\$33,000	\$226,000	\$33,000		
Construction Phase Non-Contract Costs									
Engineering During Construction			\$21,000	\$38,000	\$36,000	\$38,000	\$37,000		
Project Management during Construction			\$43,000	\$76,000	\$72,000	\$77,000	\$75,000		
Pre-Dredge and After-Dredge Surveys			\$42,000	\$66,000	\$66,000	\$66,000	\$66,000		
Contracting Division			\$6,000	\$8,000	\$8,000	\$8,000	\$8,000		
Contract Administration and Safety			\$5,000	\$6,000	\$6,000	\$6,000	\$6,000		
Supervision & Inspection			\$58,000	\$69,000	\$69,000	\$69,000	\$69,000		
Travel and Miscellaneous		\$181,000	\$6,000	\$271,000	\$8,000	\$274,000	\$9,000		
Total First Cost			\$2,460,000	\$4,315,000	\$4,107,000	\$4,339,000	\$4,254,000		
First Cost Plus Interest During Construction	0.04625	<1 Mo = \$0	\$2,460,000	100% \$4,323,000	100% \$4,115,000	100% \$4,347,000	100% \$4,262,000		
Difference From Base Plan - §204 Project Implem % is §204				43%	\$1,863,000	40%	\$1,887,000	42%	\$1,802,000
§204 Project - Design Costs					\$78,000		\$78,000		\$77,000
§204 Project - Construction Costs					\$1,785,000		\$1,809,000		\$1,724,000
Non-Federal Cost Share for §204 Project				35%	\$652,100	35%	\$660,500	35%	\$631,000
Federal Share of §204 Project - Design & Construction					\$1,210,900		\$1,226,500		\$1,171,000

TABLE 3 - Newburyport Harbor and Plum Island and Salisbury Beaches, Mass Annual Cost of Alternative Plans				
Project Cost Estimates as of 27 March 2009 160,000 Cubic Yard Plan - All Direct Placement on Plum Island Beach in Newbury	Alternative A-1 Direct Placement Using Pump-off Hopper	Alternative A-2 Direct Placement Using 24" Hydraulic Pipeline	Alternative A-3 Direct Placement Using 20" Hydraulic Pipeline	Alternative A Direct Placement Average of 3 Methods
Section 204 Project Cost (Total Cost Minus Base Plan) (Includes Interest During Construction)	\$1,600,000	\$1,380,000	\$1,612,000	\$1,531,000
ANNUAL COSTS Interest and Amortization 0.12716 Annual Maintenance - Plum Island Beach 2500 LF Sand Management (Redistribution) Fencing and Plantings Total Annual Costs	\$203,500 \$23,700 \$10,000 \$237,200	\$175,500 \$23,700 \$10,000 \$209,200	\$205,000 \$23,700 \$10,000 \$238,700	\$194,700 \$23,700 \$10,000 \$228,400
Project Cost Estimates as of 27 March 2009 160,000 Cubic Yard Plan - Direct Placement Split on Two Beaches 120,000 CY to Newbury - 40,000 CY to Salisbury	Alternative B-1 Split Placement Using Pump-Off Hopper	Alternative B-2 Split Placement Using 24" Hydraulic Pipeline	Alternative B-3 Split Placement Using 20" Hydraulic Pipeline	Alternative B Split Placement Average of 3 Methods
Section 204 Project Cost (Total Cost Minus Base Plan) (Includes Interest During Construction)	\$1,863,000	\$1,655,000	\$1,887,000	\$1,802,000
ANNUAL COSTS Interest and Amortization 0.12716 Annual Maintenance - Plum Island & Salisbury 3900 LF Sand Management (Redistribution) Fencing and Plantings Total Annual Costs	\$236,900 \$33,300 \$15,600 \$285,800	\$210,400 \$33,300 \$15,600 \$259,300	\$240,000 \$33,300 \$15,600 \$288,900	\$229,100 \$33,300 \$15,600 \$278,000

Economic Analysis

Section 204 gives the Corps the authority to construct projects to reduce storm damage to property, restore, enhance or create habitat, or for other limited purposes, in connection with the dredging of an authorized navigation project. Economic justification is a requirement for Federal participation in such projects. The cost of the §204 project is measured as the difference between the cost of Federal Base Plan for disposal of the dredged materials versus the cost of the project including beneficial use of the dredged materials. For storm damage reduction projects such as at Newburyport Harbor, that is the difference between nearshore disposal and direct placement of the material on the beaches. The difference in cost must be justified by the damages that will likely be prevented by the project's construction.

The beaches in the study area are undergoing long term erosion at a rate of about 13 feet per year at Newbury and about 3 feet per year at Salisbury, even with the nearshore placement of dredged materials off the beaches over the last several decades and more recent state and municipal efforts to place sand on the beaches after storm events. If more effective protective measures are not implemented, it is anticipated that long term erosion will continue at the current rate and eventually threaten the shorefront structures along Northern Boulevard in Newbury and the sewer and water system under the road, as well as the shorefront structures along Salisbury Beach.

Although the period of analysis for this study is ten years, direct placement of the dredged material on the two beaches as recommended by the alternatives, prevents or delays coastal erosion damages for approximately four to five years at Newbury and two years at Salisbury, based on the estimate retreat rates. The anticipated maintenance cycle for the harbor's entrance channel is about five years.

Benefits are calculated by comparing the without-project and with-project conditions. The without project condition is the continued placement of the dredged material in the nearshore bar system. The with-project condition is the delay in further loss and damage during the period the dredged material is expected to remain on the beach. This delay in loss and damage has been evaluated for the 26 structures in Newbury and the 14 structures in Salisbury that will be impacted over the 10-year period of analysis from 2010, when construction is expected to be completed, and 2019. Benefits calculated included the value of the structures lost or damaged, the value of the land lost, the cost to the State or municipality to acquire the lost property, relocation assistance costs for property owners, costs for demolition and disposal of damaged structures, and reduced State and municipal emergency response costs. At Newbury the cost of repair and rehabilitation of the municipal water and sewer system that runs beneath Northern Boulevard is also included. Each of these is described briefly below. The detailed economic analysis is provided in Appendix G.

Structural Damages and Losses Avoided

Assessor's records for both municipalities checked by field observations were used to estimate the depreciated replacement value of the structures that would be lost or damaged during the period of analysis. The method for estimating damages based on long term erosion is the timing of when the erosion reaches the seaward edge of the structure. When this occurs,

the structure is considered a total loss and is not rebuilt. Appendix G shows the detailed calculations for each of the structures. An average annual benefit for both beaches combined of about \$346,900 was calculated.

Land loss Avoided

Land losses would occur at both beaches. Under the with-project condition these losses would be delayed by the beachfill. The value of the loss was estimated from average values obtained from the municipal assessors. An average annual benefit for both beaches combined of about \$439,700 was calculated.

Property Acquisition Costs Avoided

Lost and severely damaged properties would need to be acquired by the State or municipality either in fee or by abandonment. Costs for real estate inventory, appraisal and processing would need to be borne for the transfer. A cost of \$5,000 per property was used, consistent with estimates made for similar coastal storm damage reduction projects in New England, yielding an average annual benefit for both beaches combined of about \$6,200.

Relocation Assistance Costs Avoided

Federal and State law requires that relocation assistance be provided to property owners when their property is taken by the government. Some level of assistance will be required even where the properties have been lost to storm damage. Property owners will need to relocate their residence or business, salvage, repair or replace lost furnishings and belongings, and the expense of the time to accomplish this. An average annual benefit for both beaches combined of about \$18,600 was calculated.

Structure Demolition and Disposal Costs Avoided

Structures destroyed or severely damaged and condemned must be demolished to the extent not already accomplished by the storm and the debris removed and disposed. This includes the buildings, outbuildings, supports and foundations, paved surfaces, fuel tanks, and utility connections. An average annual benefit for both beaches combined of about \$62,000 was calculated.

State and Municipal Emergency Response Costs Avoided

Major storms with property damage or overwash events result in emergency response costs for evacuation, police security and clean-up of debris and sand. Beachfill would reduce these costs by protecting the shorefront properties and reducing overwash. It was estimated that about one-fourth of Newbury's annual average recent emergency response costs would be avoided during the period of analysis. A similar figure was used for Salisbury. This yielded about \$90,000 in average annual benefits for both beaches combined.

Municipal Water & Sewer System Repair and Rehabilitation Costs Avoided

The water and sewer system beneath Northern Boulevard is vulnerable to damage from saltwater infiltration from overwash or flooding and damage to structures connected to the

system as the beach erodes further. Based on erosion rates and location of the line it was estimated that damages would begin in about 2015 and continue through the end of the period of analysis. A cost of \$300 per linear foot of the lines on the island was used for repairs. The average annual equivalent value for these damages equals about \$72,000. Additional costs, such as emergency water supply and temporary relocation costs for undamaged properties during loss of service were not calculated.

Economic Benefit Summary

Total economic benefits were calculated for two beneficial use alternatives. Plan A consists of placing all 160,000 CY of dredged sand on Plum Island Beach at Newbury. Plan B consists of splitting the available sand between Plum Island Beach (120,000 CY) and Salisbury Beach (40,000 CY). The average annual benefits for each category for each plan and beach are shown in Table 4. Annual Benefits are described in detail in the Economics Analysis – Appendix G (see Tables G-1 through G-14)

TABLE 4 Newburyport Harbor Section 204 Beneficial Use Project Economic Benefit Summary – Annual Benefits				
Benefit Categories	PLAN A	PLAN B – Both Beaches		
	Plum Island	Plum Island	Salisbury	Combined
Structural Loss	\$271,100	\$164,100	\$182,700	\$346,800
Land Loss	\$588,500	\$416,100	\$23,600	\$439,700
Property Acquisition	\$6,200	\$3,900	\$2,300	\$6,200
Relocation Assistance	\$16,700	\$11,600	\$7,000	\$18,600
Structure Demolition	\$62,300	\$38,600	\$23,400	\$62,000
Emergency Response Costs	\$45,000	\$45,000	\$45,000	\$90,000
Plum Island Water & Sewer	\$72,000	\$72,000	\$0	\$72,000
Total Benefits	\$1,063,800	\$751,300	\$284,100	\$1,035,400

Benefit-Cost Analysis

Economic justification is determined by comparing benefits with costs. To be eligible for Federal participation in project implementation under Section 204, annual project benefits must be equal to or greater than annualized project costs, as indicated by a benefit to cost ratio of 1:1 or greater. Project costs were averaged across the three direct placement methods, as shown above in Table 2; yielding average annual costs of \$230,800 for Plan A and \$281,700

for Plan B (see Table 3). As shown in Table 5 below, each of the beneficial use alternatives, including the two beaches in Plan B evaluated separately or combined, meet this test.

TABLE 5 Newburyport Harbor Section 204 Beneficial Use Project Benefit-Cost Analysis				
Benefit Categories	PLAN A Plum Island	PLAN B – Both Beaches		
		Plum Island	Salisbury	Combined
Annual Costs	\$228,400	\$198,200	\$79,900	\$278,000
Annual Benefits	\$1,063,800	\$751,300	\$284,100	\$1,035,400
Net Annual Benefits	\$835,400	\$553,100	\$204,200	\$757,400
Benefit-Cost Ratio	4.7	3.8	3.6	3.7

Environmental Impacts

An Environmental Assessment, Finding of No Significant Impact, and Clean Water Act Section 404(b)(1) Evaluation were prepared in 2007 for the maintenance dredging with the disposal nearshore as the Federal Base Plan. This EA has been updated for the Section 204 beneficial use features and is included with this Detailed Project Report. Construction windows have been established in coordination with Federal and State agencies for protection of aquatic resources in the dredging area (no work from March 15 and June 30), and for protection of shorebirds and other resources along the beach (no work from 1 April to 31 August). Work would therefore occur between 1 September and 14 March. With these construction windows, beach slopes that consider shorebird needs, and the State and municipal beach management plans, no unavoidable or significant environmental impacts are anticipated from the beachfill project.

Real Estate Requirements

A Real Estate Planning Report is included as Appendix D. The report describes the interests required for project implementation and identifies the properties involved, their value, and ownership. There are four types of easements that will be required. A Temporary Work Area Easement must be secured for all areas needed for access and staging for construction equipment and operations. At Newbury these areas consist of the public parking area and areas adjacent to Groin #1 at the seaward terminus of the Plum Island Turnpike (Center Island). At Salisbury these consist of the State parking area and its access immediately north of the shore end of the Federal jetty and the beach areas adjacent to the north jetty.

A Perpetual Beach Storm Damage Reduction Easement would be required for all properties included in the beachfill area, whether they are currently publicly or privately held. This easement is needed for construction, operation and maintenance of the project, and for perpetual (permanent) public use and access to the beach. Restrictions on public access for policing, endangered species protection, public safety, and general public management of the beaches are covered under the approved Beach Management Plans for the Newbury section of Plum Island and for Salisbury State Beach.

A Temporary Non-Exclusive Access Road Easement for access to the beachfill sites for construction equipment and vehicles. At Newbury these areas consist of at least one of the existing public rights-of-way between Northern Boulevard and the beach along the 2,500 foot long beachfill area in Newbury. At Salisbury they consist of the existing public rights-of-way at the extensions of Murray Street and Fowler Street out to the beach at either end of the beachfill area.

Temporary Pipeline Easements must be secured for all areas over which the discharge pipeline would cross between the jetties and the beachfill areas. The areas all held by either the State (DCR), City of Newburyport or Town of Newbury in the case of Plum Island Beach, or by the State (DCR) or Town of Salisbury in the case of Salisbury State Beach.

State policy requires that private shorefront property owners receiving State-funded sand on their beaches to protect their homes execute easements for construction, public access and beach management, without cost to the State, as a condition of receiving the beachfill. The State will require the property owners to donate those interests.

The project Sponsor, the Massachusetts Department of Conservation and Recreation is aware of these requirements and will provide the necessary real estate interests before bids are solicited for construction. The DCR has legal authority to acquire these interests, and is the State's largest landowning agency. The DCR has sponsored many Corps projects over the years, most recently the Westport Harbor Section 107 Navigation Improvement Project, is familiar with Federal real estate requirements, and has always met its responsibilities as a Sponsor.

Cultural Resources Impacts

No impacts to cultural resources are expected with the project, either under the Federal Base Plan or with the Section 204 beneficial use alternatives for beachfill at both Plum Island and Salisbury Beaches. The project has been coordinated with the State Historic Preservation Office and the Massachusetts Bureau of Underwater Archaeological Resources. The Federal Base Plan includes use of the Plum Island nearshore placement site for the upcoming maintenance dredging project. This plan would be followed should the beneficial use alternative not be pursued. The Salisbury nearshore placement site would not be used until the next maintenance cycle.

Additional coordination was held with the MA BUAR in June 2009, and confirmed that there is an active State permit for research concerning a wreck site near the Salisbury Beach nearshore disposal site. However, disposal at the Salisbury site is not considered an adverse

impact upon significant cultural resources. If future maintenance operations propose to use the Salisbury nearshore site, then further coordination with the MA BUAR will be initiated and the permittee will be notified of the proposed disposal activities that time.

Maintenance dredging of the Newburyport Harbor channel with disposal of dredged material at the previously used Plum Island or Salisbury Beach nearshore disposal sites, or as beachfill material on the two beaches, is unlikely to have an effect upon any structure or site of historic, architectural or archaeological significance as defined by the National Historic Preservation Act of 1966, as amended.

CONCLUSIONS

This report concludes that there is Federal interest in proceeding with implementation of a Section 204 project for the beneficial use of dredged material from Newburyport Harbor. The analysis indicates that nourishment of both Plum Island Beach at Newbury and Salisbury State Beach in Salisbury is feasible, environmentally acceptable, and economically justified.

The Corps, under its Section 204 continuing authorities program may study, design and implement projects to reduce storm damage to property in connection with the dredging of an authorized navigation project. Storm damage reduction was added as a Section 204 project purpose by Section 2037 of the Water Resources Development Act of 2007. The Corps may share in the costs of design and construction in excess of the most cost effective means of carrying out dredging of the Federal navigation project (the Federal Base Plan – in this case nearshore bar placement).

The non-Federal Sponsor, the Massachusetts Department of Conservation and Recreation, is capable and willing to enter into a Project Partnership Agreement to share in the cost of construction and provide all real estate interests. For this project the sole project purpose and all evaluated project benefits are for storm damage reduction to private properties and the utilities that service those properties. Cost sharing for project implementation, exclusive of any real estate costs, where the project purpose and benefits are for coastal storm damage reduction, is 65 percent Federal and 35 percent non-Federal, as specified in Section 103(c) of the Water Resources Development Act of 1986. Costs and cost-sharing would depend on the construction method bid, as shown in Table 6.

This report also concludes that the Section 204 beachfill will only provide temporary protection for the two beach areas nourished. It is unlikely that similar use of dredged material from future maintenance cycles for nourishment of these areas would supply enough sand to provide a long-term solution for the erosion problems being experienced on Plum Island and Salisbury. Accordingly additional studies are recommended under more encompassing State or Federal authorities to address long term needs for shore protection for these and neighboring communities for a more permanent and sustainable solution to coastal erosion in the region. The Town of Newbury has already requested the Corps undertake a Section 103 hurricane and storm damage reduction study for the Merrimack River area. The State has suggested an even broader Regional Sediment Management Study for northern Essex County that would likely cover the entire littoral cell north of Cape Ann to Hampton, New Hampshire.

**TABLE 6
Newburyport Harbor Section 204 Beneficial Use Project
Project Implementation Cost-Sharing**

	PLAN A		PLAN B	
	Plum Island Only		Plum Island & Salisbury	
	Most Costly Method	3-Method Average	Most Costly Method	3-Method Average
First Cost of 204 Construction	\$1,612,000	\$1,531,000	\$1,887,000	\$1,802,000
Federal Share 65 Percent	\$1,047,800	\$995,000	\$1,226,500	\$1,171,000
Sponsor Share 35 Percent	\$564,200	\$536,000	\$660,500	\$631,000

Section 103 of the 1962 River and Harbor Act, as amended, provides authority to the Corps of Engineers to plan and construct small hurricane and storm damage reduction projects that have not already been specifically authorized by Congress. A project is accepted for construction only after detailed investigation clearly shows its engineering feasibility, environmental acceptability, and economic justification. Each project must be complete within itself, not a part of a larger project. The maximum Federal expenditure per project is \$5 million, which includes both planning and construction costs. Costs of lands, easements, and operation and maintenance are non-federal. To qualify for this program, the shoreline to be protected must be publicly owned or used. Private land may qualify, however, if the project is necessary to protect nearby public facilities. The object is to retain or restore existing land, not to create new land. The storm damage must be the result of wind-driven waves and/or ocean tidal action, and cannot be the result of stream flow. The Town of Newbury has already requested initiation of a Section 103 study.

For Regional Sediment Management (RSM), the U. S. Army Engineer Research and Development Center (ERDC) manages a Regional Sediment Management Research Program to provide USACE with the tools and knowledge it needs to manage sediment resources on a regional basis in order to achieve high performance water resources projects that are economically and environmentally sustainable. There are a number of ongoing demonstration projects mostly associated with Corps Federal navigation channels.

Section 111 of the River and Harbor Act of 1968, as amended, provides authority for the Corps of Engineers to develop and construct projects for prevention or mitigation of damages caused by Federal navigation work. This applies to both publicly and privately owned shorelines located along the United States coastline and Great Lakes. This authority may not be used to construct projects for the prevention or mitigation of shore damage caused by river

bank erosion and/or vessel-generated wave wash, or shore damage caused by non-Federal navigation projects, or erosion of lands accreted since construction of the Federal project. Each project is limited to a Federal cost of not more than \$5 million. Federal funds may only be used to address the shore damages caused by the Federal navigation works. If the erosion or any portion of it is determined to result from other causes, including the actions of other parties, sea level rise or other natural forces, which would result in erosion in the absence of the Federal project, then the sponsor must provide 100 percent of that portion of the cost. Specific Congressional authorization is required for meritorious projects for which the Federal share of cost would exceed the \$5 million limit. Cost-sharing for implementation is at the same percentage as for the Federal navigation project.

Corps projects can also be specifically authorized by Congress. Separate study authorization and construction authorization are required. The first step of a specifically authorized study is the completion of a 905(b) report which makes an initial determination of Federal interest and determines if there is a qualified non-Federal sponsor willing to cost share the feasibility study. Feasibility studies are cost shared 50/50 and the non-Federal share may be accomplished through a combination of cash and in-kind services. As with the other authorities, the feasibility study must identify a project which is cost effective based on Federal requirements and permissable based on Federal, state and local requirements.

RECOMMENDATION

The recommendation of this feasibility level investigation is that disposal of dredged material from maintenance dredging of the existing Federal navigation project for Newburyport Harbor, Newburyport, Massachusetts, be beneficially used under the Continuing Authority of Section 204 of the Water Resources Development Act (WRDA) of 1992, as amended by Section 2037 of WRDA 2007, as beachfill on a 2,500 foot section of Plum Island Beach in Newbury and at a 1200 to 1400 foot section of Salisbury State Beach in Salisbury. The beachfill would be used at both sites to widen and increase the elevation of the beach berm to provide a period of protection to shorefront properties. Should sufficient material be made available by the dredging project, some material may also be used to buttress the dune face at either or both sites to provide additional protection and any new dune surface would be protected by plantings and sand fencing. The Massachusetts Department of Conservation and Recreation has agreed to execute a Project Partnership Agreement with the Government for construction and future maintenance of the project as the non-Federal Sponsor. The Sponsor would ensure management of the beaches consistent with public use and access and in accordance with measures to protect shorebirds.

It is also recommended, that should the Commonwealth and the three municipalities (Newbury, Newburyport and Salisbury) agree, a more comprehensive study be conducted for Newburyport Harbor and its associated littoral system to determine if a wider-range and longer-term solution exists to address the beach erosion and storm protection needs of this section of the Massachusetts coast, including Salisbury, Newburyport, Newbury and perhaps communities further south along Ipswich Bay to Cape Ann.

The recommendations contained herein reflect the policies governing formulation of individual projects and the information available at this time. They do not necessarily reflect program and budgeting priorities inherent in local and state programs, or the formulation of a national Civil Works water resources program. Consequently, the recommendations may be modified at higher levels within the Executive Branch before they are used to support funding. However, prior to executing a Project Cooperation Agreement, the non-Federal Sponsor will be advised of any modifications and will be afforded an opportunity to comment further.

LIST OF REFERENCES

Massachusetts Department of Conservation and Recreation - Salisbury Beach State Reservation Barrier Beach Master Plan, Prepared by Vine Associates, September 2008

U.S. Army Corps of Engineers, ERDC, Vicksburg, MS, Beach Erosion along Plum Island, MA, and Recommended Newburyport Harbor Navigation Project Action, DOTS Study, Nicholas C. Kraus, PhD, June 2008.

Vine Associates – EIR Waiver Request and Notice of Project Change, Filed with the Massachusetts Environmental Policy Act Unit, June 13, 2009

Vine Associates - City of Newburyport - Plum Island Beach Management Plan. Submitted to the City of Newburyport, 2009.

Vine Associates - Town of Newbury - Plum Island Beach Management Plan. Submitted to the Town of Newbury, 2009.

Weare, Nancy V., Plum Island, The Way It Was, Second Edition, Newburyport Press, Inc., 1996.

See Appendix A for Pertinent Correspondence and Public Involvement

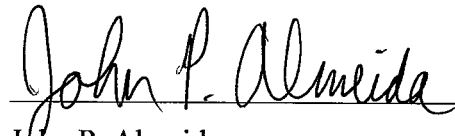
See Appendix B for Corps Civil Works references.

See Appendix J for State and Municipal Regulatory Approvals

CERTIFICATION OF REVIEW FOR LEGAL SUFFICIENCY

The Detailed Project Report and Environmental Assessment, Finding of No Significant Impact and Section 404(b)(1) Evaluation for the maintenance dredging of the Newburyport Harbor Federal Navigation Project with beneficial use of the dredged material as beachfill at Plum Island Beach in Newbury and Salisbury State Beach in Salisbury, Massachusetts has been reviewed by the Office of Counsel, New England District and is found sufficient.

Date: 9/16/09


John P. Almeida
Assistant District Counsel

**ENVIRONMENTAL ASSESSMENT
FINDING OF NO SIGNIFICANT IMPACT
AND SECTION 404(b)(1) EVALUATION**

**NEWBURYPORT HARBOR AND PLUM ISLAND AND
SALISBURY BEACHES**

**LONG TERM MAINTENANCE DREDGING WITH
BENEFICIAL USE OF DREDGED MATERIAL FOR
BEACH NOURISHMENT**

**NEWBURY, NEWBURYPORT AND SALISBURY,
MASSACHUSETTS**

Environmental Resources Section
Engineering/Planning Division
U.S. Army Corps of Engineers
New England District
Concord, Massachusetts

September 2009

**Newburyport Harbor Maintenance Dredging and Section 204 Beneficial Use Project
Environmental Assessment – September 2009**

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FINDING OF NO SIGNIFICANT IMPACT

CLEAN WATER ACT SECTION 404(b)(1) EVALUATION

1.0. Introduction

This Environmental Assessment is written for the proposed maintenance dredging of the entrance channel to Newburyport Harbor in Massachusetts. The proposed dredging involves the removal of about 160,000 cubic yards of clean sand from a recurring sandbar seaward of the jetties. A hopper dredge, large hydraulic pipeline dredge or mechanical dredge will perform the work. The sand will be disposed of at either of five disposal sites: two nearshore areas off of Plum Island Beach, a nearshore area off Salisbury Beach, a beach area on Plum Island, and a beach area on Salisbury Beach. The project sites are shown in Figure EA-1. The two beach disposal sites are candidates for beach nourishment under the Corps of Engineers beneficial use of dredge material program (§204).

The New England District of the Corps of Engineers has examined environmental resources as part of the planning and development of the proposed work in compliance with the National Environmental Policy Act of 1969 and appropriate Federal laws, Executive Orders and regulations. This report provides an assessment of environmental impacts and alternatives considered for the proposed dredging and future maintenance dredging actions involving the removal of the recurring sandbar located at the entrance to the Merrimack River (shown in Figure EA-1 as the “dredge area”).

2.0. Project History and Existing Project

The existing project was adopted in 1828, and was supplemented by enactments through 1992. The south jetty was completed in 1905, and the north jetty was completed in 1915. From 1968 to 1970 both jetties underwent major rehabilitation to restore them to authorized dimensions. In 1970 the south jetty was extended landward and a rock revetment was constructed to protect the inner end of the structure. The authorizing documents for the project are the River and Harbor Act dated 1828, and House Document No. 703, 76th Congress, 3rd Session approved by the River and Harbor Act of 2 March 1945.

The existing Federal project in Newburyport Harbor, as shown in Figure 1, consists of:

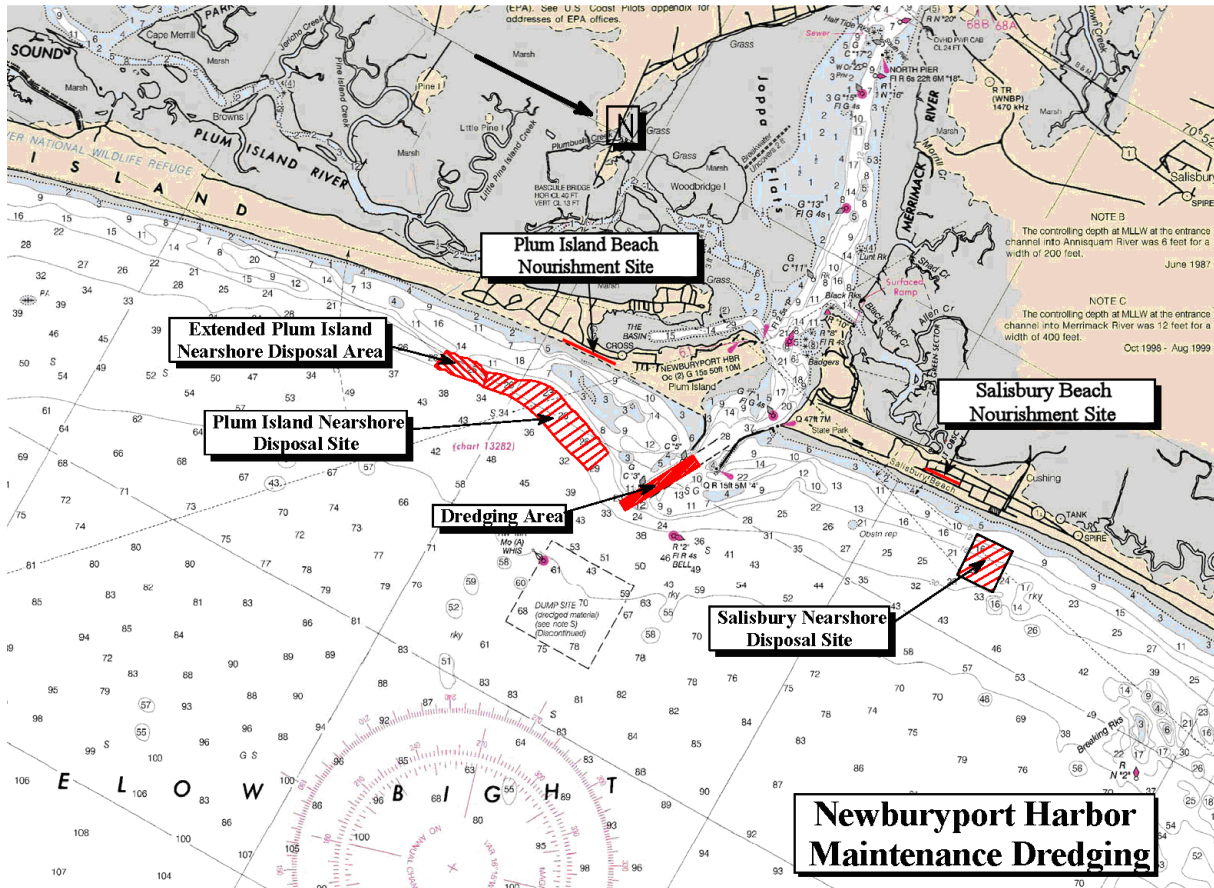
- Two jetties, one projecting 4,118 feet from the north shore, the other projecting 2,445 feet from the south shore, converging until 1,000 feet apart.
- The partial closing of Plum Island Basin by a timber dike and similar dikes extending from either side of Woodbridge Island.
- A channel 400 feet wide and 15 feet deep at mean low water (MLW) through the bar, then 200 feet wide and 9 feet deep at MLW to and including a widened turning basin in front of the city wharves.

The maintenance dredging history of the 15-foot and 9-foot Federal channels at Newburyport Harbor is summarized in Table EA-1. Work is performed on an "as-needed" basis in response to severe shoaling conditions. Disposal options have included offshore open

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water disposal by hopper dredge, nearshore disposal by hopper dredge, or disposal adjacent to the channel by sidecasting dredge. Section 5.0, Alternatives, discusses the various nearshore, open water, and beach disposal sites.

Figure EA-1. Dredging Area, Nearshore Disposal Sites, and Beach Disposal Sites.



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Table EA-1 Maintenance Dredging History		
Item	Work Dates	Quantity in cubic yards (y³)
Maintenance Dredging of entrance channel by Government Hopper Dredge HYDE	26 July - 12 August 1961	250,000 y ³
Maintenance Dredging of entrance channel by Government Hopper Dredge HYDE	18 - 25 May 1964	131,000 y ³
Maintenance Dredging of entrance channel by Government Hopper Dredge HYDE	3 - 16 May 1966	50,000 y ³
Maintenance Dredging of entrance channel by Government Hopper Dredge HYDE	2 - 13 July 1968	86,000 y ³
Maintenance Dredging of entrance channel by contract	20 August - 16 October 1970	106,190 y ³
Maintenance Dredging of entrance channel by Government Hopper Dredge HYDE	7 - 30 July 1970	183,230 y ³
Maintenance Dredging of entrance channel by Government Hopper Dredge HYDE	15 August - 3 September 1973	93,650 y ³
Maintenance Dredging of entrance channel by Government Hopper Dredge DAVISON	16 June - 3 July 1977	54,000 y ³
Maintenance Dredging of entrance channel by privately owned Hopper Dredge ATCHAFALAYA	19 June - 1 July 1981	102,600 y ³
Maintenance Dredging of entrance channel by privately owned Hopper Dredge MERMENTAU	9 - 26 August 1983	123,500 y ³
Maintenance Dredging of entrance channel by privately owned Hopper Dredge NORTHERLY ISLAND	30 August - 6 September 1983	154,000 y ³
Maintenance Dredging of entrance channel by privately owned Hopper Dredge GULF COAST TRAILING	August - September 1991	135,290 y ³
Maintenance Dredging of entrance channel by privately owned Hopper Dredge NORTHERLY ISLAND	26 - April - 10 May 1993	125,040 y ³
Maintenance Dredging of the 15-foot entrance channel by private contractor	8 – 26 September 1996	125,386 y ³
Maintenance Dredging of the 15-foot entrance channel by privately owned hopper dredge ATCHAFALAYA	28 July – 16 August 1999	145,017 y ³

3.0. Need for Project Maintenance

Hydrographic surveys of the entrance channel are performed periodically to identify shoals in the Federal Navigation Project (FNP). Over time, the project shoals sufficiently to present a hazard to navigation. Under certain tidal conditions, seas become violent at the sand bar in the entrance channel. Under these conditions, vessels using the harbor are subject to unsafe conditions which may result in hazardous situations and damages. Dredging will restore navigability to the channel and alleviate these potentially hazardous conditions.

4.0. Proposed Project

The proposed work involves dredging about 160,000 cubic yards of sand from the bar in the 15-foot deep, 400 foot wide entrance channel to Newburyport Harbor (Figure EA-1). The dredged material is clean medium-grained gray/brown sand (Appendix H). Future maintenance dredging is expected to range from 50,000 cubic yards to 200,000 cubic yards. Based on past efforts, work will be required every three to four years.

The sand will be removed by a hopper dredge or a mechanical dredge and disposed of at one of five potential disposal sites. Three sites are located in shallow nearshore waters, while two sites are located on beaches adjacent to the entrance channel of the Merrimack River. Two of the nearshore disposal areas are located to the south of the channel adjacent to Plum Island Beach (Figure EA-1). The northernmost Plum Island Beach site is 1.5 nautical miles long and located between the 20-foot MLW and 30-foot MLW contours east of Plum Island Beach. This site has been successfully used in the past for disposal of dredged material. The southernmost Plum Island Beach site is approximately 0.5 nautical miles long and is located along the 15-foot contour. The third nearshore disposal area is located to the north of the channel. It is located east of Salisbury Beach along the 20-foot depth contour (Figure EA-1). The use of these sites would place the sandy dredged material in areas that could serve as nearshore berms, allowing for the reintroduction of sandy material to the littoral system and providing a potential supply of sand for transport landward. The two beach nourishment areas are located to the north and south of the channel. The Plum Island beach site is a 2,500 foot long stretch of beach extending northerly from State Groin #1 at the seaward terminus of the Plum Island Turnpike in the Town of Newbury, while the Salisbury Beach site is an approximately 1400 foot long stretch of beach to the north of the inlet in the Salisbury Beach State Reservation located between Murray Street and Fowler Street.

All 5 disposal areas described above are feasible alternatives for the proposed project. However, beach nourishment costs for this project are significantly more than the nearshore disposal alternatives. The proposed project for the 2009-2010 dredging season will place 120,000 cy of sandy material on the Plum Island Beach site and 40,000 cy of sandy material on the Salisbury Beach site. The placement of the sandy dredge material on the beaches is considered a practice of beneficial re-use and therefore qualifies this project to utilize the Corps §204 authority for beneficial use of dredged material. The beach disposal areas identified were selected as candidate sites for sand placement based on the need to alleviate beach erosion.

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Dredging will occur during a one to two to three month period depending on the availability of funds. This assessment shall be reviewed periodically to determine its continuing applicability. At the time of the preparation of this assessment, no private or public organizations expressed an interest for dredging concurrent with or immediately after the Corps dredging.

5.0. Alternatives

5.1 No Action Alternative

The only alternative to maintenance dredging of the Newburyport Harbor entrance channel is the No Action alternative (not maintaining the channel). This would allow the shoaling to remain, along with extremely hazardous conditions. The fishing fleet will suffer long term increased economic costs from delays. The businesses of party boat operators may be damaged by cancellations due to rough seas at the entrance channel, resulting in long-term financial losses. Hazardous sea conditions near the shoaled areas will continue to cause unsafe conditions and endanger small craft. Should the maintenance dredging proceed without the beneficial use beach placement sites, it would need to rely on the nearshore placement sites.

5.2 Alternative Dredging Methods

There are a number of dredging methods that could be employed at Newburyport Harbor. A mechanical dredge operates from a stationary position while removing the material with a clamshell bucket and loading it into scows which transport it to the disposal site. A hydraulic pipeline dredge remains stationary while it pumps the material through a pipeline to the disposal area. A hydraulic sidecasting dredge moves through the dredging area and pumps the material into open water abeam of the dredge. A hopper dredge moves through the dredging area, removing the material from the bottom and pumping it into the hopper. When the hopper is full the dredge proceeds to the disposal site and empties the material through bottom opening doors. A pump-off configured hopper dredge removes the material in the manner of a typical hopper dredge, but has the ability to pump the material ashore by connecting to a pipeline anchored off the receiving beach.

Small Hydraulic Pipeline Dredge: Small hydraulic dredges, of the type typically used in New England waters, are unable to work safely in the high-energy wave action of the Newburyport Harbor entrance channel. These dredges anchor using spuds or anchor and cable systems and have limited mobility and working reach, requiring a tug to move the dredge from area to area within the channel being dredged. Working only during periods of relative calm would result in project delays and additional cost and would make it less likely that the project could be accomplished within a typical dredging window. Working during periods of unpredictable and severe ocean swells would pose a threat to dredge personnel and equipment given the anchoring and positioning systems these dredges employ. Vessel traffic would be adversely impacted by stationary equipment, cables and pipeline in the channel for an extended period. Therefore the use of a small hydraulic pipeline dredge for this project is not considered practical.

Large Hydraulic Pipeline Dredge: If a pipeline dredge is to be used, it would need to be of the larger types that typically work in more southern waters on large channel or offshore borrow dredging projects. These dredges typically have pump and pipeline diameters of 20 to 27 inches or more and have a much larger dredge hull and much more robust anchoring

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systems that could be operated stably in the sea conditions of the Newburyport entrance. A pipeline would extend from the working dredge into the inlet to the shore end of the jetties, where it would cross the jetty and transition to a land line extending along the beaches to the discharge area. An A-frame barge would be used to position the floating pipe in the inlet. Heavy equipment such as a small dozer would be used to lay and extend the pipe on the beach, form toe dikes along the discharge area to minimize loss of beach-fill material to the surf, and to spread and grade the material to the finished elevations and slopes.

Sidecast Dredge: The use of a side-casting dredge is also considered impractical. A side-casting dredge would not be able to remove the material far enough away from the dredging area to provide effective maintenance. Conditions on the outer bars at the river's mouth could be expected to reshore this channel in a short period of time. Sidecast dredges are more appropriate for situations where longshore transport, wind and wave directions are relatively constant and unidirectional; not the situation found at Newburyport.

Mechanical Bucket Dredge: A mechanical dredge utilizing scows to transport and dispose of material for use in nearshore disposal would be able to effectively dredge the project area. However, such a dredge plant could not directly place the material on the beaches and would only be used if the nearshore disposal sites were the preferred plan.

Small Split-Hull Hopper Dredge: A hopper dredge would be an effective dredging method in the Merrimack River. Historically, maintenance dredging of the entrance channel has been performed by small class, self-propelled hopper dredges. Hopper dredges are less subject to damage from wave action and have little impact on vessel traffic because they dredge while underway, and do not employ anchoring devices while working in the channel. A small hopper dredge using split hull discharge could be used if the preferred disposal plan involved use of the nearshore sites offshore of the beaches.

Large Pump-Off Hopper Dredge: For hopper dredging with direct placement on the beaches a large-class hopper dredge with onboard pump-off capability would be required. These vessels are larger than those typically used to working in New England waters. Using this method, a pipeline would be placed along the beach through the beach-fill areas with a branch leading offshore to a moored or barge-mounted connection in a water depth sufficient for the loaded hopper dredge to tie-up and connect to the discharge line.

If nearshore placement is used for disposal, the use of either a small hopper dredge or a mechanical dredge is the preferred dredging method for this project. If direct beach placement is performed as a beneficial use, then either a large pump-off hopper or a large hydraulic pipeline dredge would be preferred.

5.3 Disposal Alternatives

5.3.1 Offshore Disposal

Historically, dredged material from Newburyport Harbor was disposed at an offshore disposal site (USACE, 1973). The 1973 Environmental Assessment describes the location of

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this site as: "An area one-half nautical mile square, the sides of which run true north and south and true east and west. The center is at a point with Black Rock Light bearing true 289°, a distance of 3,700 yards; and Newburyport Light bearing true 272°, a distance of 3,200 yards.

Currently, it is the Corps policy to place sandy dredged material at a nearshore site to keep the sand within the littoral system of the project area. Offshore disposal was therefore not being considered as a preferred alternative for the disposal of material from Newburyport Harbor.

5.3.2 Nearshore Disposal

Three nearshore disposal sites were considered for this project. Two areas are located to the south of the project adjacent to Plum Island Beach (Figure EA-1). The northernmost Plum Island Beach site is 1.5 nautical miles long and located between the 20-foot MLW and 30-foot MLW contours east of Plum Island Beach. This site has been successfully used in the past for disposal of dredged material. The southernmost Plum Island Beach site is approximately 0.5 nautical miles long and is located along the 15-foot bottom contour. This site has never been used for disposal of sandy material. This site it is located directly offshore of an eroding beach area and is immediately adjacent to the existing nearshore disposal area. The third disposal area is located to the north of the project. It is located east of Salisbury Beach along the 20-foot depth contour (Figure 1) and has been used historically for disposal of the sandy dredge material.

Investigation of sediment transport patterns along the Plum Island - Salisbury Beach system and coordination with the applicable resource agencies indicates that the placement of the sandy dredged material in the nearshore areas would keep the material within the littoral drift system. Nearshore placement will make material available for movement onto the adjacent beaches. Disposal activities are planned to be alternated between sites as needed (i.e., near the beach most in need of replenishment at that time).

5.3.3 Upland Disposal

No upland areas were considered for this project. The material to be dredged is clean sand that is an important component of the Plum Island-Salisbury Beach system and considered a valuable resource. Consequently, the removal of this material from the system is deemed unacceptable. Therefore, upland disposal is not considered a practical option.

5.3.4 Beach Renourishment

Two beach sites adjacent to the project area were evaluated for sand placement. The areas identified were selected as candidate sites for sand placement based on the need to alleviate beach erosion. A beach site on Plum Island in the Town of Newbury was identified as a candidate site for beach nourishment (Figure EA-1). The Plum Island site is approximately 2,500 feet long, extending north from State Groin #1 at the terminus of the Plum Island Turnpike, The nourishment area extends across the beach face between the

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existing dune crest and the mean low water elevation. The fill section varies in width along the beach, being narrowest in the south.

A second Beachfill area on Salisbury State Beach, also experiencing erosion, was identified as a suitable site to place the dredge material from the project. The Salisbury Beach site (Figure EA-1) is approximately 1,400 feet long, and also with a section extending across the beach face between mean low water and the existing eroding dune face. At both sites a fill section of three to five feet in thickness would be placed atop the existing berm elevation to raise and widen the berm. A seaward slope of now steeper than one on ten would be formed seaward (east) of the widened berm down to mean low water. Berm width would vary depending on the existing berm width since some material would be used to buttress the existing dune face. Any new dune face formed through the renourishment would be planted with dune grass and protected from wind and foot traffic with sand/snow fencing located along the dune toe as well as laterally at frequent intervals to ensure effectiveness. The Town and State would be responsible for maintaining the plantings and fencing.

The placement of the sandy dredge material on adjacent beaches is considered a practice of beneficial re-use. The beach disposal areas identified were selected as candidate sites for sand placement based on the need to alleviate beach erosion. The placement of the material on the selected beach sites was considered practical and therefore retained as a possible disposal beneficial re-use alternative. Extensive coordination has been carried out for the beach-fill activity through the Merrimack River Beach Alliance, a group of Federal, State and local agencies, local civic and property owner's organizations, contractors, and citizens, beginning in early 2008.

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6.0. Affected Environment

6.1 Project Area – Merrimack River

6.1.1 General

Newburyport Harbor is located in the lower 3.5 miles of the estuary of the Merrimack River in Essex County, Massachusetts, 54 miles north of Boston and 20 miles southwest of Portsmouth, New Hampshire. The Federal Navigation Project (FNP) is abutted by the city of Newburyport on the south shore and the town of Salisbury on the north shore.

The city of Newburyport is comprised of approximately nine square miles. Approximately 40 percent of the available land is intensively developed, and 40 percent is open space including cleared lands and farmlands. The remaining areas include woodland, and freshwater or tidal marsh. Public land use areas include such areas as city forest, parks and playgrounds.

The most prominent water uses of the estuary in Newburyport Harbor are recreational boating, and commercial and recreational fishing. As Newburyport Harbor is at the mouth of the Merrimack River, many mariners from upstream cities and towns depend on the harbor for access to the ocean.

6.1.2 Water Quality and Tidal Characteristics

The tide ranges at Newburyport Harbor vary from the harbor area itself to the outer bar. Tidal data is shown below in Table EA-2.

TABLE EA-2 NEWBURYPORT HARBOR - TIDAL DATUMS AND ELEVATIONS		
	Newburyport Waterfront USCG Station	Plum Island Merrimack River Entrance
Highest Observed Water Level	10.794	
Mean Higher High Water	8.763	8.707
Mean High Water	8.327	8.297
Mean Tide Level	4.281	4.298
Mean Sea Level	4.278	4.291
Mean Low Water	0.236	0.299
Mean Lower Low Water	0.000	0.000
Lowest Observed Water Level	(1.486)	

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The tidal range at Plum Island is semi-diurnal. The mean tidal range at northern Plum Island is 8.3 feet. Maximum tidal currents at the mouth of the Merrimack River do not exceed 2.2 knots. Maximum velocities occur later in the ebb tide (Rosen, 1981).

The Merrimack River, in the vicinity of the project area, is designated by the Commonwealth of Massachusetts as Class SB waters (Mass EOE, 2001). Waters assigned to this class are designated as habitat for fish, other aquatic life and wildlife and for primary and secondary contact recreation. In approved areas they shall be suitable for shellfish harvesting with depuration (Restricted Shellfish Areas). These waters shall have consistently good aesthetic value (Massachusetts Surface Water Quality Standards, 1986, 1990).

6.1.3 Dredge Sediment Characteristics

The Merrimack River is the fourth largest river in New England; the associated drainage basin occupies a 5,058 square mile area. The river descends from the White Mountains in New Hampshire southward 115.3 miles to the coast. An ebb tidal delta has formed seaward of the jetties in response to the ebb tides. This delta has a large effect on longshore drift patterns. Sediments at the jetty delta are moderately to well sorted (<1.0 standard deviation) with an average phi of >1.0 (coarse sand to gravel). This material intermixes with the longshore southerly transport of sand, ultimately forming bar deposits that endanger navigation through the jetty.

The material to be dredged from the entrance channel consists of medium-grained brown/gray sand. Particles of smaller grain size (>2.0 phi) are removed from the sandbar through wave scour. Grain size analyses were performed on sediment samples taken in April of 1994, from four locations in the Newburyport Harbor entrance channel. Surface grab samples taken from each location showed the shoal to contain poorly graded sand with less than three percent fines (Appendix H).

Northeast storms are the dominant physical force impacting the sediment transport system. These storms frequently occur from December through February. The storm related erosion accretes offshore bars that migrate offshore/onshore and then north to south in the littoral transport system. The sand bars in the project area, including the one regularly dredged, tend to have their largest growth during winter months (northeasterly storms) when short-period, steep waves predominate and the beaches typically undergo a net loss of sand.

6.1.4 Biological Resources

The Merrimack River Estuary and adjacent estuarine systems support a diverse abundance of aquatic resources (JBF, 1977; Buchsbaum, 2000). The estuary and nearby offshore areas support many commercial and recreational finfish species. The most comprehensive source for species occurring in the Merrimack River estuary is from a year-long sampling program performed in 1965 by the Massachusetts Division of Marine Fisheries (Jerome et al, 1965). Table EA-3 lists the seventeen species taken during the 1965 sampling program. A summary of data collected between 1968 and 1994 on the fish communities found in the adjacent Parker River system was compiled by Buchsbaum et al.

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(2000) and is similar to Table 3. The majority of these species are estuarine resident fish which spend their entire life cycle within the Merrimack River estuary. Several species of anadromous fish may transit the project area during spring and fall migrations up and down stream of the estuary. Species that may transit the area include: Atlantic salmon (*Salmo salar*), striped bass (*Morone saxatilis*), smelt (*Osmerus mordax*), American shad (*Alosa sapidissima*), alewives (*Alosa pseudoharengus*), and blueback herring (*Alosa aestivalis*).

Table EA-3. Finfish Species in Merrimack River, Newburyport Harbor Source: MA Division of Marine Fisheries	
Alewife	<i>Alosa pseudoharengus</i>
American eel	<i>Anguilla rostrata</i>
American sand lance	<i>Ammodytes americanus</i>
rainbow smelt	<i>Osmerus mordax</i>
Atlantic silverside	<i>Menidia menidia</i>
blueback herring	<i>Alosa aestivalis</i>
Bluegill	<i>Lepomis macrochirus</i>
brown bullhead	<i>Ictalurus nebulosus</i>
Carp	<i>Cyprinus carpio</i>
Mummichog	<i>Fundulus heteroclitus</i>
ninespine stickleback	<i>Pungitius pungitius</i>
northern pipefish	<i>Syngnathus fuscus</i>
spottail shiner	<i>Notropis hudsonius</i>
red hake	<i>Urophycis chuss</i>
threespine stickleback	<i>Casterosteus aculeatus</i>
white perch	<i>Morone americana</i>
winter flounder	<i>Pseudopleuronectes americanus</i>

Commercially important invertebrates of the Merrimack River estuary and nearby offshore areas include lobsters (*Homarus americanus*), surf calms (*Spissula solidissima*), and soft-shelled clams (*Mya arenaria*). Many shellfish areas are found in the Merrimack estuary. The shellfish beds are open and closed on an irregular basis, dependent on the existing water quality conditions. Many other species of intertidal benthic invertebrates are also found in the project area. Commonly found intertidal species include many polychaete species, the common blue mussel (*Mytilus edulis*), barnacle (*Balanus balanoides*), periwinkle (*Littorina saxatilis*), dog whelk (*Thais lapillus*), and limpet (*Acmaea testudinalis*).

No submerged aquatic vegetation (SAV) has been reported or mapped within the area of the Federal Navigation Project or offshore of the receiving beaches in Salisbury and Newbury.

6.1.5 Endangered Species

Several species of threatened or endangered sea turtles and marine mammals occur in offshore and nearshore waters of New England. Turtle species include the leatherback turtle (*Dermochelys coriacea*), green turtle (*Chelonia mydas*), loggerhead (*Caretta caretta*),

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Kemp's Ridley (*Lepidochelys kempi*), and hawksbill turtle (*Eretmochelys imbricata*). Marine mammal species include humpback whales (*Megaptera novaengliae*), right whales (*Eubalaena glacialis*), fin whales (*Balaenoptera physalus*) and harbor seals (*Phoca vitulina*). The potential does exist for these species to be present in the project area. However, these species generally occur in offshore-waters and their potential to occur in the project area is limited.

One federally listed bird species, the federally threatened piping plover (*Charadrius melodus*), can be found within the project area. Plovers nest, rest, and feed on beaches adjacent to the FNP.

6.1.6 Essential Fish Habitat

Pursuant to the Magnuson-Stevens Fishery Conservation and Management Act and amended by the Sustainable Fisheries Act of 1996, an Essential Fish Habitat (EFH) consultation is necessary for this project. EFH is broadly defined as “those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity.” Newburyport Harbor and the Federal navigation project fall into this category and thus have the potential to provide habitat for fish species in the area.

As stated in NMFS EFH source documents (NMFS 2004), twenty-four federally managed species have the potential to occur within the project area. These include: Atlantic Cod (*Gadus morhua*); haddock (*Melanogrammus aeglefinus*); pollack (*Pollachius virens*); whiting (*Merluccius bilinearis*); red hake (*Urophycis chuss*); redfish (*Sebastes fasciatus*); winter flounder (*Pleuronectes americanus*); yellowtail flounder (*Pleuronectes ferruginea*); windowpane flounder (*Scophthalmus aquosus*); American plaice (*Hippoglossoides platessoides*); pout (*Macrozoarces americanus*); halibut (*Hippoglossus hippoglossus*); sea scallop (*Placopecten magellanicus*); Atlantic sea herring (*Clupea harengus*), monkfish (*Lophius americanus*); long-finned squid (*Loligo peali*); short-finned squid (*Illex illecebrosus*); Atlantic butterflyfish (*Peprilus triacanthus*); Atlantic mackerel (*Scomber scombrus*); summer flounder (*Paralichthys dentatus*); scup (*Stenotomus chrysops*); black sea bass (*Centropristes striata*); surf clam (*Spisula solidissima*); and bluefin tuna (*Thunnus thynnus*).

6.1.7 Cultural Resources

The proposed maintenance dredging at Newburyport Harbor will take place in an area which has been previously dredged. There is one known historic shipwreck in the vicinity of the Federal navigation project. The schooner Globe, a coal-vessel, sank near Newburyport lighthouse sometime during the late 19th century. The wreck of the Globe was removed by the Corps of Engineers in 1870 (Annual Report of the Corps of Engineers for 1874).

6.1.8 Air Quality

The entire state of Massachusetts is designated a non-attainment zone of ozone (O₃) and is part of the Northeast Ozone Transport Region which extends northeast from Maryland and includes all six New England states. Non-attainment zones are areas where the National

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Ambient Air Quality Standards (NAAQS) have not been met. Nitric oxide (NO), hydrocarbons, oxygen (O₂), and sunlight combine to form ozone in the atmosphere. Nitrogen oxides are released during the combustion of fossil fuels.

6.2. Proposed Disposal Sites

6.2.1 General

The three proposed nearshore disposal areas are located in shallow subtidal areas off either Plum Island or Salisbury Beach (Figure EA-1).

The two proposed beach nourishment areas are located on Plum Island and on Salisbury Beach (Figure EA-1).

6.2.2 Water Quality and Tidal Characteristics

All nearshore disposal areas are located in Class SB waters (Mass EOE, 2001). Waters assigned to this class are designated as habitat for fish, other aquatic life and wildlife and for primary and secondary contact recreation.

A study conducted by Normandeau Associates, Inc. (NAI, 1996) evaluated the Salisbury Beach nearshore disposal site in context of its physical, environmental and hydrographic features to determine its acceptability as a disposal option. Wave and sediment transport analysis were also studied to verify that the beneficial use intent of this disposal option (i.e., construction of a nearshore feeder berm serving to replenish adjacent beaches) would, in fact, occur should disposal take place. This nearshore area is a gently sloping sandy beach generally uniform in nature with no significant shoal areas. Bottom sediments are comprised mostly of sand (87%) with some silt (7.1%) clay (5.7%) and gravel (0.3%). Between May and September, sediment is likely to be transported onshore over 90% of the time. In the winter months, this movement is reduced to 70% due to the large winter waves which may be encountered in the study area (NAI 1996).

6.2.3 Disposal Area Sediment Characteristics

The material at the nearshore disposal areas off of Plum Island Beach and Salisbury Beach consists of medium-grained sands (Appendix H). The material at the Plum Island Beach nourishment area and the Salisbury Beach nourishment area consists of coarse to medium grained sand (Appendix H). All areas are located in zones of high tidal energy.

6.2.4 Biological Resources

Previous studies (Normandeau, 1971) identified the dominant subtidal benthic organism in the vicinity of the Merrimack River Estuary and Plum Island disposal sites, as the bivalve *Mesodesma arctatum*. This study identified twenty-four species inshore of the project area. The low species density is attributable to the coarse grain size in the area. The wave and current scours do not allow the accumulation of organic matter, microbial flora or larval recruitment. Those organisms identified near the disposal area are not significant commercial

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resources. The dominant benthic organisms, cockles, are simply more tolerant of the harsh environment and can therefore exploit the niche. *Mesodesma arctatum*, commonly called the Arctic Wedge Clam, has adapted to occupy the dynamic ecological niche of shifting subtidal sand. Although probably a prey species for various organisms, especially echinoderms (Stelleroidea), the species has no commercial value. Its relatively small (<4.0 cm) maximum size prohibits profitable harvest. Organisms from adjacent areas capable of exploiting this type of niche are expected to recolonize the newly deposited dredged material in a short time frame.

Biological surveys conducted by the Corps in the Plum Island nearshore disposal areas (2003) and adjacent to the disposal areas (in vicinity of the Plum Island) (1977) disposal site identified a diverse assemblage of invertebrates including the chestnut astarte (bivalve) *Astarte castanea*; the cockles (bivalve) *Cerastoderma pinnulatum*; the glandular bean mussel (bivalve) *Crenella grandula*; polychaetes; haustoriid amphipods; and mysid shrimp.

Sampling of the nearshore area off of Salisbury beach revealed a relatively sparse community in terms of numbers of individuals, with abundances ranging from 300/m² to 1575/m² represented by 28 taxa. The majority of organisms consisted of bryozoans, annelids, mollusks, arthropods and hydrozoans.

No site specific data on faunal resources of the beach disposal sites were collected. In general, sandy beach faunal communities are characterized by low species diversity and low biological production because of the continually fluctuating physical conditions associated with beaches (Dexter, 1992). The beach sites at both Plum Island and Salisbury are high energy sand environments which should exhibit these low diversity/productivity characteristics.

Finfish trawls (Corps, 1977) in the vicinity of the nearshore disposal sites revealed the presence of cod (*Gadus morhua*); skate (*Raja ocellata*) and (*Raja erinacea*); long-horn sculpin (*Myoxocephalus octodecemspinosus*); sand dab (*Hippoglossoides platessoides*); yellowtail flounder (*Pleuronectes ferruginea*); winter flounder (*Pseudopleuronectes americanus*); and windowpane flounder (*Scophthalmus aquosus*).

Some commercial lobstering occurs in the vicinity of the Salisbury Beach nearshore area. The lobstering occurs in the rocky areas to the north. These areas provide critical habitat for the lobster fishery in the area. Historical coordination with the Massachusetts Division of Marine Fisheries (MDMF) indicates that a limited fishery may be present at certain times of the year in the sand flat areas, however the most ecologically significant habitat for lobsters in the area are the rocky areas to the north (Iwanowicz, Pers. comm. 1996).

No SAV has been reported or mapped within the proposed disposal sites.

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6.2.5 Endangered Species

Rare occurrences of several species of marine mammals and sea turtles have the potential to occur in the vicinity of the near-shore disposal sites. A list of these species is presented in section 5.1.5 of this document.

The Federally listed threatened piping plover is found in the vicinity of the proposed nearshore disposal sites as well as the beach disposal sites. Plovers utilize the beaches in Newbury, Newburyport, and Salisbury and associated tidal flats for nesting, resting, and feeding from April through August. The majority of the beach area at the Plum Island Beach site is currently steeply sloped (greater than 1:8) and not considered suitable plover habitat, while the areas at Salsbury Beach are considered viable plover habitat.

6.2.6 Essential Fish Habitat

Species with EFH in the disposal areas are similar to those found in the dredging area. See section 6.1.6.

6.2.7 Cultural Resources

Examination of historic shipwreck data reveals no wrecks which can be confirmed to exist within the Plum Island disposal areas; however, eight known shipwrecks are recorded to be in the vicinity (Berman, 1972; Institute for Conservation Archaeology, 1979). While some or all of these wrecks may have occurred within the disposal area, the exposed nature and strong currents at the area indicate that the remains of these shipwrecks have most probably been scattered and/or deeply buried. Also, due to the light deposition of dredged material at any one point, compaction of any shipwreck remains which may be present is unlikely. Therefore, no effect upon significant underwater archaeological resources is anticipated.

There is one known shipwreck in the vicinity of the proposed nearshore disposal area at North Salisbury Beach. The Jennie M. Carter, a historic period schooner shipwreck, has been identified on the beach southwest of the project area. According to the Massachusetts Board of Underwater Archaeological Resources (MA BUAR), two reconnaissance permits for underwater surveys have been issued for most of the Salisbury Beach area. In particular, the northern permit (94-001) which includes the entire project area remains active.

6.2.8 Air Quality

The entire state of Massachusetts is designated a non-attainment zone of ozone (O₃) and is part of the Northeast Ozone Transport Region which extends northeast from Maryland and includes all six New England states. Non-attainment zones are areas where the National Ambient Air Quality Standards (NAAQS) have not been met. Nitric oxide (NO), hydrocarbons, oxygen (O₂), and sunlight combine to form ozone in the atmosphere. Nitrogen oxides are released during the combustion of fossil fuels.

7.0. Environmental Consequences

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7.1 General

Periodic maintenance dredging of Newburyport Harbor is necessary for continued use of the harbor. Shoaling of the entrance channel restricts depth, creating hazardous conditions. Dredging will provide an adequate channel for the maritime community. If the no dredging alternative was chosen, the Federal channel will continue to shoal and the channel will become increasingly hazardous to navigate and would eventually prevent vessel passage.

Since the material to be dredged is clean sand, all the preferred disposal alternatives are those that keep the sand within the Merrimack River estuarine/littoral system. The placement of the sandy material on Plum Island Beach and Salisbury Beach is currently needed for storm damage reduction purposes, as recent storm erosion has reduced the beach berm elevation and width and eroded back into the dune face in many areas. Shorefront property is endangered and one home was lost in late November 2008. Beneficial use of dredged sands from this maintenance operation as beach-fill is expected to provide at least a few years of protection to the dunes and properties while more longer-term regional sediment management solutions are explored. The Corps §204 authority provides a means for sharing the additional cost of direct placement of the material on the beaches between the Federal government and the non-Federal Sponsor, in this case the Massachusetts Department of Conservation and Recreation. This additional cost is measured as the increase over the cost of the Federal Base Plan of placing the material in the nearshore bars seaward of the beaches.

7.2 Water Quality

The no action alternative would have no direct effects on water quality. However, vessels passing over shoal areas would have increased potential for groundings. Grounding of vessels increases the likelihood of injury to vessel occupants, and the likelihood of fuel spills which would negatively impact water quality.

Dredging by hopper dredge or hydraulic dredge would resuspend material as the drag-heads move over the bottom. Dredging with a mechanical dredge would resuspend material when the bucket hits the bottom sediments as well as when the bucket is lifted off the bottom to deposit material in the attending scow. Increased turbidities will also be generated by overflow from the hopper or scow (if used) during dredging operations, and dispersion of dredged material during disposal. The increases in near-surface turbidity is primarily caused by the overflow of water along with the fine material from the hopper or the scow. Overflow from the hopper dredge results from the continued pumping as the hopper fills with the dredge slurry. As the solids settle out the excess water flows overboard. The distribution of suspended solids in the overflow is dependent on the nature of the sediment being dredged, the hydrologic characteristics of the dredging site, the characteristics of the overflow material, how full the hopper or scow is, and locations of the overflow ports (Barnard, 1978). In Newburyport the dredged material is clean sand therefore the percentage of solids in the overflow will be very small (fines < 3%). Wechsler and Cogley (1977) studied the normal settling characteristics of sediments during dredging. They concluded that the coarse grained fractions (<4 phi) do not contribute significantly to water column turbidities. Some of the

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suspended material in the slurry may overflow from the hopper. However, the material is primarily medium gray/brown sand and should settle out within several minutes after dredging ceases. Turbidity would be limited to the duration of the dredging activity. Given the open coastal hydrodynamic system of the project area, any negative impacts from dredging sand should be of short duration and limited to the immediate construction area.

As previously stated, the material to be dredged from Newburyport Harbor is composed of clean medium gray/brown sand that is low in organic content. Release of contaminants to the water column during dredging operations is not anticipated as sandy material does not readily adsorb chemical contaminants. Therefore, this project will not significantly impact the coastal water quality of Newburyport in the dredge or disposal areas.

7.3 Sediment Characteristics

Material to be dredged in the Federal Navigation Project is composed of medium to fine sands. It is anticipated that the bottom sediments will remain medium sand following dredging activities. If the no action alternative is considered, sediment characteristics would not change.

The proposed nearshore disposal sites (Figure EA-1) are located in nearshore areas between the 15-foot and 30-foot MLW contours. The sediments in these areas are composed of mainly medium size grained sands. The sediments at the proposed beach disposal sites (Figure 1) are generally coarse to medium grained sands. The dredged material from Newburyport Harbor is therefore compatible with the sediments at all disposal areas. The placement of the dredged material at the nearshore sites will retain the sand within the littoral system by creating nearshore feeder berms that will help stabilize the adjacent beaches through littoral transport and deposition to these areas.

The proposed beach disposal sites are high energy beaches abutting the Atlantic Ocean. The sediments at the beach sites are medium to coarse grained sands which are compatible with the dredged material and no significant changes in sediment composition at the disposal areas are anticipated. The placement of the material directly on the beaches will help stabilize the beach for a short period of time, providing the communities and agencies an opportunity to investigate longer-term solutions.

A distinct pattern of beach erosion and building is typical of sand migration along any coast. Storm activity erodes sand from the beach and deposits it in the nearshore zone where it returns via landward migrating ridge and runnel features (CE, 1983). In the vicinity of Salisbury Beach, there is a net longshore movement of sand which creates a north to south net littoral drift. Normandeau's 1996 report (NAI, 1996) conducted sediment transport modeling of the nearshore area of North Salisbury Beach and concluded that between May and September, sediment is likely to be transported onshore (berm forming) over 90% of the time. In the winter months, (November through March) the percentage of time for onshore transport is reduced to 70% or less, due to the larger bar forming winter waves (NAI, 1996).

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A reversal of sediment transport occurs along the section of Plum Island Beach (Hubbard, 1975; Rosen, 1981). Sediment transport in the northern 1-1/2 miles of Plum Island Beach is northward due to refraction of northeasterly waves crossing the bar at the mouth of the entrance channel. Sediment in this area either accretes behind the Plum Island jetty or moves offshore to join the southerly moving sediment transport system.

Based on the information provided, the use of any of the nearshore disposal or beach renourishment options is not anticipated to have any long term negative effects on the sediment characteristics of the project area.

7.4 Biological Effects

The no action alternative would allow the benthic community in the project area to remain in place as a typical opportunistic sand bottom community. Additionally, all short-term impacts described below for the action alternatives would be avoided. Beach erosion and resulting property losses would continue without beach nourishment, with debris and other pollutants from the destroyed buildings entering the environment.

Benthic organisms such as crabs, tube worms and bivalves associated with the dredging area sediments would be destroyed during the dredging process. Mobile organisms living on the surface would be displaced. The soft-shell clam flats in the estuary would not be directly disturbed by removal of any sediment. Increased turbidities generated by dredging operations are not expected to reach the clam flats up river given the large distance between the flats and the dredging area. The dredging area is in a high energy system with coarse sediments. This type of environment is normally low in epifauna, with infauna limited to a few species that can cope with stressful conditions (i.e., *Mesodesma arctatum*). Therefore, the number of benthic species which may be affected by dredging activity should be minimal. The dredged areas are expected to experience recolonization from adjacent areas within a short timeframe after dredging is completed.

Organisms inhabiting the disposal areas may be buried by the placement of material. However, many of the species in these areas have adapted to living in a shifting sand environment and may be able to survive. Additionally, many of the species in the area are opportunistic species capable of recolonization (CE, 1983). Given the dynamic high-energy nature of the nearshore sites, recolonization by benthic species from adjacent areas would be expected to occur in a short period of time with no long-term impacts.

The beach disposal areas are generally low-diversity/low-richness areas, subject to frequent and significant changes during storm events (Dexter, 1992). These areas should not be significantly impacted by placing sand upon them. Should sufficient dredged material be generated to enable buttressing of the dune face in the nourishment areas, then planting and fencing should help stabilize the fill section at least temporarily.

Lobster fishing occurs in the rocky areas adjacent to the Newburyport Harbor jetties. However, the nearshore disposal areas which are located adjacent to these sites are flat shifting sand bottoms with high tidal energy. As a consequence, the lobster population in the

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vicinity of the disposal sites is very low (JBF, 1977). As a result, periodic disposal of clean sandy material from the entrance channel of Newburyport Harbor is not expected to have any long-term negative impacts on lobster populations within these areas. The placement of material on the adjacent beaches will not affect lobster resources in the area.

Impacts to finfish species from dredging and disposal activities are not expected to be significant. Due to the open nature of the dredging and disposal areas, adult finfish species should be able to avoid the disturbed area. Section 7.6 provides an essential fish habitat assessment for managed species in the project area.

7.5 Endangered Species

This work is being coordinated with the U.S. Fish and Wildlife Service and National Marine Fisheries Service under Section 7 of the Endangered Species Act. It was determined that no threatened or endangered species are known to exist in the immediate dredging area or nearshore disposal areas. One listed bird species, the federally threatened piping plover, is present during spring and summer months on beaches proposed as nourishment areas.

Disposal occurring at the nearshore disposal areas (i.e., subtidally) is not likely to affect any threatened or endangered species or critical habitat designated as endangered or threatened, pursuant to the Endangered Species Act of 1973. If disposal occurs at a beach site, the Corps has made the determination that the proposed project is not likely to affect any threatened or endangered species given the following conditions: 1) that construction is limited to a period between September 1 and April 1; 2) that the beach disposal area be graded to slope of 1:10 at the Salisbury Beach site and to a slope of 1:8 at the Plum Island Beach site (up to station 20+50 as depicted in project plans); 3) that fencing be located 3 feet upslope of the toe of the dune; 4) that an area 3 feet seaward of the toe of the dune be planted with vegetation; and 5) that a management plan is in place for plover monitoring, protection, and management.

Any construction that involves using the beach sites for disposal will use the aforementioned work window and use the slope design mentioned above. Both beach disposal areas have beach management plans (Vine Associates 2008, 2009a, 2009b) that provide commitments to monitor and protect any threatened or endangered species that may occur at the beach sites.

7.6 Essential Fish Habitat

The no action alternative would have no effect upon EFH in the project area.

The dredging of Newburyport Harbor will have minimal effects on designated Essential Fish Habitat. A hopper dredge or mechanical dredge will be used to dredge the sandy material from the authorized FNP. A sediment plume associated with the cutterheads of the hopper dredge, the bucket of the mechanical dredge, and hopper or barge overflow will slightly increase turbidity in the area surrounding the dredge. However, the increase in turbidity is expected to be minimal and localized as the material is sand. Turbidity increases

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will also be seen at the disposal areas. On the receiving beaches, control of the discharge pipe and use of toe dikes formed from existing beach materials will limit turbidity off of the beaches.

Benthic organisms serve as an important food source for many fish species. Benthic organisms inhabiting the area to be dredged will be removed by the dredging activities. Benthic resources will recolonize the areas dredged by recruitment from surrounding areas. On the intertidal elevations of the faces of the receiving beaches, the severe and constant erosion results in limited benthic resources. Therefore, impacts to EFH as a result of this project are expected to be minimal.

The following paragraphs detail the effect of the project on each managed species in the project area:

EFH for all life stages of Atlantic cod (*Gadus morhua*) is designated within the project area. Early life stages of cod are generally found in deeper waters than those found in Newburyport Harbor. Juvenile and adult cod are highly mobile and should be able to avoid dredging and disposal activities. Therefore, any impacts to cod EFH are anticipated to be short-term and localized.

EFH for haddock (*Melanogrammus aeglefinus*) juveniles is designated in this area. Haddock are generally found in deeper waters than those found in the project area. Therefore no significant impacts haddock EFH are anticipated.

EFH for juvenile pollack (*Pollachius virens*) is designated in this area. Juvenile pollack are highly mobile and should be able to avoid construction areas. Impacts to pollack EFH are anticipated to be minimal as environmental impacts at both the dredging and disposal site will be short-term and localized.

All life stages of whiting (*Merluccius bilinearis*) are designated as having EFH within the project area. The four life stages of whiting are generally found in deeper waters than those found in Newburyport Harbor. No impacts to whiting EFH are anticipated.

EFH is designated within the project area for all life stages of red hake (*Urophycis chuss*). Eggs and larvae of red hake are generally found offshore. Juvenile red hake are most often observed in low temperature (<16°), high salinity waters (31-33 ppt), while adult red hake are generally observed in waters between 10 and 130 meters deep. This project is expected to have minimal effects on EFH for red hake in Newburyport Harbor, as the harbor is generally shallower than their preferred habitat. Impacts from this project expected to be localized and should not significantly affect hake EFH.

EFH is designated for larvae, juvenile, and adult stages of redfish (*Sebastes fasciatus*) within the project area. However, redfish are generally found in pelagic waters offshore. Therefore, no impacts to redfish EFH are anticipated.

EFH is designated within the project area for all life stages of the winter flounder (*Pseudopleuronectes americanus*). The eggs of winter flounder, which are demersal, are

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typically found at depths of less than 5 meters in bottom waters in a broad range of salinities (10-30 ppt). Spawning, and therefore the presence of eggs, occurs from February to June. EFH for larvae, juveniles, and adults includes bottom habitats of mud and fine-grained sandy substrate in waters ranging from 0.1 to 100 meters in depth. Spawning adults are typically associated with similar substrates in less than 6 meters of water. Although winter flounder EFH is located within the project area, juveniles and adults are very mobile and would be able to flee from the construction area once activities commence. Flounder adults and juveniles will have ample opportunity to avoid any potential impact. Eggs and larvae may be affected by sediment removal and the associated turbidity during construction activities. However, no more than minimal impacts on all life stages of the winter flounder EFH are anticipated as a result of this project.

EFH for adult and juvenile yellowtail flounder (*Pleuronectes ferruginea*) is designated within the project area. Both juveniles and adults are highly mobile and should be able to avoid construction activities. Therefore, no more than minimal impacts to yellowtail flounder EFH are anticipated.

EFH is designated within the project area for all life stages of the windowpane flounder (*Scophthalmus aquosus*). Eggs are buoyant and typically found in the water column in water depths of 1 meter to 70 meters. Larvae are found in pelagic waters. Juveniles and adults prefer bottom habitats of mud or fine-grained sand and can be found in salinities ranging from 5.5 ppt to 36 ppt. Seasonal occurrences in the project area are generally from February to November, with peaks in occurring May and October. Although EFH for the windowpane is within the project area, this species is broadly distributed in north and mid-Atlantic waters from the Gulf of Maine to Cape Hatteras. Any disruption of EFH will be associated with the construction activities and therefore will not be long-term. As was the case with the winter flounder, windowpane flounder adults and juveniles should be able to avoid any potential impacts because of their mobility. Eggs and larvae will only have the potential to be impacted by localized, short-term turbidity associated with the construction activities. Therefore, no more than minimal impact on all life stages of windowpane flounder EFH is anticipated as a result of this project.

EFH is designated within the project area for American plaice (*Hippoglossoides platessoides*) eggs, and adults. All life stages of American plaice are generally found in waters with depths of over 30 meters. Therefore this project will not affect plaice EFH.

EFH is designated within the project area for all life stages of ocean pout (*Macrozoarces americanus*). This species is a nearshore species that inhabits hard bottom substrates with structure (i.e., rocks and reefs) with salinities greater than 30 ppt. No more than minimal impacts to oceanpout EFH are expected as the areas to be dredged and the disposal areas are sandy areas with no structure.

EFH for all life stages of Atlantic halibut (*Hippoglossus hippoglossus*) is designated within the project area. However, all life stages of Atlantic halibut are generally found in deeper waters than those found in Newburyport Harbor. No impacts to Atlantic halibut EFH are anticipated.

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EFH is designated within the project area for all life stages of Atlantic sea herring (*Clupea harengus*). All life stages are typically found in depths of 15 to 130 meters, depths that are generally deeper than those found within Newburyport Harbor. Therefore, no more than minimal impacts are expected to occur to Atlantic sea herring EFH.

EFH is designated within the project area for monkfish (*Lophius americanus*) juveniles and adults. These life stages are generally found in waters deeper than those in the dredging area. No more than minimal impacts on monkfish EFH are anticipated as a result of the proposed project.

EFH is designated in the project area for juvenile and adult long finned squid (*Loligo pealei*) and short finned squid (*Illex illecebrosus*). These species are common inshore in warm weather months. The proposed project should have no more than minimal effects on long finned squid and short finned squid EFH at the dredging and disposal areas as the material is clean sand. Additionally, squid are highly mobile and would be able to avoid activities should they be present.

EFH is designated within the project area for all life stages of Atlantic butterfish (*Peprilus triacanthus*). All life stages of this species are generally found in deeper waters than those found in Newburyport Harbor. Therefore, no impacts to Atlantic butterfish EFH are anticipated.

EFH is designated within the project area for all life stages of Atlantic mackerel (*Scomber scombrus*) at the dredging and disposal areas. Impacts to mackerel EFH are anticipated, however they will be minimal as the area of impact will be localized and the impacts will be short-term. Additionally, mackerel are highly mobile and would be able to avoid construction and disposal activities should they be present. Therefore, no more than minimal impacts to mackerel EFH are anticipated.

EFH is designated within the project area for adult summer flounder (*Paralichthys dentatus*). Adults migrate into shallow coastal and estuarine systems during the warm summer months and then move offshore during colder months. Although summer flounder may occur in the project area, adults should be able to avoid any potential impacts because of their mobility. Therefore, no more than minimal impacts to summer flounder EFH is anticipated as a result of this project.

EFH is designated in the project area for juvenile and adult scup (*Stenotomus chrysops*). Scup juveniles and adults have the potential to occur in estuarine systems during the spring and summer months. All life stages of scup prefer salinities greater than 15 ppt. Juveniles and adults use structured areas for foraging and refuge, however, they are highly mobile and should be able to avoid construction activities. No more than minimal impacts to scup EFH are anticipated as a result of this project.

EFH is designated for black sea bass (*Centropristus striata*) juveniles within the project area. EFH for the juveniles and adults of this species is predominantly within

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estuarine systems with oceanic salinities. Juveniles and adults are found in estuaries during spring and summer months in water temperatures above 6°C and salinities greater than 18 ppt. Black sea bass prefer rough, shelly substrates and can be found in natural and man-made structured habitats. Although sea bass may occur in the project area, adults and juveniles should be able to avoid the direct impact of being caught in the dredge because of their mobility and ability to flee the area. Indirect effects (i.e., habitat alteration) should be minimal as the dredging will be confined to the channel bottom and the disturbed area will return to pre-dredging conditions within one to two years. Therefore, no more than minimal impacts to black sea bass EFH are anticipated as a result of this project.

EFH is designated for juvenile and adult surf clams (*Spisula solidissima*) in the project area. Surf clams inhabit sandy wave swept beaches from the surf zone to depths of 128 meters. Surf clams will likely be found in all disposal areas and therefore this project has the potential to impact juveniles and adults in these areas. However, since the disposal events will be short-term and localized significant impacts to the surf clam populations in the area are not anticipated. The material to be disposed in these areas has similar physical characteristics (i.e., sand) and therefore should not change the habitat quality. Therefore, no more than minimal impacts to surf clam EFH are expected as a result of this project.

EFH for the highly migratory bluefin tuna (*Thunnus thynnus*) is designated in the project area. However, tuna are highly mobile and should be able to avoid construction and disposal activities if present. Therefore, no impacts to tuna EFH are anticipated.

The National Marine Fisheries Service, in their July 13, 2006 habitat conservation recommendations, advocated an option for direct placement of the dredged material on the beaches as a means of further minimizing EFH impacts. Use of this option is dependent on authorization, funding, and sponsorship of the §204 project for beneficial use of the material on the beaches for coastal storm damage reduction.

7.7 Historic and Archaeological Resources

The no action alternative would have no effect upon historic and archaeological resources in the project area.

Use of the dredged material for beachfill at both Salisbury and Plum Island Beaches is not expected to impact cultural resources.

Personnal communication with Mr. Victor Mastone of the MA BUAR in June 2009 confirms that there is an active permit area within the proposed Salisbury Beach Nearshore site. However, disposal at this location is not considered an adverse impact upon significant cultural resources. Formal coordination will be conducted with MA BUAR that concurs with this recommendation. Additionally, the private permittee will also be notified in writing of the disposal activities. It should be noted that, under the current project scenario, disposal will be confined to the Plum Island Nearshore site while the Salisbury Nearshore site is not slated for use for another 5 years. At that time, this action will be re-coordinated with MA BUAR. We expect concurrence with these determinations.

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Therefore, maintenance dredging of the sand bar at Newburyport Harbor and disposal of dredged material at the previously used Plum Island or Salisbury Beach disposal sites is unlikely to have an effect upon any structure or site of historic, architectural or archaeological significance as defined by the National Historic Preservation Act of 1966, as amended.

7.8 Air Quality Statement of Conformity

The project would have no long-term impacts on air quality. During construction equipment operating on the site would emit pollutants including nitrogen oxides that can lead to the formation of ozone. The dredging of Newburyport Harbor is an operation and maintenance project is exempt from the conformity requirements of the Clean Air Act.

8.0 OTHER CONSIDERATIONS/SUSTAINABLE DEVELOPMENT

Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” require federal agencies to identify and address disproportionately high and adverse human health or environmental effects of its program, policies, and activities on minority and low-income populations in the U.S., including Native Americans. The Proposed Action will not have any disproportionately high or adverse impacts on minority or low-income populations, or any adverse short or long-term environmental justice impacts because the project is not located near any areas with these populations.

Executive Order 13045, “Protection of Children from Environmental Health Risks and Safety Risks,” requires federal agencies to identify and assess environmental health risks and safety risks that may disproportionately affect children. The Proposed Action will not pose any significant or adverse short or long-term health and safety risks to children. If the nearshore disposal options are used, all work will be upon the water. If the beach placement options are used, the shorefront communities, including their children, will benefit from the added storm protection provided by the Beachfill.

9.0 CUMULATIVE AND INDIRECT EFFECTS

9.1 Cumulative Effects

Cumulative impacts are by definition, those resulting from incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future actions. Past and current activities in Newburyport Harbor include the maintenance dredging of the Federal Navigation Project, maintenance dredging of private marinas in the area, and navigation in the harbor. Reasonably foreseeable future actions include the continuation of current maintenance and navigation activities. The effects of previous dredging activities were generally limited to temporary impact of the benthic communities within dredged areas. At present, resources in the area are anticipated to be similar to those that existed prior to the last

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dredging, so any disturbances have dissipated. Dredging of the Newburyport Federal navigation channel is a frequent event (See Table 1). It is anticipated that an opportunistic benthic community has re-established itself within the dredge area and will do so again within a short time frame upon completion of the project. Little or no dredging has been done recently by the marinas present near the project area, but any dredging would have similar impacts as the Federal project. No other significant dredging events are planned in the foreseeable future. Water quality impacts will be temporary and will dissipate quickly, so the potential for the actions of the project to significantly add to water quality impacts from any other action in the area are minimal. Therefore no significant adverse cumulative impacts are projected within Newburyport Harbor or the adjacent beaches and their nearshore waters are expected as a result of this or future projects.

9.2 Indirect Effects

Indirect effects are by definition, those effects which may occur in the future as a result of the proposed action. Since the majority of direct impacts for this project concern physical and biological impacts which are anticipated are expected to be short-term and localized, no significant indirect effects to these factors are expected. Since the project goal is the maintenance of the Federal Navigation Project, indirect effects on the use of the project area may occur in the form of increased vessel traffic.

10.0. Coordination and Long-Term Applicability

This project has been coordinated with the following:

Federal

U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service
National Marine Fisheries Service
U.S. Coast Guard

State

Massachusetts Division of Marine Fisheries
Massachusetts Office of Coastal Zone Management
Massachusetts Department of Environmental Protection
Massachusetts Historical Commission
Massachusetts Department of Conservation and Recreation

Local

The Town of Salisbury
The City of Newburyport
The Town of Newbury
The Plum Island Foundation

**Newburyport Harbor Maintenance Dredging and Section 204 Beneficial Use Project
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The Plum Island Taxpayers Association
The Salisbury Beach Betterment Association

This Environmental Assessment, 404 (b)(1) Evaluation and Finding of No Significant Impact will apply to the proposed and future maintenance dredging of the recurring sandbars in the Newburyport Harbor entrance channel and placement of the dredged materials in the nearshore bar disposal sites or on the adjacent beaches of Newbury and Salisbury. Prior to each future action this document shall be reviewed for its applicability to the project activities associated with the proposed (continuing) maintenance dredging and coordination with resource agencies and interested parties.

**Newburyport Harbor Maintenance Dredging and Section 204 Beneficial Use Project
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11.0. Compliance with Environmental Federal Statutes and Executive Orders

Federal Statutes

1. Archaeological Resources Protection Act of 1979, as amended, 16 USC 470 et seq.

Compliance: Not applicable. No archaeological resources are present.

2. Preservation of Historic and Archeological Data Act of 1974, as amended, 16 U.S.C. 469 et seq.

Compliance: Project has been coordinated with the State Historic Preservation officer. No archaeological resources are present.

3. American Indian Religious Freedom Act of 1978, 42 U.S.C. 1996.

Compliance: Must ensure access by native Americans to sacred sites, possession of sacred objects, and the freedom to worship through ceremonials and traditional rites.

4. Clean Air Act, as amended, 42 U.S.C. 7401 et seq.

Compliance: Public notice of the availability of this report to the Environmental Protection Agency is required for compliance pursuant to Sections 176c and 309 of the Clean Air Act. This project is an operation and maintenance project and is therefore exempt from air quality conformity.

5. Clean Water Act of 1977 (Federal Water Pollution Control Act Amendments of 1972) 33 U.S.C. 1251 et seq.

Compliance: A Section 404(b)(1) Evaluation and Compliance Review have been incorporated into this report since the purpose of disposal is nearshore for beach nourishment. A Water Quality Certification, pursuant to Section 401 of the Clean Water Act, was received in January of 2008 for the disposal of material at the nearshore sites. A request for an amendment to include the beach disposal alternatives was submitted to the Commonwealth and approved on August 20, 2009. Long-term approval of at 10 years was approved.

6. Coastal Zone Management Act of 1972, as amended, 16 U.S.C. 1451 et seq.

Compliance: A CZM consistency determination was provided to the Commonwealth for review and concurrence that the proposed project is consistent with the approved State CZM program. The Commonwealth concurred with the determination by letter of September 1, 2009.

**Newburyport Harbor Maintenance Dredging and Section 204 Beneficial Use Project
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7. Endangered Species Act of 1973, as amended, 16 U.S.C. 1531 et seq.

Compliance: Coordination with the U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) determined that no threatened or endangered species would likely be affected by this project if nearshore disposal or beach nourishment is used.

8. Estuarine Areas Act, 16 U.S.C. 1221 et seq.

Compliance: Not applicable, as this report is not being submitted to Congress.

9. Federal Water Project Recreation Act, as amended, 16 U.S.C. 4601-12 et seq.

Compliance: Public notice of availability to the project report to the National Park Service (NPS) and Office of Statewide Planning relative to the Federal and State comprehensive outdoor recreation plans signifies compliance with this Act.

10. Fish and Wildlife Coordination Act, as amended, 16 U.S.C. 661 et seq.

Compliance: Coordination with the FWS, NMFS, and State fish and wildlife agencies signifies compliance with the Fish and Wildlife Coordination Act.

11. Land and Water Conservation Fund Act of 1965, as amended, 16 U.S.C. 4601-4 et seq.

Compliance: Public notice of the availability of this report to the National Park Service (NPS) and the Office of Statewide Planning relative to the Federal and State comprehensive outdoor recreation plans signifies compliance with this Act.

12. Marine Protection, Research, and Sanctuaries Act of 1971, as amended, 33 U.S.C. 1401 et seq.

Compliance: Not applicable; project does not involve the transportation nor disposal of dredged material in ocean waters pursuant to Sections 102 and 103 of the Act, respectively.

13. National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470 et seq.

Compliance: Coordination with the State Historic Preservation Office signifies compliance.

14. Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3000-3013, 18 U.S.C. 1170

Compliance: Regulations implementing NAGPRA will be followed if discovery of human remains and/or funerary items occur during implementation of this project.

15. National Environmental Policy Act of 1969, as amended, 42 U.S.C. 4321 et seq.

**Newburyport Harbor Maintenance Dredging and Section 204 Beneficial Use Project
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Compliance: Preparation of an Environmental Assessment signifies partial compliance with NEPA. Full compliance shall be noted at the time the Finding of No Significant Impact or Record of Decision is issued.

16. Rivers and Harbors Act of 1899, as amended, 33 U.S.C. 401 et seq.

Compliance: No requirements for Corps' projects or programs authorized by Congress. The proposed maintenance dredging has been Congressionally approved under the Rivers and Harbors Acts.

17. Watershed Protection and Flood Prevention Act as amended, 16 U.S.C 1001 et seq.

Compliance: Floodplain impacts must be considered in project planning.

18. Wild and Scenic Rivers Act, as amended, 16 U.S.C 1271 et seq.

Compliance: Not applicable, the project is not in a designated Wild and Scenic River.

19. Magnuson-Stevens Act, as amended, 16 U.S.C. 1801 et seq.

Compliance: Coordination with the National Marine Fisheries Service (NMFS) and preparation of an Essential Fish Habitat (EFH) Assessment signifies compliance with the EFH provisions of the Magnuson-Stevens Act. NMFS has provided EFH recommendations and the Corps has responded.

Executive Orders

1. Executive Order 11593, Protection and Enhancement of the Cultural Environment, 13 May 1971

Compliance: Coordination with the State Historic Preservation Officer signifies compliance.

2. Executive Order 11988, Floodplain Management, 24 May 1977 amended by Executive Order 12148, 20 July 1979.

Compliance: Public notice of the availability of this report or public review fulfills the requirements of Executive Order 11988, Section 2(a) (2).

3. Executive Order 11990, Protection of Wetlands, 24 May 1977.

Compliance: Public notice of the availability if this report for public review fulfills the requirements of Executive Order 11990, Section 2 (b).

4. Executive Order 12114, Environmental Effects Abroad of Major Federal Actions, 4 January 1979.

**Newburyport Harbor Maintenance Dredging and Section 204 Beneficial Use Project
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Compliance: Not applicable to projects located within the United States.

5. Executive Order 12898, Environmental Justice, 11 February 1994.

Compliance: Not applicable, the project is not expected to have a significant impact on minority or low income population, or any other population in the United States.

6. Executive 13007, Accommodation of Sacred Sites, 24 May 1996

Compliance: Not applicable unless on Federal lands, then agencies must accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners, and avoid adversely affecting the physical integrity of such sacred sites.

7. Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks. 21 April, 1997.

Compliance: Not applicable, the project would not create a disproportionate environmental health or safety risk for children.

8. Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, 6 November 2000.

Compliance: Consultation with Indian Tribal Governments, where applicable, and consistent with executive memoranda, DoD Indian policy, and USACE Tribal Policy Principles signifies compliance.

Executive Memorandum

1. Analysis of Impacts on Prime or Unique Agricultural Lands in Implementing NEPA, 11 August 1980.

Compliance: Not applicable if the project does not involve or impact agricultural lands.

2. White House Memorandum, Government-to-Government Relations with Indian Tribes, 29 April 1994.

Compliance: Consultation with Federally Recognized Indian Tribes, where appropriate, signifies compliance.

12.0. References

**Newburyport Harbor Maintenance Dredging and Section 204 Beneficial Use Project
Environmental Assessment – September 2009**

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**Newburyport Harbor Maintenance Dredging and Section 204 Beneficial Use Project
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FINDING OF NO SIGNIFICANT IMPACT

Newburyport Harbor Federal Navigation Channel Maintenance Dredging And Section 204 Beneficial Use Project for Plum Island Beach and Salisbury Beach Newbury, Newburyport, and Salisbury Massachusetts

The proposed Newburyport Harbor navigation maintenance dredging project involves the dredging of an estimated 50,000 to 200,000 cubic yards of clean sand approximately every three to four years. The channel will be dredged to its authorized dimensions (15 feet deep, 400 feet wide) and disposal will occur at one of five disposal sites: 3 nearshore sites and 2 beach sites. Dredging operations are scheduled for a one to two month period. Evaluation of the project site and planned dredging and disposal activities indicates that there will be no unacceptable environmental impacts.

Work is authorized under the 1828 River and Harbor Act, as amended through 1992. I find that based on the evaluation of environmental effects discussed in this document, the decision on this application is not a major federal action significantly affecting the quality of the human environment. Under the Council on Environmental Quality (“CEQ”) NEPA regulations, “NEPA significance” is a concept dependent upon context and intensity (40 C.F.R. § 1508.27.) When considering a site-specific action like the proposed project, significance is measured by the impacts felt at a local scale, as opposed to a regional or nationwide context. The CEQ regulations identify a number of factors to measure the intensity of impact. These factors are discussed below, and none are implicated here to warrant a finding of NEPA significance. A review of these NEPA “intensity” factors reveals that the proposed action would not result in a significant impact—neither beneficial nor detrimental--to the human environment.

Impacts on Public Health or Safety: The project is expected to have a beneficial effect on public health and safety. The return of the navigation channel to authorized depths will reduce the potential for accidental groundings of vessels using the project. Accidental groundings have the potential to cause injury or loss of life as well as potential fuel spills and associated environmental damages.

Unique Characteristics: Sheltered harbors such as Newburyport Harbor and the Merrimack River are unique and highly valued resources to commercial and recreational fleets in Massachusetts. All vessels in the area will benefit by improving the navigation conditions in the project.

Controversy: The proposed project is not controversial. State and federal resource agencies generally agree with the Corps impact assessment.

Uncertain Impacts: The impacts of the proposed project are not uncertain, they are readily understood based on past experiences the Corps has had in dredging the Newburyport Harbor Navigation Project using the nearshore disposal sites in the past, and with other Corps projects involving beach disposal such as at Scarborough Harbor in Scarborough, Maine.

Precedent for Future Actions: The proposed project is authorized under an existing federal law and will not establish a precedent for future actions.

Cumulative Significance: As discussed in the EA, to the extent that other actions are expected to be related to project as proposed, these actions will provide little measurable cumulative impact.

Historic Resources: This project will have no effect upon significant historic properties or cultural resources.


Endangered Species: The project will have no known positive or negative impacts on any State or Federal threatened or endangered species.

Potential Violation of State or Federal Law: This action will not violate federal law. The local sponsor will be responsible for obtaining necessary state and local permits.

Measures to minimize adverse environmental affects of the proposed action (based on which disposal site is used) have been incorporated into the project design and are documented in the EA.

Based on my review and evaluation of the environmental effects as presented in the Environmental Assessment, I have determined that implementation of the proposed maintenance dredging of the Federal Navigation Projects at Newburyport Harbor will have no significant direct, indirect, or cumulative impacts on the quality of the human or natural environment. Because no significant environmental impacts will result, an Environmental Impact Statement is not required and will not be prepared.

16 September 09
DATE


PHILIP T. FEIR
Colonel, Corps of Engineers
District Engineer

**NEW ENGLAND DIVISION
U.S. ARMY CORPS OF ENGINEERS, WALTHAM, MA
CLEAN WATER ACT
SECTION 404 (b)(1) EVALUATION**

PROJECT: Present and future maintenance dredging of a recurring sandbar at the mouth of the Newburyport Federal Channel.

PROJECT MANAGER: Jack Karalius (978) 318- 8288

FORM COMPLETED BY: Todd Randall (978) 318-8518

PROJECT DESCRIPTION:

The proposed work involves dredging an estimated 50,000 to 200,000 cubic yards of sandy material approximately every three to four years from a sand bar which forms in the 15 foot deep, 400 foot wide entrance channel to Newburyport Harbor. The material to be dredged consists of clean medium-grained sand. The material will be removed by hopper dredge or mechanical dredge and disposed of at one of five disposal areas: 3 nearshore areas (off Plum Island Beach or Salisbury Beach) or 2 beach areas (Plum Island Beach or Salisbury Beach).

1. Review of Compliance (Section 230.10(a)-(d)).

- | | | |
|---|---------------------|---------------------|
| a. The discharge represents the least environmentally damaging practicable alternative and if in a special aquatic site, the activity associated with the discharge must have direct access or proximity to, or be located in the aquatic ecosystem to fulfill its basic purpose. | <u> X </u>
YES | <u> </u>
NO |
| b. The activity does not appear to:
1) violate applicable state water quality standards or effluent standards prohibited under Section 307 of the CWA; 2) jeopardize the existence of Federally listed threatened and endangered species or their habitat; and 3) violate requirements of any Federally designated marine sanctuary. | <u> X </u>
YES | <u> </u>
NO |
| c. The activity will not cause or contribute to significant degradation of waters of the U.S. including adverse effects on human health, life stages of organisms dependent on the aquatic ecosystem, ecosystem diversity, productivity and stability, and recreational, aesthetic, and economic values. | <u> X </u>
YES | <u> </u>
NO |
| d. Appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem. | <u> X </u>
YES | <u> </u>
NO |

2. Technical Evaluation Factors (Subparts C-F).

a. Potential Impacts on Physical and Chemical Characteristics of the Aquatic Ecosystem (Subpart C.)

- 1) Substrate.
- 2) Suspended particulates/turbidity.
- 3) Water column impacts.
- 4) Current patterns and water circulation.
- 5) Normal water fluctuations.
- 6) Salinity gradients.

N/A	Not Significant	Significant
	X	
	X	
	X	
X		
X		
X		

b. Potential Impacts on Biological Characteristics of the Aquatic Ecosystem (Subpart D).

- 1) Threatened and endangered species.
- 2) Fish, crustaceans, mollusks, and other organisms in the aquatic food web.
- 3) Other wildlife (mammals, birds, reptiles and amphibians)

X		
	X	
	X	

c. Potential Impacts on Special Aquatic Sites (Subpart E).

- 1) Sanctuaries and refuges.
- 2) Wetlands.
- 3) Mud flats.
- 4) Vegetated shallows.
- 5) Coral reefs.

X		
X		
X		
X		
X		

d. Potential Effects on Human Use Characteristics (Subpart F).

- 1) Municipal and private water supplies.
- 2) Recreational and commercial fisheries.
- 3) Water-related recreation.
- 4) Aesthetics impacts.
- 5) Parks, national and historic monuments, national seashores, wilderness areas, research sites and similar preserves.

X		
	X	
	X	
	X	
X		

3. Evaluation and Testing (Subpart G).

a. The following information has been considered in evaluating the biological availability of possible contaminants in dredged or fill material. (Check only those appropriate.)

- | | |
|---|---|
| 1) Physical characteristics..... | X |
| 2) Hydrography in relation to known or anticipated sources of contaminants..... | |
| 3) Results from previous testing of the material or similar material in the vicinity of the project..... | X |
| 4) Known, significant sources of persistent pesticides from land runoff or percolation..... | |
| 5) Spill records for petroleum products or designated hazardous substances (Section 311 of CWA)..... | |
| 6) Public records of significant introduction of contaminants from industries, municipalities, or other sources..... | |
| 7) Known existence of substantial material deposits of substances which could be released in harmful quantities to the aquatic environment by man-induced discharge activities..... | |
| 8) Other sources (specify)..... | |

List appropriate references. See Environmental Assessment.

b. An evaluation of the appropriate information in 3a above indicates that there is reason to believe the proposed dredge or fill material is not a carrier of contaminants, or that levels of contaminants are substantively similar at extraction and disposal sites and not likely to require constraints. The material meets the testing exclusion criteria.

<u>X</u>	<u> </u>
YES	NO

4. Disposal Site Delineation (Section 230.11(f)).

a. The following factors, as appropriate, have been considered in evaluating the disposal site.

- | | |
|--|---|
| 1) Depth of water at disposal | X |
| 2) Current velocity, direction, and variability at disposal site.. | X |
| 3) Degree of turbulence..... | X |
| 4) Water column stratification..... | X |
| 5) Discharge vessel speed and direction..... | X |
| 6) Rate of discharge..... | X |
| 7) Dredged material characteristics (constituents, amount, and type of material, settling velocities)..... | X |
| 8) Number of discharges per unit of time..... | X |
| 9) Other factors affecting rates and patterns of mixing..... | X |

List appropriate references. See Environmental Assessment.

b. An evaluation of the appropriate factors in 4a above indicated that our disposal sites and/or size of mixing zone are acceptable.

X
YES NO

5. Actions To Minimize Adverse Effects (Subpart H).

All appropriate and practicable steps have been taken, through application of recommendation of Section 230.70-230.77 to ensure minimal adverse effects of the proposed discharge.

X
YES NO

List actions taken.

The following actions will be taken to minimize adverse impacts to the biological resources within the projects area:

- a. Material will be disposed at a nearshore site to keep material within the littoral system or directly on the beach.
- b. Before construction activities begin, the disposal areas will be clearly delineated with marker buoys to assure disposal in appropriate area(s).
- c. If beach nourishment is done, a construction window of September 1 through March 15 will be used and the constructed slopes will be 1:10 for the Salisbury Beach site and 1:8 for the Plum Island Beach site.

6. Factual Determination (Section 230.11).

All review of appropriate information, as identified in items 2 - 5 above, indicate there is minimal potential for short or long term environmental effects of the proposed discharge as related to:

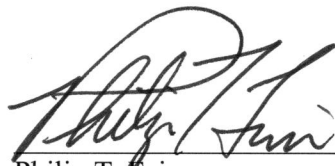
- a. Physical substrate at the disposal site
(review sections 2a, 3,4, and 5 above). X
YES NO
- b. Water circulation, fluctuation and salinity
(review sections 2a, 3, 4, and 5). X
YES NO
- c. Suspended particulates/turbidity
(review sections 2a, 3, 4, and 5). X
YES NO
- d. Contaminant availability
(review sections 2a, 3, and 4). X
YES NO
- e. Aquatic ecosystem structure, function and
organisms (review sections 2b and c, 3, and 5) X
YES NO
- f. Proposed disposal site
(review sections 2, 4, and 5). X
YES NO

- | | | |
|---|-----------------|-------------------|
| g. Cumulative effects on the aquatic ecosystem. | <u>X</u>
YES | <u> </u>
NO |
| h. Secondary effects on the aquatic ecosystem. | <u>X</u>
YES | <u> </u>
NO |

7. Findings of Compliance or Non compliance

The proposed disposal site for discharge of dredged or fill Material complies with the Section 404(b)(1) guidelines.	<u>X</u> YES	<u> </u> NO
--	-----------------	-------------------

16 September 2009
Date



Philip T. Feir
Colonel, Corps of Engineers
District Engineer

**NEWBURYPORT HARBOR
PLUM ISLAND AND SALISBURY BEACHES
§204 PROJECT FOR THE BENEFICIAL USE
OF DREDGED MATERIAL**

DETAILED PROJECT REPORT

**APPENDIX A
PUBLIC INVOLVEMENT AND
PERTINENT CORRESPONDENCE**

(UPDATED OCTOBER 2009)

NEWBURYPORT HARBOR, PLUM ISLAND AND SALISBURY BEACHES §204 PROJECT FOR THE BENEFICIAL USE OF DREDGED MATERIAL

APPENDIX A PUBLIC INVOLVEMENT AND PERTINENT CORRESPONDENCE

List of Public and Interagency Meetings

16 October 2009 – Merrimack River Beach Alliance Meeting, PITA Hall, Newbury
28 September 2009 – Merrimack River Beach Alliance Meeting, PITA Hall, Newbury
11 September 2009 – Merrimack River Beach Alliance Meeting, PITA Hall, Newbury
26 August 2009 – Federal, State and Municipal Interagency Conference Call on Endangered Species Requirements, Beach Design, and Beach Monitoring and Management
21 August 2009 – Merrimack River Beach Alliance Meeting, PITA Hall, Newbury
6 August 2009 – Meeting between Corps and MA DCR, Concord, MA
17 July 2009 – Merrimack River Beach Alliance Meeting, PITA Hall, Newbury
12 June 2009 – Merrimack River Beach Alliance Meeting, PITA Hall, Newbury
10 June 2009 – Interagency Site Visit, Plum Island Beach, Newbury
1 May 2009 – Merrimack River Beach Alliance Meeting, PITA Hall, Newbury
28 April 2009 – Meeting between Corps and MA DCR, Concord, MA
13 March 2009 – Merrimack River Beach Alliance Meeting, PITA Hall, Newbury
11 March 2009 – Meeting between Corps and MA DCR, Concord, MA
11 February 2009 – Meeting between Corps and MA DCR, Concord, MA
9 January 2009 – Merrimack River Beach Alliance Meeting, PITA Hall, Newbury
17 June 2008 – Merrimack River Beach Alliance Meeting, PITA Hall, Newbury
9 June 2008 – Meeting with Corps and Residents, Congressman Tierney’s Office, Peabody
30 April 2008 – Interagency and Stakeholder Site Visit to Plum Island and Salisbury Beach
18 January 2008 – Merrimack River Beach Alliance Meeting, PITA Hall, Newbury

Section 1 - Correspondence Received During Review of Section 204 Beneficial Use Report and Environmental Assessment

MA Office of Coastal Zone Management – Consistency Concurrence – 8 October 2009
MA Department of Environmental Protection – Chapter 91 License – 7 October 2009
MA Office of Coastal Zone Management – Extension Letter to NAE – 28 September 2009
North Atlantic Division, PD – Memo Forwarding PPA Package – 28 September 2009
New England District – Memo Forwarding PPA Package – 21 September 2009
MA Department of Conservation and Recreation - Letter to NAE – 18 September 2009
U.S. Fish and Wildlife Service – ESA Letter to New England District – 8 September 2009
North Atlantic Division, PDS-P – Memo Approving DPR – 3 September 2009
MA Office of Coastal Zone Management – Extension Letter to NAE – 1 September 2009
MA Division of Fisheries and Wildlife – Letter to Newbury Conservation Commission
– 1 September 2009

MA Department of Conservation and Recreation -:Letter to MANHESP on Commitment to Shorebird Monitoring and Management of the Beach – 31 August 2009
New England District – Email to US Fish & Wildlife Service and MANHESP on ESA – 26 August 2009
MA Department of Environmental Protection – Amendment to Water Quality Certification – 20 August 2009
State Senator Steven A. Baddor and State Representative Michael A. Costello – 14 August 2009 – Joint Letter of Support to NAE
New England District – Letter to US Fish & Wildlife Service on ESA – 6 August 2009
MA Department of Conservation and Recreation - :Letter to Town of Newbury on Commitment to Beach Management and Public Access – 6 August 2009
NAE and USF&WS – Emails Exchanged on ESA – 5 August 2009
NAE and MANHESP – Emails Exchanged on Listed Species – 4 to 5 August 2009
Massachusetts Executive Office of Environmental Affairs – 24 July 2009 – Secretary’s Certificate on Notice of Project Change for Beach Nourishment
Vine Associates (For MA DCR) – Letter to Town of Newbury – 21 July 2009
MA Division of Fisheries and Wildlife – Letter to Newburyport Conservation Commission – 17 July 2009
MA Division of Fisheries and Wildlife – Letter to Salisbury Conservation Commission – 17 July 2009

Section 2 - Correspondence Received During Section 204 Beneficial Use Study

New England District – Memo to North Atlantic Division – 17 July 2009
New England District – Public Notice for Project Modification – 16 July 2009
MA Division of Fisheries and Wildlife – Letter to EOEEA – 14 July 2009
MA Office of Coastal Zone Management – Letter to NAE – 7 July 2009
MA Bureau of Underwater Archaeological Resources – Letter to NAE – 6 July 2009
New England District – Letter to MA CZM on Consistency Modification – 1 July 2009
New England District – Letter to MA DEP on WQC Modification – 1 July 2009
Town of Newbury, Conservation Commission – Letter to USF&WS on BMP – 30 June 2009
New England District – Letter to MA BUAR on Cultural Resources – 26 June 2009
North Atlantic Division – Memo to NAE Approving Release of Draft EA – 26 June 2009
Vine Associates – Letter to the MA Executive Office of Energy and Environmental Affairs – 15 June 2009 – Submitting EIR Waiver Request and Notice of Project Change
New England District – Letter to MA DCR on Real Estate Interests – 11 June 2009
North Atlantic Division – Email to NAE Approving Release of Draft EA – 11 June 2009
New England District – Letter to National Marine Fisheries Service – 5 June 2009
New England District – Memo to NAD on Draft EA – 21 May 2009
New England District – ESA Coord. Letter to US Fish & Wildlife Service – 18 May 2009
MA DCR – Beach Management Letter to US Fish & Wildlife Service – 14 May 2009
New England District – Record of Telephone Conversation with US Fish & Wildlife Service on ESA Consultation – 5 May 2009
City of Newburyport – Letter to New England District – 26 February 2009
Town of Salisbury – Letter to New England District – 17 February 2009
New England District – Memo to NAD on IAR – 20 January 2009

Section 3 - Correspondence Received During Preparation of Original Environmental Assessment for Operations and Maintenance

MA Department of Environmental Protection – Final Water Quality Certification for Nearshore Disposal – 23 January 2008
New England District – Letter to MA Bureau of Underwater Archaeological Resources – 5 December 2007
MA Bureau of Underwater Archaeological Resources – Letter to NAE – 16 October 2007
New England District – Public Notice for Project – 26 September 2007
Suitability Determination for Nearshore Disposal – 23 August 2007
New England District – Letter to MA Dept of Environmental Protection – 15 March 2007
MA Dept of Environmental Protection – Water Quality Certification – 13 February 2007
New England District – Letter to National Marine Fisheries Service – 23 October 2006
National Marine Fisheries Service – Letter to New England District – 22 September 2006
MA Office of Coastal Zone Management – Coastal Zone Consistency Concurrence – 19 September 2006
New England District – Letter to National Marine Fisheries Service – 21 August 2006
New England District – Letter to MA Office of Coastal Zone Management – 3 August 2006
U.S. Fish and Wildlife Service – Letter to New England District – 31 July 2006
National Marine Fisheries Service – Letter to New England District – 13 July 2006
National Marine Fisheries Service – Letter to NAE on ESA Consultation – Undated – Around June/July 2006
U.S. Environmental Protection Agency – Letter to NAE – 21 June 2006
New England District – Letter to MA Dept of Environmental Protection – 19 June 2006
New England District – Letter to National Marine Fisheries Service – 13 June 2006
New England District – Letter to U.S. Fish and Wildlife Service – 7 June 2006
New England District – Letter to U.S. Environmental Protection Agency – 7 June 2006
New England District – Letter to MA Dept of Environmental Protection – 3 February 2006
Massachusetts Executive Office of Environmental Affairs – 6 June 2005 – Secretary’s Certificate on the Environmental Notification Form
Town of Newbury – Letter to New England District – 17 May 2004

SECTION 1
CORRESPONDENCE RECEIVED DURING REVIEW OF
§204 BENEFICIAL USE REPORT AND ENVIRONMENTAL ASSESSMENT



THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS
OFFICE OF COASTAL ZONE MANAGEMENT
251 Causeway Street, Suite 800, Boston, MA 02114-2136
(617) 626-1200 FAX: (617) 626-1240

October 8, 2009

John R. Kennelly
Department of the Army
New England District, Corps of Engineers
696 Virginia Road
Concord, MA 01742-2751

RE: CZM Federal Consistency Review of Newburyport Harbor Federal Maintenance
Dredging Project; Newburyport.

Dear Mr. Kennelly:

The Massachusetts Office of Coastal Zone Management (CZM) has completed its review of your proposal for the modification to the Newburyport Harbor Federal maintenance dredging project.

We concur with your certification and find that the activity as proposed is consistent with the CZM enforceable program policies.

If the above-referenced project is modified in any manner, including any changes resulting from permit, license or certification revisions, including those ensuing from an appeal, or the project is noted to be having effects on coastal resources or uses that are different than originally proposed, it is incumbent upon the proponent to notify CZM, submit an explanation of the nature of the change pursuant to 15 CFR 930, and submit any modified state permits, licenses, or certifications. CZM will use this information to determine if further federal consistency review is required.

Thank you for your cooperation with CZM.

Sincerely,

Deerin Babb-Brott
Director

RLB/kg
czm#7501

cc: Karen Kirk Adams, Chief
Regulatory Branch, US Army Corps of Engineers
Mark Habel,
Navigation Branch, US Army Corps of Engineers
Ben Lynch, Program Chief
Wetlands and Waterways Regulation, MA DEP
Lealdon Langley
Wetlands and Waterways Regulation, MA DEP
Kathryn Ford, Project Review Coordinator
MA DMF





COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

DEVAL L. PATRICK
Governor

TIMOTHY P. MURRAY
Lieutenant Governor

IAN A. BOWLES
Secretary

LAURIE BURT
Commissioner

MA Dept. of Conservation and Recreation
C/o Vine Associates, Inc.
190 Old Derby Street, Suite 311
Hingham, MA 02043
attn: Christine Player

OCT 07 2009

Re: Waterways Application No. W09-2764D/ Permit No. 12595
Merrimack River, Newburyport, Essex County

Dear Ms. Player:

The Department of Environmental Protection, has approved the enclosed referenced permit authorizing the MA Department of Conservation and Recreation to perform dredging pursuant to M.G.L. Chapter 91 and its regulations 310 CMR 9.00. Any subsequent project change not authorized by this permit shall render it void.

Pursuant to 310 CMR 9.17(1)(a) and 9.17(2), the Licensee may appeal this decision within twenty-one (21) days of the date of permit issuance, by submitting a written request, by certified mail, for an adjudicatory hearing. Any notice of claim for an adjudicatory hearing must include the following information: the DEP Waterways Application File Number; the complete name, address and telephone number of the party filing the request; if represented by counsel, the name, address and telephone number of the attorney; a clear statement that a formal adjudicatory hearing is being requested; and a clear and concise statement of the specific objections to the Department's license decision, and the relief sought through the adjudicatory hearing, including, specifically, the changes desired in the final Waterways Permit.

The hearing request, along with a valid check made payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100.00), must be mailed to:

Case Administrator
Department of Environmental Protection
One Winter Street – 2nd floor
Boston, MA 02108

This information is available in alternate format. Call Donald M. Gomes, ADA Coordinator at 617-556-1057. TDD Service - 1-800-298-2207.

At the same time, a copy of this appeal must be sent to the DEP Waterways Regulation Program, the municipal official of the city or town where the project is located, and any other parties to this proceeding. In addition, this appeal must include a statement that the appropriate copies have been delivered as described herein.

The work authorized by this permit shall not commence if the Department receives a request for an adjudicatory hearing. You are also required to notify the Department in writing of the date the authorized work is completed.

Sincerely,

A handwritten signature in black ink, appearing to read "Ben Lynch", with a stylized, cursive script.

Ben Lynch
Program Chief
Waterways Regulation Program

cc: Newburyport Conservation Commission w/enc.
file



COMMONWEALTH OF MASSACHUSETTS
 EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
 ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

DEVAL L. PATRICK
 Governor

IAN A. BOWLES
 Secretary

TIMOTHY P. MURRAY
 Lieutenant Governor

LAURIE BURT
 Commissioner

PERMIT NO. 12595

Name and Address of Permittee:
 MA Department of Conservation and Recreation
 251 Causeway Street
 Boston, MA 02114

ISSUED: October 7, 2009
 EXPIRES: October 7, 2014

Permission is hereby given by the Department of Environmental Protection to perform maintenance dredging of approximately 160,000 cubic yards of sediment from the outer entrance channel within Federal Navigation Channel of Newburyport Harbor, in the City of Newburyport. The project is proposing to dispose of the dredged sediments as beach and dune nourishment at two locations. Approximately 120,000 cubic yards will be placed along Plum Island in the Town of Newbury and approximately 40,000 cubic yards will be placed along Salisbury Beach in the Town of Salisbury. -----

All work authorized herein shall be in the location shown and to the dimensions indicated in the permit plans titled: "Proposed Dredge Plan, Newburyport Harbor Entrance Channel; MA Dept. of Conservation & Recreation, Newburyport Harbor, federal Navigation Project, Newburyport, Newbury & Salisbury, MA. Plans prepared by Vine Associates, Inc., dated June 2009", (7 sheets).

STANDARD WATERWAYS PERMIT CONDITIONS

1. Acceptance of this Waterways Permit shall constitute an agreement by the permittee to conform to all terms and conditions stated herein.
2. This permit is issued upon the express condition that any and all other applicable authorizations necessitated due to the provisions hereof shall be secured by the permittee prior to the commencement of any activity hereby authorized.
3. This permit shall be revocable by the Department for noncompliance with the terms and conditions set forth herein. This permit may be revoked after the Department has given written notice of the alleged noncompliance to the permittee, or his agent, and

those persons who have filed a written request, with the Department, for such notice and have afforded the permittee a reasonable opportunity to correct said noncompliance. Failure to correct said noncompliance after the issuance of a written notice by the Department shall render this permit void.

4. This permit is issued subject to all applicable federal, state, county, and municipal laws, ordinances, by-laws, and regulations, including but not limited to, a valid Order of Conditions issued pursuant to the Wetlands Protection Act, M.G.L. Chapter 131, s.40. In particular, this issuance is subject to the provisions of Sections 52 to 56, inclusive of Chapter 91 of the General Law and its Regulations 310 CMR 9.40(5), which provides, in part, that the transportation and dumping of the dredge material shall be done under the supervision of the Department, and, when required, the permittee shall provide at his/her expense a dredge inspector approved by the Department. When said inspector is required, a report certified by the dredge inspector shall be submitted to the Department within 30 days after the completion of the dredging. The report shall include daily logs of the dredging operation indicating volume of dredge material, point of origin, point of destination and other appropriate information.

5. This Waterways Permit is issued upon the express condition that dredging and transportation and disposal of dredge material shall be in strict conformance with all applicable requirements and authorizations of the DEP, Division of Wetlands and Waterways.

6. All subsequent maintenance dredging and transportation and disposal of this dredge material, during the term of this permit, shall conform to all standards and conditions applied to the original dredging operation performed under this permit.

7. After completion of the work authorized, the permittee shall furnish, to the Department a suitable plan showing the depths at mean low water over the area dredged. The dredging under this permit shall be conducted as to cause no unnecessary obstruction of the free passage of vessels. In doing the dredging authorized, care shall be taken to cause no shoaling. If, however, any shoaling is caused, the permittee shall, at his expense remove the shoal areas. The permittee shall pay all costs of supervision, and if at any time the Department deems necessary a survey or surveys of the area dredged, the permittee shall pay all costs associated with such work. Nothing in this permit shall be construed as to impair the legal rights of any persons, or authorize dredging on land not owned by the permittee without consent of the owner(s) of such property.

8. The permittee shall assume and pay all claims and demands arising in any manner from the work authorized herein, and shall save harmless and indemnify the audits, damages, costs and expenses incurred by reason thereof.

9. The permittee shall, at least three days before commencing any dredging in the tide water, give written notice to the Department of the time, location and amount of the proposed work.

10. Whosoever violates any provisions of this permit shall be subject to a fine of \$25,000 per day for each day such violation occurs or continues, or by imprisonment for not more than one year, or both such fine and imprisonment; or shall be subject to civil penalty not to exceed \$25,000 per day for each day such violation occurs or continues.

SPECIAL WATERWAYS PERMIT CONDITIONS

1. Dredging shall be performed by hydraulic methods.
2. Dredge spoils shall be disposed as beach nourishment at Plum Island, Newbury and Salisbury Beach.
3. Maintenance dredging may be performed for a period of five (5) years subsequent to the date of issuance of this permit.
4. Pursuant to 310 CMR 9.40(4)(a), easements for public access below the existing mean high water mark have been secured for disposal of 40,000 cubic yards of dredge spoils as beach nourishment at Salisbury Beach in the Town of Salisbury, by the permittee, for the placement of sand on private eroding beaches.
5. Disposal of 120,000 cubic yards of dredge spoils as beach nourishment at Plum Island in the Town of Newbury as beach nourishment is not authorized until all easements for public access below the existing mean high water mark have been secured, by the permittee or by their representative, for the placement of sand on private eroding beaches, pursuant to 310 CMR 9.40(4)(a).

DEPARTMENT OF ENVIRONMENTAL PROTECTION



Ben Lynch
Program Chief, Waterways Regulation Program

For Permit Attachments See Appendix J - State Approvals



DEPARTMENT OF THE ARMY
NORTH ATLANTIC DIVISION, CORPS OF ENGINEERS
FORT HAMILTON MILITARY COMMUNITY
GENERAL LEE AVENUE, BLDG 301
BROOKLYN, NY 11252

REPLY TO

CENAD-PD

28 September 2009

MEMORANDUM FOR Commander, Headquarters, US Army Corps of Engineers,
ATTN: Mr. Wes Coleman, Regional Integration Team, CEMP-NAD

SUBJECT: Newburyport Harbor, Massachusetts, Beneficial Use of Dredged Materials Project,
CWIS/P2 152124, Section 204 WRDA 1992, as amended (33 USC 2326)

1. References:
 - a. CENAE-EP-PN memorandum dated 21 September 2009, SAB
 - b. 33 USC 2326 (Section 204 WRDA 1992, as amended)
 - c. CECW-P memorandum dated 8 April 2008
 - d. E-mail correspondence and discussions as between District, Division and Headquarters concerning the "go-by" Project Partnership Agreement
2. The North Atlantic Division endorses the subject Project Partnership Agreement (PPA) package (Reference 1a) for HQUSACE and ASA (CW) review and approval to execute. Six (6) copies of the package are enclosed. Reference materials are being provided electronically to facilitate review.
3. The proposed beneficial use of dredged material project would utilize material from the Newburyport Harbor Federal navigation project. The total project cost is estimated at \$1,800,000 above the base dredging plan, to be cost shared on a 65% Federal and 35% non-Federal basis. In accord with References 1b-1d, there is no current model PPA for this project authority as Section 2037 of WRDA 2007 has resulted in program implementation changes that require incorporation into the PPA. Coordination with HQUSACE has resulted in a "go-by" PPA for this project, and prior HQUSACE comments have been addressed in this PPA.
4. Due to the time sensitive nature of this opportunity to tie-in to the Operations and Maintenance dredging project, we request approval to execute the PPA be expedited, to the extent possible, to occur by the week of 5 October 2009. Upon approval, we request signatory authority be delegated to the District Commander.
5. The District has provided assurances that all real estate easement acquisitions and regulatory approvals will be completed prior to contract advertisement.
6. If you have any questions, please contact Mr. Paul A. Sabalis, P.E. Mr. Sabalis may be reached at 718-765-7089.

LLOYD CALDWELL, P.E., SES
Director of Programs

Encls



THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS
OFFICE OF COASTAL ZONE MANAGEMENT
251 Causeway Street, Suite 800, Boston, MA 02114-2136
(617) 626-1200 FAX: (617) 626-1240

September 28, 2009

John R. Kennelly
Department of the Army
New England District, Corps of Engineers
696 Virginia Road
Concord, MA 01742-2751

RE: CZM Federal Consistency Review of Newburyport Harbor Federal
Maintenance Dredging Project; Newburyport.

Dear Mr. Kennelly:

The Massachusetts Office of Coastal Zone Management (CZM) is currently reviewing your proposed modification to the Newburyport Harbor Federal maintenance dredging project, to ensure consistency with CZM enforceable program policies. Our formal review began on July 3, 2009, and a consistency determination would ordinarily be issued no later than September 4, 2009. However, as per the Coastal Zone Management Act Federal Consistency Regulations at 15 CFR 930.41(b) and 310 CMR 21.07(3)(e), CZM may request an extension of the review period to allow for additional time to review the project. In addition, CZM cannot complete its review and issue a decision until all applicable licenses, permits, certifications and other authorizations have been issued. Our records indicate that the required Chapter 91 permit, which is awaiting signature of the temporary construction and permanent public access easements, from the Massachusetts Department of Environmental Protection has not yet been issued.

As discussed with the CZM Project Review Coordinator, Robert Boeri, the Coastal Zone Management Act Federal Consistency Regulations at 15 CFR 930.41(b) allow for an extension in the 60 day review period, if mutually agreed upon by both the federal agency and the state agency. Due to the complexity and magnitude of the project and additional state permits which are required, CZM and the Corps previously agreed to an extension of the review period until October 2, 2009. In order to facilitate the required outstanding permits, we propose an extension of the review period until October 9, 2009. CZM will need copies and documentation of all required authorizations prior to the expiration of the extension period. If the additional information necessary for CZM to issue a determination is provided to us earlier than October 9, 2009, CZM may issue the determination prior to the end date of the extension. In the event that all the necessary information has not been received within the review schedule noted above, CZM may contact you to issue an additional extension with dates to be determined. Please indicate your agreement to this schedule by signing below and returning this letter to my attention.

DEVAL L. PATRICK GOVERNOR TIMOTHY P. MURRAY LIEUTENANT GOVERNOR IAN A. BOWLES SECRETARY DEERIN BABB-BROTT DIRECTOR

www.mass.gov/czm



If you have questions about the federal consistency review process, please contact me at the above address or (617) 626-1050. If you have questions about the technical review of this project, please contact Kathryn Glenn at (978) 281-3972.

Sincerely,



Robert Boeri
Project Review Coordinator

RB

Agreed to by Applicant



cc: Karen Kirk Adams, Chief
Regulatory Branch, US Army Corps of Engineers
Mark Habel,
Navigation Branch, US Army Corps of Engineers
Ben Lynch, Program Chief
Wetlands and Waterways Regulation, MA DEP
Lealdon Langley
Wetlands and Waterways Regulation, MA DEP
Kathryn Ford, Project Review Coordinator
MA DMF



DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO:
ATTENTION OF:

CENAE-EP-PN

21 September 2009

MEMORANDUM FOR Commander, North Atlantic Division, U.S. Army Corps of Engineers
CENAD-PD-CID-P (Attn: Mr. Joseph Forcina), Fort Hamilton Military Community, 301
General Lee Avenue, Brooklyn, New York 11252-6700

SUBJECT: Newburyport Harbor and Plum Island and Salisbury Beaches Beneficial Use of
Dredged Materials Project, PWI 152124, Section 204, Newburyport, Newbury and Salisbury,
Massachusetts

1. Reference the following documents (enclosed):

- (1) NAD Approval Memo dated 3 September 2009 (Feasibility Report/EA)
- (2) Negotiated Final Draft PPA
- (3) Legal Certification of the Final Draft PPA
- (4) CAP PPA Checklist w/ Appropriations Table
- (5) Letter of Support from the Non-Federal Sponsor
- (6) Memo to NAD Seeking CAP Milestone C-6 Approval
- (7) Sponsor's Self-Certification of Financial Capability
- (8) Copy of Newburyport Harbor Detailed Project Report and EA, September 2009

2. NAE requests that NAD seek PPA approval and grant project approval for the Newburyport Harbor and Plum Island and Salisbury Beaches Beneficial Use of Dredged Materials Project, Newburyport, Newbury and Salisbury, Massachusetts. The Massachusetts Department of Conservation and Recreation (the non-Federal sponsor) supports this project and will provide funds to complete the development of the design plans and specifications and construction. Federal regulatory approvals are in-place. State regulatory approvals are in place except for final CZM consistency concurrence which is waiting on execution of public access easements by private beachfront property owners in accordance with State requirements for beachfill projects. MZ CZM has stated that Concurrence will be issued prior to the Solicitation scheduled for the week of 5 October 2009.

3. The draft PPA was developed using the September 2007 former draft model PPA for Section 204, updated to conform to WRDA 2007 modifications to Section 204 project purposes, limits and cost-sharing. The draft was provided to USACE HQ on 1 July 2009 and HQ comments received on 16, 17 and 29 July were incorporated in the PPA version provided to the Sponsor.

CENAE-EP-PN

SUBJECT: Newburyport Harbor and Plum Island and Salisbury Beaches Beneficial Use of Dredged Materials Project, PWI 152124, Section 204, Newburyport, Newbury and Salisbury, Massachusetts

4. The Sponsor is prepared to secure all required real estate easements for the project. Massachusetts requires all public access easements to be executed and recorded before final State approvals, including CZM Concurrence, can be issued.
5. Maintenance of the Newburyport Harbor Federal Navigation Project is funded by Operations and Maintenance appropriations and in part by the American Recovery and Reinvestment Act. Design and Implementation of the Section 204 project is funded from the FY09 CAP allowance of \$60,000, and FY2010 programmed amount of \$1,110,000.
6. We ask for your earliest possible consideration of this request. Pending approval for PPA execution and the receipt of the design funds from the sponsor, we are in a position to initiate the development of the plans and specification immediately. Solicitation of bids is tentatively scheduled for the week of 5 October 2009, with an award projected for early December 2009 with construction to commence in late December and be completed within the environmentally prescribed work window which closes on 31 March 2010.
7. If further information is needed, please contact the Project Manager, Mr. Mark Habel, of my staff, at (978) 318-8871.

Encls



PHILIP T. FEIR
COL, EN
Commanding

Copy Furnished:
Peter Sabalis, DST, NAD
Peter Blum, NAD

dcr
Massachusetts



September 18, 2009

Mr. John R. Kennelly
Chief, Planning Branch
US Army Corps of Engineers
New England District
696 Virginia Road
Concord, MA 01742-2751

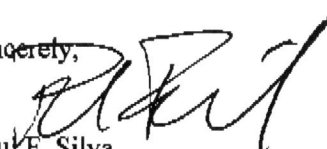
Dear Mr. Kennelly:

The Commonwealth of Massachusetts, Department of Conservation and Recreation, (DCR), has reviewed the draft Project Partnership Agreement (PPA), Project Reports and Environmental Assessment (DPR/EA) for a the Design and Construction of the Newburyport Harbor and Plum Island and Salisbury Beaches Beneficial Use of Dredged Materials Project., and as the non-Federal sponsor for the project, support the plan recommended in these reports and are prepared to move forward to project implementation.

Based on the draft PPA, the cost of the project, including preparation of plans and specifications, construction, easements, rights-of-way, relocations, and material reuse, totals \$1,800,000. We understand that the Commonwealth of Massachusetts, DCR, as the non-Federal sponsor must provide all LERRD necessary for the project and the minimum non-Federal share of all costs incurred subsequent to the feasibility phase is 35 percent. Based on the estimated cost shown above, costs would be apportioned, \$1,170,000 Federal and \$630,000 non-Federal. The Commonwealth also understands that it is responsible for operations and maintenance costs upon project completion.

The Commonwealth of Massachusetts hereby concurs with and supports the plan recommended in the draft PPA and DPR/EA. The Commonwealth also acknowledges its intention to execute a standard Project Cooperation Agreement (PCA) as the non-Federal sponsor for the project. If you have any questions or require any additional information, please contact me at 617-626-1392.

Sincerely,


Raul F. Silva
Deputy Chief Engineer

Cc: Noel Baratta, Chief Engineer
Gary Davis, General Counsel

COMMONWEALTH OF MASSACHUSETTS · EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS

Department of Conservation and Recreation
251 Causeway Street, Suite 600
Boston MA 02114-2119
617-626-1250 617-626-1351 Fax
www.mass.gov/dcr



Deval L. Patrick
Governor

Timothy P. Murray
Lt. Governor

Ian A. Bowles, Secretary
Executive Office of Environmental Affairs

Richard K. Sullivan, Jr., Commissioner
Department of Conservation & Recreation



United States Department of the Interior



FISH AND WILDLIFE SERVICE
New England Field Office
70 Commercial Street, Suite 300
Concord, New Hampshire 03301-5087
<http://www.fws.gov/northeast/newenglandfieldoffice>

September 8, 2009

John R. Kennelly
Engineering/Planning Division
New England District, Corps of Engineers
696 Virginia Road
Concord, MA 01742-2751

Dear Mr. Kennelly:

This is in response to your August 6, 2009 request for concurrence of your determination of “not likely to adversely affect” the federally-threatened piping plover for the proposed Newbury Harbor maintenance dredging and disposal project located in Newbury, Newburyport and Salisbury, Massachusetts. In order to assess the likelihood of adverse effects on piping plovers, we reviewed the project plans and conditions to protect piping plovers included in your August 6, 2009 letter, additional information provided in your letter of May 18, 2009, electronic correspondence from Mr. Mark Habel of the New England District, Corps of Engineers (Corps), dated August 26, 2009, and a letter of commitment regarding the management of Newbury Beach from Mr. Raul Silva, Massachusetts Department of Conservation and Recreation (DCR), dated August 31, 2009. Our comments are provided in accordance with Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1533).

The proposed action entails the dredging of approximately 160,000 cubic yards (cy) of sand from the Newburyport Harbor channel in the Merrimack River and placement of approximately 120,000 cy of sand on a beach on Plum Island (Newbury), and 40,000 cy of sand on Salisbury Beach State Reservation in Salisbury. The two sites were identified for beach nourishment due to severe erosion and the project is being considered under the Corps’ Section 204 authority for beneficial use of dredge material.

Piping plovers nest on Plum Island in Newbury and Newburyport, and have been documented on an irregular basis at Salisbury Beach State Reservation. Disposal of suitable sand material and creation of a wider beach at Plum Island and Salisbury Beach State Reservation will likely encourage additional piping plovers to nest on the enhanced beaches. In order to avoid adversely affecting piping plovers from the beach nourishment operation, the Corps proposed the following project conditions:

- Time-of-year construction activity restriction of April 1 to August 31 to avoid disturbing breeding piping plovers.
- Limit fill to station 22+50 at the Plum Island beach disposal area in order to avoid adversely affecting existing piping plover habitat and grading between stations 20+50 and 22+50 to match the existing beach slope.
- Modification of sand fencing and vegetation plantings required to stabilize the slope at the southern end of the Plum Island beach disposal area in order to allow piping plover movement on the dune face and provide cover for piping plover chicks.
- Use of a 10 (horizontal) to 1 (vertical) slope at the Salisbury Beach State Reservation disposal area.

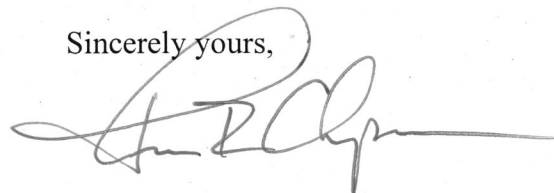
The beaches that will be created as a result of the beach nourishment proposed by the Corps have been designed to provide suitable nesting habitat for piping plovers, and we anticipate that an increase in nesting plovers will occur in the future at the Plum Island location and possibly at Salisbury State Reservation. In order to ensure that plovers nesting on the nourished beaches are protected from disturbance due to an anticipated increase in recreational use of the enhanced beaches, letters of commitment detailing management and monitoring of piping plovers were provided by the DCR and the Town of Newbury. The proposed management is consistent with state and federal guidelines for managing piping plovers nesting on recreational beaches, and includes the measures required by the Massachusetts Division of Fisheries and Wildlife (letter dated August 5, 2009) to avoid "take" under the Massachusetts Endangered Species Act.

Based upon our review of the project, the additional measures the Corps has proposed to avoid adversely affecting piping plovers, and the DCR letter outlining their commitment to manage according to state and federal guidelines, we concur with the Corps' "not likely to adversely affect" determination. The project design, time-of-year restriction, and proposed management should ensure that adverse effects to piping plovers will be insignificant (size of the impact will never reach the scale where take occurs).

Preparation of a Biological Assessment or further consultation with us under Section 7 of the Endangered Species Act is not required. Should project plans change, or additional information on listed or proposed species becomes available, this determination may be reconsidered.

Thank you for your cooperation and please contact Susi von Oettingen of my staff at 603-223-2541, extension 22, if we can be of further assistance.

Sincerely yours,



Thomas R. Chapman
Supervisor
New England Field Office

John R. Kennelly
September 3, 2009

3

CC: Scott Melvin, MADFW
Mark Habel, NED/ACOE
Todd Randal, NED/ACOE
Heather Warchalowski, MADCR
MA Department of Conservation and Recreation
251 Causeway Street, Suite 700
Boston, MA 02114
Doug Packer, Newbury Conservation Agent
Town of Newbury
26 High Road
Newbury, MA 01951-1236
Reading file

ES: SvonOettingen:9-8-09:603-223-2541



DEPARTMENT OF THE ARMY
NORTH ATLANTIC DIVISION, CORPS OF ENGINEERS
FORT HAMILTON MILITARY COMMUNITY
BROOKLYN, NY 11252-6700

REPLY TO
ATTENTION OF

CENAD-PDS-P

3 September 2009

MEMORANDUM FOR: Chief, CENAD-PDC (Mr. Joseph Forcina)

SUBJECT: Newburyport Harbor and Plum Island & Salisbury Beaches, Section 204 Beneficial Use of Dredged Materials, Newburyport, Newbury, and Salisbury, Massachusetts, (PWI 152124) – Request for Approval of Draft Detailed Project Report

1. References:

- a. E-mail dated 7 Jan 2009, subject as above, from New England District (NAE) to North Atlantic Division (NAD) Planning and Policy Community of Practice (PCoP) submitting the draft Initial Appraisal Report (IAR) for review and subsequent approval for release to the project sponsors and public.
- b. E-mail dated 27 Jan 2009, subject as above, from NAD PCoP to NAE approving release of subject IAR to sponsors and public.
- c. E-mail dated 8 June 2009, from NAD District Support Team (DST) to PCoP requesting review of draft Environmental Assessment (EA) and approval for release for Public Review.
- d. E-mail dated 11 June 2009 from NAD PCoP to DST providing review comments on the draft EA and approval to release for Public Review.
- e. CENAE-EP-P memorandum dated 17 July 2009, subject as above, submission of draft Detailed Project Report to NAD PCoP for review and approval.

2. The NAD PCoP has reviewed the final decision document and EA. The report is well done and economically justified on an incremental basis with the addition of the Salisbury element. The NAD PCoP Environmental Team Leader has recommended approval of the final EA and FONSI with the assurance from NAE and the US Fish and Wildlife Service that the draft Endangered Species Act letter provided to NAD will be received in final form by NAE.

3. The Detailed Project Report and EA are approved. Please direct any questions to Rich Ring, the NAE Planning Manager, at (978) 318-8643.

A handwritten signature in black ink, appearing to read "Joseph R. Vietri".

JOSEPH R. VIETRI
Chief, Planning and Policy
Programs Directorate



THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS
OFFICE OF COASTAL ZONE MANAGEMENT
251 Causeway Street, Suite 800, Boston, MA 02114-2136
(617) 626-1200 FAX: (617) 626-1240

September 1, 2009

John R. Kennelly
Department of the Army
New England District, Corps of Engineers
696 Virginia Road
Concord, MA 01742-2751

RE: CZM Federal Consistency Review of Newburyport Harbor Federal Maintenance
Dredging Project; Newburyport.

Dear Mr. Kennelly:

The Massachusetts Office of Coastal Zone Management (CZM) is currently reviewing your proposed modification to the Newburyport Harbor Federal maintenance dredging project, to ensure consistency with CZM enforceable program policies. Our formal review began on July 3, 2009, and a consistency determination would ordinarily be issued no later than September 4, 2009. However, as per the Coastal Zone Management Act Federal Consistency Regulations at 15 CFR 930.41(b) and 310 CMR 21.07(3)(e), CZM may request an extension of the review period to allow for additional time to review the project. In addition, CZM cannot complete its review and issue a decision until all applicable licenses, permits, certifications and other authorizations have been issued. Our records indicate that the required Chapter 91 permit, which is awaiting signature of the temporary construction and permanent public access easements, from the Massachusetts Department of Environmental Protection has not yet been issued.

As discussed with the CZM Project Review Coordinator, Robert Boeri, the Coastal Zone Management Act Federal Consistency Regulations at 15 CFR 930.41(b) allow for an extension in the 60 day review period, if mutually agreed upon by both the federal agency and the state agency. In order to facilitate the required permits, we propose an extension of the review period until October 2, 2009. CZM will need copies and documentation of all required authorizations prior to the expiration of the extension period. If the additional information necessary for CZM to issue a determination is provided to us earlier than October 2, 2009, CZM may issue the determination prior to the end date of the extension. In the event that all the necessary information has not been received within the review schedule noted above, CZM may contact you to issue an additional extension with dates to be determined. Please indicate your agreement to this schedule by signing below and returning this letter to my attention.



If you have questions about the federal consistency review process, please contact me at the above address or (617) 626-1050. If you have questions about the technical review of this project, please contact Kathryn Glenn at (978) 281-3972.

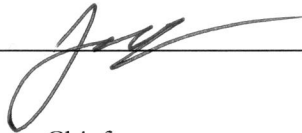
Sincerely,



Robert Boeri
Project Review Coordinator

RB

Agreed to by Applicant



cc: Karen Kirk Adams, Chief
Regulatory Branch, US Army Corps of Engineers
Mark Habel,
Navigation Branch, US Army Corps of Engineers
Ben Lynch, Program Chief
Wetlands and Waterways Regulation, MA DEP
Lealdon Langley
Wetlands and Waterways Regulation, MA DEP
Kathryn Ford, Project Review Coordinator
MA DMF



Commonwealth of Massachusetts

Division of Fisheries & Wildlife

Wayne F. MacCallum, *Director*

September 1, 2009

Newbury Conservation Commission
25 High Road
Newbury, MA 01951-1236

MA Department of Conservation and Recreation
251 Causeway Street
Boston, MA 02214

RE: Applicant: MA Department of Conservation and Recreation
 Project Location: Plum Island
 Project Description: Beach/dune nourishment
 Wetlands File No.: 050-1008
 NHESP Tracking No.: 09-26646

Dear Commissioners and Applicant:

The applicant listed above has submitted a *Notice of Intent* with a plan (sheet 4 of 5 with plot date of 07/08/2009; attached) to the Natural Heritage & Endangered Species Program (NHESP) of the Massachusetts Division of Fisheries & Wildlife, in compliance with the rare wildlife species section of the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.37). Additional materials were submitted for review pursuant to the Massachusetts Endangered Species Act (MESA; M.G.L. c. 131A) and its implementing regulations (321 CMR 10.00).

Based on a review of information that was submitted and the information that is contained in our database, the NHESP has determined that the proposed project occurs within the mapped habitat of the Piping Plover (*Charadrius melodus*), a species state-listed as "Threatened" and federally protected pursuant to the U.S. Endangered Species Act (ESA, 50 CFR 17.11). This species and its habitats are protected pursuant to the Massachusetts Endangered Species Act (MESA, MGL c131A) and its implementing regulations (321 CMR 10.00). Fact sheets for this species can be found at www.nhesp.org.

WETLANDS PROTECTION ACT (WPA)

For projects within *Estimated Habitat*, the WPA Regulations state that "...if a proposed project is found by the issuing authority to alter a resource area which is part of the habitat of a state-listed species, such project shall not be permitted to have any short or long term adverse effects on the habitat of the local population of that species" (310 CMR 10.37, 10.59), and that "no project may be permitted within the riverfront area which will have any adverse effect on specified habitat sites of rare wetland or upland, vertebrate or invertebrate species, ... or which will have any adverse effect on vernal pool habitat certified prior to the filing of the Notice of Intent" (310 CMR 10.58(4)(b)).

The proposed project will alter the nesting habitat of the Piping Plover. Therefore, based on a review of the information submitted and the information contained in the NHESP database, the NHESP has **determined that the project, as proposed, must be conditioned in order to avoid adverse effects to the Resource Area habitat of the state-listed species. The NHESP requires adherence to the following conditions:**

www.masswildlife.org

Division of Fisheries and Wildlife

Field Headquarters, 1 Rabbit Hill Rd., Westborough, MA 01581 (508) 389-6300 Fax (508) 389-7890

An Agency of the Department of Fish and Game

A-1-19

1. All work shall be carried out within the limit of work shown on the attached plan and in accordance with all design specifications shown on the plan.
2. All work shall be done outside the period of April 1 - August 31. No materials (including dredge pipes) may be present on the beach April 1 - August 31.

Provided the applicant adheres to both of the above conditions and the conditions are included in any final Orders of Conditions, the project will not adversely affect the Resource Area habitat of state-listed wildlife. We remind the Conservation Commission that a copy of any Order of Conditions associated with the proposed project, must be sent to the NHESP at the same time it is sent to the applicant, as required by 310 CMR 10.05(6)(e).

MASSACHUSETTS ENDANGERED SPECIES ACT (MESA)

The MESA is administered by the NHESP of the MA Division of Fisheries & Wildlife, and prohibits the "take" of state-listed species. The "take" of state-listed species is defined as "in reference to animals, means to harass, harm, pursue, hunt, shoot, hound, kill, trap, capture, collect, process, disrupt the nesting, breeding, feeding or migratory activity or attempt to engage in any such conduct, or to assist such conduct, and in reference to plants, means to collect, pick, kill, transplant, cut or process or attempt to engage or to assist in any such conduct. Disruption of nesting, breeding, feeding or migratory activity may result from, but is not limited to, the modification, degradation or destruction of Habitat." (321 CMR 10.02).

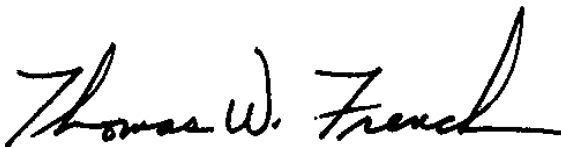
The proposed project will alter the nesting habitat of the Piping Plover. Therefore, based on a review of the information submitted and the information contained in the NHESP database, **the NHESP has determined that the project must be conditioned in order to avoid a "take" of state-listed species as noted below and as outlined in the WPA section above:**

3. The Applicant and the Town of Newbury shall implement a Shorebird Monitoring and Protection Plan as described in the attached letter from the Applicant dated August 31, 2009 for the two consecutive years following any nourishment activity associated with the project.

Provided the applicant complies with the three, above-described conditions and there are no changes to the project plans, no further review of this project subject to the MESA is necessary. Please note that this conditional no "take" determination remains in effect for 5 years. Thereafter a new MESA determination would need to be obtained from the NHESP for any proposed work in Priority Habitat at this site. If it is not possible to comply with these conditions, if project plans change, or if no physical work is commenced on the above proposed project within three-years from the date of issuance of this letter, the applicant must consult with the NHESP prior to any work. We note that all work is subject to the anti-segmentation provisions (321 CMR 10.16) of the MESA.

This determination addresses only the matter of **rare** wildlife habitat and does not pertain to other wildlife habitat issues that may be pertinent to the proposed project. If you have any questions about this letter, please contact Kristin Black, Endangered Species Review Biologist, at 508-389-6367 (kristin.e.black@state.ma.us).

Sincerely,

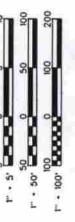
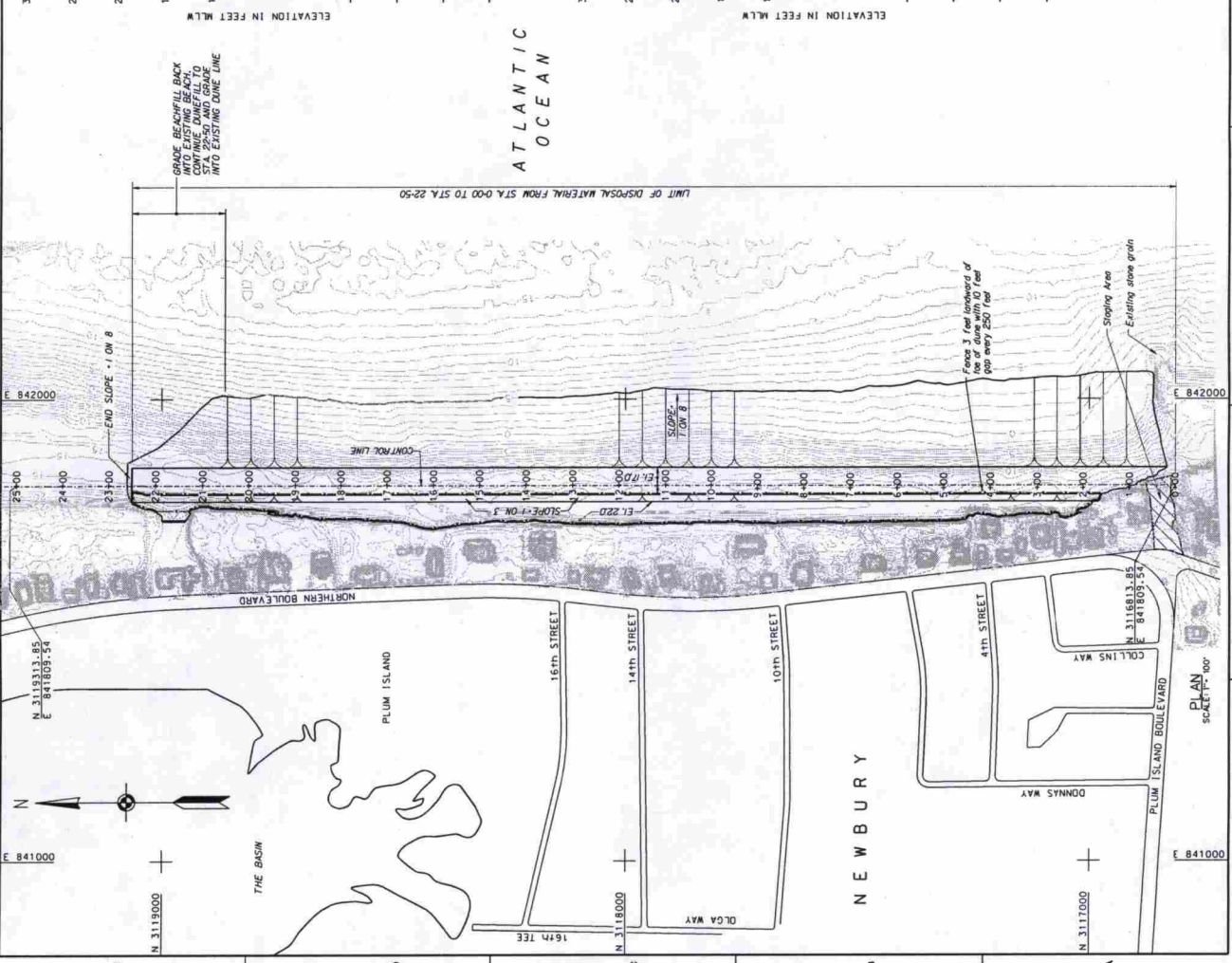
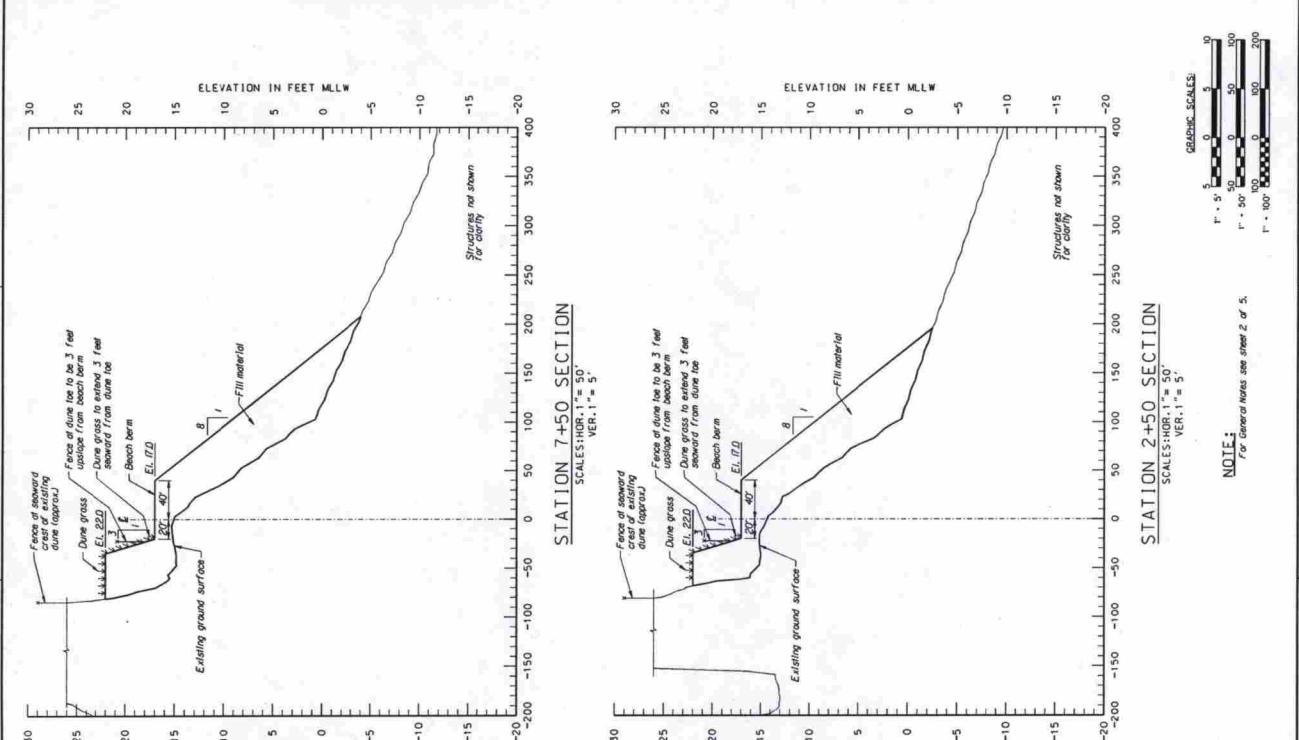


Thomas W. French, Ph.D.
Assistant Director

Attachments (2)

cc: Susi von Oettingen, U.S. Fish and Wildlife Service's New England Field Office
MA DEP Northeast Regional Office, Wetlands Program
Christine M. Player, Vine Associates, Inc.
Heather Warchalowski, MA DCR
Todd Randall, US Army Corps of Engineers
Mark Habel, US Army Corps of Engineers

MAINTENANCE DREDGING 16-FOOT ENTRANCE CHANNEL NEWBURYPORT, MASSACHUSETTS PLUM ISLAND AND REGIONAL AREA		U.S. ARMY CORPS OF ENGINEERS CONCORD, MASSACHUSETTS DISTRICT NO. 1 DISTRICT ENGINEER DISTRICT OFFICE DISTRICT HEADQUARTERS DISTRICT STATION		SHEET NO. 1 OF 2 SHEET NO. C-102 SECTION	
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NOTE:
For General Notes see sheet 2 of 5.



August 31, 2009

Ms. Kristin Black, Endangered Species Review Biologist
MA Natural Heritage and Endangered Species Program
1 Rabbit Hill Road
Westborough, MA 01581

RE: Plum Island Beach/Dune Nourishment
Newbury, MA
NHESP Tracking No. 09-26646

Dear Ms. Black:

The Town of Newbury (Town) and the MA Department of Conservation Recreation (DCR) are jointly submitting this letter to clearly identify our commitment to and responsibility for the monitoring and protection efforts required for Piping Plovers and Least Terns as part of the above referenced project. Such efforts are required in order to meet the requirements set forth by the MA Natural Heritage and Endangered Species Program (NHESP) and the U.S. Fish and Wildlife Service (USFWS) to insure protection of rare shorebirds that may use the project area for breeding activities.

Accordingly, the Town and DCR commit to implementation of the following action items as part of the Plum Island Shorebird Monitoring and Protection Plan:

- Each year, beginning April 1, a qualified shorebird monitor, approved in writing by the NHESP, shall determine whether territorial or nesting Piping Plovers or Terns are present at beach nourishment areas.
- If these species are observed, warning signs and symbolic fencing will be immediately erected and maintained to protect nesting habitat and nests from disturbance or human-caused mortality. Town and/or DCR staff will routinely check the condition of the fencing and will maintain it as necessary.
- Monitoring shall occur at least 2 times per week until at least July 1. However, if plovers or terns are found to be using the site, then monitoring frequency shall be increased to at least 3 times per week, and shall continue until all nesting and brood-rearing activity has been completed.

COMMONWEALTH OF MASSACHUSETTS · EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS

Department of Conservation and Recreation
251 Causeway Street, Suite 600
Boston MA 02114-2119
617-626-1250 617-626-1351 Fax
www.mass.gov/dcr



Deval L. Patrick
Governor

Timothy P. Murray
Lt. Governor

Ian A. Bowles, Secretary, Executive
Office of Energy & Environmental Affairs

Richard K. Sullivan, Jr., Commissioner
Department of Conservation & Recreation

- A report shall be submitted to the NHESP each year, on or before September 30, on standard census forms provided by NHESP, that summarizes the results of the state-listed species monitoring and site protection activities.
- NHESP will be notified of the monitoring arrangements before January 1 of each year for written approval.

An initial step towards implementation of the action items cited will be provided through a Memorandum of Understanding (MOU) between the Town and the Parker River National Wildlife Refuge (PRNWR). This MOU outlines the partnership between the Town and the PRNWR to monitor and protect shorebirds, including monitoring expertise from PRNWR and material and financial support by the Town. The Newbury Beach Management Plan (July 2009) also identifies efforts that will be implemented to further assure protection of shorebirds and their habitat.

It is anticipated that DCR staff will commence annual monitoring activities, with Town staff being available to install symbolic fencing, as necessary. DCR and Town monitoring efforts may also be supplemented by qualified staff from PRNWR as available. If necessary, DCR and the Town will contract with a qualified 3rd party to ensure proper monitoring. DCR and the Town will seek written approval of a 3rd party entity from NHESP prior to commencing any work at the site.

Funding for the monitoring and materials will be provided by the Town of Newbury to the greatest extent possible. The Town will seek funding for this effort each year at Town Meeting. DCR is committed to provide any additional assistance and funding, if necessary, that may be needed to fully implement the monitoring plan.

Both the Town and DCR are aware of the magnitude of the effort that will be required to successfully assure the protection of shorebirds along Plum Island. We will work together to guarantee that monitoring and protection efforts are effectively implemented. Should you have any questions or require any additional information, please feel free to contact our consultant representative, Ms. Martha Rheinhardt of Vine Associates, Inc. at (508) 743-0390.

Sincerely,



Raul F. Silva

Deputy Chief Engineer

cc: Doug Packer, Town of Newbury
 Scott Melvin, Natural Heritage and Endangered Species Program
 Susi von Oettingen, U.S. Fish and Wildlife Service New England Field Office
 Mark Habel,; Todd Randall U.S. Army Corps of Engineers
 Heather Warchalowski, MA DCR

Habel, Mark L NAE

From: Habel, Mark L NAE
Sent: Wednesday, August 26, 2009 4:39 PM
To: 'Susi_vonOettingen@fws.gov'
Cc: 'Scott.Melvin@state.ma.us'; Randall, Todd A NAE; O'Donnell, Edward G NAE; Kennelly, John R NAE; Mackay, Joseph B NAE; 'Silva, Raul (DCR)'; 'cplayer@vineassociates.net'; 'mrheinhardt@vineassociates.net'; 'Warchalowski, Heather (DCR)'; 'conscom@townofnewbury.org'
Subject: Plum Island Beachfill
Attachments: F&WS-Attach-26Aug09.pdf; Revised draft 7-09 VAI Newbury BMP1.doc



F&WS-Attach-26 Revised draft
ug09.pdf (3 MB).09 VAI Newbury

Susi: As we just discussed, the following information is offered to supplement the information and materials provided in the Corps letter to the U.S. Fish and Wildlife Service of 6 August 2009, and in the Corps emails to USF&WS and the Massachusetts Natural Heritage Endangered Species Program on 5 August and 4 August (all in the attached PDF).

As presently designed, in accordance with prior requests from you and the State, the full beachfill and dune section will go no further north than about station 20+50, after which the dune would continue north to tie into the existing frontal dune at about station 22+50, while the beachfill would tapered to tied back into the existing natural beach elevation, width and slope between stations 20+50 and 22+50. Per your prior request no material would be placed north of station 22+50. The design as shown is based on the Corps LIDAR surveys adjusted for beach section surveys conducted by Vine Associates for the DCR. How the beach may change at this or any location between now and initiation of Construction is anyone's guess. But this summer has not been kind to this section of Plum Island, as erosion has uncharacteristically continued. Normally late spring through fall is a time of accretion.

Under Section 204, which for this project is beneficial use of Navigatiion dredged material under our Hurricane and Storm Damage Reduction authority, the non-Federal Sponsor(s) have the responsibility to maintain the project for the anticipated life of the project. Here the MA DCR is the non-Federal Sponsor and will execute the standard Section 204 Project Partnership Agreement with the Corps before bids are solicited. This is unlike the Corps Navigation authorities where the Corps is responsible for future maintenance. It is more in line with our Flood Control and Environmental Restoration authorities which require non-Federal future maintenance.

Under the Beach Management Plan, and the letter (included in the PDF attachment) from DCR to the Town, the Town assumes the primary responsibility for beach management, including beach maintenance, with DCR retaining the ability to step into that role in the event the Town becomes unable or unwilling to perform those responsibilities. Among these is the responsibility to repair damage to the beachfill and dune sections for the life of the project if natural forces (or non-natural for that matter) damage the performance of the project. This includes regrading the beach if damaged by further storm and erosion, and repairing the duneline, fences and plantings, if damaged (by storms, foot traffic, or emergency vehicle traffic). In the most recent draft of the BMP (July 2009 - copy attached) these provisions for beach maintenance in response to erosion can be found on pages 22-27 and 38-39. The Town maintains a sand stockpile to facilitate these needs. Our current projections are that 120,000 CY of beachfill on 2,250 LF of Plum Island at Newbury will last about 4 years, after which time the erosion and the sea will again reach the present beach face and resume compromising the dune line and the properties it protects. Of course it is nature that will determine the life of the project, and under Section 204 we can only work with whatever amount of material is generated from maintenance dredging of the inlet channel. The Town (or State) can only work with whatever remains of the beachfill volume at any given time, supplemented by material

available from its stockpile.

DCR, per our conversation this morning, is currently drafting a second letter which will more specifically address the shorebird monitoring and management requirements spelled out in the MANHESP comments.

This Section 204 project has always been viewed by all parties as a temporary "fix" and nothing more. The intent is that the 204 beachfill project would provide a period of time in which to conduct further more detailed studies of the forces affecting the Merrimack River mouth, its estuary, and the bars and beaches to the North and South of the inlet. Such studies would hopefully find a more permanent solution or program to implement that would satisfy all needs for shore protection, navigation, and environmental enhancement along this short section of the coast. State and Federal politicians have made commitments to securing funds for such studies, and the Corps, State and municipalities would collaborate on such investigations to the extent they are funded to do so. We hope that the USF&WS and MANHESP will also participate in those efforts.

If you have any more questions, please give me or Todd a call.

Mark L. Habel, Chief, Navigation Section Engineering-Planning Division US Army Corps of Engineers New England District
696 Virginia Road, Concord, MA 01742
978-318-8871
mark.l.habel@usace.army.mil



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

DEVAL L. PATRICK
Governor

TIMOTHY P. MURRAY
Lieutenant Governor

IAN A. BOWLES
Secretary

LAURIE BURT
Commissioner

August 20, 2009

Jack Karalius
U.S. Army Corps of Engineers
New England District
696 Virginia Road
Concord, MA 01742

Re: **401 WATER QUALITY CERTIFICATION – Amendment No. 1**
Application for BRP WW 07, Major project dredging

At: Newburyport Harbor Entrance Channel
Merrimack River, NEWBURYPORT and SALISBURY

401 WQC Transmittal No: W075196
Wetlands File No: WE 151-0246
ACoE Application No: NA

Dear Mr. Karalius,

The Department has received and reviewed your BRP WW 09 Amendment request, as the Authorized Agent, of the above Final Water Quality Certification (FWQC) issued on January 23, 2008.

The scope of work authorized under the January 23, 2008 FWQC was to dredge approximately 150,000 cubic yards of sediment from the Newburyport Federal Navigation Channel (FNC) and place the dredged material at a nearshore area off Plum Island. It is our understanding that you are requesting to increase the dredge volume by 10,000 cubic yards. Approximately 120,000 cubic yards of dredged material from the Newburyport Harbor FNC will place directly on the Plum Island Beach site in the town of Newbury and approximately 40,000 cubic yards of dredged material be placed at the Salisbury Beach State Reservation site in the town of Salisbury. This split of the dredged material is a result of an agreement amount the parties of interest which included Army Corps of Engineers (ACoE), Department of Recreation Conservations (DCR), Town of Newbury, Newburyport and Salisbury.

A joint Chapter 91 and 401 WQC application public notice was published in Newburyport Current on July 31, 2009, and Department received no comment during the 15-day public comment period, which ended on August 14, 2009.

This information is available in alternate format. Call Donald M. Gomes, ADA Coordinator at 617-556-1057. TDD# 1-866-539-7622 or 1-617-574-6868.

MassDEP on the World Wide Web: <http://www.mass.gov/dep>

Printed on Recycled Paper

The Department has reviewed the information provided and in accordance with the provisions of Section 401 of the Federal Clean Water Act as amended (33 U.S.C. §1251 et seq.), MGL c.21, §§ 26-53, and 314 CMR 9.00, it has been determined there is reasonable assurance the project or activity will be conducted in a manner which will not violate applicable water quality standards (314 CMR 4.00) and other applicable requirements of state law provided the following conditions are met:

1. in accordance with the guidelines for plover management published by the U.S. Fish and Wildlife Services, and in conjunction with the Mass Division of Marine Fisheries' concern for anadromous fish, a construction window of September 1 through March 14 shall be used.
2. The beach nourishment areas will be graded on a 1:10 slope seaward of the beach berm with fill extending to the mean lower low water (MLLW) elevation, except for the southern 2100 feet of the Plum Island nourishment area where the steepness of the existing beach slopes will only permit a finished slope of 1:8 extending to about -5 feet MLLW.
3. In accordance with 314 CMR 9.07(6) Beach Nourishment – right of public access shall be provided for beach nourishment projects on private beaches where public funds are utilized for the activities.

In accordance with 314 CMR 9.09(2), this letter serves as an amendment of Final 401 Water Quality Certification, DEP Transmittal No: W075196. All other conditions of the license and Water Quality Certification remain in effect. Failure to comply with the Project's certification is grounds for enforcement, including civil and criminal penalties, under MGL c21 §42, 314 CMR 9.00, MGL c.21A §16, 310 CMR 5.00, or other possible actions/penalties as authorized by the General Laws of the Commonwealth.

If you have questions do not hesitate to contact Ken Chin of my staff at (617) 292-5893.

Sincerely,


Lealdon Langley, Director
Wetlands and Waterways Program

cc:

Jack Karalius, U.S. Army corps of Engineers, 696 Virginia Road, Concord, MA 01742-2751
Newburyport Conservation Commission, 60 Pleasant Street, Newburyport, MA 01950
Tay Evans, DMF, 30 Emerson Avenue, Gloucester, MA 01930
Nancy Colbert, Director of Planning and Development, 60 Pleasant Street, Newburyport, MA 01950
Robert Boeri, CZM, 251 Causeway Street, Suite 800, Boston, MA 02114-2119
Newbury Board of Selectmen, 25 High Road, Newbury, MA 01951
Newbury Conservation Commission, 25 High Road, Newbury, MA 01951
Neil Harrington, Town Manager, Town of Salisbury, 5 Beach Road, Salisbury, MA 01952
Salisbury Conservation Commission, 5 Beach Road, Salisbury, MA 01952
David Slagle, Robert Brown, DEP Boston Office

KC/W075196



COMMONWEALTH OF MASSACHUSETTS

GENERAL COURT

STATE HOUSE, BOSTON 02133-1053

August 14, 2009

U.S. Army Corps of Engineers
New England District
Programs/Project Management Division
ATTN: Jack Karalius
696 Virginia Road
Concord, MA 01742

RE: Plum Island and Salisbury Beach State Reservation Project

Dear Mr. Karalius,

We are writing in support of the proposed project to dredge part of the entrance channel of the Newburyport Harbor and use the sand to nourish the Plum Island and Salisbury State Reservation beaches.

This project has multiple benefits for the communities of Newburyport, Newbury and Salisbury. Dredging the entrance channel to the harbor will improve navigation of the Merrimack River. In addition, using the dredged sand to nourish the beaches will improve public safety and enhance the environment of those areas. Advancing the quality of these beaches will also have a significant impact on economic development, especially in the town of Salisbury.

We would like to thank the Army Corps of Engineers for their continued cooperation and hard work on this project. If you have any questions please feel free to contact either of our offices.

Sincerely,

A handwritten signature in black ink that reads "Steven A. Baddour".

Steven A. Baddour
State Senator

A handwritten signature in black ink that reads "Michael A. Costello".

Michael A. Costello
State Representative



DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO:
ATTENTION OF:

August 6, 2009

Engineering/Planning Division
Planning Branch

Ms. Susi Von Oettingen
U.S. Fish & Wildlife Service
70 Commercial Street, Suite 300
Concord, New Hampshire 03301-5087

Dear Ms. Von Oettingen:

This letter is a follow-up letter to the Corps letter of May 18, 2009 and various email correspondence in reference to the Newburyport Harbor maintenance dredging project located in Newbury, Newburyport, and Salisbury, Massachusetts. This letter provides project details requested by the Service (FWS) on the points listed below:

FWS Point 1: No fill beyond section 22+50 grading into the existing dune line on Plum Island Beach.

Corps Response: No fill will be placed north of the 22+50 section of beach as depicted in the plans (Attachment 1). The area between station 20+50 and 22+50 will be used to grade the beach fill material into the existing beach face and slope and grade the dune fill into the existing dune line as shown in Attachment 2.

FWS Point 2: Experimental sand fencing and vegetation planting to allow plover movement up the dune face and provide cover.

Corps Response: As per the attached plans, (Attachments 1 and 3) the dune fencing has been moved up slope approximately 3 feet above the toe of the dune. In addition to the plantings on the crest and face of the new dune, plantings will be extended 3 feet seaward from the toe of the dune onto the beach berm to provide cover for wildlife.

FWS Point 3: A time of year restriction is requested.

Corps Response: An April 1 through August 31 time of year restriction to protect wildlife resources on the beaches will be used if the beach nourishment disposal option is utilized for this project.

FWS Point 4: Letter of commitment and beach management plan (approved by the state) that plovers will be managed according to the guidelines by a qualified monitor. The National Wildlife Refuge may assist in monitoring but management is the responsibility of the town.

Corps Response: The town of Newbury and State have finalized their beach management plans for Plum Island Beach and Salisbury Beach respectively, and have committed to plover management. It is the Corps understanding that the Service has previously accepted the management commitment provided by Massachusetts DCR for Salisbury Beach. A copy of Newbury's Final Beach Management Plan for Plum Island Beach is enclosed with this letter (Attachment 4). Additionally, a letter of commitment by the town to follow the management procedures set forth in the beach plan is provided (Attachment 5). The MOU to be executed by the town and the Refuge is included at the end of the Beach Management Plan.

FWS Point 5: Acknowledge that area to be filled with a 1:8 slope was not occupied habitat and much of it was not suitable plover habitat due to severe erosion of the beach. Also, state that the 1:8 slope was designed to minimize subtidal impacts and maximize the length of time the beach fill would stay in place.

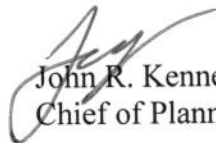
Corps Response: The Corps has incorporated this language into the attached Environmental Assessment. The 1:8 slope on the beach fill will be carried only as far as station 20+50.

Enclosed with this letter are:

- a. an updated Environmental Assessment and FONSI for the project which includes descriptions of the beach nourishment sites and potential impacts;
- b. plans of proposed beach nourishment areas;
- c. Final Beach Management Plan for Newbury; and,
- d. town of Newbury letter of commitment.

The Corps requests that the Service concur with its determination that the proposed changes in the Newburyport Harbor maintenance project are not likely to affect any federally threatened or endangered species. If you have any questions concerning this request, please contact the project manager, Mr. Mark Habel, at (978) 318-8871, or the project ecologist, Mr. Todd Randall, at (978) 318-8518.

Sincerely,


John R. Kennelly
Chief of Planning

Attachments/ Enclosure



August 6, 2009

Chuck Kostro, Town Administrator
Town of Newbury
25 High Road
Newbury, MA

RE: Newburyport Harbor Federal Navigation Project
Beach and Dune Nourishment at Plum Island & Salisbury Beaches

Dear Mr. Kostro:

As you are aware, the U.S. Army Corps of Engineers (USACE) intends to place approximately 120,000 cubic yards of dredged sediments along up to 2,500 linear feet of eroded dune/beach area at Town Beach on Plum Island in Fall 2009 – Winter 2010. The project also includes planting and fencing of the new dune areas to promote stability and prevent damage from foot traffic.

Since a portion of the proposed project will include the placement of dredge material on properties that are privately owned, permanent easements will need to be secured between the Town of Newbury (Town) and each private landowner affected to enable construction, operation and maintenance of the project, and to ensure that public access and use within these areas are maintained following the completion of the USACE project. As holder of the easement agreements, it is the Town's responsibility to maintain the project and to maintain public access and use within these affected areas for the life of the project. However, should the Town be unable to do so, DCR will act as the Town's responsible designee.

This commitment is made in addition to DCR acting as the Town's designee for other post-maintenance activities required within the project site as described in detail in the Town's Beach Management Plan for Plum Island which includes but is not limited to routine beach and dune maintenance and priority habitat monitoring and management.

Sincerely,

Raul Silva
Deputy Chief Engineer

Cc: Mark Habel, USACE
Newbury Board of Selectmen
Doug Packer, Town Conservation Agent

COMMONWEALTH OF MASSACHUSETTS · EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS

Department of Conservation and Recreation
251 Causeway Street, Suite 600
Boston MA 02114-2119
617-626-1250 617-626-1351 Fax
www.mass.gov/dcr



Deval L. Patrick
Governor

Timothy P. Murray
Lt. Governor

Ian A. Bowles, Secretary, Executive
Office of Energy & Environmental Affairs

Richard K. Sullivan, Jr., Commissioner
Department of Conservation & Recreation

Habel, Mark L NAE

From: Habel, Mark L NAE
Sent: Friday, August 07, 2009 9:22 AM
To: Habel, Mark L NAE
Subject: FW: Request for revised plans for Salisbury and Newbury Nourishment Projects

Attachments: Map&Plan-20+50-22+50.pdf



Map&Plan-20+5
22+50.pdf (80 K)

-----Original Message-----

From: Habel, Mark L NAE
Sent: Wednesday, August 05, 2009 2:37 PM
To: 'Susi_vonOettingen@fws.gov'; Randall, Todd A NAE
Cc: 'Scott.Melvin@state.ma.us'; 'Silva, Raul (DCR)'; O'Donnell, Edward G NAE;
'Robert.Boeri@state.ma.us'; Karalius, Jack NAE; Mackay, Joseph B NAE; Kennelly, John R NAE
Subject: RE: Request for revised plans for Salisbury and Newbury Nourishment Projects

Susi: I've blown up a section of the plan at the north end of Newbury (attached PDF) and added some color to the different pieces of the section. I hope this makes it easier to see what's proposed.

Local officials tell me that the property owner of the lot between 21+00 and 22+00 removed the frontal dune at this location and leveled the lot some time ago. This created a weakness in the barrier island inviting overwash damage at this location. My concern with this area is that without restoring the dune line the entire project would be potentially useless, as a major storm overwash here would flood the backshore creating the very damage we're trying to prevent/delay with the beachfill/dunefill - one of the two purposes of the project (the other being direct loss of properties to erosion).

The notation on the "End of 1:8 Slope" is in error on the plan and will be moved back south to 21+50.

The duneface itself won't have a 1:8 slope. It will have a 1:3 slope on its face and a crest elevation of +22 feet MLLW. The beach north of here begins to shallow out, but this is the area we're tailoring back into the existing beach/dune grade. From about 20+50 to 22+50 the 1:8 beach slope will be graded back into whatever the existing natural beach slope is. Plovers don't nest here now - the nearest plover nest noted by the Town in their 2007/2008 map was some 1000 feet to the north where the dune field between the homes and the frontal dune crest has widened considerably.

Moving the dunefill back on this one lot would buy maybe a 15-foot (22 minus 17 times 3) width of beach for the length of the lot, but that's all. In any event, the overall project is widening some 2100 feet of beach berm by 60 feet or so, creating nearly three acres of potential nesting habitat, and far more than offsetting a 15 by 50 foot dune footprint. The easterly trend in the dune front matches well the new dunefill crest at 22 feet and the dune slope on the north side of the cleared lot. I don't really want to risk offsetting it more to move the dune landward in this one area and so decline to adopt your latest suggestion. Keep in mind that the natural dune crest in this area is 5 feet higher (+27 feet MLLW) and so lines up landward of the dunefill that tops out at +22 feet. The elevations match-up for the dunefill section and the natural dune on the north side of the cleared lot.

Mark L. Habel, CENAE-EP-PN
978-318-8871

-----Original Message-----

From: Susi_vonOettingen@fws.gov [mailto:Susi_vonOettingen@fws.gov]
Sent: Wednesday, August 05, 2009 12:27 PM
To: Habel, Mark L NAE; Randall, Todd A NAE
Cc: Scott.Melvin@state.ma.us
Subject: RE: Request for revised plans for Salisbury and Newbury Nourishment Projects

Hi Mark (again),

I just got off the phone with Scott who was concerned about the proposed dune building between stations 21 and 22.50. According to the design plans, the open area in front of the house is at elevation of 15 to 25 feet. However, it doesn't appear to be that high anymore (see website). Building a dune in what is now good plover habitat with an 8:1 slope would not be ideal for plovers and could be considered an adverse effect (so no concurrence letter from me). I would like to know if the dune can be pushed back closer to the house to get the 10:1 slope in that area. I realize that the homeowner wants protection, but there's got to be a way to design it so that the plover habitat isn't adversely affected. Can you confirm the existing elevations and design? And, I don't believe we want snow fencing and planting except on the backside of the dune in the blowout area, if at all.

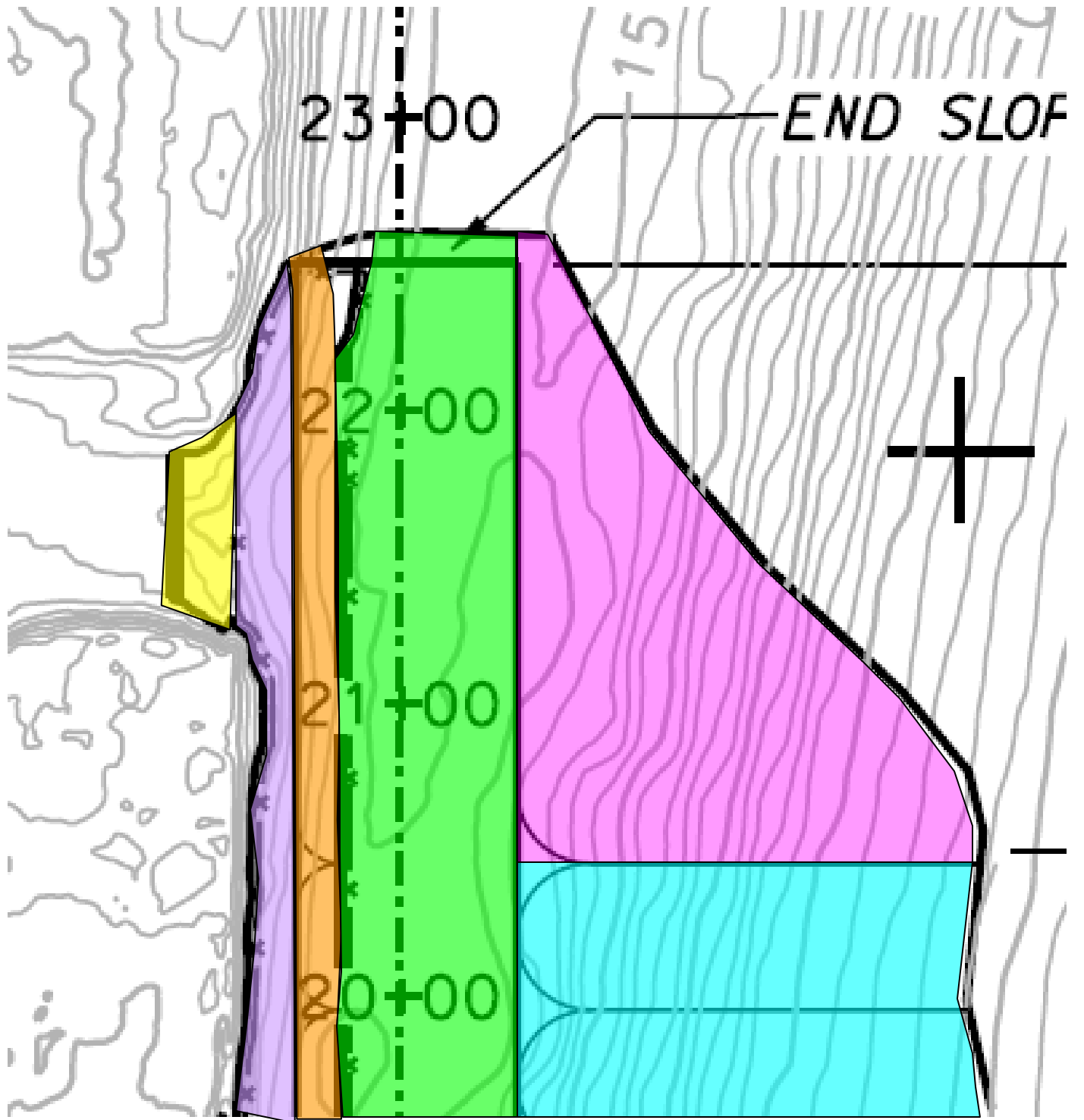
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Thanks.

Susi

~~~~~  
Susi von Oettingen  
Endangered Species Biologist  
US Fish and Wildlife Service  
70 Commercial St., Suite 300  
Concord, NH 03301  
603-223-2541 ext. 22  
603-491-8219 (cell)  
<http://www.fws.gov/northeast/newenglandfieldoffice>

"Those who say it cannot be done should not interrupt the people doing it." Chinese Proverb



|                                                                                     |                                         |                                                                                     |                                                        |
|-------------------------------------------------------------------------------------|-----------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------|
|  | Backshore Slope of Dunefill – 1:3       |  | New 60-80-Foot Berm at +17 MLLW                        |
|  | Crest of Dunefill – 20 Feet at +22 MLLW |  | New Beachfill Slope at 1:8                             |
|  | Seaward Slope of Dunefill – 1:3         |  | Beach Slope Grade Transition to Existing Natural Slope |



## Habel, Mark L NAE

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**From:** Black, Kristin (FWE) [Kristin.E.Black@state.ma.us]  
**Sent:** Wednesday, August 05, 2009 6:54 AM  
**To:** Habel, Mark L NAE  
**Subject:** RE: Request for revised plans for Salisbury and Newbury Nourishment Projects

Hi Mark,

Thanks for promptly sending the plans. Much appreciated.

Cheers,

Kristin E. Black  
Endangered Species Review Biologist  
Natural Heritage & Endangered Species Program  
1 Rabbit Hill Road, Westborough, MA 01581  
Tel: 508-389-6367  
Fax: 508-389-7891  
www.nhesp.org

-----Original Message-----

From: Habel, Mark L NAE [mailto:Mark.L.Habel@usace.army.mil]  
Sent: Tuesday, August 04, 2009 12:03 PM  
To: Black, Kristin (FWE)  
Cc: Randall, Todd A NAE; cplayer@vineassociates.net; Melvin, Scott (FWE );  
Susi\_vonOettingen@fws.gov; Boeri, Robert (ENV); mrheinhardt@vineassociates.net;  
conscom@townofnewbury.org; O'Donnell, Edward G NAE  
Subject: RE: Request for revised plans for Salisbury and Newbury Nourishment Projects

Kristin et al: Attached are the two revised plans for the Newburyport project. One sheet for Plum Island and one sheet for Salisbury. Both show the agreed changes in the beach sections and plans. The toe fence to be moved 3 feet up-slope on the dune face, and the planting to be extended out 3 feet onto the beach berm. Also the northern limit of beachfill and dune fill on Plum Island has been pulled back south 250 feet+ as shown on the plan view.

The files are both about 4 to 5MB, so if they don't come through let me know and I'll post them to our public FTP site for download.

Mark L. Habel, CENAE-EP-PN  
978-318-8871

-----Original Message-----

From: Black, Kristin (FWE) [mailto:Kristin.E.Black@state.ma.us]  
Sent: Monday, August 03, 2009 3:28 PM  
To: Habel, Mark L NAE  
Subject: Request for revised plans for Salisbury and Newbury Nourishment Projects

Hi Mark,

When available please send me revised plans/figures for the Salisbury and Newbury Nourishment Projects that illustrate the revised locations for the snow fencing and plantings.

Thanks.



*The Commonwealth of Massachusetts*  
*Executive Office of Energy and Environmental Affairs*  
 100 Cambridge Street, Suite 900  
 Boston, MA 02114

Deval L. Patrick  
 GOVERNOR

Timothy P. Murray  
 LIEUTENANT  
 GOVERNOR

Ian A. Bowles  
 SECRETARY

Tel: (617) 626-1000  
 Fax: (617) 626-1181  
<http://www.mass.gov/envir>

July 24, 2009

CERTIFICATE OF THE SECRETARY OF ENVIRONMENTAL AFFAIRS  
 ON THE  
 NOTICE OF PROJECT CHANGE

PROJECT NAME : Plum Island and Salisbury Beach Nourishment (previously reviewed as Near-Shore Dredged Material Disposal off Plum Island Beach)  
 PROJECT MUNICIPALITY : Newbury, Newburyport and Salisbury  
 PROJECT WATERSHED : North Coastal  
 EOEA NUMBER : 13503  
 PROJECT PROPONENT : Department of Conservation and Recreation  
 DATE NOTICED IN MONITOR : June 24, 2009

Pursuant to the Massachusetts Environmental Policy Act (G. L. c. 30, ss. 61-62I) and Section 11.06 of the MEPA regulations (301 CMR 11.00), I hereby determine that this project change does not require the preparation of an Environmental Impact Report. In a separate Draft Record of Decision (DROD) also issued today, I propose granting a Waiver from the requirement to prepare a mandatory Environmental Impact Report (EIR) for the project. This Certificate sets forth the issues that must be addressed by the Proponent during permitting and discusses recommendations that were submitted on the project during the MEPA comment period.

Project Description

The project was the subject of previous review under MEPA as an Environmental Notification Form (ENF) in 2005 and did not require the submission of an Environmental Impact Report (EIR). The previously reviewed project involved the revision of the disposal site for approximately 150,000 cubic yards (cy) of sand to be dredged for maintenance purposes from the Federal Navigation Project in Newburyport Harbor, which was reviewed under MEPA as EEA

#6429. The dredged material had been previously approved for disposal at a sub-tidal site east of Plum Island, which is one of two near-shore locations that has been historically used for disposal of dredged material from Newburyport Harbor. The ENF proposed the extension of the previously approved disposal site by approximately 1,500 feet to the south, but still within the sub-tidal (near shore) area, in water depths ranging from about 10 to 18 feet below mean lower low water (MLLW) in order to indirectly nourish Plum Island Beach via in-shore migration of the deposited sand and to provide a measure of protection against further erosion of shoreline public utilities and private properties. This location was proposed with the support of both Newbury and Newburyport in order to address existing erosion issues along the Plum Island public beach in Newbury. Placement of the material in the near shore was to allow typical fair-weather summer wave patterns to transport the sand onto the beach.

The Department of Conservation and Recreation (DCR) is now proposing to change the disposal area for the dredged material to two eroded beach areas, totaling about 22 acres, on Plum Island (about 2,500 feet of beach between the State Groin #1 and the Newburyport Turnpike) and Salisbury Beach (about 1,400 feet of beach between Fowler and Murray Street). Dredged material will be pumped via temporary pipelines extending for 3,600 feet along Plum Island and 3,800 feet in Salisbury. During the construction, the temporary pipeline, which is expected to be approximately 22 to 24 inches in diameter, will be placed along the beach between mean high water (MHW) and the toe of the existing dunes, and will be removed when construction is complete. The newly nourished dune areas at both sites are expected to be planted with dune grass and protected from wind and foot traffic with sand/snow fencing along the dune toe and laterally at frequent intervals.

Since the ENF filing in 2005, the coastline in Salisbury, Newbury, and Newburyport has experienced significant erosion. According to a US Army Corps of Engineers (USACE) Section 204 Study referenced in the ENF, the area of beach to receive the dredged materials has been eroding at an average rate of 13 feet per year in recent years. To offset this loss for a period of approximately five years, DCR is now proposing to hydraulically dredge approximately 160,000 cys of accumulated marine sediment from the Newburyport Harbor Navigation Channel. Changing from a hopper dredge to a hydraulic dredge presents safety issues, as indicated in the ENF. A small hydraulic dredge which remains stationary will have difficulty operating safely in the high wave-energy environment of the entrance channel to Newburyport Harbor. In order to avoid delays which potentially may cause conflicts with time-of-year restrictions imposed by the Division of Marine Fisheries for the project and costs associated with those delays, a large hydraulic pipeline dredge with a stronger anchoring system will be required.

As described in the NPC, the project will impact 654,953 square feet (sf) of coastal beach (including 276,767 square feet of intertidal impacts within the coastal beach); 79,412 sf of coastal dune; 165,024 sf of land under the ocean; and 2,700 linear feet of fish run.

### MEPA Jurisdiction and Permitting Requirements

The project is undergoing review pursuant to Section 11.03(3)(a)(1)(b) and (3)(b)(4) of the MEPA regulations because it involves alteration of ten or more acres of wetlands (in this case, coastal beach, coastal dune, and land under the ocean) and the disposal of 10,000 or more cy of dredged material. The project will require a Chapter 91 Permit and a 401 Water Quality Certification from the Department of Environmental Protection (DEP). The proposed project is subject to federal consistency review by the Office of Coastal Zone Management (CZM) and, therefore, must be found to be consistent with CZM's enforceable program policies. The project will also require Orders of Conditions from the Conservation Commissions in Newbury, Newburyport and Salisbury.

Because the proponent is DCR, a state agency, MEPA jurisdiction for this project is broad and extends to all aspects of the project that are likely, directly or indirectly, to cause Damage to the Environment, as defined in the MEPA regulations.

### Permitting Issues

#### *Beach Management Plans*

The NPC states that post-construction management at both Salisbury Beach and Plum Island will be performed in accordance with approved beach management plans for these sites. While the Salisbury Barrier Beach Management Plan is already approved and in place, the Newbury and Newburyport Barrier Beach Management Plans are still in draft form, and must be finalized and approved before the nourishment project moves forward. At the request of the communities, state agencies provided comments on the draft plans in May 2009, and these comments are being incorporated into the documents. The implementation of the post-construction management practices contained in these plans will have an important impact on the effectiveness of the nourishment project over time. State agencies should be given the opportunity to review and comment on the content of the revised draft plans before they are finalized and approved.

To maximize the success and longevity of the project in addressing erosion concerns, each community should commit to implementation and enforcement of effective beach access plans to minimize impacts from pedestrian traffic and structures on the newly nourished primary dunes. Access plans, indicating approved access locations and design for pedestrian and vehicular access, should be included as part of the barrier beach management plans for each community.

#### *Resource Area Impacts*

The NPC discusses the impacts to coastal beaches that are directly related to the placement of sediment at these locations. During the permitting process, issues associated with the placement of the pipeline should also be thoroughly addressed to ensure that impacts are

minimized. Due to required time-of-year (TOY) restrictions, the project will be conducted between the months of October and March, which is typically the highest energy period for northeast facing beaches in Massachusetts. Because it is possible that the pipeline will be exposed to wave energy while the project is underway, direct and indirect impacts on the coastal beach related to these conditions should be addressed, including the potential for scour around the pipe as well as direct storm damage to the pipe itself. A contingency plan for storm damage to the pipeline should be detailed during permitting. Finally, the extent to which the beach will be modified to accommodate the pipeline should be detailed, including what vehicles and machinery will be required for installation and restoration after removal.

The project will require the construction of toe dikes and DCR has proposed using existing beach material to construct them. In its comments, MassDEP recommends that sand be imported to construct the dikes due to the proximity of the work zone to the tidal zone and the likelihood that construction of the toe dikes will contribute to the additional loss of sand from the beach system. In Newbury especially, the area to be nourished is within the tidal zone and will be subject to wave action.

#### *Rare Species*

The project site is located within *Priority* and *Estimated Habitat* as indicated in the 13th Edition of the Massachusetts Natural Heritage Atlas and therefore requires review through a direct filing with the Division of Fisheries and Wildlife (DFW) Natural Heritage and Endangered Species Program (NHESP) for compliance with the Massachusetts Endangered Species Act (MESA 321 CMR 10.00) and its implementing regulations.

In its comments on the NPC, NHESP states that it anticipates that the proposed project will need to be conditioned in order to avoid a “take” of state-listed bird species, specifically Piping Plovers and Terns that may be attracted to the beach nourishment areas, as well as their eggs and unfledged chicks. NHESP will likely require timing restrictions and development and implementation of a shorebird monitoring and protection plan. DCR should note the specific items requested by NHESP in its comments and submit this plan as soon as possible in order to expedite the MESA review process.

In its comments, NHESP states that it is especially concerned about any nourishment activities in the vicinity of 23rd Street in Newbury because this area currently provides habitat for state-listed species. If nourishment activities are proposed farther north than 21st Street, then DCR should provide the specific information requested by NHESP in its comments in order to complete its review under the Wetlands Protection Act and pursuant to MESA.

NHESP anticipates that all issues related to state-listed species can be addressed during the MESA review process. In particular, DCR should continue to work cooperatively with NHESP to ensure that proposed dune plantings, beach fencing, and pedestrian access do not adversely affect state-listed species. As the MESA review is not complete, no alteration to the

soil, surface, or vegetation and no work associated with the proposed project may occur until NHESP has made a final determination.

*Archeological Resources*

If, in the course of implementing the project, heretofore unknown cultural resources are encountered in conducting the project, DCR should notify the Board of Underwater Archeological Resources and work with the Board to develop and implement measures to avoid adverse effects.

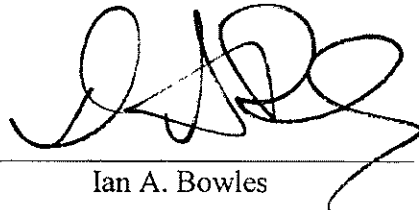
Conclusion

I am satisfied that the NPC has adequately described the general nature of the proposed project and proposed measures to avoid and minimize, or mitigate environmental impacts. Based on a review of the information provided in the NPC and after consultation with the relevant public agencies, I find that the potential impacts of this project do not warrant further MEPA review. Outstanding issues may be addressed during the permitting processes.

I have issued a DROD proposing to grant a Waiver from the requirement to prepare an EIR for the project. The DROD will be noticed in the August 12, 2009 issue of the *Environmental Monitor* for a 14-day public comment period ending August 26, 2009 in accordance with 301 CMR 11.15(2). Based on written comments received concerning the DROD, I shall either issue a Final Record of Decision (FROD) or a Scope for an EIR if the Full Waiver is not approved within seven days after the close of the public comment period, in accordance with 301 CMR 11.15(6).

July 24, 2009

Date



Ian A. Bowles

Comments received:

|         |                                                                                    |
|---------|------------------------------------------------------------------------------------|
| 7/13/09 | Board of Underwater Archaeological Resources                                       |
| 7/14/09 | Division of Fisheries & Wildlife - Natural Heritage and Endangered Species Program |
| 7/15/09 | Department of Environmental Protection Northeast Regional Office                   |
| 7/17/09 | Office of Coastal Zone Management                                                  |

IAB/RB/rb

July 21, 2009

Doug Packer, Conservation Agent  
Newbury Conservation Commission  
26 High Road  
Newbury, MA 01951-1236



190 Old Derby Street

Suite 311

Hingham

Massachusetts

02043

tel: (781) 749-2530

fax: (781) 749-2751

**RE: Newbury Town Beach Management Plan  
Notice of Intent  
DEP File No. 050-1009**

Dear Mr. Packer:

On behalf of the Massachusetts Department of Conservation and Recreation (DCR), Vine Associates, Inc. (VAI) is submitting this letter of commitment for DCR to act as the Town of Newbury's designee should the Town be unable to fulfill the maintenance requirements associated with the upcoming Newburyport Harbor Federal Navigation Project. The proposed project includes the placement of approximately 120,000 cubic yards of dredge sediments along 2,500 linear feet of eroded dune/beach area at Town Beach on Plum Island. Maintenance activities, as required along the dune and beach areas that are restored as part of the federal project, will be performed by the Town, or DCR as the Town's designee, in accordance with the Town of Newbury Beach Management Plan. This commitment by DCR shall be incorporated into the final Beach Management Plan, which is presently under review and pending approval by the local, state and federal regulatory agencies.

Very truly yours,  
**VINE ASSOCIATES, INC.**

A handwritten signature in black ink that reads "Christine M. Player". The signature is written in a cursive, flowing style.

Christine M. Player  
Principal

cc: Raul Silva, DCR Deputy Chief Engineer  
Gary Davis, Jr., DCR General Counsel  
Susan Hamilton, DCR Region 2 Director



Commonwealth of Massachusetts

# Division of Fisheries & Wildlife

Wayne F. MacCallum, *Director*

July 17, 2009

Newburyport Conservation Commission  
City Hall  
60 Pleasant Street  
Newburyport MA 01950

MA Department of Conservation and Recreation  
251 Causeway Street  
Boston, MA 02214

RE:                    Applicant:                    MA Department of Conservation and Recreation  
                          Project Location:            Atlantic Ocean/Plum Island, Newburyport  
                          Project Description:       Maintenance dredging, temporary pipeline on shoreline  
                          Wetlands File No.:        051-0830  
                          NHESP Tracking No.:     09-26646

To Whom It May Concern:

The applicant listed above has submitted a *Notice of Intent* with plans to the Natural Heritage & Endangered Species Program (NHESP) of the Massachusetts Division of Fisheries & Wildlife, in compliance with the rare wildlife species section of the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.37). Additional materials were submitted for review pursuant to the Massachusetts Endangered Species Act (MESA; M.G.L. c. 131A) and its implementing regulations (321 CMR 10.00) (MESA).

Based on a review of information that was submitted and the information that is contained in our database, the NHESP has determined that the proposed project occurs within the mapped habitat of the following state-listed species:

| Scientific Name           | Common Name   | Taxonomic Group | MA Status       |
|---------------------------|---------------|-----------------|-----------------|
| <i>Charadrius melodus</i> | Piping Plover | Bird            | Threatened*     |
| <i>Sterna hirundo</i>     | Common Tern   | Bird            | Special Concern |

These species and their habitats are protected pursuant to the Massachusetts Endangered Species Act (MESA, MGL c131A) and its implementing regulations (321 CMR 10.00). \*The Piping Plover is also federally protected pursuant to the U.S. Endangered Species Act (ESA, 50 CFR 17.11). Fact sheets for these species can be found at [www.nhesp.org](http://www.nhesp.org).

Based on a review of the information that was provided and the information that is currently contained in our database, the NHESP has determined that this project, as currently proposed, will not adversely affect the actual Resource Area Habitat of state-protected rare wildlife species (310 CMR 10.37) and will not result in a prohibited "take" of state-listed rare species (321 CMR 10.18) provided that the following conditions are met:

- All work shall be done outside the period of April 1- August 31. No materials (including dredge pipes) may be present on the beach during April 1 - August 31.

[www.masswildlife.org](http://www.masswildlife.org)

Division of Fisheries and Wildlife

Field Headquarters, 1 Rabbit Hill Rd., Westborough, MA 01581 (508) 389-6300 Fax (508) 389-7890

An Agency of the Department of Fish and Game

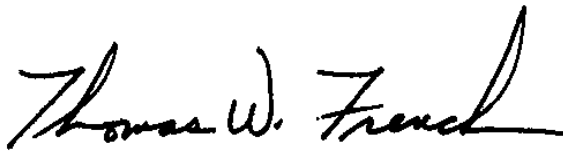
A-1-45



Please note that this determination addresses only the matter of state-listed species habitat and does not pertain to other wildlife habitat issues that may be pertinent to the proposed project. Any changes to the proposed project or any additional work beyond that shown on the attached site plans may require an additional filing with the NHESP pursuant to the MESA. This project may be subject to further review if no physical work is commenced within three years from the date of issuance of this determination, or if there is a change to the project.

This evaluation is based on the most recent information available in the Natural Heritage database, which is constantly being expanded and updated through ongoing research and inventory. Should your site plans change, or new rare species information become available, this evaluation may be reconsidered. If you have any questions about this letter, please contact Kristin E. Black, Endangered Species Review Biologist, at (508) 389-6367 ([kristin.e.black@state.ma.us](mailto:kristin.e.black@state.ma.us)).

Sincerely,

A handwritten signature in black ink that reads "Thomas W. French". The signature is written in a cursive, flowing style.

Thomas W. French, Ph.D.  
Assistant Director

cc: Christine M. Player, Vine Associates, Inc.  
Heather Warchalowski, MA DCR  
Todd Randall, US Army Corps of Engineers  
Mark Habel, US Army Corps of Engineers  
Susi von Oettingen, U.S. Fish and Wildlife Service's New England Field Office  
MA DEP Northeast Regional Office, Wetlands Program



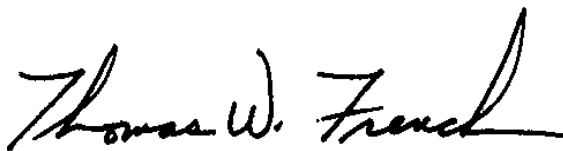
protection plan for beach nourishment areas is developed and submitted to the NHESP. The proposed arrangement for implementation of this plan shall be described in the plan (e.g., Town will annually fund a position or contract a 3<sup>rd</sup> party). At a minimum, this plan shall include the following:

- a. Each year, beginning April 1, a qualified shorebird monitor approved in writing by the NHESP shall determine whether territorial or nesting Piping Plovers or Terns are present at beach nourishment areas and if so, shall erect and maintain warning signs and symbolic fencing to protect nesting habitat and nests from disturbance or human-caused mortality.
  - b. Monitoring shall occur at least 2 times per week until at least July 1. However, if plovers or terns are found to be using the site, then monitoring frequency shall be increased to at least 3 times per week, and shall continue until all nesting and brood-rearing activity has been completed.
  - c. The applicant shall notify the NHESP prior to the start of work in the first year and before January 1st for each subsequent year as to what arrangements have been made for the aforementioned monitoring and site protection to occur. This notification shall include a written contract, memorandum of agreement, or some other formal written agreement with the individual(s) or organization that will undertake monitoring and protection efforts in the field.
  - d. A report shall be submitted to the NHESP each year, on or before September 30, on standard census forms provided by NHESP, that summarizes the results of the state-listed species monitoring and site protection activities.
2. **Revised Plans for Nourishment Area.** Please submit revised plans illustrating proposed vegetative plantings and sand fencing in the nourishment area. Currently, the proponent is working cooperatively with the NHESP to revise the plans to include proposed vegetative plantings and revise the locations of the proposed sand fencing to benefit state-listed species.

Please note that the NHESP does not typically approve beach nourishment activities proposed within state-listed shorebird habitat scheduled to commence during the period from 1 April to 31 August. Once the NHESP has determined all of the required materials have been received (321 CMR 10.20), we will determine whether or not the proposed project will result in an adverse effect to the Resource Area habitat of state-listed wildlife and determine whether or not the project will result in a “take” of state-listed rare species (321 CMR 10.18(1)).

The NHESP’s review under both the WPA and MESA are ongoing. **No soil or vegetation disturbance, work, clearing, grading or other activities related to the subject filing shall be conducted anywhere on this project site until the NHESP has completed its MESA review.** No approving Orders of Conditions shall be issued until the NHESP has completed its review of the project’s compliance with the rare species provisions of WPA and has issued a final letter to the Commission. If you have any questions about this letter, please contact Kristin E. Black, Endangered Species Review Biologist, at (508) 389-6367 ([kristin.e.black@state.ma.us](mailto:kristin.e.black@state.ma.us)) or for information related to the development and implementation of the Shorebird Monitoring and Protection Plan, please contact Scott Melvin at (508) 389-6345 ([scott.melvin@state.ma.us](mailto:scott.melvin@state.ma.us)).

Sincerely,



Thomas W. French, Ph.D.  
Assistant Director

cc: Susi von Oettingen, U.S. Fish and Wildlife Service's New England Field Office  
MA DEP Northeast Regional Office, Wetlands Program  
Christine M. Player, Vine Associates, Inc.  
Heather Warchalowski, MA DCR  
Todd Randall, US Army Corps of Engineers  
Mark Habel, US Army Corps of Engineers



**SECTION 2**  
**CORRESPONDENCE RECEIVED DURING**  
**§204 BENEFICIAL USE STUDY**





REPLY TO:  
ATTENTION OF:

CENAE-EP-PN

DEPARTMENT OF THE ARMY  
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS  
696 VIRGINIA ROAD  
CONCORD, MASSACHUSETTS 01742-2751

17 July 2009

MEMORANDUM FOR Commander, North Atlantic Division, ATTN: CENAD-MT  
(Mr. Joseph Forcina), Fort Hamilton Military Community, 302 General Lee Avenue, Brooklyn,  
New York 11252-6700

SUBJECT: Newburyport Harbor and Plum Island & Salisbury Beaches, Section 204 Beneficial  
Use of Dredged Materials, Newburyport, Newbury and Salisbury, Massachusetts, (PWI 152124) –  
Request for Approval of Draft Detailed Project Report

1. The New England District has completed a draft Detailed Project report for the beneficial use of sand generated by maintenance dredging of the entrance channel for the Newburyport Harbor Federal Navigation Project to address shore erosion on the adjacent Plum Island and Salisbury Beaches in the towns of Newbury and Salisbury. The report was prepared under the continuing authority of Section 204 of WRDA 1992 as amended by Section 2037 of WRDA 2007 for hurricane and storm damage reduction purposes. This submittal is Milestone C-4A of the CAP Milestones.
2. NAD previously reviewed and approved (26 June 2009) the Environmental Assessment for this project for public release, in order to help maintain project schedule, as the Operation and Maintenance dredging portion of the work is funded through the ARRA. Five copies of the report are enclosed and a copy of the report has been provided to Mr. Ring. The District requests that the draft DPR be approved for release to the Sponsors (the Massachusetts Department of Conservation and Recreation), the local communities, and the public. The District has conducted ATR on the draft report and EA. A draft PPA prepared by NAE was submitted to NAD and HQUSACE for review on 1 July 2009, and HQ provided an edited draft PPA on 16 July 2009.
3. The Section 204 project consists of direct placement of sand on the two beaches along severely eroding sections. One residence was lost on Plum Island in December 2008 and others are threatened with loss and damage over the next few years. The normal O&M practice is to dispose of the dredged sand in nearshore waters using a hopper dredge. Direct placement of the sand on the beach would eliminate further property losses until the next channel maintenance operation. The Section 204 project is estimated to carry a cost of about \$1,802,000 and yield annual net benefits of \$757,400 (BCR 3.7). The O&M increment of the project has received stimulus funds and is scheduled for the FY10 fall to winter dredging season.
4. If you require further information, please contact me at (978) 318-8610 or Mr. Mark Habel, Chief, Navigation Section, Planning Branch, at (978) 318-8871.

FOR THE COMMANDER:

Encls

  
ANTHONY T. MACKOS, P.E.

Acting Chief, Engineering/Planning Division

A-2-1



Copy Furnished:

Peter Blum, NAD  
Rich Ring



**US Army Corps  
of Engineers** ®  
New England District

696 Virginia Road  
Concord, MA 01742-2751

# PUBLIC NOTICE

In Reply Refer to: Programs Project  
Management Division  
Email: [nae-pn-nav@usace.army.mil](mailto:nae-pn-nav@usace.army.mil)  
Date: July 16, 2009  
Comment Period Closes: August 15, 2009

## 30 DAY PUBLIC NOTICE

### MAINTENANCE DREDGING OF THE FEDERAL ENTRANCE CHANNEL AT NEWBURYPORT HARBOR, WITH BENEFICIAL USE OF DREDGE SAND AS BEACHFILL ON PLUM ISLAND AND SALISBURY BEACHES NEWBURYPORT, NEWBURY AND SALISBURY, MASSACHUSETTS

Interested parties are hereby notified that the U.S. Army Corps of Engineers, New England District, plans to perform maintenance dredging of a portion of the Federal navigation project, involving work in the navigable waters of this District, under the provisions of Section 404 of the Clean Water Act of 1977 (P.L. 95-217) and to authorize such work in accordance with Title 33, Parts 335-338 of the Code of Federal Regulations. Attachment No. 1 lists pertinent laws, regulations, and directives. This notice is supplemental to the Public Notice released on September 26, 2007 and reflects a change in the project description. Specifically, two new disposal areas (Plum Island Beach and Salisbury Beach) are being added for beneficial use of the dredged material.

**Project Description:** The existing Federal navigation project for Newburyport Harbor consists of: two jetties; one projecting 4,118 feet from the north shore, the other projecting 2,445 feet from the south shore, converging until 1,000 feet apart, then extending seaward 1,000 feet; a 15 foot deep entrance channel 400 feet wide through the bar into the harbor, thence 9 feet deep and 200 feet wide to the Newburyport waterfront. This notice applies to only the 15 foot entrance channel.

**Character and Purpose of Work:** The proposed work involves long term maintenance dredging of the 15 foot entrance channel to provide safe navigation conditions at the mouth of the Merrimack River. Dredging is performed about every five years, depending on the amount of shoaling. Each operation involves removing about 160,000 cubic yards of sand from the entrance channel and placing the sand within nearshore areas. This notice is intended to cover long term maintenance using the described dredging and disposal methods. Dredging will be performed by a private contractor, using either a hopper dredge or a hydraulic pipeline dredge, under the supervision of the Corps of Engineers. The method used will depend on the disposal site(s) selected. In response to requests from the State, the three municipalities and the National Marine Fisheries Service, the Corps has considered direct placement of the material onto the beaches

adjacent to the inlet as an alternative to placement of the material into the nearshore bars offshore of the beaches.

Should the nearshore bar disposal areas be used, a hopper dredge or mechanical dredge would accomplish the work. A hopper dredge removes material from the bottom by suction, lifting it through dragarms connected to the side of the vessel. At the end of the dragarms are dragheads which draw a slurry of bottom material and water to the surface where it is discharged into the hopper. As pumping continues, the solid particles settle into the hopper while the excess water and some material passes overboard through overflow troughs. After the hoppers are full the dragarms are raised and the dredge proceeds to the disposal area where the loaded hopper is emptied. The dredge then returns to the dredging area to repeat the cycle.

Should the direct beach placement option be used, either a hydraulic pipeline dredge or a pump-off capable hopper dredge would accomplish the work. These methods are described as follows:

**Hydraulic Pipeline Method:** Material would be removed from the channel by a hydraulic pipeline dredge using a cutterhead suction and discharged as a sand/seawater slurry through a pipeline to the beach placement area. Floating pipe would be used in the inlet to non-floating pipe crossing the shore ends of the jetties and placed along the beach berm (above the mean high water elevation) to the placement sites. On shore the pipe would be placed, extended and removed using heavy equipment. The shore pipe may be either delivered by truck to the beach, or floated in and pulled ashore onto the beach by heavy equipment.

**Pump-Off Hopper Method:** Material would be removed from the channel by a hopper dredge with internal pump-off capability in the same manner as described above for the nearshore placement, but would discharge the material onto the beach through a pipeline connection moored offshore of the receiving beach. The pipeline terminus would be either a moored floating tie-in, or mounted on a barge spudded a short distance offshore in water of sufficient depth to accommodate the dredge draft. The dredge would re-fluidize the dredged material with seawater and discharge the slurry into the pipeline.

**Both Methods:** Depending on the size of dredge identified by the contractor, a booster pump may or may not be needed. The booster pump would likely be barge-mounted and moored near the jetties under both methods, or may be aboard the barge used for the pump-off hopper method. Work at the beach placement areas under both methods would likely consist of the following: Heavy equipment would be used to form-up toe dikes along the mean low water elevation on both beaches in the immediate area of the discharge using existing beach material. The toe dikes would help contain the slurry as it is discharged and would minimize loss of material to the surf. The same heavy equipment would be used to spread the discharged material on the beach to roughly form the elevations and slopes specified for the beach berm, dune face and seaward slope of the beach. As discharge and spreading progresses along the beachfill area the toe dikes and pipeline would be extended. Portable lights would be used to enable work to proceed at night to speed the work and further minimize loss of material to the surf during construction. On Plum Island, where placed material would extend the fill section of the

seaward slope below mean lower low water, material would be pushed seaward over the toe dike and the surf would spread that material. At both beaches finish grading to the specified elevations and slopes would be accomplished using the same heavy equipment following completion of all placement on each beach, if not already accomplished by the contractor or by natural forces during placement. The work window for dredging and disposal is 1 September to 14 March, to protect shorebirds, shellfish and fisheries resources.

Both Methods - Planting, Fencing and Beach Management: In beach areas where new dune is created, the dune crest and dune face would be planted with American Beach Grass. The spacing of the plantings would be worked-out in consultation with the US Fish and Wildlife Service and the State Natural Heritage Office, to conform to requirements for nesting shorebirds. Sand fencing would be installed along the new or existing dune crest, along the new dune toe, and laterally along public beach access ways. Sand fencing along the dune toe would be elevated at the bottom of the fence at intervals to be specified in consultation with the US Fish and Wildlife Service and the State Natural Heritage Office, to conform to requirements for nesting shorebirds. Elevated fence sections would be lowered back to the sand surface at times of year outside of the shorebird season. The shorebird season is 15 March to 31 August. The State and Town of Newbury, at Salisbury and Plum Island Beaches, respectively, would place signage at public access ways warning the public to stay off the dunes. Additional signage warning the public away from shorebird nesting sites would be placed as needed during the shorebird season as "virtual fencing" in accordance with the Beach Management Plans for each beach.

The work will be performed during a two to three month period in the year in which funding becomes available. Attachment No. 2 shows Newburyport Harbor, the dredge area, and the proposed disposal and beach nourishment sites.

**Disposal Area:** The material will be disposed of at one of five disposal sites: 3 sites are located nearshore and 2 sites are beach nourishment areas (Attachment 2). The three nearshore sites are located in about 18 to 30 feet of water off Plum Island Beach in Newburyport and Newbury, or Salisbury Beach in Salisbury. The two beach nourishment sites are located at Plum Island Beach in Newbury and at Salisbury Beach. The material (sand) will be beneficially used, either as a feeder berm at the nearshore sites (which will transport sand to adjacent beaches) or by direct placement at the beach sites. Any of the sites may be used; the Commonwealth of Massachusetts will determine the site that will be used depending on need. Direct beach placement would require cost-sharing by the Commonwealth.

The 5 disposal sites are shown in Attachment 2 and briefly described below:

The previously-used Plum Island Beach nearshore site is generally rectangular in shape, and about 5,000 feet by 1,000 feet.

The new, extended Plum Island Beach nearshore site extends about 1,500 feet south of the previously-used Plum Island Beach nearshore site, is generally rectangular in shape, and about 1,500 feet by 1,000 feet.

The previously-used Salisbury Beach nearshore site is a 40-acre square area.

The Plum Island Beach nourishment site is an approximately 2,200 to 2,500-foot long stretch of beach located on Plum Island extending northerly from State Groin #1 at the terminus of the Plum Island Turnpike. .

The Salisbury Beach nourishment site is 1,200 to 1,400-foot long stretch of beach located on Salisbury Beach, approximately between Murray Street (Beach Access #2) and Fowler Street (Beach Access #3).

Actual conditions encountered at the sites at the time of construction, including the amount of material actually removed from the channel maintenance, will determine the final length of each beachfill.

The proposed dredged material has undergone physical analysis. It is our determination that the material is acceptable for disposal at these nearshore and/or beach nourishment sites.

**Additional Information:** Additional information may be obtained from Mr. Jack Karalius, Programs & Civil Project Management Branch, Programs Project Management Division, at the return address shown, telephone number (978) 318-8288.

**Coordination:** The proposed work is being coordinated with the following Federal, State, and local agencies:

Federal

U.S. Environmental Protection Agency  
U.S. Fish and Wildlife Service  
National Marine Fisheries Service  
United States Coast Guard

Local Agencies

City of Newburyport  
Town of Newbury  
Town of Salisbury

Commonwealth of Massachusetts

Department of Environmental Protection  
Office of Coastal Zone Management  
Department of Conservation and Recreation  
Massachusetts Historic Preservation Office  
Massachusetts Board of Underwater Archaeological Resources  
Massachusetts Natural Heritage Program

**Environmental Impacts:** An Environmental Assessment for this work has been prepared and is available for review upon request. I have made a preliminary determination that an Environmental Impact Statement for the proposed maintenance dredging is not required under the provisions of the National Environmental Policy Act of 1969. This determination will be reviewed in light of facts submitted in response to this notice.

**Federal Consistency with Massachusetts Coastal Zone Management Program:** I find that maintenance dredging of the authorized navigation project and the disposal of the

sandy material as described is consistent, to the maximum extent practicable, with the State of Massachusetts's management program established as a result of the Coastal Zone Management Act of 1972. The dredging and disposal operations will be conducted, to the maximum extent practicable, in a manner that is consistent with the approved management program.

**Other Information:**

- a. Previous Dredging: This project has been dredged numerous times in the past. The most recent maintenance dredging was in July-August 1999 when 145,000 cubic yards of sand was removed from the entrance channel and placed nearshore off Plum Island Beach. Other previous projects were in September 1996 when 125,000 cubic yards of sand were dredged and placed nearshore off Salisbury Beach, and April-May 1993 when 125,000 cubic yards of sand were dredged and placed nearshore off Plum Island Beach.
- b. Non-Federal Dredging: No private dredging is proposed in conjunction with this project.
- c. Alternate Disposal Methods: All disposal methods evaluated (i.e., nearshore placement and beach nourishment) are considered beneficial use alternatives. The nearshore disposal method is the Government's preferred alternative. However, direct beach nourishment is being considered under the Corps beneficial use of dredge material program which cost-shares the additional costs of beach nourishment with a non-Federal public sponsor, in this case the Massachusetts Department of Conservation and Recreation.
- d. Endangered Species: Preliminary determinations indicate that the proposed activity will not likely affect any endangered species or critical habitat designated as endangered or threatened pursuant to the Endangered Species Act of 1973 (87 Stat. 844).
- e. Floodplain Management: In accordance with Executive Order 11988, the Corps of Engineers has determined that the proposed work will not contribute to negative impacts or damages caused by floods.
- f. Cultural Resources: The proposed work is maintenance involving previously dredged areas and previously used disposal sites, and is not likely to affect any cultural or archaeological features or resources. The new, expanded site off Plum Island Beach is adjacent to the previously used Plum Island Beach site and is not likely to affect any cultural or archaeological features or resources. The placement of material directly on the beaches is also not likely to affect any cultural or archaeological features or resources.
- g. Essential Fish Habitat Assessment: It has been determined that dredging may have a temporary adverse effect on Essential Fish Habitat (EFH). The Merrimack River and Newburyport Harbor is designated as EFH under the Magnuson-Stevens Fishery Conservation and Management Act (MSA) for federally managed



fish species. The Army Corps of Engineers has assessed the effects the dredging is likely to have on EFH, and has determined that there will be no significant impacts on the designated fisheries resources. The Corps has consulted with the National Marine Fisheries Service and the U.S. Fish and Wildlife Service to ensure that all impacts will be minimized and will not significantly affect these resources.

- h. Additional Requirements: A Water Quality Certification (WQC), pursuant to Section 401 of the Clean Water Act of 1977 (P.L. 95-217), was received for this project from the Massachusetts Department of Environmental Protection on January 23, 2008. The WQC was for the disposal of dredged material nearshore off either Plum Island Beach in Newbury or Salisbury Beach in Salisbury. A request for an amendment to the WQC to include the beach disposal sites has been submitted pursuant to The Clean Water Act of 1977, which requires that the work comply, to the maximum extent practicable, with State or interstate requirements to control the discharge of dredged or fill material. Similarly, the Commonwealth has concurred with our determination of Federal consistency with the Commonwealth's approved coastal zone management program for nearshore disposal; but we have now requested consistency for direct beach placement also.

The decision whether to perform the work will be based on an evaluation of the probable impact of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits which reasonably may be expected to accrue from the proposal will be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered; among these are conservation, economics, aesthetics, general environmental concerns, historic values, fish and wildlife values, flood damage prevention, land use classification, and the welfare of the people.


Selection of the above described proposed disposal sites for dredged material associated with maintenance of this navigation project shall be made through the application of guidelines promulgated by the Administrator, U.S. Environmental Protection Agency, in conjunction with the Secretary of the Army. If these guidelines alone would prohibit the use of the proposed disposal sites, any potential impairment to the maintenance of navigation, including any economic impact on navigation which would result from failure to use the disposal sites, will also be considered.

The final selection of a disposal method will depend on Federal funding and the Commonwealth's decision on cost-sharing in the beach nourishment alternative, and on the willingness of beachfront property owners in the areas receiving nourishment material to execute easements covering construction access and public access for the beaches.

Any person who has an interest which may be affected by the dredging and disposal of this dredged material may request a public hearing. The request must be submitted in writing to me within 30 days of the date of this notice and must clearly set forth the interest which may be affected and the manner in which the interest may be affected by this activity.

Please bring this notice to the attention of anyone you know to be interested in this project. Comments are invited from all interested parties and should be directed to me at U.S. Army Corps of Engineers, New England District, 696 Virginia Road, Concord, MA 01742-2751, ATTN: Jack Karalius, within 30 days of this notice.

14 July 2009  
Date

  
Philip T. Feir  
Colonel, Corps of Engineers  
District Engineer



## **PERTINENT LAWS, REGULATIONS, AND DIRECTIVES**

Clean Water Act, as amended (33 U.S.C. 1251 et. seq.)

Code of Federal Regulation, Title 33, Parts 335 through 338

National Environmental Policy Act of 1969 (42 U.S.C. 4321-4347)

Fish and Wildlife Coordination Act (16 U.S.C. 661-666c)

Fish and Wildlife Act of 1956 (16 U.S.C. 472a, et. seq.)

Migratory Marine Game-Fish Act (16 U.S.C. 760c-760g)

Coastal Zone Management Act of 1972 [16 U.S.C. 1456(c)(1) and (2)],

Sections 307(c)(1) and (2),

National Historic Preservation Act of 1966 (16 U.S.C. 470)

Endangered Species Act of 1973 as amended (16 U.S.C. 668aa-668cc)

Clean Air Act, as amended (42 U.S.C. 1221 et. seq.)

Estuary Protection Act (16 U.S.C. 1221 et. seq.)

Federal Water Project Recreation Act, as amended (16 U.S.C. 4601-12 et. seq.)

Land and Water Conservation Fund Act of 1965, as amended (16 U.S.C. 4601-4 et. seq.)

Magnuson-Stevens Fishery Conservation and Management Act and amended by the

Sustainable Fisheries Act of 1996

Executive Order 11988, Floodplain Management, 24 May 1977

Executive Order 11990, Protection of Wetlands, 24 May 1977

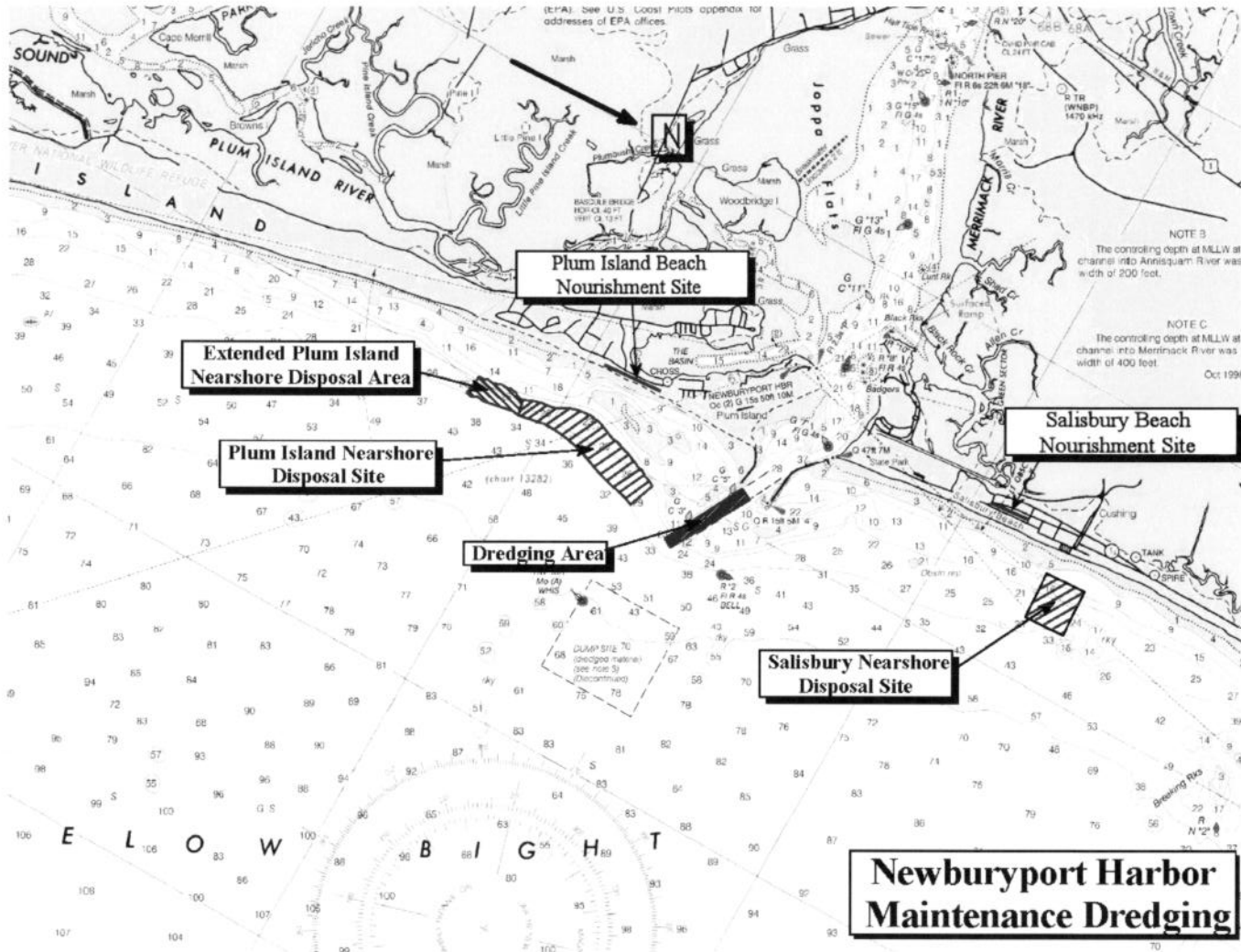
Executive Order 12898, Federal Actions to Address Environmental Justice in Minority

Populations and Low Income Populations, 11 February 1994

**Attachment No.1**

## Attachment No. 2.

### PROPOSED DISPOSAL SITES FOR NEWBURYPORT HARBOR MAINTENANCE DREDGING





**MassWildlife**

Commonwealth of Massachusetts

# Division of Fisheries & Wildlife

Wayne F. MacCallum, *Director*

July 14, 2009

Secretary Ian A. Bowles  
Executive Office of Environmental Affairs  
Attention: MEPA Office  
Rick Bourré, EEA No. 13503  
100 Cambridge St, Suite 900  
Boston, MA 02114

*Project Name:* Plum Island and Salisbury Beach Nourishment  
*Proponent:* MA Department of Conservation and Recreation  
*Location:* Newburyport, Newbury, and Salisbury, MA  
*Project Description:* Direct placement of approximately 160,000 cubic yards of dredged material from the federal entrance channel along eroded beach/dune areas at Plum Island and Salisbury Beach  
*Document Reviewed:* Notice of Project Change (NPC)  
*EEA File Number:* 13503  
*NHESP Tracking No:* 09-26646

Dear Secretary Bowles:

The Natural Heritage & Endangered Species Program (NHESP) of the Massachusetts Division of Fisheries & Wildlife has reviewed the Notice of Project Change (NPC) for the *Plum Island and Salisbury Beach Nourishment Project* (EEA No. 13503). At this time, the NHESP would like to offer the following comments regarding state-listed species and their habitats.

The project site is located within *Priority* and *Estimated Habitat* as indicated in the 13<sup>th</sup> Edition of the MA Natural Heritage Atlas and therefore **requires** review through a direct filing with NHESP for compliance with the Massachusetts Endangered Species Act (MESA 321 CMR 10.00) and its implementing regulations. The NHESP has received streamlined MESA/Wetlands Protection Act review filings for the project but has not completed its review. Based on a preliminary review of the information provided in the ENF and the information contained in the NHESP database, the NHESP anticipates that the proposed project will need to be conditioned in order to avoid a "take" of state-listed bird species. The NHESP will likely require timing restrictions and development and implementation of a shorebird monitoring and protection plan as part of the project.

The proponent has the responsibility of protecting breeding Piping Plovers and Terns that may be attracted to the beach nourishment areas, as well as their eggs and unfledged chicks. Therefore, the NHESP requires that a shorebird monitoring and protection plan for beach nourishment areas is developed and submitted to the NHESP for written approval during the MESA review process. The proponent should note that this plan should be submitted as soon as possible in order to expedite the MESA review process. The proposed arrangement for implementation of this plan shall be described in the plan (e.g., Town will annually fund a position or contract a 3<sup>rd</sup> party). This plan shall include the following:

[www.masswildlife.org](http://www.masswildlife.org)

Division of Fisheries and Wildlife

Field Headquarters, One Rabbit Hill Road, Westborough, MA 01581 (508) 389-6300 Fax (508) 389-7891

An Agency of the Department of Fish & Game

A-2-12

- a. Each year, beginning April 1, a qualified shorebird monitor approved in writing by the NHESP shall determine whether territorial or nesting Piping Plovers or Terns are present at beach nourishment areas and if so, shall erect and maintain warning signs and symbolic fencing to protect nesting habitat and nests from disturbance or human-caused mortality.
- b. Monitoring shall occur at least 2 times per week until at least July 1. However, if plovers or terns are found to be using the site, then monitoring frequency shall be increased to at least 3 times per week, and shall continue until all nesting and brood-rearing activity has been completed.
- c. The applicant shall notify the NHESP prior to the start of work in the first year and before January 1st for each subsequent year as to what arrangements have been made for the aforementioned monitoring and site protection to occur. This notification shall include a written contract, memorandum of agreement, or some other formal written agreement with the individual(s) or organization that will undertake monitoring and protection efforts in the field.
- d. A report shall be submitted to the NHESP each year, on or before September 30, on standard census forms provided by NHESP, that summarizes the results of the state-listed species monitoring and site protection activities.

The NHESP is especially concerned about any nourishment activities in the vicinity of 23<sup>rd</sup> Street in Newbury. This area currently provides habitat for state-listed species. If nourishment activities are to occur farther north than 21<sup>st</sup> Street, Newbury, then the NHESP requires the following information in order for the NHESP to complete its review under the WPA and pursuant to the MESA (321 CMR 10.20):

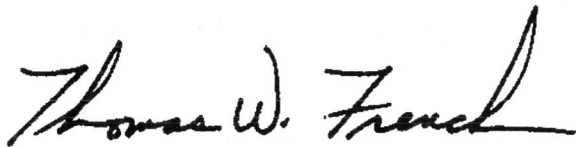
- a. Recent photos of the upper beach and dunes between 21<sup>st</sup> and 25<sup>th</sup> streets;
- b. Detailed profiles that depict the elevations, widths, and slopes of fill placement proposed for this section of the beach; and
- c. A description of how the proposed design of fill placement here will not adversely affect Piping Plover nesting and brood-rearing habitat on this section of beach.

Currently, the proponent is working cooperatively with the NHESP to revise the plans to include proposed vegetative plantings and revise the locations of the proposed sand fencing to benefit state-listed species. The NHESP looks forward to receiving revised plans.

The NHESP anticipates that all issues related to state-listed species can be addressed during the MESA review process. As the MESA review is not complete, no alteration to the soil, surface, or vegetation and no work associated with the proposed project shall occur on the property until the NHESP has made a final determination. We appreciate the opportunity to comment on this project.

Please contact Kristin E. Black of our office with any questions about this letter at (508) 389-6367 or [kristin.e.black@state.ma.us](mailto:kristin.e.black@state.ma.us).

Sincerely,



Thomas W. French, Ph.D.  
Assistant Director

cc: Christine M. Player, Vine Associates, Inc.  
Heather Warchalowski, DCR  
Newburyport Board of Selectmen  
Newburyport Conservation Commission  
Newburyport Planning Board  
DEP Northeast Regional Office, MEPA Coordinator  
Newbury Board of Selectmen  
Newbury Conservation Commission  
Newbury Planning Board  
Salisbury Board of Selectmen  
Salisbury Conservation Commission  
Salisbury Planning Board  
Susi von Oettingen, USFWS  
Todd Randall, US Army Corps of Engineers  
Mark Habel, US Army Corps of Engineers





THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS  
OFFICE OF COASTAL ZONE MANAGEMENT  
251 Causeway Street, Suite 800, Boston, MA 02114-2136  
(617) 626-1200 FAX: (617) 626-1240

July 7, 2009

John R. Kennelly  
Department of the Army  
New England District, Corps of Engineers  
696 Virginia Road  
Concord, MA 01742-2751

RE: CZM Federal Consistency Review of Newburyport Harbor Federal Maintenance  
Dredging Project; Newburyport.

Dear Mr. Kennelly:

The Massachusetts Office of Coastal Zone Management (CZM) has received the necessary information to initiate our federal consistency review for the proposed modification to the Newburyport Harbor Federal maintenance dredging project.

The notice that this proposal is undergoing consistency review by CZM will be published in the next edition of the *Environmental Monitor*. The published date of that *Monitor* will initiate a 21-day public comment period. Enclosed please find a copy of the schedule that we will follow during our consistency review. Although we have 60 days (extendable with your permission) in which to review your determination and to concur or object, we will make a vigorous effort to complete our review shortly after the close of the comment period.

**Note:** We cannot complete our review and issue a decision of consistency with our program policies until all applicable state environmental agency permits, licenses, certificates and other authorizations have been issued. Further, if they are required, federal permits cannot be issued until the federal permitting agency receives a consistency concurrence letter from CZM for the proposed project. To keep our review timely, we suggest that you forward copies of applicable state environmental agency permits, licenses, etc. to CZM as you receive them.

Future communications with this office regarding the technical aspects of the above-referenced project should be directed to Kathryn Glenn who will be conducting the federal consistency review of this project for the CZM Office. Please call me at (617) 626-1050 if you have any procedural questions about the review process.

Sincerely,

Robert L. Boeri  
Project Review Coordinator

RLB/pb  
Enclosure  
czm#7501



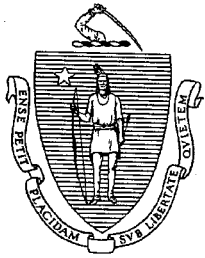
CZM Federal Consistency Review Schedule  
For a Federal Agency Activity\*

Review Steps

1. Document Receipt  
Received consistency determination on July 3, 2009.
  
2. Public Notice
  - (a) Notice of the initiation of this federal consistency review will appear in the next edition of the *MEPA Monitor* which will be published on or about July 22, 2009.
  
  - (b) Publication in the *Monitor* begins a 21 day public comment period which will close on or about Aug. 12, 2009.
  
3. CZM must issue its consistency decision within 60 days of commencement of our review unless granted an extension by the federal project proponent. The review period closes and a consistency decision will be issued no later than Sept. 4, 2009.

\* 301 CMR 21.01 – 21.04, 15 CFE 930.41





The COMMONWEALTH OF MASSACHUSETTS  
BOARD OF UNDERWATER ARCHAEOLOGICAL RESOURCES  
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS  
251 Causeway Street, Suite 800, Boston, MA 02114-2136  
Tel. (617) 626-1200 Fax (617) 626-1240 Web Site: [www.mass.gov/czm/buar/index.htm](http://www.mass.gov/czm/buar/index.htm)

July 6, 2009

Anthony T. Mackos, PE  
Acting Chief, Engineering/Planning Division  
US Army Corps of Engineers  
696 Virginia Road  
Concord, MA 01742-2751

RE: Newburyport Dredging and Beach Nourishment/Near Shore Disposal

Dear Acting Chief Mackos:

The Massachusetts Board of Underwater Archaeological Resources is in receipt of your letter of 26 June 2009 in regard to the above referenced project. The Board has completed its review of the letter and accompanying materials, and offers the following comments. The Board concurs that the planned activities as currently proposed will not adversely affect submerged cultural resources at this time.

The on-going needs for the proposed beach nourishment and near shore disposal activities are necessitated by the erosion occurring on a dynamic shoreline as well as in support of maintenance dredging. Given the coastal processes taking place along Salisbury Beach and Plum Island, circumstances and condition are likely to change. Therefore, the Board welcomes continued consultation in the event of any changes in the current plan and when future activities are considered even at the current disposal/nourishment locations.

The Board is encouraged that your agency has notified our permittee, Victor Ricardo, of the subject disposal. We request that these notifications continue when future proposed activities are in or near his permit area.

Should heretofore-unknown submerged cultural resources be encountered during the course of the project, the Board expects that the project's sponsor will take steps to limit adverse effects and notify the Board, as well as other appropriate agencies in accordance with the Board's *Policy Guidance for the Discovery of Unanticipated Archaeological Resources* (updated 9/28/06).

If you should have any questions, do not hesitate to contact me at 617-626-1141 or the address above.

Sincerely,

A handwritten signature in black ink, appearing to read "Victor T. Mastone".

Victor T. Mastone  
Director and Chief Archaeologist

/vtm

Cc: Brona Simon, MHC  
Marc Paiva, ACOE  
Robert Boeri, MCZM  
Victor Ricardo



REPLY TO:  
ATTENTION OF:

**DEPARTMENT OF THE ARMY**  
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS  
696 VIRGINIA ROAD  
CONCORD, MASSACHUSETTS 01742-2751

July 1, 2009

Programs Project Management Division  
Programs & Civil Project Management Branch

Mr. Alex Strycky  
Project Review Coordinator  
Massachusetts Office of Coastal Zone Management  
251 Causeway Street, Suite 800  
Boston, Massachusetts 02114

Re: Proposed Alternative Disposal Locations for the Newburyport Harbor Federal Maintenance Dredging Project

Dear Mr. Strycky:

The U.S. Army Corps of Engineers (Corps) requests that your office review the proposed modification to the Newburyport Harbor Federal Maintenance Dredging project for consistency with the Coastal Zone Management (CZM) Program. A previous CZM consistency determination for this project was filed with your office in 2006 and was concurred with by letter dated September 19, 2006. A change in the project description has prompted this request.

The proposed change in the project entails the addition of two alternative disposal locations. Two beach sites, Plum Island Beach in Newbury and Salisbury Beach in Salisbury (see Enclosure 1), have been identified as candidate sites for beach nourishment because of severe erosion. The Commonwealth, the National Marine Fisheries Service, and the two communities have all requested that direct beach placement be considered as a beneficial use of the dredge material from the project. The Corps, working with those parties under our Section 204 authority for beneficial use, developed a potential project modification in response to those requests. Should the State and local interests provide the necessary cost-sharing and real estate interests and agree to management of the beachfill areas, then direct beach placement would be our preferred alternative. The prior approved plan for placing the sand in the nearshore bar system would be followed if the beach placement alternative is ultimately not pursued.

The dredging of the entrance channel of the Newburyport Harbor Federal Navigation Project will yield approximately 160,000 cubic yards (cy) of sand. The updated project plan would place approximately 120,000 cy of sand at the Plum Island Beach site in the town of Newbury and approximately 40,000 cy of sand at the Salisbury Beach State Reservation site in the town of Salisbury.

In accordance with the guidelines for plover management published by the U.S. Fish and Wildlife Service and in conjunction with the Commonwealth's concern for anadromous fish, a construction window of September 1 through March 14 will be used. The dredged material would be used to increase the berm elevation by two to three feet, widen the berm in most

locations, and to buttress the dune face in areas of the most severe erosion. The beach nourishment areas will be graded on a 1:10 slope seaward of the beach berm with fill extending to the mean lower low water (MLLW) elevation, except for the southern 2100 feet of the Plum Island beachfill area where the steepness of the existing beach slopes will only permit a finished slope of 1:8 extending to about -5 feet MLLW.

Enclosed with this letter are:

- a. An updated Environmental Assessment and FONSI for the project which includes descriptions of the beach nourishment sites and potential impacts;
- b. Cross section plans of proposed beach nourishment areas; and
- c. A figure updating the dredging and nourishment areas.

The proposed project complies with the following CZM policies:

- WATER QUALITY POLICY #1 - Ensure that point-source discharges in or affecting the coastal zone are consistent with federally approved state effluent limitations and water quality standards.

Consistency: The placement of dredged sand at either the nearshore disposal sites or the beach nourishment sites will temporarily increase turbidity in the waters in and adjacent to the disposal sites. However, the impacts will be short-term and localized. The placement/disposal of the dredged sand will not significantly affect water quality in the vicinity of the site. Therefore, this project is consistent with this policy.

- WATER QUALITY POLICY #2 - Ensure that nonpoint pollution controls promote the attainment of state surface water quality standards in the coastal zone.

Consistency: The dredging and disposal of the sandy material will be performed using the best management practices to control non-point pollution sources. Therefore, this project is consistent with this policy.

- WATER QUALITY POLICY #3 - Ensure that activities in or affecting the coastal zone conform to applicable state and federal requirements governing subsurface waste discharges.

Consistency: The dredged material to be placed nearshore or on the beaches of either Plum Island or Salisbury Beach is clean sand. Therefore, this project is consistent with this policy.

- HABITAT POLICY #1 - Protect coastal resource areas including salt marshes, shellfish beds, dunes, beaches, barrier beaches, salt ponds, eelgrass beds, and fresh water wetlands for their important role as natural habitats.

Consistency: The dredging of material from the Newburyport Harbor entrance channel will not significantly impact coastal resource areas. We intend to utilize the dredged sandy material beneficially:

a. By placing the material nearshore, where it will act as a feeder berm to nourish the nearby beach; or

b. By placing the material directly on adjacent beaches for nourishment. Any adverse impacts from this project are anticipated to be short-term and highly localized. Therefore, this project is consistent with this policy.

- HABITAT POLICY #2 - Restore degraded or former wetland resources in coastal areas and ensure that activities in coastal areas do not further wetland degradation but instead take advantage of opportunities to engage in wetland restoration.

Consistency: No wetland areas will be impacted by this project. Therefore, this policy is not applicable.

- PROTECTED AREAS POLICY #1 - Preserve, restore, and enhance complexes of coastal resources of regional or statewide significance through the Areas of Critical Environmental Concern program.

Consistency: No Areas of Critical Environmental Concern will be impacted by this project. However, the placement of the sandy material in a nearshore disposal area or directly on the beach will help restore and protect the coastal beach resources in the project area. Therefore, the proposed project is consistent with this policy.

- PROTECTED AREAS POLICY #2 - Protect state and locally designated scenic rivers and state classified scenic rivers in the coastal zone.

Consistency: No scenic rivers will be impacted by this project. Therefore, this policy is not applicable.

- PROTECTED AREAS POLICY #3 - Ensure that proposed developments in or near designated or registered historic districts or sites respect the preservation intent of the designation and that potential adverse effects are minimized.

Consistency: No developments are proposed. Therefore, this policy is not applicable.

- COASTAL HAZARD 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.

Consistency: We intend to utilize the dredged sandy material beneficially by either placing the material nearshore, where it will act as a feeder berm to nourish the nearby beach, or by placing the material directly on the beach. This project is therefore consistent with this policy.

- COASTAL HAZARD POLICY #2 - Ensure construction in water bodies and contiguous land areas will minimize interference with water circulation and sediment transport. Approve permits for flood or erosion control projects only when it has been determined that there will be no significant adverse effects on the project site or adjacent or downcoast areas.

Consistency: This project will not significantly interfere with water circulation patterns and sediment transfer. We intend to use the mechanism of sediment transfer beneficially, as stated above, by placing the dredged sand nearshore, where it will act as a feeder berm to nourish the nearby beach, or by placing it on adjacent beaches. Therefore, this project is consistent with this policy.

- COASTAL HAZARD POLICY #3 - Ensure that state and federally funded public works projects proposed for location within the coastal zone will:
  - a. Not exacerbate existing hazards or damage natural buffers or other natural resources,
  - b. Be reasonably safe from flood and erosion related damage, and
  - c. Not promote growth and development in hazard-prone or buffer areas, especially in Velocity zones and ACECs, and
  - d. 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.

Consistency: This project will not damage natural buffers, promote development, or reconstruct structures. The proposed dredging will improve navigation by removing shoaling/sediment build-up which is causing a navigation hazard. All disposal options are intended to enhance natural buffers by nourishing adjacent beaches. Therefore, this project is consistent with this policy.

- COASTAL HAZARD POLICY #4 - Prioritize public funds for acquisition of hazardous coastal areas for conservation or recreation use, and relocation of structures out of coastal high hazard areas, giving due consideration to the effects of coastal hazards at the location to the use and manageability of the area.

Consistency: Not applicable.

- PORTS POLICY #1 - Ensure that dredging and disposal of dredged material minimize adverse effects on water quality, physical processes, marine productivity and public health.

Consistency: The dredging and disposal of sandy material from the Newburyport Harbor entrance channel will not significantly impact water quality, physical processes, marine resources, or public health. Dredging and disposal will impact existing benthic resources in the project footprint, but recolonization of benthic species from adjacent areas will allow

the impacted areas to recover to pre-dredge conditions. Water quality impacts at the dredge and disposal sites will be limited to short-term increases in turbidity. Therefore, this project is consistent with Ports Policy #1.

- PORTS POLICY #2 - Obtain the widest possible public benefit from channel dredging, ensuring that designated ports and developed harbors are given highest priority in the allocation of federal and state dredging funds. Ensure that this dredging is consistent with marine environment policies.

Consistency: The dredging of material from the Newburyport Harbor entrance channel is required to allow for safe navigation for recreational and commercial vessels. As previously stated, this project is consistent with marine environmental policies since no long-term adverse impacts are anticipated. This project is consistent with this policy.

- PORTS POLICY #3 - Preserve and enhance the capacity of Designated Port Areas (DPAs) to accommodate water-dependent industrial uses, and prevent the exclusion of such uses from tidelands and any other DPA lands over which a state agency exerts control by virtue of ownership, regulatory authority, or other legal jurisdiction.

Consistency: Not applicable.

- PORTS MANAGEMENT PRINCIPLE #1 - Encourage, through technical and financial assistance, expansion of water dependent uses in designated ports and developed harbors, re-development of urban waterfronts, and expansion of visual access.

Consistency: Not applicable.

- PUBLIC ACCESS POLICY #1 - Ensure that developments proposed near existing public recreation sites minimize their adverse effects.

Consistency: Not applicable.

- PUBLIC ACCESS MANAGEMENT PRINCIPLE #1 - Improve public access to coastal recreation facilities and alleviate auto traffic and parking problems through improvements in public transportation. Link existing coastal recreation sites to each other or to nearby coastal inland facilities via trails for bicyclists, hikers, and equestrians, and via rivers for boaters.

Consistency: Not applicable.

- PUBLIC ACCESS MANAGEMENT PRINCIPLE #2 - Increase capacity of existing recreation areas by facilitating multiple use and by improving management, maintenance and public support facilities. Resolve conflicting uses whenever possible through improved management rather than through exclusion of uses.

Consistency: Not applicable.



- PUBLIC ACCESS MANAGEMENT PRINCIPLE #3 - Provide technical assistance to developers of private recreational facilities and sites that increase public access to the shoreline.

Consistency: Not applicable.

- PUBLIC ACCESS MANAGEMENT PRINCIPLE #4 - Expand existing recreation facilities and acquire and develop new public areas for coastal recreational activities. Give highest priority to expansions or new acquisitions in regions of high need or limited site availability. Assure that both transportation access and the recreational facilities are compatible with social and environmental characteristics of surrounding communities.

Consistency: Maintenance dredging of the Newburyport Harbor entrance channel will improve access to Newburyport Harbor and will restore safe navigation for public boating and recreational and commercial access to the harbor and the Merrimack River. Therefore, this project is consistent with this policy.

- ENERGY POLICY #1 - For coastally dependent energy facilities, consider siting in alternative coastal locations. For non-coastally dependent energy facilities, consider siting in areas outside of the coastal zone. Weigh the environmental and safety impacts of locating proposed energy facilities at alternative sites.

Consistency: Not applicable.

- ENERGY MANAGEMENT PRINCIPLE #1 - Encourage energy conservation and the use of alternative sources such as solar and wind power in order to assist in meeting the energy needs of the Commonwealth.

Consistency: Not applicable.

- OCEAN RESOURCES POLICY #1 - Support the development of environmentally sustainable aquaculture, both for commercial and enhancement (public shellfish stocking) purposes. Ensure that the review process regulating aquaculture facility sites (and access routes to those areas) protects ecologically significant resources (salt marshes, dunes, beaches, barrier beaches, and salt ponds) and minimizes adverse impacts upon the coastal and marine environment.

Consistency: Not applicable.

- OCEAN RESOURCES POLICY #2 - Extraction of marine minerals will be considered in areas of state jurisdiction, except where prohibited by the MA Ocean Sanctuaries Act, where and when the protection of fisheries, air and marine water quality, marine resources, navigation and recreation can be assured.

Consistency: Not applicable.

- OCEAN RESOURCES POLICY #3 - Accommodate offshore sand and gravel mining needs in areas and in ways that will not adversely affect shorelines areas due to alteration of wave

direction and dynamics, marine resources and navigation. Mining of sand and gravel, when and where permitted, will be primarily for the purpose of beach nourishment.

Consistency: Not applicable. There is no mining of sand and gravel in this project. Maintenance dredging of sand from the Newburyport Harbor entrance channel will be placed nearshore, where it will act as a feeder berm to nourish the nearby beach, or directly on adjacent beaches. This project is therefore consistent with this policy.

- GROWTH MANAGEMENT PRINCIPLE #1 - Encourage, through technical assistance and review of publicly funded development, compatibility of proposed development with local community character and scenic resources.

Consistency: Not applicable.

- GROWTH MANAGEMENT PRINCIPLE #2 - Ensure that state and federally funded transportation and wastewater projects primarily serve existing developed areas, assigning highest priority to projects that meet the needs of urban and community development centers.

Consistency: The dredging of the Newburyport Harbor entrance channel will maintain waterborne transportation access to an existing developed public harbor. Therefore, this project is consistent with this policy.

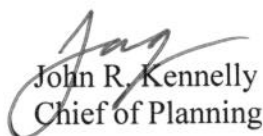
- GROWTH MANAGEMENT PRINCIPLE #3 - Encourage the revitalization and enhancement of existing development centers in the coastal zone through technical assistance and federal and state financial support for residential, commercial and industrial development.

Consistency: Not applicable.

We are requesting a long-term (10-year) CZM consistency concurrence from your office. Our previous 10-year CZM consistency concurrence was issued September 19, 2006. The two beachfill options presented provide reduction in damages to shorefront property and environmental benefit of an expanded beach and strengthened dune front.

The Corps believes that the work as proposed is consistent to the maximum extent practicable with applicable policies of the Massachusetts Coastal Zone Management Program and requests your concurrence. If you have any questions or require additional information please contact the project biologist, Mr. Todd Randall at (978) 318-8518, the project manager, Mr. Jack Karalius at (978) 318-8288, or Mr. Mark Habel at (978) 318-8871.

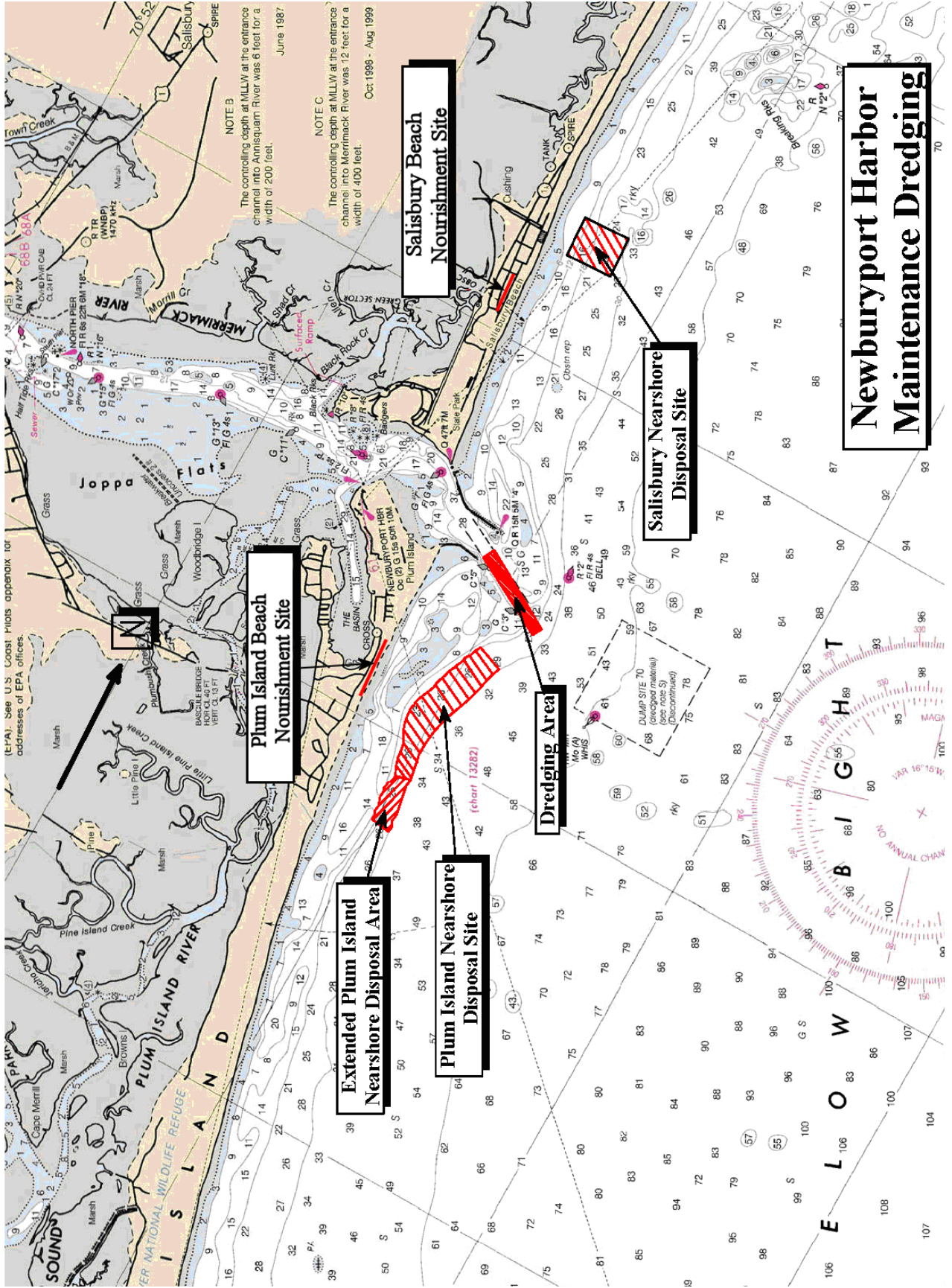
Sincerely,

  
John R. Kennelly  
Chief of Planning

Enclosures

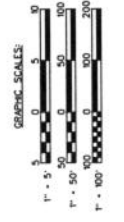
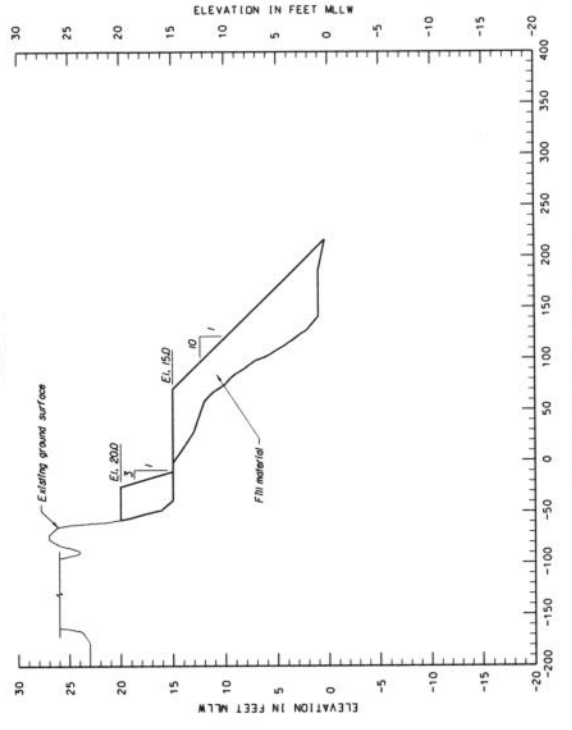
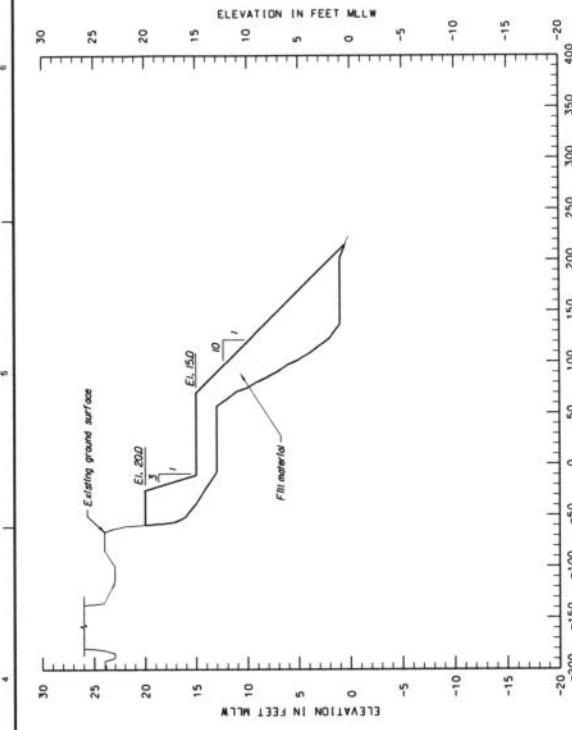


**ENCLOSURE 1: PROPOSED DISPOSAL SITES FOR NEWBURYPT HARBOR MAINTENANCE DREDGING**





|                                                                                                                                                                      |      |                                                                                                                  |    |                                                    |             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------------------------------------------------------------------------------------------------------------------|----|----------------------------------------------------|-------------|
|                                                                                                                                                                      |      | MAINTENANCE DREDGING<br>NEWBURYPORT MASSACHUSETTS<br>1500 FT ENTRANCE CHANNEL<br>NEWBURYPORT MAINTENANCE CHANNEL |    | SHEET<br><b>C-103</b><br>SHEET 3 OF 3              |             |
| U.S. ARMY CORPS OF ENGINEERS<br>CIVIL ENGINEERING DISTRICT<br>NEW ENGLAND DISTRICT<br>PROJECT NO. 15-00000-00<br>CONTRACT NO. 15-00000-00<br>DRAWING NO. 15-00000-00 |      | DATE<br>10/15/15                                                                                                 |    | DESIGNED BY<br>CHECKED BY<br>DRAWN BY<br>IN CHARGE |             |
| NO.                                                                                                                                                                  | DATE | DESCRIPTION                                                                                                      | BY | DATE                                               | DESCRIPTION |
|                                                                                                                                                                      |      |                                                                                                                  |    |                                                    |             |
|                                                                                                                                                                      |      |                                                                                                                  |    |                                                    |             |
|                                                                                                                                                                      |      |                                                                                                                  |    |                                                    |             |



PLAN  
SCALE: 1" = 100'



DEPARTMENT OF THE ARMY  
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS  
696 VIRGINIA ROAD  
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO:  
ATTENTION OF:

July 1, 2009

Planning Branch

Mr. Ken Chin  
Massachusetts Department of Environmental Protection  
1 Winter Street  
Boston, Massachusetts 02108

Dear Mr. Chin:

I am writing in reference to the Newburyport Harbor maintenance dredging project (Transmittal Number 075196) located in Newbury, Newburyport, and Salisbury, Massachusetts. The Corps is requesting a modification to the Water Quality Certificate to include alternative disposal sites for beneficial use of the dredged material for beach nourishment at two beach areas; namely Plum Island Beach at Newbury and Salisbury State Beach in Salisbury. Please find the enclosed Section 401 Water Quality Certification amendment request along with a CD containing an updated Environmental Assessment and FONSI for the project which includes descriptions of the beach nourishment sites and potential impacts, cross section plans of proposed beach nourishment areas, and an updated figure detailing the dredging and nourishment areas.

The proposed change in the project entails the addition of two alternative disposal locations. Two beach sites, Plum Island Beach and Salisbury Beach (see Enclosure 1), have been identified as candidate sites for beach nourishment because of severe erosion. The National Marine Fisheries Service, the Commonwealth, and the two communities all requested that direct beach placement be considered as a beneficial use of the dredge material from the project. The Corps, working with those parties under our Section 204 authority for beneficial use, developed a potential project modification in response to those requests. Should the State and local interests provide the necessary cost-sharing and real estate interests, then direct beach placement would be our preferred alternative. The prior approved plan for placing the sand in the nearshore bar system would be followed if the beach placement alternative is ultimately not pursued.

The dredging of the Newburyport Harbor Federal Navigation Channel will yield approximately 160,000 cubic yards (cy) of sand. The updated project plan would place approximately 120,000 cy of sand at the Plum Island Beach site in the town of Newbury and approximately 40,000 cy of sand at the Salisbury Beach State Reservation site in the town of Salisbury. This split is the result of an agreement between the State and the municipalities.

In accordance with the guidelines for plover management published by the U.S. Fish and Wildlife Service, and in conjunction with the Commonwealth's concern for anadromous fish, a construction window of September 1 through March 14 will be used. The dredged material



would be used to increase the berm elevation by two to three feet, widen the berm in most locations, and to buttress the dune face in areas of the most severe erosion. The beach nourishment areas will be graded on a 1:10 slope seaward of the beach berm with fill extending to the mean lower low water (MLLW) elevation, except for the southern 2100 feet of the Plum Island beachfill area where the steepness of the existing beach slopes will only permit a finished slope of 1:8 extending to about -5 feet MLLW.

If you have any questions or require additional information please contact the project biologist, Mr. Todd Randall at (978) 318-8518, the project manager, Mr. Jack Karalius at (978) 318-8288, or Mr. Mark Habel at (978) 318-8871.

Sincerely,

  
John R. Kennelly  
Chief of Planning

Enclosures





**Town Of Newbury**  
Office of  
The Conservation Commission  
25 High Road  
Newbury, MA 01951-4799  
Tel: 978-462-1372  
Fax: 978-465-3064

June 30, 2009

Ms. Susi von Oettingen, Endangered Species Biologist  
US Fish and Wildlife Service  
70 Commercial Street, Suite 300  
Concord, NH 03301

RE: Newburyport Harbor & Plum Island and Salisbury Beaches  
Newbury Beach Management Plan  
Plover Habitat Management Commitment Letter

Dear Ms. Oettingen:

As per your request, the Town of Newbury hereby submits this letter of commitment to follow the plover management plan set forth in the Newbury Beach Management Plan (draft dated May 2009). The Newbury Beach Management Plan is set to be presented to Townspeople at the Conservation Meeting being held on July 21, 2009. We expect the plan to be approved at this time.

Graham Taylor Parker River National Wildlife and the Town of Newbury have entered into a memorandum of understanding; the details of which spell out the responsibilities of each party relative to plover management. The PRNWR service is presently coordinating the final details with USFWS, but overall, the Town will commit to whatever PRNWR and USFWS agree to. We spoke with Graham Taylor, Refuge Manager at PRNWR, on June 22 and he informed me that the document should be completed shortly for our collective signatures.

Please feel free to contact me at (978) 462-1372 should you have any questions or require any additional information.

Respectfully,

Doug Packer  
Conservation Commission

CC: Mark Habel, Chief, Navigation Section, US Army Corps of Engineers  
Susan Hamilton, Regional Director, Department of Conservation & Recreation  
Charles Kostro, Town Administrator, Town of Newbury  
Christine Player, Vine Associates  
Todd Randall, USACE  
Raul Silva, DCR Deputy Chief Engineer  
Graham Taylor, Division of Fisheries & Wildlife  
Heather Warchalowski, DCR Coastal Ecologist



DEPARTMENT OF THE ARMY  
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS  
696 VIRGINIA ROAD  
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO:  
ATTENTION OF:

June 26, 2009

Engineering/Planning Division  
Evaluation Branch

Mr. Victor Mastone, Director  
Board of Underwater Archaeological Resources (BUAR)  
251 Causeway Street, Suite 800  
Boston, Massachusetts 02114-2136

Dear Mr. Mastone:

The U.S. Army Corps of Engineers (Corps), New England District, has been in contact with your office regarding maintenance dredging of the Federal Navigation Channel in Newburyport Harbor with disposal of dredged material at several near shore sites off Plum Island and Salisbury Beach as well as for beach nourishment purposes at the aforementioned beach sites (see enclosed figures). Please note that the maintenance dredging is conducted under our Operation and Maintenance authority for a federal navigation channel while the disposal for beach nourishment is authorized under our Section 204 Beneficial Use of Dredged Material program. Use of the beach sites as requested by the State is contingent on State cost-sharing and State provision of real estate easements.

In correspondence dated October 16, 2007, (copy enclosed) you responded to the project public notice and concurred with the Corps determination that the maintenance dredging and disposal at a previously utilized disposal site would have a minimal risk upon submerged cultural resources. However, it was indicated there was an active archaeological reconnaissance permit area administered by BUAR and in close proximity to the Salisbury near shore disposal site. As disposal at this site could impede ongoing archaeological investigations, you recommended that the Corps utilize the Plum Island near shore disposal site and/or the extended Plum Island near shore disposal as depicted on the enclosed figures.

A follow-up letter from Mr. Jack Karalius of our Programs and Civil Project Management Branch dated December 5, 2007, (copy enclosed) to your office indicated that a condition was to be added to the State Water Quality Certification stating that the project applicant would consult with BUAR prior to conducting any activities that may disturb underwater archaeological resources in proximity to the Salisbury near shore disposal site. Since it was not determined that you agreed to this proposed condition, it was decided that one of our cultural resources specialists would contact you directly to continue the coordination.



Mr. Marc Paiva of my staff contacted you on Thursday, June 18, 2009 to discuss and clarify the project intent and to determine your position regarding use of the Salisbury near shore disposal site. Apparently, there are two separate areas of concern in the vicinity of the project area, the aforementioned BUAR permit area and, to the south, a previously identified shipwreck, the Jennie Carter, which is exposed at low tide. It was our understanding initially that these two sites were one and the same. Furthermore, you indicated that disposal of dredged material at the BUAR permit area would not constitute an adverse impact upon significant resources, provided that the permittee, Mr. Victor Ricardo, be notified in writing of the subject disposal. Since the Jennie Carter shipwreck is to the south of the permit area and will not be impacted by the proposed disposal, there will be no impacts to this identified historic property. Lastly, disposal of dredged material for beach nourishment purposes along Plum Island and Salisbury beaches would constitute a "no effect" determination as well.

It is the Corps preference to use the two beach nourishment sites. Should these sites not be used, the Plum Island near shore disposal site will be utilized initially, with the Salisbury near shore site to be considered in about 5 years from now during the next scheduled maintenance dredging of Newburyport Harbor. At that time, the Corps will initiate formal coordination with your office in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended.

We would appreciate your concurrence with these determinations, namely that the disposal of dredged material at the Salisbury near shore disposal site or along the Plum Island and Salisbury beaches will constitute no effect upon cultural resources. You have previously indicated that maintenance dredging of Newburyport Harbor will not impact historic properties and, while there may be shipwrecks in the Plum Island area, no further investigations are recommended in this area.

If you have any further questions, please contact Mr. Paiva of the Evaluation Branch at 978-318-8796.

Sincerely,

A handwritten signature in black ink, appearing to read 'Anthony T. Mackos', with a stylized flourish at the end.

Anthony T. Mackos, P.E.  
Acting Chief, Engineering/Planning Division

Enclosures

Copies Furnished (with enclosures):

Ms Brona Simon, Executive Director and SHPO  
Massachusetts Historical Commission  
The Massachusetts State Archives Building  
220 Morrissey Boulevard  
Boston, Massachusetts 02125

Mr. Victor Ricardo  
148 Kings Highway  
Hampton, New Hampshire 03842



**DEPARTMENT OF THE ARMY**  
NORTH ATLANTIC DIVISION, CORPS OF ENGINEERS  
FORT HAMILTON MILITARY COMMUNITY  
GENERAL LEE AVENUE, BLDG 301  
BROOKLYN, NY 11252

REPLY TO

CENAD-PD-CID-S

26 June 2009

MEMORANDUM FOR Commander, New England District, US Army Corps of Engineers,  
ATTN: CENAE-EP-P

SUBJECT: Newburyport Harbor, Plum Island & Salisbury Beaches, Beneficial Use of  
Dredged Materials from Maintenance Dredging, Newbury & Salisbury, MA, Section 204  
Draft Environmental Assessment

1. References:

- (a) CENAE-EP-P memorandum dated 21 May 2009, subject as above, transmitting the draft environmental assessment, and request for approval to release for public review.
- (b) NAD Planning and Policy Community of Practice (CoP) e-mails dated 11 June 2009 and 24 June 2009, commenting on draft EA.

2. CENAD has performed a policy review of the draft EA provided by NAE. There are no environmental policy conditions precluding release to the Public. CENAD supports New England District's distribution of the Draft EA for public release. However, the review identified a few areas that require clarifications. Please address the comments below as you finalize the environmental compliance process:

- a. Section 7.5: Endangered Species will be revised to document conclusions of ongoing informal consultation with the USFWS subsequent to their July 2006 correspondence.
- b. Section 7.6: The Essential Fish Habitat Assessment (EFHA) will document concurrence with NMFS recommendations and the letter responding to NMFS will be included in Appendix A, Pertinent Correspondence of the final EA.
- c. Section 7.7: The Historic and Archaeological Resources section will clarify whether there are underwater archaeological properties in the area of potential effect and document measures coordinated with the Board of Underwater Archaeological Resources to avoid adverse effects.
- d. An Application for an Amendment to the existing Water Quality Certificate to cover nearshore disposal will be submitted.

3. Should you have any questions, or need additional information, please contact Ms. Patricia Donohue, P.E. (DST Project Manager) at (718) 765-7080.

A handwritten signature in black ink that reads "Patricia Donohue". The signature is written in a cursive style with a large, prominent initial "P".

PATRICIA DONOHUE, P.E.  
Acting District Support Team Leader

June 15, 2009

Mr. Ian A. Bowles  
Secretary of the Executive Office  
Of Energy and Environmental Affairs  
100 Cambridge Street  
Boston, MA 02114

**Attn: MEPA Unit**

**Re: EIR Waiver Request  
Plum Island and Salisbury Beach Nourishment  
Newburyport Harbor Federal Navigation Project  
Newburyport, Newbury & Salisbury, MA  
EOEA# 13503**



190 Old Derby Street  
Suite 311  
Hingham  
Massachusetts  
02043

tel: (781) 749-2530  
fax: (781) 749-2751

Dear Secretary Bowles:

On behalf of the Department of Conservation and Recreation (DCR), Vine Associates, Inc. (VAI) is hereby submitting a Notice of Project Change (NPC) and a request for a waiver from the requirement for preparation of an Environmental Impact Report (EIR) for performing beach/dune nourishment at Plum Island and the Salisbury Beach State Reservation as part of the Newburyport Harbor Federal Navigation Project (FNP). Included with the EIR waiver request and the enclosed NPC forms are the following: a Project Narrative that explains the proposed project changes, as well as the larger overall project; a copy of the Secretary's Certificate on the Environmental Notification Form (ENF) issued on this project under EOEA No. 13503; the previously-reviewed plans; the currently-proposed plans; a U.S.G.S. topographic map indicating the project location; and a distribution list for circulation of this NPC.

This NPC is being filed for the change in dredging disposal areas from the existing Nearshore Disposal sites to two (2) beach/dune nourishment sites located in Newbury and Salisbury. The proposed project will be conducted by the U.S. Army Corps of Engineers (USACE) and will include the direct placement of approximately 160,000 cubic yards (CY) of sediments dredged from the federal entrance channel along eroded beach/dune areas at Plum Island (120,000 CY) and Salisbury Beach (40,000 CY). Over the past several years, both Plum Island and Salisbury Beach have been subjected to significant erosion, thus warranting the need for immediate direct placement of dredge sediments along beach/dune areas rather than placement at the adjacent nearshore disposal sites which have been

historically used for the FNP. As part of the proposed project, a total of approximately 22.0 acres of beach/dune nourishment will be conducted at Plum Island (13.5 acres) and Salisbury Beach (8.5 acres). As such, the proposed project is categorically included for preparation of an EIR pursuant to 301 CMR 11.03(3), as it will alter ten (10) or more acres of a resource area protected under the Wetlands Protection Regulations (310 CMR 10.00). However, these impact areas reflect a significant reduction in impacts to resource areas, from the originally-proposed impact of 34.4 acres at the extended Nearshore Disposal Site off Plum Island to 22.0 acres of beach and dune nourishment.

This project has undergone review by the Massachusetts Environmental Policy Act (MEPA) office on several occasions within the past 20 years. In 1987, an ENF was filed under EOEA No. 6429 for the maintenance dredging of the FNP which included nearshore disposal of channel sediments adjacent to Plum Island. In 1996, an NPC was filed under EOEA No. 6429 to include the nearshore disposal of channel sediments along Salisbury Beach. In 2005, an ENF was filed under EOEA No. 13503 for a 1,500 foot extension to the most southerly boundary of the nearshore disposal site at Plum Island, as a viable disposal option for the maintenance dredging of the Newburyport Harbor FNP. Under all prior filings to MEPA, it was determined that an Environmental Impact Report (EIR) was not required.

The MEPA Regulations (301 CMR 11.18) provide that a waiver from any provision of the regulations may be granted upon a finding by the Secretary that strict compliance with the regulations would result in undue hardship and would not serve to minimize or avoid damage to the environment. It is our contention that the preparation of an EIR for this project would result in an undue hardship caused by delays that would allow for continued erosion. According to the USACE Section 204 Study conducted for this project, Plum Island and other local beaches in the area surrounding Newburyport Harbor have sustained coastal storm damages and have experienced localized, acute, erosion rates along the beach face exposed to the Atlantic Ocean. The annual coastal erosion rate has been estimated at 13 feet per year, far in excess of the long-term average for this region. Any delay in moving forward with the proposed project may result in devastating impacts to over 50 properties that are located within/adjacent to proposed nourishment areas. In addition to property damage, existing public roadways and utilities may also be damaged or lost. In November 2008, a private home was lost due the erosion that is occurring within the proposed nourishment area at Plum Island. In April 2007, Salisbury Beach suffered significant erosion as a result of the Patriot's Day storm, resulting in emergency action by the State to place over 20,000 CY of sand along 1,200 linear feet (LF) of severely eroded dune. The

proposed project will extend an additional 1,200 to 1,400 LF to the 2007 emergency nourishment effort conducted by DCR.

Conducting an EIR would result in further expense to the State without further minimizing or avoiding impacts to the environment. It is our belief that in this case, the preparation of an EIR would not serve to minimize or avoid damage to the environment because of the extensive level of effort already expended on developing a project approach which examines and minimizes or mitigates all potential adverse impacts. Furthermore, the proposed project has been approved to utilize Federal Stimulus funds. Any delay in construction beyond this upcoming dredging season will result in the loss of these funds and likely postpone the project indefinitely.

A presumption for categorically included projects is that the EIR is necessary to fully investigate and document resources, alternatives and measures associated with the project work. Attached to this NPC submittal, as Attachment 4, is the Project Narrative. The narrative includes descriptions of the project site, findings of sediment analyses, proposed plans, alternative analyses and review of resource areas and the associated impacts resulting from the direct placement of dredge sediments along beach/dune areas at Plum Island and Salisbury Beach.

A draft Environmental Assessment Report (EA) has also been prepared by the USACE for the evaluation for the beneficial reuse of dredge material for nourishment at Plum Island and Salisbury Beach. The EA is presently under review by federal agencies including the U. S. Environmental Protection Agency (USEPA), U. S. Fish and Wildlife Service (USFWS), and National Marine Fisheries (NMFS); state agencies, the Department of Environmental Protection (DEP), the Office of Coastal Zone Management (CZM) and the Division of Marine Fisheries (DMF). This review process is quite similar to the review process for Draft and Final EIRs, relative to regulatory agency involvement. The draft EA concludes a 'Finding of No Significant Impact' for the proposed project.

Lastly, post-construction management at both Salisbury Beach and Plum Island will be performed in accordance with approved beach management plans for these sites. These beach management plans establish guidelines for coastal resource protection through appropriate management practices, in order to establish a framework in which DCR, the Town of Newbury and the City of Newburyport can conduct sustainable recreation planning, facility improvements and maintenance activities. DCR already has an approved/active beach management plan in place for Salisbury Beach. The City of Newburyport and Town of Newbury anticipate having their beach management plans in place for Plum Island within the next few months and prior to implementation of the FNP. Several regulatory

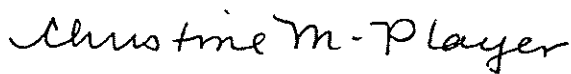


agencies, including DEP, CZM, the Natural Heritage Endangered Species Program (NHESP), USFWS, DCR and the local Conservation Commissions, have all participated in the development/review of these beach management plans.

Based upon the above, VAI believes that the planning, investigative and procedural reviews undertaken in the preparation of the NPC, the USACE draft EA report and the Salisbury Beach and Plum Island Beach Management Plans provides an extensive and thorough investigation of resources, and that the resulting measures for the beneficial reuse of dredge sediments for beach/dune nourishment will minimize impacts to natural resources.

If you have any questions regarding this request, please feel free to contact me at (781) 749-2530 x202 or via email at [cplayer@vineassociates.net](mailto:cplayer@vineassociates.net).

Sincerely,  
VINE ASSOCIATES, INC.



Christine M. Player  
Principal

Enclosure (1)

Cc: Raul Silva, DCR Deputy Chief Engineer  
NPC Distribution List



MEPA Analyst: *Rick Bourne*

Phone: 617-626-1130

# NPC

## Notice of Project Change

The information requested on this form must be completed to begin MEPA Review of a NPC in accordance with the provisions of the Massachusetts Environmental Policy Act and its implementing regulations (see 301 CMR 11.10(1)).

|                                                                                                            |                   |                                                                           |
|------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------|
| Project Name: Plum Island and Salisbury Beach Nourishment<br>Newburyport Harbor Federal Navigation Project |                   | EOEA #:13503                                                              |
| Street: Plum Island and Salisbury Beach                                                                    |                   |                                                                           |
| Municipality: Newburyport, Newbury, Salisbury                                                              |                   | Watershed: N/A                                                            |
| Universal Tranverse Mercator Coordinates:<br>N 4744762.4 to N 47400312<br>E 351635.3 to E352143.0          |                   | Latitude: 42°50'21"N to 42°47'54"N<br>Longitude: 70°48'55"W to 70°48'29"W |
| Status of project construction:            0            %complete                                          |                   |                                                                           |
| Proponent: MA Department of Conservation and Recreation                                                    |                   |                                                                           |
| Street: 251 Causeway Street, Suite 600                                                                     |                   |                                                                           |
| Municipality: Boston                                                                                       | State: MA         | Zip Code: 02114                                                           |
| Name of Contact Person From Whom Copies of this NPC May Be Obtained:<br>Christine M. Player                |                   |                                                                           |
| Firm/Agency: Vine Associates Inc.                                                                          |                   | Street: 190 Old Derby Street                                              |
| Municipality: Hingham                                                                                      | State: MA         | Zip Code: 02043                                                           |
| Phone: 781-749-2530 x202                                                                                   | Fax: 781-749-2751 | E-mail:<br>cplayer@vineassociates.net                                     |

In 25 words or less, what is the project change? The project change involves . . . change disposal locations from extended Nearshore Disposal Site to beach/dune nourishment in Plum Island and Salisbury Beach, MA. Change from hopper dredge to hydraulic dredging.

See full project change description beginning on page 3.

Date of ENF filing or publication in the Environmental Monitor: 4/09/2005

Was an EIR required?  Yes     No; if yes,  
                                          was a Draft EIR filed?  Yes (Date:            )  No  
                                          was a Final EIR filed?  Yes (Date:            )  No  
                                          was a Single EIR filed?  Yes (Date:            )  No

Have other NPCs been filed?  Yes (Date(s):            )  No

If this is a NPC solely for lapse of time (see 301 CMR 11.10(2)) proceed directly to "ATTACHMENTS & SIGNATURES" on page 4.

**PERMITS / FINANCIAL ASSISTANCE / LAND TRANSFER**

List or describe all new or modified state permits, financial assistance, or land transfers not previously reviewed: new Chapter 91 permit; MESA review

Are you requesting a finding that this project change is insignificant? (see 301 CMR 11.10(6))  
Yes    No; if yes, attach justification.

Are you requesting that a Scope in a previously issued Certificate be rescinded?  
Yes    No; if yes, attach the Certificate

Are you requesting a change to a Scope in a previously issued Certificate? Yes    No; if yes, attach Certificate and describe the change you are requesting:

| Summary of Project Size & Environmental Impacts            | Previously reviewed                 | Net Change                                                                                                                                                                                   | Currently Proposed                                                                                                                                                    |
|------------------------------------------------------------|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>LAND</b>                                                |                                     |                                                                                                                                                                                              |                                                                                                                                                                       |
| Total site acreage                                         | 34.4                                | -12.4                                                                                                                                                                                        | 22.0                                                                                                                                                                  |
| Acres of land altered                                      | 0                                   | 0                                                                                                                                                                                            | 0                                                                                                                                                                     |
| Acres of impervious area                                   | 0                                   | 0                                                                                                                                                                                            | 0                                                                                                                                                                     |
| Square feet of bordering vegetated wetlands alteration     | 0                                   | 0                                                                                                                                                                                            | 0                                                                                                                                                                     |
| Square feet of other wetland alteration                    | 1,500,000 SF LUO (Land Under Ocean) | -1,334,976 LUO<br>79,412 Coastal Dune (nourishment)<br>654,953 SF Coastal Beach (nourishment)/<br>46,746 SF (temp.)<br><br>Overall impact reduction -600,611 SF (temp. impacts not included) | 165,024 SF LUO<br>79,412 SF Coastal Dune (nourishment)<br>654,953 SF Coastal Beach (nourishment)/<br>46,746 SF (temp.)<br><br>Total: 899,389 SF/<br>46,746 SF (temp.) |
| Acres of non-water dependent use of tidelands or waterways | 0                                   | 0                                                                                                                                                                                            | 0                                                                                                                                                                     |
| <b>STRUCTURES</b>                                          |                                     |                                                                                                                                                                                              |                                                                                                                                                                       |
| Gross square footage                                       | N/A                                 | N/A                                                                                                                                                                                          | N/A                                                                                                                                                                   |
| Number of housing units                                    | N/A                                 | N/A                                                                                                                                                                                          | N/A                                                                                                                                                                   |
| Maximum height (in feet)                                   | N/A                                 | N/A                                                                                                                                                                                          | N/A                                                                                                                                                                   |
| <b>TRANSPORTATION</b>                                      |                                     |                                                                                                                                                                                              |                                                                                                                                                                       |
| Vehicle trips per day                                      | N/A                                 | N/A                                                                                                                                                                                          | N/A                                                                                                                                                                   |
| Parking spaces                                             | N/A                                 | N/A                                                                                                                                                                                          | N/A                                                                                                                                                                   |
| <b>WATER/WASTEWATER</b>                                    |                                     |                                                                                                                                                                                              |                                                                                                                                                                       |
| Gallons/day (GPD) of water use                             | N/A                                 | N/A                                                                                                                                                                                          | N/A                                                                                                                                                                   |
| GPD water withdrawal                                       | N/A                                 | N/A                                                                                                                                                                                          | N/A                                                                                                                                                                   |
| GPD wastewater generation/ treatment                       | N/A                                 | N/A                                                                                                                                                                                          | N/A                                                                                                                                                                   |
| Length of water/sewer mains (in miles)                     | N/A                                 | N/A                                                                                                                                                                                          | N/A                                                                                                                                                                   |

Does the project change involve any new or modified:

1. conversion of public parkland or other Article 97 public natural resources to any purpose not in accordance with Article 97? Yes No

2. release of any conservation restriction, preservation restriction, agricultural preservation restriction, or watershed preservation restriction? Yes No

3. impacts on Estimated Habitat of Rare Species, Vernal Pools, Priority Sites of Rare Species, or Exemplary Natural Communities? Yes No

4. impact on any structure, site or district listed in the State Register of Historic Place or the inventory of Historic and Archaeological Assets of the Commonwealth?

Yes No; if yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources? Yes No

5. impact upon an Area of Critical Environmental Concern? Yes No  
If you answered 'Yes' to any of these 5 questions, explain below:

**PROJECT CHANGE DESCRIPTION** (attach additional pages as necessary). The project change description should include:

(a) a brief description of the project as most recently reviewed

(b) a description of material changes to the project as previously reviewed,

(c) the significance of the proposed changes, with specific reference to the factors listed 301 CMR 11.10(6), and

(d) measures that the project is taking to avoid damage to the environment or to minimize and mitigate unavoidable environmental impacts. If the change will involve modification of any previously issued Section 61 Finding, include a proposed modification of the Section 61 Finding (or it will be required in a Supplemental EIR).

This project originally underwent review by the MEPA Office through the submittal of an Environmental Notification Form (ENF) in April 2005 (EOEA #13503) for the extension of the existing Nearshore Disposal Site off Plum Island. The extension was 1,500' by 1,000', covering 1,500,000 square feet (SF), or 34.4 acres, of Land Under the Ocean. This disposal site was to be used for the disposal of 150,000 cubic yards (CY) of sandy material to be removed by the maintenance dredging of the federal entrance channel located at the mouth of the Merrimack River as part of the Newburyport Harbor Federal Navigation Project. An Environmental Impact Report was not required. Other previous MEPA filings for this project have included the filing of an ENF in 1987 for the maintenance dredging of the Newburyport Harbor entrance channel with disposal at the Nearshore Disposal Site off Plum Island (EOEA #6429) and a Notice of Project Change, filed in 1996, to add the Nearshore Disposal Site off Salisbury. This Notice of Project Change (NPC) is being filed due to the change in placement areas for the dredge material

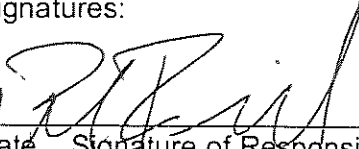
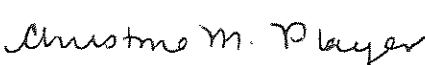
The clean, sandy dredge material (approximately 160,000 CY is proposed to be used for beach/dune nourishment at two severely eroded sites on Plum Island in Newbury (120,000 CY) and Salisbury State Beach in Salisbury (40,000 CY). The nourishment site on Plum Island is approximately 13.5 acres in size, and the nourishment site in Salisbury is approximately 8.5 acres in size. The proposed nourishment will add necessary material to the beach and dunes to help curtail the severe erosion that has occurred in these areas, and improve storm and flood protection. The overall impacts to Resource Areas has been reduced from the previously-reviewed project from 1,500,000 SF (34.4 acres) of Land Under the Ocean to 899,389 SF (22.0 acres) for nourishment, including Coastal Beach, Coastal Dune and Land Under the Ocean. There will be a total of approximately 46,746 SF of temporary impacts to Coastal Beach due to project staging/access and placement of the temporary dredge pipeline. Temporarily impacted areas will be restored in-place after construction. Impacts to Land Containing Shellfish have also now been avoided (reduction of -1,500,000 SF). Time of Year restrictions will be implemented to avoid impacts to marine fisheries and endangered species, including the piping plover. Due to the change in disposal locations, the dredging methodology will change from use of a hopper dredge to a hydraulic cutter-head dredge. The originally-proposed project and its subsequent changes are described in greater detail in Attachment 5, Project Narrative. While the NPC is being filed for the change in disposal sites, the overall project, including beach/dune nourishment and maintenance dredging, is presented in the Project Narrative.

**ATTACHMENTS & SIGNATURES**

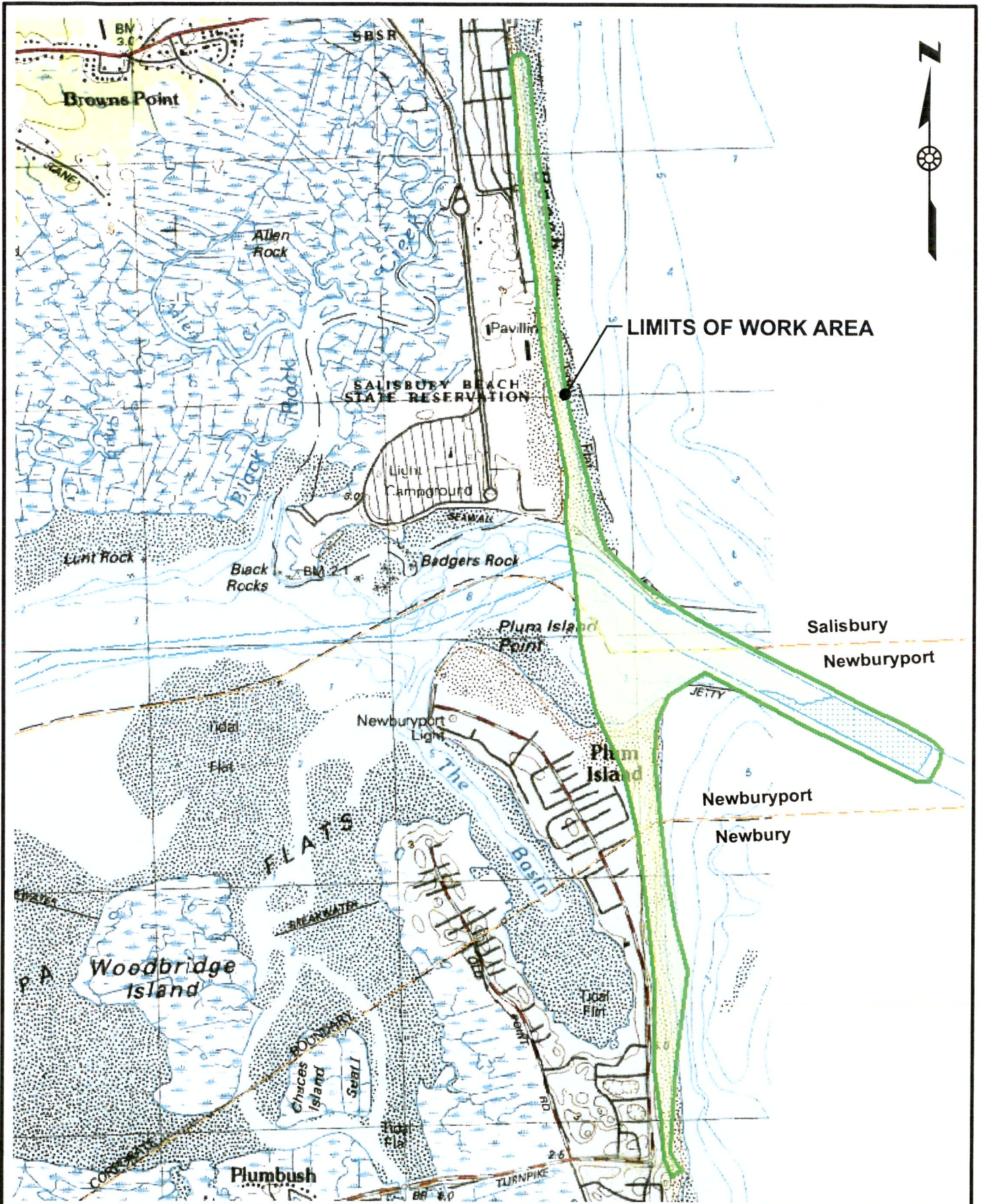
Attachments:

1. Secretary's most recent Certificate on this project
2. Plan showing most recent previously-reviewed proposed build condition
3. Plan showing currently proposed build condition
4. Original U.S.G.S. map or good quality color copy (8-1/2 x 11 inches or larger) indicating the project location and boundaries
5. List of all agencies and persons to whom the proponent circulated the NPC, in accordance with 301 CMR 11.10(7)

Signatures:

|                                                                                                  |                                                                                                   |
|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| <p>6/15/09 </p> | <p>6/15/09 </p> |
| <p>Date Signature of Responsible Officer<br/>or Proponent</p>                                    | <p>Date Signature of person preparing<br/>NPC (if different from above)</p>                       |
| <p>Raul Silva<br/>Name (print or type)</p>                                                       | <p>Christine M. Player<br/>Name (print or type)</p>                                               |
| <p>MA Dept. of Conservation &amp; Recreation<br/>Firm/Agency</p>                                 | <p>Vine Associates, Inc.<br/>Firm/Agency</p>                                                      |
| <p>251 Causeway Street, Suite 700<br/>Street</p>                                                 | <p>190 Old Derby Street, Suite 311<br/>Street</p>                                                 |
| <p>Boston, MA 02114<br/>Municipality/State/Zip</p>                                               | <p>Hingham, MA 02043<br/>Municipality/State/Zip</p>                                               |
| <p>(617) 626-1392<br/>Phone</p>                                                                  | <p>(781) 749-2530x202<br/>Phone</p>                                                               |









REPLY TO  
ATTENTION OF  
Real Estate Division

**DEPARTMENT OF THE ARMY**  
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS  
696 VIRGINIA ROAD  
CONCORD, MASSACHUSETTS 01742-2751

June 11, 2009

Mr. Raul Silva  
Deputy Chief Engineer  
Massachusetts Department of Conservation and Recreation  
251 Causeway Street, Suite 600  
Boston, Massachusetts 02114-2104

Dear Mr. Silva:

I am writing to let you know of the updated real estate requirements for the construction of the Newburyport Harbor and Plum Island and Salisbury Beaches Maintenance Dredging and Section 204 Beneficial Use Beach Nourishment Project in Newburyport, Newbury and Salisbury, Massachusetts ("Project"). This Project, if approved, is authorized by Section 204 (33 USC Sec. 2326), as amended, of Public Law 102-580. This statute, and the Project Partnership Agreement ("PPA") to be signed, set forth the extent of the non-federal interest's responsibility for costs associated with this Project.

The real estate issues associated with the Project include the following.

1. Acquiring Property Interests Prior to Signing the PPA. We are required by our regulations to inform you in writing of the risks associated with advance land acquisition. If the Massachusetts Department of Conservation and Recreation (DCR) acquires land for the Project prior to the signing of the PPA, it does so at its own risk. These risks include, but are not limited to, acquiring the wrong land, as well as acquiring too much or too little land with regard to tracts and estates, and acquiring lands contaminated with hazardous, toxic, and radiological waste that are not necessary for the construction, operation, or maintenance of the project. In addition, until the PPA is signed there is not an agreement to construct the Project or to share costs (or give credit for lands acquired in anticipation of the PPA).

2. Complying with Public Law 91-646 appraisal requirements. The acquisition of all interests in the lands needed for the project must comply with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646. This law generally requires an appraisal of the property interests to be acquired, and a written offer of not less than the appraised value to be made to the landowner. Additional requirements with regard to appraisals is in Attachment 1. A landowner may donate his property interests to a project. Under 49 CFR § 24.108, "An owner whose real property is being acquired may, after being fully informed by the Agency of the right to receive just compensation for such property, donate such property or any part thereof, any interest therein, or any compensation paid therefore, to the Agency as such owner

shall determine. The Agency is responsible for insuring that an appraisal of the real property is obtained unless the owner releases the Agency from such obligation, except as provided in § 24.102(c) (2) ." Please have the landowner sign the attached Statement of Intent to Donate Property And Waiver of Appraisal" if they are donating the property.

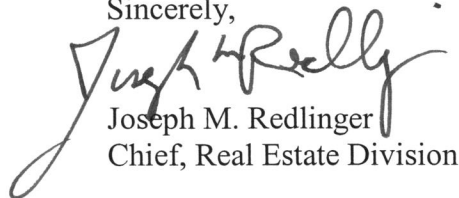
3. Properties interests to be acquired. Information regarding the easement areas which need to be acquired for this project are listed in Attachment 2.

4. Credit for Lands, Easements, Rights-of-Way, Relocations, and Disposal Areas (LERRD). Based upon earlier discussions with you, it is our understanding that all of the landowners will donate the easements needed for the project and you are waiving any credit for the value of the easements. You will be entitled to credit for the reasonable incidental costs of acquiring the LERRD. Incidental costs may include costs for mapping, appraisal, and title policies, negation fees, closing fees, legal expenses relating to the acquisition of real estate, administrative expenses and miscellaneous expenses relating to the acquisition of real estate. Administrative costs for time attributable to acquiring the LERRDs must state name of the person doing the work, their title, hourly rate, date, hours worked, and a brief description of the work performed. The document for administrative costs shall be signed by the person doing the work and the Authorized Official. Your application for all creditable items associated with LERRD, including all benefit payments and associated costs and land acquisition costs, should be submitted as they are accrued. At a minimum, they need to be submitted every six months. A sample claim form is enclosed. Please contact me if you are going to purchase or condemn any of the easements needed for the project.

Prior to construction, an "Authorization for Entry for Construction" and "Attorney's Certificate of Authority", are to be submitted to this office. A draft of this form is attached. The final document will be prepared by this office for signature after the final real estate plans have been completed.

I hope this information is of assistance. Should you have any questions, please do not hesitate to contact me at 978-318-8585, or the Project Manager, Mr. Mark Habel, at 978-318-8520. Your continued cooperation in support of this project is greatly appreciated.

Sincerely,



Joseph M. Redlinger  
Chief, Real Estate Division

Enclosures

**From:** [Ring, Richard J NAD](#)  
**To:** [Kennelly, John R NAE;](#)  
[Habel, Mark L NAE;](#)  
**Subject:** FW: Newburyport Section 204  
**Date:** Thursday, June 11, 2009 2:14:17 PM

---

See first paragraph from Roselle.

Rich

-----Original Message-----

From: Henn, Roselle E NAD  
Sent: Thursday, June 11, 2009 1:50 PM  
To: Ring, Richard J NAD; Blum, Peter R NAD  
Cc: Donohue, Catherine NAD; Cotroneo, Andrew B NAD; Donohue, Patricia NAD;  
Mackay, Joseph B NAE; Henn, Roselle E NAD  
Subject: RE: Newburyport Section 204

Rich, Peter - I have completed my review of Newburyport Section 204 and find that there are no environmental policy conditions precluding release to the Public.

I have had discussions with NAE and understand the following steps will be undertaken to complete environmental compliance as the EA is finalized:

EA Clarifications:

Section 7.5 Endangered Species will be revised to document conclusions of ongoing informal consultation with the USFWS subsequent to their July 2006 correspondence. Suggest that EA could be revised prior to public release to indicate that informal consultation is ongoing.

Section 7.6 EFH will document concurrence with NMFS recommendations and the letter responding to NMFS will be included in Appendix A Pertinent Correspondence. Suggest that if the letter has been prepared/transmitted, it be included in the the document prior to public release.

Section 7.7 Historic and Archaeological Resources will clarify whether there are underwater archaeological properties in the area of potential effect and document measures coordinated with the Board of Underwater Archaeolgoical Resources to avoid adverse effects.

In addition an Application for an Amendment to the existing Water Quality Certificate to cover nearshore disposal will be submitted.



Please let me know if there are further questions,

Thanks Roselle

Roselle Henn, NAD Environmental Team Leader  
US Army Corps of Engineers, North Atlantic Division  
Planning & Policy CoP/PCX-CSDR (CENAD-PSD-P)  
301 General Lee Avenue, Fort Hamilton Military Community  
Brooklyn, New York 11252-6700

718.765.7062 Office  
917.952.2298 Cell  
718.765.7210 FAX  
roselle.e.henn@usace.army.mil

-----Original Message-----

From: Donohue, Patricia NAD  
Sent: Monday, June 08, 2009 5:22 PM  
To: Blum, Peter R NAD; Ring, Richard J NAD; Henn, Roselle E NAD  
Cc: Donohue, Catherine NAD; Cotroneo, Andrew B NAD  
Subject: Newburyport Section 204

Pete, Rich and Roselle, Hard copies of the Draft EA are in the mail, in the meantime have downloaded the Newbury Port EA documents to our shared drive. The files which include 4 files in the folder.

- 1) EA
- 2) FONSI/404
- 3) Appendix A - Correspondence
- 4) Appendix for Sediment Data

Are located at:

M:\Civil Integration Division\DST\NAE-NAU DST-CID\NAE-NAU DST-CID (current)  
\Newburyport

Please share with Ops, RE and legal as you see fit. Thanks,

Tricia



DEPARTMENT OF THE ARMY  
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS  
696 VIRGINIA ROAD  
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO:  
ATTENTION OF:

June 5, 2009

Engineering/Planning Division  
Planning Branch

Mr. Christopher Boelke  
National Marine Fisheries Service  
Great Republic Drive  
Gloucester, Massachusetts 01930

Dear Mr. Boelke:

I am writing in reference to the Newburyport Harbor maintenance dredging project located in Newbury, Newburyport, and Salisbury, Massachusetts. Information on the proposed project was provided to your office on June 7, 2006. In several reply letters, National Marine Fisheries Service (NMFS) provided essential fish habitat (EFH) recommendations pursuant to the Magnuson-Stevens Fisheries Conservation and Management Act and comments pursuant to the Fish and Wildlife Coordination Act. The purpose of this letter is to provide NMFS information relative to a change in the proposed project description and to inform your agency that the Corps will be adopting an EFH recommendation that previously could not be accommodated.

The proposed change in the project entails the addition of two alternative disposal locations. Two beach sites, Plum Island Beach in Newbury and Salisbury Beach in Salisbury (see enclosure 1), have been identified as candidate sites for beach nourishment because of severe erosion. Your agency, the Commonwealth, and the two communities all requested that direct beach placement be considered as a beneficial use of the dredge material from the project. The Corps, working with those parties under our Section 204 authority for beneficial use, developed a potential project modification in response to those requests. Should the State and local interests provide the necessary cost-sharing and real estate interests and agree to management of the beachfill areas, then direct beach placement would be our preferred alternative. The prior approved plan for placing the sand in the nearshore bar system would be followed if the beach placement alternative is ultimately not pursued.

The dredging of the entrance channel of the Newburyport Harbor Federal Navigation Project will yield approximately 160,000 cubic yards (cy) of sand. The updated project plan would place approximately 120,000 cy of sand at the Plum Island Beach site in the town of Newbury and approximately 40,000 cy of sand at the Salisbury Beach State Reservation site in the town of Salisbury.

In accordance with the guidelines for plover management published by the US Fish and Wildlife Service, a construction window of September 1 through March 31 will be used. The dredged material would be used to increase the berm elevation by two to three feet, widen the berm in most locations, and to buttress the dune face in areas of the most severe erosion. The beach nourishment areas will be graded on a 1:10 or 1:8 slope seaward of the beach berm.

Enclosed with this letter are:

- an updated Environmental Assessment and FONSI for the project which includes descriptions of the beach nourishment sites and potential impacts;
- cross section plans of proposed beach nourishment areas; and,
- a figure detailing the dredging and nourishment areas.

The Corps is providing this information concerning the proposed changes in the Newburyport Harbor maintenance project for your review. No reply is necessary. If you have any questions concerning this request, please contact the project manager, Mr. Mark Habel, at (978) 318-8871, or the project ecologist, Mr. Todd Randall, at (978) 318-8518.

Sincerely,

  
John R. Kennelly  
Chief of Planning

Enclosures



DEPARTMENT OF THE ARMY  
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS  
696 VIRGINIA ROAD  
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO:  
ATTENTION OF:

CENAE-EP-PN

21 May 2009

MEMORANDUM FOR Commander, North Atlantic Division, ATTN: CENAD-MT  
(Mr. Joseph Forcina), Fort Hamilton Military Community, 302 General Lee Avenue, Brooklyn,  
New York 11252-6700

SUBJECT: Newburyport Harbor and Plum Island & Salisbury Beaches, Section 204 Beneficial  
Use of Dredged Materials, Newbury, Massachusetts, (PWI 152124) – Request for Approval of  
Environmental Assessment

1. The New England District has completed a draft Environmental Assessment for the beneficial use of sand generated by maintenance dredging of the entrance channel for the Newburyport Harbor Federal Navigation Project to address shore erosion on the adjacent Plum Island and Salisbury Beaches in the towns of Newbury and Salisbury. The District requests that the draft Environmental Assessment (copy submitted electronically) be approved for release to the Sponsors (the Massachusetts Department of Conservation and Recreation), the local communities, and the public.
2. The Section 204 project consists of direct placement of sand on the two beaches along severely eroding sections. One residence was lost on Plum Island in December 2008 and others are threatened with loss and damage over the next few years. The normal operations and maintenance practice is to dispose of the dredged sand in nearshore waters using a hopper dredge. Direct placement of the sand on the beach would eliminate further property losses until the next channel maintenance operation.
3. The Section 204 project is estimated to carry a cost of about \$1,966,000 and yield annual net benefits of \$929,000 (BCR 9.7). The Detailed Project Report is being prepared and will be submitted in June. However, release of the EA at this time is crucial to maintaining schedule for the combined O&M/204 project. The O&M increment of the project has received stimulus funds and is scheduled for the FY10 fall to winter dredging season.
4. If you require further information, please contact me at (978) 318-8610 or Mr. Mark Habel, Chief, Navigation Section, Planning Branch, at (978) 318-8871.

FOR THE COMMANDER:

Encls

ANTHONY T. MACKOS, P.E.  
Acting Chief, Engineering/Planning Division

Copy Furnished:  
Peter Blum, NAD



**DEPARTMENT OF THE ARMY**  
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS  
696 VIRGINIA ROAD  
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO:  
ATTENTION OF:

May 18, 2009

Engineering/Planning Division  
Planning Branch

Ms. Susi Von Oettingen  
U.S. Fish & Wildlife Service  
70 Commercial Street, Suite 300  
Concord, New Hampshire 03301-5087

Dear Ms. Von Oettingen:

I am writing in reference to the Newburyport Harbor maintenance dredging project located in Newbury, Newburyport, and Salisbury, Massachusetts. Information on the proposed project was provided to your office on June 7, 2006. In a July 31, 2006 reply letter, the Service stated that they had no objection to the proposed project pursuant to the Fish and Wildlife Coordination Act and that, pursuant to the Endangered Species Act, the proposed project was not likely to affect any federally threatened or endangered species. The purpose of this letter is to provide the Service information relative to a change in the proposed project description and seek concurrence with the Corps determination that the changes are not likely to affect any federally threatened or endangered species.

The proposed change in the project entails the addition of two alternative disposal locations. Two beach sites, Plum Island Beach and Salisbury Beach (see enclosure 1), have been identified as candidate sites for beach nourishment because of severe erosion. The National Marine Fisheries Service, the Commonwealth, and the two communities all requested that direct beach placement be considered as a beneficial use of the dredge material from the project. The Corps, working with those parties under our Section 204 authority for beneficial use, developed a potential project modification in response to those requests. Should the State and local interests provide the necessary cost-sharing and real estate interests, then direct beach placement would be our preferred alternative. The prior approved plan for placing the sand in the nearshore bar system would be followed if the beach placement alternative is ultimately not pursued.


The dredging of the Newburyport Harbor federal Navigation Channel will yield approximately 160,000 cubic yards (cy) of sand. The updated project plan would place approximately 120,000 cy of sand at the Plum Island Beach site in the town of Newbury and approximately 40,000 cy of sand at the Salisbury Beach State Reservation site in the town of Salisbury.

In accordance with the guidelines for plover management published by the Service, a construction window of September 1 through March 31 will be used. The dredged material would be used to increase the berm elevation by two to three feet, widen the berm in most locations, and to buttress the dune face in areas of the most severe erosion. The beach nourishment areas will be graded on a 1:10 slope seaward of the beach berm. Additionally, agreements are currently in place to monitor and protect plovers in the areas to be nourished with the sandy dredge material. The beach management plans embodying these agreements for Plum Island and the State reservation were provided previously.

Enclosed with this letter are: 1) an updated Environmental Assessment and FONSI for the project which includes descriptions of the beach nourishment sites and potential impacts; 2) cross section plans of proposed beach nourishment areas; and 3) a figure detailing the dredging and nourishment areas.

The Corps requests that the Service concur with its determination that the proposed changes in the Newburyport Harbor maintenance project are not likely to affect any federally threatened or endangered species. If you have any questions concerning this request, please contact the project manager, Mr. Mark Habel, at (978) 318-8871, or the project ecologist, Mr. Todd Randall, at (978) 318-8518.

Sincerely,

  
for John Kennelly  
Chief of Planning

Enclosures



May 14, 2009

Ms. Susi von Oettingen, Endangered Species Biologist  
US Fish and Wildlife Service  
70 Commercial Street, Suite 300  
Concord, NH 03301

**RE: Newburyport Harbor & Plum Island and Salisbury Beaches  
Salisbury Beach State Reservation Beach Management Plan  
Plover Habitat Management Commitment Letter**

Dear Ms. Oettingen:

As per your request, the Department of Conservation and Recreation (DCR) hereby submits this letter of commitment to follow the plover management plan set forth in the *Salisbury Beach State Reservation Barrier Beach Management Plan* (dated September 2007). DCR will provide the appropriate numbers of and appropriately qualified personnel to manage any plover resources that occur within the area that will be nourished as part of the upcoming federal maintenance dredging the Newburyport Harbor entrance channel. Management of plover resources will be conducted for the period of time that the nourishment area is determined to be appropriate.

Please feel free to contact me at (978) 369-3350 x12 should you have any questions or require any additional information.

Sincerely,

Susan Hamilton, Regional Director

Cc: Todd Randall, USACE  
Raul Silva, DCR Deputy Chief Engineer  
Heather Warchalowski, DCR Coastal Ecologist  
Christine Player, Vine Associates ✓

COMMONWEALTH OF MASSACHUSETTS · EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS

Department of Conservation and Recreation  
251 Causeway Street, Suite 600  
Boston MA 02114-2119  
617-626-1250 617-626-1351 Fax  
www.mass.gov/dcr



Deval L. Patrick  
Governor

Timothy P. Murray  
Lt. Governor

Ian A. Bowles, Secretary, Executive  
Office of Energy & Environmental Affairs

Richard K. Sullivan, Jr., Commissioner  
Department of Conservation & Recreation

**CONVERSATION RECORD**

TIME

1000

DATE

5/5/2009

TYPE

VISIT

CONFERENCE

TELEPHONE

ROUTING

| NAME/SYMBOL | INT |
|-------------|-----|
|             |     |
|             |     |
|             |     |
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|             |     |
|             |     |

INCOMING  
 OUTGOING

Location of Visit / Conference:

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU

Susi van O

ORGANIZATION (Office, dept., bureau,

USFWS - Concord

TELEPHONE NO.

SUBJECT

Newburyport Harbor Dredging

SUMMARY

- Relayed change in disposal sites using section 204 authority < Plum Island Beach Salisbury Beach

- discussed plover management + Section 7

Susi: 1) window of April 1 - August 31  
needs

2) 10:1 slope for beach

3) plover management

Checking on - MOU with Parker River Reserve

wants: - commitment from DCR for Salisbury,

to make sure measures

in Salisbury Beach

Management Plan are

followed

ACTION REQUIRED

Request DCR provide commitment letter

NAME OF PERSON DOCUMENTING CONVERSATION

Todd Randall

SIGNATURE

Todd Randall

DATE

5/5/2009

ACTION TAKEN

SIGNATURE

TITLE

DATE





# CITY OF NEWBURYPORT

OFFICE OF THE MAYOR

JOHN F. MOAK  
MAYOR

NEWBURYPORT CITY HALL  
60 PLEASANT STREET  
P.O. BOX 550  
NEWBURYPORT, MA 01950

978-465-4413

[WWW.CITYOFNEWBURYPORT.COM](http://WWW.CITYOFNEWBURYPORT.COM)

February 26, 2009

Ed O'Donnell  
Chief, Navigation Section  
USACE, New England District  
696 Virginia Road  
Concord, MA 01742

Re: Plum Island Beach Erosion

Dear Mr. O'Donnell,

I am writing to thank you for completion of the Initial Appraisal Report on the 204 study and support of the Merrimack River dredging, Plum Island and Salisbury beach nourishment projects. As you know, the City of Newburyport has been actively involved in these efforts and we are confident that the projects will be successful in protecting Plum Island and Salisbury residents from the damaging effects of continued erosion. My highest concern continues to be the protection of these residents, their property and our newly installed water and sewer systems.

Understanding that to extend the scope of the 204 study to include the entire beach would prolong implementation of the project, it is nevertheless imperative for me to make the following request:

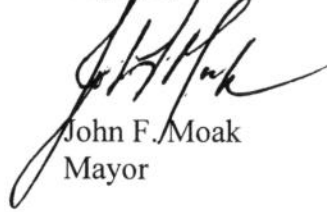
The City of Newburyport is in need of beach nourishment from the groin near 55<sup>th</sup> Street to the Newbury/Newburyport line. Erosion is ongoing and dramatic in this area, as evidenced by the Massachusetts DEP and local Conservation Commission permitting a private homeowner to install coir sand bagging for protection of his property at 55<sup>th</sup> Street. I believe that it would be appropriate to utilize 5 percent of the sand from the dredging to reinforce this vulnerable area.

I continue to be in full support of sharing of the Merrimack River dredging material among the three communities.

Please let me know if you have any questions or if you would like any additional information on this hard-hit area.

Thank you very much.

Regards,



John F. Moak  
Mayor

cc: Congressman John Tierney  
Sen. Steven Baddour  
Rep. Michael Costello  
Sen. Bruce Tarr  
Rep. Harriet Stanley  
Selectman Vincent Russo  
Raul Silva, DCR  
Neil Harrington, Salisbury Town Manger  
John Kennelly, US Army Corps of Engineers



***Town of Salisbury***  
***5 Beach Road***  
***Salisbury, Massachusetts 01952***

**Neil J. Harrington**  
**Town Manager**

February 17, 2009

John R. Kennelly, Chief of Planning  
U.S. Army Corps of Engineers  
New England District  
696 Virginia Road  
Concord, MA 01742-2751

Subject: Initial Appraisal Report on §204 Beneficial Use of Dredged Material Study

Dear Mr. Kennelly:

The Town of Salisbury has reviewed the Initial Appraisal Report (IAR) on the §204 Study of the Beneficial Use of Dredged Material from Newburyport Harbor recently released by the Army Corps of Engineers. We are pleased that the IAR has established that there is a Federal interest in placing material dredged from the Merrimack River on our local beaches in Salisbury, Newburyport and Newbury. We are also pleased that, as stated on page 2 of the IAR, a “detailed feasibility study will be initiated upon approval [of the] IAR” and that the feasibility study, which is the decision document that allows the project to proceed to construction, “will evaluate placement sites in all three municipalities.”

At last Friday’s meeting of the Merrimack River Beach Alliance, the Massachusetts Department of Conservation and Recreation (DCR) announced that it would serve as the non-federal sponsor of the project and take the lead in securing the necessary State permits, subject to two conditions: (1) that Plum Island would receive 120,000 cubic yards of the estimated dredge material and Salisbury would receive 40,000; and (2) that the communities of Newbury, Newburyport and Salisbury must sign on to a cost sharing agreement with DCR to divide up the non-federal matching funds along the ratio of 75% (State) and 25% (local). The entire membership of the Alliance present at the meeting endorsed this arrangement, including representatives of the three communities.

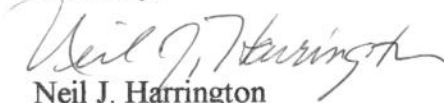
With this agreement in mind, the Town of Salisbury urges the Army Corps to swiftly initiate the feasibility study and include in the study an evaluation of the placement of clean dredged material on the portion of Salisbury Beach near the sacrificial dune that was installed by DCR in 2007. This area suffered severe erosion in 2007, with several houses being undermined. Part of the area is now temporarily protected by the sacrificial dune, but the area to the north is badly eroded, with many houses close to the edge of steep scarps along the beach.

Mr. John R. Kennelly  
February 17, 2009  
Page two

The Town also would like the Corps to include in the feasibility study the alternative of placing part of the dredged material in the sand stockpile that DCR is establishing at the Salisbury Beach State Reservation. The sand stockpile is being created under DCR's recently approved Beach Management Plan for Salisbury Beach. Under the plan sand from the stockpile will be used to nourish and protect parts of Salisbury Beach that are suffering the most erosion. Having sand in the stockpile will provide a significant level of protection to the entire beach.

The IAR states on page 13 that "in the feasibility study at least three placement sites will be evaluated, as well as combinations of multiple sites." The Town of Salisbury will be happy to cooperate with the Corps in the selection of the additional sites to be evaluated and will assist you in compiling the additional economic and property value information concerning Salisbury Beach that will be needed to complete the feasibility study. Please let us know how we can assist you as you proceed with this study.

Sincerely,



Neil J. Harrington  
Town Manager

cc: Congressman John Tierney  
Sen. Steven Baddour  
Rep. Michael Costello  
Sen. Bruce Tarr  
Rep. Harriett Stanley  
Selectman Vincent Russo  
Mayor John Moak  
Commissioner Richard Sullivan, DCR  
Raul Silva, DCR  
Susan Hamilton, DCR  
Salisbury Board of Selectmen  
Salisbury Beach Betterment Association



DEPARTMENT OF THE ARMY  
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS  
696 VIRGINIA ROAD  
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO:  
ATTENTION OF:

CENAE-EP-PN

20 January 2009

MEMORANDUM FOR Commander, North Atlantic Division, ATTN: CENAD-MT  
(Mr. Joseph Forcina), Fort Hamilton Military Community, 302 General Lee Avenue, Brooklyn,  
New York 11252-6700

SUBJECT: Newburyport Harbor and Plum Island Beach, Section 204 Beneficial Use of  
Dredged Materials, Newbury, Massachusetts, (PWI 152124) – Request for Approval of Initial  
Appraisal

1. The New England District, with assistance from New York District staff, has completed an initial appraisal examining the beneficial use of sand generated by maintenance dredging of the entrance channel for the Newburyport Harbor Federal Navigation Project to address shore erosion on the adjacent Plum Island Beach in the town of Newbury. The District requests that the report (copy submitted electronically) be approved for release to the Sponsors (the Massachusetts Department of Conservation and Recreation and the town of Newbury), and the public.
2. The Section 204 project consists of direct placement of sand on the beach along a severely eroding section of the island where one residence was lost in December 2008 and others are threatened with damage over the next few years. The normal operations and maintenance practice is to dispose of the dredged sand in nearshore waters using a hopper dredge. Direct placement of the sand on the beach would eliminate further property losses until the next channel maintenance operation.
3. The Section 204 project is estimated to carry a cost of about \$1,906,000 and yield annual net benefits of \$233,500 (BCR 1.96).
4. If you require further information, please contact me at (978) 318-8722 or Mr. Mark Habel, Chief, Navigation Section, Planning Branch, at (978) 318-8871.

FOR THE COMMANDER:

Encls

  
H. FARRELL MCMILLAN, P.E.  
Chief, Engineering/Planning Division

Copy Furnished:  
Peter Blum, NAD

**SECTION 3**  
**CORRESPONDENCE RECEIVED DURING PREPARATION OF**  
**ENVIRONMENTAL ASSESSMENT FOR**  
**ORIGINAL OPERATIONS AND MAINTENANCE ACTION**



COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
NORTHEAST REGIONAL OFFICE

205B Lowell Street, Wilmington, MA 01887 • (978) 694-3200

DEVAL L. PATRICK  
Governor

TIMOTHY P. MURRAY  
Lieutenant Governor

IAN A. BOWLES  
Secretary

LAURIE BURT  
Commissioner

ATTACHMENT A  
TO SETTLEMENT AGREEMENT DATED JANUARY 23, 2008  
OF ADJUDICATORY APPEAL DOCKET NO. DALA 07-0425,  
FORMERLY DEP DOCKET NO. 07-042

January 23, 2008

Ms. Nancy Colbert  
Director of Planning and Development  
City of Newburyport  
60 Pleasant Street  
Newburyport, MA 01950

Re: **FINAL 401 WATER QUALITY CERTIFICATION ("FWQC")**  
Application for BRP WW 07 Major project dredging,

At: Newburyport Harbor Entrance Channel  
Merrimack River, NEWBURYPORT and SALISBURY

Transmittal No: W075196  
Wetlands File No: 51-053

Dear Ms. Colbert:

In accordance with Department review of your application for Water Quality Certification, as referenced above, with settlement negotiations regarding an appeal of the initial Water Quality Certification issued pursuant to that application on February 13, 2007, and in accordance with the provisions of Section 401 of the Federal Clean Water Act as amended (33 U.S.C. §1251 et seq.), MGL c.21, §§ 26-53, and 314 CMR 9.00, it has been determined there is reasonable assurance the project or activity will be conducted in a manner which will not violate applicable water quality standards (314 CMR 4.00) and other applicable requirements of state law.

The waters of the Merrimack River Estuary (dredge site) and coastal waters of Newburyport, Newbury and Salisbury (disposal sites) are designated in the Massachusetts Surface Water Quality Standards as Class SA Waters. Such waters are intended "as excellent habitat for fish,



other aquatic life and wildlife and for primary and secondary contact recreation." Anti-degradation provisions of these Standards require that "existing uses and the level of water quality necessary to protect the existing uses shall be maintained and protected."

Proposed Project: The applicant proposes to dredge approximately 150,000 cubic yards of clean sand from an area 2700 feet long by 400 feet wide, in the outer portion of the Newburyport Harbor entrance channel. The Army Corps of Engineers is the Authorized Agent. A contracted hopper dredge or mechanical dredge will remove the sediments to a maximum depth of 17 feet Mean Low Water. Once full, the hopper dredge or dump scows will transport the sediments to the near shore placement site off Plum Island (Newbury) where the sediments will be discharged in long rows parallel to the shore in about 18 – 30 ft. of water. Keeping the sand within the littoral system would make it available for movement onto the beach for beneficial use as beach nourishment.

The project proposes to extend the Plum Island disposal site approximately 1,500 feet south of the current location as indicated by the longitude/latitude coordinates provided with the application and as shown on the plans. An alternate 40-acre, near shore disposal site with adequate capacity for this project is proposed at North Salisbury Beach. Water depths at the Salisbury disposal site range from 10-30 ft. MLW. Both sites have been used in the past as near shore placement sites for maintenance dredging of the inlet channel. The frequency of maintenance dredging is expected to be every three to five years.

Sediment sampling data: Sediment samples were done by surface grab method to a depth of 1-2 feet. Grain size analysis of the sediment samples taken from the dredging area indicates that the material is primarily sand, with less than 3% passing the No. 200 sieve. This is consistent with grain sizes of samples taken from both the Plum Island and Salisbury Beach near shore disposal sites and indicates that the dredge material is suitable for beach nourishment. The net effect of placement of sand at these sites is likely to be nourishment material for the eroding beaches at Plum Island and Salisbury.

The Department received no comments during the 21-day public comment period for the application, which began July 19, 2006. However, the Massachusetts Board of Underwater Archeological Resources has notified the U.S. Army Corps of Engineers by correspondence dated October 16, 2007, that there is an active archeological reconnaissance permit area in close proximity to the Salisbury Nearshore Disposal site, the southern boundary of which is located between 42°50.6'N, 70°48.9'W (SW) and 42°50.6'N, 70°47.3'W.

As part of the resource agencies review, National Marine Fisheries Services (NMFS) expressed concern that information presented in the draft Environmental Assessment for the Newburyport Harbor Federal Navigation Project (FNP) would not constitute an adequate essential fish habitat (EFH) assessment due to "lack of site-specific resource characterization for the proposed expanded area" and recommended that "the use of the proposed expansion area of the Plum Island Disposal site should not occur and the disposal of dredged material should be limited to the previously utilized Plum Island disposal site". Thus Condition No. 14 will require the applicant to limit the placement of dredged material to the existing area with the coordinates identified in Condition No. 7.

**Section 61 Findings:** Pursuant to M.G. L. Chapter 30, Sections 61 to 62H inclusive ("M.E.P.A."), this project was previously reviewed by the MEPA office as EOE No. 6429 (Secretary's Certificate on the Notice of Project Change issued on April 24, 1996) and as EOE No. 13503 (Secretary's Certificate on the Environmental Notification Form issued on June 6, 2005). The Secretary's Certificate on June 6, 2005 indicated that preparation of an Environmental Impact Report for the expansion of the existing disposal site off of Plum Island was not required. The Secretary's Certificate reiterates a CZM recommendation that the dredged material be placed at the northernmost reaches of the proposed placement site to maximize the effectiveness of the project to provide beach nourishment.

**Therefore, based on information currently in the record, the Department grants a 401 Final Water Quality Certification ("FWQC") for this project subject to the following conditions to maintain water quality, to minimize impact on waters and wetlands, and to ensure compliance with appropriate state law:**

1. The Contractor shall take all steps necessary to assure that the proposed activities will be conducted in a manner that will avoid violations of the anti-degradation provisions of Massachusetts Surface Water Quality Standards that protect all waters, including wetlands.
2. Prior to the start of in-water work, the Department shall be notified of any proposed change(s) in plans that may affect waters or wetlands. The Department will determine whether the change(s) require a revision to this FWQC.

Work in waters and wetlands shall conform substantially to plans submitted in application to this Department prepared by the Army Corps of Engineers.

4. The Department shall be notified, attention Ken Chin 617-292-5893, one week prior to the start of in-water work so that Department staff may inspect the work for compliance with the terms and conditions of this FWQC.
5. At least one week prior to the start of dredging, the Newburyport Harbormaster's office and the Salisbury Harbormaster's office shall be notified of the intended start date, so that local lobstermen and fishermen may be apprised of the upcoming work.
6. When sediment placement occurs in Salisbury, the sediment shall be deposited within an area with corner coordinates:
  - 42° 50.58' and 70° 48.75' (SW corner)
  - 42° 50.71' and 70° 48.75' (NW corner)
  - 42° 50.71' and 70° 48.40' (NE corner)
  - 42° 50.50' and 70° 48.40' (SE corner)
7. When sediment placement occurs in the previously approved Plum Island site, the sediment shall be deposited within an irregular area with approximate corner coordinates:
  - 42° 48.6' and 70° 47.9' (NW corner)
  - 42° 48.5' and 70° 47.7' (NE corner)
  - 42° 47.8' and 70° 47.85' (SE corner)

42° 47.8' and 70° 48.1' (SW corner)

8. When sediment placement occurs in the new extended Plum Island site, the sediment shall be deposited within an area with corner coordinates:

42° 48.20' and 70° 48.00' (NW corner)

42° 47.90' and 70° 47.85' (NE corner)

42° 47.60' and 70° 47.90' (SE corner)

42° 47.65' and 70° 48.20' (SW corner)

9. Future maintenance dredging is authorized by this FWQC for a period of five years, provided that:

- a. the initial project and any subsequent dredging has been conducted satisfactorily with no violations of the terms and conditions of this FWQC.
- b. sediment placement occurs within the coordinates in Condition Nos. 6, 7 and 8.
- c. a due-diligent evaluation to determine that no known spills of oil or other toxic substances have occurred which could have contaminated the sediment in the dredge area.
- d. Placement of dredged sediment will alternate between Plum Island and Salisbury, as proposed by the applicant. Such disposal shall commence with all of the sand from the initial dredging of the Merrimack River Estuary (the dredge site) that occurs after the effective date of this FWQC, which shall be deposited at Plum Island in the site specified in Condition No. 7, or the site specified in Condition No. 8 if appropriate studies are conducted and approved pursuant to this FWQC. Sand from the second dredging, if any, performed under the FWQC shall be deposited at Salisbury in the site designated in Condition No. 6. Sand from the third dredging, if any, shall be deposited at Plum Island and sand from subsequent dredgings, if any, under this FWQC shall be deposited at Salisbury and then Plum Island on an alternating basis at the sites designated in Conditions 6, 7 or 8 of this FWQC and in accordance with its terms.
- e. Any proposal to modify the schedule for disposal of dredged sand set forth in Condition 9.d. above shall afford reasonable notice to both the Town of Newbury and the Town of Salisbury and an opportunity for the towns to comment on the proposed modification and shall also comply with the state and federal emergency regulations set forth in paragraph 8 of the Settlement Agreement.

10. Dredging in accord with this FWQC may begin after the effective date of this FWQC and once all other permits have been received.
11. Within 30 days of the completion of the initial dredging, a bathymetric survey of the basin, depicting post-dredge conditions, shall be sent to the Department.
12. In order to protect the pathway with spawning and forage habitat for diadromous fish species and to avoid impacts of disposal activity to lobster resources and shellfish spawning activities, no dredging shall occur between March 15<sup>th</sup> and June 30<sup>th</sup> of any year.

The applicant, or their contractor, shall make every feasible effort to complete the project within the permitted timeframe. Should the applicant, or their contractor, fail to complete the project and wish to request an amendment to the Certification for incursion into the no-dredge period, the written request shall be received by the Department by March 1<sup>st</sup>. The following information shall be included in the request:

- a. project location and transmittal number,
- b. the date on which dredging started,
- c. the number of days and hours per day the dredge operated,
- d. expected daily average production rate and the actual daily average production rate,
- e. an explanation of why the project failed to remain on schedule,
- f. an account of efforts made to get the project back on schedule,
- g. a plan depicting the areas that remain to be dredged,
- h. the number of cubic yards that remain to be dredged,
- i. an accurate estimate of the number of days required to complete the project,
- j. an evaluation of the impact of continued dredging on the species of concern,
- k. a description of any efforts that will be made to minimize the impacts of the project on the species of concern, and
- l. a realistic assessment of any societal/financial effects of a denial of permission to continue dredging.

The Department will share the information with other resource agencies and a decision to grant or deny the amendment shall be made by March 15<sup>th</sup>. Requests for amendment received after March 1<sup>st</sup> will be considered at the Department's discretion.

13. Disposal of any volume of dredged material at any location in tidal waters is subject to approval by this Department and the Massachusetts Coastal Zone Management office.
14. To avoid adverse effects to the EFH, the use of the proposed expansion area of the Plum Island placement area should be off-limited. The applicant and or its authorized agent have the option to conduct a site-specific resource characterization. Upon review of the characterization, Division Marine Fisheries (DMF) and NMFS will determine whether impacts are acceptable to place dredged material at the expansion area.
15. The applicant and or its authorized agent shall consult with the Massachusetts Board of Underwater Archeological Resources prior to conducting any activities that may disturb underwater archeological resources in or proximate to the Salisbury Nearshore Disposal site.

This certification does not relieve the applicant of the obligation to comply with other applicable state or federal statutes or regulations. Any changes made to the project as described in the previously submitted Notice of Intent, 401 Water Quality Certification application, or supplemental documents will require further notification to the Department.

No activity may begin prior to the effective date of the final decision issued by the Department in connection with this FWQC.

Failure to comply with this certification is grounds for enforcement, including civil and criminal penalties, under MGL c.21 §42, 314 CMR 9.00, MGL c. 21A §16, 310 CMR 5.00, or other possible actions/penalties as authorized by the General Laws of the Commonwealth.

If you have questions on this decision, please contact Ken Chin at 617-292-5893.

Sincerely,



Glenn Haas  
Director  
Division of Watershed Management

cc:

- Jack Karalius, U.S. Army corps of Engineers, 696 Virginia Road, Concord, MA 01742-2751
- Newburyport Conservation Commission, 60 Pleasant Street, Newburyport, MA 01950
- Tay Evans, DMF, 30 Emerson Avenue, Gloucester, MA 01930
- Hans Erwich, City of Newburyport, 60 Pleasant Street, Newburyport, MA 01950
- Robert Boeri, CZM, 251 Causeway Street, Suite 900, Boston, MA 02114-2119
- Newbury Board of Selectmen, 25 High Road, Newbury, MA 01951
- Newbury Conservation Commission, 25 High Road, Newbury, MA 01951
- Neil Harrington, Town Manager, Town of Salisbury, 5 Beach Road, Salisbury, MA 01952
- Salisbury Conservation Commission, 5 Beach Road, Salisbury, MA 01952
- Victor T. Mastone, Director, Massachusetts Board of Underwater Archeological Resources, 251 Causeway Street, Suite 800, Boston, MA 02114-2136

KC/W075196



**DEPARTMENT OF THE ARM**  
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS  
696 VIRGINIA ROAD  
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO:  
ATTENTION OF:

December 5, 2007

Programs Project Management Division  
Programs & Civil Project Management Branch

Mr. Victor T. Mastone, Director  
Commonwealth of Massachusetts  
Board of Underwater Archaeological Resources  
Office of Coastal Zone Management  
251 Causeway Street, Suite 800  
Boston, MA 02114-2136

Subject: Proposed Newburyport Harbor Federal Maintenance Dredging Project

Dear Mr. Mastone:

Thank you for your October 16, 2007 letter, which was in response to our Public Notice of September 26, 2007. In your letter, because of an active archaeological reconnaissance permit area in close proximity to the Salisbury nearshore disposal site, you state that you would prefer that the Plum Island nearshore disposal site and/or the new, extended Plum Island nearshore disposal site be utilized for this project.

I understand Mr. Robert Boeri, also of the Office of Coastal Zone Management, has been intervening on our behalf, providing you with more details, and trying to work out a mutually agreeable solution – in order to be able to place the dredged sand nearshore off Salisbury Beach.

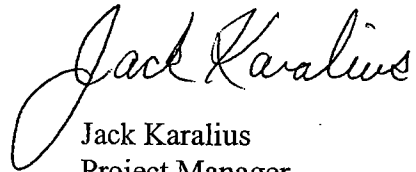
We intend to add a condition to the State Water Quality Certificate (WQC) that states “The applicant and/or its authorized agent shall consult with the Massachusetts Board of Underwater Archaeological Resources prior to conducting any activities that may disturb underwater archaeological resources in or proximate to the Salisbury nearshore disposal site”, or a similar phrase. I am hoping that we can at least use the southern portion of the site for placement of the sand.

Please confirm, within 30 days if possible, if this proposal is agreeable to you.

The Corps, along with other Federal and State agencies, and the municipalities of Newburyport, Newbury, and Salisbury, have been working on the format and conditions of the WQC for almost a year, and would appreciate any assistance or clarification your office can give us.

If you have any further comments or questions, please call me at 978-318-8288.

Sincerely,

A handwritten signature in black ink that reads "Jack Karalius". The signature is written in a cursive style with a large, looping initial "J".

Jack Karalius  
Project Manager  
Navigation Section

Copy furnished:

Mr. Ken Chin  
Commonwealth of Massachusetts  
Executive Office of Environmental Affairs  
Department of Environmental Protection  
One Winter Street  
Boston, MA 02108

Mr. Robert L. Boeri  
Acting Project Review Coordinator  
MA Office of Coastal Zone Management  
251 Causeway Street, Suite 800  
Boston, MA 02114-2138



The COMMONWEALTH OF MASSACHUSETTS  
BOARD OF UNDERWATER ARCHAEOLOGICAL RESOURCES  
OFFICE OF COASTAL ZONE MANAGEMENT

251 Causeway Street, Suite 800, Boston, MA 02114-2136

Tel. (617) 626-1200 Fax (617) 626-1240 Web Site: [www.mass.gov/czm/buar/index.htm](http://www.mass.gov/czm/buar/index.htm)

October 16, 2007

Col. Curtis L. Thalken  
District Engineer  
Attention: Jack Karalius  
U.S. Army Corps of Engineers  
New England District  
696 Virginia Road  
Concord, MA 01742-2751

RE: Maintenance Dredging of a Portion of the Federal Entrance Channel in Newburyport Harbor,  
Newburyport, Massachusetts

Dear Col. Thalken:

The Massachusetts Board of Underwater Archaeological Resources has reviewed the above referenced project as detailed in the Corps's *Public Notice* of 26 September 2007.

The Board has conducted a preliminary review of its files and secondary literature sources to identify known and potential submerged cultural resources in the proposed project area. No record of any underwater archaeological resources was found within the project area. As the proposed project consists solely of maintenance dredging of a previously dredged area (1999, 1996, 1993) and the use of previously utilized disposal sites, the Board concurs with Corps's determination that the potential risk to submerged cultural resources is minimal.

However, as the historical record indicates the occurrence of at least eleven (11) shipwrecks in the Newburyport vicinity during the period of 1777-1990 for which locations are vague, the Board cannot conclude that there are no submerged cultural resources in the proposed project area. Furthermore, the loss of earlier and smaller coastal vessels and the purposeful abandonment of obsolete or damaged vessels are generally not found in the documentary record. Should heretofore-unknown submerged cultural resources be encountered during the course of the project, the Board expects that the project's sponsor will take steps to limit adverse affects and notify the Board, as well as other appropriate agencies in accordance with the Board's *Policy Guidance for the Discovery of Unanticipated Archaeological Resources* (updated 9/28/06).

Additionally, the Board takes this opportunity to remind the Corps that there is an active archaeological reconnaissance permit area in close proximity to the Salisbury Nearshore Disposal site, the southern boundary of which is located between 42°50.6'N, 70°48.9'W (SW) and 42°50.6'N,



70°47.3'W. As the disposal of dredged material in this location could impede ongoing archaeological investigations, the Board would prefer that the Plum Island Nearshore Disposal site and/or the Extended Plum Island Nearshore Disposal Area be utilized for this project.

Thank you for your consideration of these comments. If you should have any questions, please do not hesitate to contact me at (617) 626-1141.

Sincerely,



Victor T. Mastone  
Director

Cc: Brona Simon, MHC  
Kate Atwood (USACE)  
Bob Boeri, MCZM  
Kathryn Glenn, MCZM



US Army Corps  
of Engineers®  
New England District

696 Virginia Road  
Concord, MA 01742-2751

# PUBLIC NOTICE

In Reply Refer to: Programs Project  
Management Division  
Email: [nae-pn-nav@usace.army.mil](mailto:nae-pn-nav@usace.army.mil)  
Date: September 26, 2007  
Comment Period Closes: October 26, 2007

## 30 DAY PUBLIC NOTICE

### MAINTENANCE DREDGING OF A PORTION OF THE FEDERAL ENTRANCE CHANNEL IN NEWBURYPORT HARBOR, NEWBURYPORT, MASSACHUSETTS

Interested parties are hereby notified that the U.S. Army Corps of Engineers, New England District, plans to perform maintenance dredging of a portion of the Federal navigation project, involving work in the navigable waters of this District, under the provisions of Section 404 of the Clean Water Act of 1977 (P.L. 95-217) and to authorize such work in accordance with Title 33, Parts 335-338 of the Code of Federal Regulations. Attachment No. 1 lists pertinent laws, regulations, and directives.

**Project Description:** The existing Federal navigation project for Newburyport Harbor consists of: two jetties; one projecting 4,118 feet from the north shore, the other projecting 2,445 feet from the south shore, converging until 1,000 feet apart, then extending seaward 1,000 feet; a 12 foot deep entrance channel 400 feet wide through the bar into the harbor, thence 9 feet deep and 200 feet wide to the Newburyport waterfront. This notice applies to only the 12 foot entrance channel.

**Character and Purpose of Work:** The proposed work involves long term maintenance dredging of a portion of the 12 foot entrance channel to provide safe navigation conditions at the mouth of the Merrimack River. Dredging is performed about every five years, depending on the amount of shoaling. Each operation involves removing about 150,000 cubic yards of sand from the entrance channel and placing the sand within nearshore areas. This notice is intended to cover long term maintenance using the described dredging and disposal method. Dredging will be performed by a private contractor, using a hopper dredge, under the supervision of the Corps of Engineers. A hopper dredge removes material from the bottom by suction, lifting it through dragarms connected to the side of the vessel. At the end of the dragarms are dragheads which draw a slurry of bottom material and water to the surface where it is discharged into the hopper. As pumping continues, the solid particles settle into the hopper while the excess water and some material passes overboard through overflow troughs. After the hoppers are full the dragarms are raised and the dredge proceeds to the disposal area where the loaded hopper is emptied. The dredge then returns to the dredging area to repeat the

cycle. The work will be performed during a one to two month period in the year in which funding becomes available. Attachment No. 2 shows Newburyport Harbor, the dredge area, and the proposed disposal sites.

**Disposal Area:** The material will be disposed of nearshore, in about 18 to 30 feet of water, off either Plum Island Beach in Newbury or Salisbury Beach in Salisbury. The material (sand) will be beneficially used, and will act as a feeder berm, to nourish the beach(es). Either or both of these sites will be used; the Commonwealth of Massachusetts will determine the site that will be used depending on need. Both sites have previously been utilized. In addition, the Plum Island Beach nearshore site will be extended approximately 1,500 feet south.

The previously-used Plum Island Beach nearshore site is generally rectangular in shape, and about 5,000 feet by 1,000 feet.

The new, extended Plum Island Beach nearshore site extends about 1,500 feet south of the previously-used Plum Island Beach nearshore site, is generally rectangular in shape, and about 1,500 feet by 1,000 feet.

The previously-used Salisbury Beach nearshore site is a 40-acre square area.

The proposed dredged material has undergone physical analysis. It is our preliminary determination that the material is acceptable for disposal at these disposal sites.

**Additional Information:** Additional information may be obtained from Mr. Jack Karalius, Programs & Civil Project Management Branch, Programs Project Management Division, at the return address shown, telephone number (978) 318-8288.

**Coordination:** The proposed work is being coordinated with the following Federal, State, and local agencies:

| <u>Federal</u>                    | <u>State of MA</u>       | <u>Local Agencies</u> |
|-----------------------------------|--------------------------|-----------------------|
| Environmental Protection Agency   | Department of            | City of Newburyport   |
| Fish and Wildlife Service         | Environmental Protection | Town of Newbury       |
| National Marine Fisheries Service | Office of Coastal Zone   | Town of Salisbury     |
|                                   | Management               |                       |
|                                   | MA Historic Preservation |                       |
|                                   | Office                   |                       |

**Environmental Impacts:** An Environmental Assessment for this work is being prepared and will be made available for review upon request. I have made a preliminary determination that an Environmental Impact Statement for the proposed maintenance dredging is not required under the provisions of the National Environmental Policy Act of 1969. This determination will be reviewed in light of facts submitted in response to this notice.

**Federal Consistency with Massachusetts Coastal Zone Management Program:** I find that maintenance dredging of the authorized navigation project is consistent, to the

maximum extent practicable, with the State of Massachusetts's management program established as a result of the Coastal Zone Management Act of 1972. The dredging and disposal operations will be conducted, to the maximum extent practicable, in a manner that is consistent with the approved management program.

**Other Information:**

- a. **Previous Dredging:** This project has been dredged a number of times in the past. The most recent maintenance dredging was in July-August 1999 when 145,000 cubic yards of sand was removed from the entrance channel and placed nearshore off Plum Island Beach. Other previous projects were in September 1996 when 125,000 cubic yards of sand were dredged and placed nearshore off Salisbury Beach, and April-May 1993 when 125,000 cubic yards of sand were dredged and placed nearshore off Plum Island Beach.
- b. **Non-Federal Dredging:** No private dredging is proposed in conjunction with this project.
- c. **Alternate Disposal Methods:** The possibility of direct beach nourishment for this project has been evaluated. Due to the additional cost, and lack of a non-Federal public sponsor to fund the additional cost, this alternative was rejected. The present proposal, to place the material nearshore, and as close to the beach as possible, will indirectly nourish the beach by acting as a feeder berm.
- d. **Endangered Species:** Preliminary determinations indicate that the proposed activity will not affect an endangered species or critical habitat designated as endangered or threatened pursuant to the Endangered Species Act of 1973 (87 Stat. 844).
- e. **Floodplain Management:** In accordance with Executive Order 11988, the Corps of Engineers has determined that the proposed work will not contribute to negative impacts or damages caused by floods.
- f. **Cultural Resources:** The proposed work is maintenance involving previously dredged areas and previously used disposal sites, and is not likely to affect any cultural or archaeological features or resources. The new, expanded site off Plum Island Beach is adjacent to the previously used Plum Island Beach site and is also not likely to affect any cultural or archaeological features or resources.
- g. **Essential Fish Habitat Assessment:** It has been determined that dredging may have a temporary adverse effect on Essential Fish Habitat (EFH). The Merrimack River and Newburyport Harbor is designated as EFH under the Magnuson-Stevens Fishery Conservation and Management Act (MSA) for federally managed fish species. The Army Corps of Engineers has assessed the effects the dredging is likely to have on EFH, and has determined that there will be no significant impacts on the designated fisheries resources. The

Corps will consult with the National Marine Fisheries Service and the U.S. Fish and Wildlife Service to ensure that all impacts will be minimized and would not significantly affect these resources.

- h. Additional Requirements: An application for Water Quality Certification (WQC) for disposal of dredged material nearshore off either Plum Island Beach in Newbury or Salisbury Beach in Salisbury has been submitted to the Massachusetts Department of Environmental Protection, under Section 401 of the Clean Water Act of 1977 (P.L. 95-217). The Clean Water Act of 1977 requires that the work comply, to the maximum extent practicable, with State or interstate requirements to control the discharge of dredged or fill material. The State has concurred with our determination of Federal consistency with the State's approved coastal zone management program.

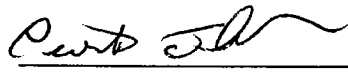
The decision whether to perform the work will be based on an evaluation of the probable impact of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits which reasonably may be expected to accrue from the proposal will be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered; among these are conservation, economics, aesthetics, general environmental concerns, historic values, fish and wildlife values, flood damage prevention, land use classification, and the welfare of the people.

Selection of the above described proposed disposal sites for dredged material associated with maintenance of this navigation project shall be made through the application of guidelines promulgated by the Administrator, U.S. Environmental Protection Agency, in conjunction with the Secretary of the Army. If these guidelines alone would prohibit the use of the proposed disposal sites, any potential impairment to the maintenance of navigation, including any economic impact on navigation which would result from failure to use the disposal sites, will also be considered.

Any person who has an interest which may be affected by the dredging and disposal of this dredged material may request a public hearing. The request must be submitted in writing to me within 30 days of the date of this notice and must clearly set forth the interest which may be affected and the manner in which the interest may be affected by this activity.

Please bring this notice to the attention of anyone you know to be interested in this project. Comments are invited from all interested parties and should be directed to me at U.S. Army Corps of Engineers, New England District, 696 Virginia Road, Concord, MA 01742-2751, ATTN: Jack Karalius, within 30 days of this notice.

20 Sep 07  
Date

  
Curtis L. Thalken  
Colonel, Corps of Engineers  
District Engineer

## **PERTINENT LAWS, REGULATIONS, AND DIRECTIVES**

Clean Water Act, as amended (33 U.S.C. 1251 et. seq.)

Code of Federal Regulation, Title 33, Parts 335 through 338

National Environmental Policy Act of 1969 (42 U.S.C. 4321-4347)

Fish and Wildlife Coordination Act (16 U.S.C. 661-666c)

Fish and Wildlife Act of 1956 (16 U.S.C. 472a, et. seq.)

Migratory Marine Game-Fish Act (16 U.S.C. 760c-760g)

Coastal Zone Management Act of 1972 [16 U.S.C. 1456(c)(1) and (2)],  
Sections 307(c)(1) and (2),

National Historic Preservation Act of 1966 (16 U.S.C. 470)

Endangered Species Act of 1973 as amended (16 U.S.C. 668aa-668cc)

Clean Air Act, as amended (42 U.S.C. 1221 et. seq.)

Estuary Protection Act (16 U.S.C. 1221 et. seq.)

Federal Water Project Recreation Act, as amended (16 U.S.C. 4601-12 et. seq.)

Land and Water Conservation Fund Act of 1965, as amended (16 U.S.C. 4601-4 et. seq.)

Magnuson-Stevens Fishery Conservation and Management Act and amended by the  
Sustainable Fisheries Act of 1996

Executive Order 11988, Floodplain Management, 24 May 1977

Executive Order 11990, Protection of Wetlands, 24 May 1977

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority  
Populations and Low Income Populations, 11 February 1994

**Attachment No.1**



**MEMORANDUM THRU**

 **Ruth M. Ladd**, Chief, Policy Analysis and Technical Support Branch

**FOR: Jack Karalius**, Project Manager, CENAE-PP-PN

**SUBJECT: Suitability Determination for Newburyport Harbor FNP, Merrimack River, Newburyport, Massachusetts.**

**1. Project Description:**

The CENAE is proposing to dredge an area of approximately **20 acres** at the mouth of the Merrimack River to a depth of -17' MLLW. This is the entrance channel to Newburyport Harbor. Approximately **150,000 cu. yds.** of material will be hydraulically dredged with a private hopper dredge. The proposed disposal sites are a nearshore area off Plum Island and a nearshore area off Salisbury Beach. This project was last dredged in 1999, 1996 and 1993. The Plum Island disposal area was used in 1999 and 1993 while the Salisbury Beach area was used in 1996.

**2. Summary:**

This memorandum addresses compliance with the regulatory evaluation and testing requirements of 40 CFR 227.13 for unconfined open water disposal at an open ocean disposal site. This evaluation confirms that sufficient information was obtained to properly evaluate the suitability of this material for open water disposal under the guidelines and finds the sediments suitable for disposal as proposed.

**3. Ocean Dumping Act Regulatory Requirements:**

The disposal of sediments below mean low water in Bigelow Bight is regulated according to both Section 103 of the Ocean Disposal Act and Section 404 of the Clean Water Act.

**§227.13 Dredged Materials.**

(a) This paragraph defines dredged materials and does not give any criteria for the evaluation of sediments.

(b) This paragraph states that proposed dredged material which meets the criteria in one of the following three paragraphs is environmentally acceptable for ocean disposal without further testing.



SUBJECT: Suitability Determination for Newburyport Harbor FNP, Merrimack River, Newburyport, Massachusetts.

(b)(1) Dredged material that is predominately sand, gravel, rock, or any other naturally occurring bottom material with particle size greater than silt and is found in areas of high current or wave energy can be disposed of in a 103 site without further testing. Grain size analysis done in 1994 showed the material from this project is predominately sand (0.8% 0.6%, 2% and 2.4% fines). As the mouth of the Merrimack River is a high energy area, I think it is unlikely that fine sediment would now be found in this channel. Therefore, the project meet this exclusion.

(b)(2) Dredged material that is proposed for beach nourishment and is predominantly sand, gravel or shell with grain sizes similar to the receiving beaches can be disposed of without further testing. Samples of the Plum Island disposal area were taken and analyzed for grain size in 2003. The four samples were predominantly sand, with 1%, 1%, 1% and 7% fines. Samples of the Salisbury Beach disposal area were taken and analyzed for grain size in 1996. The five samples were also predominantly sand, with 9.6%, 9.7%, 18.8%, 15.7% and 10.5% fines. This is similar to the material proposed to be dredged, as discussed in the previous paragraph. Therefore, as the material from this project is predominately sand and is proposed for beach disposal, it does meet this exclusion.

(b)(3) When the dredged material is substantially the same as that at the disposal site and the dredged material is taken from a site far removed from known sources of pollution, it can be disposed of without further testing. This project's material does not meet this exclusion.

(c) This paragraph states that if the dredged material does not meet the criteria of paragraph b above, it must undergo further testing of the liquid, suspended particulate and solid phases before it can be considered acceptable for ocean disposal. This section does not apply to this project, as the dredge material meets the criteria in paragraph b(1) and b(2) above.

(d) This subsection discusses the choice of the liquid phase analytes and does not give any criteria for the evaluation of sediments.

4. Copies of the draft suitability determination were sent to the State DEP, US EPA, and US F&WS for their review. No responses were received from the Federal agencies within the 10-day response period so their concurrences may be assumed.

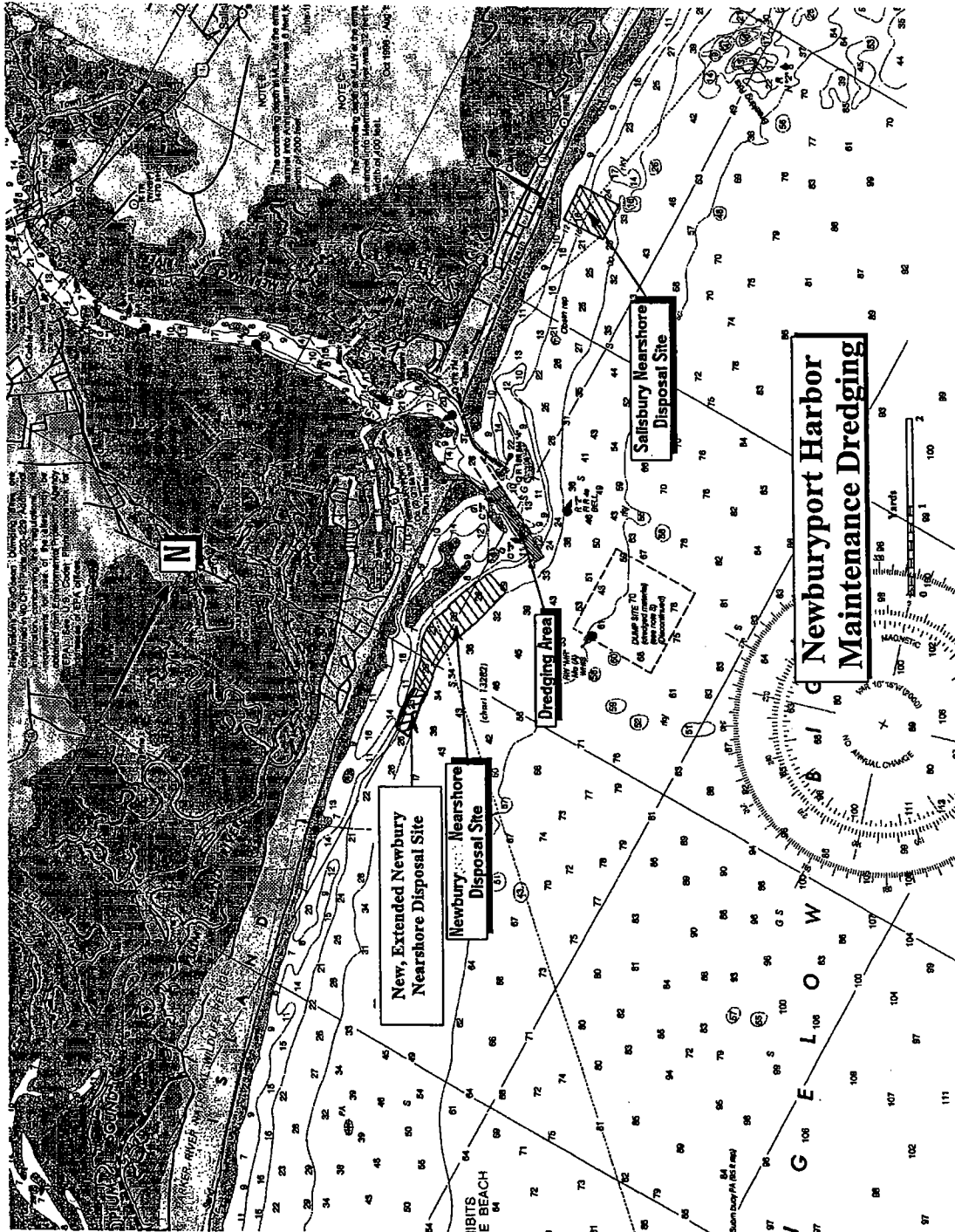
SUBJECT: Suitability Determination for Newburyport Harbor FNP, Merrimack River, Newburyport, Massachusetts.

5. If you have any questions, please contact me at (978) 318-8660.



PHILLIP NIMESKERN  
Project Manager,  
Marine Analysis Section

SUBJECT: Suitability Determination for Newburyport Harbor FNP, Merrimack River, Newburyport, Massachusetts.



March 15, 2007

Programs Project Management Division  
Programs & Civil Project Management Branch

Mr. Ken Chin  
Massachusetts Executive Office of Environmental Affairs  
Department of Environmental Protection  
One Winter Street  
Boston, MA 02108

Subject: Proposed Newburyport Harbor Federal Maintenance Dredging Project,  
401 Water Quality Certification, dated February 13, 2007  
Transmittal No. W075196, Wetlands File No. 51-053

Dear Mr. Chin:

Thank you for the subject Water Quality Certification (WQC). The Corps of Engineers requests, however, several modifications/changes to the following conditions of the WQC.

- Condition No. 9: This condition states that the WQC is valid for a period of 5 years. The Corps had requested a 10-year period, as stated in the original February 3, 2006 request. This would also coincide with the 10-year Federal Coastal Zone Management Consistency Certification, issued September 19, 2006. The Corps has been dredging the entrance channel into Newburyport Harbor since the late 1800's. All the information we have indicates that the material that was dredged was sand that had migrated through littoral processes from the adjacent beaches. We therefore expect the material from the subsequent 10 year period to remain the sandy material we've dealt with in the past. Prior to each dredging cycle within the 10 years we will review available information on potential oil or chemical spills in the area to determine if there would be any reason to suspect the material to be dredged would be contaminated. If there were any reason to suspect that additional sampling and testing will be undertaken and coordinated with your department.
- Condition No. 9d: The Corps requests a phrase be inserted such as "as needed". The Corps cannot commit to alternately place dredged material between Plum Island and Salisbury on an inflexible basis.
- Condition No. 12: The Corps does not concur that an environmental window should be imposed on this project. The window as provided in the WQC was based upon potential impacts to diadromous fish migration through the entrance

channel of the Merrimack River as well as lobster and shellfish activity at the disposal areas.

The Corps believes that the use of a hopper dredge to remove the material will not impede fish migration through the channel. Hopper dredges tow drag arms along the channel bottoms and hydraulically pump sediments into a hopper. This process allows the dredge plant to continuously move along the shoal areas to be removed. Based on these operating procedures, migrating fish species should have no trouble navigating in to or out of the Merrimack River in the presence of a hopper dredge. Additionally, the width of the mouth of the river is considerably larger than a typical hopper dredge. Turbidity plume impacts to migrating fish species should also be minimal as the material is sand and any plumes associated with barge overflow should be minimal and short-term.

As noted in the Environmental Assessment, lobster activity in the disposal areas is minimal as the disposal areas are wave-swept sandy nearshore environments. Therefore the Corps believes a restriction on disposal because of lobster activity is not warranted. There are shellfish resources in the area and the potential to impact adult and juvenile shellfish is a reality. However, based on the nature of the material to be dredged (sand) and the physical characteristics of the disposal areas (high-energy sand flats) the impacts to any shellfish in those areas should not be significant. The Corps contends that the placement of an approximately 17 inch layer of sand (which is similar in grain size to the existing sediment) over the disposal areas selected would not constitute a significant impact.

- Condition No. 14: Please reconsider the need for this condition. The Corps requests that it be eliminated, and that we be able to place the dredged material in the new extended nearshore Plum Island site described in Condition No. 8. The Corps believes that the expansion of the existing disposal area, which is being expanded to create a feeder berm for an eroding beach (a beneficial use), will not significantly impact marine resources in the area. The Corps has performed physical testing of the material (sand) and a benthic biological survey of the expansion area and has determined that the physical characteristics of the site as well as the benthic fauna are similar to that of the "approved" nearshore disposal area. Given the small scale of the expansion area, the limited time frame over which disposal activities occur, and the anticipated amount of the material to be placed at the site the Corps does not believe an extensive resource survey of the area is warranted. Attached is a letter to the National Marine Fisheries Service (NMFS) in which we did not concur with their Essential Fish Habitat (EFH) recommendations at the new expanded site. NMFS has not elevated the issue.

If you have any comments or questions, please call me at 978-318-8288.

Sincerely,

Jack Karalius  
Project Manager  
Navigation Section

Enclosure.

Copy furnished:

Mr. Hans Erwich, Chairman  
Newburyport Harbor Commission  
City Hall  
60 Pleasant Street  
Newburyport, MA 01950

Mr. Douglas Packer, Conservation Agent  
Town of Newbury  
Office of the Conservation Commission  
25 High Road  
Newbury, MA 01951



COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

MITT ROMNEY  
Governor

KERRY HEALEY  
Lieutenant Governor

ELLEN ROY HERZFELDER  
Secretary

ROBERT W. GOLLEDGE, Jr.  
Commissioner

February 13, 2007

Ms. Nancy Colbert  
Director of Planning and Development  
City of Newburyport  
60 Pleasant Street  
Newburyport, MA 01950

Re: **401 WATER QUALITY CERTIFICATION**  
Application for BRP WW 07 Major project dredging,

At: Newburyport Harbor Entrance Channel  
Merrimack River, NEWBURYPORT and SALISBURY

Transmittal No: W075196  
Wetlands File No: 51-053

Dear Ms. Colbert:

The Department has reviewed your application for Water Quality Certification, as referenced above. In accordance with the provisions of Section 401 of the Federal Clean Water Act as amended (33 U.S.C. §1251 *et seq.*), MGL c.21, §§ 26-53, and 314 CMR 9.00, it has been determined there is reasonable assurance the project or activity will be conducted in a manner which will not violate applicable water quality standards (314 CMR 4.00) and other applicable requirements of state law.

The waters of the Merrimack River Estuary (dredge site) and coastal waters of Newburyport and Salisbury (disposal sites) are designated in the Massachusetts Surface Water Quality Standards as Class SA Waters. Such waters are intended "as excellent habitat for fish, other aquatic life and wildlife and for primary and secondary contact recreation." Anti-degradation provisions of these Standards require that "existing uses and the level of water quality necessary to protect the existing uses shall be maintained and protected."

**Proposed Project:** The applicant proposes to dredge approximately 150,000 cubic yards of clean sand from an area 2700 feet long by 400 feet wide, in the outer portion of the Newburyport Harbor entrance channel. The Army Corps of Engineers is the Authorized Agent. A contracted

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DEP on the World Wide Web, <http://www.state.ma.us/dep>

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hopper dredge will remove the sediments to a maximum depth of 17 feet Mean Low Water. Once full, the hopper dredge will transport the sediments to the near shore placement site off Plum Island (Newbury) where the sediments will be discharged in long rows parallel to the shore in about 18 – 30 ft. of water. Keeping the sand within the littoral system would make it available for movement onto the beach for beneficial use as beach nourishment.

The project proposes to extend the Plum Island disposal site approximately 1,500 feet south of the current location as indicated by the longitude/latitude coordinates provided with the application and as shown on the plans. An alternate 40-acre, near shore disposal site with adequate capacity for this project is proposed at North Salisbury Beach. Water depths at the Salisbury disposal site range from 10-30 ft. MLW. Both sites have been used in the past as near shore placement sites for maintenance dredging of the inlet channel. The frequency of maintenance dredging is expected to be every three to five years.

Sediment sampling data: Sediment samples were done by surface grab method to a depth of 1-2 feet. Grain size analysis of the sediment samples taken from the dredging area indicates that the material is primarily sand, with less than 3% passing the No. 200 sieve. This is consistent with grain sizes of samples taken from both the Plum Island and Salisbury Beach near shore disposal sites and indicates that the dredge material is suitable for beach nourishment. The net effect of placement of sand at these sites is likely to be nourishment material for the eroding beaches at Plum Island and Salisbury.

The Department received no comments during the 21-day public comment period for the application, which began July 19, 2006.

As part of the resource agencies review, National Marine Fisheries Services (NMFS) expressed concern that information presented in the draft Environmental Assessment for the Newburyport Harbor Federal Navigation Project (FNP) would not constitute an adequate essential fish habitat (EFH) assessment due to “lack of site-specific resource characterization for the proposed expanded area” and recommended that “the use of the proposed expansion area of the Plum Island Disposal site should not occur and the disposal of dredged material should be limited to the previously utilized Plum Island disposal site”. Thus Condition No. 14 will require the applicant to limit the placement of dredged material to the existing area with the coordinates identified in Condition No. 7.

Section 61 Findings: Pursuant to M.G. L. Chapter 30, Sections 61 to 62H including (M.E.P.A.) this project was reviewed as EOEA No 13503 and the Secretary’s Certificate, issued on June 6, 2005, indicated that preparation of an Environmental Impact Report was not required. The Secretary’s Certificate reiterates a CZM recommendation that the dredged material be placed at the northernmost reaches of the proposed placement site to maximize the effectiveness of the project to provide beach nourishment.

**Therefore, based on information currently in the record, the Department grants a 401 Water Quality Certification for this project subject to the following conditions to maintain water quality, to minimize impact on waters and wetlands, and to ensure compliance with appropriate state law:**



1. The Contractor shall take all steps necessary to assure that the proposed activities will be conducted in a manner that will avoid violations of the anti-degradation provisions of Massachusetts Surface Water Quality Standards that protect all waters, including wetlands.
2. Prior to the start of in-water work, the Department shall be notified of any proposed change(s) in plans that may affect waters or wetlands. The Department will determine whether the change(s) require a revision to this Certification.
3. Work in waters and wetlands shall conform substantially to plans submitted in application to this Department prepared by the Army Corps of Engineers.
4. The Department shall be notified, attention Ken Chin 617-292-5893, one week prior to the start of in-water work so that Department staff may inspect the work for compliance with the terms and conditions of this Certification.
5. At least one week prior to the start of dredging, the Newburyport Harbormaster's office shall be notified of the intended start date, so that local lobstermen and fishermen may be apprised of the upcoming work.
6. When sediment placement occurs in Salisbury, the sediment shall be deposited within an area with corner coordinates:
  - 42° 50.58' and 70° 48.75' (SW corner)
  - 42° 50.71' and 70° 48.75' (NW corner)
  - 42° 50.71' and 70° 48.40' (NE corner)
  - 42° 50.50' and 70° 48.40' (SE corner)
7. When sediment placement occurs in the previously approved Plum Island site, the sediment shall be deposited within an area with corner coordinates:
  - 42° 48.6' and 70° 47.9' (NW corner)
  - 42° 48.5' and 70° 47.7' (NE corner)
  - 42° 47.9' and 70° 47.85' (SE corner)
  - 42° 47.9' and 70° 48.05' (SW corner)
8. When sediment placement occurs in the new extended Plum Island site, the sediment shall be deposited within an area with corner coordinates:
  - 42° 48.20' and 70° 48.00' (NW corner)
  - 42° 47.90' and 70° 47.85' (NE corner)
  - 42° 47.60' and 70° 47.90' (SE corner)
  - 42° 47.65' and 70° 48.20' (SW corner)
9. Future maintenance dredging is authorized by this Certification for a period of five years, provided that:
  - a. the initial project and any subsequent dredging has been conducted satisfactorily with no violations of the terms and conditions of this Certification.
  - b. sediment placement occurs within the coordinates in Condition No. 6, 7 and 8.

- c. a due-diligent evaluation to determine that no know spills of oil or other toxic substances have occurred which could have contaminated the sediment in the dredge area.
  - d. Placement of dredged sediment will alternate between Plum Island and Salisbury.
10. Dredging in accord with this Certification may begin following the 21-day appeal period and once all other permits have been received.
11. Within 30 days of the completion of the initial dredging, a bathymetric survey of the basin, depicting post-dredge conditions, shall be sent to the Department.
12. In order to protect the pathway with spawning and forage habitat for diadromous fish species and to avoid impacts of disposal activity to lobster resources and shellfish spawning activities, no dredging shall occur between March 15<sup>th</sup> and November 1<sup>st</sup> of any year.

The applicant, or their contractor, shall make every feasible effort to complete the project within the permitted timeframe. Should the applicant, or their contractor, fail to complete the project and wish to request an amendment to the Certification for incursion into the no-dredge period, the written request shall be received by the Department by March 1<sup>st</sup>. The following information shall be included in the request:

- a. project location and transmittal number,
- b. the date on which dredging started,
- c. the number of days and hours per day the dredge operated,
- d. expected daily average production rate and the actual daily average production rate,
- e. an explanation of why the project failed to remain on schedule,
- f. an account of efforts made to get the project back on schedule,
- g. a plan depicting the areas that remain to be dredged,
- h. the number of cubic yards that remain to be dredged,
- i. an accurate estimate of the number of days required to complete the project,
- j. an evaluation of the impact of continued dredging on the species of concern,
- k. a description of any efforts that will be made to minimize the impacts of the project on the species of concern, and
- l. a realistic assessment of any societal/financial effects of a denial of permission to continue dredging.

The Department will share the information with other resource agencies and a decision to grant or deny the amendment shall be made by March 15<sup>th</sup>. Requests for amendment received after March 1<sup>st</sup> will be considered at the Department's discretion.

13. Disposal of any volume of dredged material at any location in tidal waters is subject to approval by this Department and the Massachusetts Coastal Zone Management office.
14. To avoid adverse effects to the EFH, the use of the proposed expansion area of the Plum Island placement area should be off-limited. The applicant and or its authorized agent have the option to conduct a site-specific resource characterization. Upon review of the

characterization, Division Marine Fisheries (DMF) and NMFS will determine whether impacts are acceptable to place dredged material at the expansion area.

This certification does not relieve the applicant of the obligation to comply with other applicable state or federal statutes or regulations. Any changes made to the project as described in the previously submitted Notice of Intent, 401 Water Quality Certification application, or supplemental documents will require further notification to the Department.

Certain persons shall have a right to request an adjudicatory hearing concerning certifications by the Department when an application is required:

- a. the applicant or property owner;
- b. any person aggrieved by the decision who has submitted written comments during the public comment period;
- c. any ten (10) persons of the Commonwealth pursuant to M.G.L. c.30A where a group member has submitted written comments during the public comment period; or
- d. any governmental body or private organization with a mandate to protect the environment which has submitted written comments during the public comment period.

Any person aggrieved, any ten (10) persons of the Commonwealth, or a governmental body or private organization with a mandate to protect the environment may appeal without having submitted written comments during the public comment period only when the claim is based on new substantive issues arising from material changes to the scope or impact of the activity and not apparent at the time of public notice. To request an adjudicatory hearing pursuant to M.G.L. c.30A, § 10, a Notice of Claim must be made in writing, provided that the request is made by certified mail or hand delivery to the Department, with the appropriate filing fee specified within 310 CMR 4.10 along with a DEP Fee Transmittal Form within twenty-one (21) days from the date of issuance of this Certificate, and addressed to:

Docket Clerk  
Office of Administrative Appeals  
Department of Environmental Protection  
One Winter Street, 2<sup>nd</sup> Floor  
Boston, MA 02108.

A copy of the request shall at the same time be sent by certified mail or hand delivery to the issuing office of the Wetlands and Waterways Program at:

Department of Environmental Protection  
One Winter Street, 6<sup>th</sup> Floor  
Boston, MA 02108.

A Notice of Claim for Adjudicatory Hearing shall comply with the Department's Rules for Adjudicatory Proceedings, 310 CMR 1.01(6), and shall contain the following information pursuant to 310 CMR 9.10(3):

- a. the 401 Certification Transmittal Number and DEP Wetlands Protection Act File Number;
- b. the complete name of the applicant and address of the project;
- c. the complete name, address, and fax and telephone numbers of the party filing the request, and, if represented by counsel or other representative, the name, fax and telephone numbers, and address of the attorney;
- d. if claiming to be a party aggrieved, the specific facts that demonstrate that the party satisfies the definition of "aggrieved person" found at 314 CMR 9.02;
- e. a clear and concise statement that an adjudicatory hearing is being requested;
- f. a clear and concise statement of (1) the facts which are grounds for the proceedings, (2) the objections to this Certificate, including specifically the manner in which it is alleged to be inconsistent with the Department's Water Quality Regulations, 314 CMR 9.00, and (3) the relief sought through the adjudicatory hearing, including specifically the changes desired in the final written Certification; and
- g. a statement that a copy of the request has been sent by certified mail or hand delivery to the applicant, the owner (if different from the applicant), the conservation commission of the city or town where the activity will occur, the Department of Environmental Management (when the certificate concerns projects in Areas of Critical Environmental Concern), the public or private water supplier where the project is located (when the certificate concerns projects in Outstanding Resource Waters), and any other entity with responsibility for the resource where the project is located.

The hearing request along with a DEP Fee Transmittal Form and a valid check or money order payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100) must be mailed to:

Commonwealth of Massachusetts  
Department of Environmental Protection  
Commonwealth Master Lockbox  
P.O. Box 4062  
Boston, MA 02211

The request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority. The Department may waive the adjudicatory-hearing filing fee pursuant to 310 CMR 4.06(2) for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file an affidavit setting forth the facts believed to support the claim of undue financial hardship together with the hearing request as provided above.

No activity may begin prior to the expiration of the appeal period or until a final decision is issued by the Department if an appeal is filed.

Failure to comply with this certification is grounds for enforcement, including civil and criminal penalties, under MGL c.21 §42, 314 CMR 9.00, MGL c. 21A §16, 310 CMR 5.00, or other possible actions/penalties as authorized by the General Laws of the Commonwealth.

If you have questions on this decision, please contact Ken Chin at 617-292-5893.

Sincerely,



Glenn Haas

Director

Division of Watershed Management

enclosure: Departmental Action Fee Transmittal Form

cc:

Jack Karalius, U.S. Army corps of Engineers, 696 Virginia Road, Concord, MA 01742-2751  
Newburyport Conservation Commission, 60 Pleasant Street, Newburyport, MA 01950  
Tay Evans, DMF, 30 Emerson Avenue, Gloucester, MA 01930  
Hans Erwich, City of Newburyport, 60 Pleasant Street, Newburyport, MA 01950  
Truman Hanson, CZM, 251 Causway Street, Suite 900, Boston, MA 02114-2119

KC/W075196



**DEPARTMENT OF THE ARMY**  
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS  
696 VIRGINIA ROAD  
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO  
ATTENTION OF

October 23, 2006

Programs Project Management Division  
Programs & Civil Project Management Branch

Mr. Peter D. Colosi  
National Marine Fisheries Service  
Northeast Region  
One Blackburn Drive  
Gloucester, MA 01930-2298

Re: Proposed Newburyport Harbor Federal Maintenance Dredging Project

Dear Mr. Colosi:

I am responding to your September 22, 2006 letter in which National Marine Fisheries Service (NMFS) provided Essential Fish Habitat (EFH) recommendations for the proposed Newburyport Harbor Federal Maintenance Dredging Project. The Corps thanks you and your agency for helpful comments during the planning phase of this project.

The EFH recommendations from NMFS are limited to concern about the expansion of an existing near-shore disposal area and the potential effects of the expansion to surf clam populations in the vicinity of the site. The expansion area is approximately 800 yards by 400 yards. Specific recommendations include: 1) conducting a survey of surf clam resources in the proposed expansion areas to define to extent of the resource; or 2) not expanding the existing disposal area.


As stated in the Corps' August 21, 2006 letter, the Corps believes that the expansion of the existing disposal area, which is being expanded to the south to create a feeder-berm for an eroding beach, will not significantly affect surf clam populations that may be present. Although there is no specific data on surf clam populations in the project area, the Corps contends that the placement of an approximately 17 inch average layer of sand (which is similar in grain size to the existing sediment) over such a small area would not constitute a significant impact to surf clam EFH. The Corps does concur with NMFS' assertion that the burrowing capabilities of surf clams are size dependant and the potential exists to impact small clams if indeed they are present. However, given the small scale of the expansion area, the limited time frame over which disposal activities occur, the anticipated amount of the material to be placed at the site, and the burrowing capabilities of adult surf clams (which were stated in previous correspondence) the Corps does not believe an extensive shellfish survey of the area is warranted. Additionally, the depth of water at the disposal site (approximately -20 feet (6 meters) mean lower low water) is slightly outside of the range of surf clam preferred habitat depths (8-66 meters) described in NOAA Technical Memorandum NMFS-NE-142 (1999). The placement of material in the proposed area may cause the mortality of a portion of the resource, but

given the factors above and the reported life span (up to 31-years) of surf clams (NOAA, 1999), is not likely to significantly alter long-term population levels of surf clams in the Salisbury-Newburyport beach ecosystem.

As stated in previous correspondence, the intent of the expansion of the nearshore disposal area is to keep the sandy material dredged from the Newburyport Harbor entrance channel in the Salisbury-Newburyport beach ecosystem, while at the same time attempting to alleviate the shoreline erosion currently occurring along Plum Island. The Corps believes that expanding the nearshore disposal area to accomplish these goals is the most practicable, least environmentally-damaging, and least-cost alternative. Based on the information presented in our letter of August 21, 2006 and the information presented above, the Corps cannot accommodate your EFH recommendations.

If you have any questions concerning these responses to the EFH Conservation Recommendations, please contact Mr. Todd Randall at (978) 318-8518 or myself at (978) 318-8288.

Sincerely,

  
Jack Karalius  
Project Manager  
Navigation Section

Reference: NOAA. 1999. NOAA Technical Memorandum NMFS-NE-142. Essential Fish Habitat Source Document: Atlantic Surf Clam (*Spisula solidissima*), Life History and Characteristics. USDOC, NOAA, NMFS, NE Fisheries Science Center, Woods Hole, MA. 22 pp.

Copy Furnished:

Mr. Christopher Boelke  
National Marine Fisheries Service  
Northeast Region  
One Blackburn Drive  
Gloucester, MA 01930-2298



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
NORTHEAST REGION  
One Blackburn Drive  
Gloucester, MA 01930-2298

SEP 22 2006

Mr. Jack Karalius  
Project Manager  
New England District  
US Army Corps of Engineers  
696 Virginia Road  
Concord, MA 01742-2751

**Re: Newburyport Harbor Federal Navigation Project**

Dear Mr. Karalius:

The National Marine Fisheries Service (NMFS) has reviewed your August 21, 2006 response to our July 13, 2006 letter regarding the draft Environmental Assessment (EA) for the Newburyport Harbor Federal Navigation Project (FNP). The current proposal is to perform dredging of approximately 150,000 cubic yards of material from within the entrance channel to Newburyport Harbor. Disposal will occur within a previously used site off Plum Island. In addition, the Army Corps of Engineers (ACOE) is proposing to expand the Plum Island disposal site with an additional area of 1,500 feet to the south and approximately 1,000 feet wide.

The essential fish habitat (EFH) provisions of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) require federal agencies to consult with one another on projects such as this. Insofar as a project involves essential fish habitat (EFH), as this project does, this process is guided by the requirements of our EFH regulation at 50 CFR 600.905, which mandates the preparation of EFH assessments and generally outlines each agency's obligations in this consultation procedure.

Our letter dated July 13, 2006 included a request for a resource characterization for the proposed expanded nearshore disposal area, as well as a request for an analysis of the potential for direct placement of sand on the beach. In your August 21, 2006 letter, the ACOE stated that additional resource characterization for the expanded nearshore disposal area was unnecessary. NMFS maintains that a shellfish resource characterization is important in order to fully characterize potential adverse effects to EFH and living marine resources. At this time, NMFS maintains that the information currently provided does not constitute an adequate EFH assessment due to the lack of site-specific resource characterization for the proposed expanded disposal area. While the lack of a complete and adequate EFH assessment has hampered our review of this project, we offer the following comments and recommendations on this project pursuant to the above referenced regulatory process.





### **General Comments**

The proposed project area serves as valuable habitat for the Atlantic surf clam (*Spisula solidissima*). As noted in the EA, the ACOE anticipates that surf clams are likely to be found within the proposed project area, and that the project has the potential to impact juvenile and adult surf clams in the project area. The draft EA, however, states that due to the fact that the dredged material contains similar sediment characteristics as the disposal site, along with the burrowing capabilities of surf clams, significant impacts are not expected. Although NMFS acknowledges that surf clams have the ability to burrow through sand, the ability is generally related to the size (age) of the clams and the rate and depth of deposition. Without an adequate characterization of surf clam resources within the proposed project area, we do not concur with the determination that adverse effects on this species from the proposed action would be insignificant.

In addition, a shellfish resource characterization within the proposed expansion area could provide information regarding efforts to minimize or avoid specific areas which contain significant densities of surf clam resources. As noted in the 404(b)(1) guidelines of the Federal Clean Water Act (CWA), the discharge of dredged and fill material may result in debilitation or death of sedentary organisms by smothering (40 CFR 230.31). As such, the guidelines note that "locating and confining the discharge to minimize smothering or organisms" would serve to avoid and minimize adverse effects [40 CFR 230.70(a)]. However, absent a characterization of surf clams present within the proposed expansion area, efforts to avoid and minimize adverse effects to resources cannot be accurately recommended or implemented. Furthermore, the expansion of a disposal site for this and future dredge material should only be considered after an adequate assessment of the effects of the action on the marine environment has been completed. To carry out the proposed action, without the recommended resource characterization, would be contrary to our agencies shared responsibilities under the CWA and MSA.

### **Essential Fish Habitat Conservation Recommendations**

As noted in the EFH assessment included in the draft EA, the proposed project area has been identified as EFH for 22 federally managed species, including Atlantic surf clam. Please note that although the proposed project site has been correctly identified as surf clam habitat and the area has been verified as supporting surf clams, the Mid-Atlantic Fishery Management Council (MAFMC) has designated EFH for Atlantic surf clam as federal waters from the eastern edge of Georges Bank and the Gulf of Maine throughout the Atlantic Exclusive Economic Zone. The habitat characteristics of EFH designated for Atlantic surf clams by the MAFMC are similar to those located within the proposed project area. Furthermore, surf clams have been identified as prey for several federally managed species, including winter flounder (Steimle *et al.* 2000) and Atlantic cod and haddock (Clapp 1912; Clarke 1954; Ropes 1980; Cargnelli *et al.* 1999). Direct or indirect impacts to prey species for federally managed species can be considered as adverse effects on EFH. Section 305(b)(2) of the MSA requires all federal agencies to consult with NMFS on any action authorized, funded, or undertaken by that agency that may adversely affect EFH. Included in this consultation process is the preparation of a complete and appropriate EFH assessment to provide necessary information on which to consult. In our letter to you dated July 13, 2006, we requested specific information

regarding the characterization of affected habitats and potential impacts on EFH. Unfortunately, information on surf clam resources at the proposed project site, and the affects of the disposal activities on them, has not been provided. As such, our ability to adequately assess potential impacts on EFH and associated marine resources has been complicated by a lack of site-specific information. This obligates NMFS and the ACOE to take a risk-averse approach in the issuance and adoption of EFH conservation recommendations in order to ensure protection of fishery resources and habitats. Furthermore, NMFS recommends pursuant to Section 305(b)(4)(A) of the MSA that the ACOE adopt the following EFH conservation recommendation:

- 1) In order to avoid adverse effects to EFH, the use of the proposed expansion area of the Plum Island disposal site should not occur and the disposal of dredged material should be limited to the previously utilized Plum Island disposal site.

Please note that Section 305(b)(4)(B) of the MSA requires the ACOE to provide NMFS with a detailed written response to these EFH conservation recommendations, including a description of measures adopted by the ACOE for avoiding, mitigating, or offsetting the impact of the project on EFH. In the case of a response that is inconsistent with NMFS' recommendations, Section 305(b)(4)(B) of the MSA also indicates that the ACOE must explain its reasons for not following the recommendations. Included in such reasoning would be the scientific justification for any disagreements with NMFS over the anticipated effects of the proposed action and the measures needed to avoid, minimize, mitigate, or offset such effects pursuant to 50 CFR 600.920(k).

Please also note that a distinct and further EFH consultation must be reinitiated pursuant to 50 CFR 600.920(l) if new information becomes available or the project is revised in such a manner that affects the basis for the above EFH conservation recommendations.

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

In addition to the EFH provisions of the MSA, the Fish and Wildlife Coordination Act (FWCA) require federal agencies to consult with federal and state natural resource agencies regarding activities or licensing that impact fish and wildlife resources. In order to avoid adverse effects to Atlantic surf clam resources, the use of the proposed expansion area of the Plum Island disposal site should not occur and the disposal of dredged material should be limited to the previously utilized Plum Island disposal site.

#### **Long Term Approval**

In your June 13, 2006 letter, the ACOE requested that long-term (10-year) approval be given for the maintenance dredging of Newburyport Harbor. Please be advised that an EFH consultation with NMFS is required for each federal action which may adversely affect EFH. However, as described within 50 CFR 920(j)(1) of the EFH regulations, federal agencies may develop programmatic EFH consultations with NMFS for many individual actions that may adversely affect EFH. These regulations allow for the development of programmatic consultations if sufficient information is available for NMFS to provide EFH conservation recommendations that will address all reasonably foreseeable adverse impacts on EFH of an entire program, parts of a program, or a

number of similar individual actions occurring within a given geographic area. Currently, the New England District of the ACOE is in the process of developing a programmatic EFH consultation for a number of civil works projects within the New England region. To date, the Newburyport Harbor Federal Navigation Project has not been suggested as a candidate for inclusion within the proposed programmatic EFH consultation. However, this office would welcome the opportunity to coordinate with the New England District regarding the potential inclusion of the Newburyport Harbor Federal Navigation Project into the development of this programmatic consultation.

### **Conclusion**

In summary, NMFS maintains that the draft EA does not provide adequate information in order for NMFS to fully analyze the anticipated impacts on fishery resources and habitats associated with the use of the expanded nearshore disposal area. As such, NMFS recommends that the expansion area of the Plum Island nearshore disposal site not be utilized. In addition, NMFS maintains that, unless the proposed project can be included within an EFH programmatic consultation as discussed above, an individual EFH assessment and consultation will be required for each federal action that may adversely affect EFH. Should you have any questions regarding these comments, please contact Christopher Boelke of my staff at (978) 281-9131.

Sincerely,



Peter D. Colosi  
Assistant Regional Administrator  
for Habitat Conservation

Cc: US EPA – Melville Cote  
US FWS - Maria Tur, Michael Bartlett  
MA DMF - Paul Diodati, Stephanie Cunningham  
MA DEP - Lealdon Langley, Alice Smith

## References

- Cargnelli, Luca M., Sara J. Griesbach, David B. Packer, and Eric Weissberger. 1999. NOAA Technical Memorandum NMFS-NE-142. Essential Fish Habitat Source Document: Atlantic Surfclam, *Spisula solidissima*, Life History and Habitat Characteristics. National Marine Fisheries Service, Woods Hole, MA.
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- Clarke, A.H. 1954. Shell bearing marine mollusks of Cape Ann, Massachusetts. Nautilus 67:112-120.
- Ropes, J.W. 1980. Biological and fisheries data on the Atlantic surf clam, *Spisula solidissima* (Dillwyn). U.S. Natl. Mar. Fish. Serv., Northeast Fish. Cent. Sandy Hook Lab Tech. Ser. Rep. No. 24. 88 p.
- Steimle, F.W., R.A. Pikanowski, D.G. McMillan, C.A. Zetlin, and S.J. Wilk. 2000. Demersal fish and American lobster diets in the lower Hudson – Raritan Estuary. NOAA Technical Memorandum NMFS-NE-161.



THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS  
OFFICE OF COASTAL ZONE MANAGEMENT  
251 Causeway Street, Suite 800, Boston, MA 02114-2136  
(617) 626-1200 FAX: (617) 626-1240

September 19, 2006

Jack Karalius  
Department of the Army  
New England District, Corps of Engineers  
696 Virginia Road  
Concord, MA 01742-2751

RE: 10 Year Federal Consistency Certification: Newburyport Harbor Federal  
Maintenance Dredging Project; Newburyport

Dear Mr. Karalius:

The Massachusetts Office of Coastal Zone Management (MCZM) has completed its review of the proposed maintenance dredging of the Newburyport Harbor Federal Navigation Project. This project entails the periodic maintenance dredging of the entrance channel to Newburyport Harbor at the mouth of the Merrimack River, with the placement of the dredged material in designated near-shore locations off either Plum Island to the south or Salisbury Beach to the north. Additionally, the proposal calls for the expansion of the previously used site off Plum Island. The Corps of Engineers has requested that this certification be valid for a period of ten (10) years.

We concur with your certification and find that the activity as proposed is consistent with the CZM enforceable program policies.

If the above-referenced proposal, which has received this concurrence from CZM, is modified in any manner or is noted to be having effects on the coastal zone or its uses that are substantially different than originally proposed, please submit an explanation of the nature of the change to this Office pursuant to 301 CMR 21.17 and 15 CFR 930.66.

Thank you for your continued cooperation with CZM and best of luck with the project.

Sincerely,

Susan Snow-Cotter  
Director

SKL FOR SSC

SSC/rlb



Cc: Karen Kirk Adams, Chief  
Regulatory Branch, US Army Corps of Engineers  
Rich Tomczyk, Section Chief  
Northeast Regional Office, MA DEP  
Ben Lynch, Acting Section Chief  
Waterways Program, MA DEP  
Kathryn Glenn  
CZM North Shore Regional Coordinator



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS  
696 VIRGINIA ROAD  
CONCORD, MASSACHUSETTS 01742-2751

August 21, 2006

Programs Project Management Division  
Programs & Civil Project Management Branch

Mr. Christopher Boelke  
National Marine Fisheries Service  
Northeast Region  
One Blackburn Drive  
Gloucester, MA 01930-2298

Re: Proposed Newburyport Harbor Federal Maintenance Dredging Project

Dear Mr. Boelke:

I am responding to your July 13, 2006 letter in which you requested additional information regarding two items to complete Essential Fish Habitat (EFH) consultation: additional biological/fisheries information on the new expanded Plum Island nearshore disposal site, and further explanation on the chosen alternative of nearshore placement over direct placement of sand on the beach.

1). Based on the biological and physical sampling that was done for the expanded Plum Island nearshore disposal area, which has been provided to you and which has been incorporated into the Environmental Assessment, the Corps believes that the proposed project will not significantly impact resources in the expanded disposal area. The expanded area considered for dredged (sandy) material placement is a high-energy sandy subtidal habitat similar to the previously-used, and adjacent, Plum Island disposal area. As stated in the EFH assessment, this type of environment has the potential to be surf clam habitat. However, given the dynamic nature of the area (i.e., shifting sand) and the burrowing capabilities of surf clams (which according to NMFS' EFH descriptions (<http://www.nero.noaa.gov/hcd/surfclam.htm>) can be up to 3 feet), the Corps has determined that the placement of dredged material in the expanded area will not have a significant impact on surf clam populations in this area. Additionally, any loss of benthic organisms at the disposal site (as identified in the benthic macrofaunal survey of the area) should be term-term as recruitment into the sandy dredged material will occur rapidly.

2). We have considered direct placement of sand on the beach as an alternative to nearshore disposal and will add that potential alternative to the EA. We investigated that option as a result of a request from the Town of Newbury. We agree that this is a feasible option but are limited by regulation to disposing the dredged material in the most environmentally suitable and most cost-effective manner. In researching the beach nourishment option we developed a cost estimate for comparison. Direct placement of

sand on the beach is much more expensive – roughly double the cost of nearshore placement. Since this cost of this option is significantly greater than nearshore placement, the sponsor would need to cover the added costs. We contacted the Town of Newbury and they were unwilling to cost-share the additional expense. To date we have not been able to identify another willing cost share sponsor. Without a sponsor we would pursue nearshore disposal as the least cost/environmentally suitable disposal option. We do however believe that nearshore disposal keeps the sand within the littoral system and, while lacking immediate results on the beach, it will over the long term serve to renourish the beach in a cost effective manner.

The direct placement alternative was discussed among the Corps and local community proponents. After they were informed of the cost, and determined they were unable to fund the added costs, they requested we move the nearshore disposal location closer to the beach. We subsequently performed sediment and benthic sampling, and determined that we could utilize this site.

The dredged sand will be placed as close to the beach as practical, in order to maximize sand migration to the shore. The dredged sand will act as feeder berm, and nourish the beach. If we dredge 150,000 cubic yards of sand from the entrance channel and place this material in the new expanded nearshore disposal area off Plum Island that averages about 800 yards by 400 yards, then the average depth of sand will be approximately 17 inches throughout the site. The elevation change will be gradual and the more mobile species can move out of the area and avoid impacts. Typically the resources inhabiting this nearshore zone area have become adapted to a shifting sand habitat and should be able to quickly adapt to the changed bottom. As stated previously, any adverse impacts will be isolated and temporary. Impacts to finfish will be minor as the open area environment will allow them to easily avoid the disposal plant and equipment. A temporary impact will be caused by the burial of benthic organisms at the nearshore disposal site – however these organisms will be replaced through recolonization of benthos from adjacent areas. While some shellfish will be buried, some of the clam species present should be able to move up in the sand.

Nearshore disposal of sandy sediment has widespread use in New England. We have placed the dredged sand in the nearshore areas off Plum Island and Salisbury Beach before, and believe there have been minimal, or no, adverse effects from those previous operations.



We believe this information should satisfy our EFH requirements. If you have any other comments or questions, please call me at 978-318-8288.

Sincerely,



Jack Karalius  
Project Manager  
Navigation Section

Copy furnished:

Ms. Alice Smith  
MA Department of Environmental Protection  
401 Water Quality Certification Program – Dredging  
1 Winter Street  
Boston, Massachusetts 02108

Mr. Hans Erwich, Chairman  
Newburyport Harbor Commission  
City Hall  
60 Pleasant Street  
Newburyport, MA 01950



**DEPARTMENT OF THE ARMY**  
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS  
696 VIRGINIA ROAD  
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO  
ATTENTION OF

August 3, 2006

Programs Project Management Division  
Programs & Civil Project Management Branch

Mr. Alex Strysky  
Project Review Coordinator  
Massachusetts Office of Coastal Zone Management  
251 Causeway Street, Suite 800  
Boston, MA 02114

Re: Proposed Newburyport Harbor Federal Maintenance Dredging Project

Dear Mr. Strysky:

The U.S. Army Corps of Engineers requests that your office review the proposed Newburyport Harbor Federal Maintenance Dredging project for consistency with the Coastal Zone Management (CZM) Program.

The proposed work involves the Federal maintenance dredging of about 150,000 cubic yards of sand from the Newburyport Harbor entrance channel. Nearshore disposal sites will be alternated between previously-used nearshore sites off Plum Island and Salisbury Beach – but, in addition to the previously-used site off Plum Island, a new expanded site, averaging about 800 yards by 400 yards, and extending about 1,500 feet south of the previously-used site, is proposed. (Please see attached drawing). We intend to utilize this new, expanded Plum Island nearshore disposal site during the next dredging project. The work will be performed by contract (private) hopper dredge, and will take approximately 3 to 5 weeks. The entrance channel will be dredged to -15 feet mean lower low water (MLLW), plus 2 feet of allowable (but not required) overdepth to -17 feet MLLW.

The last 3 times we performed maintenance dredging in the entrance channel were July-August 1999, September 1996, and April-May 1993. Disposal was nearshore off either Plum Island or Salisbury Beach.

We are requesting a long-term (10-year) CZM consistency concurrence from your office. Our previous 10-year CZM consistency concurrence was issued March 13, 1996.

We believe that the proposed maintenance dredging in the authorized navigation project is consistent with the program policies established as a result of the Coastal Zone Management Act of 1972. The dredging operations will be conducted in a manner that is consistent with the CZM Management Plan.

The proposed project complies with the following CZM policies:

•**WATER QUALITY POLICY #1** - Ensure that point-source discharges in or affecting the coastal zone are consistent with federally approved state effluent limitations and water quality standards.

Consistency: The placement of dredged sand at the nearshore disposal site will temporarily increase turbidity in the waters in and adjacent to the disposal site. However, the impacts will be short-term and localized. The placement/disposal of the dredged sand will not significantly affect water quality in the vicinity of the site. Therefore, this project is consistent with this policy.

•**WATER QUALITY POLICY #2** - Ensure that nonpoint pollution controls promote the attainment of state surface water quality standards in the coastal zone.

Consistency: The dredging and disposal of the sandy material will be performed using the best management practices to control non-point pollution sources. Therefore, this project is consistent with this policy.

•**WATER QUALITY POLICY #3** - Ensure that activities in or affecting the coastal zone conform to applicable state and federal requirements governing subsurface waste discharges.

Consistency: The dredged material to be placed nearshore off either Plum Island or Salisbury Beach is clean sand. Therefore, this project is consistent with this policy.

•**HABITAT POLICY #1** - Protect coastal resource areas including salt marshes, shellfish beds, dunes, beaches, barrier beaches, salt ponds, eelgrass beds, and fresh water wetlands for their important role as natural habitats.

Consistency: The dredging of material from the Newburyport Harbor entrance channel will not significantly impact coastal resource areas. We intend to utilize the dredged sandy material beneficially by placing the material nearshore, where it will act as a feeder berm to nourish the nearby beach. Any adverse impacts from this project are anticipated to be short-term and highly localized. Therefore, this project is consistent with this policy.

•**HABITAT POLICY #2** - Restore degraded or former wetland resources in coastal areas and ensure that activities in coastal areas do not further wetland degradation but instead take advantage of opportunities to engage in wetland restoration.

Consistency: No wetland areas will be impacted by this project. Therefore, this policy is not applicable.

•**PROTECTED AREAS POLICY #1** - Preserve, restore, and enhance complexes of coastal resources of regional or statewide significance through the Areas of Critical Environmental Concern program.

Consistency: No Areas of Critical Environmental Concern will be impacted by this project. All work is in the water. Therefore, this policy is not applicable.

•**PROTECTED AREAS POLICY #2** - Protect state and locally designated scenic rivers and state classified scenic rivers in the coastal zone.

Consistency: No scenic rivers will be impacted by this project. Therefore, this policy is not applicable.

•**PROTECTED AREAS POLICY #3** - Ensure that proposed developments in or near designated or registered historic districts or sites respect the preservation intent of the designation and that potential adverse effects are minimized.

Consistency: No developments are proposed. Therefore, this policy is not applicable.

•**COASTAL HAZARD 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.

Consistency: We intend to utilize the dredged sandy material beneficially by placing the material nearshore, where it will act as a feeder berm to nourish the nearby beach. This project is therefore consistent with this policy.

•**COASTAL HAZARD POLICY #2** - Ensure construction in water bodies and contiguous land areas will minimize interference with water circulation and sediment transport. Approve permits for flood or erosion control projects only when it has been determined that there will be no significant adverse effects on the project site or adjacent or downcoast areas.

Consistency: This project will not significantly interfere with water circulation patterns and sediment transfer. We intend to use the mechanism of sediment transfer beneficially, as stated above, by placing the dredged sand nearshore, where it will act as a feeder berm to nourish the nearby beach. Therefore, this project is consistent with this policy.

•**COASTAL HAZARD 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, and
- not promote growth and development in hazard-prone or buffer areas, especially in Velocity zones and ACECs, and
- 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.

Consistency: This project will not damage natural buffers, promote development, or reconstruct structures. The proposed dredging will improve navigation by removing shoaling/sediment build-up which is causing a navigation hazard. Therefore, this project is consistent with this policy.

•**COASTAL HAZARD POLICY #4** - Prioritize public funds for acquisition of hazardous coastal areas for conservation or recreation use, and relocation of structures out of coastal high hazard areas, giving due consideration to the effects of coastal hazards at the location to the use and manageability of the area.

Consistency: Not applicable.

•**PORTS POLICY #1** - Ensure that dredging and disposal of dredged material minimize adverse effects on water quality, physical processes, marine productivity and public health.

Consistency: The dredging and disposal of sandy material from the Newburyport Harbor entrance channel will not significantly impact water quality, physical processes, marine resources, or public health. Dredging and disposal will impact existing benthic resources in the project footprint, but recolonization of benthic species from adjacent areas will allow the impacted areas to recover to pre-dredge conditions. Water quality impacts at the dredge and disposal sites will be limited to short-term increases in turbidity. Therefore, this project is consistent with Ports Policy #1.

•**PORTS POLICY #2** - Obtain the widest possible public benefit from channel dredging, ensuring that designated ports and developed harbors are given highest priority in the allocation of federal and state dredging funds. Ensure that this dredging is consistent with marine environment policies.

Consistency: The dredging of material from the Newburyport Harbor entrance channel is required to allow for safe navigation for recreational and commercial vessels. As previously stated, this project is consistent with marine environmental policies since no long-term adverse impacts are anticipated. This project is consistent with this policy.

•**PORTS POLICY #3** - Preserve and enhance the capacity of Designated Port Areas (DPAs) to accommodate water-dependent industrial uses, and prevent the exclusion of such uses from tidelands and any other DPA lands over which a state agency exerts control by virtue of ownership, regulatory authority, or other legal jurisdiction.

Consistency: Not applicable.

•**PORTS MANAGEMENT PRINCIPLE #1** - Encourage, through technical and financial assistance, expansion of water dependent uses in designated ports and developed harbors, re-development of urban waterfronts, and expansion of visual access.

Consistency: Not applicable.

•**PUBLIC ACCESS POLICY #1** - Ensure that developments proposed near existing public recreation sites minimize their adverse effects.

Consistency: Not applicable.

•**PUBLIC ACCESS MANAGEMENT PRINCIPLE #1** - Improve public access to coastal recreation facilities and alleviate auto traffic and parking problems through improvements in public transportation. Link existing coastal recreation sites to each other or to nearby coastal inland facilities via trails for bicyclists, hikers, and equestrians, and via rivers for boaters.

Consistency: Not applicable.

•**PUBLIC ACCESS MANAGEMENT PRINCIPLE #2** - Increase capacity of existing recreation areas by facilitating multiple use and by improving management, maintenance and public support facilities. Resolve conflicting uses whenever possible through improved management rather than through exclusion of uses.

Consistency: Not applicable.

•**PUBLIC ACCESS MANAGEMENT PRINCIPLE #3** - Provide technical assistance to developers of private recreational facilities and sites that increase public access to the shoreline.

Consistency: Not applicable.

•**PUBLIC ACCESS MANAGEMENT PRINCIPLE #4** - Expand existing recreation facilities and acquire and develop new public areas for coastal recreational activities. Give highest priority to expansions or new acquisitions in regions of high need or limited site availability. Assure that both transportation access and the recreational facilities are compatible with social and environmental characteristics of surrounding communities.

Consistency: Maintenance dredging of the Newburyport Harbor entrance channel will improve access to Newburyport Harbor and will restore safe navigation for public boating and recreational and commercial access to the harbor and the Merrimack River. Therefore, this project is consistent with this policy.

•**ENERGY POLICY #1** - For coastally dependent energy facilities, consider siting in alternative coastal locations. For non-coastally dependent energy facilities, consider siting in areas outside of the coastal zone. Weigh the environmental and safety impacts of locating proposed energy facilities at alternative sites.

Consistency: Not applicable.

•**ENERGY MANAGEMENT PRINCIPLE #1** - Encourage energy conservation and the use of alternative sources such as solar and wind power in order to assist in meeting the energy needs of the Commonwealth.

Consistency: Not applicable.

•**OCEAN RESOURCES POLICY #1** - Support the development of environmentally sustainable aquaculture, both for commercial and enhancement (public shellfish stocking) purposes. Ensure that the review process regulating aquaculture facility sites (and access routes to those areas) protects ecologically significant resources (salt marshes, dunes, beaches, barrier beaches, and salt ponds) and minimizes adverse impacts upon the coastal and marine environment.

Consistency: Not applicable.

•**OCEAN RESOURCES POLICY #2** - Extraction of marine minerals will be considered in areas of state jurisdiction, except where prohibited by the MA Ocean Sanctuaries Act, where and when the protection of fisheries, air and marine water quality, marine resources, navigation and recreation can be assured.

Consistency: Not applicable.

•**OCEAN RESOURCES POLICY #3** - Accommodate offshore sand and gravel mining needs in areas and in ways that will not adversely affect shorelines areas due to alteration of wave direction and dynamics, marine resources and navigation. Mining of sand and gravel, when and where permitted, will be primarily for the purpose of beach nourishment.

Consistency: Not applicable. There is no mining of sand and gravel in this project. Maintenance dredging of sand from the Newburyport Harbor entrance channel will be placed nearshore, where it will act as a feeder berm to nourish the nearby beach. This project is therefore consistent with this policy.

•**GROWTH MANAGEMENT PRINCIPLE #1** - Encourage, through technical assistance and review of publicly funded development, compatibility of proposed development with local community character and scenic resources.

Consistency: Not applicable.

•**GROWTH MANAGEMENT PRINCIPLE #2** - Ensure that state and federally funded transportation and wastewater projects primarily serve existing developed areas, assigning highest priority to projects that meet the needs of urban and community development centers.

Consistency: The dredging of the Newburyport Harbor entrance channel will maintain waterborne transportation access to an existing developed public harbor. Therefore, this project is consistent with this policy.

•**GROWTH MANAGEMENT PRINCIPLE #3** - Encourage the revitalization and enhancement of existing development centers in the coastal zone through technical assistance and federal and state financial support for residential, commercial and industrial development.

Consistency: Not applicable.

Enclosed are the following:

- A copy of the draft Environmental Assessment (EA).
- Plan view of the dredge area and the Plum Island nearshore disposal area, including the proposed, expanded area.
- Plan view of the dredge area and the Salisbury Beach nearshore disposal area.
- Detailed plan view of the dredge area, and a cross-section, on an 11" x 17" sheet.
- Environmental Notification Form (ENF) Certificate, dated June 6, 2005.
- Memorandum, dated April 28, 2005, from MA Office of Coastal Zone Management.
- Previous 10-year CZM consistency concurrence letter from the MA Office of Coastal Zone Management dated March 13, 1996.

If you need anything else, or have any comments or questions, please call me at 978-318-8288.

Sincerely,



Jack Karalius  
Project Manager  
Navigation Section

Enclosures.

Copy Furnished (no enclosures):

Mr. Hans Erwich, Chairman  
Newburyport Harbor Commission  
City Hall  
60 Pleasant Street  
Newburyport, MA 01950



# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
New England Field Office  
70 Commercial Street, Suite 300  
Concord, New Hampshire 03301-5087

July 31, 2006

Jack Karalius  
New England District, Corps of Engineers  
Department of the Army  
696 Virginia Road  
Concord, Massachusetts 01742-2751

Dear Mr. Karalius:

This responds to your letter dated June 7, 2006, requesting comments pursuant to the Fish and Wildlife Coordination Act, as well as information on the presence of federally-listed and/or proposed endangered or threatened species, in relation to proposed maintenance dredging in the entrance channel to Newburyport Harbor, Newburyport, Massachusetts.

The Plum Island beaches in the vicinity of the dredge disposal site are known to support breeding federally-threatened piping plovers (*Charadrius melodus*). The proposed dredging of Newburyport Harbor is not likely to adversely affect piping plovers. However, we did not have information regarding construction staging to determine if activities related to the project would occur on the Plum Island beaches. If activities are proposed for this area, construction should not occur on the beach between March 15 to August 31 in order to avoid adverse impacts to the breeding and feeding of piping plovers.

Based on our review of the information provided, we have no objection to this project with regard to the Fish and Wildlife Coordination Act. Accordingly, these comments do not preclude future evaluation and recommendations by the U.S. Fish and Wildlife Service, pursuant to the Fish and Wildlife Coordination Act (48 Stat. 401; 16 U.S.C. 661 et seq.), should project conditions change.

Thank you for your coordination. Please contact us at 603-223-2541 if we can be of further assistance.

Sincerely yours,

William J. Neidermyer  
Assistant Supervisor, Federal Activities  
New England Field Office





UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
NORTHEAST REGION  
One Blackburn Drive  
Gloucester, MA 01930-2298

JUL 13 2006

Mr. Jack Karalius, Project Manager  
US Army Corps of Engineers  
New England District  
696 Virginia Road  
Concord, MA 01742-2751

**Re: Newburyport Harbor Federal Navigation Project**

Dear Mr. Karalius:

The National Marine Fisheries Service (NMFS) has reviewed the Environmental Assessment (EA) and the Essential Fish Habitat (EFH) Assessment for the Newburyport Harbor Federal Navigation Project. The current proposal is to perform dredging of approximately 150,000 cubic yards of material from within the entrance channel to Newburyport Harbor. Disposal will utilize previously authorized sites off Plum Island and Salisbury Beach. In addition, the Army Corps of Engineers (ACOE) is proposing to expand the Plum Island disposal area an additional 1,500 feet to the south.

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) requires federal agencies such as the ACOE to consult with the Secretary of Commerce regarding any action or proposed action authorized, funded, or undertaken by the agency that may adversely affect essential fish habitat (EFH) identified under the MSA. The EFH regulations, 50 CFR Section 600.920, outline that consultation procedure and, further, enable federal agencies to use existing consultation/environmental review procedures to satisfy the MSA consultation requirements. In a letter dated January 18, 2000, NMFS previously reported to your agency that the National Environmental Policy Act (NEPA) process used by the ACOE for civil works projects may be used to satisfy the consultation requirements of the MSA.

Our ability to assess the potential impacts on EFH and associated marine resources has been complicated by deficiencies in the EFH assessment provided by the ACOE. While the EA states that previous biological surveys have been performed within the disposal areas, this information was not provided within the EA or EFH assessment. In addition, it is not clear whether there has been a biological characterization for the proposed expansion of the Plum Island Disposal area, although the EA notes that this area would likely be habitat for Atlantic surf clam. Finally, the EA lacks a discussion of the direct beach placement alternative as a means of keeping sand within the littoral system. This alternative should be considered further prior to the approval of new in-water disposal sites. In order to fully assess the potential impacts on NMFS trust resources and to determine whether conservation recommendations to avoid and minimize adverse effects on EFH and living marine resources are appropriate, we request the following information be provided:



- 1) Results of previous biological surveys which describe fishery resources within the proposed disposal area should be presented. In order to determine potential adverse effects resulting from the use of the expanded Plum Island disposal area, a resource characterization for this area should be performed. Based on the results of this characterization, efforts to avoid and minimize adverse effects to EFH should be considered.
- 2) The alternative for direct placement of sand on the beach should be analyzed further. Should this alternative prove to be viable, this option may serve as a means to avoid and minimize adverse effects to EFH resulting from disposal.

In your June 13, 2006 letter, the ACOE requested that long-term (10-year) approval be given for the maintenance dredging of Newburyport Harbor. Please be advised that an EFH consultation with NMFS is required for each federal action which may adversely affect EFH. However, as described within 50 CFR 920(j)(1) of the EFH regulations, federal agencies may develop programmatic EFH consultations with NMFS for many individual actions that may adversely affect EFH. These regulations describe programmatic consultation, as appropriate, if sufficient information is available to develop EFH conservation recommendations that will address all reasonably foreseeable adverse impacts on EFH of an entire program, parts of a program, or a number of similar individual actions occurring within a given geographic area. Currently, the New England District of the ACOE is in the process of developing a programmatic EFH consultation for a number of civil works projects within the New England region. To date, the ACOE has not included Newburyport Harbor Federal Navigation Project within the programmatic EFH consultation. This office would welcome the opportunity to coordinate with the ACOE regarding this request to include the Newburyport Harbor Federal Navigation Project into the ongoing development of the programmatic consultation.

Based on the need for more information, NMFS seeks to extend the consultation process pursuant to 50 CFR (i)(5) so that the ACOE may provide NMFS with a complete assessment of potential adverse impacts on EFH and living marine resources. Upon review of the above mentioned analyses and complete EFH assessment, NMFS may provide, as appropriate, conservation recommendations pursuant to the MSA and the Fish and Wildlife Coordination Act. Kindly contact Christopher Boelke at 978-281-9131 relative to this request. Thank you for your immediate attention to this matter.

Sincerely,



Louis A. Chiarella  
New England Field Office Supervisor  
for Habitat Conservation



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
NORTHEAST REGION  
One Blackburn Drive  
Gloucester, MA 01930-2298

Jack Karalius  
Programs Project Management Division  
Programs & Civil Project Management Branch  
Department of the Army  
New England District, Corps of Engineers  
696 Virginia Road  
Concord, Massachusetts 01742-2751

Dear Mr. Karalius,

This is in response to your letter dated June 13, 2006 regarding a proposal by the Army Corps of Engineers (ACOE) to perform long-term maintenance dredging of the Federal navigation project in the entrance channel to Newburyport Harbor. Approximately 150,000 cubic yards will be removed with a hopper dredge over 4-5 weeks. Disposal will occur off Plum Island and Salisbury Beach. The channel was last dredged in July and August, 1999.

While a population of endangered shortnose sturgeon (*Acipenser brevirostrum*) occurs in the Merrimack River, the range of this species does not extend into Newburyport Harbor. Several species of listed whales and sea turtles occur seasonally off of the coast of Massachusetts. However, these species are rarely found close to shore and listed sea turtles do not commonly forage in the bays and harbors of northern Massachusetts. While rare transient sea turtles may occur in Newburyport Harbor, this would be unlikely. As such, no further coordination with NMFS PRD is necessary for the proposed project and, as no listed species are likely to occur at the project site, no consultation pursuant to Section 7 of the ESA is required. Should you have any questions regarding this correspondence, please contact Julie Crocker of my staff at (978)281-9300 x6530 or by e-mail ([julie.crocker@noaa.gov](mailto:julie.crocker@noaa.gov)). You may receive comments from NMFS Habitat Conservation Division under separate cover.

Sincerely,

Mary A. Colligan  
Assistant Regional Administrator  
for Protected Resources

Cc: Boelke, F/NER4

File Code: Sec 7 ACOE NE- Mass no spp. present





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION I  
ONE CONGRESS STREET SUITE 1100  
BOSTON, MASSACHUSETTS 02114-2023

Jack Karalius  
U.S. Army Corps of Engineers  
New England District  
Programs/Project Management Division  
Civil/Military Project Management Branch  
696 Virginia Road  
Concord, Massachusetts 01742-2751

June 21, 2006

Dear Mr. Karalius:

This is in response to your June 7, 2006 letter request to the U.S. Environmental Protection Agency (EPA) for review and comment on the proposed maintenance dredging of the Newburyport Harbor Federal Navigational Project relative to section 176 (c) and 309 of the Clean Air Act (CAA).

EPA has reviewed the information provided. Based upon our review and understanding as to how the project will be dredged/disposed, and the associated impacts, we find the project meets the requirements of Section 176 (c) and 309 of the CAA.

Please contact Ms. Olga A. Guza of my staff at 617-918-1542 if you have any questions or require additional information.

Sincerely,

A handwritten signature in black ink, appearing to read "Melville P. Cote, Jr.".

Melville P. Cote, Jr., Manager  
Ocean and Coastal Protection Unit



**DEPARTMENT OF THE ARMY**  
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS  
696 VIRGINIA ROAD  
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO  
ATTENTION OF

June 19, 2006

Programs Project Management Division  
Programs & Civil Project Management Branch

Ms. Yvonne Unger  
Massachusetts Department of Environmental Protection  
401 Water Quality Certification Program – Dredging  
1 Winter Street  
Boston, Massachusetts 02108

Subject: 401WQC Application (Form BRP WW 07, 08 Dredging);  
Proposed Federal Maintenance Dredging of Newburyport Harbor  
Entrance Channel, with Nearshore Disposal.

Dear Ms. Unger:

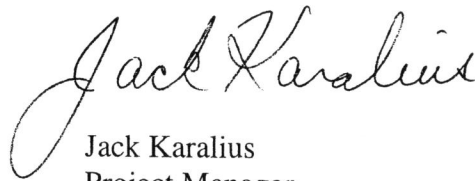
This letter is in response to your May 15, 2006 e-mail message, and to the April 12, 2006 e-mail message from Ms. Stephanie Cunningham of the Massachusetts Division of Marine Fisheries. The following addresses Ms. Cunningham's concerns so that you may continue to review our application for WQC.

1. We do not believe there should be any time-of-year dredge restrictions. We have dredged during various months in the past without problems. The last three times we performed maintenance dredging of the entrance channel were July-August 1999, September 1996, and April-May 1993. Given the large width of the entrance channel and the narrow width between the dredge arms (of the proposed private contract hopper dredge), there should be no impedance of diadromous fish in and out of the river.
2. We inserted a section on surf clams in the Environmental Assessment (EA). We find that since the disposal events will be short-term and localized, significant impacts to the surf clam populations in the area are not anticipated. No more than minimal impacts to surf clam Essential Fish Habitat are expected as a result of this project. Although ocean quahogs may be present, we will not necessarily impact them. Given the nature of the material (sand) we are placing at the disposal site, the overall area of the disposal site, and the frequency of the disposal events, there should be only minimal impacts to any sand-dwelling bivalves in the area.
3. The disposal sites are in areas with a sandy, not rocky, bottom. Sediment samples off Plum Island indicate a sandy bottom. For Salisbury Beach, originally a 90 acre disposal site was proposed; but due to further investigations, a rocky bottom was encountered in a portion of the area, so the disposal site was reduced to 40 acres to avoid the rocky substrate.

4. Placement of the sand on the beach was considered as an alternative to nearshore disposal. However, as addressed in the Supplement to the WQC application, direct placement of the sand on the beach will be roughly twice the cost of nearshore placement and will require a time-consuming cost-sharing agreement with some non-Federal public sponsor (the Town of Newbury is not willing to cost-share the additional expense). The process of finding a non-Federal public sponsor, executing the agreement, and obtaining all of the funding is lengthy, and meanwhile the beach will continue to erode.
5. Samples and grain-size curves were included in the WQC application. Samples taken from the proposed dredge site and the disposal areas indicate a sandy bottom. Previous dredging projects all revealed sand, and the disposal sites were previously used – with the exception of the new, proposed, expanded site off of Plum Island. Four samples taken in this new site also indicate sand.
6. Regarding lobsters and finfish and their habitat, lobster fishing occurs in the rocky areas adjacent to the Newburyport Harbor jetties. However, the disposal areas which are located adjacent to these sites are flat shifting sand bottoms with high tidal energy. As a consequence, the lobster population in the vicinity of the disposal sites is very low. As a result, periodic disposal of clean sandy material from the entrance channel of Newburyport Harbor is not expected to have any long-term negative impacts on lobster populations within these areas. Impacts to finfish species from dredging and disposal activities are not expected to be significant. Due to the open nature of the dredging and disposal areas, adult finfish species should be able to avoid the disturbed area.

The above will hopefully address your concerns. If you have any other comments or questions, please contact me at (978) 318-8288.

Sincerely,

A handwritten signature in cursive script that reads "Jack Karalius". The signature is written in black ink and is positioned above the printed name and title.

Jack Karalius  
Project Manager



**DEPARTMENT OF THE ARMY**  
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS  
696 VIRGINIA ROAD  
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO  
ATTENTION OF

June 13, 2006

Programs Project Management Division  
Programs & Civil Project Management Branch

Mr. Peter Colosi, Jr.  
Assistant Regional Administrator  
For Habitat Conservation  
National Marine Fisheries Service  
Northeast Region  
One Blackburn Drive  
Gloucester, MA 01930-2296

Dear Mr. Colosi:

I am writing to request your comments on our proposal to perform long-term (10-year) maintenance dredging of the Federal navigation project in the entrance channel to Newburyport Harbor. Officials from the City of Newburyport have requested that this project be maintained. The last three times we performed maintenance dredging of the entrance channel were July-August 1999, September 1996, and April-May 1993.

The channel leading into the harbor shoals regularly creating hazardous conditions at the entrance. We estimate that about 150,000 cubic yards of sand need to be removed to restore safe navigation. The work will be performed by contract hopper dredge, and will take approximately four or five weeks. Disposal will alternate between the previously used nearshore disposal sites off Plum Island and Salisbury Beach. For the Plum Island nearshore disposal site, we have requested State approvals to extend the site another 1,500 feet south. For the next dredging cycle, we intend to place the sand in the Plum Island nearshore disposal site. Work will be scheduled as soon as possible contingent on the availability of necessary approvals and funds.

A hopper dredge removes material from the bottom by suction, lifting it through dragarms connected to the side of the vessel. At the end of the dragarms are dragheads that draw a slurry of bottom material and water to the surface where it is discharged into the hopper. As pumping continues, the solid particles settle into the hopper while the excess water passes overboard through overflow troughs. After the hoppers are full the dragarms are raised and the dredge proceeds to the disposal site where the loaded hopper is emptied. The dredge then returns to the dredging area to repeat the cycle.

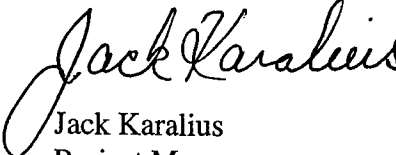
Enclosed are the following:

- A copy of the draft Environmental Assessment (EA).
- An 11" x 17" copy of the most recent hydrographic survey, with the dredging area and overdepth shaded as per our agreement, along with an 8½" x 11" sheet summarizing the volumes.
- Plan view of the dredge area and the Plum Island nearshore disposal area.
- Plan view of the dredge area and the Salisbury Beach nearshore disposal area.
- Plan view and cross-section of the area to be dredged – on 8½" by 11" sheets.
- Plan of sampling locations (4) at the dredge site, and grain-size curves of the samples.
- Plan of sampling locations (4) at the extended Plum Island nearshore disposal site, and grain-size curves of the samples.
- Plan of sampling locations (5) at the Salisbury Beach nearshore disposal site, and grain-size curves of the samples.

I request information on endangered species that may be impacted by the proposed work. This request is made pursuant to Section 7(c) of the Endangered Species Act of 1973 as amended. I am requesting your comments in accordance with the Fish and Wildlife Coordination Act. I am also requesting your comments for this project regarding Essential Fish Habitat (EFH), in accordance with the Magnuson-Stevens Fishery Conservation and Management Act and amended by the Sustainable Fisheries Act of 1996. "Essential fish habitat" is broadly defined to include "those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity." We have made the preliminary assessment that there will be no significant impacts to Essential Fish Habitat with this project. The material to be dredged is relatively coarse sand with little potential for turbidity and low probability for other forms of contamination. Impacts from the dredging are expected to be short-term and localized. The disposal sites are nearshore areas with relatively coarse substrates that are in a constant state of flux. High concentrations of sessile or pelagic life stages are not expected to be present in the project area. Schooling life stages are not expected to be affected by the proposed project. Therefore, we have concluded that there is negligible potential for adverse effects, including cumulative effects, of the proposed project on Essential Fish Habitat.

Please forward any comments to me by July 13, 2006. If you have any questions or require additional information please contact me at (978) 318-8288.

Sincerely,

  
Jack Karalius  
Project Manager



Enclosures

Copies Furnished:

Mr. Christopher Boelke  
Habitat Conservation Branch  
National Marine Fisheries Service  
One Blackburn Drive  
Gloucester, MA 01930-2298

Ms. Mary Colligan  
Protected Resources Division  
National Marine Fisheries Service  
One Blackburn Drive  
Gloucester, MA 01930-2298



**DEPARTMENT OF THE ARMY**  
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS  
696 VIRGINIA ROAD  
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO  
ATTENTION OF

June 7, 2006

Programs Project Management Division  
Programs & Civil Project Management Branch

Mr. Michael Bartlett, Supervisor  
New England Field Offices  
Division of Ecological Services  
U.S. Fish and Wildlife Service  
70 Commercial Street  
Suite 300  
Concord, NH 03301-5087

Dear Mr. Bartlett:

I am writing to request your comments on our proposal to perform long-term (10-year) maintenance dredging of the Federal navigation project in the entrance channel to Newburyport Harbor. Officials from the City of Newburyport have requested that this project be maintained. The last three times we performed maintenance dredging of the entrance channel were July-August 1999, September 1996, and April-May 1993.

The channel leading into the harbor shoals regularly creating hazardous conditions at the entrance. We estimate that about 150,000 cubic yards of sand need to be removed to restore safe navigation. The work will be performed by contract hopper dredge, and will take approximately four or five weeks. Disposal will alternate between the previously used nearshore disposal sites off Plum Island and Salisbury Beach. For the Plum Island nearshore disposal site, we have requested State approvals to extend the site another 1,500 feet south. For the next dredging cycle, we intend to place the sand in the Plum Island nearshore disposal site. Work will be scheduled as soon as possible contingent on the availability of necessary approvals and funds.

A hopper dredge removes material from the bottom by suction, lifting it through dragarms connected to the side of the vessel. At the end of the dragarms are dragheads that draw a slurry of bottom material and water to the surface where it is discharged into the hopper. As pumping continues, the solid particles settle into the hopper while the excess water passes overboard through overflow troughs. After the hoppers are full the dragarms are raised and the dredge proceeds to the disposal site where the loaded hopper is emptied. The dredge then returns to the dredging area to repeat the cycle.

Enclosed are the following:

- A copy of the draft Environmental Assessment (EA).
- Plan view of the dredge area and the Plum Island nearshore disposal area.
- Plan view of the dredge area and the Salisbury Beach nearshore disposal area.
- A full-size sheet (labeled Sv-1, dated 3/15/2002, Drawing code NH-185) of the most recent hydrographic survey of the entrance channel.
- Plan view and cross-section of the area to be dredged – on 8½” by 11” sheets.
- Plan of sampling locations (4) at the dredge site, and grain-size curves of the samples.
- Plan of sampling locations (4) at the extended Plum Island nearshore disposal site, and grain-size curves of the samples.
- Plan of sampling locations (5) at the Salisbury Beach nearshore disposal site, and grain-size curves of the samples.

Please review this information. Pursuant to Section 7(c) of the Endangered Species Act of 1973 as amended, as well as the Fish and Wildlife Coordination Act, please provide information on any endangered or threatened species which would be impacted by the proposed work.

Please forward any comments to me by July 6, 2006. If you have any questions or require additional information please contact me at (978) 318-8288.

Sincerely,



Jack Karalius  
Project Manager

Enclosures



**DEPARTMENT OF THE ARMY**  
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS  
696 VIRGINIA ROAD  
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO  
ATTENTION OF

June 7, 2006

Programs Project Management Division  
Programs & Civil Project Management Branch

Mr. Mel Cote, Jr., Chief  
Water Quality Unit (CWQ)  
U.S. Environmental Protection Agency  
Region 1  
1 Congress Street  
Boston, MA 02203-2211

Dear Mr. Cote:

I am writing to request your comments on our proposal to perform long-term (10-year) maintenance dredging of the Federal navigation project in the entrance channel to Newburyport Harbor. Officials from the City of Newburyport have requested that this project be maintained. The last three times we performed maintenance dredging of the entrance channel were July-August 1999, September 1996, and April-May 1993.

The channel leading into the harbor shoals regularly creating hazardous conditions at the entrance. We estimate that about 150,000 cubic yards of sand need to be removed to restore safe navigation. The work will be performed by contract hopper dredge, and will take approximately four or five weeks. Disposal will alternate between the previously used nearshore disposal sites off Plum Island and Salisbury Beach. For the Plum Island nearshore disposal site, we have requested State approvals to extend the site another 1,500 feet south. For the next dredging cycle, we intend to place the sand in the Plum Island nearshore disposal site. Work will be scheduled as soon as possible contingent on the availability of necessary approvals and funds.

A hopper dredge removes material from the bottom by suction, lifting it through dragarms connected to the side of the vessel. At the end of the dragarms are dragheads that draw a slurry of bottom material and water to the surface where it is discharged into the hopper. As pumping continues, the solid particles settle into the hopper while the excess water passes overboard through overflow troughs. After the hoppers are full the dragarms are raised and the dredge proceeds to the disposal site where the loaded hopper is emptied. The dredge then returns to the dredging area to repeat the cycle.

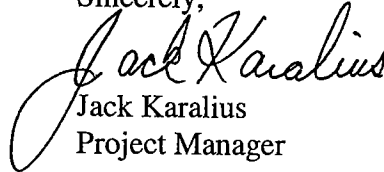
Enclosed are the following:

- A copy of the draft Environmental Assessment (EA).
- Plan view of the dredge area and the Plum Island nearshore disposal area.
- Plan view of the dredge area and the Salisbury Beach nearshore disposal area.
- A full-size sheet (labeled Sv-1, dated 3/15/2002, Drawing code NH-185) of the most recent hydrographic survey of the entrance channel.
- Plan view and cross-section of the area to be dredged – on 8½” by 11” sheets.
- Plan of sampling locations (4) at the dredge site, and grain-size curves of the samples.
- Plan of sampling locations (4) at the extended Plum Island nearshore disposal site, and grain-size curves of the samples.
- Plan of sampling locations (5) at the Salisbury Beach nearshore disposal site, and grain-size curves of the samples.

Please review this information and forward any comments to me by July 6, 2006. In addition, I am also requesting that you review this proposal relative to EPA's responsibility under Sections 176 (c) and 309 of the Clean Air Act.

If you have any questions or require additional information please contact me at (978) 318-8288.

Sincerely,

  
Jack Karalius  
Project Manager

Enclosures



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS  
696 VIRGINIA ROAD  
CONCORD, MASSACHUSETTS 01742-2751

February 3, 2006

Programs Project Management Division  
Programs & Civil Project Management Branch

Ms. Yvonne Unger  
Massachusetts Department of Environmental Protection  
Bureau of Resource Protection – Wetlands & Waterways  
1 Winter Street  
Boston, Massachusetts 02108

Dear Ms. Unger:

On behalf of the Town of Newburyport, enclosed is a completed 401WQC application (Form BRP WW 07, 08 Dredging) with attachments. We are requesting a 10-year long-term approval to perform maintenance dredging of the Newburyport Harbor Federal channel, with disposal of the dredged sandy material off Plum Island or Salisbury Beach. Both sites have previously been utilized. For the Plum Island site, we are also requesting an extension of the existing site approximately 1,500 feet to the south. The purpose of the proposed disposal site expansion is to maximize the nourishment potential at the beach via on-shore transport. About 150,000 cubic yards of sand will be removed from the channel during each dredging cycle, approximately every 3 to 5 years, utilizing a hopper dredge.

We intend to alternate nearshore disposal sites between Plum Island and Salisbury Beach, as needed. However, we plan to utilize the new, extended portion of the Plum Island disposal site, approximately 1,500 feet by 1,000 feet, during the next dredging project in order to renourish the nearby beach.

Attached are the following.

- Form BRP WW 07, 08 Dredging.
- Supplement to BRP WW 07, 08 Dredging.
- MEPA certificate (EOEA #13503, dated May 27, 2005).
- May 27, 2005 letter from the MA Executive Office of Environmental Affairs, DEP, concerning a 401 WQC, and additional information needed.
- Most recent WQC (DEP Transmittal No. W009881, dated July 22, 2003).
- WQC (DEP Wetlands File #: 51-503 (Newburyport), 65-298 (Salisbury); Transmittal Number: 119883, 114041, stamped May 31, 1996) for the most recent (1999) Federal maintenance dredging project in Newburyport Harbor.
- Plan view of the dredge area and the Plum Island disposal areas.
- Plan view of the dredge area and the Salisbury Beach disposal area.
- Plan view and cross-section of the area to be dredged.

- Plan of sampling locations (4) at the dredge site, and grain-size curves of the samples.
- Plan of sampling locations (4) at the extended Plum Island nearshore disposal site, and grain-size curves of the samples.
- Plan of sampling locations (5) at the Salisbury Beach nearshore disposal site, and grain-size curves of the samples.

If you have any questions, please contact me at (978) 318-8288.

Sincerely,

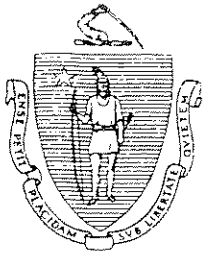
  
Jack Karalius  
Project Manager

Enclosures

CF:

Mr. Nicholas Cracknell, Dir.  
Office of Planning and Development  
Newburyport City Hall  
60 Pleasant Street  
Newburyport, MA 01950

Mr. Douglas Packer, Conservation Agent  
Town of Newbury  
25 High Road  
Newbury, MA 01951



The Commonwealth of Massachusetts

Executive Office of Environmental Affairs

100 Cambridge Street, Suite 900

Boston, MA 02114-2524

MITT ROMNEY  
GOVERNOR

KERRY HEALEY  
LIEUTENANT GOVERNOR

ELLEN ROY HERZFELDER  
SECRETARY

*my files*  
Tel. (617) 626-1000  
Fax. (617) 626-1181  
<http://www.mass.gov/envi>

June 6, 2005

CERTIFICATE OF THE SECRETARY OF ENVIRONMENTAL AFFAIRS  
ON THE  
ENVIRONMENTAL NOTIFICATION FORM

PROJECT NAME : Near-Shore Dredged Material Disposal  
off Plum Island Beach  
PROJECT MUNICIPALITY : Newbury/Newburyport  
PROJECT WATERSHED : Merrimack  
EOEA NUMBER : 13503  
PROJECT PROPONENT : City of Newburyport  
DATE NOTICED IN MONITOR : April 9, 2005

Pursuant to the Massachusetts Environmental Policy Act (G. L. c. 30, ss. 61-62H) and Section 11.06 of the MEPA regulations (301 CMR 11.00), I hereby determine that this project **does not require** the preparation of an Environmental Impact Report.

Project Description

As described in the Environmental Notification Form (ENF), the project involves the revision of the disposal site for approximately 15,000 cubic yards (cy) of sand to be dredged for maintenance purposes from the Federal Navigation Project in Newburyport Harbor (EOEA #6429). The material was previously approved for disposal at a sub-tidal site east of Plum Island, which is one of two near-shore locations historically used for disposal of dredged material from Newburyport Harbor. The newly proposed disposal site entails the extension of the previously approved disposal site by approximately 1,500 foot to the south



in order to indirectly nourish Plum Island Beach via in-shore migration of the deposited sand and to provide a measure of protection against further erosion of shoreline public utilities and properties. Benthic and physical sampling indicates that both the sediments and benthic community of the proposed disposal site are similar to the adjacent, previously-approved disposal site.

#### MEPA Jurisdiction and Permitting Requirements

The project is undergoing review pursuant to Section 11.03 (3)(b)(1)(f) and (3)(b)(4) of the MEPA regulations because the project involves alteration of one-half or more acres of wetlands (in this case, Land Under the Ocean) and the disposal of 10,000 or more cy of dredged material. The project will require a Chapter 91 License and a 401 Water Quality Certification from the Department of Environmental Protection (DEP) and may require Federal Consistency Review by the Office of Coastal Zone Management (CZM). The project will also require Order of Conditions from the Newbury Conservation Commission, which was issued on February 5, 2005, and has not been appealed.

The proponent is not seeking financial assistance from the Commonwealth for the project. Therefore, MEPA jurisdiction applies to those aspects of the project within the subject matter of required permits with the potential to cause Damage to the Environment. In this case, MEPA jurisdiction is limited to issues of wetlands, waterways and tidelands.

#### Permitting Issues

In its comments, DEP states that the proponents have provided sufficient information to proceed to permitting for a 401 Water Quality Certificate. However, the proponent should provide the additional items listed in DEP's comment letter when applying for the 401 Water Quality Certificate in order to ensure that the project avoids and minimizes impacts to the aquatic ecosystem. In its comments, CZM indicates its support for the project, but recommends that the dredged material be placed at the northernmost reaches of the proposed disposal site to maximize the effectiveness of the project to provide beach nourishment.

In its comments, the Board of Underwater Archeological Resources states that the U.S. Geological Survey and CZM will soon be conducting a remote sensing survey of the near-shore area off Plum Island and hat results of this survey should be available in September 2005. If the survey indicates the presence of shipwrecks or other archeological sites in the proposed disposal area, the proponent should work with the Board to develop and implement measures to avoid adverse effects, including but not limited to adjusting the disposal area boundaries to ensure avoidance of submerged cultural resources. This may necessitate the submission of a Notice of Project Change (NPC).

Conclusion

The impacts of the project within MEPA jurisdiction do not warrant the preparation of an EIR. I conclude that no further MEPA review is required. The proponents may resolve any remaining issues during the state and local permitting processes.

June 6, 2005

Date



Ellen Roy Herzfelder

Comments received:

- 04/25/05 Board of Underwater Archeological Resources
- 05/02/05 Office of Coastal Zone Management
- 05/31/05 Department of Environmental Protection Northeast Regional Office

ERH/RAB/rab



## Town Of Newbury

Office of  
The Selectmen  
Newbury, MA 01951-4799  
Tel: 978-462-9241  
Fax: 978-465-3064

May 17, 2004

Mr. Edward O'Donnell  
U.S. Army Corp of Engineers  
New England Division  
696 Virginia Road  
Concord, MA 01742-2751

Dear Mr. O'Donnell,

The Town of Newbury respectfully requests that the Army Corp of Engineers initiate a study relative to the flooding of Fordham and Dartmouth Ways on Plum Island. Small storm events as recently as December 6<sup>th</sup> and 7<sup>th</sup>, 2003 caused the flooding of Fordham and over wash at Dartmouth. This was only the most recent flooding incident. There have been numerous accountings of other minor events in the past. However, the area is starting to show increased signs of flooding from events of varying severity.

Conducting this study now as opposed to later may avert serious flooding damage to municipal infrastructure as well as to private property. The Army Corp has expressed an interest and involvement in the past. John Winkleman from the Army Corp performed a site visit approximately two years ago and subsequently issued a draft report of findings. It is the Town's understanding that the draft never went to a final report and then on to a planning stage. It is this planning and implementation stage that the Town of Newbury is now requesting. Please respond to our request for this study regarding its feasibility for flood acceptance by the Army Corp.

Thank you for your consideration and we look forward to a response.

Regards,

*Richard F. Joy* Chairman B.L. Selectman  
*V. Plessio*, Selectman

**NEWBURYPORT HARBOR  
PLUM ISLAND AND SALISBURY BEACHES  
§204 PROJECT FOR THE BENEFICIAL USE  
OF DREDGED MATERIAL**

**DETAILED PROJECT REPORT**

**APPENDIX B**

**PROJECT AUTHORIZATION AND WORK HISTORY  
FOR  
NEWBURYPORT HARBOR**

**AND PRIOR STUDY SUMMARIES  
FOR  
NEWBURYPORT HARBOR  
PLUM ISLAND BEACH  
AND SALISBURY BEACH**

**APPENDIX B**  
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**NEWBURYPORT HARBOR**

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**PLUM ISLAND BEACH**

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**SALISBURY BEACH**

|                             |      |
|-----------------------------|------|
| Prior Corps Study Summaries | B-19 |
|-----------------------------|------|

**NEWBURYPORT HARBOR  
NEWBURYPORT & SALISBURY, MASSACHUSETTS  
LIST OF AUTHORIZATIONS**

Note: Early improvements to Newburyport Harbor and the Mouth of the Merrimack River were authorized and carried out under the project for the Merrimack River. These authorizations and work are recorded under both projects for reference.

| <b><u>Authorization</u></b>                                                 | <b><u>Work Authorized &amp; Constructed</u></b>                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b><u>Construction</u></b>                                                                                                       |
|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Act of 23 May 1828<br>Vol. 4, Page 288,<br>Chapter 73                       | Improving the Bar at the River's Mouth by<br>Erection of "Piers and Other Works" - Stone<br>Filled Timber Crib Dike, 12 Feet Wide,<br>Westerly from Plum Island 1,680 LF to<br>Woodbridge Island and then 5,280 LF<br>Across Joppa Flats, to Constrain the River<br>Flow to Increase Inlet Velocities to Effect<br>Removal of the Bars                                                                                                                                                   | Dredging only –<br>1828 – 1831<br><br>Dikes Completed<br>1837                                                                    |
| Annual Report for<br>23 Nov 1833                                            | Construction of a Stone Pier from Badgers<br>Rock to Salisbury Head to Constrain the<br>Channel and Shelter Vessels.                                                                                                                                                                                                                                                                                                                                                                     | 1834 – 1835                                                                                                                      |
| Act of 11 July 1870                                                         | Removal of Obstructions from the River at<br>Newburyport and between Newburyport<br>and Haverhill, Consisting of Removal of<br>Gangway Rock (-9 Feet MLW), a Wreck at<br>the River's Mouth, and Boilers Rocks near<br>the Wharves at Newburyport (-5 Feet<br>MLW)                                                                                                                                                                                                                        | Sept 1870 – Sept<br>1881 (Except “The<br>Boilers”)<br><br>The Boilers<br>Removed:<br>Oct 1892 – Aug 1893<br><br>Wreck: Sept 1870 |
| Annual Report for<br>1881, Appendices<br>A-16, Page 501 &<br>A-17, Page 511 | Newburyport: Removal of South Badger<br>Ledge to -10 Feet MLW (50 cy Estimated),<br>and North Rock Spur to -9 Feet MLW                                                                                                                                                                                                                                                                                                                                                                   | July 1881 – Sept<br>1883<br>(South Badger to –<br>9.5 Feet only)                                                                 |
| Annual Report for<br>1881, Appendices<br>A-16, Page 501 &<br>A-17, Page 511 | Two Converging Stone Jetties at the River’s<br>Mouth at Salisbury and Plum Island, with<br>Top Elevation of +12 Feet MLW, Top<br>Width of 15 Feet and Slopes of 1:2 Outside<br>& Head and 1:1 Inside, with South Jetty<br>Extended Westerly along the Shore of the<br>Inlet to Prevent Flanking and Shore<br>Protection Measures through the Inlet.<br>Potential for Parallel Seaward Extension of<br>both Jetties. Jetties Intended to Scour a<br>Channel –17 Feet MLW 1,000 Feet Wide. | North Jetty: July<br>1881 – Oct 1914<br><br>South Jetty: See<br>below                                                            |

|                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                               |
|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Chief of Engineers,<br>26 March 1883,<br>Annual Report 1883,<br>Appendix B-1, Page<br>433 & Appendix B-<br>2, Page 439 | Modification of South Jetty Plan to Include<br>about 500 LF of Wood Sheet Piling Core<br>and 7,000 Tons of Stone in the Landward<br>Extension of the Structure up the Beach<br><br>Plum Island Basin Dike – A Wood Pile &<br>Rubble-Stone Dike                                                                                                                               | South Jetty: April<br>1883 – FY 1906<br><br>Plum Island Basin<br>Dike: Dec 1882 -<br>December 1883                                                                            |
| Annual Report for<br>1884, Appendix B-<br>1, Page 493 &<br>Appen. B-2, Pg 500                                          | Double Row Timber Pile & Plank Sand-<br>Catch, Filled with Seaweed and Wire,<br>Landward of the South Jetty to Prevent<br>Aeolian Erosion                                                                                                                                                                                                                                    | Spring 1884 – FY<br>1885<br>Rehabbed Aug 1886                                                                                                                                 |
| Annual Report of<br>1887, Page 825                                                                                     | Parallel Seaward Jetty Extensions                                                                                                                                                                                                                                                                                                                                            | Completed: North<br>Jetty – Oct 1914<br>South Jetty – FY<br>1906                                                                                                              |
| River & Harbor Act<br>of 3 March 1899                                                                                  | Removal of North Rock from the Harbor                                                                                                                                                                                                                                                                                                                                        | July 1901                                                                                                                                                                     |
| River & Harbor Act<br>of 25 June 1910                                                                                  | Authorized Dredging of the Entrance<br>Channel across the Bars to Secure a Depth<br>of -17 Feet MLW by 1000 Feet Wide                                                                                                                                                                                                                                                        | June 1937 – June<br>1938, but Only to a<br>Controlling Depth of<br>-15 Feet MLW.                                                                                              |
| River & Harbor Act<br>of 2 March 1945                                                                                  | Entrance Channel -15 Feet MLW 400 Feet<br>Wide through the Jetties, then -12 Feet<br>MLW by 200 Feet Wide to Newburyport<br>Wharves to a Widened Turning Basin 600<br>to 750 Feet Wide at -12 Feet MLW. Depths<br>Reduced to 9 Feet in the Harbor Channel<br>and Basin due to Lack of Local Cost-<br>Sharing for Deeper Project.                                             | Nov 1957 – Aug<br>1958<br>Bar Channel Dredged<br>to -12 Feet and<br>Harbor Channel &<br>Basin to -9 Feet.<br><br>Entrance Channel<br>Deepened to -15 Feet<br>in 1964 and 1981 |
| Design<br>Memorandum,<br>29 October 1965                                                                               | Restoration of Both Jetties to a Top<br>Elevation of +12 Feet MLW and Top Width<br>of 15 Feet, by Placing One Layer of 12-Ton<br>Armor Stone on the Seaward Slope and<br>Crest of Each Structure, and Construction of<br>150-LF Landward Extension of the South<br>Jetty and Building a Dike and Revetment<br>along the South Shore of the Inlet Back to<br>the USCG Station | Jetties Rebuilt: Sept<br>1968 – Sept 1970<br><br>Revetment: May<br>1970 - Sept 1970                                                                                           |

|                                                                    |                                                                                                                                                                                                                                        |                                   |
|--------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| Water Resources Development Act of 17 October 1986, Section 1002   | Deauthorized the Unconstructed Deepening of the 9-Foot Inner Harbor Channel and Basin to -12 Feet, as Authorized by the River and Harbor Act of 2 March 1945                                                                           | Deauthorization                   |
| Water Resources Development Act of 31 October 1992, Section 116(3) | Deauthorized the Eastern Portion of the 12-Foot Turning Basin at Newburyport, Authorized by the River & Harbor Act of 1910 and 1945, and Redesignating a 200-Foot Wide Area along the Western Limit of the Basin as a Federal Channel. | Deauthorization and Redesignation |

**NEWBURYPORT HARBOR  
NEWBURYPORT & SALISBURY, MASSACHUSETTS  
PROJECT CONSTRUCTION & MAINTENANCE HISTORY**

Note: Early improvements to Newburyport Harbor and the Mouth of the Merrimack River were authorized and carried out under the project for the Merrimack River. These authorizations and work are recorded under both projects for reference.

| <b><u>Work Dates</u></b> | <b><u>Work Accomplished</u></b>                                                                                                                                                                                                   | <b><u>Quantities</u></b> |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 1828 - 1837              | Stone Filled Timber Crib Dike, 12 Feet Wide, Westerly from Plum Island 1,680 LF to Woodbridge Island and then 5,280 LF Across Joppa Flats, to Constrain the River Flow to Increase Inlet Velocities to Effect Removal of the Bars | Unknown                  |
| 1834 - 1834              | Stone Pier from Badgers Rocks to Salisbury Shore to Shelter Vessels and Constrain Channel                                                                                                                                         | Unknown                  |
| Sept 1870 – Oct 1870     | Removal of the Wreck of the Coal Schooner <i>Globe</i> from Harbor’s Mouth near Black Rocks                                                                                                                                       | Wreck Removal            |
| Sept 1870 – Oct 1870     | South (Main) Gangway Rock was Blasted and Removed to -9-½ Feet MLW                                                                                                                                                                | Included Below           |
| October 1870             | Partial Removal of North Gangway Rock                                                                                                                                                                                             | 600 Tons Rock            |
| Aug 1878 – Jun 1879      | Partial Removal of North Gangway Rock to -9 Feet MLW                                                                                                                                                                              | 305 cy Rock              |
| Sept 1880 – Oct 1880     | Removal of the Remainder of North Gangway Rock to -9 Feet MLW                                                                                                                                                                     | 23 cy Ledge              |



|                                            |                                                                                                                                                                         |                        |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| July 1880 – Oct 1880                       | Removed Six Sunken Timber Crib Piers (1812 Harbor Defenses) and a Sunken Scow from the Main Channel at Salisbury Point, all to a Least Depth of -9 Feet MLW             | Unknown                |
| July 1880 – Oct 1880                       | Removal of a Ledge between the North and South Piers at Newburyport to -12 Feet MLW                                                                                     | 7 cy Ledge             |
| FY 1881                                    | Removal of Wreck of the Schooner <i>Greyhound</i> from the Entrance Channel                                                                                             | Wreck Removal          |
| June 1881 – Sept 1881                      | Complete Removal of South Gangway Rock to -9 Feet MLW                                                                                                                   | 120 cy Rock            |
| July 1881 – Aug 1881                       | Removal of North Rocks Spur to -9 Feet MLW                                                                                                                              | 13 cy Rock             |
| July 1881 – April 1883                     | Begin Construction of North Jetty                                                                                                                                       | 48,166 Long Tons Stone |
| Aug 1881 – Nov 1881 and May 1882 – FY 1883 | Partial Removal of South Badger Ledge to -10 Feet MLW                                                                                                                   | 21 cy Rock             |
| Oct 1882 – FY 1883                         | Continued Removal of South Badger Ledge to -10 Feet MLW (only to -9.5 Feet - Completed)                                                                                 | Unknown                |
| Oct 1882 – Sept 1883                       | Complete the Removal of North Rock to -9 Feet MLW                                                                                                                       | 101 cy Rock            |
| Oct 1892 – Dec 1892 & May 1893 – Aug 1893  | Removal of "The Boilers" Rocks at Newburyport to -5 Feet MLW                                                                                                            | 350 cy Rock            |
| Dec 1882 - December 1883                   | Construction of the Plum Island Basin Stone Filled Timber Crib Dike – with Small Opening Left in the Center                                                             | Unknown                |
| April 1883 - December 1883                 | Begin Construction of the South Jetty                                                                                                                                   | Unknown                |
| March 1884                                 | Repairs to the Plum Island Basin Dike                                                                                                                                   | Unknown                |
| Spring 1884 – FY 1885                      | Construction of a Double Row Timber Pile & Plank Sand-Catch, Filled with Seaweed and Wire, Landward of the South Jetty along the Inlet Shore to Prevent Aeolian Erosion | 1,178 LF               |
| Sept 1884 – Aug 1885                       | Resume Construction of the North Jetty                                                                                                                                  | 2,101 Tons Stone       |
| Sept 1884 – Aug 1885                       | Resume Construction of the South Jetty                                                                                                                                  | 16,593 Tons Stone      |

|                                           |                                                                                                                                                                         |                   |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| FY 1885 – Sept 1885                       | Removal of Three Ledges from the Harbor                                                                                                                                 | 52 cy Rock        |
| FY 1886                                   | Continued Extension of the Timber & Wire Sand-Catch along the South Inlet Shore                                                                                         | 245 LF            |
| Aug 1886 – Sept 1886                      | Rehabilitation of the South Jetty Sand-Catch - Dikes and Spurs Composed of a Double Row of Timber Piles 5 Feet Apart and Distant, Filled with Brush Weighted with Stone | 860 LF            |
| Nov 1886 – Oct 1887                       | Continued Construction of the North Jetty                                                                                                                               | 11,380 Tons Stone |
| Jan 1889 – Sept 1889                      | Continued Construction of the North Jetty                                                                                                                               | 9,999 Tons Stone  |
| May 1891 – FY 1892                        | Continued Construction of the North Jetty                                                                                                                               | 11,445 Tons Stone |
| Oct 1892 – Dec 1892 & May 1893 – Aug 1893 | Removal of "The Boilers" Rocks at Newburyport to -5 Feet MLW                                                                                                            | 350 cy Rock       |
| May 1893 – FY 1894                        | Continued Construction of the North Jetty (Completed to Full Section for 2,705 LF)                                                                                      | 15,113 Tons Stone |
| May 1895 – Oct 1895                       | Resume Construction of South Jetty                                                                                                                                      | 14,251 Tons Stone |
| May 1897 – Dec 1897                       | Continued Construction of the South Jetty                                                                                                                               | 13,004 Tons Stone |
| May 1900 – June 1900                      | Repairs to Damaged Stone Work in the North Jetty                                                                                                                        | 540 Tons Stone    |
| May 1900 – June 1900                      | Continued Construction of the South Jetty                                                                                                                               | 16,457 Tons Stone |
| July 1901                                 | Removal of North Rock Completed                                                                                                                                         | Unknown           |
| June 1902                                 | The North Jetty Beacon, Displaced by Storms, was Reset with Additional Protective Stone                                                                                 | 100 Tons Stone    |
| FY 1905                                   | Repair and Continued Construction (Extension) of the South Jetty                                                                                                        | 11,328 Tons Stone |
| July 1905 – Oct 1905                      | Repairs to the North Jetty                                                                                                                                              | 2,500 Tons Stone  |
| FY 1906                                   | Continued Construction of the South Jetty                                                                                                                               | 8,672 Tons Stone  |
| Sept 1906 – Oct 1906                      | Repairs to the North Jetty                                                                                                                                              | 2,026 Tons Stone  |

|                        |                                                                                                                                                                                                                                                 |                                                             |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| March 1907 – Sept 1908 | Repairs and Extension of the North Jetty                                                                                                                                                                                                        | 26,119 Tons                                                 |
| FY 1910                | Drainage Breach in Plum Island Basin Dike Cleared of Debris                                                                                                                                                                                     | Unknown                                                     |
| FY 1911 – FY 1912      | Continued Extension of the North Jetty                                                                                                                                                                                                          | 36,628 Tons Stone                                           |
| Oct 1913 – Oct 1914    | Continued Construction and Completion of the North Jetty (Total Length now 4,118 LF)                                                                                                                                                            | 24,984 Tons Stone                                           |
| June 1917 – Nov 1917   | Repairs to the North Jetty                                                                                                                                                                                                                      | 7,135 Tons Stone                                            |
| July 1917 – Nov 1917   | Repairs to the South Jetty                                                                                                                                                                                                                      | 1,753 Tons Stone                                            |
| June 1925              | Repairs to the North Jetty                                                                                                                                                                                                                      | 1,600 Tons Stone                                            |
| Nov 1932 – Jan 1933    | Construction of Head at End of North Jetty                                                                                                                                                                                                      | 800 Tons Stone                                              |
| Nov 1932 – Jan 1933    | Construction of Head at End of South Jetty                                                                                                                                                                                                      | 388 Tons Stone                                              |
| April 1936 – Dec 1937  | Repairs to the North Jetty                                                                                                                                                                                                                      | 29,930 Tons Stone                                           |
| April 1936 – Dec 1937  | Repairs to the South Jetty                                                                                                                                                                                                                      | 16,376 Tons Stone                                           |
| June 1937 – June 1938  | Maintenance and Improvement Dredging of the Entrance Channel to -15 Feet by U.S. Hopper Dredge <i>Minquas</i>                                                                                                                                   | 335,489 cy                                                  |
| November 1939          | Removal of Timber Guide Pilings from the Plum Island Basin Dike as Navigation Hazards                                                                                                                                                           | Unknown                                                     |
| July 1940 – Aug 1940   | Maintenance Dredging of the Entrance Channel to 15 Feet by the U.S. Hopper Dredge <i>Absecon</i>                                                                                                                                                | 158,092 cy                                                  |
| Sept 1941 – Oct 1941   | Maintenance Dredging of the Entrance Channel to 15 Feet by the U.S. Hopper Dredge <i>Absecon</i>                                                                                                                                                | 141,990 cy                                                  |
| Nov 1957 – Dec 1957    | Improvement Dredging to Deepen the Inner Channel to 9-Feet by 100 Feet between the Inlet and the Wharves at Newburyport, including the 9-Foot Basin, beginning the 1945 Project                                                                 | 40,300 cy - of this 30,000 cy was placed on Salisbury Beach |
| July 1958 – Aug 1958   | Improvement Dredging to Widen the Entrance Channel to 400 Feet, but with a Reduced Depth of 12 Feet, plus a 2-Foot Overdepth, between and Seaward of the Jetties, by the U.S. Hopper Dredge <i>Hyde</i> , in Continuance of the Project of 1945 | 35,694 cy                                                   |

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                            |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| July 1961 – Aug 1961  | Maintenance Dredging of the Inlet Entrance Channel to 12 Feet between the Jetties and the Outer Harbor by the U.S. Dredge <i>Hyde</i>                                                                                                                                                                                                                                                                                                                    | 250,000 cy                                                 |
| May 1964              | Maintenance Dredging of the Inlet Entrance Channel to 16 Feet MLW between the Jetties and the Outer Harbor by the U.S. Dredge <i>Hyde</i> with a 4-Foot Overdepth Allowance                                                                                                                                                                                                                                                                              | 131,102 cy                                                 |
| May 1966              | Maintenance Dredging of the Inlet Entrance Channel to 12 Feet between the Jetties and the Outer Harbor by the U.S. Dredge <i>Lyman</i>                                                                                                                                                                                                                                                                                                                   | 50,000 cy                                                  |
| July 1968             | Maintenance Dredging of the Inlet Entrance Channel to 12 Feet between the Jetties and the Outer Harbor by the U.S. Dredge <i>Hyde</i>                                                                                                                                                                                                                                                                                                                    | 86,000 cy                                                  |
| Sept 1968 – July 1969 | Rehabilitation of the North and South Jetties (South Jetty Work Completed June 1969)                                                                                                                                                                                                                                                                                                                                                                     | 36,900 Tons Stone                                          |
| May 1970 - Sept 1970  | Construction of Revetment and Sand Dike as Erosion Protection Works near of the U.S. Coast Guard Station along the South Bank of the Inlet in the River's Mouth. Extending the South Jetty about 150 LF Landward at a Top Elevation of +19 Feet MLW, Construct a Sandfill (6,000 cy) and Rock Revetment Protected Dike for a Distance of 300 LF Landward from the End of the Jetty, with a Further 200 LF of Rock Revetment Placed on the Existing Slope | 10,183 Tons of Bedding Stone and 2,592 Tons of Armor Stone |
| June 1970 – Sept 1970 | Continued Rehabilitation of the North Jetty Including Rebuilding the Head of the Jetty                                                                                                                                                                                                                                                                                                                                                                   | 14,974 Tons Stone                                          |
| Aug 1970 – Oct 1970   | Maintenance Dredging of Shoals at the Outer End of the 9-Foot Inner Channel to a Required Depth of -15 Feet with Disposal on Shore to Form the Dikes on the USCG Property at the North End of Plum Island.                                                                                                                                                                                                                                               | 106,196 cy                                                 |
| Aug 1973 – Sept 1973  | Maintenance Dredging of the Inlet Entrance Channel between the Sea and the Outer Harbor by U.S. Hopper Dredge                                                                                                                                                                                                                                                                                                                                            | 93,650 cy                                                  |
| June 1977 – July 1977 | Maintenance Dredging of the Inlet Entrance Channel between the Jetties by the U.S. Hopper Dredge <i>Davison</i> with Open Water Disposal off Plum Island                                                                                                                                                                                                                                                                                                 | 54,000 cy                                                  |

|                       |                                                                                                                                   |            |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------|------------|
| June 1981 – July 1981 | Maintenance Dredging (Hopper) of the Inlet Entrance Channel to 15 Feet plus a 1-Foot Overdepth Allowance between the Jetties      | 102,633 cy |
| FY 1983               | Dredging of the Inlet Entrance Channel to –15 Feet MLW Plus a 1-Foot Overdepth Allowance                                          | 123,500 cy |
| July 1987 – Sept 1987 | Maintenance Dredging (Hopper) of the 15-foot Entrance Channel with Disposal off Plum Island Beach and a 1-Foot OD Allowance       | 156,265 cy |
| June 1990 – July 1990 | Maintenance Dredging by the U.S. Hopper Dredge <i>Currituck</i> of the Inlet Entrance Channel with Disposal off Plum Island Beach | 62,460 cy  |
| Aug 1991 – Sept 1991  | Maintenance Dredging (Hopper) of the Inlet Entrance Channel to 15 Feet with Disposal off Plum Island Beach with 2-Foot Overdepth  | 135,290 cy |
| April 1993 – May 1993 | Maintenance Dredging (Hopper) of the Inlet Entrance Channel to 15 Feet with Disposal off Plum Island Beach                        | 125,040 cy |
| September 1996        | Maintenance Dredging (Hopper) of the Entrance Channel to –15 Feet MLW with Disposal off Salisbury Beach                           | 125,386 cy |
| July 1999 – Aug 1999  | Maintenance Dredging (Hopper) of the Entrance Channel to –15 Feet MLW with Disposal off Plum Island Beach                         | 145,017 cy |

**NEWBURYPORT HARBOR  
NEWBURYPORT & SALISBURY, MASSACHUSETTS  
PRIOR CORPS STUDY SUMMARIES**

Below are summaries of prior studies, reports and plans for project modification and rehabilitation by the Corps of Engineers for Newburyport Harbor, including early studies prepared for the inlet under the title of Merrimack River. Prior to about 1900 some special reports and recommendations for project modifications were made to Congress in the Annual Reports of the Chief of Engineers and were not included in survey reports later printed in House and Senate Documents – those have been summarized here where pertinent.

Section 204 Initial Appraisal Report, Beneficial Use of Dredged Materials, January 2009

- Study Requested by the Town of Newbury
- Examined: Beneficial Use of about 160,000 Cubic Yards of Sand Material Dredged for Maintenance of the Entrance Channel to Newburyport Harbor by Direct Placement on Plum Island Beach in Newbury. The Federal Base Plan was Disposal by Hopper Dredge in Nearshore Bars off the Beach. Direct Placement would Require either a Pump-off Hopper or a Pipeline Dredge. Material would be Placed on a 2,500 LF Section of the Beach Northerly of State Groin #1 at the Terminus of the Plum Island Turnpike.
- Report Approved by NAD as Basis for Preparing a Feasibility Report, 27 January 2009

Dredging Operations Technical Support Memorandum, 8 June 2008

- DOTS Memorandum for Plum Island and Newburyport Harbor, prepared by ERDC (Nicholas Kraus, PhD). Memorandum Documented a Site Visit by ERDC Staff, Navigation Project History, Recent LIDAR Surveys, and Existing Erosion Conditions on Plum Island. Memorandum Recommended a Regional Sediment Management Study be Conducted including Consideration to Mining Sand from the Flood Tidal Shoal Inside the Merrimack River Inlet, Raising and Sand-Tightening of the Shoreward End of the South Jetty, and Distributing Material Placed in the Nearshore Disposal Site in a more Linear Manner along the Beach.

Environmental Assessment for Maintenance Dredging, 23 July 2008

Environmental Assessment, FONSI and 404(b)(1) Evaluation for Maintenance Dredging of about 150,000 cy from 12-Foot Entrance Channel by Hopper Dredge, with Disposal off either Plum Island Beach or Salisbury Beach, with the Site used to be Alternated between the Two Beaches under Future Maintenance Operations. Future Maintenance would be Required Every Three to Four Years with between 50,000 and 200,000 CY Removed. Work would be Limited to the Period of 1 July to 14 March

Waterways Experiment Station Technical Report #HL-79-1, February 1979

"Design for Wave Protection and Erosion Control"

Physical Model Study, Examined Construction of Groins within the River Mouth, Raising and or Extending the North Jetty with a Curve to the South at its End.

Plans & Specifications Extract for Maintenance Dredging, 15 May 1970

- Plans & Specifications for Hydraulic Maintenance Dredging of about 100,000 cy, from Shoal Areas in the Outer Reach of the 9-Foot Harbor Channel to a Depth of 15-Feet (No Overdepth Allowance Included). Material Removed below –10 Feet MLW had Not been Previously Dredged. Extract Includes: Notice to Bidders, Bid Abstract, Invitation, Unit Price List, Special and Technical Provisions. Includes Disposal and Grading of Material to Form a Sand Dike on

Government Property on Plum Island. Contract Awarded 16 June 1970 to North Atlantic Dredging Co., with Notice to Proceed 7 July 1970.

Plans & Specifications Extract for Construction of Shore Protection, 29 December 1969

- Plans & Specifications for Construction of Shore Protection Measures at the U.S. Coast Guard Station on Plum Island inshore of the South Jetty. Specifications call for Rehabilitation of the Outer End of the North Jetty at Newburyport Harbor. Work includes Extending the South Jetty about 150 LF Landward at a Top Elevation of +19 Feet MLW, Construct a Sandfill (6,000 cy) and Rock Revetment Protected Dike for a Distance of 300 LF Landward from the End of the Jetty, with a Further 200 LF of Rock Revetment Placed on the Existing Slope. The Jetty Extension and Revetment to Require a Total of 2,200 Tons Armor Stone, 4,700 Tons Cover Stone, 6,600 Tons Bedding Stone, and 1,000 cy Gravel. Extract Includes: Notice to Bidders, Bid Abstract, Invitation, Unit Price List, Special and Technical Provisions. Contract Awarded 17 February 1970 to Perini Corp., with Notice to Proceed 9 March 1970.

Plans & Specifications Extract for Rehabilitation of the North Jetty, 16 December 1969

- Plans & Specifications for Rehabilitation of the Outer End of the North Jetty at Newburyport Harbor. Work includes Placement of about 15,000 Tons of Armor Stone (8 to 12 Ton Stone) in the Outer 720 LF of the North Jetty. Extract Includes: Notice to Bidders, Bid Abstract, Invitation, Unit Price List, Special and Technical Provisions. Contract Awarded 16 March 1970 to Perini Corp., with Notice to Proceed 2 April 1970.

Special Erosion Control Study, South Shore of Merrimack River, June 1969

- Study of Serious Erosion Problem that began with Three Northeast Storms in February 1969 in the Vicinity of the US Coast Guard Station on Plum Island Landward of South Jetty along South Shore of Inlet, endangering the Station. The Jetty Rehab Project then Underway had Not been Completed at the Time of the Storms. Study found that the Shore Arm of the Old South Jetty Extended Landward Beneath the Station.
- Recommended: Stone Revetment Consisting of Extending the South Jetty Landward at a Top Elevation of +19 Feet MLW into the Backshore and Constructing a Sandfill Rock-Protected Embankment along 400 LF of River-Bank at the Station. Fill to have a 70-Foot Top Berm Width at +20 Feet MLW, Sloping 1:5 Riverward and Retained by a Rock Toe with a Top Elevation of +10 Feet MLW, with the Revetment Tied into the Jetty to Seaward, and Riverward Continuing 200 Feet Westward beyond the 400 LF Fill Area.
- Jetty Extension Section Quantity Not Quantified. Fill Section Requiring 17,100 Tons of Stone, 8,500 CY of Landfill and 1,300 CY of Gravel Fill. Rock Revetment Section Requiring 2,700 Tons of Stone and 160 CY of Gravel. Work Completed in 1970.

Plans & Specifications Extract for Jetty Repairs, 28 May 1968

- Extract of Specifications for Jetty Repairs to the a 2,750 LF Section of the North Jetty and a 1,025 LF Section of the South Jetty at the Mouth of the Merrimack River. Extract Includes: Notice to Bidders, Contract Acceptance Documents, Bid Abstract, Unit Price Schedule (for Placing 38,000 Tons of ½ to 12-Ton Cover Stone and 624 Tons of Core Stone), and Special and Technical Provisions. Work Includes Constructing a 350 LF Sand-Tight Stone Dike, using ½ to 1-Ton Stone, as Part of the North Jetty Reconstruction. Contract Awarded 28 June 1968 to Perini Corp., with Notice to Proceed 22 July 1968.

Design Memorandum (Major Rehabilitation of the North and South Jetties), 29 October 1965

Major Rehabilitation of the North and South Jetties

- Contains Detailed History of Jetty Construction and Modifications, and Channel Maintenance, Including a Table Listing Repairs made to Both Structures, from 1900 to 1964.
- Recommended: Restoration of Both Jetties to a Top Elevation of +12 Feet MLW and Top

Width of 15 Feet, by Placing One Layer of Armor Stone on the Seaward Slope and Crest of Each Structure, and Resetting Existing Stone, with Smaller Bedding Stone used to Achieve a Uniform Surface. Armor Stone would be 12 Ton, Plus or Minus 20%, and Smaller Stone Down to ¼-Ton, with 57% at or Greater than 12 Tons. The North Jetty was Estimated to Require 27,000 Tons of Stone, the South Jetty 8,000 Tons.

Extract of the Annual Report for 1964, New England Division Extract, Page 39

- Work using the Government Hopper Dredge *Hyde* for Maintenance Dredging of the Entrance Channel to a Depth of 16 Feet was Undertaken during May 1964, with 131,102 cy Removed this Fiscal Year.

House Doc. #703, 76th Congress, 3rd Session, 23 April 1940

(Called for by House Committee on Rivers & Harbors Resolution 12 February 1937)

Reexamination Report, 29 September 1939 (Favorable)

Recommended: An Entrance -15 Feet MLW by 400 Feet Wide through the Jetties, then -12 Feet MLW by 200 Feet Wide to Newburyport Wharves to a Widened Turning Basin 600 to 750 Feet Wide at -12 Feet MLW.

Division Engineer's Report, 10 April 1940, & the BERH Report, 26 March 1940, Recommended an Entrance -15 Feet MLW by 400 Feet Wide through the Jetties, then -12 Feet MLW as above. (Authorized by the River & Harbor Act of 2 March 1945)

Letter Report, 15 November 1939 (District) Plum Island Basin Dike Modification

The Remains of the 12-13 Wooden Guide Pilings Projecting up from the Stone & Timber Dike Tidal Current Barrier across the Mouth of Plum Island Basin were Declared a Hazard to Small Craft based there and were Removed in November 1939 at the Request of Local Interests, with the Stonework Left in Place.

Extract of the Annual Report for 1938, Boston District Extract, Page 56

- Work under Contract for making Repairs to the Two Jetties at the River's Mouth, in Progress at the Beginning of the Fiscal Year, Continued through December 1937, with 7,824 Tons of Stone Placed in the North Jetty (Restoring about 1,720 LF), and 4,684 Tons Placed in the South Jetty (Restoring about 1,000 LF).
- Work using the U.S. Hopper Dredge *Minquas* for Maintenance Dredging of the Entrance Channel, in Progress at the Beginning of the Fiscal Year, Continued through November 1937, Resumed in May 1938, and Continued through June 1938, with 322,092 cy Removed this Fiscal Year (a Total of 335,489 under the Contract). A subsequent Condition Survey Indicated a Controlling Depth of 15 Feet was Achieved.

Preliminary Examination, 29 April 1938 (District), 10 May 1938 (Division) (Favorable)

(Called for by House Committee on Rivers & Harbors Resolution, 17 February 1937)

Examined: Providing a Channel 500 Feet Wide from the Sea to Lunt's Rocks, then 300 Feet Wide Upstream to the Wharves at Newburyport, with a Maneuvering Basin along the Wharves 600 Feet Wide. Estimates Provided for Depths of -20 Feet MLW (2,800,000 cy Ordinary Material Plus 79,000 cy Ledge Rock), and -15 Feet MLW (1,360,000 cy Ordinary Material Plus 30,000 cy Ledge Rock). Also Examined a 1,000-Foot Seaward Extension of the North Jetty, Top Width 15 Feet, Top Elevation +12 Feet MLW, Slopes 1:1.5.

(BERH Approved Report, 9 June 1938)

Letter Report, 8 July 1937 (District), 15 July 1937 (Division)

(Chief's Report, 28 July 1937)

(Prepared in Response to a Congressional Request for Dredging Plum Island Basin)

Reported on the History and Condition of the Dike across the Plum Island Basin. The Dike was



Constructed in 1883 to Prevent Tidal Flows from Opening up a New River Outlet through the Basin. Dike was a Rubblestone Mound with Top Elevation of +5.5 Feet MLW, with a Timber Bulkhead along the Centerline of the Dike, with an Opening 30 Feet Wide made at the Request of Local Residents for Navigational Access. Restoration of the Dike Estimated to Require 1,000 Tons of Rubblestone and 400 Feet of Sheet Piling. No Action Taken.

House Doc. #649, 71st Congress, 3rd Session, 2 December 1930

(Called for by the River & Harbor Act of 21 January 1927 "308")

(Chief's Report - 1 December 1930, BERH Report - 27 May 1930)

Special Comprehensive Report, 27 July 1929 (Unfavorable)

Examined: Providing Navigation Improvements between Lowell and the Sea and also above Lowell to Manchester NH.

House Committee on Rivers & Harbors Doc. #5, 66th Congress, 2nd Session, 24 May 1920

(Called for by House Committee on Rivers & Harbors Resolution, 3 March 1919)

Special Report of the BERH, 4 May 1920 (Unfavorable)

Report on "Merrimack River, From Lowell to the Sea"

Reexamined: HD 1813, for -18 Feet MLW Channel from Black Rocks Beacon to Hunts Falls and below Black Rocks to the Entrance, Including a Lock and Dam at Lyons Mouth and a Lock at the Lawrence Dam. Also Examined an Entrance Channel Across the Bar -23 Feet MLW by 1,000 Feet Wide.

House Doc. #1813, 64th Congress, 2nd Session, 2 January 1917

(Reports Called for by River & Harbor Act of 25 July 1912) Merrimack River

Further Supplemental Report, 26 October 1916 (Favorable)

Recommends: Adding to the Proposed Project the Deepening of the Entrance Channel Across the Bar to -25 Feet MLW.

Supplemental Report, 22 October 1915 - Lowell to the Sea

Reconsidered the Below Project and Reported Unfavorably

- BERH & Chief of Engineers did Not Concur and Recommended the Project Provided that Non-Federals Contribute 50% of First Cost.

(Project Never Authorized or Constructed)

Survey Report, 10 November 1914 - Lowell to the Sea (Unfavorable)

Examined: Providing a Channel -18 Feet MLW by 200 Feet Wide from Black Rocks Beacon at Newburyport to Hunts Falls at Lowell, with a New Lock & Dam at the Lyon's Mouth, and a New Lock & Modifications of the Dam at Lawrence.

Preliminary Examination, 29 March 1913 - Lowell to the Sea

Examined: Providing Greater Depth from Newburyport to Ward Hill with Provision that the State Undertake a Survey of Improvements above Ward Hill to Lowell, with a View towards a Tidal Channel to Wards Hill with a Lock at Ward Hill & a Dam above at Mitchells Falls.

(Report Called for by the River & Harbor Act of 4 March 1915) (Unfavorable)

Preliminary Examination, 25 March 1915 - Lowell to Manchester

(BERH Report, 23 May 1916)

Examined: Extension of the Proposed -18-Foot Channel Extending about 35 Miles Upriver from Hunts Falls at Lowell to Manchester, NH.

House Doc. #339, 59th Congress, 2d Session, 3 January 1907

(Called for by the River & Harbor Act of 3 March 1905)

(Chief's Report, 29 December 1906, BERH Report, 12 December 1906)

Survey Report, 5 December 1906 (Favorable)

- Recommended: Removal of the Gangway Rocks and Adjacent Shoals to Form a Channel -12

Feet MLW by 225 Feet Wide in the Approach to Newburyport Wharves and Removal of the Middle Ground Shoals above the River Mouth to -12 Feet MLW (Total 49,098 cy Ordinary and 1,845 cy Rock, Estimated).

- Also Considered but did Not Recommend: Removing Badger Rocks at Salisbury Point in Inlet. Preliminary Examination, 22 November 1905 (Favorable)

Examined but did Not Recommend: Provision of a Channel -12 Feet MLW by 150 Feet Wide Upriver to the Railroad Bridge at Haverhill. Suggested that a Lock & Dam Would be Necessary to Accomplish a Deeper Channel up to Haverhill.

Also Examined and Recommended: Removal of Rocks and Shoal Obstructions in the River Channel Below Newburyport to the Sea, Including the Removal of Gangway Rocks.

House Doc. #168, 54th Congress, 1st Session, 22 January 1896

(Called for by the River & Harbor Act of 17 August 1894) (Chief's Report, 18 January 1896)

Survey Report, 15 January 1896 (Unfavorable) (With Map)

Considered: Providing a Channel -12 Feet MLW Extending about 20.5 Miles Upriver from the Sea to Haverhill, 200 Feet Wide up to the Wharves at Newburyport and then 150 Feet Wide above to Haverhill. (Total Estimate - 1,305,998 cy Ordinary Material and 34,125 cy Rock).

Extract of the Annual Report for 1884, Appendix B-1, Page 493 & Appendix B-2, Page 500

Newburyport Harbor (with Map):

- The Dike across Plum Island Basin was Completed in December 1883, and Repaired in March 1884, Leaving a Small Opening in the Center.
- Work under Contract for Continuing the Shore Extension of the South Jetty, in Progress at the Beginning of the Fiscal Year, was Completed in December 1883 (Total Length of Jetty now 1,077 LF). No Work on the North Jetty was Undertaken this Fiscal Year.
- Special Reports, 13 November 1883 & 28 March 1884 (Basin Dike)
  - Examined: Plum Island Basin Dike. Work under Contract on the Basin Dike began in May 1883, but Closing the Dike Center Resulted in Breaching by Tidal Forces. Recommended Leaving the Central Opening Unclosed, and Placing Stone at the Toes of the Sand Dike Surrounding the Wood Sheet Pile Wall. The Contract was Completed in December 1883. Damage to the Center of the Dike during the Winter of 1883-1884 was Repaired with Sandfill, but Placement of 200 Tons of Additional Rubblestone was Recommended to make the Repairs Permanent.
- Special Report, 6 May 1884 (South Jetty)
  - Recommended: Placing a Double Row Timber Pile & Plank Sand-Catch, Filled with Seaweed and Wire, Landward of the South Jetty to Prevent Aeolian Erosion and Subsequent Flanking of the Jetty. Sand Catch to be Picket & Wire Mesh Crib Filled with Seaweed.
- Work using Hired Labor for Construction of the Seaweed Filled Open Wood Frame Sand-Catch was Constructed in the Spring of 1884. The Completed Sand Catch was 468 Feet Long with an Aggregate Total of 426 LF of Lateral Spurs.

Extract of the Annual Report for 1883, Appendix B-1, Page 433 & Appendix B-2, Page 439

Newburyport Harbor (with Map):

Letter Report: Proposed Jetty Design Modifications, 8 March 1883

- South Jetty Plan Relocation Necessitated by Shoreline Changes. Modification of South Jetty Plan to Include about 500 LF of Wood Sheet Piling Core and 7,000 Tons of Stone in the Landward Extension of the Structure up the Beach.  
(Approved by the Chief of Engineers, 26 March 1883)

Extract of the Annual Report for 1882, Page xi, Appendix A-16, Page 509 & App. A-17, Page 510

Newburyport Harbor (Appendix A-16 & A-17): Recommendations for Further Work:

- Recommended that Construction of the South Jetty Commence Next Year.

- Recommended the Closure of the Mouth of Plum Island Basin with a Dike of Sheet Pile and Rubblestone to Prevent the Opening of a New River Mouth through the Basin.
- Recommended the Removal of "The Boilers" Rocks to -5 Feet MLW (350 cy Estimated) and the North (Gangway) Rocks to -9 Feet MLW (150 cy Estimated).

Extract of the Annual Report for 1881, Appendix A-16, Page 501 & Appendix A-17, Page 511

Newburyport Harbor: (with Map)

Survey Report, 16 September 1880 (Favorable)

(Called for by River & Harbor Appropriation Act of 14 June 1880)

(Chief's Report, 26 October 1880, BEF&RHI Report, 4 October 1880)

Recommended: Building 2 Converging Stone Rubblemound Jetties at the River Mouth. Jetties to Converge until 1,000 Feet Apart. Both the North (Salisbury) Jetty (4,118 LF) and South (Plum Island) Jetty (2,445 LF) to have a Top Elevation of +12 Feet MLW, Top Width of 15 Feet and Slopes of 1:2 Exterior & Head and 1:1 Interior Face, with the South Jetty Extended Westerly Along the Shore of the Inlet to Prevent Flanking and with Shore Protection Measures through the Inlet. (Total Estimate 241,500 Tons, about 170,000 to the North Jetty and 80,000 to the South Jetty) Also Suggested that in the Future it May be Found Necessary to Extend the 2 Jetties Seaward in Parallel Fashion.

- North Jetty Constructed from 1881-1914, South Jetty Constructed from 1883-1905 Except the Outer 30 LF.
- Also Examined but did Not Recommend an Alternative Plan for Building Parallel Jetties 1,000 Feet Apart through the Inlet and Seaward for a Total Distance of about 3,000 LF.
- BEF&RHI Report made Further Recommendation as to the Possible Need for Easterly Jetty Extensions & Recommended that Construction of the North Jetty be Commenced First.

Annual Report Recommended Additional Improvements:

- The Removal of North Rocks to -9 Feet MLW (150 cy Estimated), the Removal of the Boilers Ledge to -5 Feet MLW (350 cy Estimated), Removal of South Gangway Rock to -9 Feet MLW (120 cy Estimated began in June 1881), Removal of South Badger Ledge to -10 Feet MLW (50 cy Estimated), Removal of North Rock Spur to -9 Feet MLW (13 cy Estimated).

Senate Ex. Doc. #25, 42nd Congress, 3rd Session, 14 January 1873

(Called for by the River & Harbor Act of 10 June 1872)

Reports on Machias River ME, Camden Harbor ME, Salem Harbor MA & Merrimack River MA

(Chief's Report, 11 January 1873)

Examination & Survey Report, 14 December 1872 (Favorable)

Recommended Improvements as Follows:

Newburyport Harbor:

- Recommended Completing the Removal of North Gangway Rock (700 cy Estimated).
- Recommended Removal of "The Boilers" Rocks Near the City Wharves.

Merrimack River above Newburyport:

- The Removal of Gangway Rock Located between Carr's Island and the Newburyport Shore to Elevation -20 Feet MHW (14 cy Estimated).
- Removal of 2 Rocks above the Deer Island Bridge (108 cy Estimated).
- Removal of Rocks at Rock's Bridge, Petty Rock (50 cy Estimated) and Little Annies Rock (2 cy Estimated) and Little Currier Rock (2 cy Estimated) at the Foot of Currier Shoals.
- The Dredging of Currier Shoals to Form a Channel -12 Feet MLW by 150 Feet Wide (6,500 cy Estimated).
- Construction of a 350-Foot-Long Dike at Little Head between the Mainland & Silby's Island.

Extract of the Annual Report for 1870, Page 78 and Appendix V-1, Page 467

- The Act of 11 July 1870 Authorized the Removal of Obstructions from the River at Newburyport, between Newburyport and Haverhill, and above Haverhill to Lawrence, as Recommended in the Survey Reports of 4 May 1869 and 19 August 1869.
- No Work was Undertaken this Fiscal Year, aside from Award of Contracts for Removing Obstructions in Newburyport Harbor and at the Lower Falls.
- Supplemental Report, 15 January 1870 - Newburyport Harbor & Merrimack River (Requested by the Chief of Engineers, 13 January 1870)  
Reported on the Commerce of the Harbor and Merrimack River and the Anticipated Benefits to Improving the Same.

Extract of the Annual Report for 1869, Page 60 and Appendix S & S-3, Page 421 & 437

- No Work was Undertaken this Fiscal Year, aside from Preparation of Estimates for Removal of Obstructions for the River between Newburyport and Haverhill (Removal of Gangway Rock, a Wreck at the River's Mouth, and the Boilers Rocks near the Wharves at Newburyport), and at the Rapids above Haverhill to Lawrence (Removal of Upper & Lower Falls).
- Survey Report, 4 May 1869 - Newburyport Harbor  
(Called for by the Chief of Engineers)  
Recommended: (1) Removal of Gangway Rock (45 cy, Estimated), and (2) Removal of the Wreck of a Coal Schooner near the Black Rocks Sunk in 1867.

Extract of the Act of 4 June 1842, 27th Congress, 2d Session (6 Stat. 829)

- 6 Stat. 829 – 27th Congress, Act of 4 June 1842, Chapter 35 – Extracted from House Doc. #1491, 62<sup>nd</sup> Congress, 3<sup>rd</sup> Session, 1940 – Laws of the United States Relating to the Improvement of Rivers and Harbors for 11 August 1790 to 29 June 1938 – Volume 1, Page 96
- Authorizes and Appropriates Funds (\$8,000) to the Plum Island Bridge and Turnpike Company of Newburyport, Massachusetts, for the Destruction of a Bridge Occasioned by the Construction of the Breakwater at Newburyport Harbor, Massachusetts.

Extract of the Annual Report of the Chief of Engineers, 23 November 1833

- Extracted from Doc. #551, 23rd Congress, 1st Session, Report of the Secretary of War, 29 November 1833, from American State Papers Collection, Series V, Military Affairs, Vol. 5, 1832-1836, Page 169 (184).
- Part II – Internal Improvements (Page 186) – Reports that some Addition was made to the Breakwater (Jetty) at the River's Mouth during the Year. Also Recommends Construction of a Stone Pier between Badgers Rocks and Salisbury Head.

Extract of the Annual Report of the Chief of Engineers, 13 November 1832

- Extracted from Doc. #532, 22nd Congress, 2nd Session, Report of the Secretary of War, 25 November 1832, from American State Papers Collection, Series V, Military Affairs, Vol. 5, 1832-1836, Page 18 (42).
- Part II – Internal Improvements (Page 46) – Reports that the “Pier” at the Mouth of the River (the Joppa Flats Dike) had Succeeded in Deepening and Widening the Channel Opposite Black Rock and Eliminated Shoals inside the River Mouth. But also States that no Effect on the Bar at the Entrance had been Observed.

Extract of the Annual Report of the Chief of Engineers, 18 November 1829

- Extracted from Doc. #410, 21st Congress, 1st Session, Report of the Secretary of War, 30 November 1829, from American State Papers Collection, Series V, Military Affairs, Vol. 4, 1828-1832, Page 150.
- Part II – Civil Constructions (Page 167) – Reports that Construction of Works at the Mouth of the Merrimack River for Improving Newburyport Harbor began this Past Spring. States that the Work is Considered “Experimental” and has Not at First been Completely Successful. A Portion of the Mole across the Lateral Channel was Carried Away and Repairs have been Undertaken.

House Doc. #140, 19th Congress, 2d Session, 9 February 1827

Reports on Edgartown, Hyannis and Newburyport Harbors

(Called for by House Resolution, 4 January 1827)

(Chief's Report, 7 February 1827)

Newburyport Harbor: Surveyed the Mouth of the River and the Harbor up to the Newburyport Waterfront. Examined Removal of the Bar at the Rivers Mouth. Proposed Building a Stone Filled Timber Crib Training Dike, with a Width of 12 Feet, Extending Westerly from Plum Island, Upriver 1,680 LF to Woodbridge Island and then from Woodbridge Island 5,280 LF Upriver Across the Joppa Flats, with the Goal of Constraining the River Flow to Increase Velocities in the Inlet to Effect Removal of the Hump Shoals.

**PLUM ISLAND BEACH  
NEWBURYPORT & NEWBURY, MASSACHUSETTS  
PRIOR CORPS STUDY SUMMARIES**

Feasibility Report, December 1976 (Unfavorable)

- Study Called for by Senate Committee on Public Works Resolution of 29 March 1976 to Review House Doc. #243. Study Area included the Island Foreshore and South Riverbank in the City of Newburyport and Town of Newbury.
- Examined Providing Measures to Protect the Island's Foreshore from the Northern Boundary of the Parker River NWR Northerly to the South Jetty. Six Plans were Developed all of which also Included Stone Revetment of the Merrimack River Shore in the Inlet from the South Jetty West Upriver to the USCG Boathouse. The Foreshore Components of the Six Plans were:
  - (1) A Trapezoidal Offshore Stone Breakwater located about 1500 Feet Offshore Parallel to the Beach along the Entire Northern Area. Top Elevation +18 Feet MLW. Top Width 12 Feet. Both Slopes 2:1. Average Depth of Bottom -12 Feet MLW. 1,600,000 Tons Stone Total.
  - (2) A Stone Revetment along the Dune-Front. Top Elevation +16 Feet MLW. Top Width 9 Feet. Slopes 1.5:1. 4-Foot Armor Stone Toe. 142,000 Tons Stone Total.
  - (3) A Trapezoidal Shore-Parallel Nearshore Stone Mound/Berm built on the Lower Beach with Base at Average +3-Foot MLW Elevation located about 300 Feet Seaward of the Dune Face. Top Elevation +16 Feet MLW. Top Width 12 Feet. Slopes 2:1 Seaward and 1.5:1 Shoreward. Seaward Face and Crest Armored. Level Sandfill behind Stone Mound back to Beach at Elevation +15 Feet MLW. 253,000 Tons Stone and 100,000 CY Sand.
  - (4) Sandfill in Front of the Dune Face. 15-Foot MLW Berm Elevation with 100-Foot Top Width. Slope 15:1 Down to Existing Grade. 500,000 CY Sand.
  - (5) A Series of 11 Armor-Stone Groins Placed on 800-Foot Intervals along the Beach. Shoreward Elevation +16 Feet MLW for 100 Feet out from Dune Face, then Sloping Seaward at 15:1 to +10-Foot MLW Elevation, then Seaward Section out to -2-Foot MLW Elevation. 92,500 Tons Stone Total.
  - (6) A Combination of the Plan 4 Sandfill and Plan 5 Groins.
- Merrimack River Shore Revetment to Consist of a Trapezoidal Stone Dike with Riverward Toe with Top Elevation of +10 Feet MLW, and Top Width of 5 Feet, Slopes of 1.5:1. A Sand Dike topped with Gravel would be Placed behind the Stone Dike at a Slope of 1:3 up the Slope to +20 Feet MLW with a 100-Foot Top Width. The Sand Dike would be Stone Armored on its Face. 83,600 Tons Stone and 150,000 CY Sand Total.
- No Plan was found Economically Justified and No Improvement was Recommended.

Plans and Specifications Extract for Shore Protection Improvements, 19 January 1973

- Extract of Plans and Specifications for Shore Protection Improvements at Plum Island Beach. Improvements Consist of Placing about 35,000 to 40,000 cy of Sandfill on the Beach to the North of the State Groin. A Borrow Area was Provided from the Former Alignment of the Entrance Channel to Newburyport Harbor North of the End of Plum Island. Extract includes: Notice to Bidders, Bid Abstract, Invitation, Unit Price Schedule, and Special & Technical Provisions. Low Bidder was Hydro-Dredge Corporation. Work Completed April 1973.

Detailed Project Report for Section 103 Beach Erosion Control Project, January 1973

- Detailed Project Report for Section 103 Beach Erosion Control Project (with Plans and Sections in 5 Sheets). Study Focused on the Section of Beach Immediately North of the State Groin at the End of the Plum Island Turnpike.
- Recommended: Dune Restoration and Embankment Reinforcing (4,000 CY) with a Protective Beach (31,000 CY) along an 800 LF Reach of Beach Northerly from the Turnpike Groin. Beach Berm to be 75 Feet Wide at +15 Feet MLW with Seaward Slope of 1:10. Dune Top Elevation of +24 Feet MLW with Seaward Slope of 1:5 and the Same Landward Slope where Required. Total Protective Width of 210 Feet in Front of the Backshore. Annual Nourishment of 3,000 CY.

Special Erosion Control Study, South Shore of Merrimack River, June 1969

- Study of Serious Erosion Problem that began with Three Northeast Storms in February 1969 in the Vicinity of the US Coast Guard Station on Plum Island Landward of South Jetty along South Shore of Inlet, endangering the Station. The Jetty Rehab Project then Underway had Not been Completed at the Time of the Storms. Study found that the Shore Arm of the Old South Jetty Extended Landward Beneath the Station.
- Recommended: Stone Revetment Consisting of Extending the South Jetty Landward at a Top Elevation of +19 Feet MLW into the Backshore and Constructing a Sandfill Rock-Protected Embankment along 400 LF of River-Bank at the Station. Fill to have a 70-Foot Top Berm Width at +20 Feet MLW, Sloping 1:5 Riverward and Retained by a Rock Toe with a Top Elevation of +10 Feet MLW, with the Revetment Tied into the Jetty to Seaward, and Riverward Continuing 200 Feet Westward beyond the 400 LF Fill Area.
- Jetty Extension Section Quantity Not Quantified. Fill Section Requiring 17,100 Tons of Stone, 8,500 CY of Landfill and 1,300 CY of Gravel Fill. Rock Revetment Section Requiring 2,700 Tons of Stone and 160 CY of Gravel. Work Completed in 1970.

Reconnaissance Study for Section 103 Small Beach Erosion Control Project, 19 October 1967

- Study Requested under Authority of Section 103 of the River and Harbor Act of 1962 Jointly by the City of Newburyport and Town of Newbury 12 July 1966.
- Reconnaissance Study for Section 103 Small Beach Erosion Control Project (with Plans in 2 Sheets and 24 Photos). Examined 2 Plans; Beachfill and Beachfill in Combination with Groins and Extension of the Existing State Groins. Beachfill would Require 420,000 CY of Sand and Raising the Inner End of the South Jetty by 4 Feet (2,500 Tons Stone). Beach Berm would be 150 Feet Wide at an Elevation of +15 Feet MLW at the Dune Face and +12 Feet at the Seaward Crest, with Slope of 1:12.5 above MLW and 1:20 below MLW. Groins would Require 25,000 Tons of Stone (6-Ton Armor).
- Determined that the Necessary Improvements would Cost more than the \$1 Million Project Limit under Section 103 Authority. Local Officials were Advised to Seek Specific Congressional Authorization to Complete Comprehensive Study Efforts.
- Endorsed by OCE, 5 January 1968.

House Doc. #243, 83rd Congress, 2d Session, 25 August 1953

- Chief of Engineer's Report, 23 January 1953. BEB Report, 18 November 1952.
- Beach Erosion Control Report, 29 August 1952 (Unfavorable – See Below)
  - Study Requested by the Massachusetts Department of Public Works, 8 May 1952, under Section 2 of the River and Harbor Act of 1930, in Response to Erosion and Damage from Three Storms in 1950.

Beach Erosion Control Report, 29 August 1952

- Study Requested by the Massachusetts Department of Public Works, 8 May 1952, under Section 2 of the River and Harbor Act of 1930, in Response to Erosion and Damage from Three Storms in 1950.
- Found that the Most Severe Erosion was Occurring along the Beach Opposite the Plum Island Basin Resulting in Loss of Beach and Cottages and Potential Breaching of the Island at the Basin. However Determined that Federal Participation was Not Warranted Due to the Private Ownership of the Beach and Properties at Risk.
- Recommended: That Local Interests Implement Improvements Consisting of (1) Direct Sandfill Placement to Widen the Beach in Front of the Dunes in the Problem Area and (2) Raising the Top Elevation of the South Jetty at the Merrimack River to about +16 Feet MLW (2,500 Tons Stone Estimated) to Bar the Northern Drifting of Sand off the Beach over the Jetty. The Report Identified Shoals in the River Inlet as a Source of the Sandfill Material. The Fill Area would Extend from the End of the Plum Island Turnpike Northerly to a Point about 3,000 Feet South of the South Jetty. The Beachfill should Provide a Berm with of 100 to 150 Feet at an Elevation of +12 Feet MLW, with a Seaward Slope of 1:12.5 Down to MLW with Sufficient Material to Allow the Shore to Adjust to a Slope of 1:20 below MLW. Total Sandfill Quantity Estimated at 285,000 CY. Renourishment Requirements Estimated at about 180,000 CY every Five Years.

**SALISBURY BEACH  
SALISBURY, MASSACHUSETTS  
PRIOR CORPS STUDY SUMMARIES**

House Doc. #2517, 87th Congress, 2d Session, 13 August 1962

- Chief of Engineer's Report, 19 June 1962. BER Report, 5 December 1961.
- Secretary of the Army Transmittal, 9 August 1962
- Beach Erosion Control Report, 15 September 1961 (Unfavorable – See Below)
  - Study Requested by the Massachusetts Department of Public Works, 28 October 1958, under Section 2 of the River and Harbor Act of 1930.  
Concluded: That Repairing and Raising the Inshore End of the North Jetty would be an Effective Way of Retaining Sand on the Beach. That Construction of Seawalls or Groins was Not Warranted to Due to the Infrequency of Damages.

Beach Erosion Control Report, 15 September 1961 (Unfavorable)

- Study Requested by the Massachusetts Department of Public Works, 28 October 1958, under Section 2 of the River and Harbor Act of 1930.  
Concluded: That Repairing and Raising the Inshore End of the North Jetty would be an Effective Way of Retaining Sand on the Beach. That Construction of Seawalls or Groins was Not Warranted to Due to the Infrequency of Damages.





**NEWBURYPORT HARBOR  
PLUM ISLAND AND SALISBURY BEACHES  
§204 PROJECT FOR THE BENEFICIAL USE  
OF DREDGED MATERIAL  
DETAILED PROJECT REPORT**

**APPENDIX C  
SITE PHOTOGRAPHS**





**Plum Island, Center Island – 30 April 2008 (NAN)**



**Jeannie's Restaurant - Plum Island, Center Island – 30 April 2008 (NAN)**





**Plum Island, Center Island – 30 April 2008 (NAN)**



**Plum Island, Center Island – 30 April 2008 (NAN)**





**Plum Island, Center Island – 30 April 2008 (NAN)**



**Plum Island, Center Island – 30 April 2008 (NAN)**





**Plum Island North from Groin #1 – 16 April 2009 – After Town Planting (Vine Assoc.)**



**Plum Island North from Groin #1 – 27 April 2009 – After Storm (Vine Assoc.)**



**2 Photos – Plum Island North from Second Groin South of Groin #1 – 10 August 2001  
Though Dunes Damaged by Storm, Beach Still Uniform and Wide**







**NEWBURYPORT HARBOR  
PLUM ISLAND AND SALISBURY BEACHES  
§204 PROJECT FOR BENEFICIAL USE  
OF DREDGED MATERIAL**

**DETAILED PROJECT REPORT**

**APPENDIX D  
REAL ESTATE  
PLANNING REPORT**

NEW ENGLAND DISTRICT  
U.S. ARMY CORPS OF ENGINEERS  
696 VIRGINIA ROAD  
CONCORD, MASSACHUSETTS 01742-2751

PREPARED BY:  
R. JEFFREY TELLER  
LEAD APPRAISER  
May 19, 2009

EDITED AND APPROVED BY:  
JOSEPH M. REDLINGER  
CHIEF, REAL ESTATE DIVISION



**PROJECT PURPOSE:** The New England District completed a detailed project report in accordance with Section 204 (33 USC Sec. 2326), as amended, of the continuing authorities program (CAP), pertaining to the beneficial use of dredged material from a navigation project. In this case, maintenance dredging is planned for the existing Federal entrance channel to Newburyport Harbor, with the dredge material being placed on Plum Island Beach and Salisbury Beach. The local sponsor will be the Massachusetts Department of Conservation and Recreation (DCR). However the towns of Newbury and Salisbury will be required to pay a percentage of the overall project costs which will be detailed in a separate memorandum of understanding between the towns and DCR.

The purpose of the study was to determine whether there is an economic benefit concerning the project alternatives of *on shore* versus *near shore sand* placement from the referenced maintenance dredging project. The direct placement of sand on the beach would reportedly benefit both Plum Island Beach and Salisbury Beach, located in Newbury and Salisbury, Massachusetts, respectively. Historically, Plum Island Beach and Salisbury Beach have sustained coastal storm damage and experienced acute erosion rates along the beach area exposed to the Atlantic Ocean.

This detailed project report concludes that there is Federal interest in implementing a Section 204 beneficial use project in order to address the near-term needs of Plum Island Beach in the Town of Newbury, and Salisbury Beach, Salisbury MA. Long term solutions are also being recommended for study under other Federal authorities.

**PROJECT AREA DESCRIPTION:** The no action alternative (Section 204) is to continue with the required maintenance/operation of the Federal channel using near shore placement of dredged material versus the discussed direct beach placement. However, the without project scenario is not considered an acceptable alternative by the District based upon the potential catastrophic loss of real property, impact to public infrastructure, and potential impact to local emergency operations in the near term (5 years). The following beneficial use alternatives were referenced within the Section 204 project study:

**Alternative A:** Direct beach placement on Plum Island Beach using either a pump-off capable hopper dredge or a hydraulic pipeline dredge. The 160,000 cubic yards of material dredged from the maintenance of Newburyport Harbor channel would be used to construct a 60 to 80 foot wide, 2,500 foot long beach fill project on Plum Island in the Town of Newbury.

**Alternative B:** Direct placement of material dredged from maintenance of Newburyport Harbor channel on both Plum Island Beach and Salisbury Beach using either a pump-off capable hopper dredge or a hydraulic pipeline dredge. Approximately 120,000 cubic yards of material dredged from the maintenance of Newburyport Harbor channel would be used to construct a 60 to 80 foot wide, 2,500 foot long beach fill project on Plum Island in the Town of Newbury. The remaining 40,000 cubic yards of dredge material would be used to construct a 60 to 80 foot wide, 1,200 to 1,400 foot long beachfill project on Salisbury Beach to widen and increase the elevation of the existing berm.

Depending upon the actual amount of material dredged, any additional dredge material would be used to buttress seaward the existing dune face at both beaches

**RECOMMENDED PLAN:** A recommended construction plan has been chosen to maximize the beneficial use of dredge materials. The **recommended plan** for the Section 204 project is for direct sand placement of 120,000 cubic yards on Plum Island Beach in Newbury, and 40,000 cubic yards on Salisbury Beach (Dredging by either pump-off capable hopper or pipeline dredge). The construction specifications will be written based on project parameters. Dredge material will be placed on the beach areas seaward of the dune face and extending out to mean low water, based on variable determined distance. In regards to Plum Island segment, placement will be over the section of beach extending north of State Groin #1 at the Plum Island Turnpike terminus, to the vicinity of State groin #2, a reported distance of 2,500 feet. At Salisbury Beach, beachfill material would be placed over a 1,200 to 1,400 foot long area extending from about Murray Street (Beach Access #2) to about Fowler Street (Beach Access #3). The Salisbury fill area would be adjusted immediately prior to construction based on field conditions at the time and may add or eliminate one or two lots from the plan. Project construction is estimated for a period not to exceed six to twelve months.

**OWNERSHIPS:** In regards to the Plum Island project segment, there are approximately twenty six structures which would receive an economic benefit from the proposed project Easements would be acquired over approximately 32 properties.

**OWNERSHIPS:** In regards to the Salisbury Beach project segment, there are approximately fourteen structures which would receive an economic benefit from the proposed project. Easements would be acquired over approximately 24 properties.

**REAL ESTATE MAPPING:** The real property requirements of the project are referenced on the attached Exhibits "A", "B", "C", and "D", and include temporary non-exclusive road easements, temporary pipeline easements, temporary construction easements, and perpetual beach storm damage reduction easements. There may be changes in the location of the various easements to accommodate any changes in the final plans.

The following is a list of the various easements the sponsor needs to acquire on Exhibits "A", an aerial photograph of the entire project; "B", an aerial photograph of the Salisbury beach area; "C", an aerial photograph of the Plum Island beach area; and "D", an aerial photograph of the Salisbury Beach area:

1. A Perpetual Beach Storm Damage Reduction Easement  
Exhibit "B" - the areas colored Green  
Exhibit "C" – the numbered lots located in the blue striped area.
2. A Temporary Work Area Easement  
Exhibit "A" – The yellow striped area located at the entrance to the Merrimack River in Salisbury  
Exhibit "C" - The yellow stripe area located south of Lots 1 & 2 and the blue striped area on the beach and outside of the lots  
Exhibit "D" The blue striped area on Salisbury beach

3. A Temporary Non-Exclusive Access Road Easement  
Exhibit "B" – the blue areas marked Access #2, & #3  
"C" – The yellow area north of Lot 32 Exhibit
4. A Temporary Pipeline Easement  
Exhibit "A" – The public beach area crossed by the pipeline route marked in blue

RECOMMENDED ESTATES: The Massachusetts DCR Department of Conservation and Recreation has agreed to act as the non-Federal sponsor for this project and will execute the Project Partnership Agreement (PPA) agreement with USACE. The local sponsor will be required to obtain and certify acquisition of all real property interests (easements) required for the construction operation and maintenance of the project. The real property requirements were carefully developed and analyzed by the Real Estate Division; originally through completion of the Initial Appraisal Report, and further refined through the detailed project report. The real property easements were based upon the estates found in ER 405-1-12 and will include a Perpetual Beach Storm Damage Reduction Easement, a Temporary Work Area Easement, a Temporary Non-Exclusive Access Road Easement and a Temporary Pipeline Easement. There are currently no non standard estates required for this project. The local sponsor will provide all of the temporary and permanent easements needed for the project. The local towns may be involved in the acquisition of these easements and may be included in the deed as a additional grantee or may acquire the easements from the landowners and convey the appropriate interests to the sponsor. Copies of the easements are attached.

DESCRIPTION OF NON-FEDERAL SPONSOR'S EXISTING OWNERSHIP: The Massachusetts Department of Conservation and Recreation is the local project sponsor, and reportedly owns Salisbury Beach which is a component of this project.

BASELINE COST ESTIMATE: There are no fee acquisitions required for this project. Temporary road, pipeline and construction easements and permanent beach storm damage reduction easements are required for the construction, operation and maintenance of the project. The economic component of the project determined that during a projected ten year analysis approximately twenty six structures (Plum Island) will experience storm damages; the total depreciated replacement value was estimated to be \$7.1 million. Implementation costs for the Federal Base Plan (near shore disposal) are estimated at about \$2.5 million. The estimated implementation costs of the maintenance dredging and on-shore placement alternative ranged from \$4.1 to \$4.9M and includes the additional costs associated with on shore placement, which range from \$1.6 to \$2.4M. The net result is a positive cost to benefit ratio in regards to the economic analysis for both Plans A and B.

As previously referenced, the without project scenario identifies potential catastrophic loss of real property improvements and infrastructure. The construction of this project would generally be construed as beneficial to individual property owners. A review of ER 1165-2-130, Water Resources Policies and Authorities, Federal Participation In Shore Protection, Paragraph 9 d(1) states. "...the value of LER eligible for credit toward the non-Federal share of shore protection costs is that which is not subject to loss through erosion in the without project condition. LER needed for placement of shore protection project costs is that which is not subject to loss through erosion in the without project condition. LER needed for

placement of shore protection project features that prevent the loss of the land itself has no value for crediting purposes." However, the ER also states that the local real estate market **may not** recognize the value of the project in relationship to the required permanent easement requirements-public access and perpetual maintenance agreement (loss of real property rights). In addition, State policy requires that private shorefront property owners receiving State-funded sand on their beaches to protect their homes execute easements for construction, public access and beach management without cost to the State, as a condition of receiving the beachfill. The State will require the property owners to donate these interests.

In order to be compliant with 42 USC CHAPTER 61, The Uniform Relocation Assistance And Real Property Acquisition Policies For Federal And Federally Assisted Programs and the regulations relating to this statute, 49 CFR Part 24, Uniform Relocation Assistance and Real Property Acquisition for Federal and Federally-Assisted Programs, the Real Estate Division recommends that the local sponsor be required to obtain waiver's of just compensation from property owners, in regards to the acquisition of the required permanent easements. The value associated with the temporary construction and staging areas are determined nominal, as result of the benefit of beach replenishment. In addition, the temporary easements located on properties not receiving any of the dredged material are all located on state or town owned property. If all of the easements are acquired through donation, there will be no LERD credit to the local sponsor for the actual easements. The sponsor would be entitled to credit for the time and money spent acquiring the donated easements. These costs would include surveys, map preparation, deed preparation, negotiations, etc.

**EXISTING FEDERAL PROJECTS:** There are no existing Federal projects that will impact the real property component of this project. In regards to navigation, the Corps has responsibility for the entrance channel to Newburyport Harbor. A Section 103 erosion control project was completed for a portion of Plum Island in 1976.

**EXISTING FEDERAL OWNERSHIPS:** There are no Federal lands required for this project.

**NAVIGATION SERVITUDE:** Navigational servitude applies to this project in regards to the real property located below the mean high water mark.

**INDUCED FLOODING:** Induced flooding will not occur as a result of the proposed project.

**PUBLIC LAW 91-646 RELOCATIONS:** No relocations required in accordance with Public Law 91-646.

**MINERAL/TIMBER ACTIVITIES:** There are no mineral or timber harvesting activities in the vicinity of the project that may affect the operation thereof.

**ASSESSMENT OF NON-FEDERAL SPONSOR'S REAL ESTATE ACQUISITION CAPABILITIES:** A meeting was held between USACE and Raul Silva, the PM for the local sponsor (Massachusetts Department of Conservation and Recreation), in regards to capabilities of acquiring the real property requirements, i.e. temporary and permanent easements. The MA DCR has sponsored many Corps projects in the past including the

Westport River and Harbor Section 107 navigation improvement project. The MA DCR has met its Sponsorship responsibilities in all cases.

ZONING CHANGES: There are no zoning changes proposed in lieu of, or to facilitate, real estate acquisitions for the project.

FACILITIES AND UTILITIES RELOCATIONS: The project will not require utility and/or facility relocations.

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE: The real estate cost estimate was developed based on an "as clean" condition in reference all properties required for construction and staging efforts for both projects.

LANDOWNER SENTIMENT: Landowners and the local sponsors are in favor of the project, due to the existing beachfront erosion problems, and in anticipation of the benefits of the beachfront improvement project.

ACQUISITION SCHEDULE: A projected schedule has been developed based on the assumption that both federal and non-federal funds will be available.

|                                                 |                            |
|-------------------------------------------------|----------------------------|
| Survey Completion                               | July 2009                  |
| Project Approval by Division                    | September 2009             |
| Completion of Detailed Plans and Specifications | October 2009               |
| Execution of Project Partnership Agreement      | October 2009               |
| Real Estate Agreements Executed                 | September 2009             |
| Bid and Award                                   | October 2009/November 2009 |
| Initiate Construction                           | December 2009              |
| Completion of Construction                      | May 2010                   |

## ATTACHMENTS

Easements to be used for the project

Exhibits "A", "B", "C" & "D" which show the location of the various easements

A copy of the ASSESSMENT OF NON-FEDERAL SPONSOR'S REAL ESTATE ACQUISITION CAPABILITY



## **PERPETUAL BEACH STORM DAMAGE REDUCTION EASEMENT**

A perpetual and assignable easement and right-of-way in, on, over and across (the land described in Schedule A) (Tract No. \_\_) for use by the Massachusetts Department of Conservation and Recreation, hereinafter referred to as "DCR", its invitees, representatives, agents, contractors, and assigns, to construct, preserve, patrol, operate, maintain, repair, rehabilitate, and replace a public beach and dune system and other erosion control and storm damage reduction measures together with appurtenances thereto, including the right to deposit sand; to accomplish any alterations of contours on said land; to construct berms and dunes; to nourish and renourish periodically; to move, store and remove equipment and supplies; to erect and remove temporary structures; and to perform any other work necessary and incident to the construction, periodic renourishment and maintenance of the Newburyport Harbor and Plum Island and Salisbury Beaches Maintenance Dredging and Section 204 Beneficial Use Beach Nourishment Project, Newburyport, Newbury and Salisbury, Massachusetts, together with the right of public use and access; to plant vegetation on said dunes and berms; to erect, maintain and remove silt screens and sand fences; to facilitate preservation of dunes and vegetation through the limitation of access to dune areas; to trim, cut, fell, and remove from said land all trees, underbrush, debris, obstructions, and any other vegetation, structures and obstacles within the limits of the easement (except \_\_\_\_\_); reserving, however, to the grantor(s), (his) (her) (its) (their) (heirs), successors and assigns, the right to construct dune overwalk structures in accordance with any applicable Federal, State or local laws or regulations, provided that such structures shall not violate the integrity of the dune in shape, dimension or function, and that prior approval of the plans and specifications for such structures is obtained from the designated representative of the "DCR", and provided further that such structures are subordinate to the construction, operation, maintenance, repair, rehabilitation and replacement of the project; and further reserving to the grantor(s), (his) (her) (its) (their) (heirs), successors and assigns all such rights and privileges as may be used and enjoyed without interfering with or abridging the rights and easements hereby acquired; subject however to existing easements for public roads and highways, public utilities, railroads and pipelines.

## **TEMPORARY WORK AREA EASEMENT**

A temporary easement and right-of-way in, on, over and across the area marked “ \_\_\_\_\_ ” on the attached drawing entitled “ \_\_\_\_\_ ”, for a period not to exceed one year from the date of this deed, for use by the Grantee, its invitees, representatives, agents, and contractors as a staging area, including the right to move, store and remove equipment and supplies, and erect and remove temporary structures on the land and to perform any other work necessary and incident to the construction of the Newburyport Harbor and Plum Island and Salisbury Beaches Maintenance Dredging and Section 204 Beneficial Use Beach Nourishment Project, Newburyport, Newbury and Salisbury, Massachusetts, together with the right to trim, cut, fell and remove therefrom all trees, underbrush, obstructions, and any other vegetation, structures, or obstacles within the limits of the right-of-way; reserving, however, to the landowners, their heirs and assigns, all such rights and privileges as may be used without interfering with or abridging the rights and easement hereby acquired; subject,

however, to existing easements for public roads and highways, public utilities, railroads and pipelines.

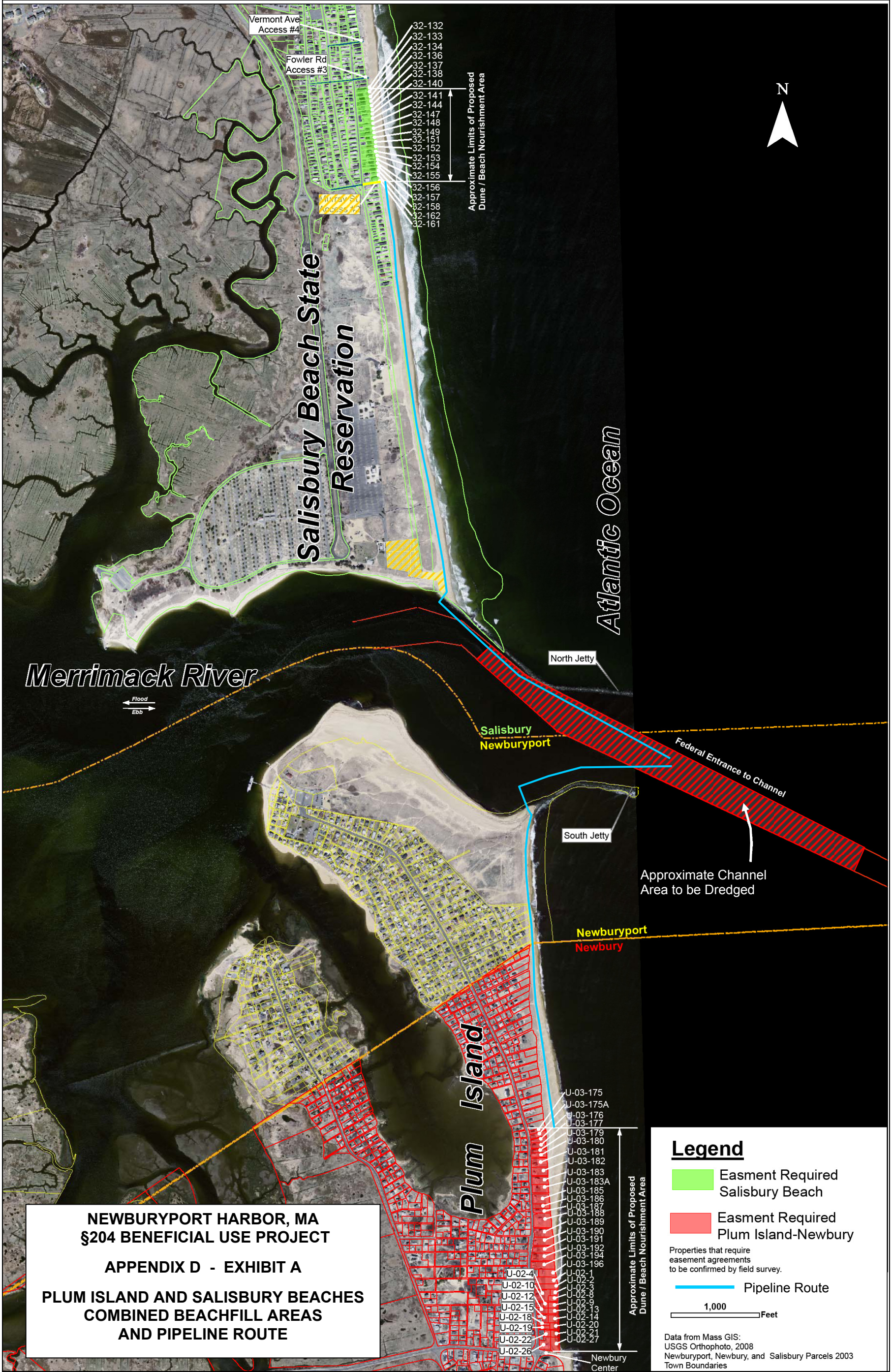
**TEMPORARY NON-EXCLUSIVE ACCESS ROAD EASEMENT**

A temporary easement and right-of-way in, on, over and across the area marked “\_\_\_\_\_” on the drawing entitled “\_\_\_\_\_”, for a period not to exceed one year from the date of this deed, for use by the Grantee, its invitees, representatives, agents, and contractors as a non-exclusive access road for the Newburyport Harbor and Plum Island and Salisbury Beaches Maintenance Dredging and Section 204 Beneficial Use Beach Nourishment Project, Newburyport, Newbury and Salisbury, Massachusetts, reserving, however, to the landowners, their heirs and assigns, all such rights and privileges as may be used without interfering with or abridging the rights and easement hereby acquired; subject, however, to existing easements for public roads and highways, public utilities, railroads and pipelines.

**TEMPORARY PIPELINE EASEMENT**

A temporary easement and right-of-way in, on, over and across the areas marked “\_\_\_\_\_” on the attached drawing entitled “\_\_\_\_\_”, which areas are located above the mean high water mark, for a period not to exceed one year from the date of this deed, for use by the Grantee, its invitees, representatives, agents, and contractors for the installation, operation, maintenance and removal of an above ground pipeline for transporting dredge material, including the right to move, store and remove equipment and supplies, and erect and remove temporary structures on the land and to perform any other work necessary and incident to the construction of the Newburyport Harbor and Plum Island and Salisbury Beaches Maintenance Dredging and Section 204 Beneficial Use Beach Nourishment Project, Newburyport, Newbury and Salisbury, Massachusetts, together with the right to trim, cut, fell and remove therefrom all trees, underbrush, obstructions, and any other vegetation, structures, or obstacles within the limits of the right-of-way; reserving, however, to the landowners, their heirs and assigns, all such rights and privileges as may be used without interfering with or abridging the rights and easement hereby acquired; subject, however, to existing easements for public roads and highways, public utilities, railroads and pipelines.







# Salisbury Beach Reservation Proposed Dune/Beach Nourishment



**NEWBURYPORT HARBOR, MA  
§204 BENEFICIAL USE PROJECT**



**APPENDIX D - EXHIBIT B  
SALISBURY BEACH**



Somewhere under the beach here is State Groin #2



32  
31  
30  
29  
28  
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6  
5  
4  
3  
2  
1

-  Beachfill Zone
-  Construction Staging and Access

South End of Beachfill at State Groin #1

250  
Feet

**NEWBURYPORT HARBOR §204 PROJECT**  
**APPENDIX D - EXHIBIT C**  
**PLUM ISLAND BEACH AT NEWBURY**  
**RECOMMENDED BENEFICIAL USE PLAN**

Mass GIS: USGS Orthophoto, 2008  
Newbury & Newburyport Assessor's Parcels, 2003





Project Name: \_ Newburyport Harbor and Plum Island and Salisbury Beaches Maintenance Dredging and Section 204 Beneficial Use Beach Nourishment Project, Newburyport, Newbury and Salisbury, Massachusetts

Project Location: Newburyport, Newbury and Salisbury, Massachusetts

Project Sponsor: Massachusetts Department of Conservation and Recreation

ASSESSMENT OF NON-FEDERAL SPONSOR'S  
REAL ESTATE ACQUISITION CAPABILITY

I. Legal Authority: -

Name and title of sponsor's representative providing answers to this section.

Mr. Raul Silva, Deputy Chief Engineer

- a. Does the sponsor have legal authority to acquire and hold title to real property for project purposes? **YES**  
(yes/no) If yes, list the basis for the legal authority:     N/A
- b. Does the sponsor have the power of eminent domain for this project? **YES**  
(yes/no) If yes, list the basis for the legal authority:     N/A
- c. Does the sponsor have "quick-take" authority for this project? (yes/no)
- d. Are any of the lands/interests in land required for the project located outside the sponsor's political boundary? (yes/no) **NO**
- e. Are any of the lands/interests in land required for the project owned by an entity whose property the sponsor cannot condemn? (yes/no) **NO**

II. Human Resource Requirements:

Name and title of sponsor's representative providing answers to this section.

Mr. Raul Silva, Deputy Chief Engineer

- a. Will the sponsor's in-house staff require training to become familiar with the real estate requirements of Federal projects including P.L. 91-646, as amended? (yes/no) **NO**
- b. If the answer to II. a. is "yes," has a reasonable plan been developed to provide such training? (yes/no)
- c. Does the sponsor's in-house staff have sufficient real estate acquisition experience to meet its responsibilities for the project? (yes/no) **YES**
- d. Is the sponsor's projected in-house staffing level sufficient considering its other work load, if any, and the project schedule? (yes/no) **YES**
- e. Can the sponsor obtain contractor support, if required in a timely fashion? (yes/no) **YES**
- f. Will the sponsor likely request USACE assistance in acquiring real estate? (yes/no) (If "yes," provide description) **NO**

Project Name: \_ Newburyport Harbor and Plum Island and Salisbury Beaches Maintenance Dredging and Section 204 Beneficial Use Beach Nourishment Project, Newburyport, Newbury and Salisbury, Massachusetts

Project Location: Newburyport, Newbury and Salisbury, Massachusetts

Project Sponsor: Massachusetts Department of Conservation and Recreation

III. Other Project Variables:

Name and title of sponsor's representative providing answers to this section.

Mr. Raul Silva, Deputy Chief Engineer

- a. Will the sponsor's staff be located within reasonable proximity to the project site? (yes/no) **YES**
- b. Has the sponsor approved the project/real estate schedule/milestones? (yes/no) **YES**

IV. Overall Assessment:

- a. Has the sponsor performed satisfactorily on other USACE projects? (yes/no/not applicable) **YES**
- b. With regard to this project, the sponsor is anticipated to be: highly capable/fully capable/moderately capable/marginally capable/insufficiently capable. **HIGHLY CAPABLE/FULLY CAPABLE**  
(If sponsor is believed to be "insufficiently capable," provide explanation)

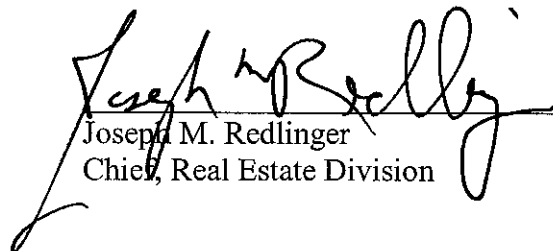
V. Coordination:

- a. Has this assessment been coordinated with the sponsor? (yes/no) **YES**
- b. Does the sponsor concur with this assessment? (yes/no) (If "no," provide explanation)

VI. NOTES:

The sponsor is planning on acquiring all property interests through donation.

Prepared by:

 (date) June 4, 2009  
Joseph M. Redlinger  
Chief, Real Estate Division





**NEWBURYPORT HARBOR  
PLUM ISLAND AND SALISBURY BEACHES  
§204 BENEFICIAL USE OF DREDGED MATERIAL STUDY  
DETAILED PROJECT REPORT**



**APPENDIX E  
COASTAL ENGINEERING REPORT**



**U.S. Army Corps of Engineers  
New England District - Water Management Section**



## 1.0 Introduction

A 2,500 foot long section of Plum Island has experienced localized, acute, erosion rates along the beach face exposed to the Atlantic Ocean. To help address this issue an Initial Appraisal phase of a Section 204 (beneficial reuse of dredged material) was undertaken for this area. The study will be evaluating the feasibility of placing the dredged sand directly on the beach located on Plum Island. Additionally, a 2,000 foot long section of beach in Salisbury, MA was studied at the Initial Appraisal level for beneficial reuse of dredged material. The Water Management Section was tasked with developing the without project condition for the beaches, developing the conceptual beach fill design that would utilize the dredged sand, and developing the with project future condition for the beach. These three tasks were completed at an Initial Appraisal level so only basic analysis was done. This must be recognized during the review of this report and the use of any resulting products. The analysis for each task will be discussed further in the following sections. Dr. Nicholas Kraus and Dr. William Curtis from the USACE Engineering Research and Development Center performed reviews of the Plum Island Project area also.

## 2.0 Project Study Area

The project is located in Newburyport, MA on the northern third of Plum Island and in Salisbury, MA (Figure 1). The New England District of the U.S. Army Corps of Engineers (USACE) was requested to investigate the acute/localized erosion on Plum Island (southern site) in the specific area shown in Figure 2 and an erosion area between two dune restoration projects in Salisbury (northern site) shown in Figure 3. The project length on Plum Island is approximately 2,500 feet long and the project length as Salisbury is 1,200 feet long.



Figure 1. Project location



Figure 2. Plum Island study area



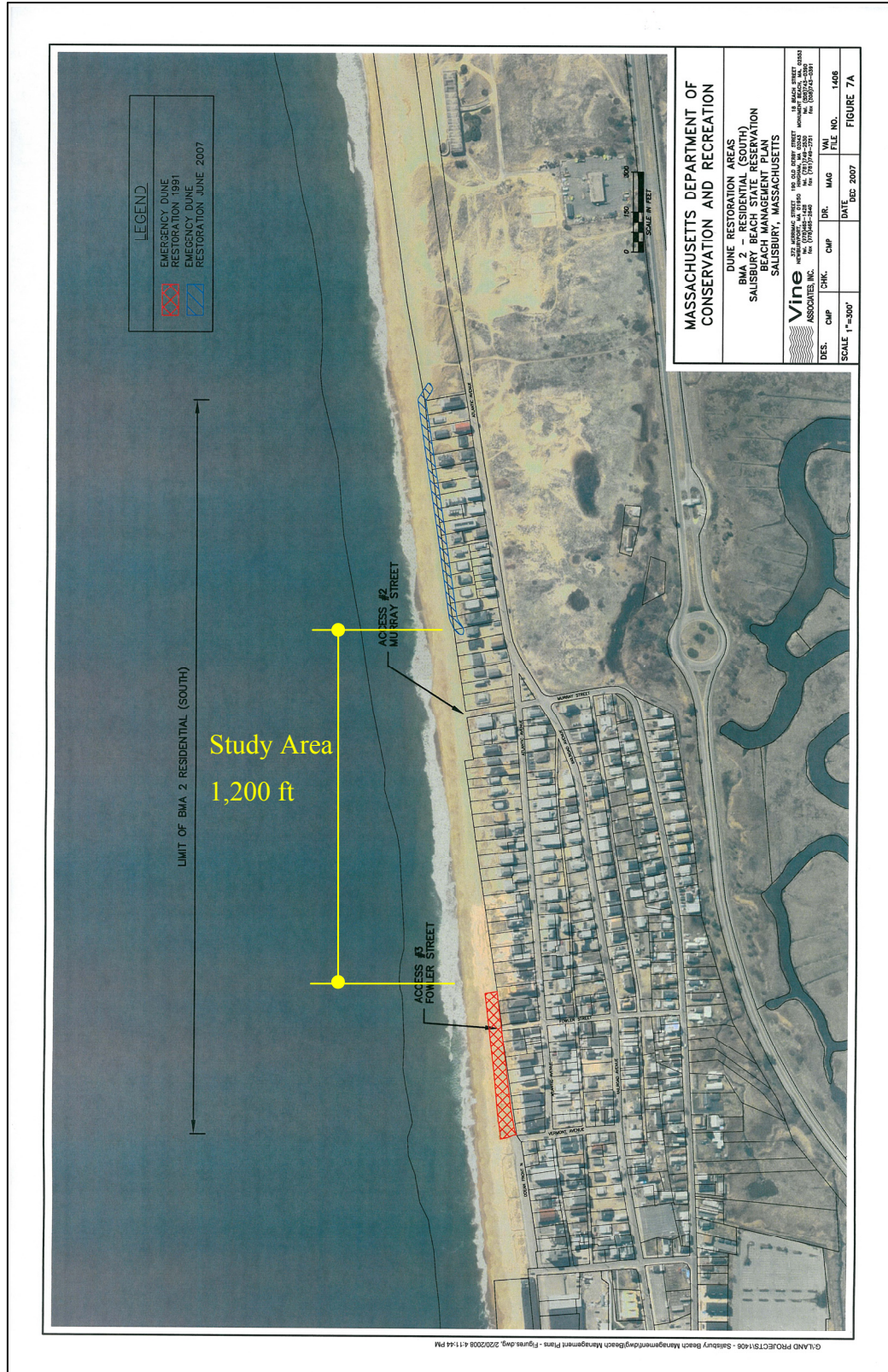


Figure 3. Salisbury Beach study area

### **3.0 Without Project Beach Condition**

In order for the benefits of a future project to be determined the without project condition of the beach and the impacts to structures and infrastructure needed to be determined. A very simplistic, non process based investigation was conducted for this Initial Appraisal level study. Historic shoreline erosion rates were used to project the future condition of the beach. Two sets of data were used to determine the shoreline erosion rate. The first was the shoreline mapping/erosion rate maps made available through the MA CZM office. The shoreline mapping along with the erosion rates for the most recent period provided (1978 to 1994) are shown in Figure 4 for the Plum Island study area. As shown, the erosion rates range between accretion to 0.37 m/yr (1.2 feet/year). This is certainly not significant and it was obvious that this was not representative of the more recent acute erosion problem being investigated.

With the erosion problem being more recent it was decided to look at the movement of the shoreline over a more recent time period. Fortunately the beach was surveyed in 2000 by NOAA using topographic LIDAR which produced a very detailed and accurate map of the dry beach and dunes and the beach was flow again by the USACE in the summer of 2007 using both topographic an bathymetric LIDAR. Shown in Figure 5 is the survey from 2007 showing the point field for Plum Island and shown in Figure 6 is the digital terrain model or TIN surface generated from the point data. A similar terrain model was created for the 2000 NOAA LIDAR data. Similar maps were also generated for the Salisbury Beach study area but were not included in this report. To measure the beach movement between the two surveys, the 5 m contour was plotted for each survey, which was very nearly the edge of the dune line, and the horizontal difference was measured between the two. To measure the recession rate, the shoreline movement package for ArcGIS that was developed by the United States Geological Service (USGS) was used. The package allows the distance between the two defined shorelines along a user defined baseline. The two shorelines, beach transects, and accompanying beach erosion rates between 2000 and 2007 are shown in Figure 7 (Plum Island) and Figure 8 (Salisbury Beach). As shown the recession rate is very high for Plum Island with rates ranging from 5.7 ft/yr to 21.4 ft/yr. The rates were averaged in the study area which resulted in an average beach erosion rate of 13.3 ft/yr. For Salisbury Beach the erosion rates ranged from 0.72 ft/yr to 3.94 ft/yr with an average rate of 2.25 ft/yr between 2000 and 2007.





Figure 4. MA CZM historic shoreline maps



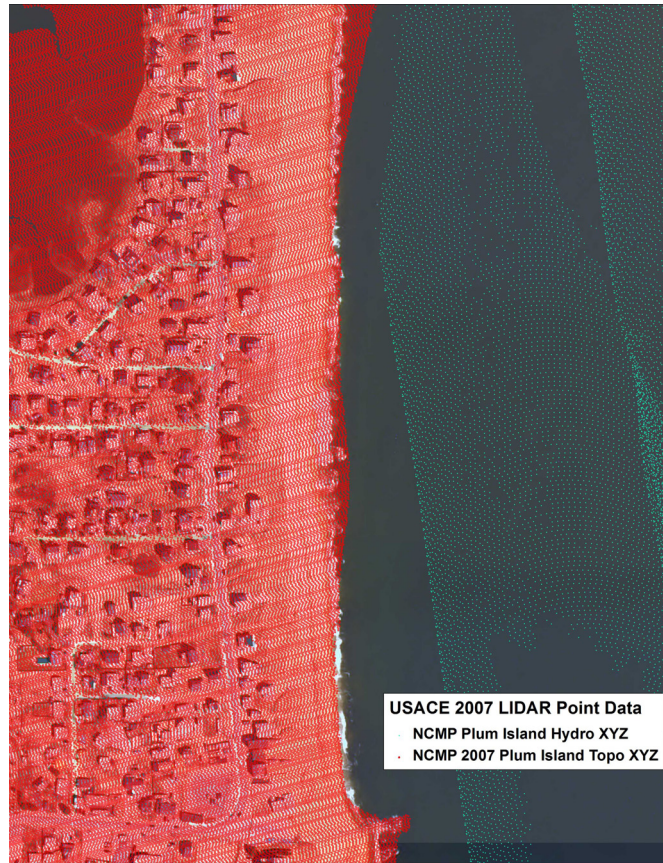


Figure 5. USACE NCMP LIDAR survey from 2007 survey (topo and hydro data)

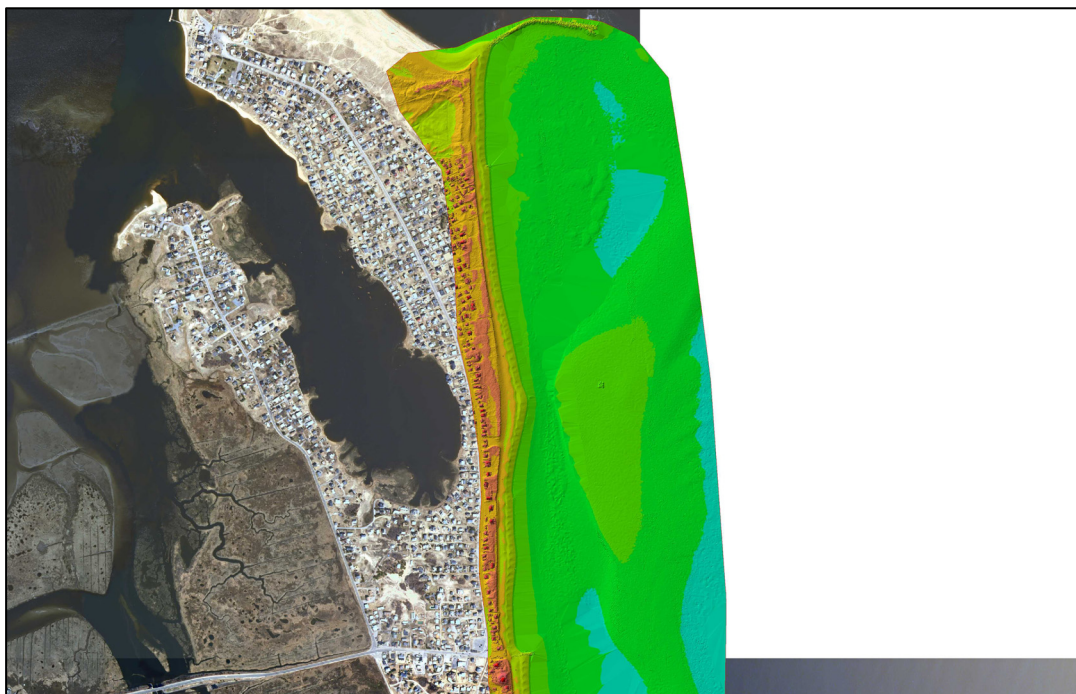


Figure 6. Digital terrain model (TIN) created from USACE 2007 LIDAR survey



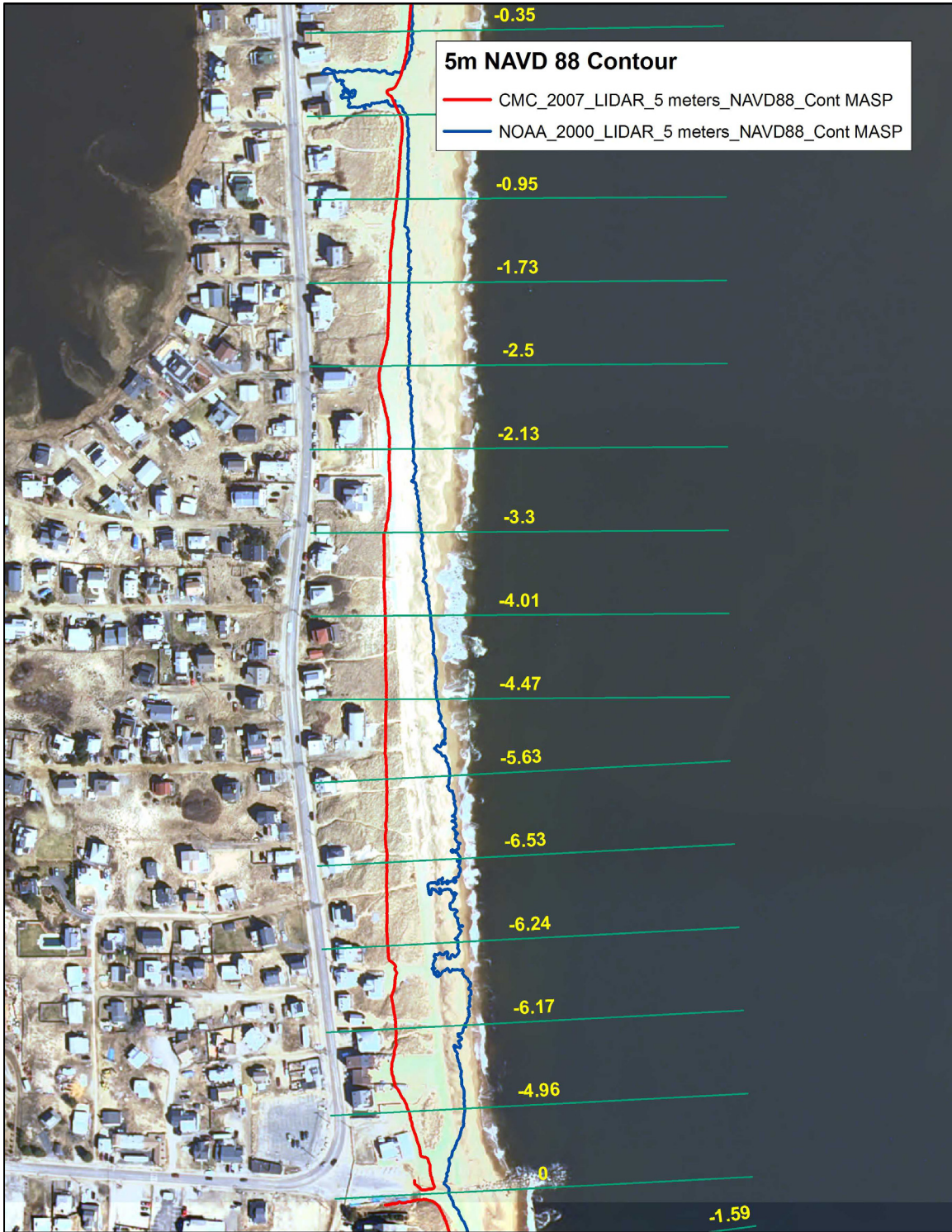


Figure 7. Plum Island LIDAR derived shorelines for 2000 and 2007 and erosion rates (ft/yr)



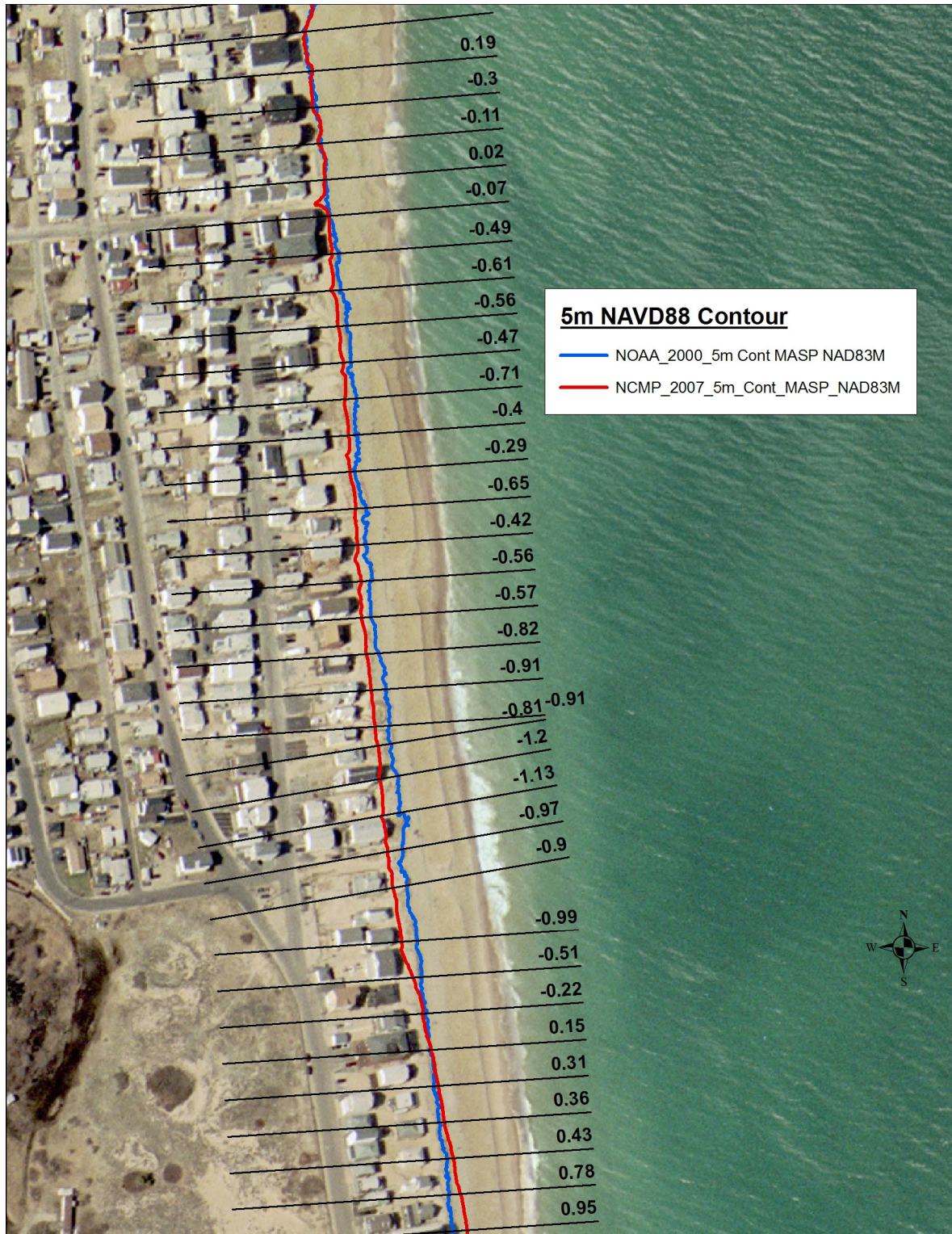


Figure 8. Salisbury LIDAR derived shorelines for 2000 and 2007 and erosion rates (ft/yr)

With the recent annual beach erosion rates determined, future, without project shorelines were projected for Plum Island and Salisbury. The 2007 shoreline mapped from the USACE LIDAR data was used as a baseline and then moved landward at the rate of 13 feet per year for Plum Island and 2.25 feet per year for Salisbury Beach. As shown in Figures 9 and 10, the years from 2008 to 2019 were plotted. For Plum Island it can be seen that starting in 2010, houses will be impacted and after 2014 the roadway will be impacted. Looking at Figure 10, it can be seen that several houses will be impacted by 2011 on Salisbury Beach, but no roads will be impacted in the analysis period.

It must be understood though that these projected shorelines were developed using very rudimentary methods and the further out in time the projection is the more uncertainty there is for the prediction. Intuitively looking at the shorelines in Figure 9, it is unlikely this would happen since the beach to the north and south would erode causing beach sand to redistribute and possibly slow erosion in this study area. At the south end, the groin would be outflanked which would allow sand to move into the area from the south. The evident offshore bar configuration shown in Figure 6 may change which could have dramatic effects on the beach. Also, the Plum Island beaches are known to experience short term acute erosion areas that are “self” healing. A similar episode of erosion to the south of the present study area occurred in 2002. The erosion persisted for a couple of years and then halted, with the beach returning. This does not mean that this will happen in the current study area, but highlights the uncertainty associated with the basic analysis performed for this Initial Appraisal.



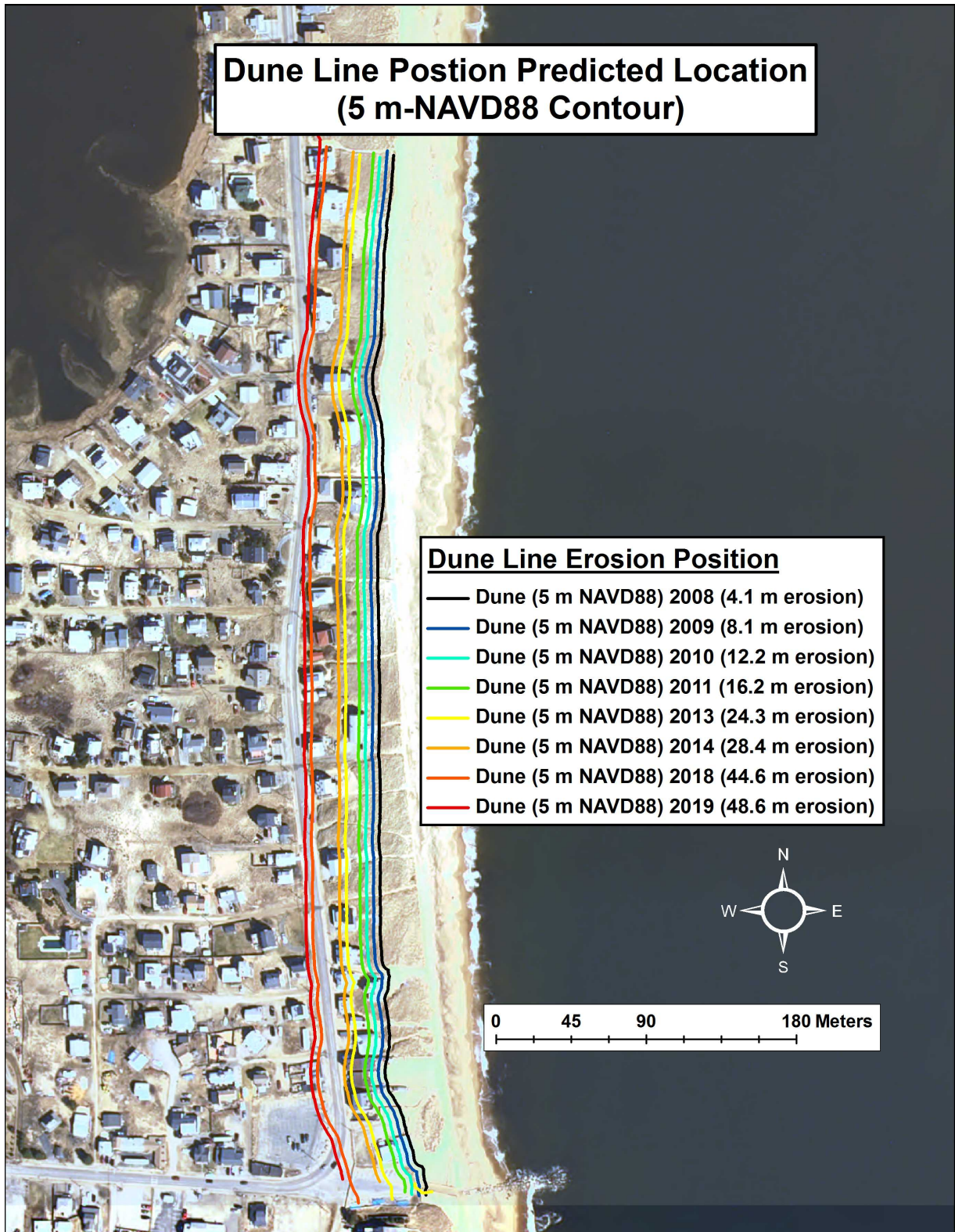


Figure 9. Plum Island without project predicted shoreline position



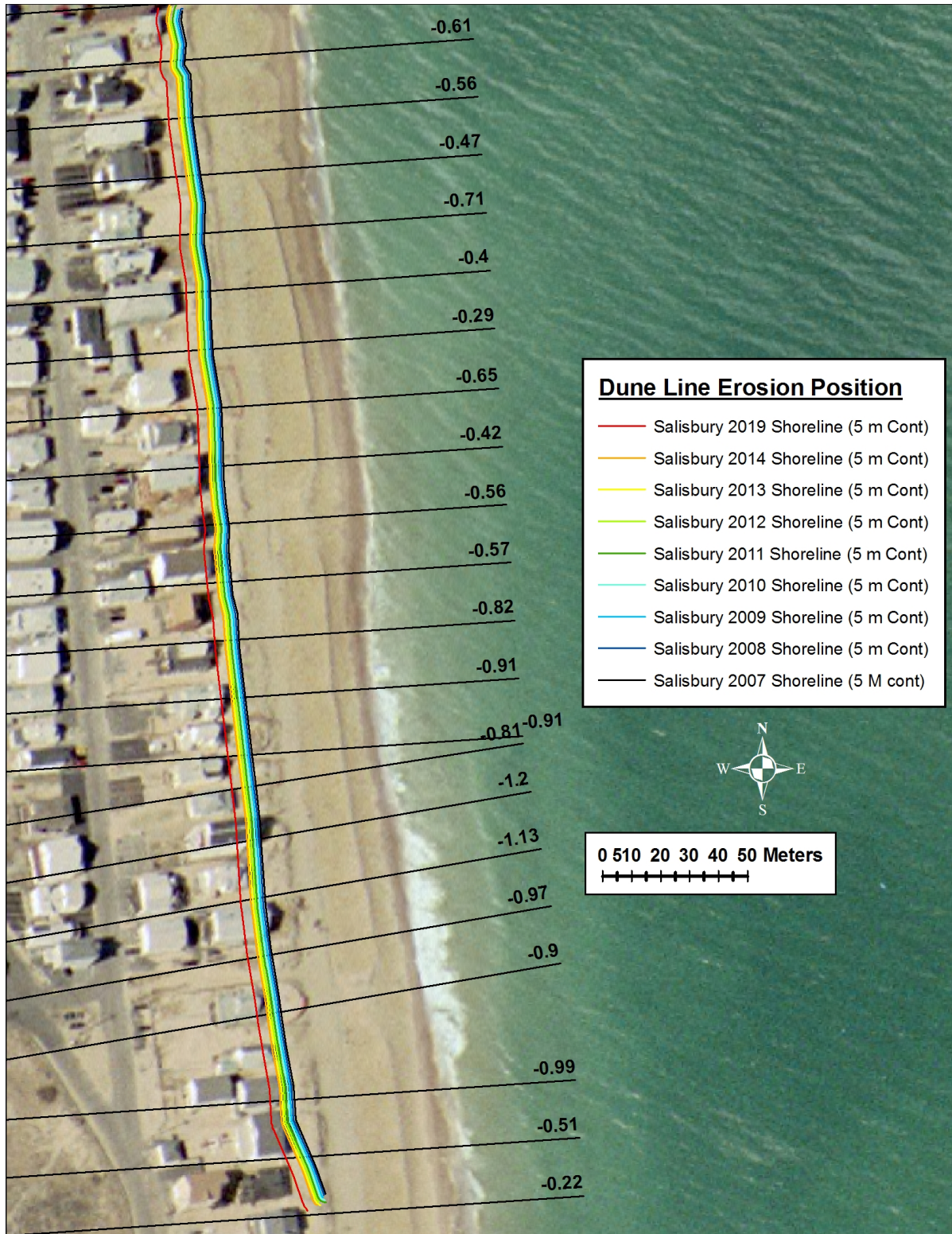


Figure 10. Salisbury without project predicted shoreline position

#### **4.0 With Project Condition**

In order to determine the benefits of placing the dredged material from the Merrimack River channel on the beach within the study areas a similar analysis was performed for the with project (beach fill) conditions as for the without project conditions.

The first step was determining the beach fill cross sectional design of the fill project. Once again the USACE LIDAR data was used to cut cross sections of the beach at various locations along the study area. Figures 11 and 12 show the transect locations used for the beach fill design and Figures 13 through 18 show the resulting profiles. These profiles were used to design the beach fill project. For the beach fill designs it was assumed (based upon provided information) that the available dredge volume would be approximately 160,000 cubic yards with 120,000 cubic yards going to Plum Island and 40,000 cubic yards going to Salisbury Beach. Using these volumes the beach fill widths were determined along the 2,500 foot study area on Plum Island and the 1,200 foot study area of Salisbury Beach. The USACE software package RMAP was used to design the two fill areas. It was assumed the material was completely compatible to the existing material. This allowed the beach fill design to be simplified in that the existing profile could simply be translated by the width of the beach fill. Through a few iterations it was determined that a beach berm width of approximately 50 feet would result if the 120,000 cubic yards were placed in the Plum Island study area once the beach fill equilibrated from the constructed beach fill slope. For Salisbury Beach it was determined that a beach berm width of approximately 10 feet would result if the 40,000 cubic yards were placed and after the beach fill equilibrated from the constructed beach slope. The Plum Island beach fill berm width will vary somewhat over the project area due to natural variations in the existing beach face and the tapered fill at the northern end caused by the tie in of the beach fill to the natural salient formation. The beach fill profiles for the two study areas are shown in Figures 13 through 18.



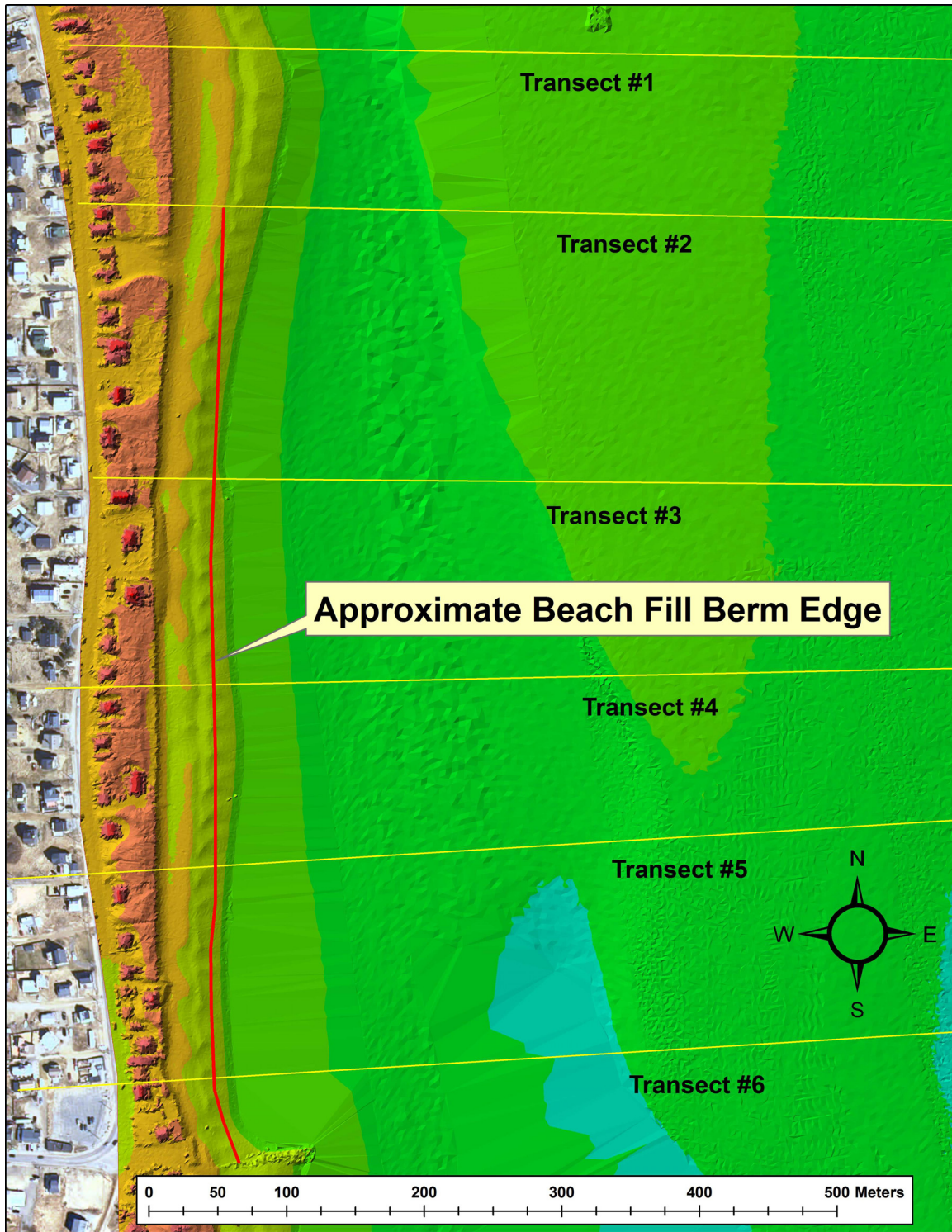


Figure 11. Plum Island beach profiles and approximate beach fill berm edge



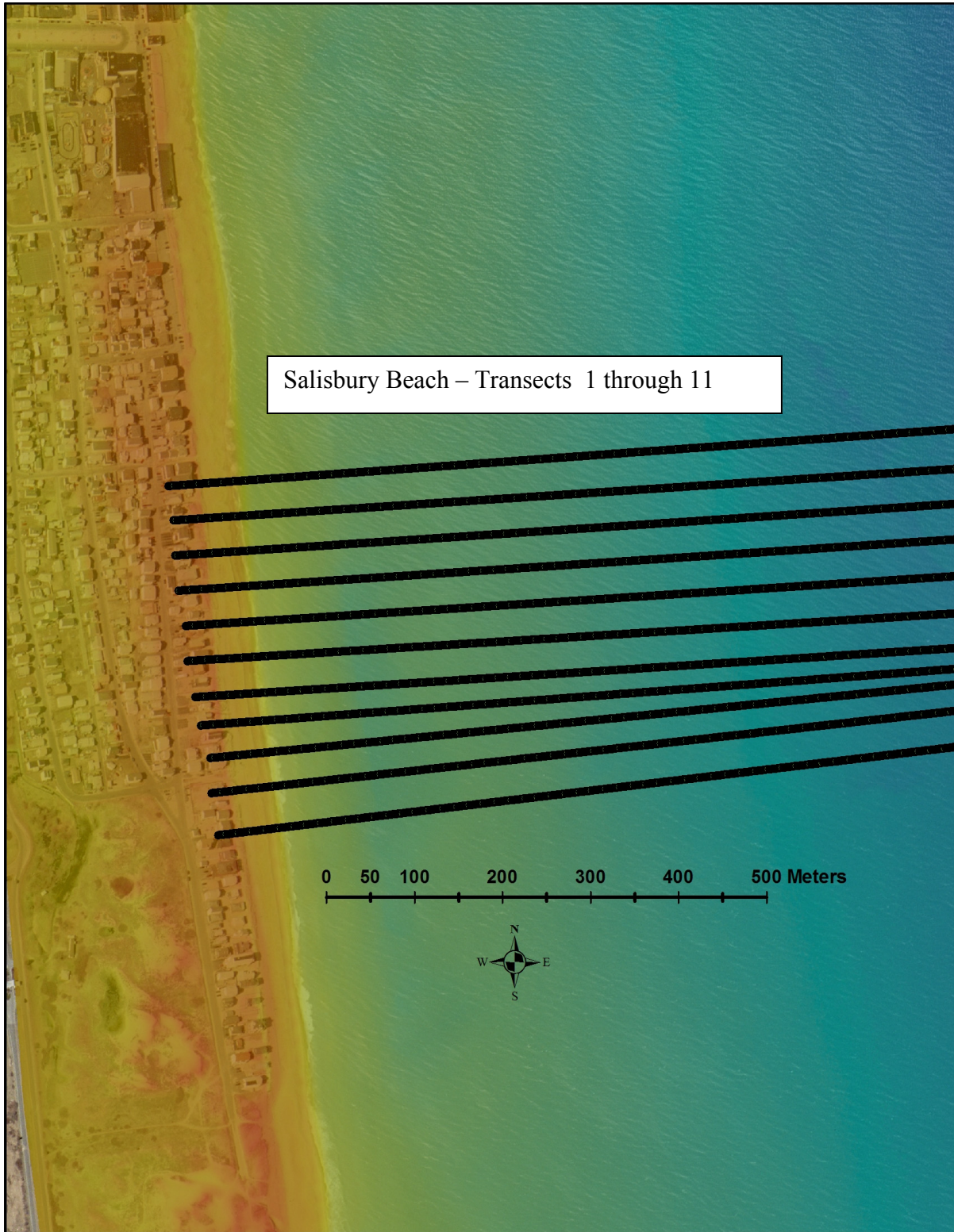


Figure 12. Salisbury beach transect locations

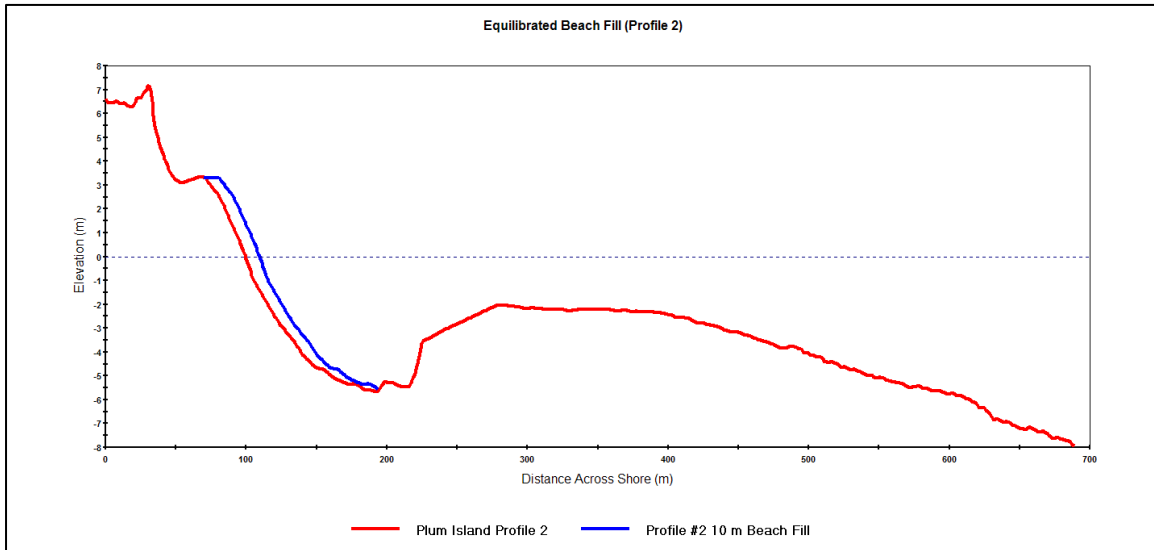


Figure 13. Plum Island beach profile #2 and beach fill design

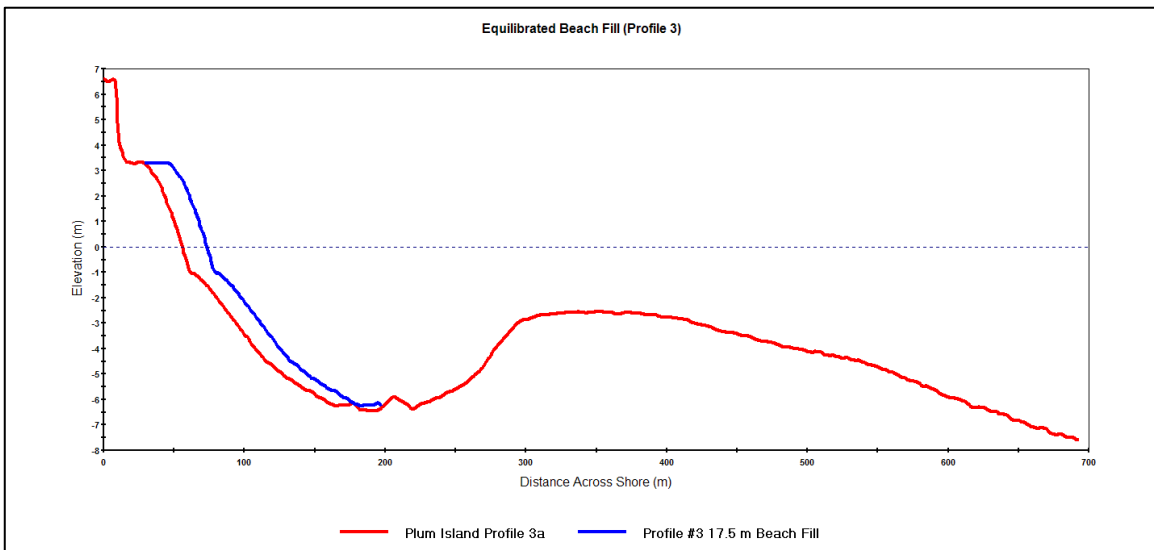


Figure 14. Plum Island beach profile #3 and beach fill design

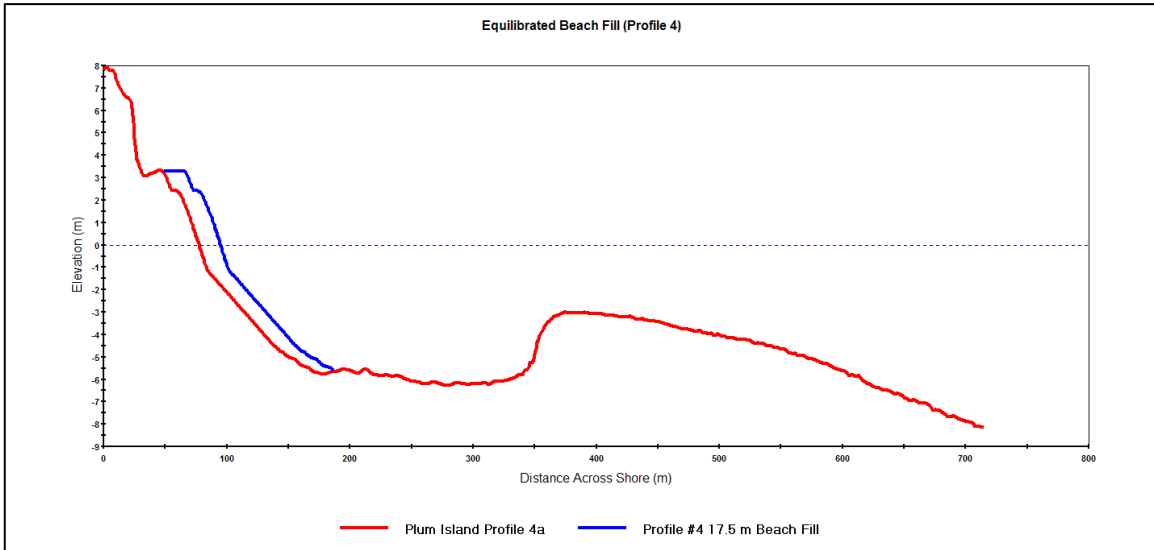


Figure 15. Plum Island beach profile #4 and beach fill design

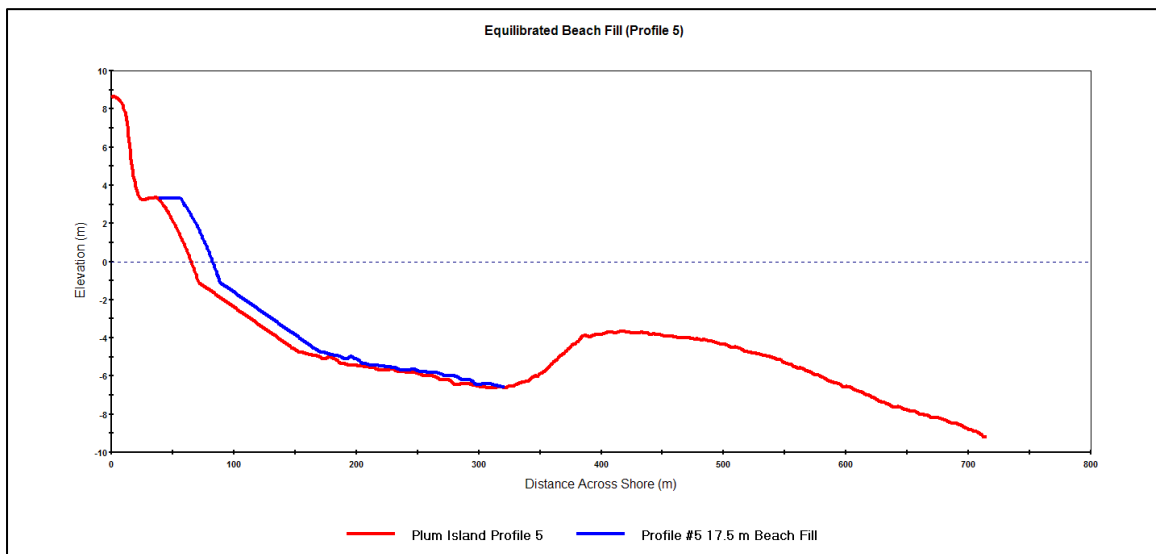


Figure 16. Plum Island beach profile #5 and beach fill design

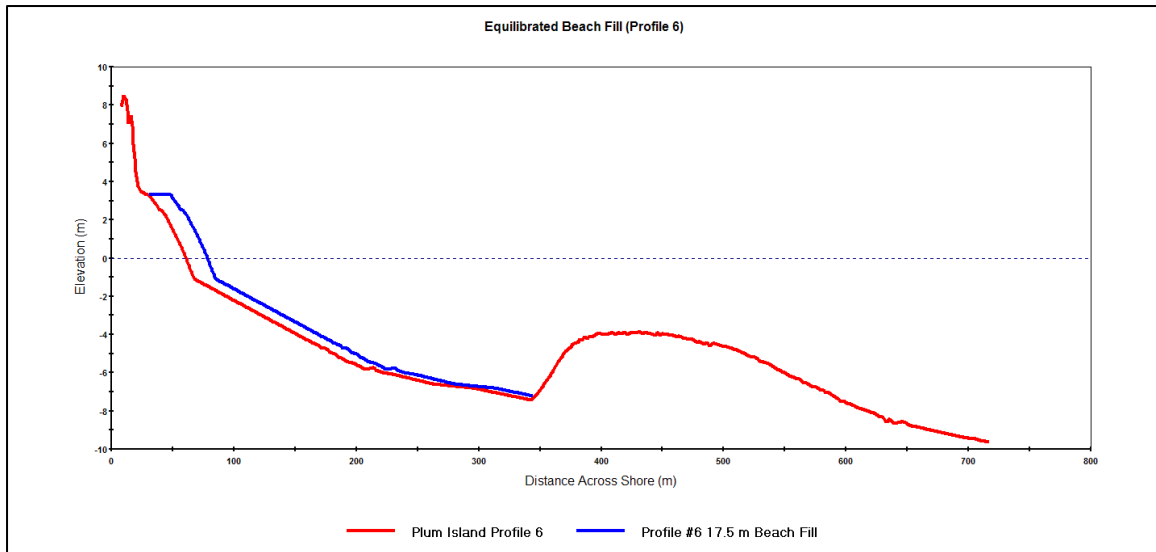


Figure 17. Plum Island beach profile #6 and beach fill design

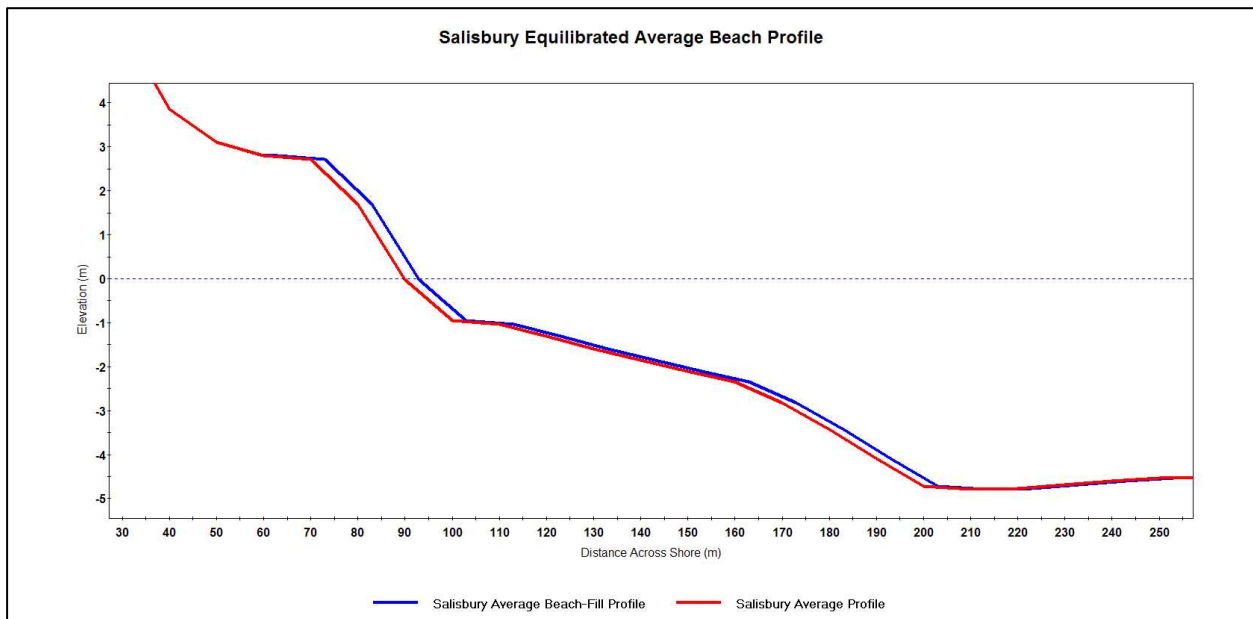


Figure 18. Salisbury Beach average profile and beach fill design

The analysis of the beach fill longevity/shoreline position was done in a simple manner. It was assumed the two beach fill projects would be constructed in 2009. The projected shoreline for 2009 taken from Figures 7 and 8 were translated seaward the width of the respective beach fill berms. For the Plum Island beach berm it was assumed that the fill would erode at the recent average annual erosion rate of 13.3 ft/yr. This results in the 50 foot berm eroding completely away in approximately 4 years. Basically, the Plum Island beach fill would offset the without project erosion time line by 4 years. This would make the 2009 without project shoreline the 2014 with project shoreline. Because the Salisbury beach fill volume and length was much smaller than the Plum Island fill, the beach fill longevity was only estimated to last 1 year. Even with this very short life the economic analysis determined that 1 would have a benefit cost ratio greater than 1.

It is very much understood this analysis is very simplified for a beach fill project but due to the complexities of the system and the minimal funding, the analysis completed was reasonable. As shown in Figures 13 through 17 there is a noticeable bar formation running parallel to shore in the Plum Island beach fill area. This bar feature may help retain the beach fill in the cross shore direction by preventing the cross shore migration of the beach fill toe. However, the dynamics that created such an extensive offshore bar may cause accelerated erosion of the beach fill in both the long shore and cross shore direction. Also, the anticipated end losses of the Plum Island beach fill would have been difficult to determine since the fill will terminate at a naturally formed salient to the north and at a groin to the south. These features are not expected to completely prevent end losses but certainly are expected to reduce them. Also, the very high erosion rate of 13.3 ft/yr is not expected to continue. Intuitively this rate will not persist since it is so much higher than the long term erosion rates provided by the CZM shoreline mapping effort.

## **5.0 Summary**

As part of a Section 204 (beneficial reuse of dredged material) Initial appraisal, a 2,500 foot long section of Plum Island was investigated due to an acute erosion problem along the beach face exposed to the Atlantic Ocean along with a 1,200 foot long section of Salisbury beach. The Water Management Section was tasked with developing the without project condition for the two beach sections, developing the conceptual beach fill designs that would utilize the dredged sand, and developing the with project future condition for the beaches. The three main tasks were completed at an initial appraisal level so only a basic analysis was done. This must be recognized during the review of this report and the use of any resulting products.

It was determined that over the last seven years the beach within the study area has eroded at the very high rate of 13.3 feet per year at Plum island and at a the significant rate of 2.25 feet per year at Salisbury. This rate is very much above the historical average rate which was less then 1 foot per year (based on MA CZM historical erosion rate mapping). A beach fill was designed based on the expected volume of dredge sand which was estimated to be 160,000 cubic yards. This volume allowed for an approximately 50 foot wide beach fill to be placed along the 2,500 ft Plum Island study area and a 10 foot wide beach fill to be placed along the 1,200 ft Salisbury study area. It was also approximated that with the proposed beach fill project the erosion problem would be offset by up to 4 years for Plum Island and 1 to 2 years for Salisbury.

**NEWBURYPORT HARBOR  
PLUM ISLAND AND SALISBURY BEACHES**

**§204 PROJECT FOR THE BENEFICIAL USE  
OF DREDGED MATERIAL  
FOR BEACH NOURISHMENT**

**DETAILED PROJECT REPORT**

**APPENDIX F  
COST ESTIMATES**





## **PROJECT COST ESTIMATES**

Project costs for a Section 204 project are the difference between the Federal Base Plan (the plan for dredging and disposal that would be recommended if there were no more costly additional beneficial use features) and the plans that include the beneficial use features. If a plan including beneficial use features is the least costly environmentally acceptable alternative for dredging and disposal, then that plan is the Federal Base Plan.

Determining the Federal Base Plan and developing a cost for that plan is the first step. For the past several decades, maintenance dredging of the Newburyport Harbor entrance channel, has yielded beach nourishment compatible sands. However, the exposed nature of the inlet, coupled with extreme tidal currents, have made dredging by a medium to large seagoing hopper dredge the most efficient method. This has precluded direct placement of the dredged material on the adjacent beaches without additional cost. The dredged sands have been deposited in the nearshore bar systems offshore of the beaches as feeder material for the littoral system. Direct placement on the beaches would require either a large hopper dredge with onboard pump-off capability to discharge through a pipeline moored off the beach, or use of a large capacity hydraulic pipeline dredge using a booster to pump the material more than a mile from the inlet onto the beach. The difficulties that would be encountered by a pipeline dredging in this inlet would result in greater inefficiency (more downtime, a lesser production rate) than would be experienced with a large hopper dredge. A hopper dredge would require more time to pump material directly to the beach than it would to simply discharge material in the nearshore bars.

Until recently there was no interest on the part of the State or local communities in paying for all or a share of the additional cost for direct placement on the beaches. Recent storm erosion and loss of property has changed that dynamic.

Cost estimates have been prepared for the Federal Base Plan, two plans for adding a Section 204 beneficial use component to the Base Plan, and four additional estimates prepared at the State's request to look at non-Federal dredging of additional sand from the inlet beyond that required for Federal channel maintenance at this time, and placement of sand in State stockpiles rather than on the beaches. Stockpile placement does not generate quantifiable economic benefits eligible for inclusion in a Section 204 project. The following paragraphs and tables present the costs for the Federal Base Plan, the Section 204 alternatives, and the State requested alternatives.

## **The Federal Base Plan**

The Federal Base Plan involves maintenance dredging of the existing 15-foot MLLW entrance channel to Newburyport Harbor, in shoal areas between and seaward of the two jetties. Hydrographic surveys indicate that removal of about 100,000 cubic yards (CY) are required to reach -15 feet, while a two-foot allowable overdepth to -17 feet would require another 60,000 CY. Under the Base Plan dredging would be accomplished with a medium-sized hopper dredge which would suction the material from the channel bottom into onboard hoppers. Once the hoppers were full, the dredge would travel to the disposal location off the beach and discharge its hopper by opening the doors in the bottom of the ship. The ship would then return to the channel to dredge its next load and repeat the process until progress surveys determined that at least the target channel depth of -15 feet had been achieved.

## **Section 204 Alternative A**

Alternative A involves direct placement of all 160,000 CY of available material on Plum Island Beach in the area most severely impacted by recent storm damage. This area is located in the Town of Newbury north of State Groin #1 at the seaward terminus of the Plum Island Turnpike. This volume of material would allow nourishment of the beach for about 2,500 feet northward from Groin #1, providing temporary protection the damaged area and the area immediately north where the island is its narrowest opposite the Plum Island Basin. A berm width of about 60 feet would be formed.

Estimates have been prepared for three types of dredges that may be available for this work; a large seagoing hopper dredge with onboard pump-off capability, and two sizes of large hydraulic pipeline dredges. These three dredges will be used for estimating each of the direct placement and State requested alternatives.

Pump-off Hopper – Alternative A-1: The pump-off capable hopper would dredge the material in the same manner as the equipment used under the Base Plan. The dredge would then transit to a location off the receiving beach where it would connect to a floating pipeline moored offshore and extending landward onto the beach. The dredge would remix its load of sand with seawater and pump that slurry through the pipeline to the beach. Additional pipe would be laid along the beach above the MHW elevation to the discharge point. A dozer or other heavy equipment would be used on the beach to place, shift and retrieve the shore pipe. This equipment would also form toe dikes along the MLW elevation using existing beach materials to entrain and dewater the slurry discharge from the pipeline, minimizing loss of newly-placed sand to the surf. As the fill operation progressed along the beach, the pipe and dikes would be extended and the fill graded. At the conclusion of the work the pipe would be retrieved and the beach face finish graded to the required specifications and section (berm elevation, width and slope).

Pipeline Dredge – Alternatives A-2 and A-3: The hydraulic pipeline dredge uses a rotating cutterhead to loosen the material on the channel bottom and pumps the material into a pipeline that discharges on the beach. The dredge anchors itself in the channel with either spuds or cables and can move short distances while dredging. The dredge would need to be repositioned by tug to cover larger distances. Given the depth of the channel, the elevation of the beach, and the distance of the discharge areas from the channel (more than a mile), a booster pump would be required to maintain production. A barge-mounted booster moored inside the inlet in the area where the pipeline crosses over the jetties has been assumed in these estimates. A very large pipeline dredge may not require a booster for these distances and elevations, however such equipment is rarely seen in New England. The pipeline would be placed along the beaches above the MHW elevation from the jetties to the discharge area by heavy equipment. Moving and extending the pipe, forming dikes, and grading would be accomplished in the same manner as for the hopper dredge alternative.

### **Section 204 Alternative B**

Alternative B involves direct placement of all 160,000 CY of available material, but with the volume split between Plum Island Beach at Newbury (120,000 CY), and the central area of Salisbury State Beach (40,000 CY). The area at Salisbury Beach lies between two previously State-nourished sections of the beach.

At Plum Island, the same 2,500-foot long section of beach north of State Groin #1 in Newbury would receive the 120,000 CY of material, with a lesser width berm of about 50 feet formed. This lesser volume of material would provide a lesser term of temporary protection to the damaged area and the area immediately north where the island is its narrowest opposite the Plum Island Basin. The remaining 40,000 CY of material would be placed on Salisbury Beach over a 1200 to 1400 foot long area approximately between Murray Street (Beach Access #2) in the south and Fowler Street (Beach Access #3) in the north to widen the berm by about 10 feet. Berm elevations on both beaches would be increased where required for a uniform berm. The actual beachfill area may be shortened or extended by one or two lots at either end depending on conditions in the field as determined immediately prior to construction.

As for Plan A, estimates have been prepared for three types of dredges that may be available for this work; a large seagoing hopper dredge with onboard pump-off capability, and two sizes of large hydraulic pipeline dredges.

Pump-off Hopper – Alternative B-1: The pump-off capable hopper would dredge the material in the same manner as the equipment used under the Base Plan. The dredge would then transit to locations off the two receiving beaches where it would connect to a floating pipeline moored offshore and extending landward onto the beach. The dredge would remix its load of sand with seawater and pump that slurry through the pipelines to the beaches. Additional pipe

would be laid along the beaches above the MHW elevation to the discharge points. A dozer or other heavy equipment would be used on the beaches to place, shift and retrieve the shore pipe. This equipment would also form toe dikes along the MLW elevation at both sites using existing beach materials to entrain and dewater the slurry discharge from the pipeline, minimizing loss of newly-placed sand to the surf. As the fill operation progressed along the beaches, the pipe and dikes would be extended and the fill graded. At the conclusion of the work the pipe would be retrieved and the beach face finish graded to the required specifications and section (berm elevation, width and slopes). Depending on the volume of material actually dredged for the channel, some material may be used to buttress the face of the dunes. If this does occur then the new dune face would be planted with beach grass and the planted area protected with sand fencing at the dune toe and laterally at intervals along the dune face.

Pipeline Dredge – Alternatives B-2 and B-3: The hydraulic pipeline dredge uses a rotating cutterhead to loosen the material on the channel bottom and pumps the material into a pipeline that discharges on the beach. The dredge anchors itself in the channel with either spuds or cables and can move short distances while dredging. The dredge would need to be repositioned by tug to cover larger distances. Given the depth of the channel, the elevation of the two receiving beaches, and the distance of the discharge areas from the channel (more than a mile), a booster pump would be required to maintain production. A barge-mounted booster moored inside the inlet in the area where the pipeline crosses over the jetties has been assumed in these estimates. A very large pipeline dredge may not require a booster for these distances and elevations, however such equipment is rarely seen in New England. The pipeline would be placed along the beaches above the MHW elevation from the jetties to the discharge area by heavy equipment. Moving and extending the pipe, forming dikes, and grading the finished beaches would be accomplished in the same manner as for the hopper dredge alternative. Buttressing of the dune face, along with planting and fencing of any new dune face, would be accomplished if sufficient material was generated by the channel dredging.

## **Cost Estimates**

Cost estimates have been developed for both the Federal Base Plan and the two beneficial use alternatives evaluated in this study. The estimates were developed using the Corps of Engineers Dredge Estimating Program with inputs based on recent construction bids for work of this type in New England. Costs were prepared in March 2009, include construction contract costs and non-contract costs, and use January to June 2009 Price Levels. The several costs estimates are shown in Table F-1.

Contract estimates include costs for mobilization and demobilization of the construction plant, unit costs for dredging and disposal of the dredged material, and costs for planting and fencing. The contract unit costs for dredging and disposal include removal of the material

from the channel, transport and placement of the material on the beach, contractor profit and bonds, and spreading and grading of the material on the beach. A contingency of 20 to 25 percent was applied to the contract costs according to the risk of construction method.

Non-contract costs include Corps of Engineers costs for project design, engineering and supervision and administration of the contract. Design costs include preparation of Plans and Specifications, specifications surveys (hydrographic and topographic), final regulatory approvals, execution of the Project Partnership Agreement, contracting and project management costs during design. Supervision and Administration costs include costs for pre- and post-construction surveys, contract administration, supervision and inspection of construction activities, contracting and project management during construction, and close-out of the contract and project accounts.

Costs for the Section 204 project were calculated as the difference between each Section 204 alternative and the Federal Base Plan. Allocation of costs to the Section 204 project alternatives and cost-allocation between Federal and State increments for the State requested plans for additional sand placement, are shown in Table F-2 and F-3., respectively.

### **Annual Costs**

Annual Costs were developed using the Fiscal Year 2009 interest rate of 4-5/8 percent. Maintenance costs were developed for the dune grass and sand fencing. No beachfill maintenance is included as costs and benefits were developed assuming a one-time placement. Annual Costs are shown in Table F-4.

**NEWBURYPORT HARBOR AND PLUM ISLAND AND SALISBURY BEACHES, MASSACHUSETTS  
SECTION 204 PROJECT - BENEFICIAL USE - FEDERAL BASE PLAN COST ESTIMATE - CEDEP CHECKLIST  
HOPPER DREDGING OF CHANNEL WITH NEARSHORE BAR PLACEMENT OFF PLUM ISLAND BEACH**

|                               |                              |
|-------------------------------|------------------------------|
| MOBIL & DEMOB COST: \$485,785 | BID QUANTITY 160,000 C.Y.    |
|                               | UNIT COST... \$8.06 PER C.Y. |
| BASE PLAN HOPPER NEAR SHORE   | EXCAV. COST. \$1,289,600     |
| CHECKLIST FOR INPUT DATA.     | TIME..... 1.06 MONTHS        |

|                                                |                                                   |
|------------------------------------------------|---------------------------------------------------|
| <u>PG 1 OF 12: PROJECT TITLES</u>              | <u>PG 7 &amp; 8 OF 12: PLANT OWN. &amp; OPER.</u> |
| PROJECT - BASE PLAN HOPPER NEAR SHORE          | DREDGE SELECTED - GENERIC MEDIUM                  |
| LOCATION - Newburyport, MA                     | DREDGE ACQUIS COST - \$16,600,000                 |
| INVIT # - IAR                                  | DREDGE CAPITAL IMPROV - 10%                       |
| DATE OF EST. - 18 Aug 08                       | PROPULSION TUG - self prop. /mo                   |
| EST. BY - W. McIntyre                          | SURVEY VESSEL - \$30,000 /mo                      |
| MOB. BID ITEM # - 1                            | BOOSTER - \$0 /mo                                 |
| EXCAV. BID ITEM # - 2                          | CRANE BARGE - \$0 /mo                             |
|                                                | TENDER TUG - \$0 /mo                              |
|                                                | OTHER MARINE - \$0 /mo                            |
|                                                | SHORE EQUIP - \$0 /mo                             |
| <u>PG 2 OF 12: TYPE OF EST &amp; IND COSTS</u> | <u>PG 9 OF 12: OTHER ADJUSTMENTS</u>              |
| TYPE OF EST. - Planning Estimate               | SPECIAL COST/MO (1ST) - \$0 >                     |
| CONTRACTOR'S O.H. - 20.0%                      | SP COST/MO (2ND-14TH) - \$0 From Sheet D13        |
| CONTRACTOR'S PROFIT - 10.0%                    | SPECIAL COST LS (1ST) - \$5,000 Permits, etc.     |
| CONTRACTOR'S BOND - 2.0%                       | SP COST LS (2ND-14TH) - \$0 From Sheet E          |
| <u>PG 3 OF 12: EXCAVATION QTY'S</u>            | <u>PG 10 OF 12: LOCAL AREA FACTORS</u>            |
| DREDGING AREA - 820,000 sf                     | PRESENT YEAR - 2009                               |
| REQ'D EXCAVATION - 160,000 cyds                | ECONOMIC INDEX - 7667                             |
| PAY OVERDEPTH - 0 cyds                         | LAF - 1.18                                        |
| CONTRACT AMOUNT - 160,000 cyds                 | INTEREST RATE - 5.265% /yr                        |
| NOT DREDGED - 0 cyds                           | TIME PERIOD - January to March 2009               |
| NET PAY - 160,000 cyds                         | PIPELINE AVAILABILITY - 9 mos/yr                  |
| NONPAY YARDAGE - 30,400 cyds                   | BUCKET AVAILABILITY - 10 mos/yr                   |
| GROSS YARDAGE - 190,400 cyds                   | HOPPER AVAILABILITY - 10 mos/yr                   |
| NONPAY HEIGHT - 1.0 ft overdig                 | FUEL PRICE - \$3.21 /gal                          |
| TOTAL BANK HEIGHT - 6.3 ft                     | <u>PG 11 OF 12: DREDGE OPER ADJ FACTORS</u>       |
| <u>PG 4, 5 &amp; 6 OF 12: PRODUCTION</u>       | PUMP LOAD FACTOR - 50%                            |
| TYPE OF MATERIAL - 0% MUD                      | RPR & MAINT. ADJ - 1.00                           |
| - 100% SAND                                    | JET PUMP USEAGE - 100%                            |
| - 0% GRAVEL                                    | <u>PG 12 OF 12: TRAVEL &amp; PROVISIONS</u>       |
| HOPPER CAPACITY - 3,800 cyds                   | FREQ PD TRAVEL - 7 days                           |
| EFF. HOPPER CAP. - 1,900 cyds                  | RT TRAVEL COST - \$400                            |
| DRDGE RATE (ALL HEADS) - 1,260 cy/hr           | GOVT. PERSONNEL - 2 ea                            |
| ACT. DRAGHDS USED - 1 ea                       | PROVISIONS & SUPP - \$50 /man                     |
| DRDGE RATE USED - 630 cy/hr                    |                                                   |
| TURNS/CYCLE - 4 ea                             |                                                   |
| MIN. PER TURN - 5 min                          |                                                   |
| DISPOSAL DIST - 1 mi                           |                                                   |
| TRVL SPD TO DISP - 6.0 mph                     |                                                   |
| TRVL SPD FROM DISP - 7.0 mph                   |                                                   |
| DUMP/CONNECT TIME - 10 min                     |                                                   |
| TYPE OF DISPOSAL - Gravity Dump                | LOADS PER DAY - 3.1                               |
| PIPELINE USED - 0 lf                           | PRODUCTION - 412 gross cy per hour                |
| CLEANUP - 20% More Time                        | OPERATING TIME - 438 hours per month              |
| % EFF WORK TIME - 60.0%                        | GROSS PRODUCTION - 180,456 cy per month           |
|                                                | PAY PRODUCTION - 150,943 pay cy per month         |

**NEWBURYPORT HARBOR AND PLUM ISLAND AND SALISBURY BEACHES, MASSACHUSETTS  
SECTION 204 PROJECT - BENEFICIAL USE PLAN A-1 AND B-1 - COST ESTIMATE - CEDEP CHECKLIST  
PUMP-OFF HOPPER DREDGING OF CHANNEL WITH DIRECT PLACEMENT ON BEACH(ES)**

|                                      |           |              |                  |
|--------------------------------------|-----------|--------------|------------------|
| MOBIL & DEMOB COST:                  | \$557,019 | BID QUANTITY | 160,000 C.Y.     |
| PLAN A-1 OR PLAN B-1 DREDGING COSTS  |           | UNIT COST... | \$13.83 PER C.Y. |
| A-1/B-1 MED. HOPPER w/DIRECT PUMP OU |           | EXCAV. COST. | \$2,212,800      |
| CHECKLIST FOR INPUT DATA.            |           | TIME.....    | 1.33 MONTHS      |

|                                                |                                                         |
|------------------------------------------------|---------------------------------------------------------|
| <u>PG 1 OF 12: PROJECT TITLES</u>              | <u>PG 7 &amp; 8 OF 12: PLANT OWN. &amp; OPER.</u>       |
| PROJECT - A-1/B-1 MED. HOPPER w/DIRECT PUMP    | DREDGE SELECTED - GENERIC MEDIUM                        |
| LOCATION - Newburyport, MA                     | DREDGE ACQUIS COST - \$16,600,000                       |
| INVIT # - IAR                                  | DREDGE CAPITAL IMPROV - 10%                             |
| DATE OF EST. - 18 Aug 08                       | PROPULSION TUG - self prop. /mo                         |
| EST. BY - W. McIntyre                          | SURVEY VESSEL - \$30,000 /mo                            |
| MOB. BID ITEM # - 1                            | BOOSTER - \$0 /mo                                       |
| EXCAV. BID ITEM # - 2                          | CRANE BARGE - \$0 /mo                                   |
|                                                | TENDER TUG - \$0 /mo                                    |
|                                                | OTHER MARINE - \$0 /mo                                  |
|                                                | SHORE EQUIP - \$0 /mo                                   |
| <u>PG 2 OF 12: TYPE OF EST &amp; IND COSTS</u> | <u>PG 9 OF 12: OTHER ADJUSTMENTS</u>                    |
| TYPE OF EST. - Planning Estimate               | SPECIAL COST/MO (1ST) - \$17,000 Anchor Barge Platform  |
| CONTRACTOR'S O.H. - 20.0%                      | SP COST/MO (2ND-14TH) - \$0 From Sheet D\3              |
| CONTRACTOR'S PROFIT - 10.0%                    | SPECIAL COST LS (1ST) - \$360,000 Shore work at 2.25/cy |
| CONTRACTOR'S BOND - 2.0%                       | SP COST LS (2ND-14TH) - \$0 From Sheet E                |
| <u>PG 3 OF 12: EXCAVATION QTY'S</u>            | <u>PG 10 OF 12: LOCAL AREA FACTORS</u>                  |
| DREDGING AREA - 820,000 sf                     | PRESENT YEAR - 2009                                     |
| REQ'D EXCAVATION - 160,000 cyds                | ECONOMIC INDEX - 7667                                   |
| PAY OVERDEPTH - 0 cyds                         | LAF - 1.18                                              |
| CONTRACT AMOUNT - 160,000 cyds                 | INTEREST RATE - 5.265% /yr                              |
| NOT DREDGED - 0 cyds                           | TIME PERIOD - January to March 2009                     |
| NET PAY - 160,000 cyds                         | PIPELINE AVAILABILITY - 9 mos/yr                        |
| NONPAY YARDAGE - 30,400 cyds                   | BUCKET AVAILABILITY - 10 mos/yr                         |
| GROSS YARDAGE - 190,400 cyds                   | HOPPER AVAILABILITY - 10 mos/yr                         |
| NONPAY HEIGHT - 1.0 ft overdig                 | FUEL PRICE - \$3.21 /gal                                |
| TOTAL BANK HEIGHT - 6.3 ft                     |                                                         |
| <u>PG 4, 5 &amp; 6 OF 12: PRODUCTION</u>       | <u>PG 11 OF 12: DREDGE OPER ADJ FACTORS</u>             |
| TYPE OF MATERIAL - 0% MUD                      | PUMP LOAD FACTOR - 50%                                  |
| - 100% SAND                                    | RPR & MAINT. ADJ - 1.00                                 |
| - 0% GRAVEL                                    | JET PUMP USEAGE - 100%                                  |
| HOPPER CAPACITY - 3,800 cyds                   | <u>PG 12 OF 12: TRAVEL &amp; PROVISIONS</u>             |
| EFF. HOPPER CAP. - 1,900 cyds                  | FREQ PD TRAVEL - 7 days                                 |
| DRDGE RATE (ALL HEADS) - 1,260 cy/hr           | RT TRAVEL COST - \$400                                  |
| ACT. DRAGHDS USED - 2 ea                       | GOVT. PERSONNEL - 2 ea                                  |
| DRDGE RATE USED - 1,260 cy/hr                  | PROVISIONS & SUPP - \$50 /man                           |
| TURNS/CYCLE - 4 ea                             |                                                         |
| MIN. PER TURN - 5 min                          | LOADS PER DAY - 2.5                                     |
| DISPOSAL DIST - 1 mi                           | PRODUCTION - 447 gross cy per hour                      |
| TRVL SPD TO DISP - 6.0 mph                     | OPERATING TIME - 321 hours per month                    |
| TRVL SPD FROM DISP - 7.0 mph                   | GROSS PRODUCTION - 143,487 cy per month                 |
| DUMP/CONNECT TIME - 20 min                     | PAY PRODUCTION - 120,301 pay cy per month               |
| PUMPOUT RATE - 1800 cy/hr                      |                                                         |
| PIPELINE USED - 2500 lf                        |                                                         |
| CLEANUP - 20% More Time                        |                                                         |
| % EFF WORK TIME - 44.0%                        |                                                         |



**NEWBURYPORT HARBOR AND PLUM ISLAND AND SALISBURY BEACHES, MASSACHUSETTS  
SECTION 204 PROJECT - BENEFICIAL USE PLAN A-2 AND B-2 - COST ESTIMATE - CEDEP CHECKLIST  
24-INCH HYDRAULIC PIPELINE DREDGING OF CHANNEL WITH DIRECT PLACEMENT ON BEACH(ES)**

|                                      |                                     |
|--------------------------------------|-------------------------------------|
| MOBIL & DEMOB COST: <b>\$831,279</b> | BID QUANTITY <b>160,000</b> C.Y.    |
| PLAN A-2 OR PLAN B-2 DREDGING COSTS  | UNIT COST... <b>\$8.06</b> PER C.Y. |
| A-2/B-2 24" Pipeline to Plum Island  | EXCAV. COST. <b>\$1,289,600</b>     |
| CHECKLIST FOR INPUT DATA.            | TIME..... <b>0.70</b> MONTHS        |

|                                                     |                                                         |
|-----------------------------------------------------|---------------------------------------------------------|
| <b>PG 1 OF 11: PROJECT TITLES</b>                   | <b>PG 6 OF 11: PRODUCTION ANALYSIS</b>                  |
| PROJECT - A-2/B-2 24" Pipeline to Plum Island       | BOOSTER(S) - 1                                          |
| LOCATION - Newburyport, MA - Plum Island Beach      | % EWT (NO BOOSTERS) - 55.0% (402 HRS/MO)                |
| INVIT #- IAR                                        | BOOSTER FACTOR - 0.85                                   |
| DATE OF EST. - March 09, 2009                       | % EWT (WITH BOOSTERS) - 46.8% (341 HRS/MO)              |
| EST. BY - William McIntyre                          | MAX. POSSIBLE- 24,363 ft                                |
| MOB. BID ITEM #- 1                                  | TOTAL HP AVAIL - 5,250 hp                               |
| EXCAV. BID ITEM #- 2                                |                                                         |
|                                                     | <b>PG 7 OF 11: OTHER PRODUCTION FACTORS</b>             |
| <b>PG 2 OF 11: TYPE OF EST &amp; INDIRECT COSTS</b> | DREDGE SELECTED - 24" Cutter-Suction                    |
| TYPE OF EST. - Planning Estimate                    | COMPUTED BANK FACTOR- 1.02                              |
| CONTRACTOR'S O.H. - 20.0%                           | BANK FACTOR USED- 1.02 >                                |
| CONTRACTOR'S PROFIT - 10.0%                         | OTHER FACTOR - 0.8 Waves & Tidal Currents               |
| CONTRACTOR'S BOND - 2.0%                            | CLEANUP- 20% More Time                                  |
|                                                     | <b>PG 8 OF 11: HISTORICAL PRODUCTION OVERRIDES</b>      |
| <b>PG 3 OF 11: EXCAVATION QTY'S</b>                 | PRODUCTION OVERRIDE- NO                                 |
| DREDGING AREA - 820,000 sf                          | PRODUCTION - 803 cy per hour                            |
| REQ'D EXCAVATION- 100,000 cyds                      | OPERATING TIME- 341 hours per month                     |
| PAY OVERDEPTH- 60,000 cyds                          | BASED ON - 1 booster(s)                                 |
| CONTRACT AMOUNT- 160,000 cyds                       | PRODUCTION (GROSS)- 273,823 cy per month                |
| NOT DREDGED - 0 cyds                                | PRODUCTION (CONTRACT)- 228,571 pay cy per month         |
| NET PAY - 160,000 cyds                              |                                                         |
| NONPAY YARDAGE- 30,400 cyds                         | <b>PG 9 OF 11: OTHER ADJUSTMENTS</b>                    |
| GROSS YARDAGE - 190,400 cyds                        | SPECIAL COST/MO (1ST) - \$50,000 Tender Tug             |
| NONPAY HEIGHT - 1.0 ft overdig                      | SP COST/MO (2ND-14TH) - \$0 From Sheet D14              |
| TOTAL BANK HEIGHT- 6.3 ft                           | SPECIAL COST LS (1ST) - \$0                             |
|                                                     | SP COST LS (2ND-14TH) - \$0 From Sheet E                |
| <b>PG 4 OF 11: MATERIAL FACTOR</b>                  | <b>PG 10 OF 11: LOCAL AREA FACTORS</b>                  |
| MUD & SILT - 3 0%                                   | PRESENT YEAR - 2009                                     |
| MUD & SILT - 2.5 0%                                 | ECONOMIC INDEX- 7667                                    |
| MUD & SILT - 2 0%                                   | LAF - 1.180                                             |
| LOOSE SAND - 1.1 0%                                 | INTEREST RATE - 5.265% /yr                              |
| LOOSE SAND - 1 100%                                 | TIME PERIOD- January to March 2009                      |
| COMP. SAND - 0.9 0%                                 | PIPELINE AVAILABILITY- 9 mos/yr                         |
| STIFF CLAY - 0.6 0%                                 | BUCKET AVAILABILITY- 0 mos/yr                           |
| COMP. SHELL - 0.5 0%                                | HOPPER AVAILABILITY- 0 mos/yr                           |
| SOFT ROCK - 0.4 0%                                  | FUEL PRICE - \$3.21 /gal                                |
| BLAST. ROCK - 0.25 0%                               |                                                         |
| RESULTANT FACTOR - 1.00                             | <b>PG 11 OF 11: HP &amp; BOOSTER FACTOR ADJUSTMENTS</b> |
|                                                     | AVAIL PUMP HP- 2,250                                    |
| <b>PG 5 OF 11: PIPELINE CONSIDERATIONS</b>          | BOOSTER HP - 3,000 hp(ea)                               |
| FLOATING - 4,400 ft                                 | LOSS PER BOOSTER - 15%                                  |
| SUBMERGED- 0 ft                                     |                                                         |
| SHORE - 6,300 ft                                    |                                                         |
| TOTAL - 10,700 ft                                   |                                                         |
| AVE. PIPELINE- 9,000 ft                             | PRODUCTION - 803 gross cy per hour                      |
| COST CATEGORY - 2 SAND                              | OPERATING TIME- 341 hours per month                     |
| EQUIVALENT- 0 ft                                    | GROSS PRODUCTION - 273,823 cy per month                 |
| DESCRIPTION-                                        | PAY PRODUCTION- 228,571 pay cy per month                |
| BASIS OF PRODUCTION- 9,000 Feet (Ave + Equiv)       |                                                         |

**NEWBURYPORT HARBOR AND PLUM ISLAND AND SALISBURY BEACHES, MASSACHUSETTS  
SECTION 204 PROJECT - BENEFICIAL USE PLAN A-3 AND B-3 - COST ESTIMATE - CEDEP CHECKLIST  
20-INCH HYDRAULIC PIPELINE DREDGING OF CHANNEL WITH DIRECT PLACEMENT ON BEACH(ES)**

|                                     |           |              |             |          |
|-------------------------------------|-----------|--------------|-------------|----------|
| MOBIL & DEMOB COST:                 | \$781,729 | BID QUANTITY | 160,000     | C.Y.     |
| PLAN A-3 OR PLAN B-3 DREDGING COSTS |           | UNIT COST... | \$9.48      | PER C.Y. |
| A3/B-3-20" Pipeline to Plum Island  |           | EXCAV. COST. | \$1,516,800 |          |
| CHECKLIST FOR INPUT DATA.           |           | TIME.....    | 0.97        | MONTHS   |

**PG 1 OF 11: PROJECT TITLES**

|                     |                                     |
|---------------------|-------------------------------------|
| PROJECT -           | A3/B-3-20" Pipeline to Plum Island  |
| LOCATION -          | Newburyport, MA - Plum Island Beach |
| INVIT # -           | IAR                                 |
| DATE OF EST. -      | March 09, 2009                      |
| EST. BY -           | William McIntyre                    |
| MOB. BID ITEM # -   | 1                                   |
| EXCAV. BID ITEM # - | 2                                   |

**PG 6 OF 11: PRODUCTION ANALYSIS**

|                         |                    |
|-------------------------|--------------------|
| BOOSTER(S) -            | 1                  |
| % EWT (NO BOOSTERS) -   | 55.0% (402 HRS/MO) |
| BOOSTER FACTOR -        | 0.85               |
| % EWT (WITH BOOSTERS) - | 46.8% (341 HRS/MO) |
| MAX. POSSIBLE -         | 24,561 ft          |
| TOTAL HP AVAIL -        | 4,250 hp           |

**PG 2 OF 11: TYPE OF EST & INDIRECT COSTS**

|                       |                   |
|-----------------------|-------------------|
| TYPE OF EST. -        | Planning Estimate |
| CONTRACTOR'S O.H. -   | 20.0%             |
| CONTRACTOR'S PROFIT - | 10.0%             |
| CONTRACTOR'S BOND -   | 2.0%              |

**PG 7 OF 11: OTHER PRODUCTION FACTORS**

|                        |                            |
|------------------------|----------------------------|
| DREDGE SELECTED -      | 20" Cutter-Suction         |
| COMPUTED BANK FACTOR - | 1.1                        |
| BANK FACTOR USED -     | 1.1 >                      |
| OTHER FACTOR -         | 0.8 Waves & Tidal Currents |
| CLEANUP -              | 20% More Time              |

**PG 3 OF 11: EXCAVATION QTY'S**

|                     |         |            |
|---------------------|---------|------------|
| DREDGING AREA -     | 820,000 | sf         |
| REQ'D EXCAVATION -  | 100,000 | cyds       |
| PAY OVERDEPTH -     | 60,000  | cyds       |
| CONTRACT AMOUNT -   | 160,000 | cyds       |
| NOT DREDGED -       | 0       | cyds       |
| NET PAY -           | 160,000 | cyds       |
| NONPAY YARDAGE -    | 30,400  | cyds       |
| GROSS YARDAGE -     | 190,400 | cyds       |
| NONPAY HEIGHT -     | 1.0     | ft overdig |
| TOTAL BANK HEIGHT - | 6.3     | ft         |

**PG 8 OF 11: HISTORICAL PRODUCTION OVERRIDES**

|                         |         |                  |
|-------------------------|---------|------------------|
| PRODUCTION OVERRIDE -   | NO      |                  |
| PRODUCTION -            | 573     | cy per hour      |
| OPERATING TIME -        | 341     | hours per month  |
| BASED ON -              | 1       | booster(s)       |
| PRODUCTION (GROSS) -    | 195,393 | cy per month     |
| PRODUCTION (CONTRACT) - | 164,948 | pay cy per month |

**PG 4 OF 11: MATERIAL FACTOR**

|                    |      |      |
|--------------------|------|------|
| MUD & SILT -       | 3    | 0%   |
| MUD & SILT -       | 2.5  | 0%   |
| MUD & SILT -       | 2    | 0%   |
| LOOSE SAND -       | 1.1  | 0%   |
| LOOSE SAND -       | 1    | 100% |
| COMP. SAND -       | 0.9  | 0%   |
| STIFF CLAY -       | 0.6  | 0%   |
| COMP. SHELL -      | 0.5  | 0%   |
| SOFT ROCK -        | 0.4  | 0%   |
| BLAST. ROCK -      | 0.25 | 0%   |
| RESULTANT FACTOR - | 1.00 |      |

**PG 9 OF 11: OTHER ADJUSTMENTS**

|                         |          |               |
|-------------------------|----------|---------------|
| SPECIAL COST/MO (1ST) - | \$50,000 | Tender Tug    |
| SP COST/MO (2ND-14TH) - | \$0      | From Sheet D4 |
| SPECIAL COST LS (1ST) - | \$0      |               |
| SP COST LS (2ND-14TH) - | \$0      | From Sheet E  |

**PG 5 OF 11: PIPELINE CONSIDERATIONS**

|                       |        |                    |
|-----------------------|--------|--------------------|
| FLOATING -            | 4,400  | ft                 |
| SUBMERGED -           | 0      | ft                 |
| SHORE -               | 6,300  | ft                 |
| TOTAL -               | 10,700 | ft                 |
| AVE. PIPELINE -       | 9,000  | ft                 |
| COST CATEGORY -       | 2      | SAND               |
| EQUIVALENT -          | 0      | ft                 |
| DESCRIPTION -         |        |                    |
| BASIS OF PRODUCTION - | 9,000  | Feet (Ave + Equiv) |

**PG 10 OF 11: LOCAL AREA FACTORS**

|                         |                       |        |
|-------------------------|-----------------------|--------|
| PRESENT YEAR -          | 2009                  |        |
| ECONOMIC INDEX -        | 7667                  |        |
| LAF -                   | 1.180                 |        |
| INTEREST RATE -         | 5.265% /yr            |        |
| TIME PERIOD -           | January to March 2009 |        |
| PIPELINE AVAILABILITY - | 9                     | mos/yr |
| BUCKET AVAILABILITY -   | 0                     | mos/yr |
| HOPPER AVAILABILITY -   | 0                     | mos/yr |
| FUEL PRICE -            | \$3.21                | /gal   |

**PG 11 OF 11: HP & BOOSTER FACTOR ADJUSTMENTS**

|                    |       |        |
|--------------------|-------|--------|
| AVAIL PUMP HP -    | 2,250 |        |
| BOOSTER HP -       | 2,000 | hp(ea) |
| LOSS PER BOOSTER - | 15%   |        |

|                    |         |                   |
|--------------------|---------|-------------------|
| PRODUCTION -       | 573     | gross cy per hour |
| OPERATING TIME -   | 341     | hours per month   |
| GROSS PRODUCTION - | 195,393 | cy per month      |
| PAY PRODUCTION -   | 164,948 | pay cy per month  |

**Table F-1 - Newburyport Harbor and Plum Island Beach, Massachusetts - Project Cost Estimates**

| Project Cost Estimates as of 27 March 2009<br>160,000 Cubic Yard Plan - All to Newbury |                                                                                        |            | Federal Base Plan<br>Near-Shore Bar Placement<br>Off Plum Island Center |                       | Alternative A-1<br>Direct Placement on Beach<br>at Plum Island Center<br>Using Pumpoff Hopper |                       | Alternative A-2<br>Direct Placement on Beach<br>at Plum Island Center<br>Using 24" Hydraulic Pipeline |                       | Alternative A-3<br>Direct Placement on Beach<br>at Plum Island Center<br>Using 20" Hydraulic Pipeline |                       |
|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|------------|-------------------------------------------------------------------------|-----------------------|-----------------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------|-----------------------|
|                                                                                        |                                                                                        |            | Unit<br>Price                                                           | Total<br>Project Cost | Unit<br>Price                                                                                 | Total<br>Project Cost | Unit<br>Price                                                                                         | Total<br>Project Cost | Unit<br>Price                                                                                         | Total<br>Project Cost |
| <b>Construction Contract</b>                                                           | <u>Quantity</u>                                                                        |            |                                                                         |                       |                                                                                               |                       |                                                                                                       |                       |                                                                                                       |                       |
| 0001                                                                                   | Mob & Demob                                                                            | 1 LS       | \$ 485,785.00                                                           | \$486,000             | \$ 557,019.00                                                                                 | \$557,000             | \$ 831,279.00                                                                                         | \$831,000             | \$ 781,729.00                                                                                         | \$782,000             |
| 0002                                                                                   | Dredging 15-Foot Entrance Channel - Hopper<br>Disposal at Plum Island Center - Newbury |            |                                                                         |                       |                                                                                               |                       |                                                                                                       |                       |                                                                                                       |                       |
| 0002AA                                                                                 | Ordinary Material - Required                                                           | 100,000 CY | \$ 8.06                                                                 | \$806,000             | \$ 13.83                                                                                      | \$1,383,000           | \$ 10.31                                                                                              | \$1,031,000           | \$ 11.73                                                                                              | \$1,173,000           |
| 0002AB                                                                                 | Ordinary Material - Allowable                                                          | 60,000 CY  | \$ 8.06                                                                 | \$484,000             | \$ 13.83                                                                                      | \$830,000             | \$ 10.31                                                                                              | \$619,000             | \$ 11.73                                                                                              | \$704,000             |
| 0003                                                                                   | Sand Fencing and Dune Grass Planting                                                   | 2500 LF    |                                                                         |                       | \$ 80.00                                                                                      | \$200,000             | \$ 80.00                                                                                              | \$200,000             | \$ 80.00                                                                                              | \$200,000             |
|                                                                                        | Total Contract Cost                                                                    |            |                                                                         | \$1,776,000           |                                                                                               | \$2,970,000           |                                                                                                       | \$2,681,000           |                                                                                                       | \$2,859,000           |
|                                                                                        | Contingencies                                                                          |            | 20%                                                                     | \$355,000             | 20%                                                                                           | \$594,000             | 25%                                                                                                   | \$670,000             | 25%                                                                                                   | \$715,000             |
|                                                                                        | Total Construction                                                                     |            |                                                                         | \$2,131,000           |                                                                                               | \$3,564,000           |                                                                                                       | \$3,351,000           |                                                                                                       | \$3,574,000           |
| <b>Design Phase Costs</b>                                                              |                                                                                        |            |                                                                         |                       |                                                                                               |                       |                                                                                                       |                       |                                                                                                       |                       |
|                                                                                        | Plans and Specifications                                                               |            |                                                                         | \$60,000              |                                                                                               | \$80,000              |                                                                                                       | \$80,000              |                                                                                                       | \$80,000              |
|                                                                                        | Engineering & Design                                                                   |            |                                                                         | \$27,000              |                                                                                               | \$44,000              |                                                                                                       | \$42,000              |                                                                                                       | \$44,000              |
|                                                                                        | Environmental Coordination                                                             |            |                                                                         | \$5,000               |                                                                                               | \$12,000              |                                                                                                       | \$12,000              |                                                                                                       | \$12,000              |
|                                                                                        | Project Management during Design                                                       |            |                                                                         | \$35,000              |                                                                                               | \$55,000              |                                                                                                       | \$55,000              |                                                                                                       | \$55,000              |
|                                                                                        | Specifications Surveys                                                                 |            |                                                                         | \$21,000              |                                                                                               | \$33,000              |                                                                                                       | \$33,000              |                                                                                                       | \$33,000              |
| <b>Construction Phase Non-Contract Costs</b>                                           |                                                                                        |            |                                                                         |                       |                                                                                               |                       |                                                                                                       |                       |                                                                                                       |                       |
|                                                                                        | Engineering During Construction                                                        |            |                                                                         | \$21,000              |                                                                                               | \$36,000              |                                                                                                       | \$34,000              |                                                                                                       | \$36,000              |
|                                                                                        | Project Management during Constr.                                                      |            |                                                                         | \$43,000              |                                                                                               | \$71,000              |                                                                                                       | \$67,000              |                                                                                                       | \$71,000              |
|                                                                                        | Pre-Dredge and After-Dredge Surveys                                                    |            |                                                                         | \$42,000              |                                                                                               | \$66,000              |                                                                                                       | \$66,000              |                                                                                                       | \$66,000              |
|                                                                                        | Contracting Division                                                                   |            |                                                                         | \$6,000               |                                                                                               | \$8,000               |                                                                                                       | \$8,000               |                                                                                                       | \$8,000               |
|                                                                                        | Contract Administration and Safety                                                     |            |                                                                         | \$5,000               |                                                                                               | \$6,000               |                                                                                                       | \$6,000               |                                                                                                       | \$6,000               |
|                                                                                        | Supervision & Inspection                                                               |            |                                                                         | \$58,000              |                                                                                               | \$69,000              |                                                                                                       | \$69,000              |                                                                                                       | \$69,000              |
|                                                                                        | Travel and Miscellaneous                                                               |            |                                                                         | \$6,000               |                                                                                               | \$8,000               |                                                                                                       | \$10,000              |                                                                                                       | \$10,000              |
|                                                                                        | <b>Total First Cost</b>                                                                |            | <b>\$329,000</b>                                                        | <b>\$2,460,000</b>    | <b>\$488,000</b>                                                                              | <b>\$4,052,000</b>    | <b>\$482,000</b>                                                                                      | <b>\$3,833,000</b>    | <b>\$490,000</b>                                                                                      | <b>\$4,064,000</b>    |
|                                                                                        | Construction Duration                                                                  | Months     | 0.92                                                                    |                       | 1.21                                                                                          |                       | 1.21                                                                                                  |                       | 1.21                                                                                                  |                       |
|                                                                                        |                                                                                        | SAY        | 1                                                                       |                       | 2                                                                                             |                       | 2                                                                                                     |                       | 2                                                                                                     |                       |
|                                                                                        | First Cost Plus Interest During Construction                                           | 0.04625    | <1 Mo = \$0                                                             | \$2,460,000           |                                                                                               | \$4,060,000           |                                                                                                       | \$3,840,000           |                                                                                                       | \$4,072,000           |
| <b>Difference From Base Plan - \$204 Project Implementation Costs</b>                  |                                                                                        |            |                                                                         |                       |                                                                                               | \$1,600,000           |                                                                                                       | \$1,380,000           |                                                                                                       | \$1,612,000           |
| <b>\$204 Project - Design Costs</b>                                                    |                                                                                        |            |                                                                         |                       |                                                                                               | \$76,000              |                                                                                                       | \$74,000              |                                                                                                       | \$76,000              |
| <b>\$204 Project - Construction Costs</b>                                              |                                                                                        |            |                                                                         |                       |                                                                                               | \$1,524,000           |                                                                                                       | \$1,306,000           |                                                                                                       | \$1,536,000           |
| <b>Non-Federal Cost Share</b>                                                          |                                                                                        |            |                                                                         |                       |                                                                                               | \$560,000             |                                                                                                       | \$483,000             |                                                                                                       | \$564,200             |
| <b>Federal Share of 204 Project - Design &amp; Construction</b>                        |                                                                                        |            |                                                                         |                       |                                                                                               | \$1,040,000           |                                                                                                       | \$897,000             |                                                                                                       | \$1,047,800           |

Note: Unit costs for dredging and disposal include an additional \$2.25 for shore work

**Table F-1 (Continued) - Newburyport Harbor and Plum Island & Salisbury Beaches, Massachusetts - Project Cost Estimates**

| Project Cost Estimates as of 27 March 2009                                                    |                                                                                        |           | Federal Base Plan<br>Near-Shore Bar Placement<br>Off Plum Island Center |                       | Alternative B-1<br>Split Placement on Beaches<br>at Plum Island (Newbury)<br>and Salisbury State Beach<br>Using Pump-Off Hopper |                       | Alternative B-2<br>Split Placement on Beaches<br>at Plum Island (Newbury)<br>and Salisbury State Beach<br>Using 24" Hydraulic Pipeline |                       | Alternative B-3<br>Split Placement on Beaches<br>at Plum Island (Newbury)<br>and Salisbury State Beach<br>Using 20" Hydraulic Pipeline |                       |
|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-----------|-------------------------------------------------------------------------|-----------------------|---------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| 160,000 Cubic Yard Plan - Direct to Beaches<br>120,000 CY to Newbury - 40,000 CY to Salisbury |                                                                                        |           | Unit<br>Price                                                           | Total<br>Project Cost | Unit<br>Price                                                                                                                   | Total<br>Project Cost | Unit<br>Price                                                                                                                          | Total<br>Project Cost | Unit<br>Price                                                                                                                          | Total<br>Project Cost |
| <b>Construction Contract</b>                                                                  | <b>Quantity</b>                                                                        |           |                                                                         |                       |                                                                                                                                 |                       |                                                                                                                                        |                       |                                                                                                                                        |                       |
| 0001                                                                                          | Mob & Demob                                                                            | 1 LS      | \$ 485,785.00                                                           | \$486,000             | \$ 557,019.00                                                                                                                   | \$557,000             | \$ 831,279.00                                                                                                                          | \$831,000             | \$ 781,729.00                                                                                                                          | \$782,000             |
| 0002                                                                                          | Dredging 15-Foot Entrance Channel - Hopper<br>Disposal at Plum Island Center - Newbury |           |                                                                         |                       |                                                                                                                                 |                       |                                                                                                                                        |                       |                                                                                                                                        |                       |
| 0002AA                                                                                        | Ordinary Material - Required                                                           | 60,000 CY | 100000 CY                                                               | \$806,000             | \$ 13.83                                                                                                                        | \$830,000             | \$ 10.31                                                                                                                               | \$619,000             | \$ 11.73                                                                                                                               | \$704,000             |
| 0002AB                                                                                        | Ordinary Material - Allowable                                                          | 60,000 CY | 60000 CY                                                                | \$484,000             | \$ 13.83                                                                                                                        | \$830,000             | \$ 10.31                                                                                                                               | \$619,000             | \$ 11.73                                                                                                                               | \$704,000             |
|                                                                                               | Disposal at Salisbury State Beach                                                      |           |                                                                         |                       |                                                                                                                                 |                       |                                                                                                                                        |                       |                                                                                                                                        |                       |
| 0003AA                                                                                        | Ordinary Material - Required                                                           | 40,000 CY |                                                                         |                       | \$ 13.83                                                                                                                        | \$553,000             | \$ 10.31                                                                                                                               | \$412,000             | \$ 11.73                                                                                                                               | \$469,000             |
|                                                                                               | Relocate Pipelines and Discharge                                                       |           |                                                                         |                       |                                                                                                                                 | \$100,000             |                                                                                                                                        | \$100,000             |                                                                                                                                        | \$100,000             |
| 0004                                                                                          | Sand Fencing and Dune Grass Planting                                                   | 3900 LF   |                                                                         |                       | \$ 80.00                                                                                                                        | \$312,000             | \$ 80.00                                                                                                                               | \$312,000             | \$ 80.00                                                                                                                               | \$312,000             |
|                                                                                               | Total Contract Cost                                                                    |           |                                                                         | \$1,776,000           |                                                                                                                                 | \$3,182,000           |                                                                                                                                        | \$2,893,000           |                                                                                                                                        | \$3,071,000           |
|                                                                                               | Contingencies                                                                          | 20%       | 20%                                                                     | \$355,000             | 20%                                                                                                                             | \$636,000             | 25%                                                                                                                                    | \$723,000             | 25%                                                                                                                                    | \$768,000             |
|                                                                                               | Total Construction                                                                     |           |                                                                         | \$2,131,000           |                                                                                                                                 | \$3,818,000           |                                                                                                                                        | \$3,616,000           |                                                                                                                                        | \$3,839,000           |
| <b>Design Phase Costs</b>                                                                     |                                                                                        |           |                                                                         |                       |                                                                                                                                 |                       |                                                                                                                                        |                       |                                                                                                                                        |                       |
|                                                                                               | Plans and Specifications                                                               |           |                                                                         | \$60,000              |                                                                                                                                 | \$80,000              |                                                                                                                                        | \$80,000              |                                                                                                                                        | \$80,000              |
|                                                                                               | Engineering & Design                                                                   |           |                                                                         | \$27,000              |                                                                                                                                 | \$46,000              |                                                                                                                                        | \$44,000              |                                                                                                                                        | \$46,000              |
|                                                                                               | Environmental Coordination                                                             |           |                                                                         | \$5,000               |                                                                                                                                 | \$12,000              |                                                                                                                                        | \$12,000              |                                                                                                                                        | \$12,000              |
|                                                                                               | Project Management during Design                                                       |           |                                                                         | \$35,000              |                                                                                                                                 | \$55,000              |                                                                                                                                        | \$55,000              |                                                                                                                                        | \$55,000              |
|                                                                                               | Specifications Surveys                                                                 |           |                                                                         | \$21,000              |                                                                                                                                 | \$33,000              |                                                                                                                                        | \$33,000              |                                                                                                                                        | \$33,000              |
| <b>Construction Phase Non-Contract Costs</b>                                                  |                                                                                        |           |                                                                         |                       |                                                                                                                                 |                       |                                                                                                                                        |                       |                                                                                                                                        |                       |
|                                                                                               | Engineering During Construction                                                        |           |                                                                         | \$21,000              |                                                                                                                                 | \$38,000              |                                                                                                                                        | \$36,000              |                                                                                                                                        | \$38,000              |
|                                                                                               | Project Management during Constr.                                                      |           |                                                                         | \$43,000              |                                                                                                                                 | \$76,000              |                                                                                                                                        | \$72,000              |                                                                                                                                        | \$77,000              |
|                                                                                               | Pre-Dredge and After-Dredge Surveys                                                    |           |                                                                         | \$42,000              |                                                                                                                                 | \$66,000              |                                                                                                                                        | \$66,000              |                                                                                                                                        | \$66,000              |
|                                                                                               | Contracting Division                                                                   |           |                                                                         | \$6,000               |                                                                                                                                 | \$8,000               |                                                                                                                                        | \$8,000               |                                                                                                                                        | \$8,000               |
|                                                                                               | Contract Administration and Safety                                                     |           |                                                                         | \$5,000               |                                                                                                                                 | \$6,000               |                                                                                                                                        | \$6,000               |                                                                                                                                        | \$6,000               |
|                                                                                               | Supervision & Inspection                                                               |           |                                                                         | \$58,000              |                                                                                                                                 | \$69,000              |                                                                                                                                        | \$69,000              |                                                                                                                                        | \$69,000              |
|                                                                                               | Travel and Miscellaneous                                                               |           |                                                                         | \$6,000               |                                                                                                                                 | \$8,000               |                                                                                                                                        | \$10,000              |                                                                                                                                        | \$10,000              |
|                                                                                               | <b>Total First Cost</b>                                                                |           | <b>\$329,000</b>                                                        | <b>\$2,460,000</b>    | <b>\$497,000</b>                                                                                                                | <b>\$4,315,000</b>    | <b>\$491,000</b>                                                                                                                       | <b>\$4,107,000</b>    | <b>\$500,000</b>                                                                                                                       | <b>\$4,339,000</b>    |
|                                                                                               | Construction Duration                                                                  | Months    | 0.92                                                                    |                       | 1.21                                                                                                                            |                       | 1.21                                                                                                                                   |                       | 1.21                                                                                                                                   |                       |
|                                                                                               |                                                                                        | SAY       | 1                                                                       |                       | 2                                                                                                                               |                       | 2                                                                                                                                      |                       | 2                                                                                                                                      |                       |
|                                                                                               | First Cost Plus Interest During Construction                                           | 0.04625   | <1 Mo = \$0                                                             | \$2,460,000           |                                                                                                                                 | \$4,323,000           |                                                                                                                                        | \$4,115,000           |                                                                                                                                        | \$4,347,000           |
| <b>Difference From Base Plan - \$204 Project Implementation Costs</b>                         |                                                                                        |           |                                                                         |                       |                                                                                                                                 | \$1,863,000           |                                                                                                                                        | \$1,655,000           |                                                                                                                                        | \$1,887,000           |
| <b>\$204 Project - Design Costs</b>                                                           |                                                                                        |           |                                                                         |                       |                                                                                                                                 | \$78,000              |                                                                                                                                        | \$76,000              |                                                                                                                                        | \$78,000              |
| <b>\$204 Project - Construction Costs</b>                                                     |                                                                                        |           |                                                                         |                       |                                                                                                                                 | \$1,785,000           |                                                                                                                                        | \$1,579,000           |                                                                                                                                        | \$1,809,000           |
| <b>Non-Federal Cost Share</b>                                                                 |                                                                                        |           |                                                                         |                       |                                                                                                                                 | \$652,100             |                                                                                                                                        | \$579,300             |                                                                                                                                        | \$660,500             |
| <b>Federal Share of \$204 Project - Design &amp; Construction</b>                             |                                                                                        |           |                                                                         |                       |                                                                                                                                 | \$1,210,900           |                                                                                                                                        | \$1,075,700           |                                                                                                                                        | \$1,226,500           |

Note: Unit costs for dredging and disposal include an additional \$2.25 for shore work



**Table F-1 (Continued) - Newburyport Harbor and Plum Island & Salisbury Beaches, Massachusetts - Project Cost Estimates**

| Project Cost Estimates as of 27 March 2009                                                               |                                                                                        |            | Federal Base Plan<br>Near-Shore Bar Placement<br>Off Plum Island Center |                       | Alternative D-1<br>Split Placement on Plum Island<br>Beach (Newbury)<br>and into Salisbury Stockpile<br>Using Pump-Off Hopper |                       | Alternative D-2<br>Split Placement on Beaches<br>at Plum Island (Newbury)<br>and Salisbury Stockpile Using<br>24" Hydraulic Pipeline |                       | Alternative D-3<br>Split Placement on Beaches<br>at Plum Island (Newbury)<br>and Salisbury Stockpile Using<br>20" Hydraulic Pipeline |                       |
|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|------------|-------------------------------------------------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| 200,000 Cubic Yard Plan with State Paying to Dredge Extra<br>40,000 CY to Place into Salisbury Stockpile |                                                                                        |            | Unit<br>Price                                                           | Total<br>Project Cost | Unit<br>Price                                                                                                                 | Total<br>Project Cost | Unit<br>Price                                                                                                                        | Total<br>Project Cost | Unit<br>Price                                                                                                                        | Total<br>Project Cost |
| <b>Construction Contract</b>                                                                             | <u>Quantity</u>                                                                        |            |                                                                         |                       |                                                                                                                               |                       |                                                                                                                                      |                       |                                                                                                                                      |                       |
| 0001                                                                                                     | Mob & Demob                                                                            | 1 LS       | \$ 485,785.00                                                           | \$486,000             | \$ 557,019.00                                                                                                                 | \$557,000             | \$ 831,279.00                                                                                                                        | \$831,000             | \$ 781,729.00                                                                                                                        | \$782,000             |
| 0002                                                                                                     | Dredging 15-Foot Entrance Channel - Hopper<br>Disposal at Plum Island Center - Newbury |            |                                                                         |                       |                                                                                                                               |                       |                                                                                                                                      |                       |                                                                                                                                      |                       |
| 0002AA                                                                                                   | Ordinary Material - Required                                                           | 100,000 CY | 100000 CY                                                               | \$806,000             | \$ 13.83                                                                                                                      | \$1,383,000           | \$ 10.31                                                                                                                             | \$1,031,000           | \$ 11.73                                                                                                                             | \$1,173,000           |
| 0002AB                                                                                                   | Ordinary Material - Allowable<br>Disposal at Salisbury State Stockpile                 | 60,000 CY  | 60000 CY                                                                | \$484,000             | \$ 13.83                                                                                                                      | \$830,000             | \$ 10.31                                                                                                                             | \$619,000             | \$ 11.73                                                                                                                             | \$704,000             |
| 0003AA                                                                                                   | Ordinary Material - Required<br>Relocate Pipelines and Discharge                       | 40,000 CY  |                                                                         |                       | \$ 13.83                                                                                                                      | \$553,000             | \$ 9.36                                                                                                                              | \$374,000             | \$ 9.36                                                                                                                              | \$374,000             |
| 0004                                                                                                     | Dike Construction at Stockpile                                                         |            |                                                                         |                       |                                                                                                                               | \$100,000             |                                                                                                                                      | \$100,000             |                                                                                                                                      | \$100,000             |
| 0005                                                                                                     | Boulder & Debris Removal & Disposal                                                    | 0 TN       |                                                                         |                       |                                                                                                                               | \$35,000              |                                                                                                                                      | \$35,000              |                                                                                                                                      | \$35,000              |
|                                                                                                          | Total Contract Cost                                                                    |            |                                                                         | \$1,776,000           |                                                                                                                               | \$3,458,000           |                                                                                                                                      | \$2,990,000           |                                                                                                                                      | \$3,168,000           |
|                                                                                                          | Contingencies                                                                          | 20%        | 20%                                                                     | \$355,000             | 25%                                                                                                                           | \$865,000             | 25%                                                                                                                                  | \$748,000             | 25%                                                                                                                                  | \$792,000             |
|                                                                                                          | Total Construction                                                                     |            |                                                                         | \$2,131,000           |                                                                                                                               | \$4,323,000           |                                                                                                                                      | \$3,738,000           |                                                                                                                                      | \$3,960,000           |
| <b>Design Phase Costs</b>                                                                                |                                                                                        |            |                                                                         |                       |                                                                                                                               |                       |                                                                                                                                      |                       |                                                                                                                                      |                       |
|                                                                                                          | Plans and Specifications                                                               |            |                                                                         | \$60,000              |                                                                                                                               | \$80,000              |                                                                                                                                      | \$80,000              |                                                                                                                                      | \$80,000              |
|                                                                                                          | Engineering & Design                                                                   |            |                                                                         | \$27,000              |                                                                                                                               | \$51,000              |                                                                                                                                      | \$45,000              |                                                                                                                                      | \$48,000              |
|                                                                                                          | Environmental Coordiantion                                                             |            |                                                                         | \$5,000               |                                                                                                                               | \$12,000              |                                                                                                                                      | \$12,000              |                                                                                                                                      | \$12,000              |
|                                                                                                          | Project Management during Design                                                       |            |                                                                         | \$35,000              |                                                                                                                               | \$55,000              |                                                                                                                                      | \$55,000              |                                                                                                                                      | \$55,000              |
|                                                                                                          | Specifications Surveys                                                                 |            |                                                                         | \$21,000              |                                                                                                                               | \$33,000              |                                                                                                                                      | \$33,000              |                                                                                                                                      | \$33,000              |
| <b>Construction Phase Non-Contract Costs</b>                                                             |                                                                                        |            |                                                                         |                       |                                                                                                                               |                       |                                                                                                                                      |                       |                                                                                                                                      |                       |
|                                                                                                          | Engineering During Construction                                                        |            |                                                                         | \$21,000              |                                                                                                                               | \$43,000              |                                                                                                                                      | \$37,000              |                                                                                                                                      | \$40,000              |
|                                                                                                          | Project Management during Constr.                                                      |            |                                                                         | \$43,000              |                                                                                                                               | \$86,000              |                                                                                                                                      | \$75,000              |                                                                                                                                      | \$79,000              |
|                                                                                                          | Pre-Dredge and After-Dredge Surveys                                                    |            |                                                                         | \$42,000              |                                                                                                                               | \$66,000              |                                                                                                                                      | \$66,000              |                                                                                                                                      | \$66,000              |
|                                                                                                          | Contracting Division                                                                   |            |                                                                         | \$6,000               |                                                                                                                               | \$8,000               |                                                                                                                                      | \$8,000               |                                                                                                                                      | \$8,000               |
|                                                                                                          | Contract Administration and Safety                                                     |            |                                                                         | \$5,000               |                                                                                                                               | \$6,000               |                                                                                                                                      | \$6,000               |                                                                                                                                      | \$6,000               |
|                                                                                                          | Supervision & Inspection                                                               |            |                                                                         | \$58,000              |                                                                                                                               | \$69,000              |                                                                                                                                      | \$69,000              |                                                                                                                                      | \$69,000              |
|                                                                                                          | Travel and Miscellaneous                                                               |            |                                                                         | \$6,000               |                                                                                                                               | \$8,000               |                                                                                                                                      | \$10,000              |                                                                                                                                      | \$10,000              |
|                                                                                                          | <b>Total First Cost</b>                                                                |            | <b>\$329,000</b>                                                        | <b>\$2,460,000</b>    | <b>\$517,000</b>                                                                                                              | <b>\$4,840,000</b>    | <b>\$496,000</b>                                                                                                                     | <b>\$4,234,000</b>    | <b>\$506,000</b>                                                                                                                     | <b>\$4,466,000</b>    |
|                                                                                                          | Construction Duration                                                                  | Months     | 0.92                                                                    |                       | 1.21                                                                                                                          |                       | 1.21                                                                                                                                 |                       | 1.21                                                                                                                                 |                       |
|                                                                                                          |                                                                                        | SAY        | 1                                                                       |                       | 2                                                                                                                             |                       | 2                                                                                                                                    |                       | 2                                                                                                                                    |                       |
|                                                                                                          | First Cost Plus Interest During Construction                                           | 0.04625    | <1 Mo = \$0                                                             | \$2,460,000           |                                                                                                                               | \$4,849,000           |                                                                                                                                      | \$4,242,000           |                                                                                                                                      | \$4,475,000           |
| Note: Unit costs for dredging and disposal include an additional \$2.25 for shore work                   |                                                                                        |            |                                                                         |                       |                                                                                                                               |                       |                                                                                                                                      |                       |                                                                                                                                      |                       |







**TABLE F-2 - Newburyport Harbor and Plum Island Beach, Massachusetts - Project Cost Comparison & Allocation**

| Project Cost Estimates as of 27 March 2009<br>160,000 Cubic Yard Plan - All to Newbury |                                                                                        |            | Federal Base Plan<br>Near-Shore Bar<br>Placement Off<br>Plum Island Center | Alternative A-1<br>Direct Placement<br>on Beach at<br>Plum Island Center<br>Using Pump-off Hopper | Alternative A-2<br>Direct Placement<br>on Beach at<br>Plum Island Center Using<br>24" Hydraulic Pipeline | Alternative A-3<br>Direct Placement<br>on Beach at<br>Plum Island Center Using<br>20" Hydraulic Pipeline | Alternative A<br>Direct Placement of 160,000<br>CY on Beach at<br>Plum Island Center<br>Average of 3 Methods |
|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
|                                                                                        |                                                                                        |            | Total<br>Project Cost                                                      | Total<br>Project Cost                                                                             | Total<br>Project Cost                                                                                    | Total<br>Project Cost                                                                                    | Total<br>Project Cost                                                                                        |
| <b>Construction Contract</b>                                                           | <u>Quantity</u>                                                                        |            |                                                                            |                                                                                                   |                                                                                                          |                                                                                                          |                                                                                                              |
| 0001                                                                                   | Mob & Demob                                                                            | 1 LS       | \$486,000                                                                  | \$557,000                                                                                         | \$831,000                                                                                                | \$782,000                                                                                                | \$723,000                                                                                                    |
| 0002                                                                                   | Dredging 15-Foot Entrance Channel - Hopper<br>Disposal at Plum Island Center - Newbury |            |                                                                            |                                                                                                   |                                                                                                          |                                                                                                          |                                                                                                              |
| 0002AA                                                                                 | Ordinary Material - Required                                                           | 100,000 CY | \$ 7.52 \$806,000                                                          | 100% \$1,383,000                                                                                  | 100% \$1,031,000                                                                                         | 100% \$1,173,000                                                                                         | \$1,196,000                                                                                                  |
| 0002AB                                                                                 | Ordinary Material - Allowable                                                          | 60,000 CY  | \$ 7.52 \$484,000                                                          | \$830,000                                                                                         | \$619,000                                                                                                | \$704,000                                                                                                | \$718,000                                                                                                    |
| 0003                                                                                   | Sand Fencing and Dune Grass Planting                                                   | 2500 LF    |                                                                            | \$ 80.00 \$200,000                                                                                | \$ 80.00 \$200,000                                                                                       | \$ 80.00 \$200,000                                                                                       | \$200,000                                                                                                    |
|                                                                                        | Total Contract Cost                                                                    |            | \$1,776,000                                                                | \$2,970,000                                                                                       | \$2,681,000                                                                                              | \$2,859,000                                                                                              | \$2,837,000                                                                                                  |
|                                                                                        | Contingencies                                                                          |            | 20% \$355,000                                                              | 20% \$594,000                                                                                     | 25% \$670,000                                                                                            | 25% \$715,000                                                                                            | \$660,000                                                                                                    |
|                                                                                        | Total Construction                                                                     | 160,000 CY | \$13.32 \$2,131,000                                                        | \$22.28 \$3,564,000                                                                               | \$20.94 \$3,351,000                                                                                      | \$22.34 \$3,574,000                                                                                      | \$21.85 \$3,496,000                                                                                          |
| <b>Design Phase Costs</b>                                                              |                                                                                        |            |                                                                            |                                                                                                   |                                                                                                          |                                                                                                          |                                                                                                              |
|                                                                                        | Plans and Specifications                                                               |            | \$60,000                                                                   | \$80,000                                                                                          | \$80,000                                                                                                 | \$80,000                                                                                                 | \$80,000                                                                                                     |
|                                                                                        | Engineering & Design                                                                   |            | \$27,000                                                                   | \$44,000                                                                                          | \$42,000                                                                                                 | \$44,000                                                                                                 | \$43,000                                                                                                     |
|                                                                                        | Environmental Coordination                                                             |            | \$5,000                                                                    | \$12,000                                                                                          | \$12,000                                                                                                 | \$12,000                                                                                                 | \$12,000                                                                                                     |
|                                                                                        | Project Management during Design                                                       |            | \$35,000                                                                   | \$55,000                                                                                          | \$55,000                                                                                                 | \$55,000                                                                                                 | \$55,000                                                                                                     |
|                                                                                        | Specifications Surveys                                                                 |            | \$148,000 \$21,000                                                         | \$224,000 \$33,000                                                                                | \$222,000 \$33,000                                                                                       | \$224,000 \$33,000                                                                                       | \$223,000 \$33,000                                                                                           |
| <b>Construction Phase Non-Contract Costs</b>                                           |                                                                                        |            |                                                                            |                                                                                                   |                                                                                                          |                                                                                                          |                                                                                                              |
|                                                                                        | Engineering During Construction                                                        |            | \$21,000                                                                   | \$36,000                                                                                          | \$34,000                                                                                                 | \$36,000                                                                                                 | \$35,000                                                                                                     |
|                                                                                        | Project Management during Construction                                                 |            | \$43,000                                                                   | \$71,000                                                                                          | \$67,000                                                                                                 | \$71,000                                                                                                 | \$70,000                                                                                                     |
|                                                                                        | Pre-Dredge and After-Dredge Surveys                                                    |            | \$42,000                                                                   | \$66,000                                                                                          | \$66,000                                                                                                 | \$66,000                                                                                                 | \$66,000                                                                                                     |
|                                                                                        | Contracting Division                                                                   |            | \$6,000                                                                    | \$8,000                                                                                           | \$8,000                                                                                                  | \$8,000                                                                                                  | \$8,000                                                                                                      |
|                                                                                        | Contract Administration and Safety                                                     |            | \$5,000                                                                    | \$6,000                                                                                           | \$6,000                                                                                                  | \$6,000                                                                                                  | \$6,000                                                                                                      |
|                                                                                        | Supervision & Inspection                                                               |            | \$58,000                                                                   | \$69,000                                                                                          | \$69,000                                                                                                 | \$69,000                                                                                                 | \$69,000                                                                                                     |
|                                                                                        | Travel and Miscellaneous                                                               |            | \$181,000 \$6,000                                                          | \$264,000 \$8,000                                                                                 | \$260,000 \$10,000                                                                                       | \$266,000 \$10,000                                                                                       | \$263,000 \$9,000                                                                                            |
|                                                                                        | <b>Total First Cost</b>                                                                |            | <b>\$2,460,000</b>                                                         | <b>\$4,052,000</b>                                                                                | <b>\$3,833,000</b>                                                                                       | <b>\$4,064,000</b>                                                                                       | <b>\$3,983,000</b>                                                                                           |
|                                                                                        | First Cost Plus Interest During Construction                                           | 0.04625    | <1 Mo = \$0 \$2,460,000                                                    | 100% \$4,060,000                                                                                  | 100% \$3,840,000                                                                                         | 100% \$4,072,000                                                                                         | 100% \$3,991,000                                                                                             |
|                                                                                        | <b>Difference From Base Plan - §204 Project Implementation is §204</b>                 |            |                                                                            | 39% \$1,600,000                                                                                   | 36% \$1,380,000                                                                                          | 40% \$1,612,000                                                                                          | 38% \$1,531,000                                                                                              |
|                                                                                        | <b>§204 Project - Design Costs</b>                                                     |            |                                                                            | \$76,000                                                                                          | \$74,000                                                                                                 | \$76,000                                                                                                 | \$75,000                                                                                                     |
|                                                                                        | <b>§204 Project - Construction Costs</b>                                               |            |                                                                            | \$1,524,000                                                                                       | \$1,306,000                                                                                              | \$1,536,000                                                                                              | \$1,455,000                                                                                                  |
|                                                                                        | <b>Non-Federal Cost Share for §204 Project</b>                                         |            |                                                                            | 35% \$560,000                                                                                     | 35% \$483,000                                                                                            | 35% \$564,200                                                                                            | 35% \$536,000                                                                                                |
|                                                                                        | <b>Federal Share of §204 Project - Design &amp; Construction</b>                       |            |                                                                            | \$1,040,000                                                                                       | \$897,000                                                                                                | \$1,047,800                                                                                              | \$995,000                                                                                                    |

**TABLE F-2 (Continued) - Newburyport Harbor and Plum Island & Salisbury Beaches, Massachusetts - Project Cost Comparison & Allocation**

| Project Cost Estimates as of 27 March 2009<br>160,000 Cubic Yard Plan - Direct to Beaches<br>120,000 CY to Newbury - 40,000 CY to Salisbury |                                                                                        |            | Federal Base Plan<br>Near-Shore Bar<br>Placement Off<br>Plum Island Center | Alternative B-1<br>Split Placement on Beaches<br>at Plum Island (Newbury) &<br>Salisbury State Beach Using<br>Pump-Off Hopper | Alternative B-2<br>Split Placement on Beaches<br>at Plum Island (Newbury)<br>and Salisbury State Beach<br>Using<br>24" Hydraulic Pipeline | Alternative B-3<br>Split Placement on Beaches<br>at Plum Island (Newbury)<br>and Salisbury State Beach<br>Using<br>20" Hydraulic Pipeline | Alternative B<br>Split Placement on Beaches<br>at Plum Island (Newbury)<br>and Salisbury State Beach<br>Average of 3 Methods |
|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|------------|----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                             | Quantity                                                                               |            | Total<br>Project Cost                                                      | Total<br>Project Cost                                                                                                         | Total<br>Project Cost                                                                                                                     | Total<br>Project Cost                                                                                                                     | Total<br>Project Cost                                                                                                        |
| 0001                                                                                                                                        | Mob & Demob                                                                            | 1 LS       | \$486,000                                                                  | \$557,000                                                                                                                     | \$831,000                                                                                                                                 | \$782,000                                                                                                                                 | \$723,000                                                                                                                    |
| 0002                                                                                                                                        | Dredging 15-Foot Entrance Channel - Hopper<br>Disposal at Plum Island Center - Newbury |            |                                                                            |                                                                                                                               |                                                                                                                                           |                                                                                                                                           |                                                                                                                              |
| 0002AA                                                                                                                                      | Ordinary Material - Required                                                           | 60,000 CY  | \$ 7.52 \$806,000                                                          | 75% \$830,000                                                                                                                 | 75% \$619,000                                                                                                                             | 75% \$704,000                                                                                                                             | \$718,000                                                                                                                    |
| 0002AB                                                                                                                                      | Ordinary Material - Allowable<br>Disposal at Salisbury State Beach                     | 60,000 CY  | \$ 7.52 \$484,000                                                          | \$830,000                                                                                                                     | \$619,000                                                                                                                                 | \$704,000                                                                                                                                 | \$718,000                                                                                                                    |
| 0003AA                                                                                                                                      | Ordinary Material - Required<br>Relocate Pipelines and Discharge                       | 40,000 CY  |                                                                            | 25% \$553,000                                                                                                                 | 25% \$412,000                                                                                                                             | 25% \$469,000                                                                                                                             | \$478,000                                                                                                                    |
|                                                                                                                                             |                                                                                        |            |                                                                            | \$100,000                                                                                                                     | \$100,000                                                                                                                                 | \$100,000                                                                                                                                 | \$100,000                                                                                                                    |
| 0004                                                                                                                                        | Sand Fencing and Dune Grass Planting                                                   | 3900 LF    |                                                                            | \$ 80.00 \$312,000                                                                                                            | \$ 80.00 \$312,000                                                                                                                        | \$ 80.00 \$312,000                                                                                                                        | \$312,000                                                                                                                    |
|                                                                                                                                             | Total Contract Cost                                                                    | 160,000 CY | \$1,776,000                                                                | \$3,182,000                                                                                                                   | \$2,893,000                                                                                                                               | \$3,071,000                                                                                                                               | \$3,049,000                                                                                                                  |
|                                                                                                                                             | Contingencies                                                                          |            | 20% \$355,000                                                              | 20% \$636,000                                                                                                                 | 25% \$723,000                                                                                                                             | 25% \$768,000                                                                                                                             | \$709,000                                                                                                                    |
|                                                                                                                                             | Total Construction                                                                     |            | \$13.32 \$2,131,000                                                        | \$23.86 \$3,818,000                                                                                                           | \$22.60 \$3,616,000                                                                                                                       | \$23.99 \$3,839,000                                                                                                                       | \$23.49 \$3,758,000                                                                                                          |
|                                                                                                                                             | <b>Design Phase Costs</b>                                                              |            |                                                                            |                                                                                                                               |                                                                                                                                           |                                                                                                                                           |                                                                                                                              |
|                                                                                                                                             | Plans and Specifications                                                               |            | \$60,000                                                                   | \$80,000                                                                                                                      | \$80,000                                                                                                                                  | \$80,000                                                                                                                                  | \$80,000                                                                                                                     |
|                                                                                                                                             | Engineering & Design                                                                   |            | \$27,000                                                                   | \$46,000                                                                                                                      | \$44,000                                                                                                                                  | \$46,000                                                                                                                                  | \$45,000                                                                                                                     |
|                                                                                                                                             | Environmental Coordination                                                             |            | \$5,000                                                                    | \$12,000                                                                                                                      | \$12,000                                                                                                                                  | \$12,000                                                                                                                                  | \$12,000                                                                                                                     |
|                                                                                                                                             | Project Management during Design                                                       |            | \$35,000                                                                   | \$55,000                                                                                                                      | \$55,000                                                                                                                                  | \$55,000                                                                                                                                  | \$55,000                                                                                                                     |
|                                                                                                                                             | Specifications Surveys                                                                 |            | \$148,000 \$21,000                                                         | \$226,000 \$33,000                                                                                                            | \$224,000 \$33,000                                                                                                                        | \$226,000 \$33,000                                                                                                                        | \$225,000 \$33,000                                                                                                           |
|                                                                                                                                             | <b>Construction Phase Non-Contract Costs</b>                                           |            |                                                                            |                                                                                                                               |                                                                                                                                           |                                                                                                                                           |                                                                                                                              |
|                                                                                                                                             | Engineering During Construction                                                        |            | \$21,000                                                                   | \$38,000                                                                                                                      | \$36,000                                                                                                                                  | \$38,000                                                                                                                                  | \$37,000                                                                                                                     |
|                                                                                                                                             | Project Management during Construction                                                 |            | \$43,000                                                                   | \$76,000                                                                                                                      | \$72,000                                                                                                                                  | \$77,000                                                                                                                                  | \$75,000                                                                                                                     |
|                                                                                                                                             | Pre-Dredge and After-Dredge Surveys                                                    |            | \$42,000                                                                   | \$66,000                                                                                                                      | \$66,000                                                                                                                                  | \$66,000                                                                                                                                  | \$66,000                                                                                                                     |
|                                                                                                                                             | Contracting Division                                                                   |            | \$6,000                                                                    | \$8,000                                                                                                                       | \$8,000                                                                                                                                   | \$8,000                                                                                                                                   | \$8,000                                                                                                                      |
|                                                                                                                                             | Contract Administration and Safety                                                     |            | \$5,000                                                                    | \$6,000                                                                                                                       | \$6,000                                                                                                                                   | \$6,000                                                                                                                                   | \$6,000                                                                                                                      |
|                                                                                                                                             | Supervision & Inspection                                                               |            | \$58,000                                                                   | \$69,000                                                                                                                      | \$69,000                                                                                                                                  | \$69,000                                                                                                                                  | \$69,000                                                                                                                     |
|                                                                                                                                             | Travel and Miscellaneous                                                               |            | \$181,000 \$6,000                                                          | \$271,000 \$8,000                                                                                                             | \$267,000 \$10,000                                                                                                                        | \$274,000 \$10,000                                                                                                                        | \$270,000 \$9,000                                                                                                            |
|                                                                                                                                             | <b>Total First Cost</b>                                                                |            | <b>\$2,460,000</b>                                                         | <b>\$4,315,000</b>                                                                                                            | <b>\$4,107,000</b>                                                                                                                        | <b>\$4,339,000</b>                                                                                                                        | <b>\$4,254,000</b>                                                                                                           |
|                                                                                                                                             | First Cost Plus Interest During Construction                                           | 0.04625    | <1 Mo = \$0 \$2,460,000                                                    | 100% \$4,323,000                                                                                                              | 100% \$4,115,000                                                                                                                          | 100% \$4,347,000                                                                                                                          | 100% \$4,262,000                                                                                                             |
|                                                                                                                                             | <b>Difference From Base Plan - §204 Project Implementation is §204</b>                 |            |                                                                            | 43% \$1,863,000                                                                                                               | 40% \$1,655,000                                                                                                                           | 43% \$1,887,000                                                                                                                           | 42% \$1,802,000                                                                                                              |
|                                                                                                                                             | §204 Project - Design Costs                                                            |            |                                                                            | \$78,000                                                                                                                      | \$76,000                                                                                                                                  | \$78,000                                                                                                                                  | \$77,000                                                                                                                     |
|                                                                                                                                             | §204 Project - Construction Costs                                                      |            |                                                                            | \$1,785,000                                                                                                                   | \$1,579,000                                                                                                                               | \$1,809,000                                                                                                                               | \$1,724,000                                                                                                                  |
|                                                                                                                                             | Non-Federal Cost Share for §204 Project                                                |            |                                                                            | 35% \$652,100                                                                                                                 | 35% \$579,300                                                                                                                             | 35% \$660,500                                                                                                                             | 35% \$630,600                                                                                                                |
|                                                                                                                                             | Federal Share of §204 Project - Design & Construction                                  |            |                                                                            | \$1,210,900                                                                                                                   | \$1,075,700                                                                                                                               | \$1,226,500                                                                                                                               | \$1,171,000                                                                                                                  |

**Table F-3 - Newburyport Harbor and Plum Island and Salisbury Beaches, Massachusetts - Project Cost Allocation for State Alternatives**

| Project Cost Estimates as of 27 March 2009<br>200,000 Cubic Yard Plan with §204 Project Placing 160,000 CY at Plum Island Beach and the State Paying to Dredge Extra 40,000 CY to Place on Directly Salisbury Beach |                                                                                        |            | Federal Base Plan<br>Near-Shore Bar<br>Placement Off<br>Plum Island Center | Alternative C-1<br>Split Placement on Beaches at Plum Island<br>(Newbury) & Salisbury State Beach<br>Using Pump-Off Hopper |                       | Alternative C-2<br>Split Placement on Beaches at Plum Island<br>(Newbury) and Salisbury State Beach<br>Using 24" Hydraulic Pipeline |                  |                       | Alternative C-2<br>Split Placement on Beaches at Plum Island<br>(Newbury) and Salisbury State Beach<br>Using 20" Hydraulic Pipeline |                  |                       |                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------------|-------------------|
|                                                                                                                                                                                                                     |                                                                                        |            |                                                                            | Total<br>Project Cost                                                                                                      | Total<br>Project Cost | Cost Distribution                                                                                                                   |                  | Total<br>Project Cost | Cost Distribution                                                                                                                   |                  | Total<br>Project Cost | Cost Distribution |
| Quantity                                                                                                                                                                                                            | Federal                                                                                | State      | Federal                                                                    |                                                                                                                            |                       | State                                                                                                                               | Federal          |                       | State                                                                                                                               |                  |                       |                   |
| 0001                                                                                                                                                                                                                | Mob & Demob                                                                            | 1 LS       | \$486,000                                                                  | \$557,000                                                                                                                  | \$445,600             | \$111,400                                                                                                                           | \$831,000        | \$664,800             | \$166,200                                                                                                                           | \$782,000        | \$625,600             | \$156,400         |
| 0002                                                                                                                                                                                                                | Dredging 15-Foot Entrance Channel - Hopper<br>Disposal at Plum Island Center - Newbury |            |                                                                            |                                                                                                                            |                       |                                                                                                                                     |                  |                       |                                                                                                                                     |                  |                       |                   |
| 0002AA                                                                                                                                                                                                              | Ordinary Material - Required                                                           | 100,000 CY | \$806,000                                                                  | 80% \$1,383,000                                                                                                            | \$1,383,000           |                                                                                                                                     | 80% \$1,031,000  | \$1,031,000           |                                                                                                                                     | 80% \$1,173,000  | \$1,173,000           |                   |
| 0002AB                                                                                                                                                                                                              | Ordinary Material - Allowable<br>Disposal at Salisbury State Beach                     | 60,000 CY  | \$484,000                                                                  | \$830,000                                                                                                                  | \$830,000             |                                                                                                                                     | \$619,000        | \$619,000             |                                                                                                                                     | \$704,000        | \$704,000             |                   |
| 0003AA                                                                                                                                                                                                              | Ordinary Material - Required<br>Relocate Pipelines and Discharge                       | 40,000 CY  |                                                                            | 20% \$553,000                                                                                                              | \$553,000             |                                                                                                                                     | 20% \$412,000    | \$412,000             |                                                                                                                                     | 20% \$469,000    | \$469,000             |                   |
| 0004                                                                                                                                                                                                                | Boulder & Debris Removal & Disposal                                                    | 0 TN       |                                                                            | \$100,000                                                                                                                  | \$100,000             |                                                                                                                                     | \$100,000        | \$100,000             |                                                                                                                                     | \$100,000        | \$100,000             |                   |
|                                                                                                                                                                                                                     | <b>Total Contract Cost</b>                                                             | 200,000 CY | \$1,776,000                                                                | \$3,423,000                                                                                                                | \$2,658,600           | \$764,400                                                                                                                           | \$2,993,000      | \$2,314,800           | \$678,200                                                                                                                           | \$3,228,000      | \$2,502,600           | \$725,400         |
|                                                                                                                                                                                                                     | Contingencies                                                                          |            | \$355,000                                                                  | \$685,000                                                                                                                  | \$548,000             | \$137,000                                                                                                                           | \$748,000        | \$598,400             | \$149,600                                                                                                                           | \$807,000        | \$645,600             | \$161,400         |
|                                                                                                                                                                                                                     | <b>Total Construction</b>                                                              |            | \$2,131,000                                                                | \$4,108,000                                                                                                                | \$3,206,600           | \$901,400                                                                                                                           | \$3,741,000      | \$2,913,200           | \$827,800                                                                                                                           | \$4,035,000      | \$3,148,200           | \$886,800         |
|                                                                                                                                                                                                                     | <b>Design Phase Costs</b>                                                              |            |                                                                            |                                                                                                                            |                       |                                                                                                                                     |                  |                       |                                                                                                                                     |                  |                       |                   |
|                                                                                                                                                                                                                     | Plans and Specifications                                                               |            | \$60,000                                                                   | \$80,000                                                                                                                   |                       |                                                                                                                                     | \$80,000         |                       |                                                                                                                                     | \$80,000         |                       |                   |
|                                                                                                                                                                                                                     | Engineering & Design                                                                   |            | \$27,000                                                                   | \$49,000                                                                                                                   |                       |                                                                                                                                     | \$45,000         |                       |                                                                                                                                     | \$48,000         |                       |                   |
|                                                                                                                                                                                                                     | Environmental Coordination                                                             |            | \$5,000                                                                    | \$12,000                                                                                                                   | \$183,200             | \$45,800                                                                                                                            | \$12,000         | \$180,000             | \$45,000                                                                                                                            | \$12,000         | \$182,400             | \$45,600          |
|                                                                                                                                                                                                                     | Project Management during Design                                                       |            | \$35,000                                                                   | \$55,000                                                                                                                   |                       |                                                                                                                                     | \$55,000         |                       |                                                                                                                                     | \$55,000         |                       |                   |
|                                                                                                                                                                                                                     | Specifications Surveys                                                                 |            | \$21,000                                                                   | \$33,000                                                                                                                   |                       |                                                                                                                                     | \$33,000         |                       |                                                                                                                                     | \$33,000         |                       |                   |
|                                                                                                                                                                                                                     | <b>Construction Phase Non-Contract Costs</b>                                           |            |                                                                            |                                                                                                                            |                       |                                                                                                                                     |                  |                       |                                                                                                                                     |                  |                       |                   |
|                                                                                                                                                                                                                     | Engineering During Construction                                                        |            | \$21,000                                                                   | \$41,000                                                                                                                   |                       |                                                                                                                                     | \$37,000         |                       |                                                                                                                                     | \$40,000         |                       |                   |
|                                                                                                                                                                                                                     | Project Management during Constr.                                                      |            | \$43,000                                                                   | \$82,000                                                                                                                   |                       |                                                                                                                                     | \$75,000         |                       |                                                                                                                                     | \$81,000         |                       |                   |
|                                                                                                                                                                                                                     | Pre-Dredge and After-Dredge Surveys                                                    |            | \$42,000                                                                   | \$66,000                                                                                                                   |                       |                                                                                                                                     | \$66,000         |                       |                                                                                                                                     | \$66,000         |                       |                   |
|                                                                                                                                                                                                                     | Contracting Division                                                                   |            | \$6,000                                                                    | \$8,000                                                                                                                    | \$224,000             | \$56,000                                                                                                                            | \$8,000          | \$216,800             | \$54,200                                                                                                                            | \$8,000          | \$225,600             | \$56,400          |
|                                                                                                                                                                                                                     | Contract Administration and Safety                                                     |            | \$5,000                                                                    | \$6,000                                                                                                                    |                       |                                                                                                                                     | \$6,000          |                       |                                                                                                                                     | \$6,000          |                       |                   |
|                                                                                                                                                                                                                     | Supervision & Inspection                                                               |            | \$58,000                                                                   | \$69,000                                                                                                                   |                       |                                                                                                                                     | \$69,000         |                       |                                                                                                                                     | \$69,000         |                       |                   |
|                                                                                                                                                                                                                     | Travel and Miscellaneous                                                               |            | \$6,000                                                                    | \$8,000                                                                                                                    |                       |                                                                                                                                     | \$10,000         |                       |                                                                                                                                     | \$12,000         |                       |                   |
|                                                                                                                                                                                                                     | <b>Total First Cost</b>                                                                |            | \$2,460,000                                                                | \$4,617,000                                                                                                                | \$3,613,800           | \$1,003,200                                                                                                                         | \$4,237,000      | \$3,310,000           | \$927,000                                                                                                                           | \$4,545,000      | \$3,556,200           | \$988,800         |
|                                                                                                                                                                                                                     | First Cost Plus Interest During Construction                                           | 0.04625    | \$2,460,000                                                                | 100% \$4,626,000                                                                                                           | \$3,620,800           |                                                                                                                                     | 100% \$4,245,000 | \$3,316,200           |                                                                                                                                     | 100% \$4,554,000 | \$3,563,200           |                   |
|                                                                                                                                                                                                                     | <b>Difference From Base Plan - §204 Project Implementation Costs</b>                   |            |                                                                            | 78% is §204                                                                                                                | \$1,160,800           |                                                                                                                                     | 78% is §204      | \$856,200             |                                                                                                                                     | 78% is §204      | \$1,103,200           |                   |
|                                                                                                                                                                                                                     | §204 Project - Design Costs                                                            |            |                                                                            |                                                                                                                            | \$35,200              |                                                                                                                                     |                  | \$32,000              |                                                                                                                                     |                  | \$34,400              |                   |
|                                                                                                                                                                                                                     | §204 Project - Construction Costs                                                      |            |                                                                            |                                                                                                                            | \$1,125,600           |                                                                                                                                     |                  | \$824,200             |                                                                                                                                     |                  | \$1,068,800           |                   |
|                                                                                                                                                                                                                     | <b>Non-Federal Cost Share for §204 Project &amp; Total State/§204</b>                  |            |                                                                            | 36%                                                                                                                        | \$406,300             | \$1,409,500                                                                                                                         | 36%              | \$299,700             | \$1,226,700                                                                                                                         | 36%              | \$386,100             | \$1,374,900       |
|                                                                                                                                                                                                                     | <b>Federal Share of §204 Project - Design &amp; Construction</b>                       |            |                                                                            |                                                                                                                            | \$754,500             |                                                                                                                                     |                  | \$556,500             |                                                                                                                                     |                  | \$717,100             |                   |

**Table F-3 (Continued) - Newburyport Harbor and Plum Island and Salisbury Beaches, Massachusetts - Project Cost Allocation for State Alternatives**

| Project Cost Estimates as of 27 March 2009<br>200,000 Cubic Yard Plan with State Paying to Dredge Extra<br>40,000 CY to Place into Salisbury Stockpile |                                                                                        |                       | Federal Base Plan<br>Near-Shore Bar<br>Placement Off<br>Plum Island Center | Alternative D-1<br>Split Placement on<br>Plum Island Beach (Newbury)<br>and into Salisbury Stockpile<br>Using Pump-Off Hopper |                    | Alternative D-2<br>Split Placement on Beaches at Plum Island<br>(Newbury) and Salisbury (via Stockpile)<br>Using 24" Hydraulic Pipeline |                    |                    | Alternative D-3<br>Split Placement on Beaches at Plum Island<br>(Newbury) and Salisbury (via Stockpile)<br>Using 20" Hydraulic Pipeline |                    |                    |                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-----------------------|----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|------------------|
| Construction Contract                                                                                                                                  | Quantity                                                                               | Total<br>Project Cost | Total<br>Project Cost                                                      | Cost Distribution                                                                                                             |                    | Total<br>Project Cost                                                                                                                   | Cost Distribution  |                    | Total<br>Project Cost                                                                                                                   | Cost Distribution  |                    |                  |
|                                                                                                                                                        |                                                                                        |                       |                                                                            | Federal                                                                                                                       | State              |                                                                                                                                         | Federal            | State              |                                                                                                                                         | Federal            | State              |                  |
| 0001                                                                                                                                                   | Mob & Demob                                                                            | 1 LS                  | \$486,000                                                                  | \$557,000                                                                                                                     | \$445,600          | \$111,400                                                                                                                               | \$831,000          | \$664,800          | \$166,200                                                                                                                               | \$782,000          | \$625,600          | \$156,400        |
| 0002                                                                                                                                                   | Dredging 15-Foot Entrance Channel - Hopper<br>Disposal at Plum Island Center - Newbury |                       |                                                                            |                                                                                                                               |                    |                                                                                                                                         |                    |                    |                                                                                                                                         |                    |                    |                  |
| 0002AA                                                                                                                                                 | Ordinary Material - Required                                                           | 100,000 CY            | \$806,000                                                                  | 80% \$1,383,000                                                                                                               | \$1,383,000        |                                                                                                                                         | 80% \$1,031,000    | \$1,031,000        |                                                                                                                                         | 80% \$1,173,000    | \$1,173,000        |                  |
| 0002AB                                                                                                                                                 | Ordinary Material - Allowable<br>Disposal at Salisbury State Stockpile                 | 60,000 CY             | \$484,000                                                                  | \$830,000                                                                                                                     | \$830,000          |                                                                                                                                         | \$619,000          | \$619,000          |                                                                                                                                         | \$704,000          | \$704,000          |                  |
| 0003AA                                                                                                                                                 | Ordinary Material - Required<br>Relocate Pipelines and Discharge                       | 40,000 CY             |                                                                            | 20% \$553,000                                                                                                                 | \$553,000          |                                                                                                                                         | 20% \$374,000      | \$374,000          |                                                                                                                                         | 20% \$374,000      | \$374,000          |                  |
| 0004                                                                                                                                                   | Dike Construction at Stockpile                                                         |                       |                                                                            | \$100,000                                                                                                                     | \$100,000          |                                                                                                                                         | \$100,000          | \$100,000          |                                                                                                                                         | \$100,000          | \$100,000          |                  |
| 0005                                                                                                                                                   | Boulder & Debris Removal & Disposal                                                    | 0 TN                  |                                                                            | \$35,000                                                                                                                      | \$35,000           |                                                                                                                                         | \$35,000           | \$35,000           |                                                                                                                                         | \$35,000           | \$35,000           |                  |
|                                                                                                                                                        | Total Contract Cost                                                                    | 200,000 CY            | \$1,776,000                                                                | \$3,458,000                                                                                                                   | \$2,658,600        | \$799,400                                                                                                                               | \$2,990,000        | \$2,314,800        | \$675,200                                                                                                                               | \$3,168,000        | \$2,502,600        | \$665,400        |
|                                                                                                                                                        | Contingencies                                                                          |                       | \$355,000                                                                  | \$865,000                                                                                                                     | \$692,000          | \$173,000                                                                                                                               | \$748,000          | \$598,400          | \$149,600                                                                                                                               | \$792,000          | \$633,600          | \$158,400        |
|                                                                                                                                                        | Total Construction                                                                     |                       | \$2,131,000                                                                | \$4,323,000                                                                                                                   | \$3,350,600        | \$972,400                                                                                                                               | \$3,738,000        | \$2,913,200        | \$824,800                                                                                                                               | \$3,960,000        | \$3,136,200        | \$823,800        |
|                                                                                                                                                        | <b>Design Phase Costs</b>                                                              |                       |                                                                            |                                                                                                                               |                    |                                                                                                                                         |                    |                    |                                                                                                                                         |                    |                    |                  |
|                                                                                                                                                        | Plans and Specifications                                                               |                       | \$60,000                                                                   | \$80,000                                                                                                                      |                    |                                                                                                                                         | \$80,000           |                    |                                                                                                                                         | \$80,000           |                    |                  |
|                                                                                                                                                        | Engineering & Design                                                                   |                       | \$27,000                                                                   | \$51,000                                                                                                                      |                    |                                                                                                                                         | \$45,000           |                    |                                                                                                                                         | \$48,000           |                    |                  |
|                                                                                                                                                        | Environmental Coordination                                                             |                       | \$5,000                                                                    | \$12,000                                                                                                                      | \$184,800          | \$46,200                                                                                                                                | \$12,000           | \$180,000          | \$45,000                                                                                                                                | \$12,000           | \$182,400          | \$45,600         |
|                                                                                                                                                        | Project Management during Design                                                       |                       | \$35,000                                                                   | \$55,000                                                                                                                      |                    |                                                                                                                                         | \$55,000           |                    |                                                                                                                                         | \$55,000           |                    |                  |
|                                                                                                                                                        | Specifications Surveys                                                                 |                       | \$21,000                                                                   | \$33,000                                                                                                                      |                    |                                                                                                                                         | \$33,000           |                    |                                                                                                                                         | \$33,000           |                    |                  |
|                                                                                                                                                        | <b>Construction Phase Non-Contract Costs</b>                                           |                       |                                                                            |                                                                                                                               |                    |                                                                                                                                         |                    |                    |                                                                                                                                         |                    |                    |                  |
|                                                                                                                                                        | Engineering During Construction                                                        |                       | \$21,000                                                                   | \$43,000                                                                                                                      |                    |                                                                                                                                         | \$37,000           |                    |                                                                                                                                         | \$40,000           |                    |                  |
|                                                                                                                                                        | Project Management during Constr.                                                      |                       | \$43,000                                                                   | \$86,000                                                                                                                      |                    |                                                                                                                                         | \$75,000           |                    |                                                                                                                                         | \$79,000           |                    |                  |
|                                                                                                                                                        | Pre-Dredge and After-Dredge Surveys                                                    |                       | \$42,000                                                                   | \$66,000                                                                                                                      |                    |                                                                                                                                         | \$66,000           |                    |                                                                                                                                         | \$66,000           |                    |                  |
|                                                                                                                                                        | Contracting Division                                                                   |                       | \$6,000                                                                    | \$8,000                                                                                                                       | \$228,800          | \$57,200                                                                                                                                | \$8,000            | \$216,800          | \$54,200                                                                                                                                | \$8,000            | \$222,400          | \$55,600         |
|                                                                                                                                                        | Contract Administration and Safety                                                     |                       | \$5,000                                                                    | \$6,000                                                                                                                       |                    |                                                                                                                                         | \$6,000            |                    |                                                                                                                                         | \$6,000            |                    |                  |
|                                                                                                                                                        | Supervision & Inspection                                                               |                       | \$58,000                                                                   | \$69,000                                                                                                                      |                    |                                                                                                                                         | \$69,000           |                    |                                                                                                                                         | \$69,000           |                    |                  |
|                                                                                                                                                        | Travel and Miscellaneous                                                               |                       | \$6,000                                                                    | \$8,000                                                                                                                       |                    |                                                                                                                                         | \$10,000           |                    |                                                                                                                                         | \$10,000           |                    |                  |
|                                                                                                                                                        | <b>Total First Cost</b>                                                                |                       | <b>\$2,460,000</b>                                                         | <b>\$4,840,000</b>                                                                                                            | <b>\$3,764,200</b> | <b>\$1,075,800</b>                                                                                                                      | <b>\$4,234,000</b> | <b>\$3,310,000</b> | <b>\$924,000</b>                                                                                                                        | <b>\$4,466,000</b> | <b>\$3,541,000</b> | <b>\$925,000</b> |
|                                                                                                                                                        | First Cost Plus Interest During Construction                                           | 0.04625               | \$2,460,000                                                                | 100% \$4,849,000                                                                                                              | \$3,771,200        |                                                                                                                                         | 100% \$4,242,000   | \$3,316,300        |                                                                                                                                         | 100% \$4,475,000   | \$3,548,100        |                  |
|                                                                                                                                                        | <b>Difference From Base Plan - §204 Project Implementation Costs</b>                   |                       |                                                                            | 78% is §204                                                                                                                   | \$1,311,200        |                                                                                                                                         | 78% is §204        | \$856,300          |                                                                                                                                         | 79% is §204        | \$1,088,100        |                  |
|                                                                                                                                                        | <b>§204 Project - Design Costs</b>                                                     |                       |                                                                            |                                                                                                                               | \$36,800           |                                                                                                                                         |                    | \$32,000           |                                                                                                                                         |                    | \$34,400           |                  |
|                                                                                                                                                        | <b>§204 Project - Construction Costs</b>                                               |                       |                                                                            |                                                                                                                               | \$1,274,400        |                                                                                                                                         |                    | \$824,300          |                                                                                                                                         |                    | \$1,053,700        |                  |
|                                                                                                                                                        | <b>Non-Federal Cost Share for §204 Project &amp; Total State/§204</b>                  |                       |                                                                            | 36%                                                                                                                           | \$458,900          | \$1,534,700                                                                                                                             | 36%                | \$299,700          | \$1,223,700                                                                                                                             | 36%                | \$380,800          | \$1,305,800      |
|                                                                                                                                                        | <b>Federal Share of §204 Project - Design &amp; Construction</b>                       |                       |                                                                            |                                                                                                                               | \$852,300          |                                                                                                                                         |                    | \$556,600          |                                                                                                                                         |                    | \$707,300          |                  |

**Table F-3 (Continued) - Newburyport Harbor and Plum Island and Salisbury Beaches, Massachusetts - Project Cost Allocation for State Alternatives**

| Project Cost Estimates as of 27 March 2009<br>200,000 Cubic Yard Plan with State Paying to Dredge Extra<br>40,000 CY to Place into Salisbury Stockpile<br>And Trucking Material to Salisbury Beach |                                                                                        |            | Federal Base Plan<br>Near-Shore Bar<br>Placement Off<br>Plum Island Center | Alternative E-1<br>Split Placement on Plum Island Beach<br>(Newbury) and into Salisbury Stockpile<br>Using Pump-Off Hopper |                   | Alternative E-2<br>Split Placement on Beaches at Plum Island<br>(Newbury) and Salisbury (via Stockpile)<br>Using 24" Hydraulic Pipeline |                       |                   | Alternative E-3<br>Split Placement on Beaches at Plum Island<br>(Newbury) and Salisbury (via Stockpile)<br>Using 20" Hydraulic Pipeline |                       |                   |             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------|-------------|
|                                                                                                                                                                                                    | Quantity                                                                               |            | Total<br>Project Cost                                                      | Total<br>Project Cost                                                                                                      | Cost Distribution |                                                                                                                                         | Total<br>Project Cost | Cost Distribution |                                                                                                                                         | Total<br>Project Cost | Cost Distribution |             |
|                                                                                                                                                                                                    |                                                                                        |            |                                                                            |                                                                                                                            | Federal           | State                                                                                                                                   |                       | Federal           | State                                                                                                                                   |                       | Federal           | State       |
| 0001                                                                                                                                                                                               | Mob & Demob                                                                            | 1 LS       | \$486,000                                                                  | \$557,000                                                                                                                  | \$445,600         | \$111,400                                                                                                                               | \$831,000             | \$664,800         | \$166,200                                                                                                                               | \$782,000             | \$625,600         | \$156,400   |
| 0002                                                                                                                                                                                               | Dredging 15-Foot Entrance Channel - Hopper<br>Disposal at Plum Island Center - Newbury |            |                                                                            |                                                                                                                            |                   |                                                                                                                                         |                       |                   |                                                                                                                                         |                       |                   |             |
| 0002AA                                                                                                                                                                                             | Ordinary Material - Required                                                           | 100,000 CY | \$806,000                                                                  | 80% \$1,383,000                                                                                                            | \$1,383,000       |                                                                                                                                         | 80% \$1,031,000       | \$1,031,000       |                                                                                                                                         | 80% \$1,173,000       | \$1,173,000       |             |
| 0002AB                                                                                                                                                                                             | Ordinary Material - Allowable<br>Disposal at Salisbury State Stockpile                 | 60,000 CY  | \$484,000                                                                  | \$830,000                                                                                                                  | \$830,000         |                                                                                                                                         | \$619,000             | \$619,000         |                                                                                                                                         | \$704,000             | \$704,000         |             |
| 0003AA                                                                                                                                                                                             | Ordinary Material - Required<br>Relocate Pipelines and Discharge                       | 40,000 CY  |                                                                            | 20% \$553,000                                                                                                              | \$553,000         |                                                                                                                                         | 20% \$374,000         | \$374,000         |                                                                                                                                         | 20% \$374,000         |                   | \$374,000   |
| 0004                                                                                                                                                                                               | Trucking to Beach & Spreading                                                          | 40,000 CY  |                                                                            | \$100,000                                                                                                                  | \$100,000         |                                                                                                                                         | \$100,000             | \$100,000         |                                                                                                                                         | \$100,000             |                   | \$100,000   |
| 0005                                                                                                                                                                                               | Dike Construction at Stockpile                                                         |            |                                                                            | \$220,000                                                                                                                  | \$220,000         |                                                                                                                                         | \$220,000             | \$220,000         |                                                                                                                                         | \$220,000             |                   | \$220,000   |
| 0006                                                                                                                                                                                               | Boulder & Debris Removal & Disposal                                                    | 0 TN       |                                                                            | \$35,000                                                                                                                   | \$35,000          |                                                                                                                                         | \$35,000              | \$35,000          |                                                                                                                                         | \$35,000              |                   | \$35,000    |
|                                                                                                                                                                                                    | <b>Total Contract Cost</b>                                                             | 200,000 CY | \$1,776,000                                                                | \$3,678,000                                                                                                                | \$2,658,600       | \$1,019,400                                                                                                                             | \$3,210,000           | \$2,314,800       | \$895,200                                                                                                                               | \$3,388,000           | \$2,502,600       | \$885,400   |
|                                                                                                                                                                                                    | Contingencies                                                                          |            | \$355,000                                                                  | \$920,000                                                                                                                  | \$736,000         | \$184,000                                                                                                                               | \$803,000             | \$642,400         | \$160,600                                                                                                                               | \$847,000             | \$677,600         | \$169,400   |
|                                                                                                                                                                                                    | <b>Total Construction</b>                                                              |            | \$2,131,000                                                                | \$4,598,000                                                                                                                | \$3,394,600       | \$1,203,400                                                                                                                             | \$4,013,000           | \$2,957,200       | \$1,055,800                                                                                                                             | \$4,235,000           | \$3,180,200       | \$1,054,800 |
|                                                                                                                                                                                                    | <b>Design Phase Costs</b>                                                              |            |                                                                            |                                                                                                                            |                   |                                                                                                                                         |                       |                   |                                                                                                                                         |                       |                   |             |
|                                                                                                                                                                                                    | Plans and Specifications                                                               |            | \$60,000                                                                   | \$80,000                                                                                                                   |                   |                                                                                                                                         | \$80,000              |                   |                                                                                                                                         | \$80,000              |                   |             |
|                                                                                                                                                                                                    | Engineering & Design                                                                   |            | \$27,000                                                                   | \$54,000                                                                                                                   |                   |                                                                                                                                         | \$48,000              |                   |                                                                                                                                         | \$50,000              |                   |             |
|                                                                                                                                                                                                    | Environmental Coordination                                                             |            | \$5,000                                                                    | \$12,000                                                                                                                   | \$187,200         | \$46,800                                                                                                                                | \$12,000              | \$182,400         | \$45,600                                                                                                                                | \$12,000              | \$184,000         | \$46,000    |
|                                                                                                                                                                                                    | Project Management during Design                                                       |            | \$35,000                                                                   | \$55,000                                                                                                                   |                   |                                                                                                                                         | \$55,000              |                   |                                                                                                                                         | \$55,000              |                   |             |
|                                                                                                                                                                                                    | Specifications Surveys                                                                 |            | \$21,000                                                                   | \$33,000                                                                                                                   |                   |                                                                                                                                         | \$33,000              |                   |                                                                                                                                         | \$33,000              |                   |             |
|                                                                                                                                                                                                    | <b>Construction Phase Non-Contract Costs</b>                                           |            |                                                                            |                                                                                                                            |                   |                                                                                                                                         |                       |                   |                                                                                                                                         |                       |                   |             |
|                                                                                                                                                                                                    | Engineering During Construction                                                        |            | \$21,000                                                                   | \$46,000                                                                                                                   |                   |                                                                                                                                         | \$40,000              |                   |                                                                                                                                         | \$42,000              |                   |             |
|                                                                                                                                                                                                    | Project Management during Constr.                                                      |            | \$43,000                                                                   | \$92,000                                                                                                                   |                   |                                                                                                                                         | \$80,000              |                   |                                                                                                                                         | \$85,000              |                   |             |
|                                                                                                                                                                                                    | Pre-Dredge and After-Dredge Surveys                                                    |            | \$42,000                                                                   | \$66,000                                                                                                                   |                   |                                                                                                                                         | \$66,000              |                   |                                                                                                                                         | \$66,000              |                   |             |
|                                                                                                                                                                                                    | Contracting Division                                                                   |            | \$6,000                                                                    | \$8,000                                                                                                                    | \$236,000         | \$59,000                                                                                                                                | \$8,000               | \$223,200         | \$55,800                                                                                                                                | \$8,000               | \$228,800         | \$57,200    |
|                                                                                                                                                                                                    | Contract Administration and Safety                                                     |            | \$5,000                                                                    | \$6,000                                                                                                                    |                   |                                                                                                                                         | \$6,000               |                   |                                                                                                                                         | \$6,000               |                   |             |
|                                                                                                                                                                                                    | Supervision & Inspection                                                               |            | \$58,000                                                                   | \$69,000                                                                                                                   |                   |                                                                                                                                         | \$69,000              |                   |                                                                                                                                         | \$69,000              |                   |             |
|                                                                                                                                                                                                    | Travel and Miscellaneous                                                               |            | \$6,000                                                                    | \$8,000                                                                                                                    |                   |                                                                                                                                         | \$10,000              |                   |                                                                                                                                         | \$10,000              |                   |             |
|                                                                                                                                                                                                    | <b>Total First Cost</b>                                                                |            | \$2,460,000                                                                | \$5,127,000                                                                                                                | \$3,817,800       | \$1,309,200                                                                                                                             | \$4,520,000           | \$3,362,800       | \$1,157,200                                                                                                                             | \$4,751,000           | \$3,593,000       | \$1,158,000 |
|                                                                                                                                                                                                    | First Cost Plus Interest During Construction                                           | 0.04625    | \$2,460,000                                                                | 100% \$5,137,000                                                                                                           | \$3,825,200       |                                                                                                                                         | 100% \$4,529,000      | \$3,369,500       |                                                                                                                                         | 100% \$4,760,000      | \$3,599,800       |             |
|                                                                                                                                                                                                    | <b>Difference From Base Plan - \$204 Project Implementation Costs</b>                  |            |                                                                            | 74% is \$204                                                                                                               | \$1,365,200       |                                                                                                                                         | 74% is \$204          | \$909,500         |                                                                                                                                         | 76% is \$204          | \$1,139,800       |             |
|                                                                                                                                                                                                    | <b>\$204 Project - Design Costs</b>                                                    |            |                                                                            |                                                                                                                            | \$39,200          |                                                                                                                                         |                       | \$34,400          |                                                                                                                                         |                       | \$36,000          |             |
|                                                                                                                                                                                                    | <b>\$204 Project - Construction Costs</b>                                              |            |                                                                            |                                                                                                                            | \$1,326,000       |                                                                                                                                         |                       | \$875,100         |                                                                                                                                         |                       | \$1,103,800       |             |
|                                                                                                                                                                                                    | <b>Non-Federal Cost Share for \$204 Project &amp; Total State/\$204</b>                |            |                                                                            | 36%                                                                                                                        | \$477,800         | \$1,787,000                                                                                                                             | 36%                   | \$318,300         | \$1,475,500                                                                                                                             | 36%                   | \$398,900         | \$1,556,900 |
|                                                                                                                                                                                                    | <b>Federal Share of \$204 Project - Design &amp; Construction</b>                      |            |                                                                            |                                                                                                                            | \$887,400         |                                                                                                                                         |                       | \$591,200         |                                                                                                                                         |                       | \$740,900         |             |



**Table F-3 (Continued) - Newburyport Harbor and Plum Island and Salisbury Beaches, Massachusetts - Project Cost Allocation for State Alternatives**

| Project Cost Estimates as of 27 March 2009                                                                                                                                                                   |                                                                                        |            | Federal Base Plan<br>Near-Shore Bar<br>Placement Off<br>Plum Island Center | Alternative F-1<br>Split Placement on Beaches at Plum Island<br>(Newbury) & Salisbury State Beach<br>Using Pump-Off Hopper |                       | Alternative F-2<br>Split Placement on Beaches at Plum Island<br>(Newbury) and Salisbury State Beach<br>Using 24" Hydraulic Pipeline |                    |                       | Alternative F-2<br>Split Placement on Beaches at Plum Island<br>(Newbury) and Salisbury State Beach<br>Using 20" Hydraulic Pipeline |                    |                       |                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------------|-------------------|
| 200,000 Cubic Yard Plan with §204 Project Placing 120,000<br>CY at Plum Island and 40,000 CY at Salisbury Beach, and the<br>State Paying to Dredge Extra 40,000 CY to Place on Directly<br>Plum Island Beach |                                                                                        |            |                                                                            | Total<br>Project Cost                                                                                                      | Total<br>Project Cost | Cost Distribution                                                                                                                   |                    | Total<br>Project Cost | Cost Distribution                                                                                                                   |                    | Total<br>Project Cost | Cost Distribution |
| Construction Contract                                                                                                                                                                                        | Quantity                                                                               |            |                                                                            |                                                                                                                            | Federal               | State                                                                                                                               |                    | Federal               | State                                                                                                                               |                    | Federal               | State             |
| 0001                                                                                                                                                                                                         | Mob & Demob                                                                            | 1 LS       | \$486,000                                                                  | \$557,000                                                                                                                  | \$445,600             | \$111,400                                                                                                                           | \$831,000          | \$664,800             | \$166,200                                                                                                                           | \$782,000          | \$625,600             | \$156,400         |
| 0002                                                                                                                                                                                                         | Dredging 15-Foot Entrance Channel - Hopper<br>Disposal at Plum Island Center - Newbury |            |                                                                            |                                                                                                                            |                       |                                                                                                                                     |                    |                       |                                                                                                                                     |                    |                       |                   |
| 0002AA                                                                                                                                                                                                       | Ordinary Material - Required                                                           | 60,000 CY  | \$806,000                                                                  | \$830,000                                                                                                                  | \$830,000             |                                                                                                                                     | \$619,000          | \$619,000             |                                                                                                                                     | \$704,000          | \$704,000             |                   |
| 0002AB                                                                                                                                                                                                       | Ordinary Material - Allowable<br>Disposal at Salisbury State Beach                     | 60,000 CY  | \$484,000                                                                  | 80% \$830,000                                                                                                              | \$830,000             |                                                                                                                                     | 80% \$619,000      | \$619,000             |                                                                                                                                     | 80% \$704,000      | \$704,000             |                   |
| 0003AA                                                                                                                                                                                                       | Ordinary Material - Required<br>Relocate Pipelines and Discharge                       | 40,000 CY  |                                                                            | \$553,000                                                                                                                  | \$553,000             |                                                                                                                                     | \$412,000          | \$412,000             |                                                                                                                                     | \$469,000          | \$469,000             |                   |
|                                                                                                                                                                                                              | State Disposal at Plum Island Beach                                                    |            |                                                                            | \$100,000                                                                                                                  | \$100,000             |                                                                                                                                     | \$100,000          | \$100,000             |                                                                                                                                     | \$100,000          | \$100,000             |                   |
| 0004AA                                                                                                                                                                                                       | Ordinary Material - Required                                                           | 40,000 CY  |                                                                            | 20% \$553,000                                                                                                              |                       | \$553,000                                                                                                                           | 20% \$412,000      |                       | \$412,000                                                                                                                           | 20% \$469,000      |                       | \$469,000         |
| 0005                                                                                                                                                                                                         | Boulder & Debris Removal & Disposal                                                    | 0 TN       |                                                                            |                                                                                                                            |                       |                                                                                                                                     |                    |                       |                                                                                                                                     |                    |                       |                   |
|                                                                                                                                                                                                              | Total Contract Cost                                                                    | 200,000 CY | \$1,776,000                                                                | \$3,423,000                                                                                                                | \$2,758,600           | \$664,400                                                                                                                           | \$2,993,000        | \$2,414,800           | \$578,200                                                                                                                           | \$3,228,000        | \$2,602,600           | \$625,400         |
|                                                                                                                                                                                                              | Contingencies                                                                          |            | \$355,000                                                                  | 20% \$684,600                                                                                                              | \$551,700             | \$132,900                                                                                                                           | 25% \$748,000      | \$603,700             | \$144,600                                                                                                                           | 25% \$807,000      | \$650,700             | \$156,400         |
|                                                                                                                                                                                                              | Total Construction                                                                     |            | \$2,131,000                                                                | \$4,107,600                                                                                                                | \$3,310,300           | \$797,300                                                                                                                           | \$3,741,000        | \$3,018,500           | \$722,800                                                                                                                           | \$4,035,000        | \$3,253,300           | \$781,800         |
| <b>Design Phase Costs</b>                                                                                                                                                                                    |                                                                                        |            |                                                                            |                                                                                                                            |                       |                                                                                                                                     |                    |                       |                                                                                                                                     |                    |                       |                   |
|                                                                                                                                                                                                              | Plans and Specifications                                                               |            | \$60,000                                                                   | \$80,000                                                                                                                   |                       |                                                                                                                                     | \$80,000           |                       |                                                                                                                                     | \$80,000           |                       |                   |
|                                                                                                                                                                                                              | Engineering & Design                                                                   |            | \$27,000                                                                   | \$49,000                                                                                                                   |                       |                                                                                                                                     | \$45,000           |                       |                                                                                                                                     | \$48,000           |                       |                   |
|                                                                                                                                                                                                              | Environmental Coordination                                                             |            | \$5,000                                                                    | \$12,000                                                                                                                   | \$183,200             | \$45,800                                                                                                                            | \$12,000           | \$180,000             | \$45,000                                                                                                                            | \$12,000           | \$182,400             | \$45,600          |
|                                                                                                                                                                                                              | Project Management during Design                                                       |            | \$35,000                                                                   | \$55,000                                                                                                                   |                       |                                                                                                                                     | \$55,000           |                       |                                                                                                                                     | \$55,000           |                       |                   |
|                                                                                                                                                                                                              | Specifications Surveys                                                                 |            | \$21,000                                                                   | \$33,000                                                                                                                   |                       |                                                                                                                                     | \$33,000           |                       |                                                                                                                                     | \$33,000           |                       |                   |
| <b>Construction Phase Non-Contract Costs</b>                                                                                                                                                                 |                                                                                        |            |                                                                            |                                                                                                                            |                       |                                                                                                                                     |                    |                       |                                                                                                                                     |                    |                       |                   |
|                                                                                                                                                                                                              | Engineering During Construction                                                        |            | \$21,000                                                                   | \$41,000                                                                                                                   |                       |                                                                                                                                     | \$37,000           |                       |                                                                                                                                     | \$40,000           |                       |                   |
|                                                                                                                                                                                                              | Project Management during Constr.                                                      |            | \$43,000                                                                   | \$82,000                                                                                                                   |                       |                                                                                                                                     | \$75,000           |                       |                                                                                                                                     | \$81,000           |                       |                   |
|                                                                                                                                                                                                              | Pre-Dredge and After-Dredge Surveys                                                    |            | \$42,000                                                                   | \$66,000                                                                                                                   |                       |                                                                                                                                     | \$66,000           |                       |                                                                                                                                     | \$66,000           |                       |                   |
|                                                                                                                                                                                                              | Contracting Division                                                                   |            | \$6,000                                                                    | \$8,000                                                                                                                    | \$224,000             | \$56,000                                                                                                                            | \$8,000            | \$216,800             | \$54,200                                                                                                                            | \$8,000            | \$225,600             | \$56,400          |
|                                                                                                                                                                                                              | Contract Administration and Safety                                                     |            | \$5,000                                                                    | \$6,000                                                                                                                    |                       |                                                                                                                                     | \$6,000            |                       |                                                                                                                                     | \$6,000            |                       |                   |
|                                                                                                                                                                                                              | Supervision & Inspection                                                               |            | \$58,000                                                                   | \$69,000                                                                                                                   |                       |                                                                                                                                     | \$69,000           |                       |                                                                                                                                     | \$69,000           |                       |                   |
|                                                                                                                                                                                                              | Travel and Miscellaneous                                                               |            | \$6,000                                                                    | \$8,000                                                                                                                    |                       |                                                                                                                                     | \$10,000           |                       |                                                                                                                                     | \$12,000           |                       |                   |
|                                                                                                                                                                                                              | <b>Total First Cost</b>                                                                |            | <b>\$2,460,000</b>                                                         | <b>\$4,616,600</b>                                                                                                         | <b>\$3,717,500</b>    | <b>\$899,100</b>                                                                                                                    | <b>\$4,237,000</b> | <b>\$3,415,300</b>    | <b>\$822,000</b>                                                                                                                    | <b>\$4,545,000</b> | <b>\$3,661,300</b>    | <b>\$883,800</b>  |
|                                                                                                                                                                                                              | First Cost Plus Interest During Construction                                           | 0.04625    | \$2,460,000                                                                | 100% \$4,626,000                                                                                                           | \$3,725,100           |                                                                                                                                     | 100% \$4,245,000   | \$3,421,700           |                                                                                                                                     | 100% \$4,554,000   | \$3,668,600           |                   |
| <b>Difference From Base Plan - §204 Project Implementation Costs</b>                                                                                                                                         |                                                                                        |            |                                                                            | 81% is §204                                                                                                                | \$1,265,100           |                                                                                                                                     | 81% is §204        | \$961,700             |                                                                                                                                     | 81% is §204        | \$1,208,600           |                   |
| <b>§204 Project - Design Costs</b>                                                                                                                                                                           |                                                                                        |            |                                                                            |                                                                                                                            | \$35,200              |                                                                                                                                     |                    | \$32,000              |                                                                                                                                     |                    | \$34,400              |                   |
| <b>§204 Project - Construction Costs</b>                                                                                                                                                                     |                                                                                        |            |                                                                            |                                                                                                                            | \$1,229,900           |                                                                                                                                     |                    | \$929,700             |                                                                                                                                     |                    | \$1,174,200           |                   |
| <b>Non-Federal Cost Share for §204 Project &amp; Total State/§204</b>                                                                                                                                        |                                                                                        |            |                                                                            | 36%                                                                                                                        | \$442,800             | \$1,341,900                                                                                                                         | 36%                | \$336,600             | \$1,158,600                                                                                                                         | 35%                | \$423,000             | \$1,306,800       |
| <b>Federal Share of §204 Project - Design &amp; Construction</b>                                                                                                                                             |                                                                                        |            |                                                                            |                                                                                                                            | \$822,300             |                                                                                                                                     |                    | \$625,100             |                                                                                                                                     |                    | \$785,600             |                   |

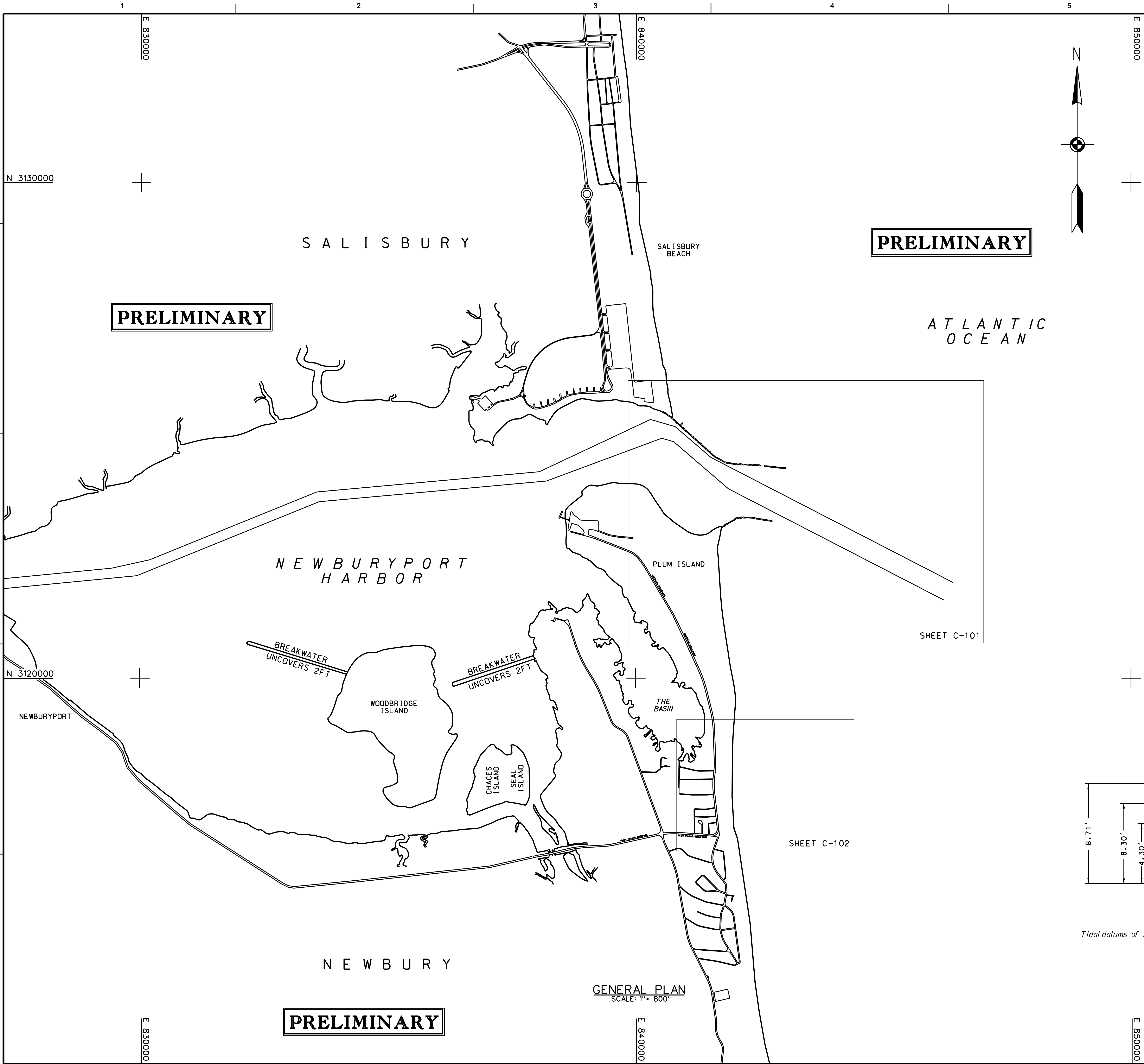
**TABLE F-4 - Newburyport Harbor and Plum Island and Salisbury Beaches, Mass  
Annual Cost of Alternative Plans**

| <b>Project Cost Estimates as of 27 March 2009<br/>160,000 Cubic Yard Plan - All Direct Placement on Plum<br/>Island Beach in Newbury</b>                                                                                                                                                                                                                     | <b>Alternative A-1<br/>Direct Placement<br/>Using Pump-off<br/>Hopper</b>                                        | <b>Alternative A-2<br/>Direct Placement<br/>Using 24"<br/>Hydraulic Pipeline</b>                                 | <b>Alternative A-3<br/>Direct Placement<br/>Using 20"<br/>Hydraulic Pipeline</b>                                 | <b>Alternative A<br/>Direct Placement<br/>Average of 3 Methods</b>                                               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| <b>Section 204 Project Cost (Total Cost Minus Base Plan)</b><br>(Includes Interest During Construction)<br><br><b>ANNUAL COSTS</b><br><br>Interest and Amortization (10-Year Period)      0.12716<br>Annual Maintenance - Plum Island Beach      2500 LF<br>Sand Management (Redistribution)<br>Fencing and Plantings<br><br><b>Total Annual Costs</b>       | \$1,600,000<br><br><br><br><br><br><br><br><br><br>\$203,500<br><br>\$23,700<br><u>\$10,000</u><br><br>\$237,200 | \$1,380,000<br><br><br><br><br><br><br><br><br><br>\$175,500<br><br>\$23,700<br><u>\$10,000</u><br><br>\$209,200 | \$1,612,000<br><br><br><br><br><br><br><br><br><br>\$205,000<br><br>\$23,700<br><u>\$10,000</u><br><br>\$238,700 | \$1,531,000<br><br><br><br><br><br><br><br><br><br>\$194,700<br><br>\$23,700<br><u>\$10,000</u><br><br>\$228,400 |
| <b>Project Cost Estimates as of 27 March 2009<br/>160,000 Cubic Yard Plan - Direct Placement Split on Two<br/>Beaches<br/>120,000 CY to Newbury - 40,000 CY to Salisbury</b>                                                                                                                                                                                 | <b>Alternative B-1<br/>Split Placement<br/>Using<br/>Pump-Off Hopper</b>                                         | <b>Alternative B-2<br/>Split Placement<br/>Using 24"<br/>Hydraulic Pipeline</b>                                  | <b>Alternative B-3<br/>Split Placement<br/>Using 20"<br/>Hydraulic Pipeline</b>                                  | <b>Alternative B<br/>Split Placement<br/>Average of 3 Methods</b>                                                |
| <b>Section 204 Project Cost (Total Cost Minus Base Plan)</b><br>(Includes Interest During Construction)<br><br><b>ANNUAL COSTS</b><br><br>Interest and Amortization (10-Year Period)      0.12716<br>Annual Maintenance - Plum Island & Salisbury      3900 LF<br>Sand Management (Redistribution)<br>Fencing and Plantings<br><br><b>Total Annual Costs</b> | \$1,863,000<br><br><br><br><br><br><br><br><br><br>\$236,900<br><br>\$33,300<br><u>\$15,600</u><br><br>\$285,800 | \$1,655,000<br><br><br><br><br><br><br><br><br><br>\$210,400<br><br>\$33,300<br><u>\$15,600</u><br><br>\$259,300 | \$1,887,000<br><br><br><br><br><br><br><br><br><br>\$240,000<br><br>\$33,300<br><u>\$15,600</u><br><br>\$288,900 | \$1,802,000<br><br><br><br><br><br><br><br><br><br>\$229,100<br><br>\$33,300<br><u>\$15,600</u><br><br>\$278,000 |



**TABLE F-5 - Newburyport Harbor and Plum Island and Salisbury Beaches, Massachusetts  
Benefit-Cost Analysis for Alternative Plans**

| <b>Project Cost Estimates as of 27 March 2009<br/>160,000 Cubic Yard Plan - All Direct Placement<br/>on Plum Island Beach in Newbury</b>                                     | <b>Alternative A-1<br/>Direct Placement<br/>Using Pump-off<br/>Hopper</b> | <b>Alternative A-2<br/>Direct Placement<br/>Using 24"<br/>Hydraulic Pipeline</b> | <b>Alternative A-3<br/>Direct Placement<br/>Using 20"<br/>Hydraulic Pipeline</b> | <b>Alternative A<br/>Direct Placement<br/>Average of 3 Methods</b> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------------------------------------------------|
| <b>Section 204 Project Total Annual Costs</b>                                                                                                                                | \$237,200                                                                 | \$209,200                                                                        | \$238,700                                                                        | \$228,400                                                          |
| <b>Total \$204 Project Benefits</b>                                                                                                                                          | \$1,063,800                                                               | \$1,063,800                                                                      | \$1,063,800                                                                      | \$1,063,800                                                        |
| <b>\$204 Project Benefit-Cost Ratio</b>                                                                                                                                      | 4.5                                                                       | 5.1                                                                              | 4.5                                                                              | 4.7                                                                |
| <b>Net Annual \$204 Project Benefits</b>                                                                                                                                     | \$826,600                                                                 | \$854,600                                                                        | \$825,100                                                                        | \$835,400                                                          |
| <b>Project Cost Estimates as of 27 March 2009<br/>160,000 Cubic Yard Plan - Direct Placement<br/>Split on Two Beaches<br/>120,000 CY to Newbury - 40,000 CY to Salisbury</b> | <b>Alternative B-1<br/>Split Placement<br/>Using<br/>Pump-Off Hopper</b>  | <b>Alternative B-2<br/>Split Placement<br/>Using 24"<br/>Hydraulic Pipeline</b>  | <b>Alternative B-3<br/>Split Placement<br/>Using 20"<br/>Hydraulic Pipeline</b>  | <b>Alternative B<br/>Split Placement<br/>Average of 3 Methods</b>  |
| <b>Section 204 Project Total Annual Costs</b>                                                                                                                                | \$285,800                                                                 | \$259,300                                                                        | \$288,900                                                                        | \$278,000                                                          |
| <b>Total \$204 Project Benefits</b>                                                                                                                                          | \$1,035,400                                                               | \$1,035,400                                                                      | \$1,035,400                                                                      | \$1,035,400                                                        |
| <b>\$204 Project Benefit-Cost Ratio</b>                                                                                                                                      | 3.6                                                                       | 4.0                                                                              | 3.6                                                                              | 3.7                                                                |
| <b>Net Annual \$204 Project Benefits</b>                                                                                                                                     | \$749,600                                                                 | \$776,100                                                                        | \$746,500                                                                        | \$757,400                                                          |



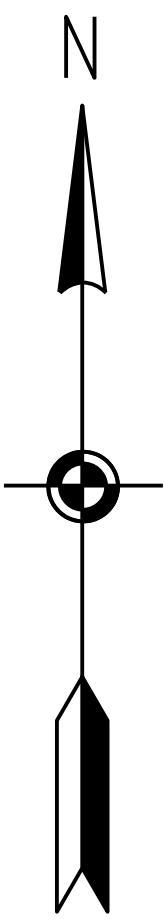
**PRELIMINARY**

**PRELIMINARY**

**PRELIMINARY**

GENERAL PLAN  
SCALE: 1" = 800'

ATLANTIC OCEAN

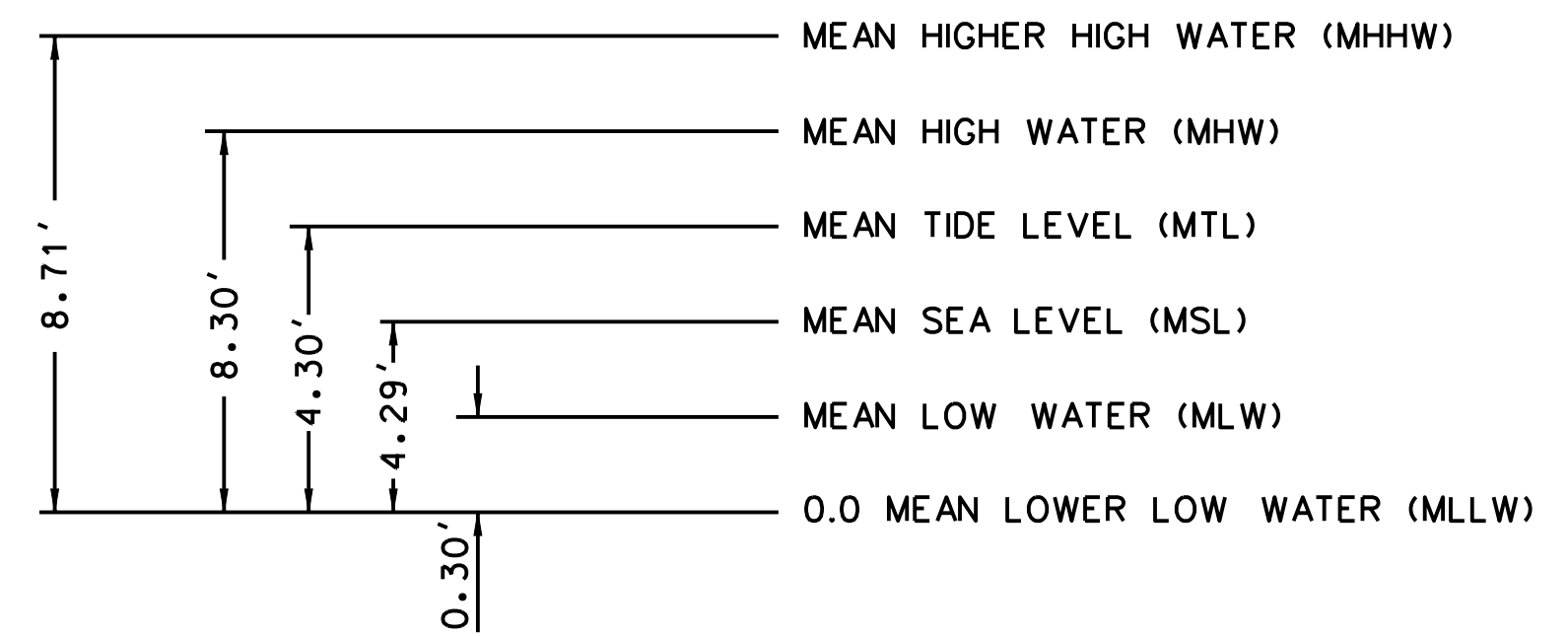


| LEGEND                                   |        |
|------------------------------------------|--------|
| DESCRIPTION                              | SYMBOL |
| REQUIRED DREDGING DEPTH CONTOUR          | —      |
| APPROXIMATE DREDGING AREA LIMITS         | —      |
| MATERIAL REQUIRED TO BE DREDGED          | ■      |
| ALLOWABLE OVERDEPTH (CROSS-SECTION ONLY) | ■      |
| NAVIGATION AIDS                          | ◊ ◆    |
| BASELINE / CENTERLINE                    | —      |

| INDEX OF NAVIGATION AIDS |          |                             |                                            |
|--------------------------|----------|-----------------------------|--------------------------------------------|
| NO.                      | DATE     | STATE PLANE COORDINATES     | GEOGRAPHIC POSITION                        |
| GC-3                     | 01/30/09 | N 3122340.17<br>E 844571.98 | 42° - 48' - 49.3" N<br>70° - 47' - 52.3" W |
| GC-5                     | 01/30/09 | N 3123171.47<br>E 843310.39 | 42° - 48' - 57.7" N<br>70° - 48' - 09.1" W |
| F 1 G-7                  | 02/10/09 | N 3124902.11<br>E 840520.57 | 42° - 49' - 15.0" N<br>70° - 48' - 46.4" W |

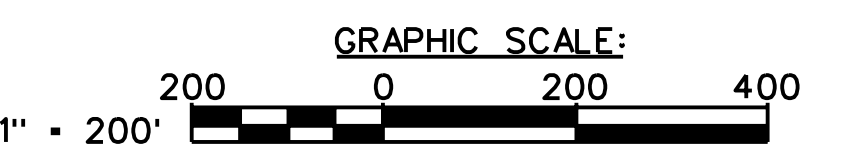
**GENERAL NOTES:**

- Soundings are in feet and tenths and refer to the plane of Mean Lower Low Water (MLLW) 1983-2001 Epoch Tidal.
- Topography shown is from previous surveys and/or NOAA Chart No. 13274. All topography, including shoreline, bridges, piers, etc., is located approximate unless otherwise noted and should be used as a general reference only.
- Bench Mark Data: TBM No. 1 (1953) is a USC&GS Tidal Bench Mark disk set in the northwest corner of the concrete foundation for the wooden stairs at the south end of the U.S. Coast Guard Auxiliary Station, 97.2 feet (29.6 m) east of power pole #18824, 79.5 feet (24.2 m) north-northeast of a power pole in the southwest area of the Auxiliary Station Compound, 53.3 feet (16.2 m) northeast of the north corner of the easternmost of two red pumphouses, 27.5 feet (8.4 m) southwest of the east corner of the Auxiliary Station Building, 1.8 feet (0.5 m) above ground level. Elevation is 13.96 feet above MLLW.
- Coordinates shown are based on the Lambert Grid System for the Commonwealth of Massachusetts (Meanland Zone 2001) & NAD 1983.
- Survey was performed using an Odom MK2 echotrac echosounder. Vessel positioning was obtained utilizing a Trimble 4000 SSE GPS Receiver with U.S. Coast Guard Beacon System.
- The sounding information shown on this map represents the SHORLEST soundings of those obtained from hydrographic surveys conducted during January and February 2009.
- The sounding information depicted on this map should NOT be used to determine volumes. Volumes are determined from more sounding information than shown. Additional sounding information is available upon request.
- The information depicted on this map represents the results of surveys made on the dates indicated, and can only be considered as indicating the general conditions existing at that time.
- Field Book: R&H 5068
- 15-foot depth contour shown thus: —
- Depthsounder Rolls: 09-978/01-02
- Surveyed by: Paul K. O'Brien and Crew



(Based upon National Ocean Survey Tidal datums of Plum Island, Merrimack River Entrance, Newburyport, Massachusetts 1983-2001 National Tidal Datum Epoch)

TIDAL DATUM PLANE



| NO. | DATE       | DESCRIPTION                          | APPR. | MARK |
|-----|------------|--------------------------------------|-------|------|
| 1   | 2007/07/22 | 1 ACCORDANCE WITH MODIFICATION NO. 1 |       |      |

|                                                                                |                              |                              |                   |
|--------------------------------------------------------------------------------|------------------------------|------------------------------|-------------------|
| DESIGNED BY:<br>ROBERT MAZUR                                                   | DRAWN BY:<br>BOB A. SHANNON  | SCALE:<br>AS SHOWN           | DATE:<br>07/22/07 |
| CHECKED BY:<br>BOB A. SHANNON                                                  | IN CHARGE:<br>BOB A. SHANNON | PROJECT NO.:                 | CONTRACT NO.:     |
| U.S. ARMY CORPS OF ENGINEERS<br>NEW ENGLAND DISTRICT<br>CONCORD, MASSACHUSETTS |                              | DRAWING CODE:<br>NEWBURYPORT |                   |

MAINTENANCE DREDGING  
12-FOOT ENTRANCE CHANNEL  
(MAINTAINED TO 15-FOOT)  
NEWBURYPORT HARBOR  
NEWBURYPORT, MASSACHUSETTS  
TIDAL DREDGING INDEX COMMISSION AID

SHEET IDENTIFICATION  
**G-002**  
SHEET 2 OF 5











**NEWBURYPORT HARBOR  
PLUM ISLAND AND SALISBURY BEACHES**

**§204 PROJECT FOR THE BENEFICIAL USE  
OF DREDGED MATERIAL**

**DETAILED PROJECT REPORT**

**APPENDIX G  
ECONOMIC ANALYSIS**





**NEWBURYPORT HARBOR  
§204 BENEFICIAL USE OF DREDGED MATERIAL STUDY  
PLUM ISLAND AND SALISBURY BEACHES  
INITIAL APPRAISAL REPORT**

**ECONOMIC ANALYSIS**

**Introduction**

This analysis examines the benefits to be attained from the beneficial use of dredged material from Newburyport Harbor in Massachusetts. It is expected that 160,000 cubic yards (cy) of material will be dredged from the harbor in maintenance operations. The least-cost disposal option, called the Federal Base Plan, consists of nearshore ocean disposal. Current Corps guidance requires that the incremental costs of beneficial use of disposal material be compared to the least-cost disposal option, and that the benefits of the beneficial disposal method exceed its incremental costs.

Two beneficial use alternatives are examined in this analysis. Alternative A consists of placing all 160,000 cy of material at Plum Island Beach in Newburyport, MA. Alternative B consists of placing 120,000 cy of material at Plum Island Beach and 40,000 cy at Salisbury Beach in Salisbury, MA. Both beaches contain areas that are threatened by erosion, areas that would benefit from the placement of sand from dredging operations. This analysis was conducted using the Fiscal Year 2009 Federal interest rate for water resources projects of 4 5/8%. A ten year period of analysis is used.

**Description of Study Areas**

The Plum Island Beach study area is located on Plum Island, an 11 mile long barrier island off the shore of the Town of Newbury and the City of Newburyport, MA. The island is connected to the mainland by the Plum Island Turnpike/Plum Island Boulevard. There were 760 occupied lots on Plum Island in 2006.<sup>1</sup> Water and sewer services are connected to the Newburyport Water System. The area of focus for beneficial use of dredge material on Plum Island was determined to be on the northern end of Plum Island along Northern Boulevard between Plum Island Boulevard and 26<sup>th</sup> Street, approximately 2500 linear feet.

The Plum Island study area is undergoing long-term erosion at the rate of 13 feet per year. If protective measures are not implemented, it is anticipated that long-term erosion will continue and eventually threaten the shorefront structures along Northern Boulevard as well as the sewer and water lines under the road. Figure G-1 shows the existing beach profile of the study area along Northern Boulevard between Plum Island Boulevard and 26<sup>th</sup> Street and the projected long-term erosion distances landward from year 2008 to year 2019. Figure G-2 shows the projected long-term erosion distances from year 2009 to 2019 at Plum Island Beach after dredge material placement.

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<sup>1</sup> Newbury, MA Master Plan 2006

The Salisbury Beach study area extends from 81 Atlantic Avenue to 147 Atlantic Avenue in Salisbury. Salisbury Beach is a popular state beach in Massachusetts, stretching nearly 4 miles along the Atlantic Coast. The study area consists of a 1,400-foot long section of the beach which is currently affected by erosion, containing 32 shorefront properties and 11 backshore properties, all houses. The Salisbury study area is located between two Emergency Dune Restoration Projects that were constructed in 1991 and 2007, and is currently eroding at the rate of 3 feet per year.

It is anticipated that dredging the Newburyport Harbor Federal Entrance Channel to a depth of -17 feet mean lower low water, including a two-foot allowable overdepth, will yield approximately 160,000 cubic yards of suitable material for beach nourishment. Placement of the dredged material at either study area will delay the encroachment of long-term erosion landward, slowing the loss of land and structures and reducing erosion-related damages and costs.

### **Benefit Methodology**

For this analysis, the without project condition is defined as the Federal Base Plan, in which the least-cost ocean disposal method is used and no material is placed onshore. The with project condition is defined as the use of a beneficial placement option, either Alternative A (all material to Plum Island) or Alternative B (material to both Plum Island and Salisbury Beach). The benefits to beach disposal are determined by estimating the value of the erosion losses and damages that would occur without beneficial placement, and comparing them to the erosion losses and damages that would occur with beneficial placement. The benefits equal the degree to which erosion losses and damages are reduced. Placing all of the dredged material on Plum Island as in Alternative A would provide about five years of protection. Splitting the material between Plum Island and Salisbury Beaches as in Alternative B would provide about four and two years of protection respectively. These periods of protection were used in calculating the with-project losses and benefits.

Benefit categories examined include structure damages avoided, land loss avoided, property acquisition costs avoided, relocation costs avoided, structure demolition and disposal costs avoided, reduced emergency response costs, and reduced utility repair costs. In the sections below, each benefit category is described and the calculations made are explained.

Both study areas are potentially subject to significant storm-induced shoreline recession, which becomes increasingly more damaging as long-term erosion reduces the beach that provides a protective buffer. Unlike long-term erosion, which is assumed to be halted at major access roads, storm recession occurs over a short period of time during the course of a storm, thereby not providing sufficient time to implement protective measures. Storm-induced recession is considered capable of impacting structures and infrastructure, including those fronted by protective measures. Storm-induced recession damages were not analyzed for this initial appraisal report due to insufficient data. Future studies will examine the impact caused by storm-induced recession.

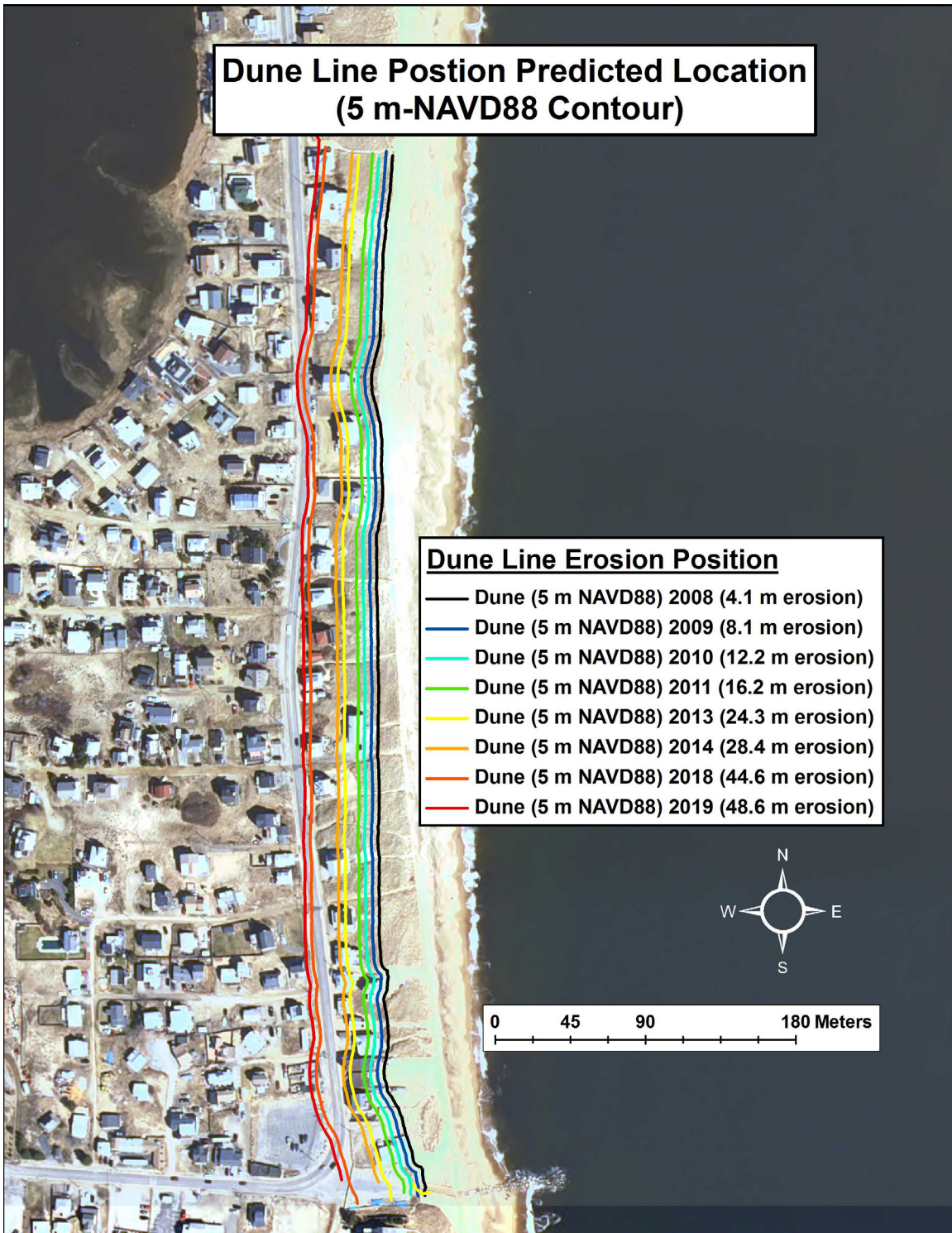


Figure G-1. Without-Project Conditions - Northern Boulevard between Plum Island Boulevard and 26<sup>th</sup> Street.



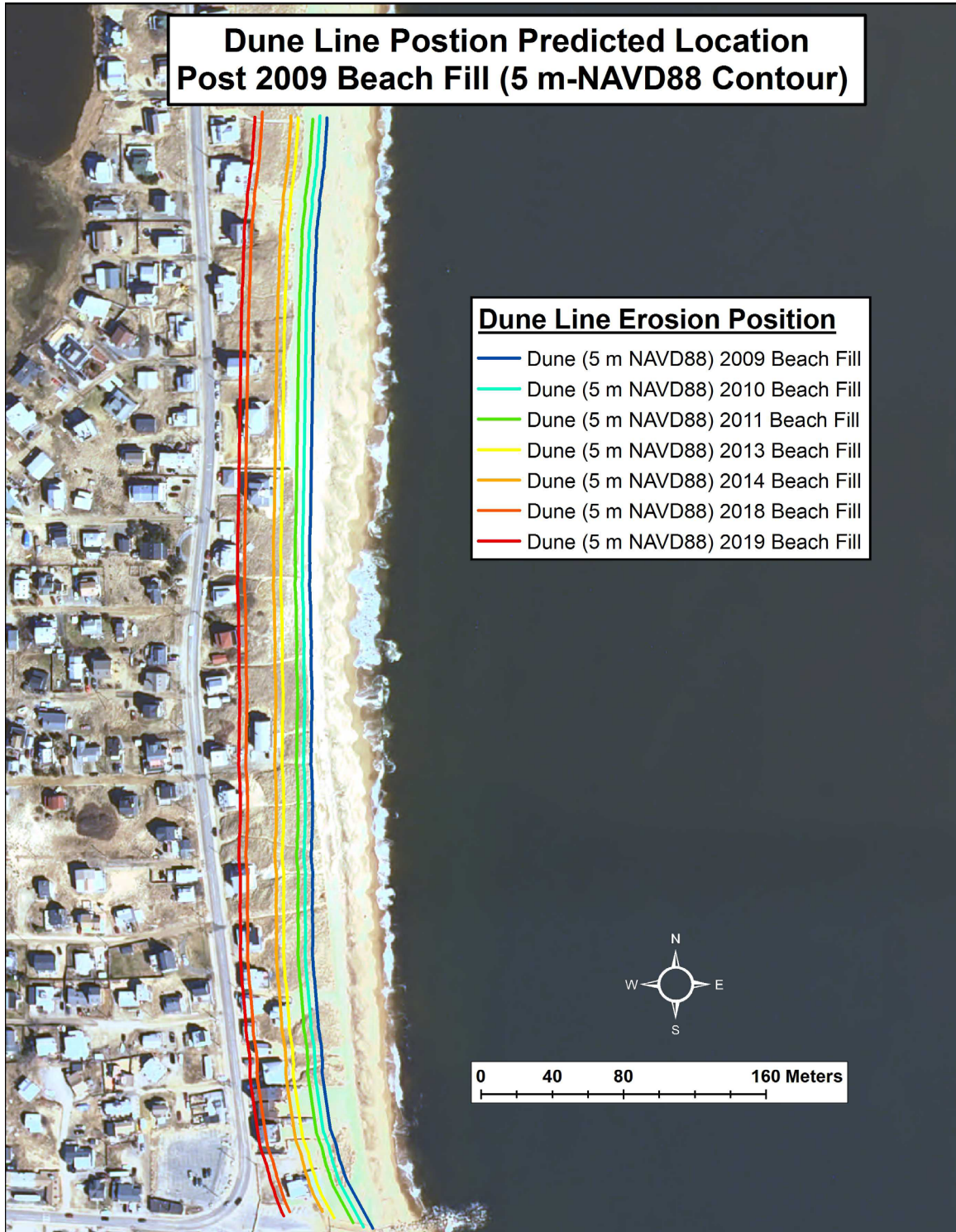


Figure G-2. Post Dredged Material Placement Conditions – Northern Boulevard between Plum Island Boulevard and 26<sup>th</sup> Street.

## **Damages to Structures Avoided**

In the Plum Island study area, there are 26 structures that are projected to be affected by erosion over the 10 year period of analysis (2010 to 2019). The total depreciated replacement value of these structures is estimated at \$7.1 million.<sup>2</sup> Left unimpeded, long-term erosion will eventually undermine Northern Boulevard and cause damage to the newly constructed water and sewer system that connects Plum Island to the Newburyport Water System. Northern Boulevard provides access to Plum Island Turnpike/Plum Island Boulevard, which is the only land based egress off of Plum Island. Damage to Northern Boulevard will isolate a significant portion of the population living on the northern part of Plum Island. If this occurs, the population at risk would most likely be evacuated from Plum Island. It is likely that the Town of Newbury will expend funds to prevent damage from occurring to Northern Boulevard. Placement of dredge material at this location will delay the future expenditure of these funds.

In the Salisbury Beach study area, there are 14 structures that are projected to be affected by erosion over the 10 year period of analysis. The total depreciated replacement value of these structures is estimated at \$4,088,500. Left unimpeded, erosion will cause loss of structures and land over time.

Long-term erosion damages to the structures at both study areas were calculated for the existing conditions, and then compared to the residual damages for the same structures after dredge material placement. Damages to structures were analyzed by advancing the dune line landward at the average erosion rate for each study area for the without-project conditions over the 10 year period of analysis. A structure was considered damaged when the long-term erosion reaches the seaward edge of the structure. When this occurs the structure is considered a total loss and is not rebuilt. Damages for the same structures were analyzed similarly for the post-dredged material placement condition.

Table G-1 shows the structures in the Plum Island study area, and the years that it is estimated they will be damaged under the without project condition (no beneficial placement). Table G-2 shows when the Plum Island structures will be damaged in the with project condition (with beneficial placement) under Alternative 1 (160,000 cy at Plum Island). Tables G-3 shows when the Plum Island structures will be damaged under Alternative 2 (120,000 cy at Plum Island). Table G-4 shows the structures in the Salisbury Beach study area, and the years that it is estimated they will be damaged under the without project condition. Table G-5 shows when the Salisbury Beach structures will be damaged under the with project condition of Alternative 2 (40,000 cy at Salisbury).

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<sup>2</sup> Depreciated replacement values were based on field observations and Town of Newbury assessment records.

**Table G-1  
Plum Island Structures - Without-Project Conditions**

| Parcel ID | Structure Value | Year Structures are Damaged |      |             |             |           |           |             |             |      |           |           |           |
|-----------|-----------------|-----------------------------|------|-------------|-------------|-----------|-----------|-------------|-------------|------|-----------|-----------|-----------|
|           |                 | 2008                        | 2009 | 2010        | 2011        | 2012      | 2013      | 2014        | 2015        | 2016 | 2017      | 2018      | 2019      |
| U02-196   | \$128,400       |                             |      |             |             |           |           |             |             | \$0  |           | \$128,400 |           |
| U02-215A  | \$125,100       |                             |      |             |             |           |           |             |             |      |           |           | \$125,100 |
| U-02-26   | \$145,600       |                             |      |             | \$145,600   |           |           |             |             |      |           |           |           |
| U-02-25   | \$241,600       |                             |      |             | \$241,600   |           |           |             |             |      |           |           |           |
| U-02-23   | \$1,024,400     |                             |      | \$1,024,400 |             |           |           |             |             |      |           |           |           |
| U-02-19   | \$104,600       |                             |      | \$104,600   |             |           |           |             |             |      |           |           |           |
| U-02-18   | \$57,900        |                             |      |             |             | \$57,900  |           |             |             |      |           |           |           |
| U-02-17   | \$81,100        |                             |      |             |             |           | \$81,100  |             |             |      |           |           |           |
| U-02-16   | \$91,700        |                             |      |             |             |           | \$91,700  |             |             |      |           |           |           |
| U-02-15   | \$179,400       |                             | na   |             |             |           |           |             |             |      |           |           |           |
| U-02-12   | \$195,000       |                             |      |             | \$195,000   |           |           |             |             |      |           |           |           |
| U-02-11   | \$158,200       |                             |      |             |             | \$158,200 |           |             |             |      |           |           |           |
| U-02-4    | \$424,700       |                             |      |             |             |           | \$424,700 |             |             |      |           |           |           |
| U-02-1    | \$343,600       |                             |      |             |             |           |           |             | \$343,600   |      |           |           |           |
| U-03-196  | \$367,000       |                             |      | \$367,000   |             |           |           |             |             |      |           |           |           |
| U-03-195  | \$178,300       |                             |      |             |             |           |           |             |             |      | \$178,300 |           |           |
| U-03-194  | \$101,000       |                             |      |             |             |           |           |             |             |      | \$101,000 |           |           |
| U-03-192  | \$160,500       |                             |      |             |             |           |           |             | \$160,500   |      |           |           |           |
| U-03-191  | \$155,500       |                             |      |             |             |           |           |             | \$155,500   |      |           |           |           |
| U-03-190  | \$115,700       |                             |      |             |             |           |           |             | \$115,700   |      |           |           |           |
| U-03-189  | \$741,800       |                             |      |             | \$741,800   |           |           |             |             |      |           |           |           |
| U-03-188  | \$348,300       |                             |      |             |             | \$348,300 |           |             |             |      |           |           |           |
| U-03-187  | \$289,900       |                             |      |             |             | \$289,900 |           |             |             |      |           |           |           |
| U-03-185  | \$264,400       |                             |      |             |             |           |           |             | \$264,400   |      |           |           |           |
| U-03-183A | \$622,500       |                             |      |             |             |           |           | \$622,500   |             |      |           |           |           |
| U-03-183  | \$478,900       |                             |      |             |             |           |           | \$478,900   |             |      |           |           |           |
| U-03-182  | \$148,800       |                             |      |             |             |           |           |             |             |      | \$148,800 |           |           |
| Total     |                 | \$0                         | \$0  | \$1,496,000 | \$1,324,000 | \$854,300 | \$597,500 | \$1,101,400 | \$1,039,700 | \$0  | \$428,100 | \$128,400 | \$125,100 |

**Table G-2  
Plum Island Structures - Post Dredged Material Placement – Alternative 1**

| Parcel ID    | Structure Value | Year Structures are Damaged |      |      |      |      |      |           |             |             |           |           |           |             |
|--------------|-----------------|-----------------------------|------|------|------|------|------|-----------|-------------|-------------|-----------|-----------|-----------|-------------|
|              |                 | 2008                        | 2009 | 2010 | 2011 | 2012 | 2013 | 2014      | 2015        | 2016        | 2017      | 2018      | 2019      |             |
| U02-196      | \$128,400       |                             |      |      |      |      |      |           |             |             |           |           | na        |             |
| U02-215A     | \$125,100       |                             |      |      |      |      |      |           |             |             |           |           | na        |             |
| U-02-26      | \$145,600       |                             |      |      |      |      |      |           | \$145,600   |             |           |           |           |             |
| U-02-25      | \$241,600       |                             |      |      |      |      |      |           |             | \$241,600   |           |           |           |             |
| U-02-23      | \$1,024,400     |                             |      |      |      |      |      |           | \$1,024,400 |             |           |           |           |             |
| U-02-19      | \$104,600       |                             |      |      |      |      |      | \$104,600 |             |             |           |           |           |             |
| U-02-18      | \$57,900        |                             |      |      |      |      |      |           |             | \$57,900    |           |           |           |             |
| U-02-17      | \$81,100        |                             |      |      |      |      |      |           |             |             | \$81,100  |           |           |             |
| U-02-16      | \$91,700        |                             |      |      |      |      |      |           |             |             | \$91,700  |           |           |             |
| U-02-15      | \$179,400       |                             |      |      |      |      | na   |           |             |             |           |           |           |             |
| U-02-12      | \$195,000       |                             |      |      |      |      |      |           |             | \$195,000   |           |           |           |             |
| U-02-11      | \$158,200       |                             |      |      |      |      |      |           |             |             | \$158,200 |           |           |             |
| U-02-4       | \$424,700       |                             |      |      |      |      |      |           |             |             |           | \$424,700 |           |             |
| U-02-1       | \$343,600       |                             |      |      |      |      |      |           |             |             |           |           | na        |             |
| U-03-196     | \$367,000       |                             |      |      |      |      |      |           | \$367,000   |             |           |           |           |             |
| U-03-195     | \$178,300       |                             |      |      |      |      |      |           |             |             |           |           | na        |             |
| U-03-194     | \$101,000       |                             |      |      |      |      |      |           |             |             |           |           | na        |             |
| U-03-192     | \$160,500       |                             |      |      |      |      |      |           |             |             |           |           | na        |             |
| U-03-191     | \$155,500       |                             |      |      |      |      |      |           |             |             |           |           | na        |             |
| U-03-190     | \$115,700       |                             |      |      |      |      |      |           |             |             |           |           | na        |             |
| U-03-189     | \$741,800       |                             |      |      |      |      |      | \$741,800 |             |             |           |           |           |             |
| U-03-188     | \$348,300       |                             |      |      |      |      |      |           | \$348,300   |             |           |           |           |             |
| U-03-187     | \$289,900       |                             |      |      |      |      |      |           |             |             | \$289,900 |           |           |             |
| U-03-185     | \$264,400       |                             |      |      |      |      |      |           |             |             |           |           | na        |             |
| U-03-183A    | \$622,500       |                             |      |      |      |      |      |           |             |             |           |           | \$622,500 |             |
| U-03-183     | \$478,900       |                             |      |      |      |      |      |           |             |             |           |           | \$478,900 |             |
| U-03-182     | \$148,800       |                             |      |      |      |      |      |           |             |             |           |           | na        |             |
| <b>Total</b> |                 | 0                           | 0    | 0    | 0    | 0    | 0    | 0         | \$846,400   | \$1,885,300 | \$494,500 | \$539,800 | \$505,800 | \$1,101,400 |



**Table G-3  
Plum Island Structures - Post Dredged Material Placement - Alternative 2**

| Parcel ID    | Structure   | Year Structures are Damaged |            |            |            |            |                  |                    |                  |                  |                  |                    |                    |
|--------------|-------------|-----------------------------|------------|------------|------------|------------|------------------|--------------------|------------------|------------------|------------------|--------------------|--------------------|
|              |             | 2008                        | 2009       | 2010       | 2011       | 2012       | 2013             | 2014               | 2015             | 2016             | 2017             | 2018               | 2019               |
|              | Value       |                             |            |            |            |            |                  |                    |                  |                  |                  |                    |                    |
| U02-196      | \$128,400   |                             |            |            |            |            |                  |                    |                  |                  |                  |                    | na                 |
| U02-215A     | \$125,100   |                             |            |            |            |            |                  |                    |                  |                  |                  |                    | na                 |
| U-02-26      | \$145,600   |                             |            |            |            |            |                  | \$145,600          | \$0              |                  |                  |                    |                    |
| U-02-25      | \$241,600   |                             |            |            |            |            |                  |                    | \$241,600        | \$0              |                  |                    |                    |
| U-02-23      | \$1,024,400 |                             |            |            |            |            |                  | \$1,024,400        | \$0              |                  |                  |                    |                    |
| U-02-19      | \$104,600   |                             |            |            |            |            | \$104,600        | \$0                |                  |                  |                  |                    |                    |
| U-02-18      | \$57,900    |                             |            |            |            |            |                  |                    | \$57,900         | \$0              |                  |                    |                    |
| U-02-17      | \$81,100    |                             |            |            |            |            |                  |                    |                  |                  | \$81,100         | \$0                |                    |
| U-02-16      | \$91,700    |                             |            |            |            |            |                  |                    |                  | \$91,700         | \$0              |                    |                    |
| U-02-15      | \$179,400   |                             |            |            |            |            |                  |                    |                  |                  |                  |                    |                    |
| U-02-12      | \$195,000   |                             |            |            |            |            |                  |                    | \$195,000        | \$0              |                  |                    |                    |
| U-02-11      | \$158,200   |                             |            |            |            |            |                  |                    |                  | \$158,200        | \$0              |                    |                    |
| U-02-4       | \$424,700   |                             |            |            |            |            |                  |                    |                  |                  | \$424,700        | \$0                |                    |
| U-02-1       | \$343,600   |                             |            |            |            |            |                  |                    |                  |                  |                  |                    | \$343,600          |
| U-03-196     | \$367,000   |                             |            |            |            |            |                  | \$367,000          | \$0              |                  |                  |                    |                    |
| U-03-195     | \$178,300   |                             |            |            |            |            |                  |                    |                  |                  |                  |                    | na                 |
| U-03-194     | \$101,000   |                             |            |            |            |            |                  |                    |                  |                  |                  |                    | na                 |
| U-03-192     | \$160,500   |                             |            |            |            |            |                  |                    |                  |                  |                  |                    | \$160,500          |
| U-03-191     | \$155,500   |                             |            |            |            |            |                  |                    |                  |                  |                  |                    | \$155,500          |
| U-03-190     | \$115,700   |                             |            |            |            |            |                  |                    |                  |                  |                  |                    | \$115,700          |
| U-03-189     | \$741,800   |                             |            |            |            |            | \$741,800        | \$0                |                  |                  |                  |                    |                    |
| U-03-188     | \$348,300   |                             |            |            |            |            |                  | \$348,300          | \$0              |                  |                  |                    |                    |
| U-03-187     | \$289,900   |                             |            |            |            |            |                  |                    |                  | \$289,900        | \$0              |                    |                    |
| U-03-185     | \$264,400   |                             |            |            |            |            |                  |                    |                  |                  |                  |                    | \$264,400          |
| U-03-183A    | \$622,500   |                             |            |            |            |            |                  |                    |                  |                  |                  | \$622,500          | \$0                |
| U-03-183     | \$478,900   |                             |            |            |            |            |                  |                    |                  |                  |                  | \$478,900          | \$0                |
| U-03-182     | \$148,800   |                             |            |            |            |            |                  |                    |                  |                  |                  |                    | na                 |
| <b>Total</b> |             | <b>\$0</b>                  | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$846,400</b> | <b>\$1,885,300</b> | <b>\$494,500</b> | <b>\$539,800</b> | <b>\$505,800</b> | <b>\$1,101,400</b> | <b>\$1,039,700</b> |

**Table G-4  
Salisbury Beach Structures - Without-Project Conditions**

| Address           | Parcel ID | Structure Value | Year Structures are Damaged |           |      |           |          |      |             |      |      |      |      |             |
|-------------------|-----------|-----------------|-----------------------------|-----------|------|-----------|----------|------|-------------|------|------|------|------|-------------|
|                   |           |                 | 2008                        | 2009      | 2010 | 2011      | 2012     | 2013 | 2014        | 2015 | 2016 | 2017 | 2018 | 2019        |
| 81 Atlantic Ave.  | 32-133    | \$193,300       |                             |           |      |           |          |      |             |      |      |      |      |             |
| 83 Atlantic Ave.  | 32-134    | \$153,100       |                             |           |      |           |          |      |             |      |      |      |      |             |
| 85 Atlantic Ave.  | 31-136    | \$1,126,200     |                             |           |      |           |          |      |             |      |      |      |      |             |
| 89 Atlantic Ave.  | 32-137    | \$79,100        |                             |           |      |           |          |      |             |      |      |      |      |             |
| 91 Atlantic Ave.  | 32-138    | \$106,600       |                             |           |      |           |          |      |             |      |      |      |      |             |
| 93 Atlantic Ave.  | 32-140    | \$185,000       |                             |           |      |           |          |      |             |      |      |      |      |             |
| 95 Atlantic Ave.  | 32-139    | \$70,200        |                             |           |      |           |          |      |             |      |      |      |      |             |
| 97 Atlantic Ave.  | 32-141    | \$40,400        |                             |           |      |           |          |      |             |      |      |      |      |             |
| 99 Atlantic Ave.  | 32-144    | \$171,700       |                             |           |      |           |          |      |             |      |      |      |      |             |
| 101 Atlantic Ave. | 32-145    | \$107,000       |                             |           |      |           |          |      |             |      |      |      |      |             |
| 103 Atlantic Ave. | 32-147    | \$262,800       |                             |           |      |           |          |      |             |      |      |      |      |             |
| 105 Atlantic Ave. | 32-148    | \$1,286,600     |                             |           |      |           |          |      |             |      |      |      |      | \$1,286,600 |
| 107 Atlantic Ave. | 32-149    | \$893,800       |                             |           |      |           |          |      |             |      |      |      |      |             |
| 109 Atlantic Ave. | 32-381    | \$107,200       |                             |           |      |           |          |      |             |      |      |      |      |             |
| 111 Atlantic Ave. | 32-151    | \$575,600       |                             |           |      |           |          |      | \$575,600   |      |      |      |      |             |
| 113 Atlantic Ave. | 32-150    | \$65,300        |                             |           |      |           |          |      |             |      |      |      |      |             |
| 115 Atlantic Ave. | 32-152    | \$193,200       |                             |           |      |           |          |      |             |      |      |      |      |             |
| 117 Atlantic Ave. | 32-153    | \$150,000       |                             |           |      |           |          |      |             |      |      |      |      | \$150,000   |
| 119 Atlantic Ave. | 32-154    | \$473,600       |                             |           |      |           |          |      | \$473,600   |      |      |      |      |             |
| 121 Atlantic Ave. | 32-155    | \$95,600        |                             |           |      |           |          |      |             |      |      |      |      | \$95,600    |
| 123 Atlantic Ave. | 32-156    | \$370,100       |                             |           |      |           |          |      |             |      |      |      |      | \$370,100   |
| 125 Atlantic Ave. | 32-157    | \$184,700       |                             |           |      |           |          |      |             |      |      |      |      | \$184,700   |
| 127 Atlantic Ave. | 32-158    | \$270,700       |                             | \$270,700 |      |           |          |      |             |      |      |      |      |             |
| 129 Atlantic Ave. | 32-162    | \$98,500        |                             |           |      |           |          |      | \$98,500    |      |      |      |      |             |
| 131 Atlantic Ave. | 32-159    | N/A             |                             |           |      |           |          |      |             |      |      |      |      |             |
| 133 Atlantic Ave. | 32-161    | \$181,100       | \$181,100                   |           |      |           |          |      |             |      |      |      |      |             |
| 135 Atlantic Ave. | 32-160    | \$117,100       |                             |           |      |           |          |      |             |      |      |      |      |             |
| 137 Atlantic Ave. | 31-1      | \$83,900        |                             |           |      |           |          |      | \$83,900    |      |      |      |      |             |
| 139 Atlantic Ave. | 31-2      | \$68,600        |                             |           |      |           |          |      | \$68,600    |      |      |      |      |             |
| 141 Atlantic Ave. | 31-3      | \$161,500       |                             |           |      | \$161,500 |          |      |             |      |      |      |      |             |
| 145 Atlantic Ave. | 31-4      | \$88,000        |                             |           |      |           | \$88,000 |      |             |      |      |      |      |             |
| 147 Atlantic Ave. | 31-5      | \$217,900       |                             |           |      |           |          |      |             |      |      |      |      |             |
| <b>Total</b>      |           |                 | \$181,100                   | \$270,700 | \$0  | \$161,500 | \$88,000 | \$0  | \$1,300,200 | \$0  | \$0  | \$0  | \$0  | \$2,087,000 |

| Table G-5<br>Salisbury Beach Structures - Post Dredged Material Placement - Alternative 2 |           |                 |                             |      |      |      |      |           |          |      |             |      |      |      |
|-------------------------------------------------------------------------------------------|-----------|-----------------|-----------------------------|------|------|------|------|-----------|----------|------|-------------|------|------|------|
| Address                                                                                   | Parcel ID | Structure Value | Year Structures are Damaged |      |      |      |      |           |          |      |             |      |      |      |
|                                                                                           |           |                 | 2008                        | 2009 | 2010 | 2011 | 2012 | 2013      | 2014     | 2015 | 2016        | 2017 | 2018 | 2019 |
| 81 Atlantic Ave.                                                                          | 32-133    | \$193,300.00    |                             |      |      |      |      |           |          |      |             |      |      |      |
| 83 Atlantic Ave.                                                                          | 32-134    | \$153,100.00    |                             |      |      |      |      |           |          |      |             |      |      |      |
| 85 Atlantic Ave.                                                                          | 31-136    | \$1,126,200.00  |                             |      |      |      |      |           |          |      |             |      |      |      |
| 89 Atlantic Ave.                                                                          | 32-137    | \$79,100.00     |                             |      |      |      |      |           |          |      |             |      |      |      |
| 91 Atlantic Ave.                                                                          | 32-138    | \$106,600.00    |                             |      |      |      |      |           |          |      |             |      |      |      |
| 93 Atlantic Ave.                                                                          | 32-140    | \$185,000.00    |                             |      |      |      |      |           |          |      |             |      |      |      |
| 95 Atlantic Ave.                                                                          | 32-139    | \$70,200.00     |                             |      |      |      |      |           |          |      |             |      |      |      |
| 97 Atlantic Ave.                                                                          | 32-141    | \$40,400.00     |                             |      |      |      |      |           |          |      |             |      |      |      |
| 99 Atlantic Ave.                                                                          | 32-144    | \$171,700       |                             |      |      |      |      |           |          |      |             |      |      |      |
| 101 Atlantic Ave.                                                                         | 32-145    | \$107,000       |                             |      |      |      |      |           |          |      |             |      |      |      |
| 103 Atlantic Ave.                                                                         | 32-147    | \$262,800       |                             |      |      |      |      |           |          |      |             |      |      |      |
| 105 Atlantic Ave.                                                                         | 32-148    | \$1,286,600     |                             |      |      |      |      |           |          |      |             |      |      |      |
| 107 Atlantic Ave.                                                                         | 32-149    | \$893,800       |                             |      |      |      |      |           |          |      |             |      |      |      |
| 109 Atlantic Ave.                                                                         | 32-381    | \$107,200       |                             |      |      |      |      |           |          |      |             |      |      |      |
| 111 Atlantic Ave.                                                                         | 32-151    | \$575,600       |                             |      |      |      |      |           |          | \$0  | \$575,600   |      |      |      |
| 113 Atlantic Ave.                                                                         | 32-150    | \$65,300        |                             |      |      |      |      |           |          |      |             |      |      |      |
| 115 Atlantic Ave.                                                                         | 32-152    | \$193,200       |                             |      |      |      |      |           |          |      |             |      |      |      |
| 117 Atlantic Ave.                                                                         | 32-153    | \$150,000       |                             |      |      |      |      |           |          |      |             |      |      |      |
| 119 Atlantic Ave.                                                                         | 32-154    | \$473,600       |                             |      |      |      |      |           |          | \$0  | \$473,600   |      |      |      |
| 121 Atlantic Ave.                                                                         | 32-155    | \$95,600        |                             |      |      |      |      |           |          |      |             |      |      |      |
| 123 Atlantic Ave.                                                                         | 32-156    | \$370,100       |                             |      |      |      |      |           |          |      |             |      |      |      |
| 125 Atlantic Ave.                                                                         | 32-157    | \$184,700       |                             |      |      |      |      |           |          |      |             |      |      |      |
| 127 Atlantic Ave.                                                                         | 32-158    | \$270,700       |                             |      |      |      |      |           |          |      |             |      |      |      |
| 129 Atlantic Ave.                                                                         | 32-162    | \$98,500        |                             |      |      |      |      |           |          | \$0  | \$98,500    |      |      |      |
| 131 Atlantic Ave.                                                                         | 32-159    | N/A             |                             |      |      |      |      |           |          |      |             |      |      |      |
| 133 Atlantic Ave.                                                                         | 32-161    | \$181,100       |                             |      |      |      |      |           |          |      |             |      |      |      |
| 135 Atlantic Ave.                                                                         | 32-160    | \$117,100       |                             |      |      |      |      |           |          |      |             |      |      |      |
| 137 Atlantic Ave.                                                                         | 31-1      | \$83,900        |                             |      |      |      |      |           |          | \$0  | \$83,900    |      |      |      |
| 139 Atlantic Ave.                                                                         | 31-2      | \$68,600        |                             |      |      |      |      |           |          | \$0  | \$68,600    |      |      |      |
| 141 Atlantic Ave.                                                                         | 31-3      | \$161,500       |                             |      |      |      | \$0  | \$161,500 |          |      |             |      |      |      |
| 145 Atlantic Ave.                                                                         | 31-4      | \$88,000        |                             |      |      |      |      | \$0       | \$88,000 |      |             |      |      |      |
| 147 Atlantic Ave.                                                                         | 31-5      | \$217,900       |                             |      |      |      |      |           |          |      |             |      |      |      |
|                                                                                           |           | Total           | \$0                         | \$0  | \$0  | \$0  | \$0  | \$161,500 | \$88,000 | \$0  | \$1,300,200 | \$0  | \$0  | \$0  |

The total present value of the structure damages at each location under each condition were determined, and then converted to average annual terms using the Fiscal Year 2009 Federal interest rate for water resources projects of 4 5/8 percent. The resulting annual values between the without and with project conditions were then compared to determine the annual benefit from the prevention of structure damages. The results for each location and each alternative are summarized below in Table G-6.

| <b>Table G-6<br/>Structure Damages</b> |                                     |                                  |                        |
|----------------------------------------|-------------------------------------|----------------------------------|------------------------|
| <b>Alternative/Location</b>            | <b>Without Project Annual Value</b> | <b>With Project Annual Value</b> | <b>Annual Benefits</b> |
| Alternative A - Plum Island            | \$765,288                           | \$494,173                        | \$271,115              |
| Alternative B - Plum Island            | \$765,288                           | \$601,147                        | \$164,141              |
| Alternative B - Salisbury              | \$329,261                           | \$146,540                        | \$182,721              |
| Total, Alternative B                   | \$1,094,549                         | \$747,687                        | \$346,862              |

### **Land Loss Avoided**

Land losses that would occur at each study area were determined by calculating the total land area that would be lost under the without project condition and each with project condition over the 10 year period of analysis. The value of the land lost to erosion was estimated using average land values obtained from the Newbury and Salisbury property assessment offices. The results for each location and each alternative are summarized below in Table G-7.

| <b>Table G-7<br/>Land Loss</b> |                                     |                                  |                        |
|--------------------------------|-------------------------------------|----------------------------------|------------------------|
| <b>Alternative/Location</b>    | <b>Without Project Annual Value</b> | <b>With Project Annual Value</b> | <b>Annual Benefits</b> |
| Alternative A - Plum Island    | \$1,474,428                         | \$885,874                        | \$588,554              |
| Alternative B - Plum Island    | \$1,474,428                         | \$1,058,319                      | \$416,109              |
| Alternative B - Salisbury      | \$88,458                            | \$64,845                         | \$23,613               |
| Total, Alternative B           | \$1,562,886                         | \$1,123,164                      | \$439,722              |

### **Property Acquisition Costs**

Properties damaged to the point of total loss would be acquired by the municipality or state, either in fee by agreement with the owners or by abandonment. Costs for inventory, appraisal and processing would be borne by the Town or State to accomplish the transfer. These costs would be avoided or delayed if the properties were protected from damage by the beachfill. A cost of \$5,000 has been estimated per property damaged, consistent with estimates made for similar coastal storm damage reduction

projects in New England. Property acquisition costs were calculated for the without project conditions (without beneficial placement) and for the with project condition (with beneficial placement) for each location and each alternative. The results are shown below in Table G-8.

| <b>Table G-8<br/>Property Acquisition Costs</b> |                                     |                                  |                        |
|-------------------------------------------------|-------------------------------------|----------------------------------|------------------------|
| <b>Alternative/Location</b>                     | <b>Without Project Annual Value</b> | <b>With Project Annual Value</b> | <b>Annual Benefits</b> |
| Alternative A - Plum Island                     | \$13,553                            | \$7,327                          | \$6,226                |
| Alternative B - Plum Island                     | \$13,553                            | \$9,689                          | \$3,864                |
| Alternative B - Salisbury                       | \$5,694                             | \$3,354                          | \$2,340                |
| Total, Alternative B                            | \$19,247                            | \$13,043                         | \$6,204                |

### **Relocation Assistance Costs**

Federal and State law requires that relocation assistance be provided to property owners when their properties are taken by the government. While these properties will have been lost to storm damage, some level of assistance will likely be due to those owners. Regardless of whether or not public assistance is available, property owners will need to relocate their residence or business, salvage, transport and repair or replace furnishings and other belongings and bear the expense and time needed to relocate. A cost of \$15,000 has been estimated per property lost, consistent with estimates made for similar coastal storm damage reduction projects in New England.. Relocation assistance costs were calculated for the without project condition and for the with project condition for each alternative at each location. The results are shown below in Table G-9.

| <b>Table G-9<br/>Relocation Assistance Costs</b> |                                     |                                  |                        |
|--------------------------------------------------|-------------------------------------|----------------------------------|------------------------|
| <b>Alternative/Location</b>                      | <b>Without Project Annual Value</b> | <b>With Project Annual Value</b> | <b>Annual Benefits</b> |
| Alternative A - Plum Island                      | \$40,658                            | \$21,981                         | \$18,677               |
| Alternative B - Plum Island                      | \$40,658                            | \$29,066                         | \$11,592               |
| Alternative B - Salisbury                        | \$17,083                            | \$10,063                         | \$7,020                |
| Total, Alternative B                             | \$57,741                            | \$39,129                         | \$18,612               |

### **Structure Demolition and Disposal Costs Avoided**

Once land beneath residences and other structures has been lost to erosion, or the structures have been damaged to the point of total loss, the remains of those structures will need to be demolished, removed and disposed of. This includes the buildings and out-buildings, their supports and foundations, any paved surfaces, underground and

above ground utilities and their connections to municipal systems, and any fuel tanks. Protecting the properties would avoid or delay these costs.

Costs avoided for demolition and removal have been estimated on an average per occupied lot of \$50,000 each, including structures, foundations, roads and utilities, consistent with estimates made for similar coastal storm damage reduction projects in New England. Structure demolition and disposal costs were calculated for the without project condition and compared to each with project condition alternative for each location. The resulting average annual values are shown below in Table G-10.

| <b>Table G-10<br/>Structure Demolition and Disposal Costs</b> |                                     |                                  |                        |
|---------------------------------------------------------------|-------------------------------------|----------------------------------|------------------------|
| <b>Alternative/Location</b>                                   | <b>Without Project Annual Value</b> | <b>With Project Annual Value</b> | <b>Annual Benefits</b> |
| Alternative A - Plum Island                                   | \$135,528                           | \$73,271                         | \$62,257               |
| Alternative B - Plum Island                                   | \$135,528                           | \$96,886                         | \$38,642               |
| Alternative B - Salisbury                                     | \$56,943                            | \$33,542                         | \$23,401               |
| Total, Alternative B                                          | \$192,471                           | \$130,428                        | \$62,043               |

### **State and Municipal Emergency Response Costs**

Major storms with overwash events of the type that would be prevented by adequate beachfill, result in municipal emergency response costs for evacuation, additional police presence for security, and clean-up of debris and sand after the storm. The Town of Newbury estimates that it has spent \$180,000<sup>3</sup> for emergency response cost for storms impacting Plum Island since May 2006. At this initial level of analysis, it was estimated that one-fourth of these costs, or \$45,000 would be avoided as a beachfill project would prevent overwash events during major storms and the additional damage caused. Evacuations would be less frequent and clean-up less extensive in the with-project condition. This figure was used for each alternative as the estimate for emergency costs avoided, as shown in Table G-11.

| <b>Table G-11<br/>Emergency Costs</b> |                                     |                                  |                        |
|---------------------------------------|-------------------------------------|----------------------------------|------------------------|
| <b>Alternative/Location</b>           | <b>Without Project Annual Value</b> | <b>With Project Annual Value</b> | <b>Annual Benefits</b> |
| Alternative A - Plum Island           | \$180,000                           | \$135,000                        | \$45,000               |
| Alternative B - Plum Island           | \$180,000                           | \$135,000                        | \$45,000               |
| Alternative B - Salisbury             | \$180,000                           | \$135,000                        | \$45,000               |
| Total, Alternative B                  | \$360,000                           | \$270,000                        | \$90,000               |

<sup>3</sup> The \$180,000 in expenses includes \$63,600 that was reimbursed by FEMA for the May 2006 storm.

**Municipal Sewer and Water Utility Repair and Rehabilitation Costs Avoided**

Left unimpeded, long-term erosion will eventually undermine Northern Boulevard behind Plum Island Beach and cause damage to the water and sewer system that connects Plum Island to the Newburyport water system. At this initial level of analysis, it was estimated that the repair costs would be approximately \$300 per linear foot. Based on the location of the utility lines and the projected erosion rate, it was determined that damage to sewer and water lines would begin in 2015 with 80 linear feet affected, and would increase steadily to 1200 linear feet affected by 2019. This yielded an average annual equivalent value for damage to utility lines of \$72,003. No estimate of utility damages under the with-project condition was made. For this analysis, it was assumed that the damages projected in the without project condition would be prevented by the placement of fill under either with project alternative. Additional costs relating to utility line damages could be incurred, such as costs for property owners to obtain alternative utilities, or costs for residents to temporarily relocate during repair work. No sewer or water lines are threatened by the erosion at the Salisbury Beach study area. These results are summarized below in Table G-12.

| <b>Table G-12<br/>Sewer and Water Utility Repair Costs</b> |                                     |                                  |                        |
|------------------------------------------------------------|-------------------------------------|----------------------------------|------------------------|
| <b>Alternative/Location</b>                                | <b>Without Project Annual Value</b> | <b>With Project Annual Value</b> | <b>Annual Benefits</b> |
| Alternative 1 - Plum Island                                | \$72,003                            | \$0                              | \$72,003               |
| Alternative 2 - Plum Island                                | \$72,003                            | \$0                              | \$72,003               |
| Alternative 2 - Salisbury                                  | \$0                                 | \$0                              | \$0                    |
| Total, Alternative 2                                       | \$72,003                            | \$0                              | \$72,003               |

**Benefit Results Summary**

The results of the benefit analysis for Alternative 1, placing 160,000 cy of material at Plum Island Beach, are summarized below in Table G-13. The results for Alternative 2, placing 120,000 cy at Plum Island and 40,000 cy at Salisbury Beach, are summarized in Table G-14. First costs, annual costs, and benefit-cost analysis for each beneficial use disposal option for the two beaches may be found in the main report beginning on page 29.



| <b>Table G-13<br/>Benefit Summary<br/>Alternative A - 160,000 cy at Plum Island Beach</b> |                        |
|-------------------------------------------------------------------------------------------|------------------------|
| <b>Benefit Category</b>                                                                   | <b>Annual Benefits</b> |
| Structure Damages Avoided                                                                 | \$271,115              |
| Value of Land Lost                                                                        | \$588,554              |
| Property Acquisition Costs Avoided                                                        | \$6,226                |
| Relocation Assistance Costs Avoided                                                       | \$18,677               |
| Structure Demolition and Disposal Costs Avoided                                           | \$62,257               |
| Emergency Costs Avoided                                                                   | \$45,000               |
| Sewer and Water Utility Repair and Rehab Costs Avoided                                    | \$72,003               |
| Total                                                                                     | \$1,063,831            |

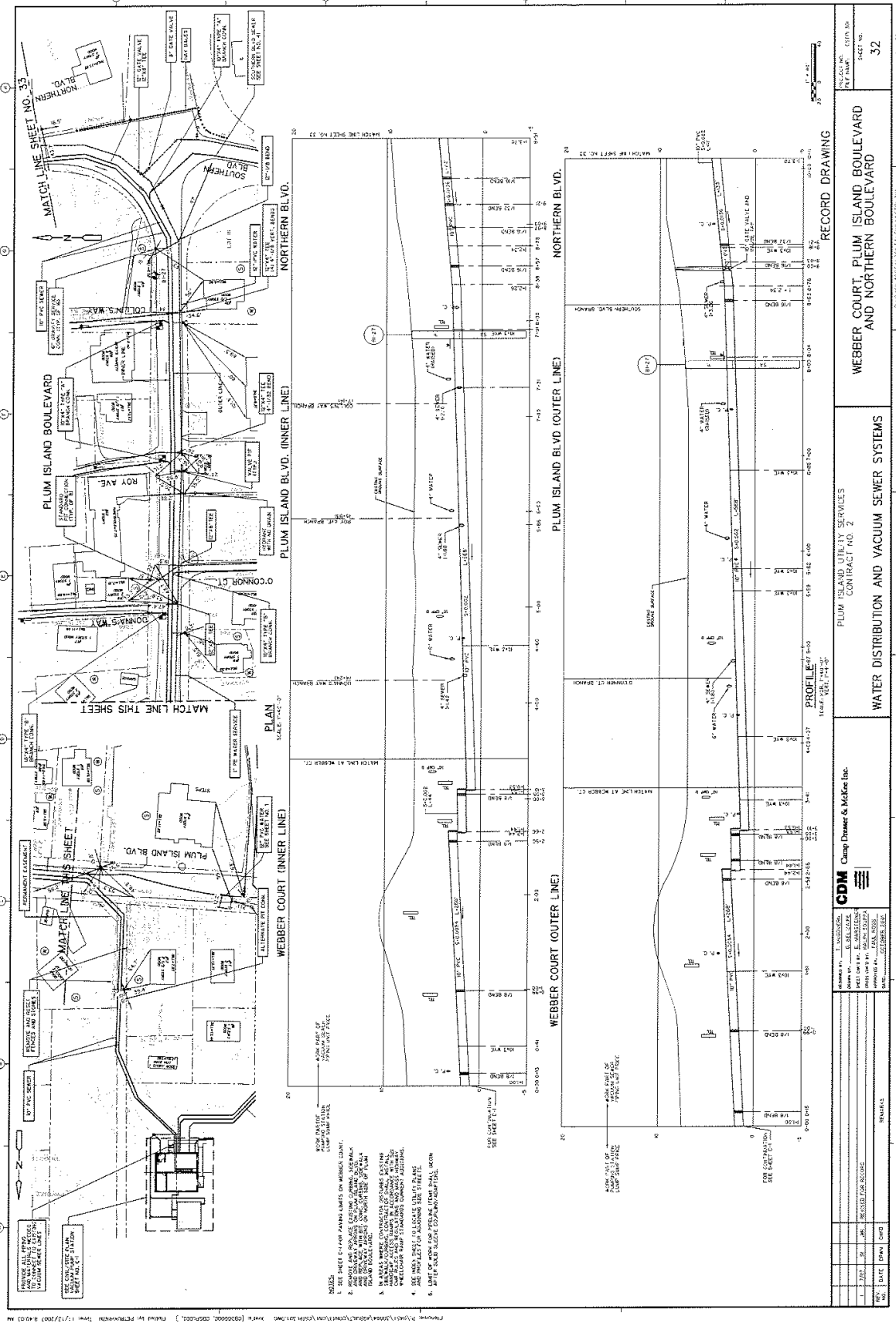
| <b>Table G-14</b>                                               |                                         |                                             |                                  |
|-----------------------------------------------------------------|-----------------------------------------|---------------------------------------------|----------------------------------|
| <b>Benefit Summary - Alternative B</b>                          |                                         |                                             |                                  |
| <b>Material Split Between Plum Island and Salisbury Beaches</b> |                                         |                                             |                                  |
| <b>Benefit Category</b>                                         | <b>Annual Benefits,<br/>Plum Island</b> | <b>Annual Benefits,<br/>Salisbury Beach</b> | <b>Total Annual<br/>Benefits</b> |
| Structure Damages Avoided                                       | \$164,141                               | \$182,721                                   | \$346,862                        |
| Value of Land Lost                                              | \$416,109                               | \$23,613                                    | \$439,722                        |
| Property Acquisition Costs<br>Avoided                           | \$3,864                                 | \$2,340                                     | \$6,204                          |
| Relocation Assistance Costs<br>Avoided                          | \$11,592                                | \$7,020                                     | \$18,612                         |
| Structure Demolition and<br>Disposal Costs Avoided              | \$38,642                                | \$23,401                                    | \$62,043                         |
| Emergency Costs Avoided                                         | \$45,000                                | \$45,000                                    | \$90,000                         |
| Sewer and Water Utility Repair<br>and Rehab Costs Avoided       | \$72,003                                | \$0                                         | \$72,003                         |
| Total                                                           | \$751,351                               | \$284,095                                   | \$1,035,446                      |

**NEWBURYPORT HARBOR  
PLUM ISLAND AND SALISBURY BEACHES  
§204 PROJECT FOR BENEFICIAL USE  
OF DREDGED MATERIAL**

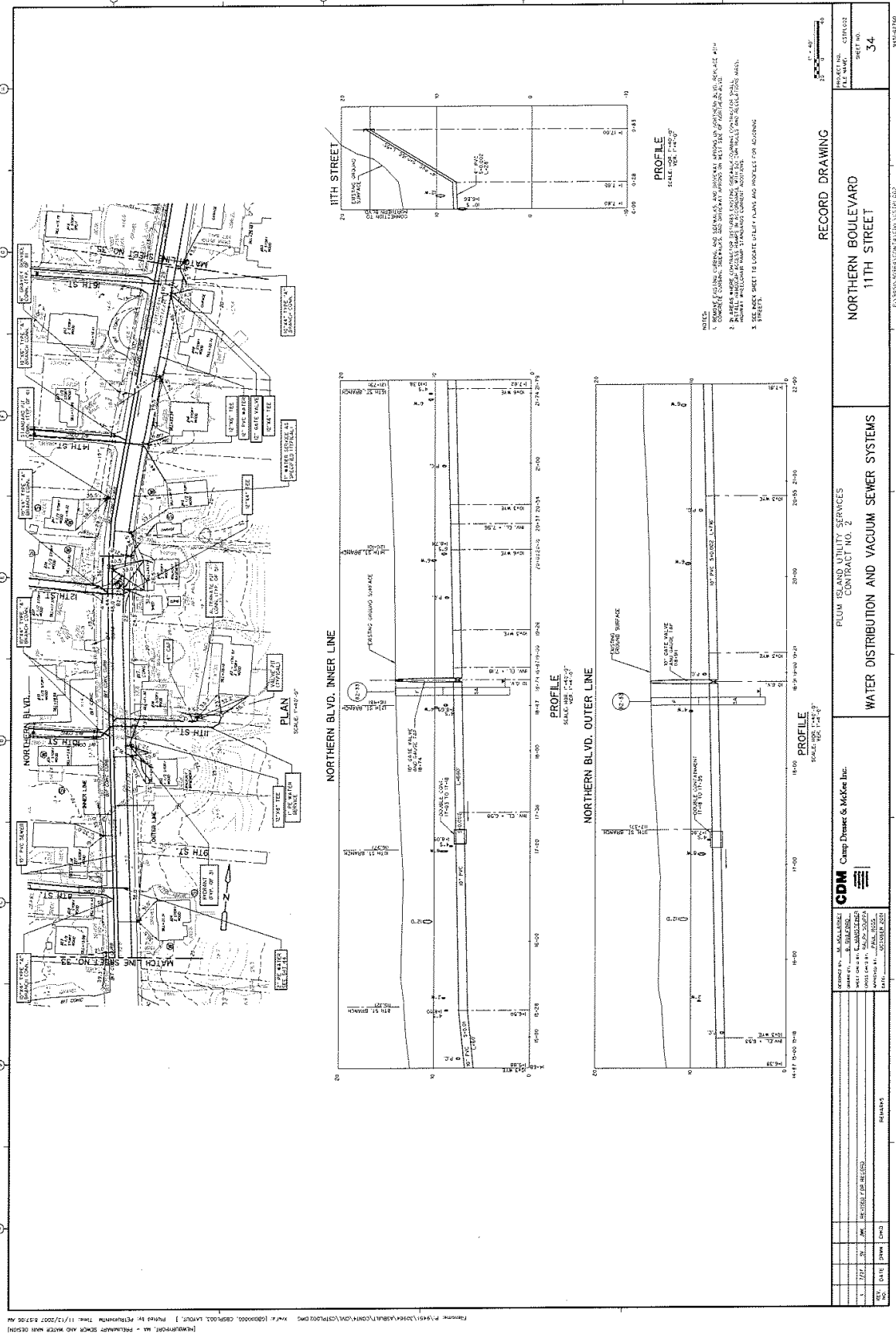
**DETAILED PROJECT REPORT**

**APPENDIX H  
SEWER SYSTEM DRAWINGS**



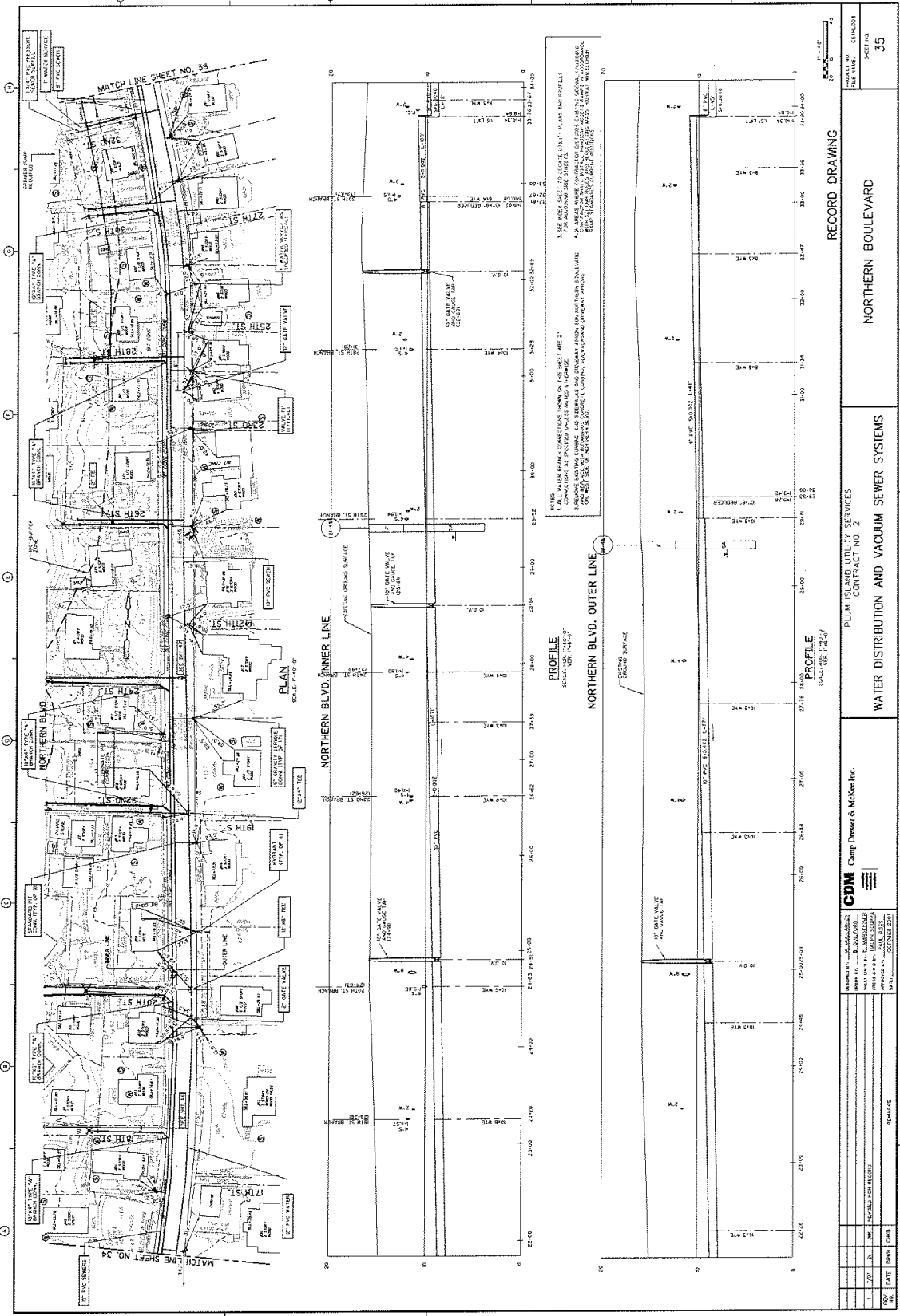






|                                                                                                                                                   |  |                                                                                                                                          |  |                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------|
| <p>PROJECT: PLUM ISLAND UTILITY SERVICES<br/>                 CONTRACT NO. 2<br/>                 WATER DISTRIBUTION AND VACUUM SEWER SYSTEMS</p> |  | <p>RECORD DRAWING<br/>                 NORTHERN BOULEVARD<br/>                 11TH STREET</p>                                           |  | <p>SHEET NO.<br/>                 34</p> |
| <p>DESIGNED BY: CDM<br/>                 CHECKED BY: [Name]<br/>                 DRAWN BY: [Name]<br/>                 DATE: [Date]</p>           |  | <p>PLUM ISLAND UTILITY SERVICES<br/>                 CONTRACT NO. 2<br/>                 WATER DISTRIBUTION AND VACUUM SEWER SYSTEMS</p> |  |                                          |





**NEWBURYPORT HARBOR  
PLUM ISLAND AND SALISBURY BEACHES  
§204 PROJECT FOR BENEFICIAL USE  
OF DREDGED MATERIAL**

**DETAILED PROJECT REPORT**

**APPENDIX I  
SUITABILITY DETERMINATION  
AND SEDIMENT TEST DATA**



**MEMORANDUM THRU**

 **Ruth M. Ladd**, Chief, Policy Analysis and Technical Support Branch

**FOR: Jack Karalius**, Project Manager, CENAE-PP-PN

**SUBJECT: Suitability Determination for Newburyport Harbor FNP, Merrimack River, Newburyport, Massachusetts.**

**1. Project Description:**

The CENAE is proposing to dredge an area of approximately **20 acres** at the mouth of the Merrimack River to a depth of -17' MLLW. This is the entrance channel to Newburyport Harbor. Approximately **150,000 cu. yds.** of material will be hydraulically dredged with a private hopper dredge. The proposed disposal sites are a nearshore area off Plum Island and a nearshore area off Salisbury Beach. This project was last dredged in 1999, 1996 and 1993. The Plum Island disposal area was used in 1999 and 1993 while the Salisbury Beach area was used in 1996.

**2. Summary:**

This memorandum addresses compliance with the regulatory evaluation and testing requirements of 40 CFR 227.13 for unconfined open water disposal at an open ocean disposal site. This evaluation confirms that sufficient information was obtained to properly evaluate the suitability of this material for open water disposal under the guidelines and finds the sediments suitable for disposal as proposed.

**3. Ocean Dumping Act Regulatory Requirements:**

The disposal of sediments below mean low water in Bigelow Bight is regulated according to both Section 103 of the Ocean Disposal Act and Section 404 of the Clean Water Act.

**§227.13 Dredged Materials.**

(a) This paragraph defines dredged materials and does not give any criteria for the evaluation of sediments.

(b) This paragraph states that proposed dredged material which meets the criteria in one of the following three paragraphs is environmentally acceptable for ocean disposal without further testing.

SUBJECT: Suitability Determination for Newburyport Harbor FNP, Merrimack River, Newburyport, Massachusetts.

(b)(1) Dredged material that is predominately sand, gravel, rock, or any other naturally occurring bottom material with particle size greater than silt and is found in areas of high current or wave energy can be disposed of in a 103 site without further testing. Grain size analysis done in 1994 showed the material from this project is predominately sand (0.8% 0.6%, 2% and 2.4% fines). As the mouth of the Merrimack River is a high energy area, I think it is unlikely that fine sediment would now be found in this channel. Therefore, the project meet this exclusion.

(b)(2) Dredged material that is proposed for beach nourishment and is predominantly sand, gravel or shell with grain sizes similar to the receiving beaches can be disposed of without further testing. Samples of the Plum Island disposal area were taken and analyzed for grain size in 2003. The four samples were predominantly sand, with 1%, 1%, 1% and 7% fines. Samples of the Salisbury Beach disposal area were taken and analyzed for grain size in 1996. The five samples were also predominantly sand, with 9.6%, 9.7%, 18.8%, 15.7% and 10.5% fines. This is similar to the material proposed to be dredged, as discussed in the previous paragraph. Therefore, as the material from this project is predominately sand and is proposed for beach disposal, it does meet this exclusion.

(b)(3) When the dredged material is substantially the same as that at the disposal site and the dredged material is taken from a site far removed from known sources of pollution, it can be disposed of without further testing. This project's material does not meet this exclusion.

(c) This paragraph states that if the dredged material does not meet the criteria of paragraph b above, it must undergo further testing of the liquid, suspended particulate and solid phases before it can be considered acceptable for ocean disposal. This section does not apply to this project, as the dredge material meets the criteria in paragraph b(1) and b(2) above.

(d) This subsection discusses the choice of the liquid phase analytes and does not give any criteria for the evaluation of sediments.

4. Copies of the draft suitability determination were sent to the State DEP, US EPA, and US F&WS for their review. No responses were received from the Federal agencies within the 10-day response period so their concurrences may be assumed.

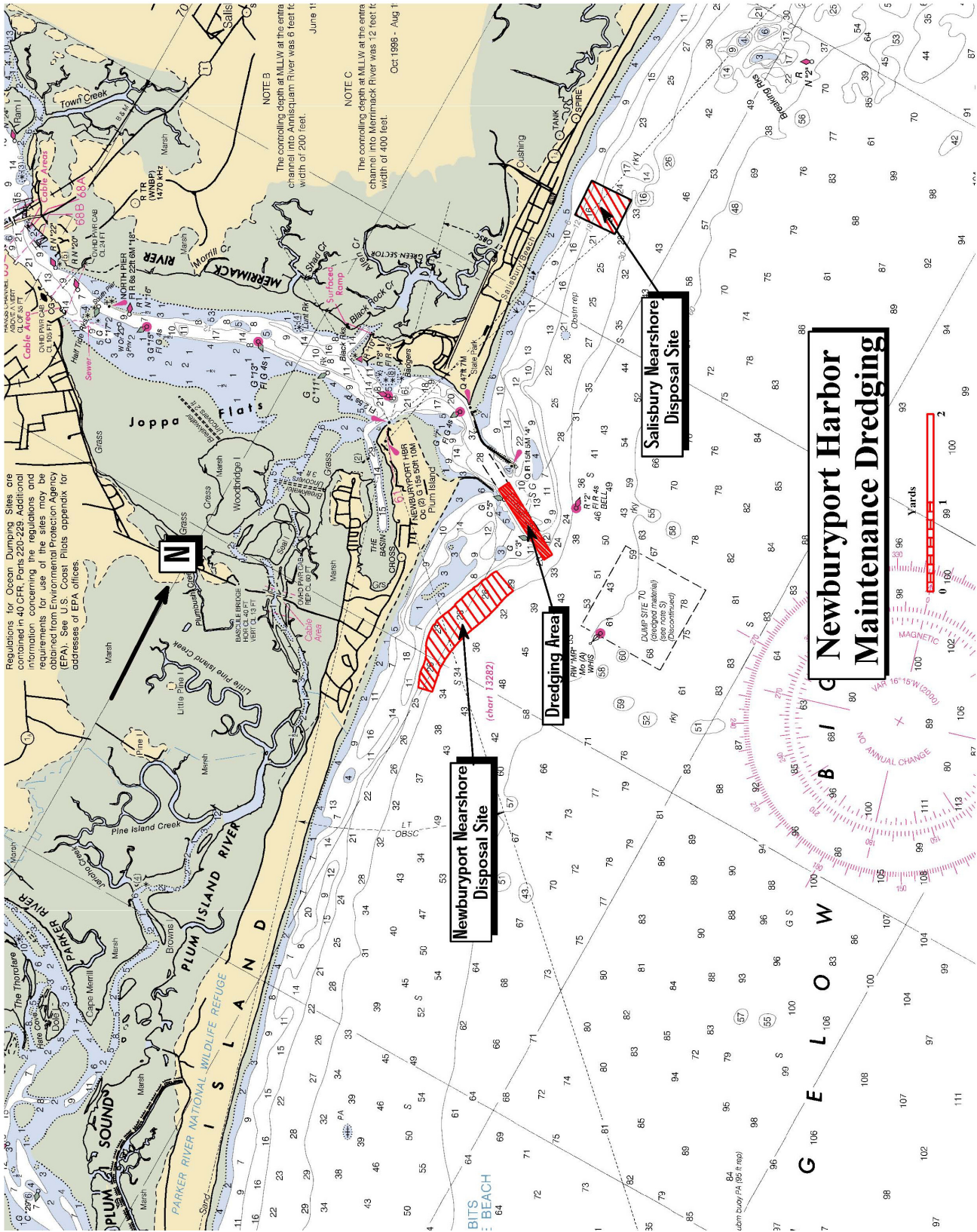
SUBJECT: Suitability Determination for Newburyport Harbor FNP, Merrimack River, Newburyport, Massachusetts.

5. If you have any questions, please contact me at (978) 318-8660.



PHILLIP NIMESKERN  
Project Manager,  
Marine Analysis Section

**SUBJECT: Suitability Determination for Newburyport Harbor FNP, Merrimack River, Newburyport, Massachusetts**



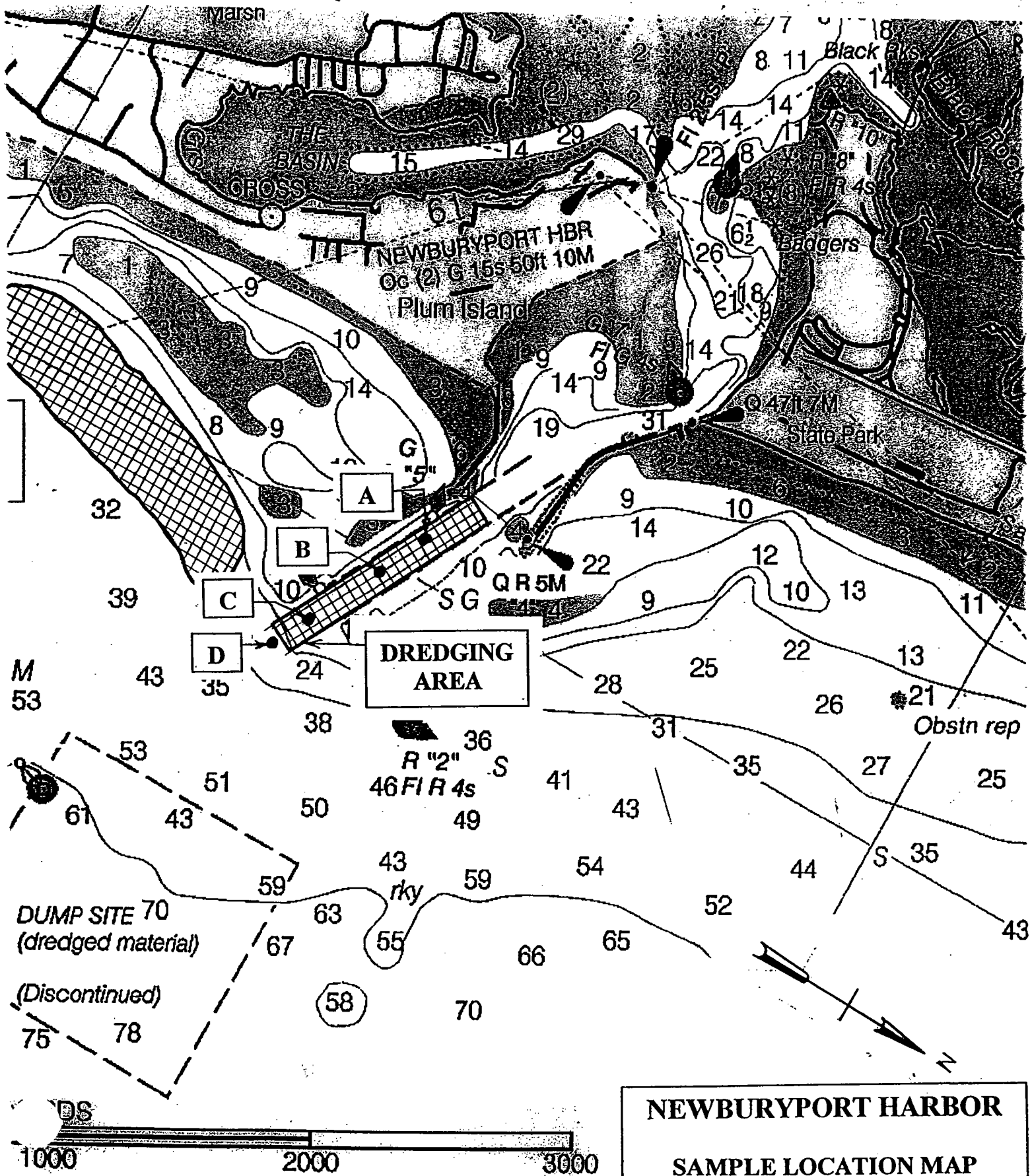


**SEDIMENT TEST RESULTS**

**DREDGING SITE**

**NEWBURYPORT HARBOR ENTRANCE CHANNEL**



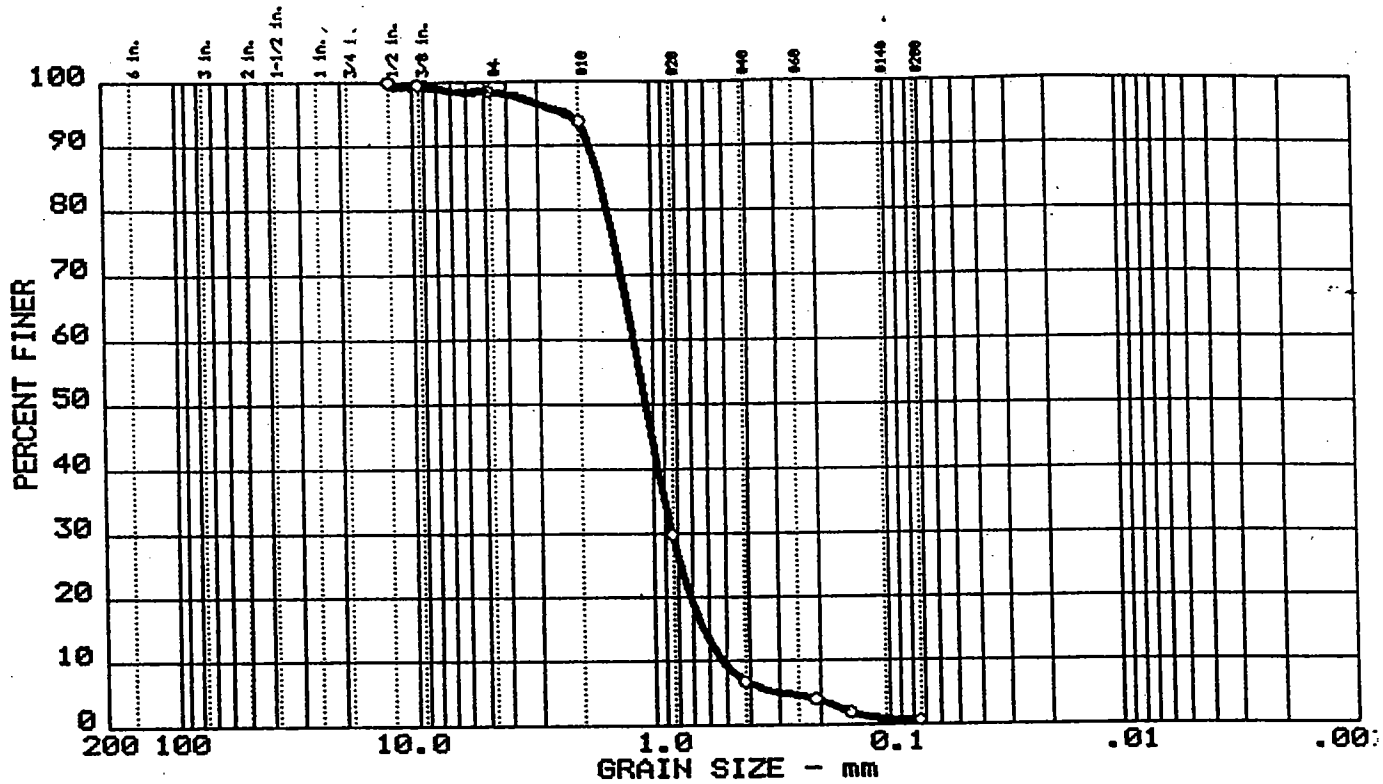


**NEWBURYPORT HARBOR**

**SAMPLE LOCATION MAP**

1994

# GRAIN SIZE DISTRIBUTION TEST REPORT



| Test | % +3" | % GRAVEL | % SAND | % SILT | % CLAY |
|------|-------|----------|--------|--------|--------|
| 1    | 0.0   | 1.5      | 97.8   | 0.8    |        |

| LL | PI | D75  | D60  | D50  | D30   | D25    | D10    | Cc   | Cu  |
|----|----|------|------|------|-------|--------|--------|------|-----|
|    |    | 1.43 | 1.20 | 1.08 | 0.839 | 0.7780 | 0.5200 | 1.13 | 2.3 |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|----------------------|------|--------|
| POORLY GRADED SAND   | SP   |        |

Project No.: 100-605-1  
 Project: NEWBURYPORT HARBOR , MASS.  
 Location: SAMPLE LOCATION "A" , ENV. NO. 25193

Date: 4-22-94

**GRAIN SIZE DISTRIBUTION TEST REPORT**  
**CORPS OF ENGINEERS - NEW ENGLAND**

Remarks:  
 SURFACE "GRAB" SAMPLE  
 COLOR: MEDIUM BROWN

Fig. No. 1





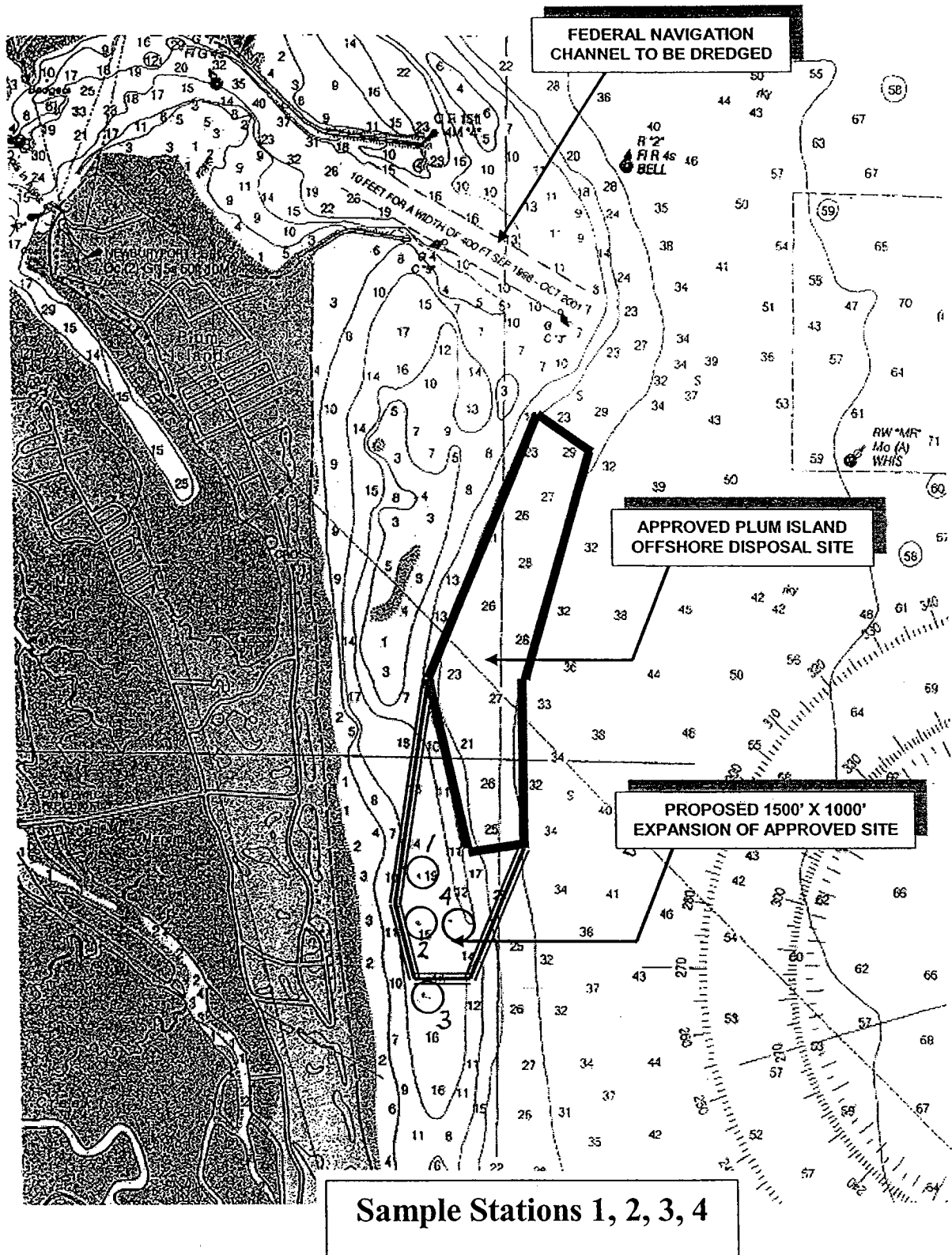






**SEDIMENT TEST RESULTS**  
**PLUM ISLAND NEARSHORE DISPOSAL SITE**





**PLAN DEPICTING APPROVED PLUM ISLAND OFFSHORE DISPOSAL SITE AND PROPOSED EXPANSION OFF PLUM ISLAND BEACH**  
**SHEET 1 OF 1**                      **FEBRUARY 2006**

**KEY**  
 Depicts limits of approved Disposal site      **—————**  
 Depicts limits of proposed expansion of approved site      **=====  
 =====**

## Geotechnical Test Report

# Newburyport Harbor Project

Newburyport, MA

*New nearshore disposal area (2003)*

Prepared for:

**U.S. Army Corps of Engineers**

Concord, MA

Prepared by:



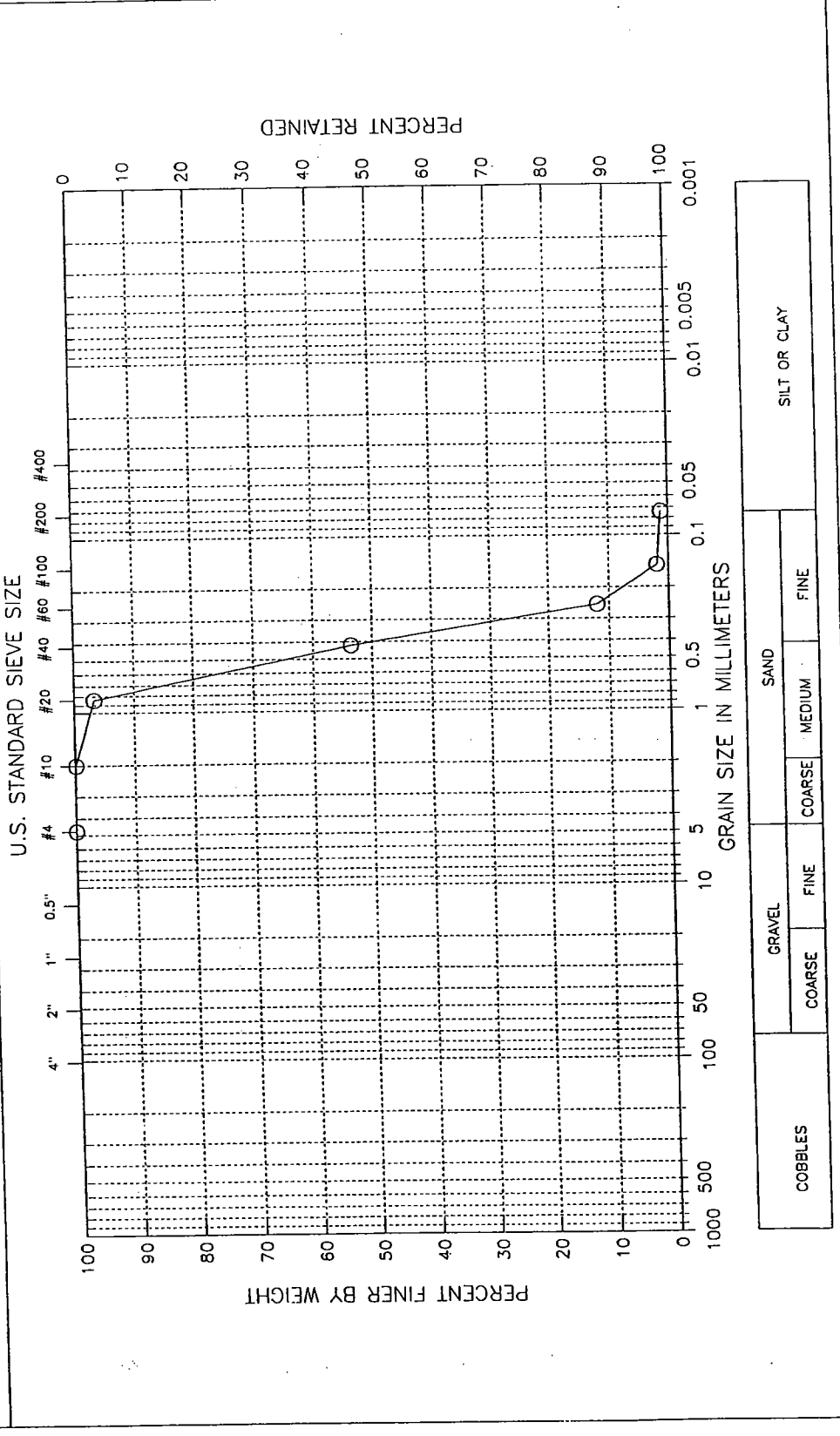
**GeoTesting Express, Inc.**

Boxborough, MA

July 3, 2003

# Grain Size Analysis by ASTM D 422

|                                                                                        |                                                                                                              |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| Boring No.: NBPT<br>Sample No.: Station 1<br>Test Method ASTM D 422<br>Filename : STA1 | Project : Newburyport Harbor<br>Project No.: GTX-4631<br>Location: Newburyport, MA<br>Date : Thu Jul 03 2003 |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|



Classification :  
 (SP) Poorly graded sand  
 Visual Description :  
 Moist, olive brown sand

Remarks :

Figure 1

GEOTECHNICAL LABORATORY TEST DATA

Project : Newburyport Harbor  
Project No. : GTX-4631  
Boring No. : NBPT  
Sample No. : Station 1  
Location : Newburyport, MA  
Soil Description : Moist, olive brown sand  
Remarks :

Depth : ---  
Test Date : 06/27/03  
Test Method : ASTM D 422

Filename : STA1  
Elevation : ---  
Tested by : tje/jx  
Checked by : jdt

| Sieve Mesh | Sieve Openings |             | FINE SIEVE SET       |                                 | Percent Finer (%) |
|------------|----------------|-------------|----------------------|---------------------------------|-------------------|
|            | Inches         | Millimeters | Weight Retained (gm) | Cumulative Weight Retained (gm) |                   |
| #4         | 0.187          | 4.75        | 0.00                 | 0.00                            | 100               |
| #10        | 0.079          | 2.00        | 0.33                 | 0.33                            | 100               |
| #20        | 0.033          | 0.84        | 9.28                 | 9.61                            | 97                |
| #40        | 0.017          | 0.42        | 123.71               | 133.32                          | 54                |
| #60        | 0.010          | 0.25        | 119.43               | 252.75                          | 12                |
| #100       | 0.006          | 0.15        | 28.97                | 281.72                          | 2                 |
| #200       | 0.003          | 0.07        | 2.13                 | 283.85                          | 1                 |
| Pan        |                |             | 3.25                 | 287.10                          | 0                 |

Total Dry Weight of Sample = 295.16

- D85 : 0.6970 mm
- D60 : 0.4659 mm
- D50 : 0.4017 mm
- D30 : 0.3131 mm
- D15 : 0.2596 mm
- D10 : 0.2260 mm

Soil Classification

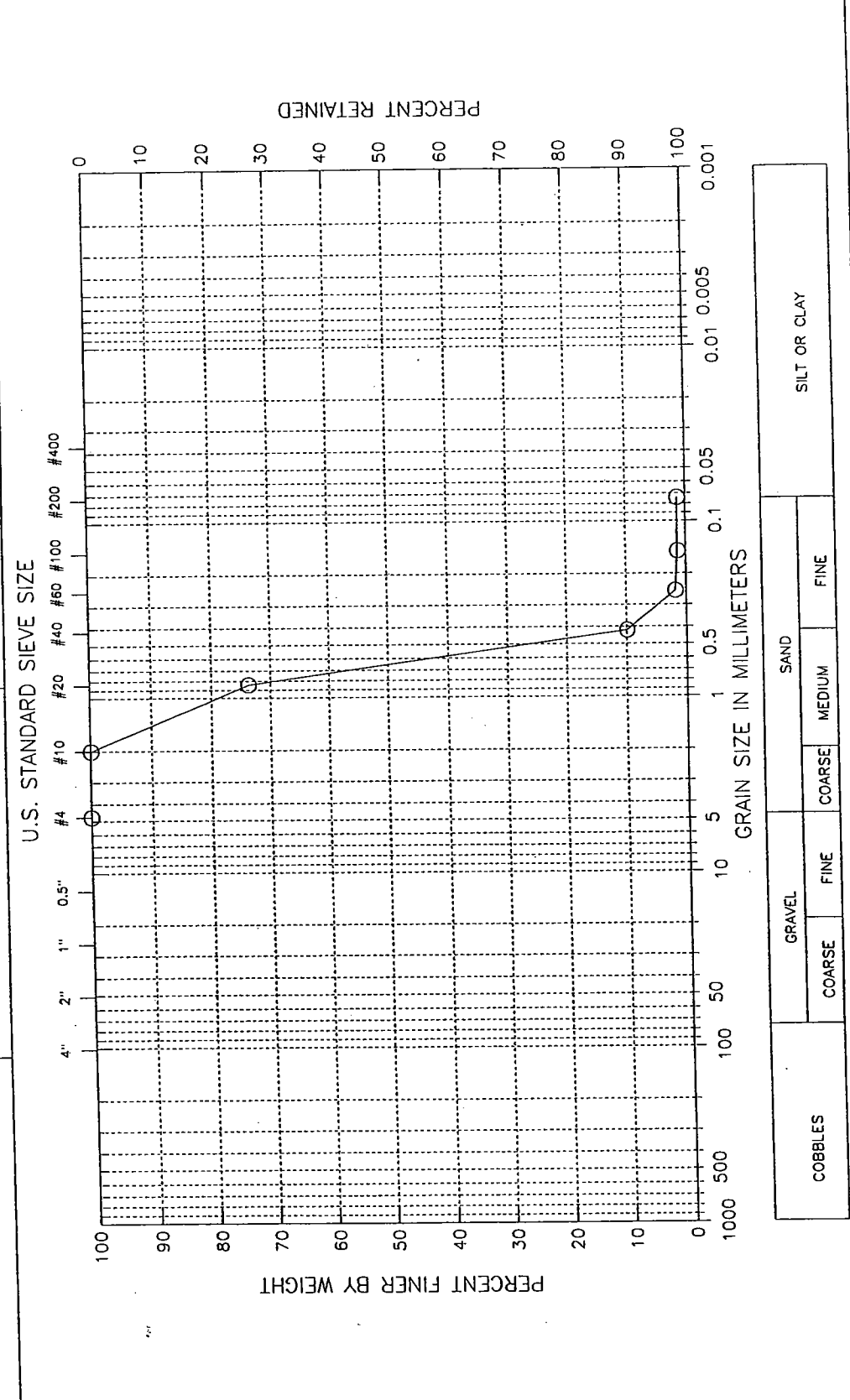
ASTM Group Symbol : SP  
ASTM Group Name : Poorly graded sand  
AASHTO Group Symbol : A-3(0)  
AASHTO Group Name : Fine Sand



# Grain Size Analysis by ASTM D 422

Boring No.: NBPT  
 Sample No.: Station 2  
 Test Method ASTM D 422  
 Filename : STA2

Project : Newburyport Harbor  
 Project No.: GTX-4631  
 Location: Newburyport, MA  
 Date : Thu Jul 03 2003



Classification :  
 (SP) Poorly graded sand  
 Visual Description :  
 Moist, olive brown sand

Remarks :

Figure 2

GEOTECHNICAL LABORATORY TEST DATA

Project : Newburyport Harbor

Project No. : GTX-4631

Boring No. : NBPT

Sample No. : Station 2

Location : Newburyport, MA

Soil Description : Moist, olive brown sand

Remarks :

Depth : ---

Test Date : 06/27/03

Test Method : ASTM D 422

Filename : STA2

Elevation : ---

Tested by : tje/jx

Checked by : jdt

| Sieve Mesh | Sieve Openings |             | FINE SIEVE SET       |                                 | Percent Finer (%) |
|------------|----------------|-------------|----------------------|---------------------------------|-------------------|
|            | Inches         | Millimeters | Weight Retained (gm) | Cumulative Weight Retained (gm) |                   |
| #4         | 0.187          | 4.75        | 0.00                 | 0.00                            | 100               |
| #10        | 0.079          | 2.00        | 0.18                 | 0.18                            | 100               |
| #20        | 0.033          | 0.84        | 41.80                | 41.98                           | 74                |
| #40        | 0.017          | 0.42        | 101.63               | 143.61                          | 10                |
| #60        | 0.010          | 0.25        | 13.03                | 156.64                          | 2                 |
| #100       | 0.006          | 0.15        | 0.68                 | 157.32                          | 1                 |
| #200       | 0.003          | 0.07        | 0.05                 | 157.37                          | 1                 |
| Pan        |                |             | 2.01                 | 159.38                          | 0                 |

Total Dry Weight of Sample = 167.39

- D85 : 1.2231 mm
- D60 : 0.7248 mm
- D50 : 0.6500 mm
- D30 : 0.5228 mm
- D15 : 0.4440 mm
- D10 : 0.4205 mm

Soil Classification

- ASTM Group Symbol : SP
- ASTM Group Name : Poorly graded sand
- AASHTO Group Symbol : A-1-b(0)
- AASHTO Group Name : Stone Fragments, Gravel and Sand



GEOTECHNICAL LABORATORY TEST DATA

Project : Newburyport Harbor

Project No. : GTX-4631

Boring No. : NBPT

Sample No. : Station 3

Location : Newburyport, MA

Soil Description : Moist, olive brown sand

Remarks :

Depth : ---

Test Date : 06/27/03

Test Method : ASTM D 422

Filename : STA3

Elevation : ---

Tested by : tje/jx

Checked by : jdt

| Sieve<br>Mesh | Sieve Openings |             | FINE SIEVE SET             |                                       | Percent<br>Finer<br>(%) |
|---------------|----------------|-------------|----------------------------|---------------------------------------|-------------------------|
|               | Inches         | Millimeters | Weight<br>Retained<br>(gm) | Cumulative<br>Weight Retained<br>(gm) |                         |
| #10           | 0.079          | 2.00        | 0.00                       | 0.00                                  | 100                     |
| #20           | 0.033          | 0.84        | 3.11                       | 3.11                                  | 99                      |
| #40           | 0.017          | 0.42        | 138.29                     | 141.40                                | 55                      |
| #60           | 0.010          | 0.25        | 102.00                     | 243.40                                | 23                      |
| #100          | 0.006          | 0.15        | 65.23                      | 308.63                                | 2                       |
| #200          | 0.003          | 0.07        | 4.39                       | 313.02                                | 1                       |
| Pan           |                |             | 2.69                       | 315.71                                | 0                       |

Total Dry Weight of Sample = 323.82

- D85 : 0.6735 mm
- D60 : 0.4531 mm
- D50 : 0.3863 mm
- D30 : 0.2802 mm
- D15 : 0.2051 mm
- D10 : 0.1810 mm

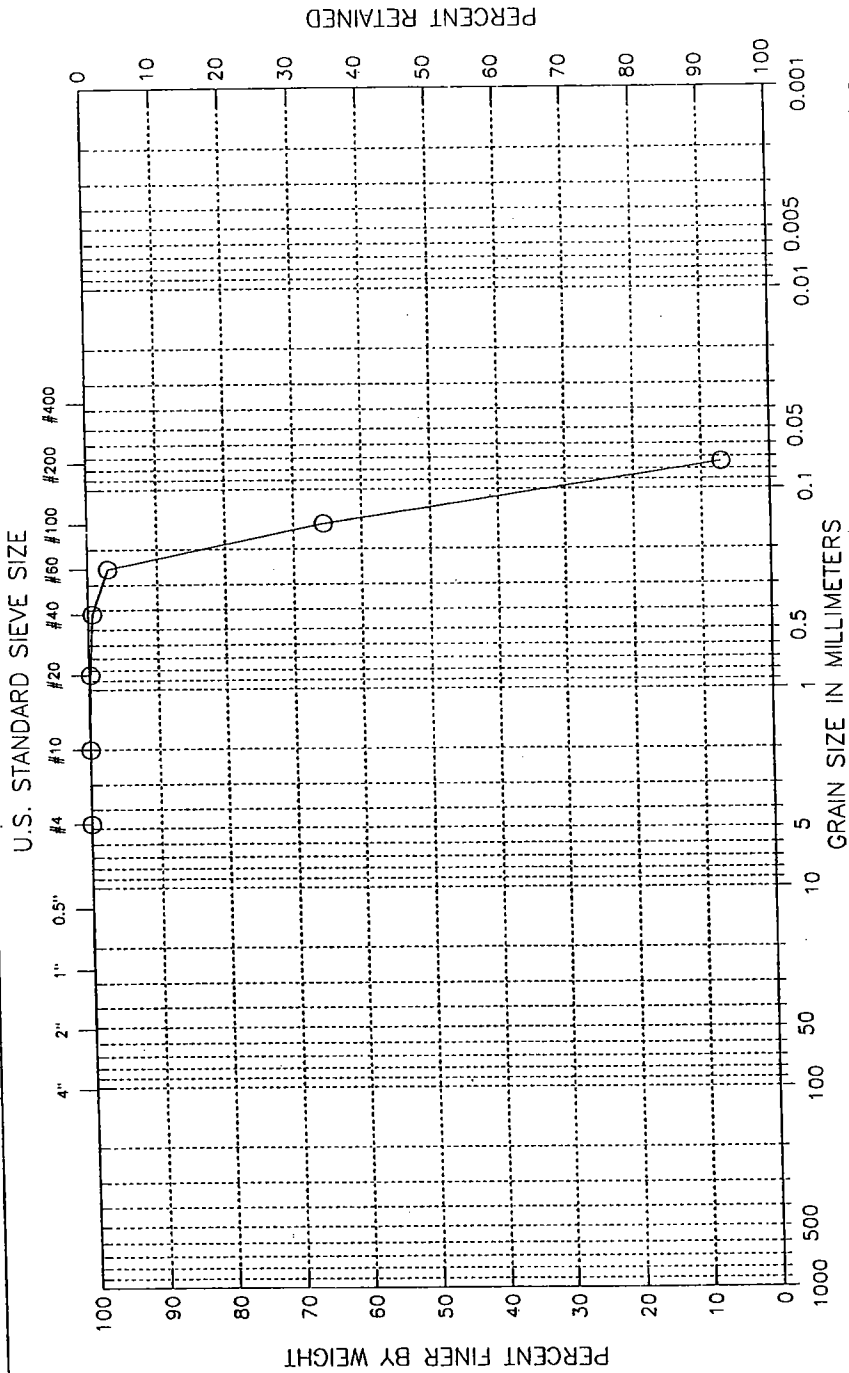
Soil Classification

ASTM Group Symbol : SP  
 ASTM Group Name : Poorly graded sand  
 AASHTO Group Symbol : A-3(0)  
 AASHTO Group Name : Fine Sand

# Grain Size Analysis by ASTM D 422

Boring No.: NBPT  
 Sample No.: Station 4  
 Test Method ASTM D 422  
 Filename : STA4

Project : Newburyport Harbor  
 Project No.: GTX-4631  
 Location: Newburyport, MA  
 Date : Thu Jul 03 2003



|         |        |      |        |        |      |  |              |
|---------|--------|------|--------|--------|------|--|--------------|
| COBBLES | GRAVEL |      |        | SAND   |      |  | SILT OR CLAY |
|         | COARSE | FINE | COARSE | MEDIUM | FINE |  |              |

Classification :  
 Visual Description :  
 Moist, very dark gray sand with silt

Remarks :

Figure 4

GEOTECHNICAL LABORATORY TEST DATA

Project : Newburyport Harbor  
 Project No. : GTX-4631  
 Boxing No. : NBPT  
 Sample No. : Station 4  
 Location : Newburyport, MA  
 Soil Description : Moist, very dark gray sand with silt  
 Remarks :

Filename : STA4  
 Elevation : ---  
 Tested by : tje/jx  
 Checked by : jdt

| Sieve Mesh | Sieve Openings |             | FINE SIEVE SET       |                                 | Percent Finer (%) |
|------------|----------------|-------------|----------------------|---------------------------------|-------------------|
|            | Inches         | Millimeters | Weight Retained (gm) | Cumulative Weight Retained (gm) |                   |
| #4         | 0.187          | 4.75        | 0.00                 | 0.00                            | 100               |
| #10        | 0.079          | 2.00        | 0.16                 | 0.16                            | 100               |
| #20        | 0.033          | 0.84        | 0.42                 | 0.58                            | 100               |
| #40        | 0.017          | 0.42        | 0.94                 | 1.52                            | 99                |
| #60        | 0.010          | 0.25        | 5.50                 | 7.02                            | 97                |
| #100       | 0.006          | 0.15        | 75.61                | 82.63                           | 66                |
| #200       | 0.003          | 0.07        | 141.09               | 223.72                          | 7                 |
| Pan        |                |             | 16.90                | 240.62                          | 0                 |

Total Dry Weight of Sample = 248.68

- D85 : 0.2049 mm
- D60 : 0.1393 mm
- D50 : 0.1236 mm
- D30 : 0.0974 mm
- D15 : 0.0814 mm
- D10 : 0.0767 mm

Soil Classification

ASTM Group Symbol : N/A  
 ASTM Group Name : N/A  
 AASHTO Group Symbol : A-3(0)  
 AASHTO Group Name : Fine Sand

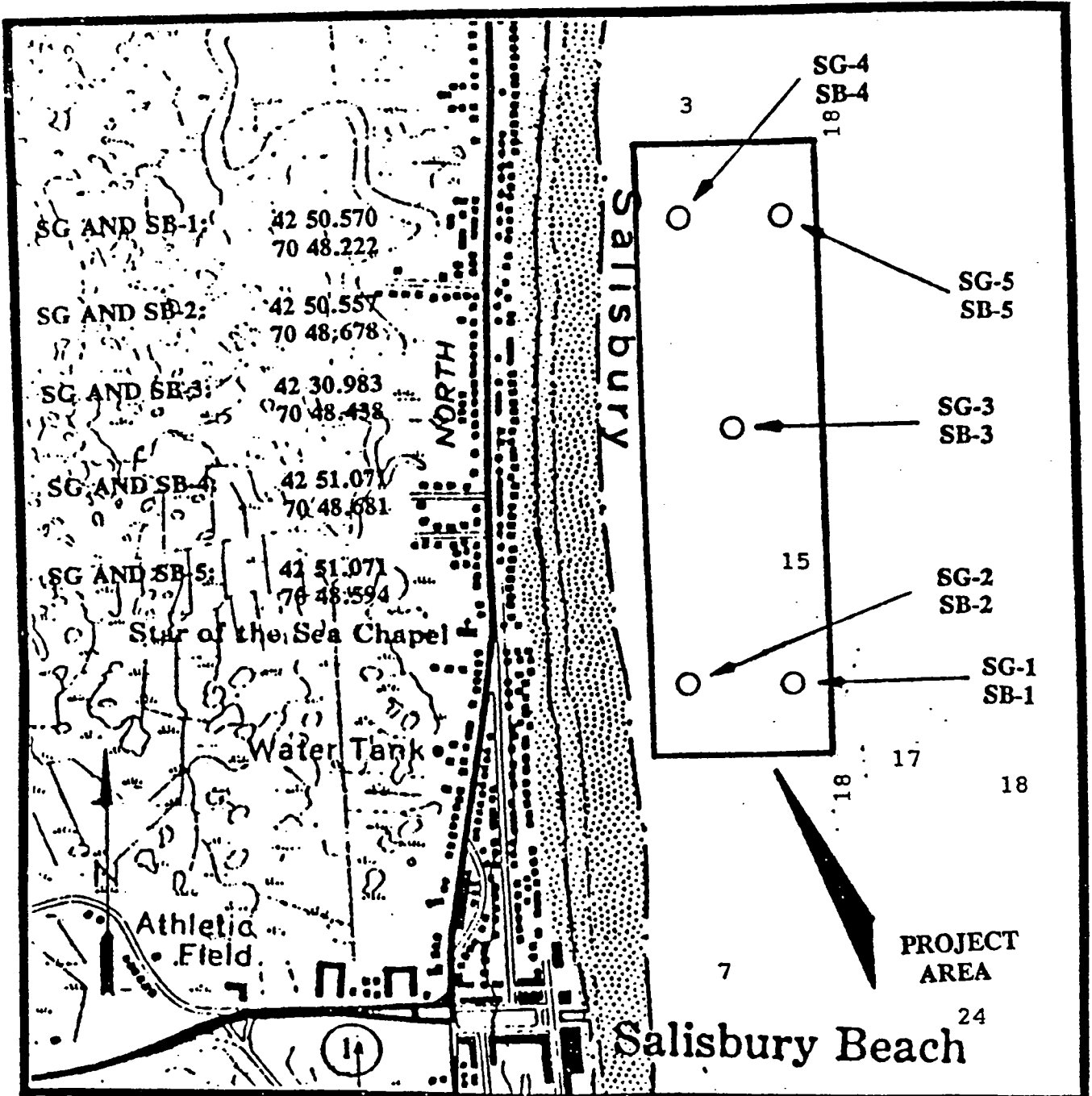
**SEDIMENT TEST RESULTS**  
**SALISBURY NEARSHORE DISPOSAL SITE**





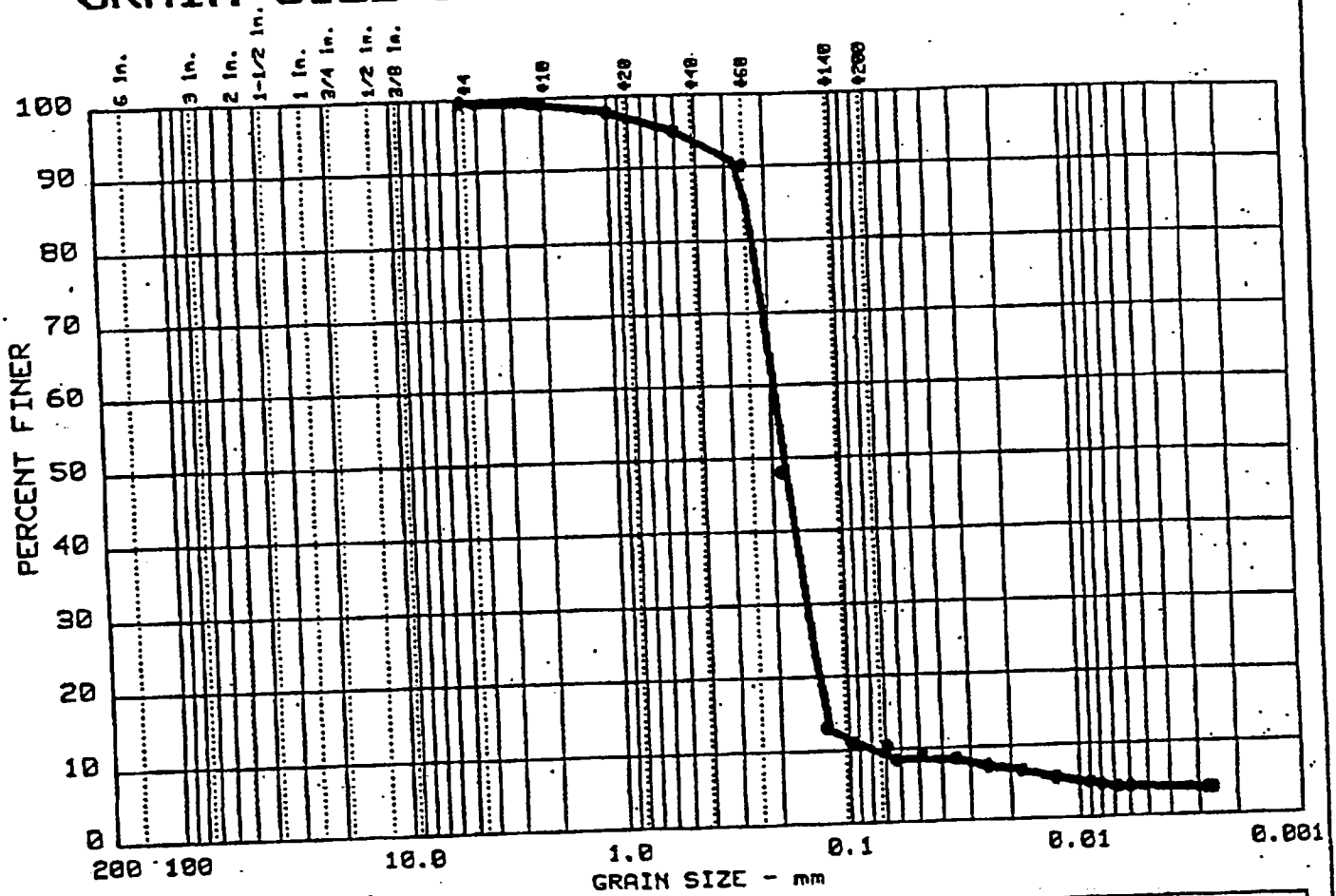
Figure 6

Taken from: Normandeau Associates, Inc. Final Report of Findings: North Salisbury Beach Nearshore Disposal Site for the Merrimack River Entrance Dredging. April, 1996.





# GRAIN SIZE DISTRIBUTION TEST REPORT



| Test | % +3" | % GRAVEL | % SAND | % SILT | % CLAY |
|------|-------|----------|--------|--------|--------|
| ● 19 | 0.0   | 0.5      | 89.8   | 5.7    | 4.0    |

| LL | PI | D85   | D60   | D50   | D30   | D15   | D10    | Cc   | Cu  |
|----|----|-------|-------|-------|-------|-------|--------|------|-----|
| ●  |    | 0.239 | 0.191 | 0.174 | 0.146 | 0.127 | 0.0784 | 1.42 | 2.4 |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|----------------------|------|--------|
| ● SEDIMENT           |      |        |

Project No.: 15961.000  
 Project: Salisbury Beach Dredge Disp.  
 ● Location: Sal-2/SW Quadrant

Date: 03-12-96

GRAIN SIZE DISTRIBUTION TEST REPORT  
 NORMANDEAU ASSOCIATES  
 25 Nashua Rd - Bedford, NH 03110

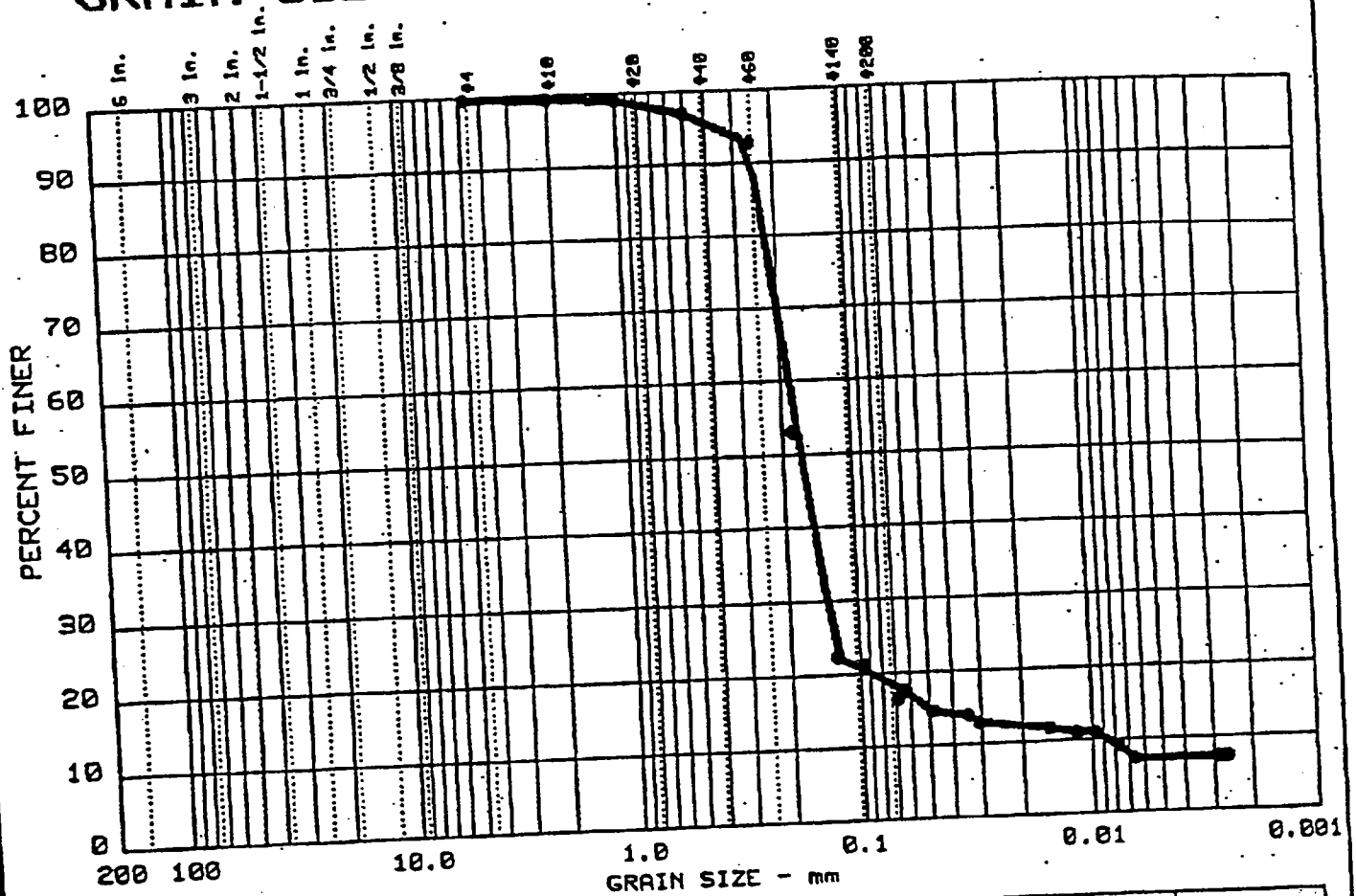
Remarks:  
 Project Manager  
 MARK GARRETT

SG-2

SAMPLE No# 96030090

ELLEN

# GRAIN SIZE DISTRIBUTION TEST REPORT



| Test | % +3" | % GRAVEL | % SAND | % SILT | % CLAY |
|------|-------|----------|--------|--------|--------|
| ● 16 | 0.0   | 0.5      | 80.7   | 11.4   | 7.4    |

| LL | PI | D85   | D60   | D50   | D30   | D15    | D10    | Cc    | Cu   |
|----|----|-------|-------|-------|-------|--------|--------|-------|------|
| ●  |    | 0.231 | 0.181 | 0.164 | 0.135 | 0.0494 | 0.0085 | 11.79 | 21.3 |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|----------------------|------|--------|
| ● SEDIMENT           |      |        |

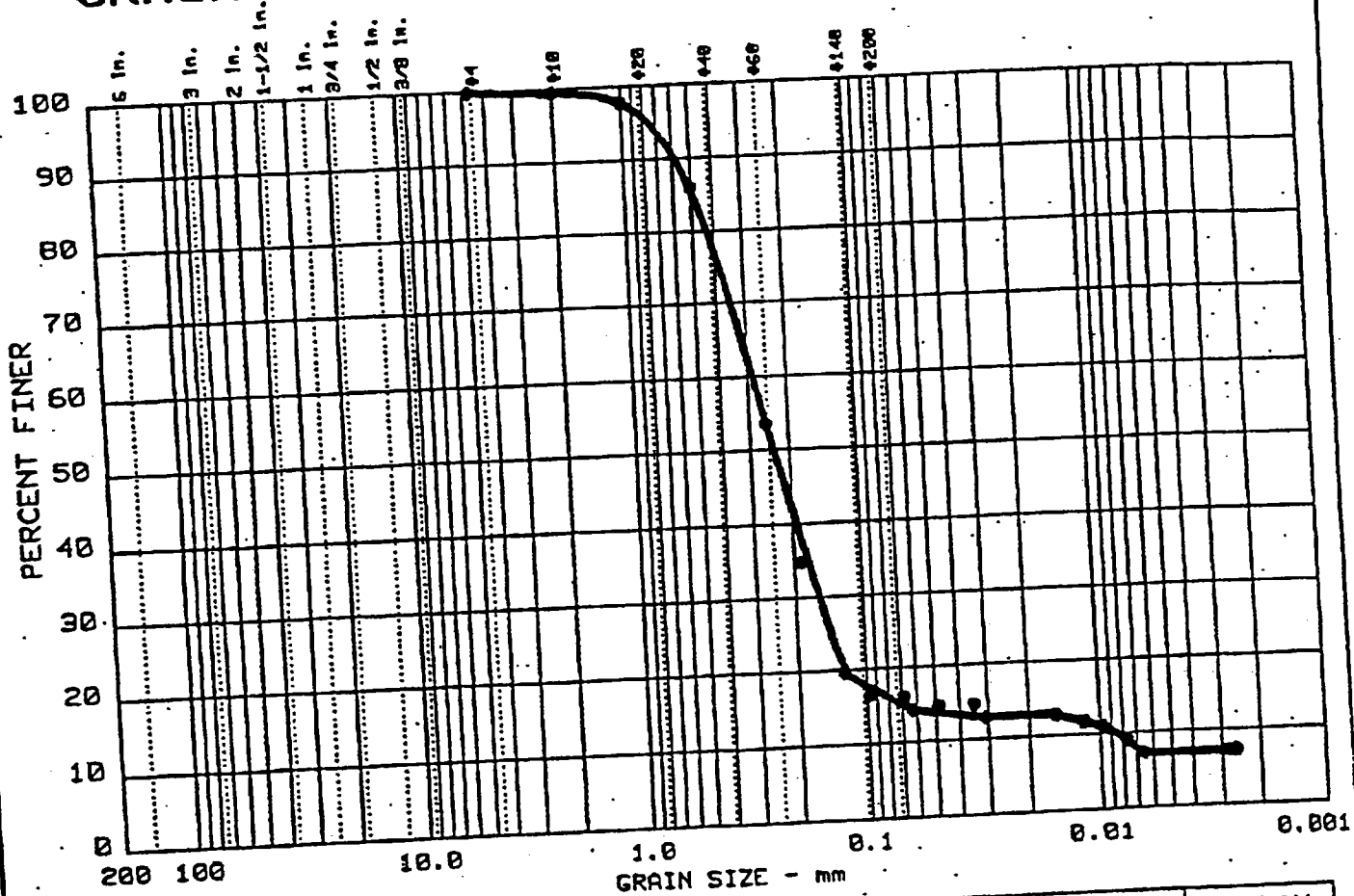
Project No.: 15961.000  
 Project: Salisbury Beach Dredge Disp.  
 ● Location: Sal-3/Center  
 Date: 03-12-96

Remarks:  
 Project Manager  
 MARK GARRETT  
 SG-3

GRAIN SIZE DISTRIBUTION TEST REPORT  
 NORMANDEAU ASSOCIATES  
 25 Nashua Rd - Bedford, NH 03110

SAMPLE No# 96030091

# GRAIN SIZE DISTRIBUTION TEST REPORT



|      |       |          |        |        |        |
|------|-------|----------|--------|--------|--------|
| Test | % +3" | % GRAVEL | % SAND | % SILT | % CLAY |
| 17   | 0.0   | 0.2      | 84.1   | 8.3    | 7.4    |

|    |    |       |       |       |       |        |        |                |                |
|----|----|-------|-------|-------|-------|--------|--------|----------------|----------------|
| LL | PI | D85   | D60   | D50   | D30   | D15    | D10    | C <sub>c</sub> | C <sub>u</sub> |
|    |    | 0.484 | 0.281 | 0.232 | 0.154 | 0.0689 | 0.0084 | 10.10          | 33.5           |

|                      |      |        |
|----------------------|------|--------|
| MATERIAL DESCRIPTION | USCS | AASHTO |
| ● SEDIMENT           |      |        |

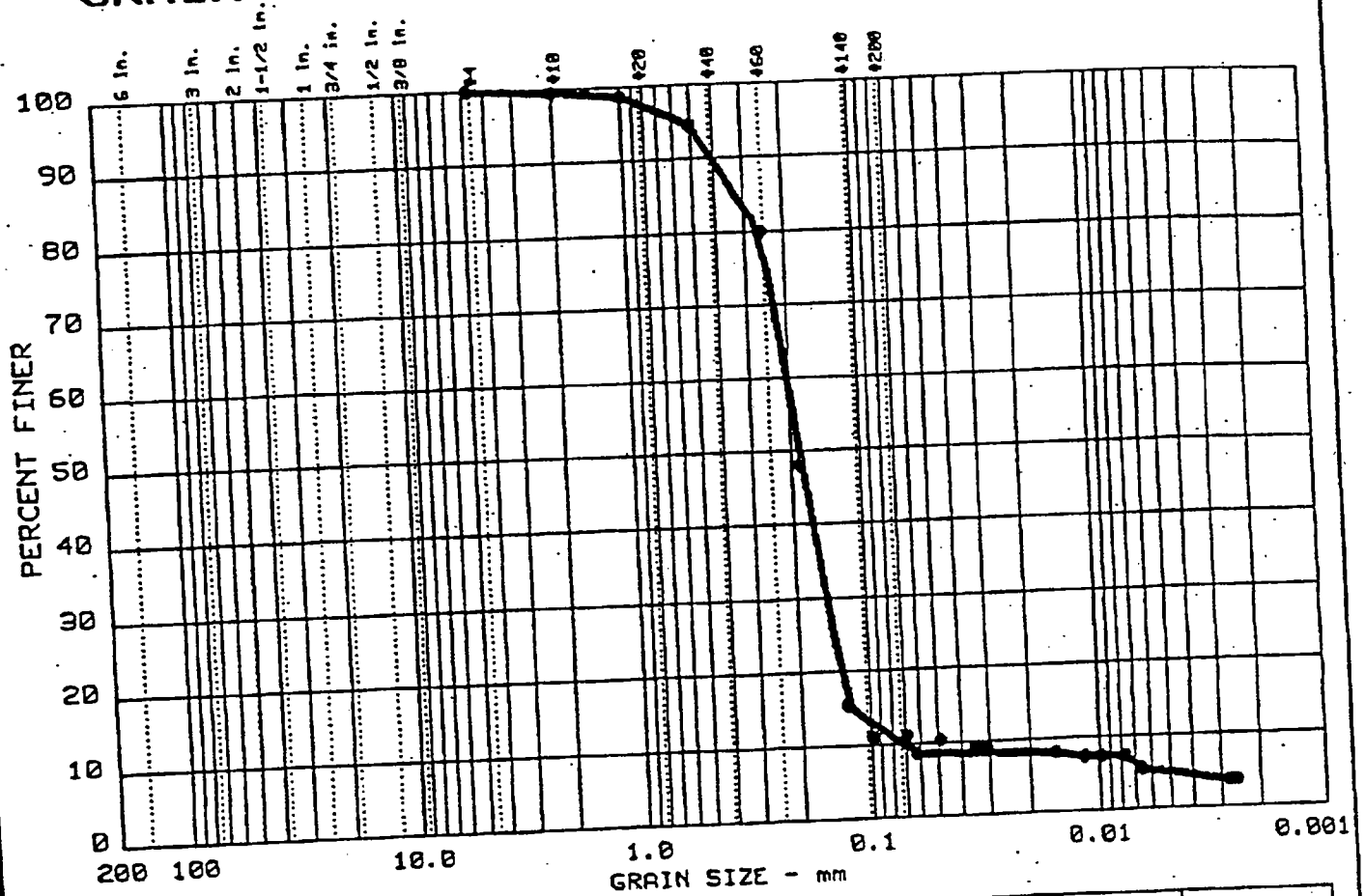
Project No.: 15961.000  
 Project: Salisbury Beach Dredge Disp.  
 ● Location: Sal-4/NW Quadrant  
 Date: 03-12-96

Remarks:  
 Project Manager  
 MARK GARRETT  
 SG-4

GRAIN SIZE DISTRIBUTION TEST REPORT  
 NORMANDEAU ASSOCIATES  
 25 Nashua Rd - Bedford, NH 03110

SAMPLE No# 96030092

# GRAIN SIZE DISTRIBUTION TEST REPORT



| Test | % +3" | % GRAVEL | % SAND | % SILT | % CLAY |
|------|-------|----------|--------|--------|--------|
| ● 20 | 0.0   | 0.1      | 89.4   | 5.5    | 5.0    |

| LL | PI | D85   | D60   | D50   | D30   | D15   | D10    | Cc   | Cu  |
|----|----|-------|-------|-------|-------|-------|--------|------|-----|
| ●  |    | 0.319 | 0.202 | 0.181 | 0.146 | 0.119 | 0.0715 | 1.48 | 2.8 |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|----------------------|------|--------|
| ● SEDIMENT           |      |        |

Project No.: 15961.000  
 Project: Salisbury Beach Dredge Disp.  
 ● Location: Sal-5/NE Quadrant  
 Date: 03-12-96

Remarks:  
 Project Manager  
 MARK GARRETT  
 SG-5

GRAIN SIZE DISTRIBUTION TEST REPORT  
 NORMANDEAU ASSOCIATES  
 25 Nashua Rd - Bedford, NH 03110

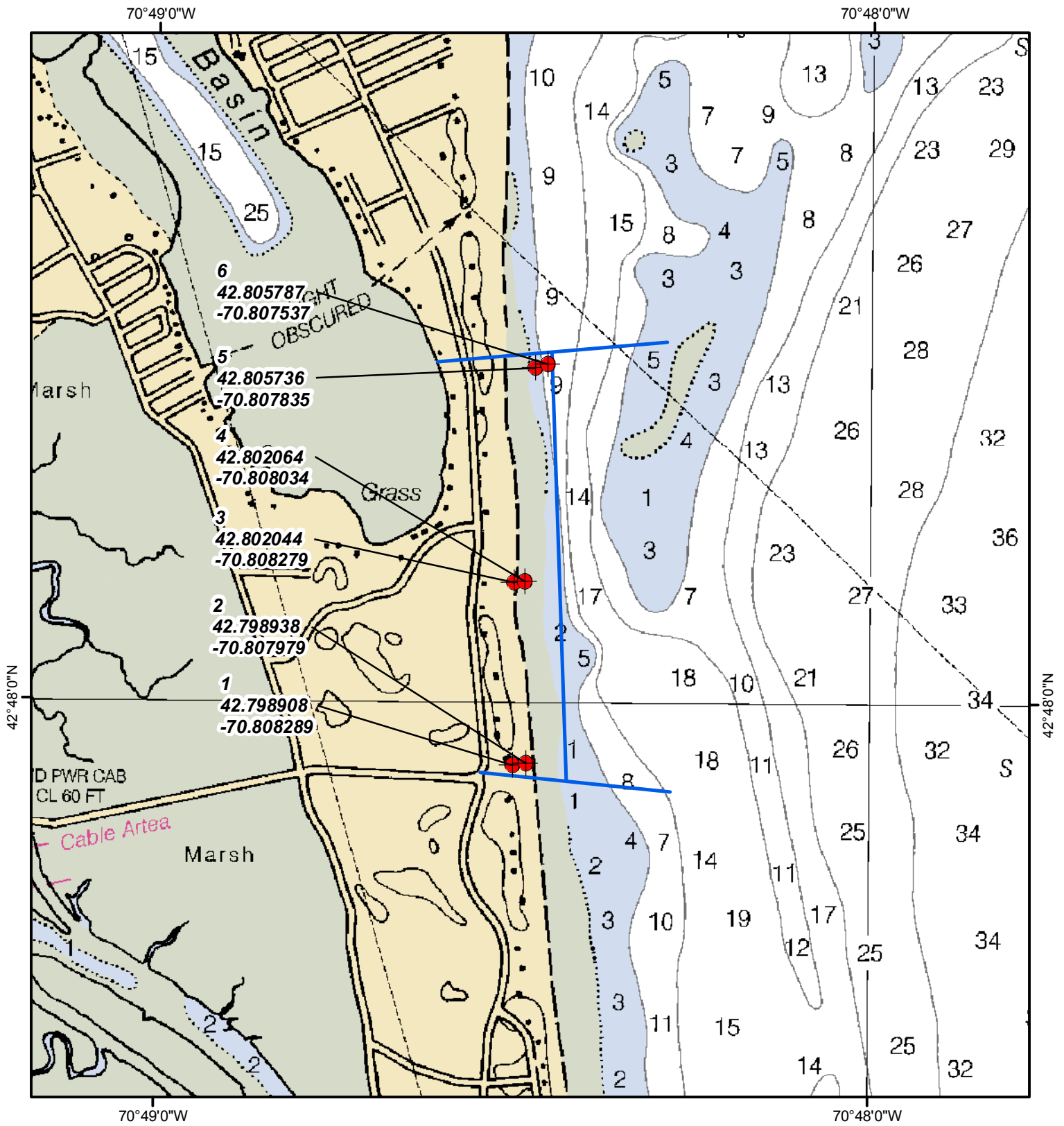
SAMPLE No# 96030093




**SEDIMENT TEST RESULTS**

**PLUM ISLAND BEACH**





 **PLUM ISLAND BEACH SAMPLE LOCATIONS**  
**NEWBURYPORT, MA**

US Army Corps  
of Engineers  
New England District

— Project Area    ● Sample Location

SCALE 1:10,000

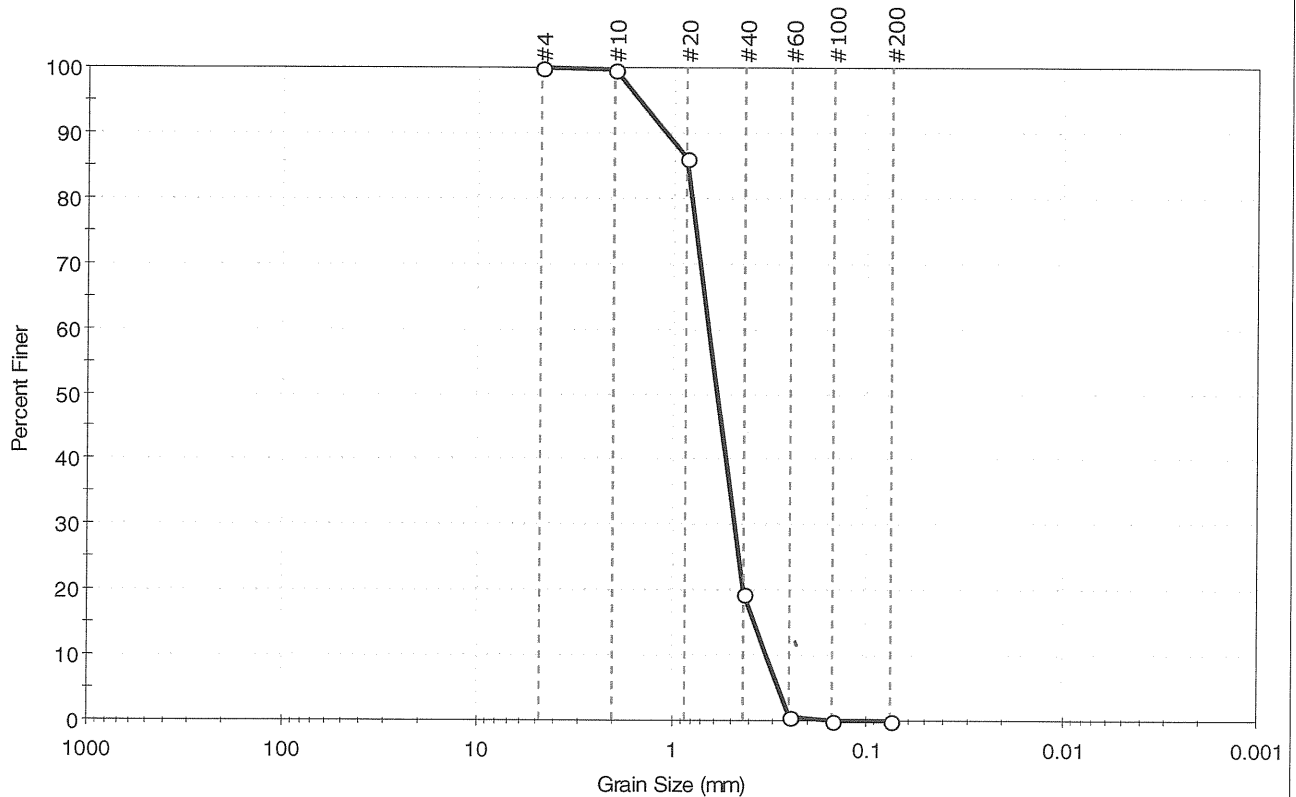
0 250 500 1,000 1,500 2,000 Feet

CHART 13282 from NOAA NGDC Website



|                                                       |                      |
|-------------------------------------------------------|----------------------|
| Client: US Army Corp of Engineers                     | Project No: GTX-8940 |
| Project: Newburyport - Plum Island                    |                      |
| Location: Newburyport, MA                             |                      |
| Boring ID: Station 1                                  | Sample Type: jar     |
| Sample ID: Newburyport-Plum Island                    | Test Date: 04/06/09  |
| Depth: ---                                            | Test Id: 150344      |
| Test Comment: ---                                     |                      |
| Sample Description: Moist, light yellowish brown sand |                      |
| Sample Comment: ---                                   |                      |

## Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



| % Cobble | % Gravel | % Sand | % Silt & Clay Size |
|----------|----------|--------|--------------------|
| —        | —        | 99.9   | 0.1                |

| Sieve Name | Sieve Size, mm | Percent Finer | Spec. Percent | Complies |
|------------|----------------|---------------|---------------|----------|
| #4         | 4.75           | 100           |               |          |
| #10        | 2.00           | 100           |               |          |
| #20        | 0.85           | 86            |               |          |
| #40        | 0.42           | 19            |               |          |
| #60        | 0.25           | 1             |               |          |
| #100       | 0.15           | 0             |               |          |
| #200       | 0.075          | 0             |               |          |

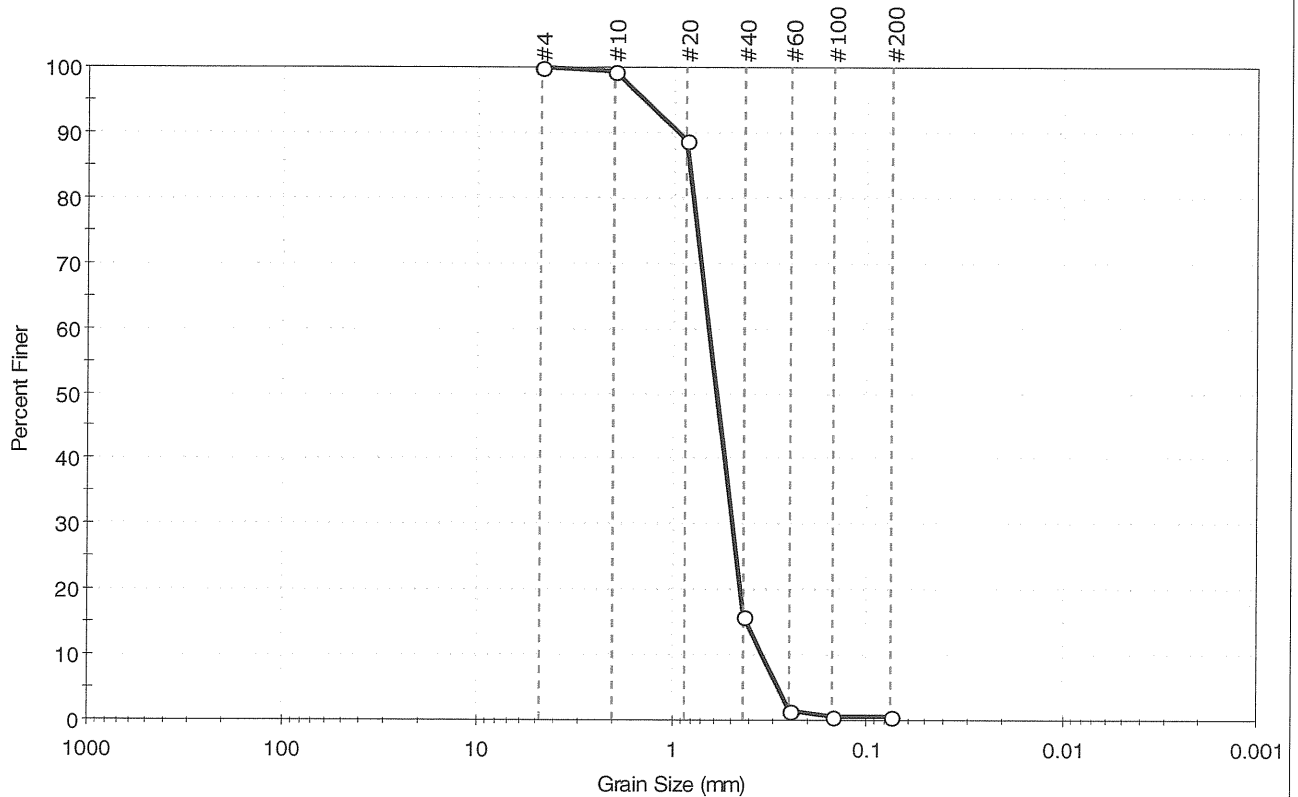
| <b>Coefficients</b>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.8408 mm | D <sub>30</sub> = 0.4745 mm |
| D <sub>60</sub> = 0.6482 mm | D <sub>15</sub> = 0.3754 mm |
| D <sub>50</sub> = 0.5842 mm | D <sub>10</sub> = 0.3262 mm |
| C <sub>u</sub> = 1.987      | C <sub>c</sub> = 1.065      |

| <b>Classification</b> |                                              |
|-----------------------|----------------------------------------------|
| <b>ASTM</b>           | Poorly graded sand (SP)                      |
| <b>AASHTO</b>         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

| <b>Sample/Test Description</b> |     |
|--------------------------------|-----|
| Sand/Gravel Particle Shape :   | --- |
| Sand/Gravel Hardness :         | --- |

|                                                   |                                    |                           |                      |
|---------------------------------------------------|------------------------------------|---------------------------|----------------------|
| Client: US Army Corp of Engineers                 | Project: Newburyport - Plum Island | Location: Newburyport, MA | Project No: GTX-8940 |
| Boring ID: Station 2                              | Sample Type: jar                   | Tested By: jbr            |                      |
| Sample ID: Newburyport-Plum Island                | Test Date: 04/08/09                | Checked By: jdt           |                      |
| Depth: ---                                        | Test Id: 150345                    |                           |                      |
| Test Comment: ---                                 |                                    |                           |                      |
| Sample Description: Moist, light olive brown sand |                                    |                           |                      |
| Sample Comment: ---                               |                                    |                           |                      |

## Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



| % Cobble | % Gravel | % Sand | % Silt & Clay Size |
|----------|----------|--------|--------------------|
| —        | 0.0      | 99.3   | 0.7                |

| Sieve Name | Sieve Size, mm | Percent Finer | Spec. Percent | Complies |
|------------|----------------|---------------|---------------|----------|
| #4         | 4.75           | 100           |               |          |
| #10        | 2.00           | 99            |               |          |
| #20        | 0.85           | 89            |               |          |
| #40        | 0.42           | 16            |               |          |
| #60        | 0.25           | 1             |               |          |
| #100       | 0.15           | 1             |               |          |
| #200       | 0.075          | 1             |               |          |

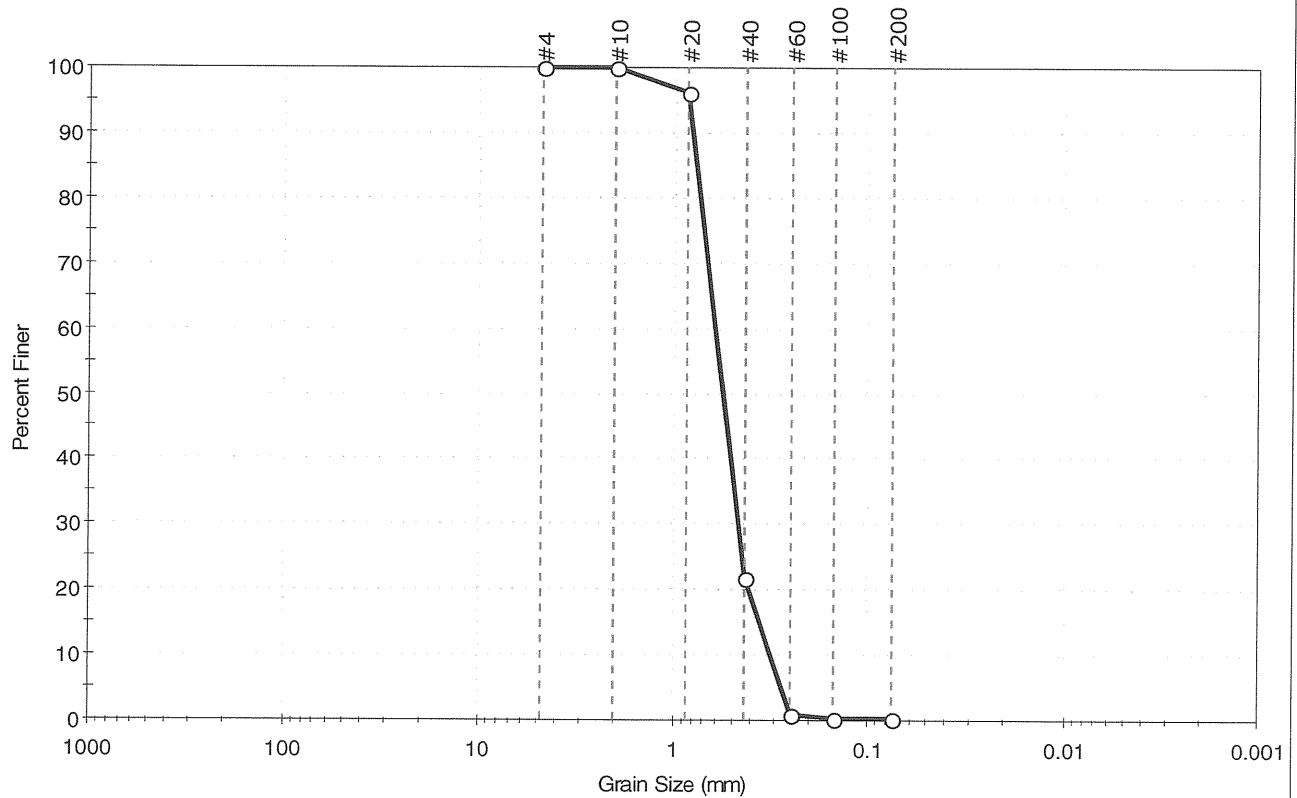
| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.8197 mm | D <sub>30</sub> = 0.4862 mm |
| D <sub>60</sub> = 0.6465 mm | D <sub>15</sub> = 0.4121 mm |
| D <sub>50</sub> = 0.5879 mm | D <sub>10</sub> = 0.3427 mm |
| C <sub>u</sub> = 1.886      | C <sub>c</sub> = 1.067      |

| <u>Classification</u> |                                              |
|-----------------------|----------------------------------------------|
| ASTM                  | Poorly graded sand (SP)                      |
| AASHTO                | Stone Fragments, Gravel and Sand (A-1-b (0)) |

| <u>Sample/Test Description</u> |       |
|--------------------------------|-------|
| Sand/Gravel Particle Shape     | : --- |
| Sand/Gravel Hardness           | : --- |

|                                                       |                      |
|-------------------------------------------------------|----------------------|
| Client: US Army Corp of Engineers                     | Project No: GTX-8940 |
| Project: Newburyport - Plum Island                    |                      |
| Location: Newburyport, MA                             |                      |
| Boring ID: Station 3                                  | Sample Type: jar     |
| Sample ID: Newburyport-Plum Island                    | Test Date: 04/07/09  |
| Depth: ---                                            | Test Id: 150346      |
| Test Comment: ---                                     |                      |
| Sample Description: Moist, light yellowish brown sand |                      |
| Sample Comment: ---                                   |                      |

## Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



| % Cobble | % Gravel | % Sand | % Silt & Clay Size |
|----------|----------|--------|--------------------|
| ---      | 0.0      | 99.8   | 0.2                |

| Sieve Name | Sieve Size, mm | Percent Finer | Spec. Percent | Complies |
|------------|----------------|---------------|---------------|----------|
| #4         | 4.75           | 100           |               |          |
| #10        | 2.00           | 100           |               |          |
| #20        | 0.85           | 96            |               |          |
| #40        | 0.42           | 22            |               |          |
| #60        | 0.25           | 1             |               |          |
| #100       | 0.15           | 0             |               |          |
| #200       | 0.075          | 0             |               |          |

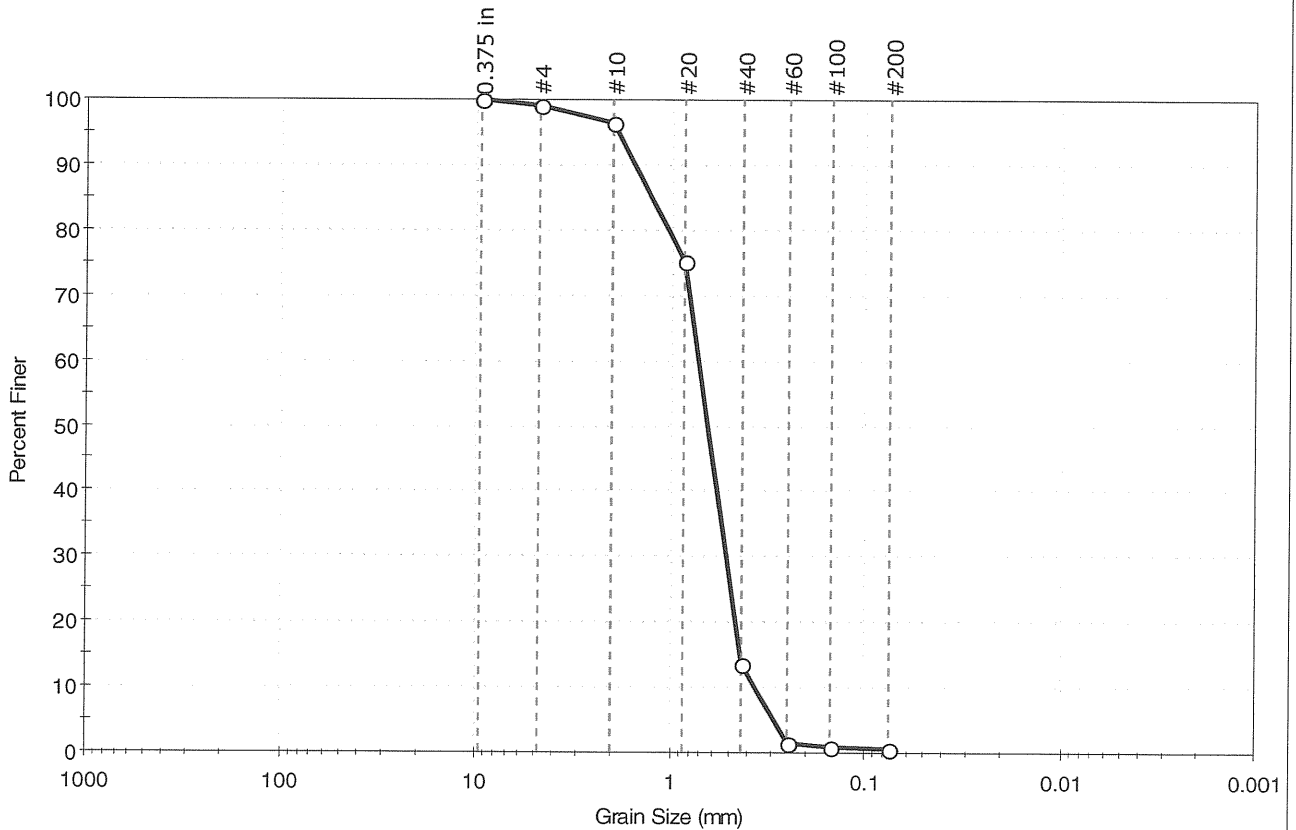
| <b>Coefficients</b>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.7667 mm | D <sub>30</sub> = 0.4586 mm |
| D <sub>60</sub> = 0.6070 mm | D <sub>15</sub> = 0.3572 mm |
| D <sub>50</sub> = 0.5528 mm | D <sub>10</sub> = 0.3147 mm |
| C <sub>u</sub> = 1.929      | C <sub>c</sub> = 1.101      |

| <b>Classification</b> |                                              |
|-----------------------|----------------------------------------------|
| <b>ASTM</b>           | Poorly graded sand (SP)                      |
| <b>AASHTO</b>         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

| <b>Sample/Test Description</b>   |
|----------------------------------|
| Sand/Gravel Particle Shape : --- |
| Sand/Gravel Hardness : ---       |

|                     |                               |              |          |
|---------------------|-------------------------------|--------------|----------|
| Client:             | US Army Corp of Engineers     |              |          |
| Project:            | Newburyport - Plum Island     |              |          |
| Location:           | Newburyport, MA               | Project No:  | GTX-8940 |
| Boring ID:          | Station 4                     | Sample Type: | jar      |
| Sample ID:          | Newburyport-Plum Island       | Test Date:   | 04/09/09 |
| Depth :             | ---                           | Test Id:     | 150347   |
| Test Comment:       | ---                           |              |          |
| Sample Description: | Moist, light olive brown sand |              |          |
| Sample Comment:     | ---                           |              |          |

## Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



| % Cobble | % Gravel | % Sand | % Silt & Clay Size |
|----------|----------|--------|--------------------|
| ---      | 0.8      | 98.5   | 0.7                |

| Sieve Name | Sieve Size, mm | Percent Finer | Spec. Percent | Complies |
|------------|----------------|---------------|---------------|----------|
| 0.375 in   | 9.50           | 100           |               |          |
| #4         | 4.75           | 99            |               |          |
| #10        | 2.00           | 97            |               |          |
| #20        | 0.85           | 75            |               |          |
| #40        | 0.42           | 14            |               |          |
| #60        | 0.25           | 1             |               |          |
| #100       | 0.15           | 1             |               |          |
| #200       | 0.075          | 1             |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 1.2554 mm | D <sub>30</sub> = 0.5109 mm |
| D <sub>60</sub> = 0.7155 mm | D <sub>15</sub> = 0.4318 mm |
| D <sub>50</sub> = 0.6396 mm | D <sub>10</sub> = 0.3633 mm |
| C <sub>u</sub> = 1.969      | C <sub>c</sub> = 1.004      |

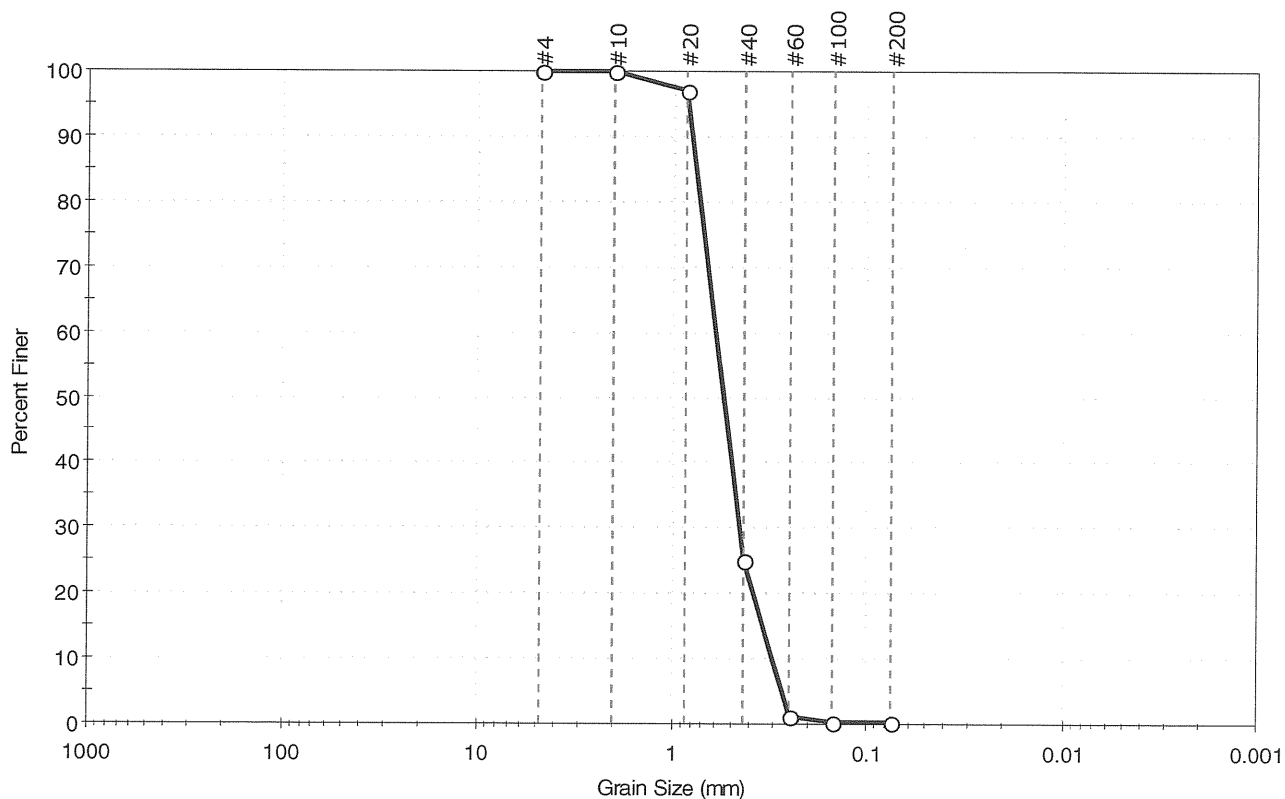
| <u>Classification</u> |                                              |
|-----------------------|----------------------------------------------|
| <u>ASTM</u>           | Poorly graded sand (SP)                      |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

| <u>Sample/Test Description</u> |     |
|--------------------------------|-----|
| Sand/Gravel Particle Shape :   | --- |
| Sand/Gravel Hardness :         | --- |



|                                                   |                      |
|---------------------------------------------------|----------------------|
| Client: US Army Corp of Engineers                 | Project No: GTX-8940 |
| Project: Newburyport - Plum Island                |                      |
| Location: Newburyport, MA                         |                      |
| Boring ID: Station 5                              | Sample Type: jar     |
| Sample ID: Newburyport-Plum Island                | Test Date: 04/08/09  |
| Depth: ---                                        | Test Id: 150348      |
| Test Comment: ---                                 | Tested By: jbr       |
| Sample Description: Moist, light olive brown sand | Checked By: jdt      |
| Sample Comment: ---                               |                      |

## Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



| % Cobble | % Gravel | % Sand | % Silt & Clay Size |
|----------|----------|--------|--------------------|
| ---      | ---      | 99.7   | 0.3                |

| Sieve Name | Sieve Size, mm | Percent Finer | Spec. Percent | Complies |
|------------|----------------|---------------|---------------|----------|
| #4         | 4.75           | 100           |               |          |
| #10        | 2.00           | 100           |               |          |
| #20        | 0.85           | 97            |               |          |
| #40        | 0.42           | 25            |               |          |
| #60        | 0.25           | 1             |               |          |
| #100       | 0.15           | 0             |               |          |
| #200       | 0.075          | 0             |               |          |

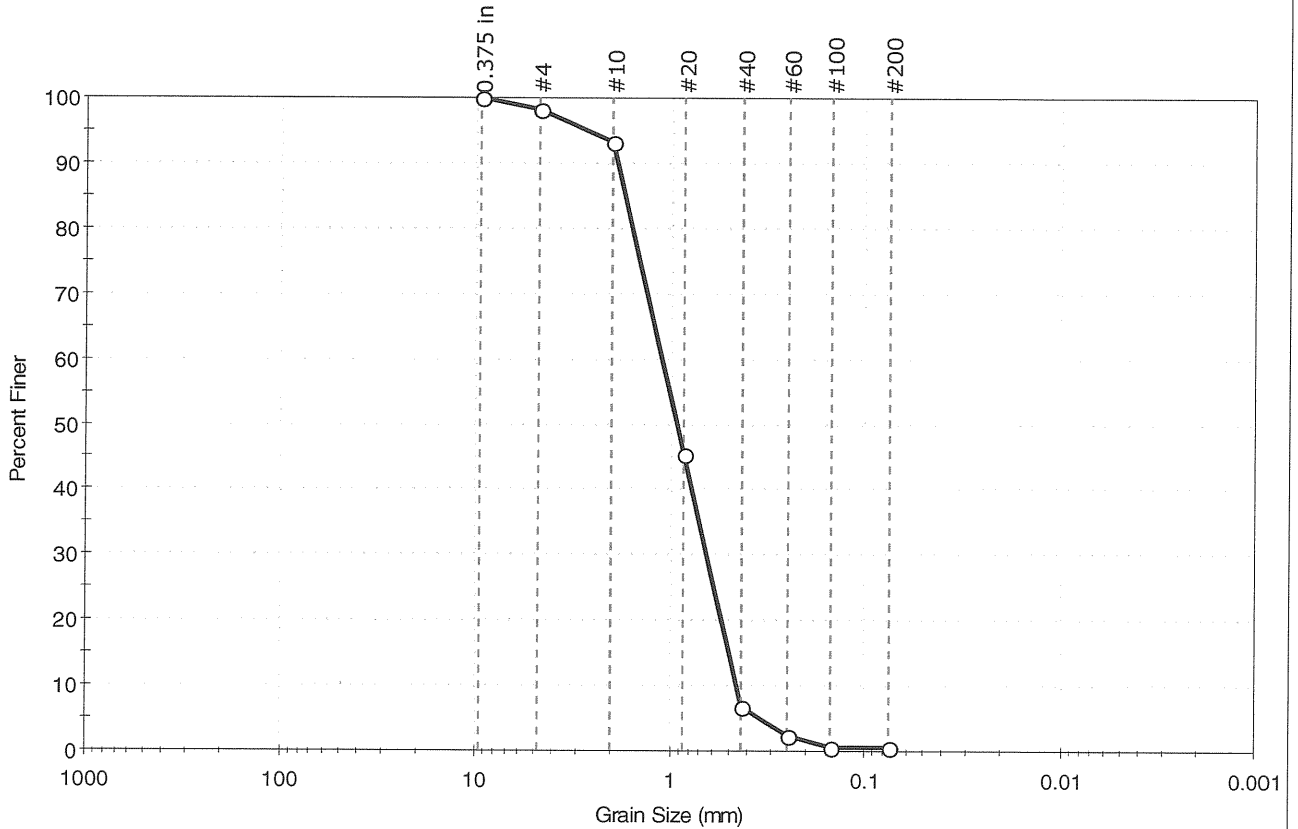
| <b>Coefficients</b>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.7576 mm | D <sub>30</sub> = 0.4460 mm |
| D <sub>60</sub> = 0.5954 mm | D <sub>15</sub> = 0.3400 mm |
| D <sub>50</sub> = 0.5407 mm | D <sub>10</sub> = 0.3041 mm |
| C <sub>u</sub> = 1.958      | C <sub>c</sub> = 1.099      |

| <b>Classification</b> |                                              |
|-----------------------|----------------------------------------------|
| <b>ASTM</b>           | Poorly graded sand (SP)                      |
| <b>AASHTO</b>         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

| <b>Sample/Test Description</b>   |
|----------------------------------|
| Sand/Gravel Particle Shape : --- |
| Sand/Gravel Hardness : ---       |

|                                                       |                                    |                           |                      |
|-------------------------------------------------------|------------------------------------|---------------------------|----------------------|
| Client: US Army Corp of Engineers                     | Project: Newburyport - Plum Island | Location: Newburyport, MA | Project No: GTX-8940 |
| Boring ID: Station 6                                  | Sample Type: jar                   | Tested By: jbr            | Checked By: jdt      |
| Sample ID: Newburyport-Plum Island                    | Test Date: 04/09/09                | Test Id: 150349           |                      |
| Depth: ---                                            |                                    |                           |                      |
| Test Comment: ---                                     |                                    |                           |                      |
| Sample Description: Moist, light yellowish brown sand |                                    |                           |                      |
| Sample Comment: ---                                   |                                    |                           |                      |

## Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



| % Cobble | % Gravel | % Sand | % Silt & Clay Size |
|----------|----------|--------|--------------------|
| ---      | 1.9      | 97.6   | 0.5                |

| Sieve Name | Sieve Size, mm | Percent Finer | Spec. Percent | Complies |
|------------|----------------|---------------|---------------|----------|
| 0.375 in   | 9.50           | 100           |               |          |
| #4         | 4.75           | 98            |               |          |
| #10        | 2.00           | 93            |               |          |
| #20        | 0.85           | 46            |               |          |
| #40        | 0.42           | 7             |               |          |
| #60        | 0.25           | 2             |               |          |
| #100       | 0.15           | 1             |               |          |
| #200       | 0.075          | 1             |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 1.7259 mm | D <sub>30</sub> = 0.6433 mm |
| D <sub>60</sub> = 1.1021 mm | D <sub>15</sub> = 0.4915 mm |
| D <sub>50</sub> = 0.9211 mm | D <sub>10</sub> = 0.4493 mm |
| C <sub>u</sub> = 2.453      | C <sub>c</sub> = 0.836      |

**Classification**

|               |                                              |
|---------------|----------------------------------------------|
| <b>ASTM</b>   | Poorly graded sand (SP)                      |
| <b>AASHTO</b> | Stone Fragments, Gravel and Sand (A-1-b (0)) |

**Sample/Test Description**

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

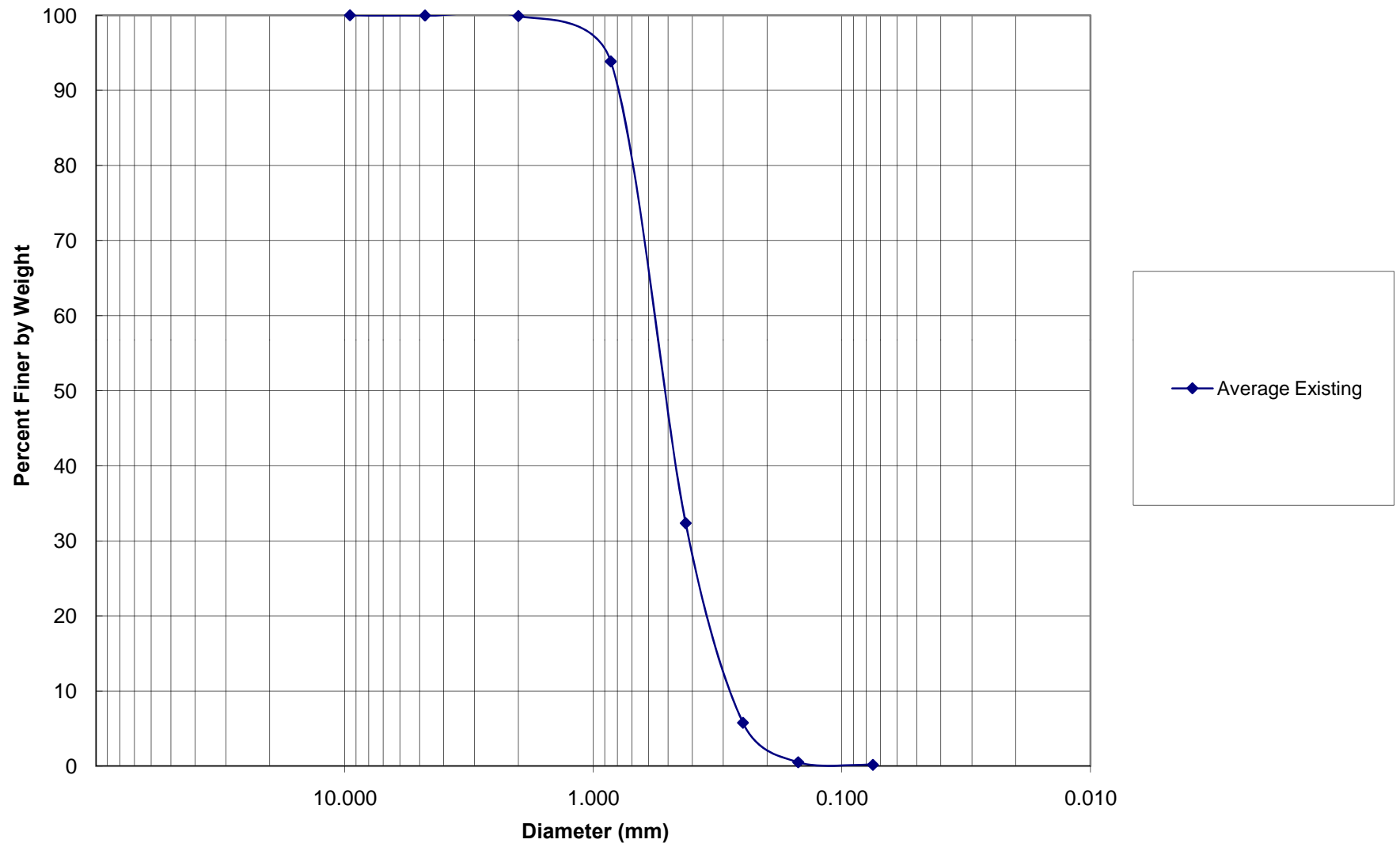


**SEDIMENT TEST RESULTS**

**SALISBURY STATE BEACH**



### Salisbury Beach State Reservation Dune Nourishment







**NEWBURYPORT HARBOR  
PLUM ISLAND AND SALISBURY BEACHES  
§204 PROJECT FOR BENEFICIAL USE  
OF DREDGED MATERIAL**

**DETAILED PROJECT REPORT**

**APPENDIX J  
STATE AND LOCAL  
REGULATORY APPROVAL DOCUMENTS  
(UPDATED OCTOBER 2009)**



## **APPENDIX J STATE AND LOCAL REGULATORY APPROVAL DOCUMENTS**

MA Office of Coastal Zone Management – Consistency Concurrence – 8 October 2009  
MA Department of Environmental Protection – Chapter 91 License – 7 October 2009  
MA Office of Coastal Zone Management – Extension Letter to NAE – 28 September 2009  
Massachusetts Office of Coastal Zone Management – Consistency Review Extension –  
1 September 2009  
Massachusetts Department of Fisheries and Wildlife, Natural Heritage and Endangered  
Species Program – Comment Letter to Newbury Conservation Commission –  
1 September 2009  
MA Department of Conservation and Recreation – Letter to MANHESP on Commitment  
to Shorebird Monitoring and Management of the Beach – 31 August 2009  
Massachusetts Department of Environmental Protection – Amendment to Water Quality  
Certification – 20 August 2009  
MA Department of Conservation and Recreation - :Letter to Town of Newbury on  
Commitment to Beach Management and Public Access – 6 August 2009  
Town of Newbury Conservation Commission Order of Conditions – 5 August 2009  
Massachusetts Department of Environmental Protection – Chapter 91 Public Notice –  
29 July 2009  
Town of Salisbury Conservation Commission Order of Conditions – 29 July 2009  
City of Newburyport Conservation Commission Order of Conditions – 28 July 2009  
Massachusetts Executive Office of Environmental Affairs – 24 July 2009 – Secretary’s  
Certificate on Notice of Project Change for Beach Nourishment  
Massachusetts Department of Fisheries and Wildlife, Natural Heritage and Endangered  
Species Program – Comment Letter to Salisbury Conservation Commission –  
17 July 2009  
Massachusetts Department of Fisheries and Wildlife, Natural Heritage and Endangered  
Species Program – Comment Letter to Newburyport Conservation Commission –  
17 July 2009  
MA Division of Fisheries and Wildlife, NHESP – Letter to EOEEA – 14 July 2009  
MA Office of Coastal Zone Management – Letter to NAE – 7 July 2009  
MA Bureau of Underwater Archaeological Resources – Letter to NAE – 6 July 2009  
MA Department of Environmental Protection – Final Water Quality Certification for  
Nearshore Disposal – 23 January 2008  
New England District – 15 March 2007 – Letter to MA DEP on WQC Conditions  
MA Department of Environmental Protection –Water Quality Certification for  
Nearshore Disposal – 13 February 2007  
MA Office of Coastal Zone Management – Coastal Zone Consistency Concurrence  
– 19 September 2006  
New England District – 3 August 2006 – Federal CZM Consistency Determination  
Massachusetts Executive Office of Environmental Affairs – 6 June 2005 – Secretary’s  
Certificate on the Environmental Notification Form





**THE COMMONWEALTH OF MASSACHUSETTS**  
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS  
OFFICE OF COASTAL ZONE MANAGEMENT  
251 Causeway Street, Suite 800, Boston, MA 02114-2136  
(617) 626-1200 FAX: (617) 626-1240

October 8, 2009

John R. Kennelly  
Department of the Army  
New England District, Corps of Engineers  
696 Virginia Road  
Concord, MA 01742-2751

RE: CZM Federal Consistency Review of Newburyport Harbor Federal Maintenance  
Dredging Project; Newburyport.

Dear Mr. Kennelly:

The Massachusetts Office of Coastal Zone Management (CZM) has completed its review of your proposal for the modification to the Newburyport Harbor Federal maintenance dredging project.

We concur with your certification and find that the activity as proposed is consistent with the CZM enforceable program policies.

If the above-referenced project is modified in any manner, including any changes resulting from permit, license or certification revisions, including those ensuing from an appeal, or the project is noted to be having effects on coastal resources or uses that are different than originally proposed, it is incumbent upon the proponent to notify CZM, submit an explanation of the nature of the change pursuant to 15 CFR 930, and submit any modified state permits, licenses, or certifications. CZM will use this information to determine if further federal consistency review is required.

Thank you for your cooperation with CZM.

Sincerely,

Deerin Babb-Brott  
Director

RLB/kg  
czm#7501

cc: Karen Kirk Adams, Chief  
Regulatory Branch, US Army Corps of Engineers  
Mark Habel,  
Navigation Branch, US Army Corps of Engineers  
Ben Lynch, Program Chief  
Wetlands and Waterways Regulation, MA DEP  
Lealdon Langley  
Wetlands and Waterways Regulation, MA DEP  
Kathryn Ford, Project Review Coordinator  
MA DMF





COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

DEVAL L. PATRICK  
Governor

TIMOTHY P. MURRAY  
Lieutenant Governor

IAN A. BOWLES  
Secretary

LAURIE BURT  
Commissioner

MA Dept. of Conservation and Recreation  
C/o Vine Associates, Inc.  
190 Old Derby Street, Suite 311  
Hingham, MA 02043  
attn: Christine Player

OCT 07 2009

Re: Waterways Application No. W09-2764D/ Permit No. 12595  
Merrimack River, Newburyport, Essex County

Dear Ms. Player:

The Department of Environmental Protection, has approved the enclosed referenced permit authorizing the MA Department of Conservation and Recreation to perform dredging pursuant to M.G.L. Chapter 91 and its regulations 310 CMR 9.00. Any subsequent project change not authorized by this permit shall render it void.

Pursuant to 310 CMR 9.17(1)(a) and 9.17(2), the Licensee may appeal this decision within twenty-one (21) days of the date of permit issuance, by submitting a written request, by certified mail, for an adjudicatory hearing. Any notice of claim for an adjudicatory hearing must include the following information: the DEP Waterways Application File Number; the complete name, address and telephone number of the party filing the request; if represented by counsel, the name, address and telephone number of the attorney; a clear statement that a formal adjudicatory hearing is being requested; and a clear and concise statement of the specific objections to the Department's license decision, and the relief sought through the adjudicatory hearing, including, specifically, the changes desired in the final Waterways Permit.

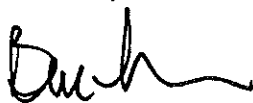
The hearing request, along with a valid check made payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100.00), must be mailed to:

Case Administrator  
Department of Environmental Protection  
One Winter Street – 2<sup>nd</sup> floor  
Boston, MA 02108

At the same time, a copy of this appeal must be sent to the DEP Waterways Regulation Program, the municipal official of the city or town where the project is located, and any other parties to this proceeding. In addition, this appeal must include a statement that the appropriate copies have been delivered as described herein.

The work authorized by this permit shall not commence if the Department receives a request for an adjudicatory hearing. You are also required to notify the Department in writing of the date the authorized work is completed.

Sincerely,

A handwritten signature in black ink, appearing to read "Ben Lynch", with a stylized, cursive script.

Ben Lynch  
Program Chief  
Waterways Regulation Program

cc: Newburyport Conservation Commission w/enc.  
file





COMMONWEALTH OF MASSACHUSETTS  
 EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS  
 DEPARTMENT OF ENVIRONMENTAL PROTECTION  
 ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

DEVAL L. PATRICK  
 Governor

IAN A. BOWLES  
 Secretary

TIMOTHY P. MURRAY  
 Lieutenant Governor

LAURIE BURT  
 Commissioner

PERMIT NO. 12595

Name and Address of Permittee:  
 MA Department of Conservation and Recreation  
 251 Causeway Street  
 Boston, MA 02114

ISSUED: October 7, 2009  
 EXPIRES: October 7, 2014

Permission is hereby given by the Department of Environmental Protection to perform maintenance dredging of approximately 160,000 cubic yards of sediment from the outer entrance channel within Federal Navigation Channel of Newburyport Harbor, in the City of Newburyport. The project is proposing to dispose of the dredged sediments as beach and dune nourishment at two locations. Approximately 120,000 cubic yards will be placed along Plum Island in the Town of Newbury and approximately 40,000 cubic yards will be placed along Salisbury Beach in the Town of Salisbury. -----

All work authorized herein shall be in the location shown and to the dimensions indicated in the permit plans titled: "Proposed Dredge Plan, Newburyport Harbor Entrance Channel; MA Dept. of Conservation & Recreation, Newburyport Harbor, federal Navigation Project, Newburyport, Newbury & Salisbury, MA. Plans prepared by Vine Associates, Inc., dated June 2009", (7 sheets).

STANDARD WATERWAYS PERMIT CONDITIONS

1. Acceptance of this Waterways Permit shall constitute an agreement by the permittee to conform to all terms and conditions stated herein.
2. This permit is issued upon the express condition that any and all other applicable authorizations necessitated due to the provisions hereof shall be secured by the permittee prior to the commencement of any activity hereby authorized.
3. This permit shall be revocable by the Department for noncompliance with the terms and conditions set forth herein. This permit may be revoked after the Department has given written notice of the alleged noncompliance to the permittee, or his agent, and

those persons who have filed a written request, with the Department, for such notice and have afforded the permittee a reasonable opportunity to correct said noncompliance. Failure to correct said noncompliance after the issuance of a written notice by the Department shall render this permit void.

4. This permit is issued subject to all applicable federal, state, county, and municipal laws, ordinances, by-laws, and regulations, including but not limited to, a valid Order of Conditions issued pursuant to the Wetlands Protection Act, M.G.L. Chapter 131, s.40. In particular, this issuance is subject to the provisions of Sections 52 to 56, inclusive of Chapter 91 of the General Law and its Regulations 310 CMR 9.40(5), which provides, in part, that the transportation and dumping of the dredge material shall be done under the supervision of the Department, and, when required, the permittee shall provide at his/her expense a dredge inspector approved by the Department. When said inspector is required, a report certified by the dredge inspector shall be submitted to the Department within 30 days after the completion of the dredging. The report shall include daily logs of the dredging operation indicating volume of dredge material, point of origin, point of destination and other appropriate information.

5. This Waterways Permit is issued upon the express condition that dredging and transportation and disposal of dredge material shall be in strict conformance with all applicable requirements and authorizations of the DEP, Division of Wetlands and Waterways.

6. All subsequent maintenance dredging and transportation and disposal of this dredge material, during the term of this permit, shall conform to all standards and conditions applied to the original dredging operation performed under this permit.

7. After completion of the work authorized, the permittee shall furnish, to the Department a suitable plan showing the depths at mean low water over the area dredged. The dredging under this permit shall be conducted as to cause no unnecessary obstruction of the free passage of vessels. In doing the dredging authorized, care shall be taken to cause no shoaling. If, however, any shoaling is caused, the permittee shall, at his expense remove the shoal areas. The permittee shall pay all costs of supervision, and if at any time the Department deems necessary a survey or surveys of the area dredged, the permittee shall pay all costs associated with such work. Nothing in this permit shall be construed as to impair the legal rights of any persons, or authorize dredging on land not owned by the permittee without consent of the owner(s) of such property.

8. The permittee shall assume and pay all claims and demands arising in any manner from the work authorized herein, and shall save harmless and indemnify the audits, damages, costs and expenses incurred by reason thereof.

9. The permittee shall, at least three days before commencing any dredging in the tide water, give written notice to the Department of the time, location and amount of the proposed work.

10. Whosoever violates any provisions of this permit shall be subject to a fine of \$25,000 per day for each day such violation occurs or continues, or by imprisonment for not more than one year, or both such fine and imprisonment; or shall be subject to civil penalty not to exceed \$25,000 per day for each day such violation occurs or continues.

SPECIAL WATERWAYS PERMIT CONDITIONS

1. Dredging shall be performed by hydraulic methods.
2. Dredge spoils shall be disposed as beach nourishment at Plum Island, Newbury and Salisbury Beach.
3. Maintenance dredging may be performed for a period of five (5) years subsequent to the date of issuance of this permit.
4. Pursuant to 310 CMR 9.40(4)(a), easements for public access below the existing mean high water mark have been secured for disposal of 40,000 cubic yards of dredge spoils as beach nourishment at Salisbury Beach in the Town of Salisbury, by the permittee, for the placement of sand on private eroding beaches.
5. Disposal of 120,000 cubic yards of dredge spoils as beach nourishment at Plum Island in the Town of Newbury as beach nourishment is not authorized until all easements for public access below the existing mean high water mark have been secured, by the permittee or by their representative, for the placement of sand on private eroding beaches, pursuant to 310 CMR 9.40(4)(a).

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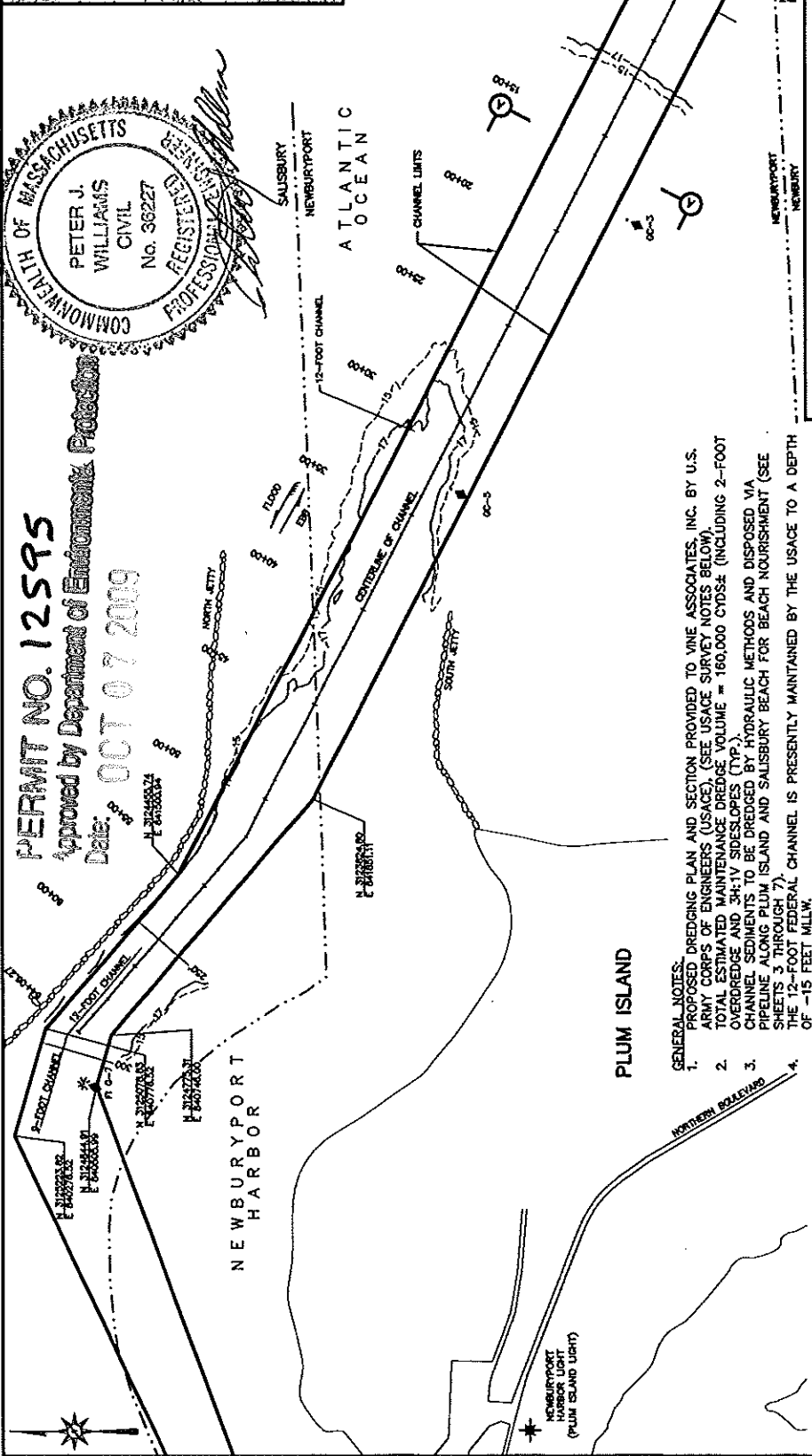
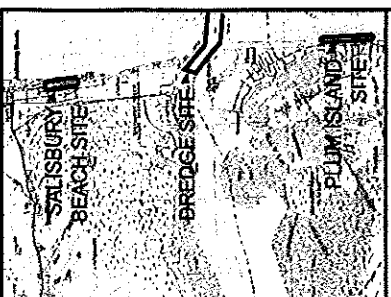
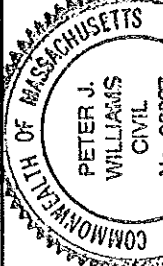
DEPARTMENT OF ENVIRONMENTAL PROTECTION



---

Ben Lynch  
Program Chief, Waterways Regulation Program

**PERMIT NO. 12595**  
 Approved by Department of Environmental Protection  
 Date: **OCT 07 2009**



**GENERAL NOTES:**

1. PROPOSED DREDGING PLAN AND SECTION PROVIDED TO VINE ASSOCIATES, INC. BY U.S. ARMY CORPS OF ENGINEERS (USACE). (SEE USAGE SURVEY NOTES BELOW).
2. TOTAL ESTIMATED MAINTENANCE DREDGE VOLUME = 160,000 CYDS $\pm$  (INCLUDING 2'-FOOT OVERDREDGE AND 3/4"-1" SIDESLOPES (TYP.)).
3. CHANNEL SEDIMENTS TO BE DREDGED BY HYDRAULIC METHODS AND DISPOSED VIA PIPELINE ALONG PLUM ISLAND AND SALISBURY BEACH FOR BEACH NOURISHMENT (SEE SHEETS 3 THROUGH 7).
4. THE 12'-FOOT FEDERAL CHANNEL IS PRESENTLY MAINTAINED BY THE USACE TO A DEPTH OF -15 FEET MLLW.

USAGE SURVEY NOTES:

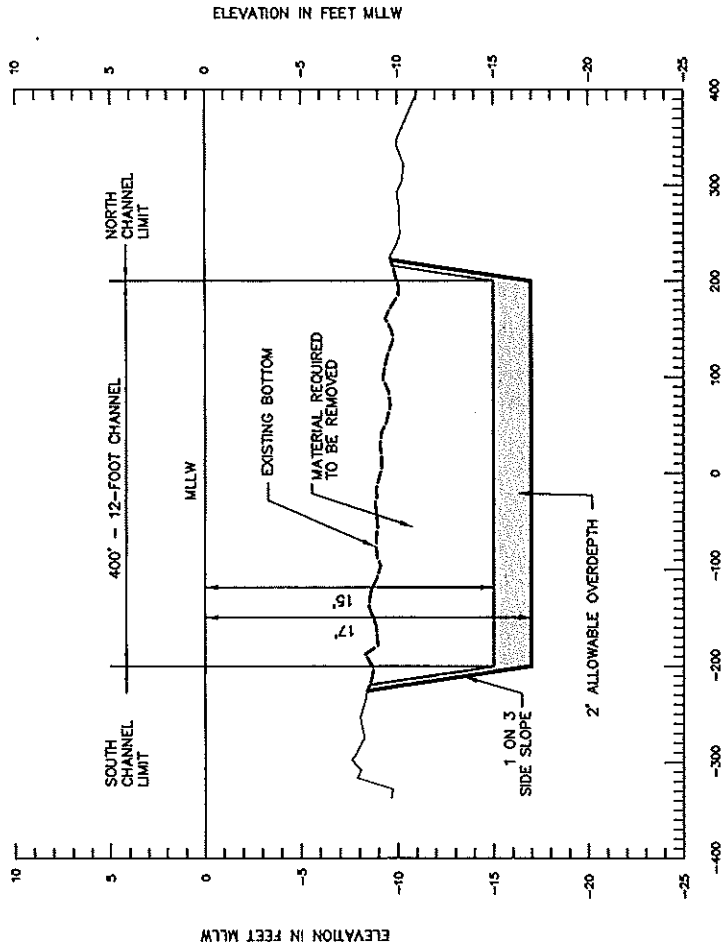
1. SOUNDINGS ARE IN FEET AND TENTHS AND REFER TO THE PLANE OF MEAN LOWER LOW WATER (MLLW) 1983-2001 EPOCH TIDAL SURVEYS ARE IN FEET AND TENTHS AND REFER TO THE PLANE OF MEAN LOWER LOW WATER (MLLW) 1983-2001 EPOCH TIDAL TOPOGRAPHY SHOWN IS FROM PREVIOUS SURVEYS AND/OR NOAA CHART NO. 13274. ALL TOPOGRAPHY, INCLUDING SHORELINE, BRIDGES, PIERS, ETC. IS LOCATED APPROXIMATE UNLESS OTHERWISE NOTED AND SHOULD BE USED AS A GENERAL REFERENCE ONLY.
2. BENCH MARK DATA: TBM NO. 1 (1983) IS USACE'S TIDAL BENCH MARK DISK SET IN THE NORTHWEST CORNER OF THE CONCRETE FOUNDATION FOR THE WOODEN STAIRS AT THE SOUTH END OF THE U.S. COAST GUARD AUXILIARY STATION, 97.2 FEET (29.6 M) EAST OF POWER POLE #18924.
3. 70.5 FEET (24.3 M) NORTH-NORTHEAST OF POWER POLE IN THE SOUTHWEST AREA OF THE AUXILIARY STATION COMPOUND, 53.3 FEET (16.2 M) NORTHWEST OF THE NORTH CORNER OF THE EASTERNMOST OF TWO RED PUMPHOUSES, 27.5 FEET (8.4 M) SOUTHWEST OF THE EAST CORNER OF THE AUXILIARY STATION BUILDING, 1.8 FEET (0.1 M) ABOVE GROUND LEVEL. ELEVATION IS 13.96 FEET ABOVE MLLW.
4. COORDINATES SHOWN ARE BASED ON THE LAMBERT GRID SYSTEM FOR THE COMMONWEALTH OF MASSACHUSETTS (MAINLAND ZONE 2001) & NAD 1983.
5. SURVEY WAS PERFORMED USING AN ODOM MK2 ECHOTRAC ECHOSOUNDER. VESSEL POSITIONING WAS OBTAINED UTILIZING A TRIMBLE 4000 SSE GPS RECEIVER WITH U.S. COAST GUARD BEACON SYSTEM.
6. THE SOUNDING INFORMATION SHOWN ON THIS MAP REPRESENTS THE SHORLEST SOUNDINGS OF THOSE OBTAINED FROM HYDROGRAPHIC SURVEYS CONDUCTED DURING JANUARY AND FEBRUARY 2008.
7. THE SOUNDING INFORMATION DEPICTED ON THIS MAP SHOULD NOT BE USED TO DETERMINE VOLUMES. VOLUMES ARE DETERMINED FROM MORE SOUNDING INFORMATION THAN SHOWN. ADDITIONAL SOUNDING INFORMATION IS AVAILABLE UPON REQUEST.
8. THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED, AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.
9. FIELD BOOK: R28 3068
10. 15'-FOOT DEPTH CONTOUR SHOWN THUS: DEPTH/SOUNDER ROLLS: 09-9787/01-02

SURVEYED BY: PAUL K. O'BRIEN AND CREW

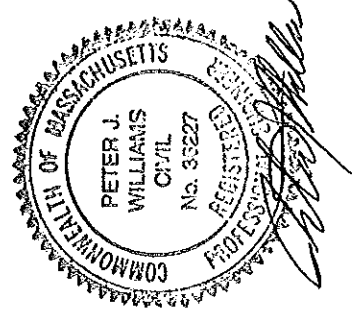
**PROPOSED DREDGE PLAN**  
**NEWBURYPORT HARBOR ENTRANCE CHANNEL**  
**MA DEPT. OF CONSERVATION & RECREATION**  
**NEWBURYPORT HARBOR**  
**FEDERAL NAVIGATION PROJECT**  
**NEWBURYPORT, NEWBURY & SALISBURY, MA**

**Vine ASSOCIATES, INC.**  
 372 MERRIMAC STREET  
 NEWBURYPORT, MA 01950  
 Tel: (978)465-1428 Fax: (978)465-2550  
 18 BEACH STREET  
 MONUMENT BEACH, MA 02553  
 Tel: (508)743-0390 Fax: (508)743-0391

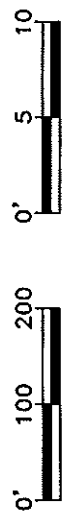
|               |      |     |     |     |              |              |
|---------------|------|-----|-----|-----|--------------|--------------|
| DES.          | CHK. | CMP | DR. | DWG | VAI FILE NO. | 1516         |
| SCALE 1"=800' |      |     |     |     | DATE         | JUNE 2009    |
|               |      |     |     |     |              | SHEET 1 OF 7 |



**TYPICAL SECTION A-A**  
 VERTICAL SCALE: 1"=10'  
 HORIZONTAL SCALE 1"=200'

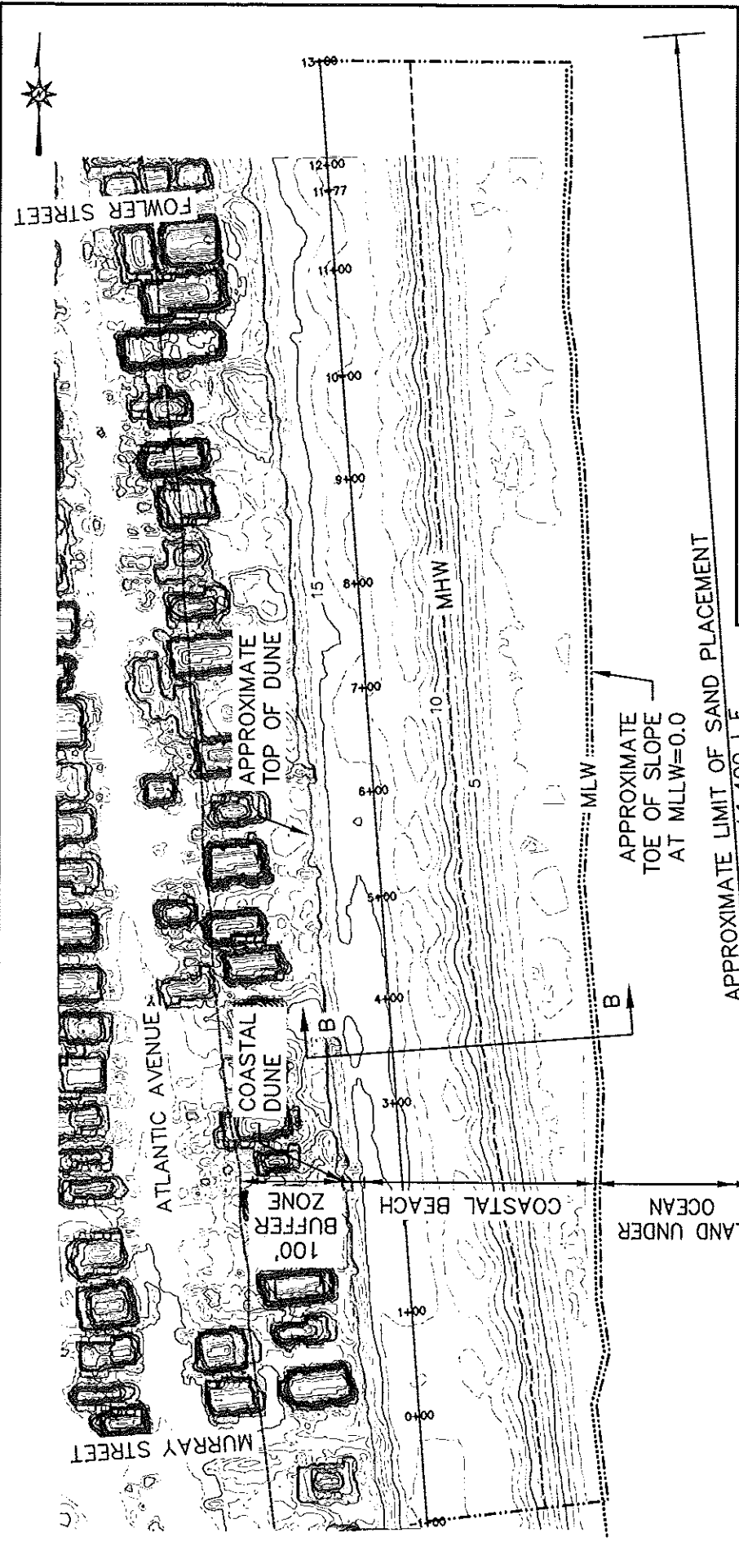


**PERMIT NO. 12595**  
 Approved by Department of Environmental Protection  
 Date: OCT 07 2009

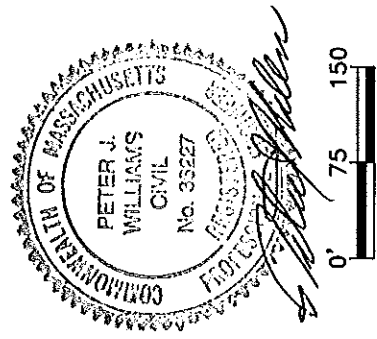


**NOTE:**  
 SEE SHEET 1 OF 7 FOR DREDGING NOTES.

|                                                                                                                                                     |                                                                                                                                                                                                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>PROPOSED DREDGE SECTION<br/>NEWBURYPORT HARBOR ENTRANCE CHANNEL</b>                                                                              |                                                                                                                                                                                                                |
| <b>MA DEPT. OF CONSERVATION &amp; RECREATION<br/>NEWBURYPORT HARBOR<br/>FEDERAL NAVIGATION PROJECT<br/>NEWBURYPORT, NEWBURY &amp; SALISBURY, MA</b> |                                                                                                                                                                                                                |
|                                                                                                                                                     | <b>Vine</b><br>ASSOCIATES, INC.<br>372 MERRIMAC STREET<br>NEWBURYPORT, MA 01950<br>Tel. (978)465-1428 Fax (978)465-2350<br>19 BEACH STREET<br>MONUMENT BEACH, MA 02043<br>Tel. (508)742-0390 Fax (508)742-0391 |
| DES.                                                                                                                                                | CHK. CMP. DR. DMG. VAI FILE NO. 1516                                                                                                                                                                           |
| SCALE AS SHOWN                                                                                                                                      | DATE: JUNE 2009                                                                                                                                                                                                |
| <b>SHEET 2 OF 7</b>                                                                                                                                 |                                                                                                                                                                                                                |



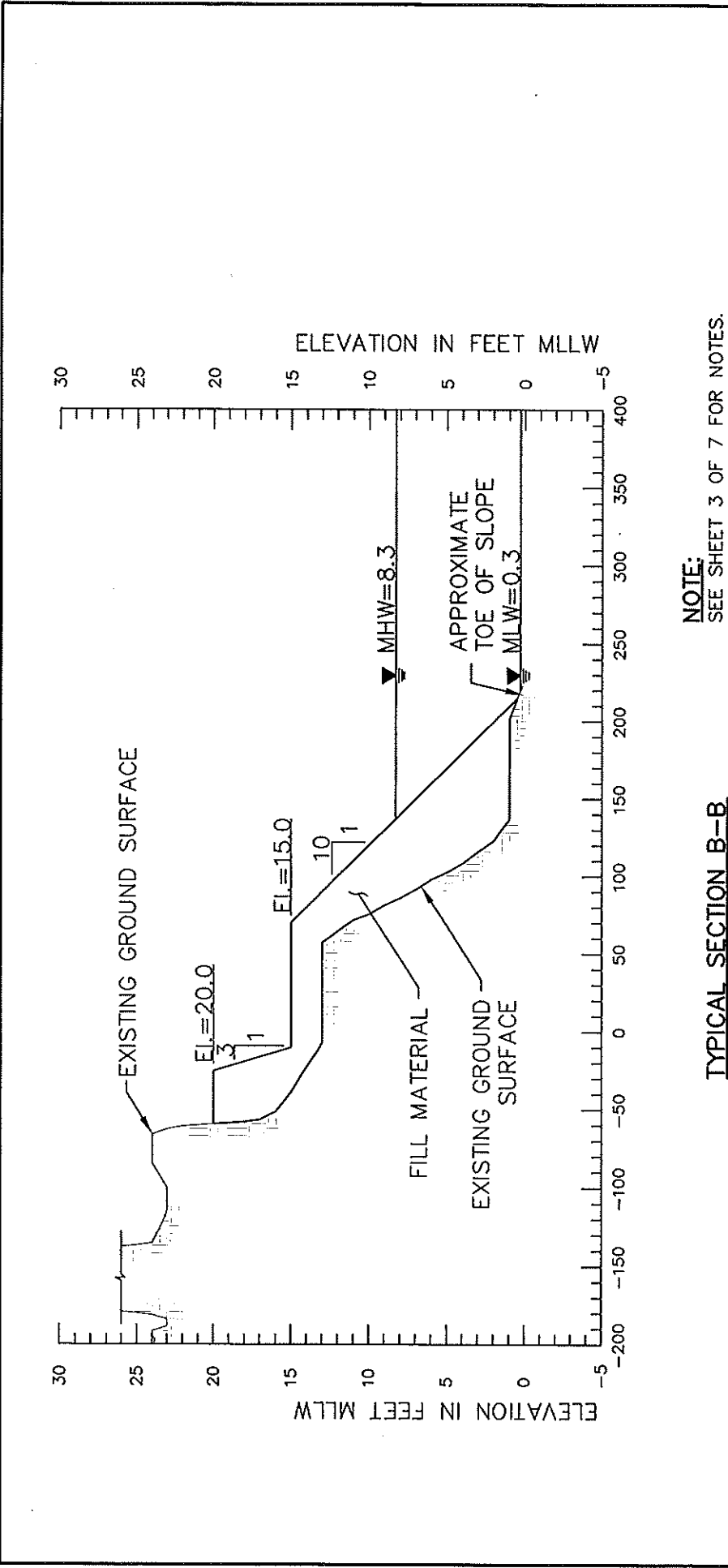
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| <b>PROPOSED FILL PLACEMENT PLAN</b><br><b>SALISBURY BEACH STATE RESERVATION</b>                                                                                       |          |
| <b>MA DEPT. OF CONSERVATION &amp; RECREATION</b><br><b>NEWBURYPORT HARBOR</b><br><b>FEDERAL NAVIGATION PROJECT</b><br><b>NEWBURYPORT, NEWBURY &amp; SALISBURY, MA</b> |          |
| <b>Vine</b><br><small>372 MERRIMAC STREET<br/>         NEWBURYPORT, MA 01950<br/>         TEL. (978)465-1428<br/>         FAX (978)465-2840</small>                   |          |
| <small>18 BEACH STREET<br/>         HINGHAM, MA 02043<br/>         TEL. (508)743-0390<br/>         FAX (508)743-0391</small>                                          |          |
| DES.                                                                                                                                                                  | VAI      |
| CHK.                                                                                                                                                                  | DMG      |
| CMP                                                                                                                                                                   | FILE NO. |
| DR.                                                                                                                                                                   | DATE     |
| SCALE 1"=150'<br>JUNE 2009                                                                                                                                            |          |
| <b>SHEET 3 OF 7</b>                                                                                                                                                   |          |



**PERMIT NO. 12595**  
 Approved by Department of Environmental Protection  
 Date: OCT 07 2009

0' 75 150

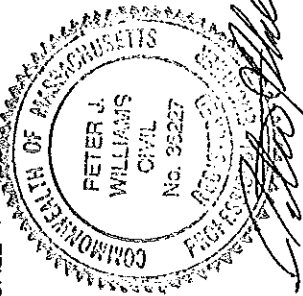
- NOTES:**
- DATUM: MLLW=0.0; MHW=8.3; HTL=10.7
  - PLANS & SECTIONS PREPARED BY THE U.S. ARMY CORPS OF ENGINEERS (USACE). TOPOGRAPHY, AS SHOWN, IS BASED UPON LIDAR SURVEY BY THE USACE IN 2007.
  - RESOURCE AREA LIMITS, AS SHOWN, HAVE BEEN INTERPRETED BY VINE ASSOCIATES, INC. (VAI).



**NOTE:**  
SEE SHEET 3 OF 7 FOR NOTES.

**TYPICAL SECTION B-B**  
VERTICAL SCALE: 1"=10'  
HORIZONTAL SCALE 1"=100'

**PERMIT NO. 12595**  
Approved by Department of Environmental Protection  
Date: **OCT 07 2009**



**PROPOSED FILL PLACEMENT SECTION**  
**SALISBURY BEACH STATE RESERVATION**

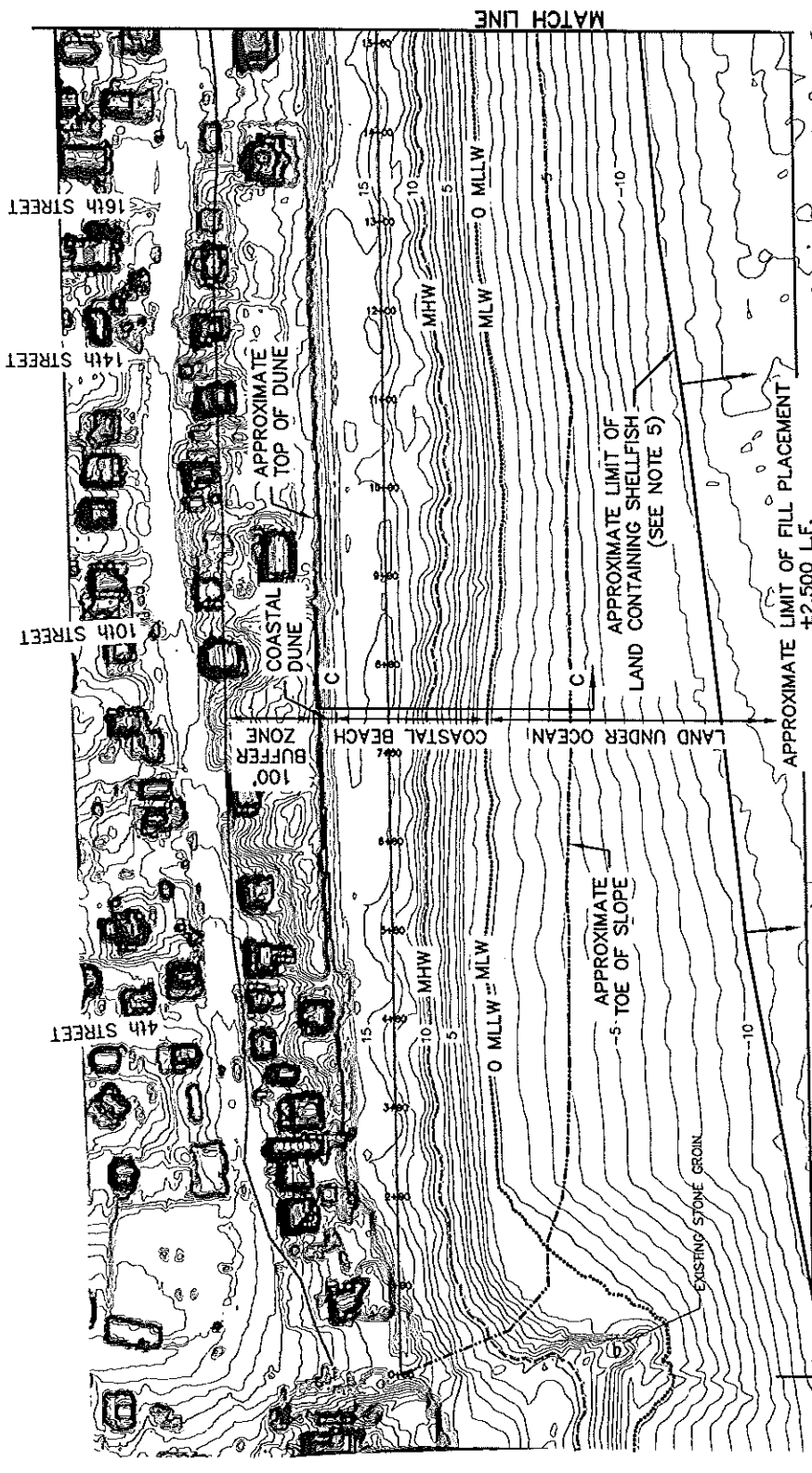
**MA DEPT. OF CONSERVATION & RECREATION**  
**NEWBURYPORT HARBOR**  
**FEDERAL NAVIGATION PROJECT**  
**NEWBURYPORT, NEWBURY & SALISBURY, MA**

**Vine**  
ASSOCIATES, INC.  
372 MERRIMAC STREET  
NEWBURYPORT, MA 01950  
Tel. (978)465-1428  
Fax (978)465-2840

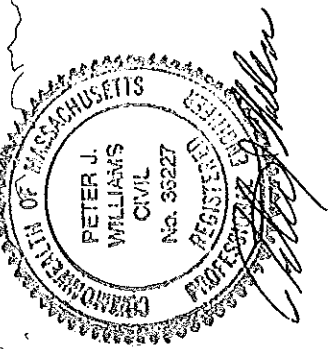
18 BEACH STREET  
MONUMENT BEACH, MA 02553  
Tel. (508)743-0390  
Fax (508)743-0391

|                |      |      |     |      |     |          |                     |
|----------------|------|------|-----|------|-----|----------|---------------------|
| DES.           | CHK. | CMP. | DR. | DWG. | VAI | FILE NO. | 1516                |
| SCALE AS SHOWN |      |      |     |      |     | DATE     | JUNE 2009           |
|                |      |      |     |      |     |          | <b>SHEET 4 OF 7</b> |





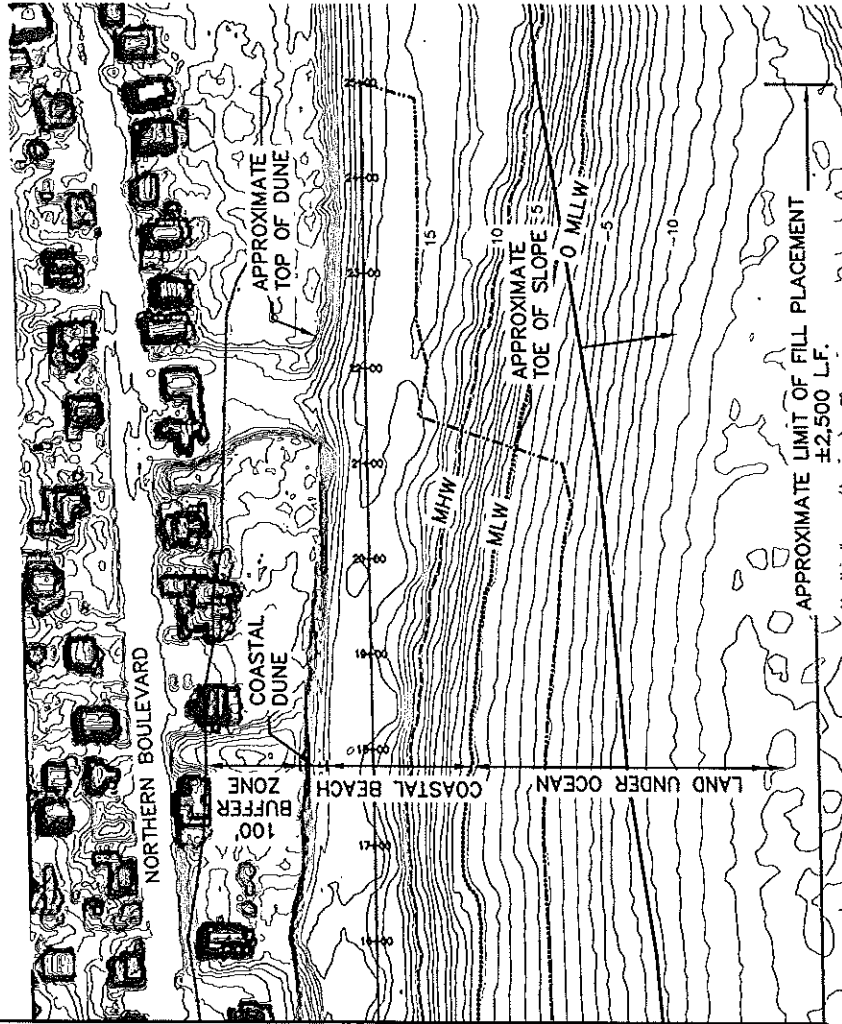
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| <b>PROPOSED FILL PLACEMENT PLAN<br/>PLUM ISLAND</b>                                                                                                 |      |                                                                                        |              |
| <b>MA DEPT. OF CONSERVATION &amp; RECREATION<br/>NEWBURYPORT HARBOR<br/>FEDERAL NAVIGATION PROJECT<br/>NEWBURYPORT, NEWBURY &amp; SALISBURY, MA</b> |      |                                                                                        |              |
| <b>Vine</b><br>ASSOCIATES, INC.<br>372 HERRIMAN STREET<br>NEWBURYPORT, MA 01950<br>Tel. (978)445-1428<br>Fax (978)445-2640                          |      | 18 BEACH STREET<br>MONUMENT BEACH, MA 02553<br>Tel. (508)743-0390<br>Fax (508)743-0391 |              |
| DES.                                                                                                                                                | CHK. | CMP                                                                                    | DR.          |
| SCALE 1"=200'                                                                                                                                       |      |                                                                                        | DATE         |
|                                                                                                                                                     |      |                                                                                        | JUNE 2009    |
|                                                                                                                                                     |      |                                                                                        | FILE NO.     |
|                                                                                                                                                     |      |                                                                                        | 1516         |
|                                                                                                                                                     |      |                                                                                        | SHEET 5 OF 7 |



**PERMIT NO. 12595**  
 Approved by Department of Environment Protection  
 Date: OCT 07 2009

- NOTES:**
1. DATUM: MLLW=0.0; MHW=0.3; HYL=10.9
  2. PLANS & SECTIONS PREPARED BY THE U.S. ARMY CORPS OF ENGINEERS (USACE).
  3. TOPOGRAPHY, AS SHOWN, IS BASED UPON LIDAR SURVEY BY THE USACE IN 2007.
  4. RESOURCE AREA LIMITS, AS SHOWN, HAVE BEEN INTERPRETED BY VINE ASSOCIATES, INC. (VAI).
  5. LIMIT OF LAND CONTAINING SHELLFISH IS BASED UPON AVAILABLE INFORMATION FROM MASS GIS.

PLUM ISLAND



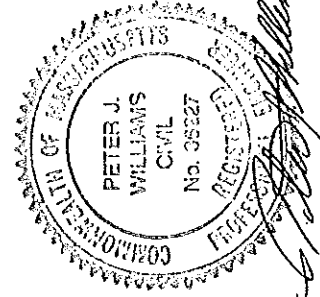
**NOTE:**  
SEE SHEET 5 OF 7 FOR NOTES.

**PROPOSED FILL PLACEMENT PLAN  
PLUM ISLAND**

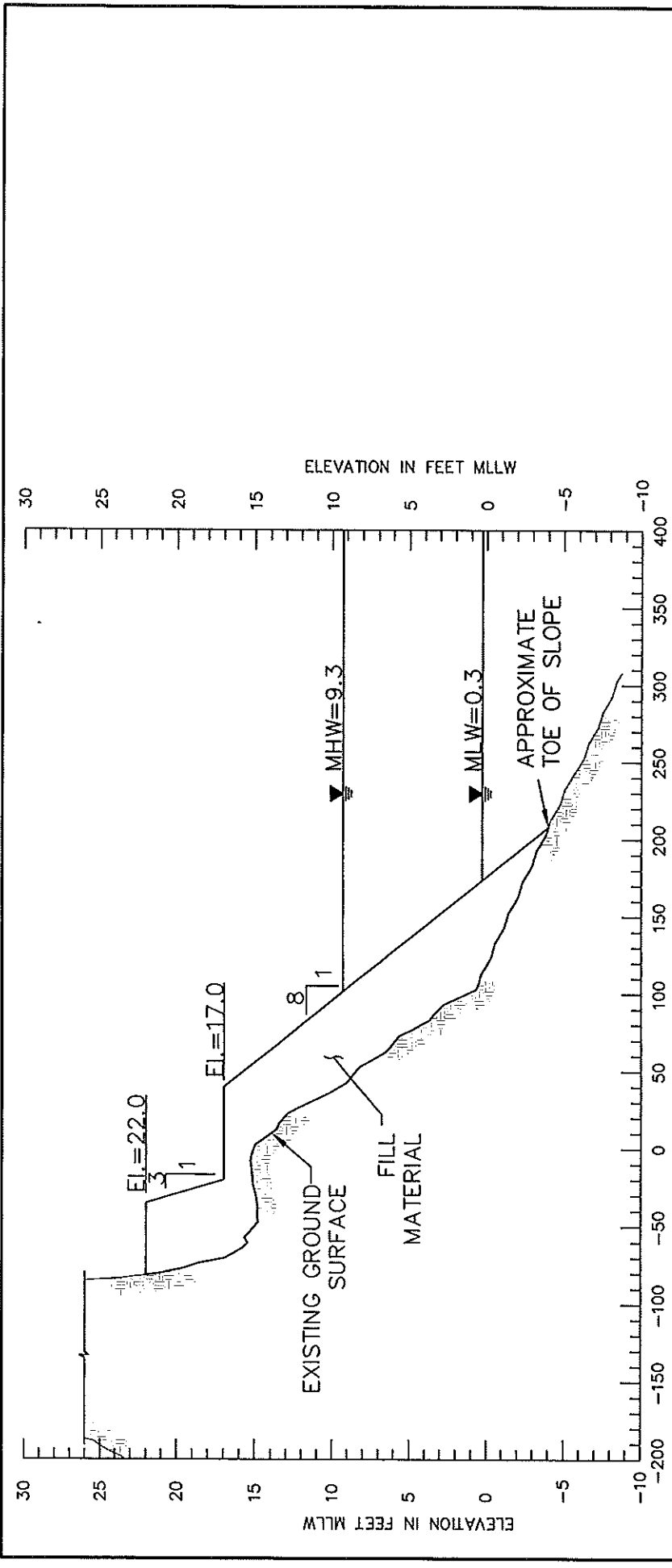
**MA DEPT. OF CONSERVATION & RECREATION  
NEWBURYPORT HARBOR  
FEDERAL NAVIGATION PROJECT  
NEWBURYPORT, NEWBURY & SALISBURY, MA**

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Tel. (508)743-0390 Fax (508)743-0391

|               |      |     |     |     |              |           |
|---------------|------|-----|-----|-----|--------------|-----------|
| DES.          | CHK. | CMP | DR. | DMG | VAI          | FILE NO.  |
|               |      |     |     |     |              | 1516      |
| SCALE 1"=200' |      |     |     |     | DATE         | JUNE 2009 |
|               |      |     |     |     | SHEET 6 OF 7 |           |

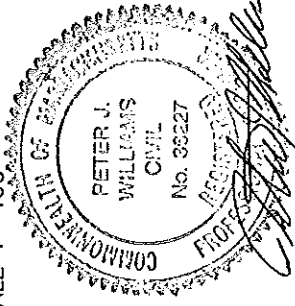


**PERMIT NO. 12595**  
Approved by Department of Environmental Protection  
Date: OCT 07 2009



**NOTE:**  
SEE SHEET 5 OF 7 FOR NOTES.

**TYPICAL SECTION C-C**  
VERTICAL SCALE: 1"=10'  
HORIZONTAL SCALE 1"=100'



**PERMIT NO. 12595**  
Approved by Department of Environmental Protection  
Date: **OCT 07 2009**



**PROPOSED FILL PLACEMENT SECTION  
PLUM ISLAND**

**MA DEPT. OF CONSERVATION & RECREATION  
NEWBURYPORT HARBOR  
FEDERAL NAVIGATION PROJECT  
NEWBURYPORT, NEWBURY & SALISBURY, MA**

**Vine**  
ASSOCIATES, INC.  
372 MERRIMAC STREET  
NEWBURYPORT, MA 01950  
Tel. (978)465-1428  
Fax (978)465-2640

|                |      |     |           |     |     |              |
|----------------|------|-----|-----------|-----|-----|--------------|
| DES.           | CHK. | CMP | DR.       | DMG | VAI | FILE NO.     |
|                |      |     |           |     |     | 1516         |
| SCALE AS SHOWN |      |     | DATE      |     |     | SHEET 7 OF 7 |
|                |      |     | JUNE 2009 |     |     |              |

18 BEACH STREET  
MONUMENT BEACH, MA 02553  
Tel. (508)743-0390  
Fax (508)743-0391



**THE COMMONWEALTH OF MASSACHUSETTS**  
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS  
OFFICE OF COASTAL ZONE MANAGEMENT  
251 Causeway Street, Suite 800, Boston, MA 02114-2136  
(617) 626-1200 FAX: (617) 626-1240

September 28, 2009

John R. Kennelly  
Department of the Army  
New England District, Corps of Engineers  
696 Virginia Road  
Concord, MA 01742-2751

RE: CZM Federal Consistency Review of Newburyport Harbor Federal  
Maintenance Dredging Project; Newburyport.

Dear Mr. Kennelly:

The Massachusetts Office of Coastal Zone Management (CZM) is currently reviewing your proposed modification to the Newburyport Harbor Federal maintenance dredging project, to ensure consistency with CZM enforceable program policies. Our formal review began on July 3, 2009, and a consistency determination would ordinarily be issued no later than September 4, 2009. However, as per the Coastal Zone Management Act Federal Consistency Regulations at 15 CFR 930.41(b) and 310 CMR 21.07(3)(e), CZM may request an extension of the review period to allow for additional time to review the project. In addition, CZM cannot complete its review and issue a decision until all applicable licenses, permits, certifications and other authorizations have been issued. Our records indicate that the required Chapter 91 permit, which is awaiting signature of the temporary construction and permanent public access easements, from the Massachusetts Department of Environmental Protection has not yet been issued.

As discussed with the CZM Project Review Coordinator, Robert Boeri, the Coastal Zone Management Act Federal Consistency Regulations at 15 CFR 930.41(b) allow for an extension in the 60 day review period, if mutually agreed upon by both the federal agency and the state agency. Due to the complexity and magnitude of the project and additional state permits which are required, CZM and the Corps previously agreed to an extension of the review period until October 2, 2009. In order to facilitate the required outstanding permits, we propose an extension of the review period until October 9, 2009. CZM will need copies and documentation of all required authorizations prior to the expiration of the extension period. If the additional information necessary for CZM to issue a determination is provided to us earlier than October 9, 2009, CZM may issue the determination prior to the end date of the extension. In the event that all the necessary information has not been received within the review schedule noted above, CZM may contact you to issue an additional extension with dates to be determined. Please indicate your agreement to this schedule by signing below and returning this letter to my attention.

DEVAL L. PATRICK GOVERNOR TIMOTHY P. MURRAY LIEUTENANT GOVERNOR IAN A. BOWLES SECRETARY DEERIN BABB-BROTT DIRECTOR

[www.mass.gov/czm](http://www.mass.gov/czm)



If you have questions about the federal consistency review process, please contact me at the above address or (617) 626-1050. If you have questions about the technical review of this project, please contact Kathryn Glenn at (978) 281-3972.

Sincerely,



Robert Boeri  
Project Review Coordinator

RB

Agreed to by Applicant



cc: Karen Kirk Adams, Chief  
Regulatory Branch, US Army Corps of Engineers  
Mark Habel,  
Navigation Branch, US Army Corps of Engineers  
Ben Lynch, Program Chief  
Wetlands and Waterways Regulation, MA DEP  
Lealdon Langley  
Wetlands and Waterways Regulation, MA DEP  
Kathryn Ford, Project Review Coordinator  
MA DMF



**THE COMMONWEALTH OF MASSACHUSETTS**  
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS  
OFFICE OF COASTAL ZONE MANAGEMENT  
251 Causeway Street, Suite 800, Boston, MA 02114-2136  
(617) 626-1200 FAX: (617) 626-1240

September 1, 2009

John R. Kennelly  
Department of the Army  
New England District, Corps of Engineers  
696 Virginia Road  
Concord, MA 01742-2751

RE: CZM Federal Consistency Review of Newburyport Harbor Federal Maintenance  
Dredging Project; Newburyport.

Dear Mr. Kennelly:

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If you have questions about the federal consistency review process, please contact me at the above address or (617) 626-1050. If you have questions about the technical review of this project, please contact Kathryn Glenn at (978) 281-3972.

Sincerely,



Robert Boeri  
Project Review Coordinator

RB

Agreed to by Applicant \_\_\_\_\_

cc: Karen Kirk Adams, Chief  
Regulatory Branch, US Army Corps of Engineers  
Mark Habel,  
Navigation Branch, US Army Corps of Engineers  
Ben Lynch, Program Chief  
Wetlands and Waterways Regulation, MA DEP  
Lealdon Langley  
Wetlands and Waterways Regulation, MA DEP  
Kathryn Ford, Project Review Coordinator  
MA DMF





Commonwealth of Massachusetts

# Division of Fisheries & Wildlife

Wayne F. MacCallum, *Director*

September 1, 2009

Newbury Conservation Commission  
25 High Road  
Newbury, MA 01951-1236

MA Department of Conservation and Recreation  
251 Causeway Street  
Boston, MA 02214

RE:                    Applicant:                    MA Department of Conservation and Recreation  
                          Project Location:           Plum Island  
                          Project Description:      Beach/dune nourishment  
                          Wetlands File No.:        050-1008  
                          **NHESP Tracking No.: 09-26646**

Dear Commissioners and Applicant:

The applicant listed above has submitted a *Notice of Intent* with a plan (sheet 4 of 5 with plot date of 07/08/2009; attached) to the Natural Heritage & Endangered Species Program (NHESP) of the Massachusetts Division of Fisheries & Wildlife, in compliance with the rare wildlife species section of the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.37). Additional materials were submitted for review pursuant to the Massachusetts Endangered Species Act (MESA; M.G.L. c. 131A) and its implementing regulations (321 CMR 10.00).

Based on a review of information that was submitted and the information that is contained in our database, the NHESP has determined that the proposed project occurs within the mapped habitat of the Piping Plover (*Charadrius melodus*), a species state-listed as "Threatened" and federally protected pursuant to the U.S. Endangered Species Act (ESA, 50 CFR 17.11). This species and its habitats are protected pursuant to the Massachusetts Endangered Species Act (MESA, MGL c131A) and its implementing regulations (321 CMR 10.00). Fact sheets for this species can be found at [www.nhesp.org](http://www.nhesp.org).

## **WETLANDS PROTECTION ACT (WPA)**

For projects within *Estimated Habitat*, the WPA Regulations state that "...if a proposed project is found by the issuing authority to alter a resource area which is part of the habitat of a state-listed species, such project shall not be permitted to have any short or long term adverse effects on the habitat of the local population of that species" (310 CMR 10.37, 10.59), and that "no project may be permitted within the riverfront area which will have any adverse effect on specified habitat sites of rare wetland or upland, vertebrate or invertebrate species, ... or which will have any adverse effect on vernal pool habitat certified prior to the filing of the Notice of Intent" (310 CMR 10.58(4)(b)).

The proposed project will alter the nesting habitat of the Piping Plover. Therefore, based on a review of the information submitted and the information contained in the NHESP database, the NHESP has **determined that the project, as proposed, must be conditioned in order to avoid adverse effects to the Resource Area habitat of the state-listed species. The NHESP requires adherence to the following conditions:**

[www.masswildlife.org](http://www.masswildlife.org)

1. All work shall be carried out within the limit of work shown on the attached plan and in accordance with all design specifications shown on the plan.
2. All work shall be done outside the period of April 1 – August 31. No materials (including dredge pipes) may be present on the beach April 1 – August 31.

**Provided the applicant adheres to both of the above conditions and the conditions are included in any final Orders of Conditions, the project will not adversely affect the Resource Area habitat of state-listed wildlife.** We remind the Conservation Commission that a copy of any Order of Conditions associated with the proposed project, must be sent to the NHESP at the same time it is sent to the applicant, as required by 310 CMR 10.05(6)(e).

#### **MASSACHUSETTS ENDANGERED SPECIES ACT (MESA)**

The MESA is administered by the NHESP of the MA Division of Fisheries & Wildlife, and prohibits the “take” of state-listed species. The “take” of state-listed species is defined as “in reference to animals, means to harass, harm, pursue, hunt, shoot, hound, kill, trap, capture, collect, process, disrupt the nesting, breeding, feeding or migratory activity or attempt to engage in any such conduct, or to assist such conduct, and in reference to plants, means to collect, pick, kill, transplant, cut or process or attempt to engage or to assist in any such conduct. Disruption of nesting, breeding, feeding or migratory activity may result from, but is not limited to, the modification, degradation or destruction of Habitat.” (321 CMR 10.02).

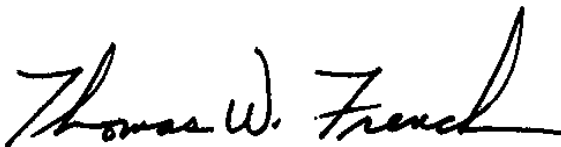
The proposed project will alter the nesting habitat of the Piping Plover. Therefore, based on a review of the information submitted and the information contained in the NHESP database, **the NHESP has determined that the project must be conditioned in order to avoid a “take” of state-listed species as noted below and as outlined in the WPA section above:**

3. The Applicant and the Town of Newbury shall implement a Shorebird Monitoring and Protection Plan as described in the attached letter from the Applicant dated August 31, 2009 for the two consecutive years following any nourishment activity associated with the project.

Provided the applicant complies with the three, above-described conditions and there are no changes to the project plans, no further review of this project subject to the MESA is necessary. Please note that this conditional no “take” determination remains in effect for 5 years. Thereafter a new MESA determination would need to be obtained from the NHESP for any proposed work in Priority Habitat at this site. If it is not possible to comply with these conditions, if project plans change, or if no physical work is commenced on the above proposed project within three-years from the date of issuance of this letter, the applicant must consult with the NHESP prior to any work. We note that all work is subject to the anti-segmentation provisions (321 CMR 10.16) of the MESA.

This determination addresses only the matter of **rare** wildlife habitat and does not pertain to other wildlife habitat issues that may be pertinent to the proposed project. If you have any questions about this letter, please contact Kristin Black, Endangered Species Review Biologist, at 508-389-6367 (kristin.e.black@state.ma.us).

Sincerely,

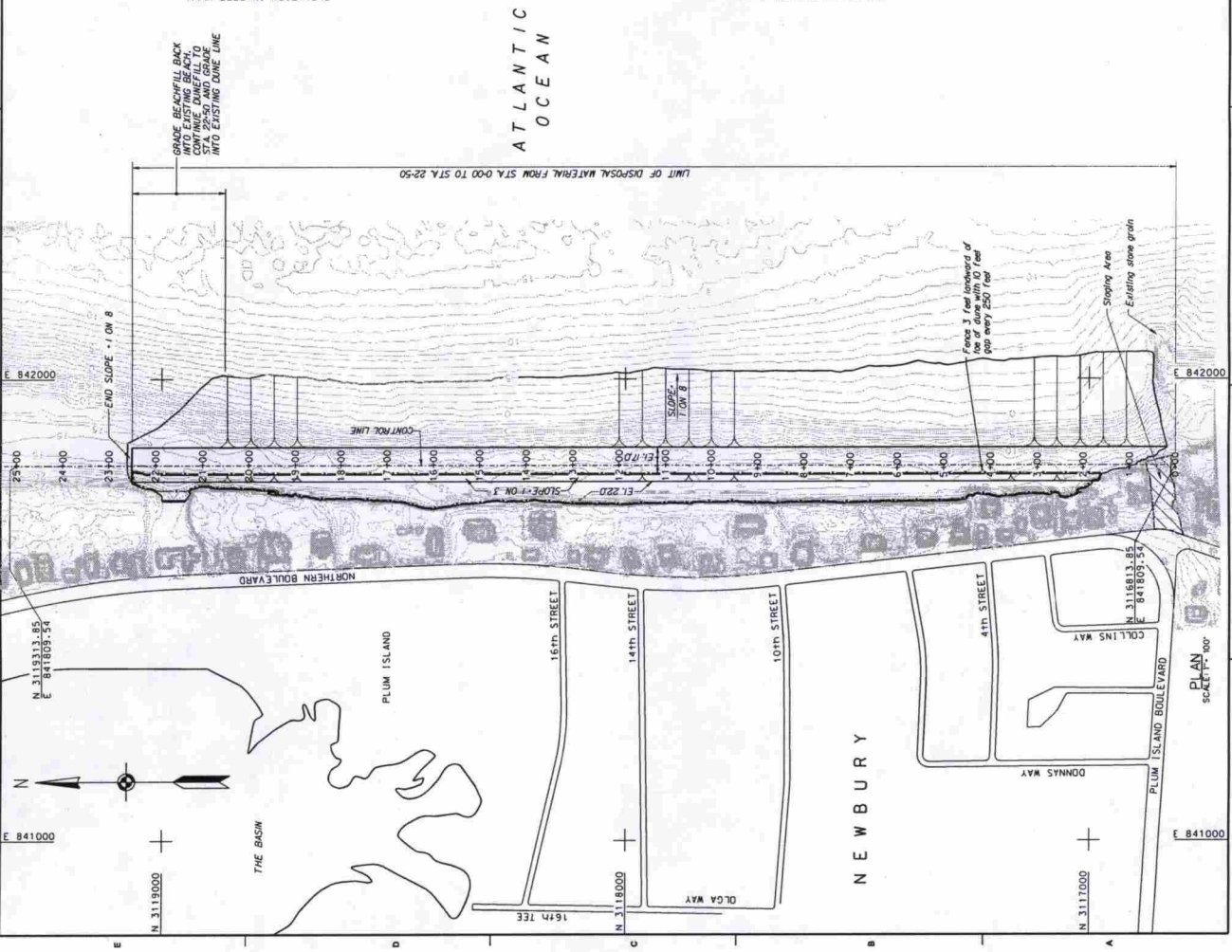
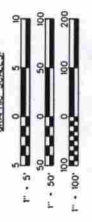
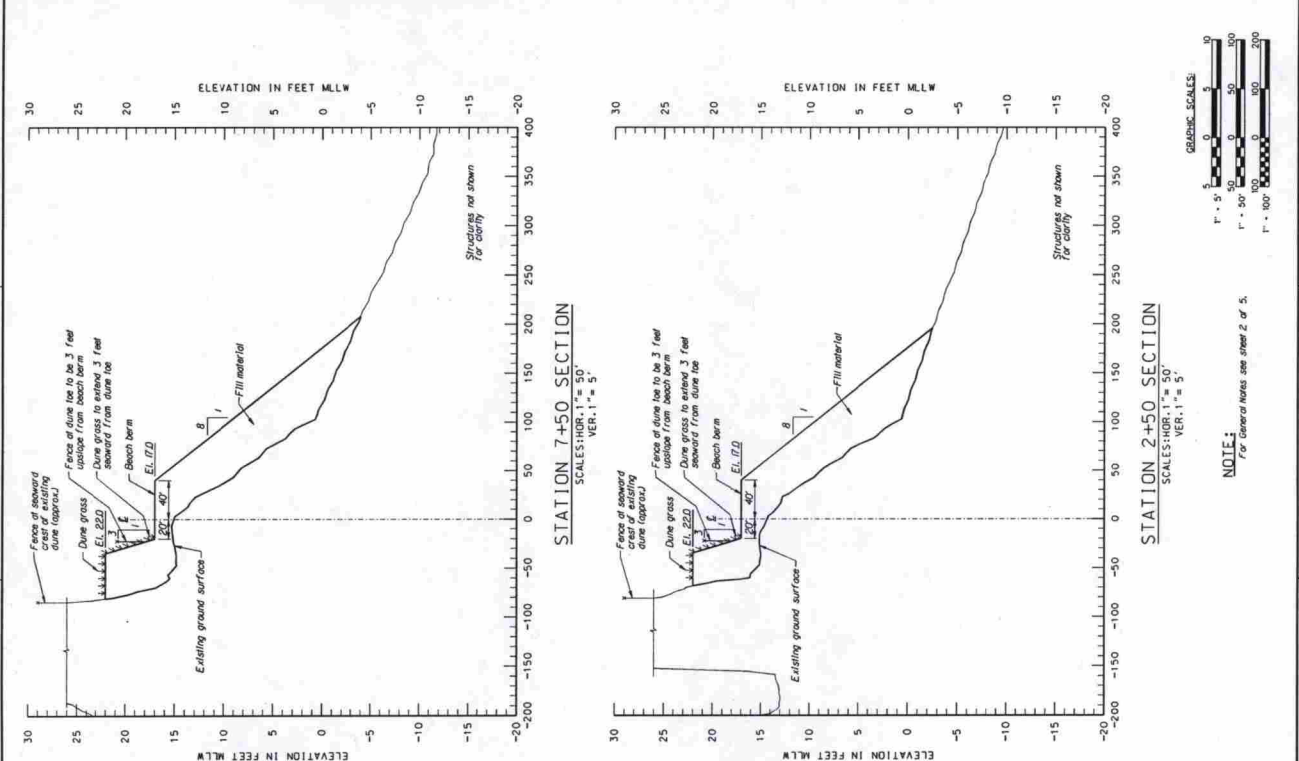


Thomas W. French, Ph.D.  
Assistant Director

Attachments (2)

cc: Susi von Oettingen, U.S. Fish and Wildlife Service's New England Field Office  
MA DEP Northeast Regional Office, Wetlands Program  
Christine M. Player, Vine Associates, Inc.  
Heather Warchalowski, MA DCR  
Todd Randall, US Army Corps of Engineers  
Mark Habel, US Army Corps of Engineers

|                                                                                                                 |             |                                                                                                         |             |                                           |             |
|-----------------------------------------------------------------------------------------------------------------|-------------|---------------------------------------------------------------------------------------------------------|-------------|-------------------------------------------|-------------|
| MAINTENANCE DREDGING<br>16-FOOT ENTRANCE CHANNEL<br>NEWBURYPORT, MASSACHUSETTS<br>PLUM ISLAND AND REGIONAL AREA |             | U.S. ARMY CORPS OF ENGINEERS<br>CONCORD, MASSACHUSETTS<br>DISTRICT OFFICE<br>NEWBURYPORT, MASSACHUSETTS |             | SHEET NO. <b>C-102</b><br>SECTION<br>OF 1 |             |
| DATE                                                                                                            | DESCRIPTION | DATE                                                                                                    | DESCRIPTION | DATE                                      | DESCRIPTION |
|                                                                                                                 |             |                                                                                                         |             |                                           |             |



PLAN  
SCALE 1" = 100'



August 31, 2009

Ms. Kristin Black, Endangered Species Review Biologist  
MA Natural Heritage and Endangered Species Program  
1 Rabbit Hill Road  
Westborough, MA 01581


RE: Plum Island Beach/Dune Nourishment  
Newbury, MA  
NHESP Tracking No. 09-26646

Dear Ms. Black:

The Town of Newbury (Town) and the MA Department of Conservation Recreation (DCR) are jointly submitting this letter to clearly identify our commitment to and responsibility for the monitoring and protection efforts required for Piping Plovers and Least Terns as part of the above referenced project. Such efforts are required in order to meet the requirements set forth by the MA Natural Heritage and Endangered Species Program (NHESP) and the U.S. Fish and Wildlife Service (USFWS) to insure protection of rare shorebirds that may use the project area for breeding activities.

Accordingly, the Town and DCR commit to implementation of the following action items as part of the Plum Island Shorebird Monitoring and Protection Plan:

- Each year, beginning April 1, a qualified shorebird monitor, approved in writing by the NHESP, shall determine whether territorial or nesting Piping Plovers or Terns are present at beach nourishment areas.
- If these species are observed, warning signs and symbolic fencing will be immediately erected and maintained to protect nesting habitat and nests from disturbance or human-caused mortality. Town and/or DCR staff will routinely check the condition of the fencing and will maintain it as necessary.
- Monitoring shall occur at least 2 times per week until at least July 1. However, if plovers or terns are found to be using the site, then monitoring frequency shall be increased to at least 3 times per week, and shall continue until all nesting and brood-rearing activity has been completed.

|                                                                                                                                                          |                                                                                     |                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| COMMONWEALTH OF MASSACHUSETTS · EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS                                                                       |                                                                                     |                                                                                                                                                                                                                                                       |
| Department of Conservation and Recreation<br>251 Causeway Street, Suite 600<br>Boston MA 02114-2119<br>617-626-1250 617-626-1351 Fax<br>www.mass.gov/dcr |  | Deval L. Patrick<br>Governor<br><br>Timothy P. Murray<br>Lt. Governor<br><br>Ian A. Bowles, Secretary, Executive<br>Office of Energy & Environmental Affairs<br><br>Richard K. Sullivan, Jr., Commissioner<br>Department of Conservation & Recreation |

- A report shall be submitted to the NHESP each year, on or before September 30, on standard census forms provided by NHESP, that summarizes the results of the state-listed species monitoring and site protection activities.
- NHESP will be notified of the monitoring arrangements before January 1 of each year for written approval.

An initial step towards implementation of the action items cited will be provided through a Memorandum of Understanding (MOU) between the Town and the Parker River National Wildlife Refuge (PRNWR). This MOU outlines the partnership between the Town and the PRNWR to monitor and protect shorebirds, including monitoring expertise from PRNWR and material and financial support by the Town. The Newbury Beach Management Plan (July 2009) also identifies efforts that will be implemented to further assure protection of shorebirds and their habitat.

It is anticipated that DCR staff will commence annual monitoring activities, with Town staff being available to install symbolic fencing, as necessary. DCR and Town monitoring efforts may also be supplemented by qualified staff from PRNWR as available. If necessary, DCR and the Town will contract with a qualified 3<sup>rd</sup> party to ensure proper monitoring. DCR and the Town will seek written approval of a 3<sup>rd</sup> party entity from NHESP prior to commencing any work at the site.

Funding for the monitoring and materials will be provided by the Town of Newbury to the greatest extent possible. The Town will seek funding for this effort each year at Town Meeting. DCR is committed to provide any additional assistance and funding, if necessary, that may be needed to fully implement the monitoring plan.

Both the Town and DCR are aware of the magnitude of the effort that will be required to successfully assure the protection of shorebirds along Plum Island. We will work together to guarantee that monitoring and protection efforts are effectively implemented. Should you have any questions or require any additional information, please feel free to contact our consultant representative, Ms. Martha Rheinhardt of Vine Associates, Inc. at (508) 743-0390.

Sincerely,

  
Raul F. Silva

Deputy Chief Engineer

cc: Doug Packer, Town of Newbury  
Scott Melvin, Natural Heritage and Endangered Species Program  
Susi von Oettingen, U.S. Fish and Wildlife Service New England Field Office  
Mark Habel,; Todd Randall U.S. Army Corps of Engineers  
Heather Warchalowski, MA DCR



COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

DEVAL L. PATRICK  
Governor

TIMOTHY P. MURRAY  
Lieutenant Governor

IAN A. BOWLES  
Secretary

LAURIE BURT  
Commissioner

August 20, 2009

Jack Karalius  
U.S. Army Corps of Engineers  
New England District  
696 Virginia Road  
Concord, MA 01742

Re: **401 WATER QUALITY CERTIFICATION – Amendment No. 1**  
Application for BRP WW 07, Major project dredging

At: Newburyport Harbor Entrance Channel  
Merrimack River, NEWBURYPORT and SALISBURY

401 WQC Transmittal No: W075196  
Wetlands File No: WE 151-0246  
ACoE Application No: NA

Dear Mr. Karalius,

The Department has received and reviewed your BRP WW 09 Amendment request, as the Authorized Agent, of the above Final Water Quality Certification (FWQC) issued on January 23, 2008.

The scope of work authorized under the January 23, 2008 FWQC was to dredge approximately 150,000 cubic yards of sediment from the Newburyport Federal Navigation Channel (FNC) and place the dredged material at a nearshore area off Plum Island. It is our understanding that you are requesting to increase the dredge volume by 10,000 cubic yards. Approximately 120,000 cubic yards of dredged material from the Newburyport Harbor FNC will place directly on the Plum Island Beach site in the town of Newbury and approximately 40,000 cubic yards of dredged material be placed at the Salisbury Beach State Reservation site in the town of Salisbury. This split of the dredged material is a result of an agreement amount the parties of interest which included Army Corps of Engineers (ACoE), Department of Recreation Conservations (DCR), Town of Newbury, Newburyport and Salisbury.

A joint Chapter 91 and 401 WQC application public notice was published in Newburyport Current on July 31, 2009, and Department received no comment during the 15-day public comment period, which ended on August 14, 2009.

This information is available in alternate format. Call Donald M. Gomes, ADA Coordinator at 617-556-1057. TDD# 1-866-539-7622 or 1-617-574-6868.

MassDEP on the World Wide Web: <http://www.mass.gov/dep>

Printed on Recycled Paper



The Department has reviewed the information provided and in accordance with the provisions of Section 401 of the Federal Clean Water Act as amended (33 U.S.C. §1251 et seq.), MGL c.21, §§ 26-53, and 314 CMR 9.00, it has been determined there is reasonable assurance the project or activity will be conducted in a manner which will not violate applicable water quality standards (314 CMR 4.00) and other applicable requirements of state law provided the following conditions are met:

1. in accordance with the guidelines for plover management published by the U.S. Fish and Wildlife Services, and in conjunction with the Mass Division of Marine Fisheries' concern for anadromous fish, a construction window of September 1 through March 14 shall be used.
2. The beach nourishment areas will be graded on a 1:10 slope seaward of the beach berm with fill extending to the mean lower low water (MLLW) elevation, except for the southern 2100 feet of the Plum Island nourishment area where the steepness of the existing beach slopes will only permit a finished slope of 1:8 extending to about -5 feet MLLW.
3. In accordance with 314 CMR 9.07(6) Beach Nourishment – right of public access shall be provided for beach nourishment projects on private beaches where public funds are utilized for the activities.

In accordance with 314 CMR 9.09(2), this letter serves as an amendment of Final 401 Water Quality Certification, DEP Transmittal No: W075196. All other conditions of the license and Water Quality Certification remain in effect. Failure to comply with the Project's certification is grounds for enforcement, including civil and criminal penalties, under MGL c21 §42, 314 CMR 9.00, MGL c.21A §16, 310 CMR 5.00, or other possible actions/penalties as authorized by the General Laws of the Commonwealth.

If you have questions do not hesitate to contact Ken Chin of my staff at (617) 292-5893.

Sincerely,

  
Lealdon Langley, Director  
Wetlands and Waterways Program

cc:

Jack Karalius, U.S. Army corps of Engineers, 696 Virginia Road, Concord, MA 01742-2751  
Newburyport Conservation Commission, 60 Pleasant Street, Newburyport, MA 01950  
Tay Evans, DMF, 30 Emerson Avenue, Gloucester, MA 01930  
Nancy Colbert, Director of Planning and Development, 60 Pleasant Street, Newburyport, MA 01950  
Robert Boeri, CZM, 251 Causeway Street, Suite 800, Boston, MA 02114-2119  
Newbury Board of Selectmen, 25 High Road, Newbury, MA 01951  
Newbury Conservation Commission, 25 High Road, Newbury, MA 01951  
Neil Harrington, Town Manager, Town of Salisbury, 5 Beach Road, Salisbury, MA 01952  
Salisbury Conservation Commission, 5 Beach Road, Salisbury, MA 01952  
David Slagle, Robert Brown, DEP Boston Office

KC/W075196



August 6, 2009

Chuck Kostro, Town Administrator  
Town of Newbury  
25 High Road  
Newbury, MA

RE: Newburyport Harbor Federal Navigation Project  
Beach and Dune Nourishment at Plum Island & Salisbury Beaches

Dear Mr. Kostro:

As you are aware, the U.S. Army Corps of Engineers (USACE) intends to place approximately 120,000 cubic yards of dredged sediments along up to 2,500 linear feet of eroded dune/beach area at Town Beach on Plum Island in Fall 2009 – Winter 2010. The project also includes planting and fencing of the new dune areas to promote stability and prevent damage from foot traffic.

Since a portion of the proposed project will include the placement of dredge material on properties that are privately owned, permanent easements will need to be secured between the Town of Newbury (Town) and each private landowner affected to enable construction, operation and maintenance of the project, and to ensure that public access and use within these areas are maintained following the completion of the USACE project. As holder of the easement agreements, it is the Town's responsibility to maintain the project and to maintain public access and use within these affected areas for the life of the project. However, should the Town be unable to do so, DCR will act as the Town's responsible designee.

This commitment is made in addition to DCR acting as the Town's designee for other post-maintenance activities required within the project site as described in detail in the Town's Beach Management Plan for Plum Island which includes but is not limited to routine beach and dune maintenance and priority habitat monitoring and management.

Sincerely,

Raul Silva  
Deputy Chief Engineer

Cc: Mark Habel, USACE  
Newbury Board of Selectmen  
Doug Packer, Town Conservation Agent

COMMONWEALTH OF MASSACHUSETTS · EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS

Department of Conservation and Recreation  
251 Causeway Street, Suite 600  
Boston MA 02114-2119  
617-626-1250 617-626-1351 Fax  
www.mass.gov/dcr



Deval L. Patrick  
Governor

Timothy P. Murray  
Lt. Governor

Ian A. Bowles, Secretary, Executive  
Office of Energy & Environmental Affairs

Richard K. Sullivan, Jr., Commissioner  
Department of Conservation & Recreation



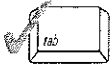
# WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Document Transaction Number  
Newbury  
City/Town

## A. General Information

**Important:**  
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



1. From: Town of Newbury  
Conservation Commission
2. This issuance is for (check one): a.  Order of Conditions    b.  Amended Order of Conditions
3. To: Applicant:

a. First Name MA Department of Conservation & Recreation    b. Last Name \_\_\_\_\_  
 c. Organization 251 Causeway Street, Suite 700  
 d. Mailing Address Boston    MA    02114  
 e. City/Town    f. State    g. Zip Code

4. Property Owner (if different from applicant):

Conservation    Commission  
 a. First Name Town of Newbury and Others    b. Last Name \_\_\_\_\_  
 c. Organization 25 High Road  
 d. Mailing Address Newbury    MA    01951  
 e. City/Town    f. State    g. Zip Code

5. Project Location:

Town Beach north of State Groin #1 Plum Island    Newbury  
 a. Street Address    b. City/Town  
U-02    various  
 c. Assessors Map/Plat Number    d. Parcel/Lot Number  
 Latitude and Longitude, if known: 42d 48' 18" N to 48d 47' 54" N    70d 48' 31" W to 70d 48' 30" W

6. Property recorded at the Registry of Deeds for (attach additional information if more than one parcel):

Essex  
 a. County    b. Certificate Number (if registered land) \_\_\_\_\_  
 c. Book \_\_\_\_\_    d. Page \_\_\_\_\_

7. Dates: July 9, 2009    July 21, 2009    August 5, 2009  
 a. Date Notice of Intent Filed    b. Date Public Hearing Closed    c. Date of Issuance

8. Final Approved Plans and Other Documents (attach additional plan or document references as needed):

Dredging/Fill Plans & Sections Plum Island, Newburyport Harbor FNP (Sheets 1 and 2 of 2)  
 a. Plan Title  
Vine Associates Inc.    Peter J. Williams  
 b. Prepared By    c. Signed and Stamped by  
June 2009    \_\_\_\_\_  
 d. Final Revision Date    e. Scale \_\_\_\_\_  
WPA Form 3 - Notice of Intent w/all attachments    July 9, 2009  
 f. Additional Plan or Document Title    g. Date



# WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

## B. Findings

1. Findings pursuant to the Massachusetts Wetlands Protection Act:

Following the review of the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act (the Act).

Check all that apply:

- a.  Public Water Supply
- b.  Land Containing Shellfish
- c.  Prevention of Pollution
- d.  Private Water Supply
- e.  Fisheries
- f.  Protection of Wildlife Habitat
- g.  Groundwater Supply
- h.  Storm Damage Prevention
- i.  Flood Control

2. This Commission hereby finds the project, as proposed, is: (check one of the following boxes)

**Approved** subject to:

- a.  the following conditions which are necessary in accordance with the performance standards set forth in the wetlands regulations. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.

**Denied** because:

- b.  the proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect the interests of the Act, and a final Order of Conditions is issued. **A description of the performance standards which the proposed work cannot meet is attached to this Order.**
- c.  the information submitted by the applicant is not sufficient to describe the site, the work, or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the Act's interests, and a final Order of Conditions is issued. **A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).**

**Inland Resource Area Impacts:** Check all that apply below. (For Approvals Only)

- 3.  Buffer Zone Impacts: Shortest distance between limit of project disturbance and Bank or Bordering Vegetated Wetland boundary (if available)

| Resource Area                                                    | Proposed Alteration | Permitted Alteration | Proposed Replacement | Permitted Replacement |
|------------------------------------------------------------------|---------------------|----------------------|----------------------|-----------------------|
| 4. <input type="checkbox"/> Bank                                 | a. linear feet      | b. linear feet       | c. linear feet       | d. linear feet        |
| 5. <input type="checkbox"/> Bordering Vegetated Wetland          | a. square feet      | b. square feet       | c. square feet       | d. square feet        |
| 6. <input type="checkbox"/> Land Under Waterbodies and Waterways | a. square feet      | b. square feet       | c. square feet       | d. square feet        |
|                                                                  | e. c/y dredged      | f. c/y dredged       |                      |                       |



**WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

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**B. Findings (cont.)**

| Resource Area                                                  | Proposed Alteration | Permitted Alteration | Proposed Replacement | Permitted Replacement |
|----------------------------------------------------------------|---------------------|----------------------|----------------------|-----------------------|
| 7. <input type="checkbox"/> Bordering Land Subject to Flooding | a. square feet      | b. square feet       | c. square feet       | d. square feet        |
| Cubic Feet Flood Storage                                       | e. cubic feet       | f. cubic feet        | g. cubic feet        | h. cubic feet         |
| 8. <input type="checkbox"/> Isolated Land Subject to Flooding  | a. square feet      | b. square feet       |                      |                       |
| Cubic Feet Flood Storage                                       | c. cubic feet       | d. cubic feet        | e. cubic feet        | f. cubic feet         |
| 9. <input type="checkbox"/> Riverfront Area                    | a. total sq. feet   | b. total sq. feet    |                      |                       |
| Sq ft within 100 ft                                            | c. square feet      | d. square feet       | e. square feet       | f. square feet        |
| Sq ft between 100-200 ft                                       | g. square feet      | h. square feet       | i. square feet       | j. square feet        |

**Coastal Resource Area Impacts:** Check all that apply below. (For Approvals Only)

|                                                                    |                                                                                                                                 |                |                   |                   |
|--------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|----------------|-------------------|-------------------|
| 10. <input type="checkbox"/> Designated Port Areas                 | Indicate size under Land Under the Ocean, below                                                                                 |                |                   |                   |
| 11. <input checked="" type="checkbox"/> Land Under the Ocean       | 158,295                                                                                                                         | 158,295        |                   |                   |
|                                                                    | a. square feet                                                                                                                  | b. square feet |                   |                   |
|                                                                    | 0                                                                                                                               |                |                   |                   |
|                                                                    | c. c/y dredged                                                                                                                  | d. c/y dredged |                   |                   |
| 12. <input checked="" type="checkbox"/> Barrier Beaches            | Indicate size under Coastal Beaches and/or Coastal Dunes below                                                                  |                |                   |                   |
| 13. <input checked="" type="checkbox"/> Coastal Beaches            | 380,486                                                                                                                         | same           | 77,282            | 77,282            |
|                                                                    | 19,469 temp.                                                                                                                    | b. square feet | c. c/y nourishmt. | d. c/y nourishmt. |
| 14. <input checked="" type="checkbox"/> Coastal Dunes              | 48,535                                                                                                                          | same           | 33,232            | 33,232            |
|                                                                    | a. square feet                                                                                                                  | b. square feet | c. c/y nourishmt. | d. c/y nourishmt. |
| 15. <input type="checkbox"/> Coastal Banks                         | a. linear feet                                                                                                                  | b. linear feet |                   |                   |
| 16. <input type="checkbox"/> Rocky Intertidal Shores               | a. square feet                                                                                                                  | b. square feet |                   |                   |
| 17. <input type="checkbox"/> Salt Marshes                          | a. square feet                                                                                                                  | b. square feet | c. square feet    | d. square feet    |
| 18. <input type="checkbox"/> Land Under Salt Ponds                 | a. square feet                                                                                                                  | b. square feet |                   |                   |
|                                                                    | c. c/y dredged                                                                                                                  | d. c/y dredged |                   |                   |
| 19. <input type="checkbox"/> Land Containing Shellfish             | a. square feet                                                                                                                  | b. square feet | c. square feet    | d. square feet    |
| 20. <input type="checkbox"/> Fish Runs                             | Indicate size under Coastal Banks, Inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above |                |                   |                   |
|                                                                    | a. c/y dredged                                                                                                                  | b. c/y dredged |                   |                   |
| 21. <input type="checkbox"/> Land Subject to Coastal Storm Flowage | a. square feet                                                                                                                  | b. square feet |                   |                   |



## WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

### C. General Conditions Under Massachusetts Wetlands Protection Act

The following conditions are only applicable to Approved projects.

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.
2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.
4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
  - a. the work is a maintenance dredging project as provided for in the Act; or
  - b. the time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.
5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order.
6. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.
7. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.
8. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to the Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work.
9. A sign shall be displayed at the site not less than two square feet or more than three square feet in size bearing the words,

"Massachusetts Department of Environmental Protection" [or, "MassDEP"]

"File Number 050-1008 ....."



## WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

050-1008

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### C. General Conditions Under Massachusetts Wetlands Protection Act

10. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before MassDEP.
11. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.
12. The work shall conform to the plans and special conditions referenced in this order.
13. Any change to the plans identified in Condition #12 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent.
14. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.
15. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.
16. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.
17. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.

#### NOTICE OF STORMWATER CONTROL AND MAINTENANCE REQUIREMENTS

18. **The work associated with this Order (the "Project") is (1)  is not (2)  subject to the Massachusetts Stormwater Standards. If the work is subject to the Stormwater Standards, then the project is subject to the following conditions:**
  - a) All work, including site preparation, land disturbance, construction and redevelopment, shall be implemented in accordance with the construction period pollution prevention and erosion and sedimentation control plan and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Construction General Permit as required by Stormwater Condition 8. Construction period erosion, sedimentation and pollution control measures and best management practices (BMPs) shall remain in place until the site is fully stabilized.





**C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)**

- b) No stormwater runoff may be discharged to the post-construction stormwater BMPs unless and until a Registered Professional Engineer provides a Certification that:
- i.* all construction period BMPs have been removed or will be removed by a date certain specified in the Certification. For any construction period BMPs intended to be converted to post construction operation for stormwater attenuation, recharge, and/or treatment, the conversion is allowed by the MassDEP Stormwater Handbook BMP specifications and that the BMP has been properly cleaned or prepared for post construction operation, including removal of all construction period sediment trapped in inlet and outlet control structures;
  - ii.* as-built final construction BMP plans are included, signed and stamped by a Registered Professional Engineer, certifying the site is fully stabilized;
  - iii.* any illicit discharges to the stormwater management system have been removed, as per the requirements of Stormwater Standard 10;
  - iv.* all post-construction stormwater BMPs are installed in accordance with the plans (including all planting plans) approved by the issuing authority, and have been inspected to ensure that they are not damaged and that they are in proper working condition;
  - v.* any vegetation associated with post-construction BMPs is suitably established to withstand erosion.
- c) The landowner is responsible for BMP maintenance until the issuing authority is notified that another party has legally assumed responsibility for BMP maintenance. Prior to requesting a Certificate of Compliance, or Partial Certificate of Compliance, the responsible party (defined in General Condition 18(e)) shall execute and submit to the issuing authority an Operation and Maintenance Compliance Statement ("O&M Statement") for the Stormwater BMPs identifying the party responsible for implementing the stormwater BMP Operation and Maintenance Plan ("O&M Plan") and certifying the following: *i.*) the O&M Plan is complete and will be implemented upon receipt of the Certificate of Compliance, and *ii.*) the future responsible parties shall be notified in writing of their ongoing legal responsibility to operate and maintain the stormwater management BMPs and implement the Stormwater Pollution Prevention Plan.
- d) Post-construction pollution prevention and source control shall be implemented in accordance with the long-term pollution prevention plan section of the approved Stormwater Report and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Multi-Sector General Permit.
- e) Unless and until another party accepts responsibility, the landowner, or owner of any drainage easement, assumes responsibility for maintaining each BMP. To overcome this presumption, the landowner of the property must submit to the issuing authority a legally binding agreement of record, acceptable to the issuing authority, evidencing that another entity has accepted responsibility for maintaining the BMP, and that the proposed responsible party shall be treated as a permittee for purposes of implementing the requirements of Conditions 18(f) through 18(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 18(f) through 18(k) with respect to that BMP shall be a violation of the Order of Conditions or Certificate of Compliance. In the case of stormwater BMPs that are serving more than one lot, the legally binding agreement shall also identify the lots that will be serviced by the stormwater BMPs. A plan and easement deed that grants the responsible party access to perform the required operation and maintenance must be submitted along with the legally binding agreement.
- f) The responsible party shall operate and maintain all stormwater BMPs in accordance with the design plans, the O&M Plan, and the requirements of the Massachusetts Stormwater Handbook.



# WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

## C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

- g) The responsible party shall:
  - 1. Maintain an operation and maintenance log for the last three (3) consecutive calendar years of inspections, repairs, maintenance and/or replacement of the stormwater management system or any part thereof, and disposal (for disposal the log shall indicate the type of material and the disposal location);
  - 2. Make the maintenance log available to MassDEP and the Conservation Commission ("Commission") upon request; and
  - 3. Allow members and agents of the MassDEP and the Commission to enter and inspect the site to evaluate and ensure that the responsible party is in compliance with the requirements for each BMP established in the O&M Plan approved by the issuing authority.
- h) All sediment or other contaminants removed from stormwater BMPs shall be disposed of in accordance with all applicable federal, state, and local laws and regulations.
- i) Illicit discharges to the stormwater management system as defined in 310 CMR 10.04 are prohibited.
- j) The stormwater management system approved in the Order of Conditions shall not be changed without the prior written approval of the issuing authority.
- k) Areas designated as qualifying pervious areas for the purpose of the Low Impact Site Design Credit (as defined in the MassDEP Stormwater Handbook, Volume 3, Chapter 1, Low Impact Development Site Design Credits) shall not be altered without the prior written approval of the issuing authority.
- l) Access for maintenance, repair, and/or replacement of BMPs shall not be withheld. Any fencing constructed around stormwater BMPs shall include access gates and shall be at least six inches above grade to allow for wildlife passage.

Special Conditions (if you need more space for additional conditions, please attach a text document):

**The applicant shall supply the Commission with a document showing access points and the equipment that will traverse these areas. The description shall include a plan to return the area to its pre-project condition once job is completed. The narrative will also include like information relative to the pipe used to carry the slurry. All dewatering berms built with existing beach sand shall be returned to the profile in the approve plan as quickly as is reasonably possible to reduce the time of exposure to unfavorable contours that may be eroded quickly.**

## D. Findings Under Municipal Wetlands Bylaw or Ordinance

- 1. Is a municipal wetlands bylaw or ordinance applicable?  Yes  No
- 2. The Newbury Conservation Commission hereby finds (check one that applies):
  - a.  that the proposed work cannot be conditioned to meet the standards set forth in a municipal ordinance or bylaw specifically;

1. Municipal Ordinance or Bylaw

2. Citation

Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides measures which are adequate to meet these standards, and a final Order of Conditions is issued.



# WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

050-1008

MassDEP File Number

Document Transaction Number

Newbury

City/Town

## D. Findings Under Municipal Wetlands Bylaw or Ordinance (cont.)

- b.  that the following additional conditions are necessary to comply with a municipal ordinance or bylaw:

1. Municipal Ordinance or Bylaw

2. Citation

3. The Commission orders that all work shall be performed in accordance with the following conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, the conditions shall control.

The special conditions relating to municipal ordinance or bylaw are as follows (if you need more space for additional conditions, attach a text document):

The project as presented and approved complies with the town of Newbury Wetlands Bylaw.

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**E. Signatures and Notary Acknowledgement**

This Order is valid for three years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance. Please indicate the number of members who will sign this form. This Order must be signed by a majority of the Conservation Commission. The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office, if not filing electronically, and the property owner, if different from applicant.

August 5, 2009  
 1. Date of Issuance  
 5  
 2. Number of Signers

Signatures:

*[Handwritten signatures of Douglas Packer and three other members of the Conservation Commission]*

*[Handwritten signature of Edward Beach]*

**Notary Acknowledgement**

Commonwealth of Massachusetts County of Essex

On this 5th Day of August 2009

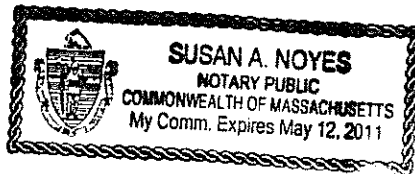
Before me, the undersigned Notary Public, personally appeared Douglas Packer

proved to me through satisfactory evidence of identification, which was/were

Known to me personally  
 Description of evidence of identification

to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he/she signed it voluntarily for its stated purpose.

As member of Newbury City/Town Conservation Commission



*[Handwritten signature of Susan A. Noyes]*  
 Signature of Notary Public  
 Susan A. Noyes  
 Printed Name of Notary Public  
 May 12, 2011  
 My Commission Expires (Date)

Place notary seal and/or any stamp above.

This Order is issued to the applicant as follows:

- by hand delivery on
- by certified mail, return receipt requested, on

Date

Date



## WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

### F. Appeals

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate MassDEP Regional Office to issue a Superseding Order of Conditions. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Request of Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

Any appellants seeking to appeal the Department's Superseding Order associated with this appeal will be required to demonstrate prior participation in the review of this project. Previous participation in the permit proceeding means the submission of written information to the Conservation Commission prior to the close of the public hearing, requesting a Superseding Order, or providing written information to the Department prior to issuance of a Superseding Order.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40), and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal ordinance or bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.

**Section G, Recording Information, is available on the following page.**



# WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

050-1008

MassDEP File Number

Document Transaction Number

Newbury

City/Town

## G. Recording Information

This Order of Conditions must be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Order. In the case of registered land, this Order shall also be noted on the Land Court Certificate of Title of the owner of the land subject to the Order of Conditions. The recording information on this page shall be submitted to the Conservation Commission listed below.

Town of Newbury

Conservation Commission

Detach on dotted line, have stamped by the Registry of Deeds and submit to the Conservation Commission.

To:

Town of Newbury

Conservation Commission

Please be advised that the Order of Conditions for the Project at:

Town Beach, North Plum Island

Project Location

050-1008

MassDEP File Number

Has been recorded at the Registry of Deeds of:

Essex

County

Book

Page

for:

Town of Newbury

Property Owner

and has been noted in the chain of title of the affected property in:

Book

Page

In accordance with the Order of Conditions issued on:

August 5, 2009

Date

If recorded land, the instrument number identifying this transaction is:

Instrument Number

If registered land, the document number identifying this transaction is:

Document Number

Signature of Applicant



COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

DEVAL L. PATRICK  
Governor

TIMOTHY P. MURRAY  
Lieutenant Governor

IAN A. BOWLES  
Secretary

LAURIE BURT  
Commissioner

July 29, 2009

MA Department of Conservation and Recreation  
C/o Vine Associates, Inc.  
190 Old Derby Street, Suite 311  
Hingham, MA 02043  
Attn: Christine M. Player

Re: PUBLIC NOTICE OF WATERWAYS LICENSE APPLICATION No. W09-2764D  
and 401 WATER QUALITY CERTIFICATION AMENDMENT  
Merrimack River, Newburyport, Essex County

Dear Applicant:

The Waterways Regulation Program (WRP) has received your application requesting authorization to perform certain activities in state waterways pursuant to M.G.L. Chapter 91, the Public Waterfront Act and its regulations at 310 CMR 9.00 etc. The WRP has assigned this application filing with the above-referenced Waterways License application number. IT IS IMPERATIVE THAT YOU REFER TO THIS APPLICATION NUMBER WHENEVER YOU SUBMIT OR REQUEST INFORMATION FOR THIS FILE. Upon review of this application, the WRP has made a determination that this project is a Water-dependent Use Project.

Attached is the WRP's Public Notice form for this application. The Applicant is required to publish this notice, at his/her expense, in one or more newspapers having circulation in the area affected by the proposed activity. This notice must be published in the local newspaper(s) for at least one day on or before Notification Date. The required public comment period shall begin on this designated Notification Date. The Applicant is required to submit proof of publication to the WRP by sending a copy of the newspaper notice showing the date of publication or a copy of the newspaper notice and a letter from the newspaper indicating the date the public notice was published.

**Pursuant to 310 CMR 9.13(1)(a), the Applicant is also required to concurrently provide this notification, along with a copy of the project site plans submitted with the Waterways License Application, to the appropriate municipal officials, regulatory agencies and abutters to the project for their review and comment, by**



**Certified mail, (see Notification mailing list attached).**

For Chapter 91 purposes, an abutter is defined as the owner of land that shares a common boundary or corner with a project site at the water's edge, as well as the owner of land that lies within 50' across a waterbody from such site, see; 310 CMR 9.02.

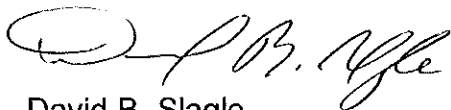
The WRP will publish the Public Notice in The Environmental Monitor, if required.

Lastly, the WRP cannot complete its review of this application until the following information/document(s) checked below have been submitted:

- Proof of publication of the Public Notice
- Receipt of the Municipal Zoning Certification
- Receipt of the Municipal Planning Board Notification Form
- Receipt of a valid Wetlands Order of Conditions
- Receipt of a valid DEP Water Quality Certification
- Completion of the MEPA review process
- Plans according to the specifications of Appendix B of the Waterways Application.
- Other: Please provide copies of easements for those property owners who will benefit from the beach nourishment.

Should you have any questions, please contact me at (617) 654-6520. Thank you.

Sincerely,



David B. Slagle  
Environmental Analyst  
Waterways Regulation Program

**DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**Notice of License Application pursuant to M. G. L. Chapter 91  
401 Water Quality Certification Amendment  
Waterways License Application Number W09-2764D  
MA Department of Conservation and Recreation**

**NOTIFICATION DATE: August 5, 2009**

Public notice is hereby given of the application by MA Department of Conservation and Recreation to perform dredging of approximately 160,000 cubic yards of sediment from the Newburyport Federal Navigation Channel with dredged sediment to be used as beach nourishment in the Towns of Newbury and Salisbury. The proposed use of the project is to improve navigation and provide beach nourishment and is a water dependent project.

The Department will consider all written comments on this Waterways application received by within 15 days subsequent to the "Notification Date". Failure of any aggrieved person or group of ten citizens or more to submit written comments to the Waterways Regulation Program by the Public Comments Deadline will result in the waiver of any right to an adjudicatory hearing in accordance with 310 CMR 9.13(4)(c).

Additional information regarding this application may be obtained by contacting the Waterways Regulation Program at (617) 292-5500. Project plans and documents for this application are on file with the Waterways Regulation Program for public viewing, by appointment only, at the address below. Written comments must be addressed to: David Slagle, MassDEP - WRP, One Winter St., 5<sup>th</sup> fl., Boston, MA 02108.

401 Water Quality Certification Amendment for the Newbury Federal Navigation Channel by the Army Corps of Engineers (ACoE) as the Authorized Agent for the Town of Newburyport to increase the authorized dredge volume from 150,000 cubic yards to 160,000 cubic yards with 120,000 cubic yards of dredged material to be used as nourishment material at Plume Island beach in the Town of Newbury and 40,000 cubic yards at Salisbury Beach State Reservation site in the Town of Salisbury. Additional information may be obtained from Jack Karalius of the ACoE, 696 Virginia Road, Concord, MA 01742-2751, telephone no. 978 318-8288.

Pursuant to 310 CMR 9.13(1)(a), the Applicant is also required to concurrently provide this notification, along with a copy of the project site plans submitted with the Waterways License Application, to the appropriate municipal officials, regulatory agencies and abutters to the project for their review and comment (see Notification mailing list attached). The applicant shall send the notice of license or permit application by Certified mail to the attached list, abutters and notify the Department when completed.

**Mailing List: Notice of License Application pursuant to M. G. L. Chapter 91**

**Mayor and City Council, City of Newburyport  
Board of Selectmen, Towns of Newbury and Salisbury  
Newburyport, Newbury and Salisbury Planning Boards  
Newburyport, Newbury and Salisbury Conservation Commissions  
Newburyport, Newbury and Salisbury Zoning Boards  
Newburyport, Newbury and Salisbury Harbormasters**

**Massachusetts Environmental Policy Act (MEPA) File #  
100 Cambridge Street, Suite 900  
Boston, MA 02114**

**Division of Fish & Wildlife and Law Enforcement  
Field Headquarters  
1 Rabbit Hill Road  
Westborough, MA 01581  
Attn: Tom French**

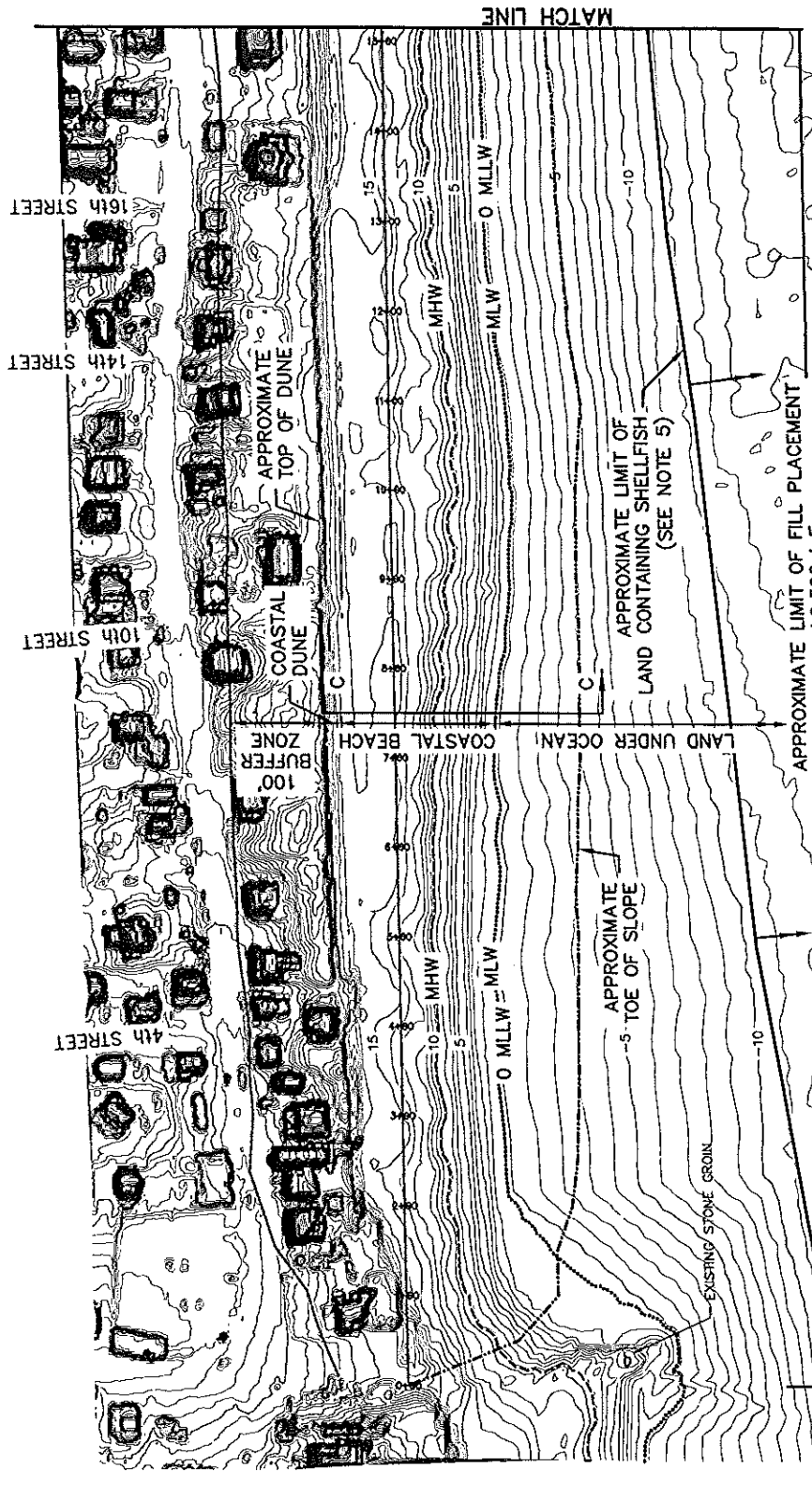
**Division of Marine Fisheries  
Annisquam River Marine Fisheries Field Station  
30 Emerson Avenue  
Gloucester, MA 01930**

**Massachusetts Historical Commission  
22 Morrissey Blvd., Columbia Point  
Boston, MA 02125**

**Army Corps of Engineers  
New England Division  
696 Virginia Road  
Concord, MA 01742-2751**

**Abutters** – For Chapter 91 purposes, an abutter is defined as the owner of land that shares a common boundary or corner with a project site, as well as the owner of land that lies within 50' across a waterbody from such site, see 310 CMR 9.02.

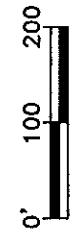
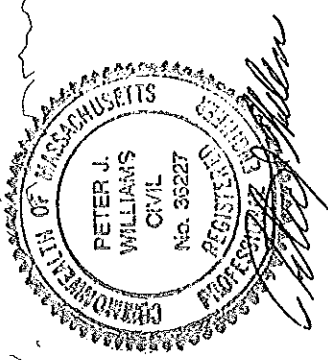
**WRP Files`**



**PROPOSED FILL PLACEMENT PLAN  
PLUM ISLAND**

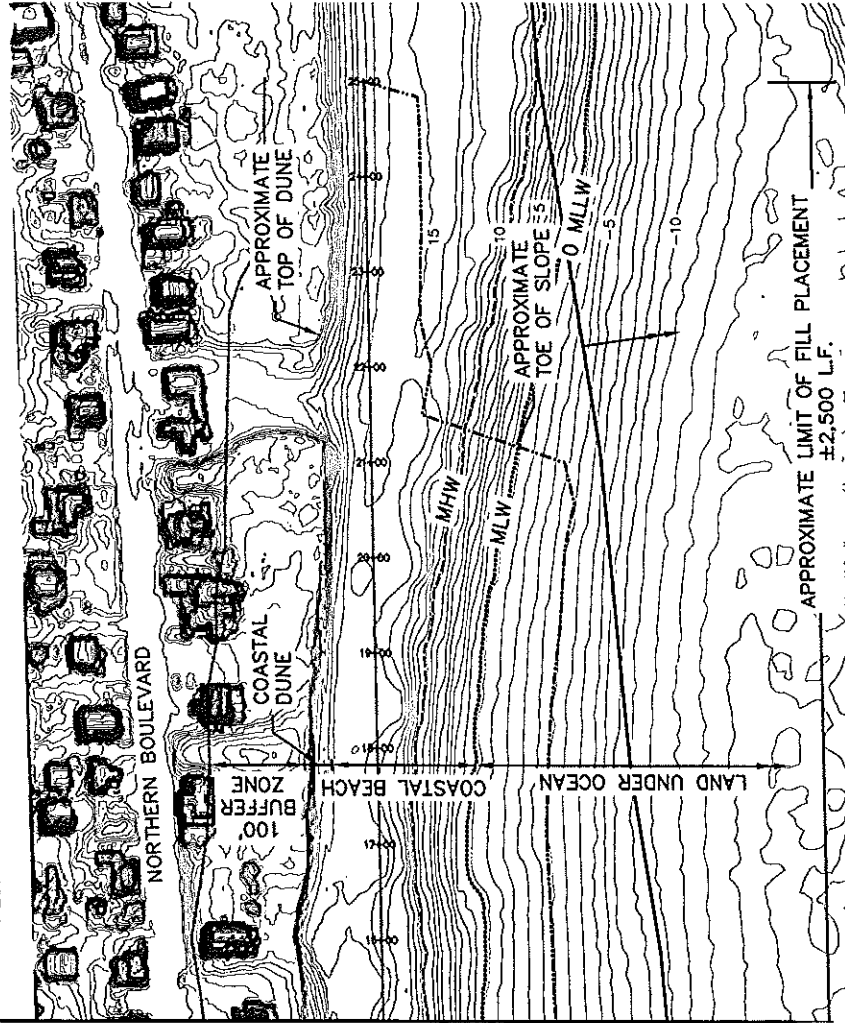
**MA DEPT. OF CONSERVATION & RECREATION  
NEWBURYPORT HARBOR  
FEDERAL NAVIGATION PROJECT  
NEWBURYPORT, NEWBURY & SALISBURY, MA**

|                                 |                                                                                          |                                                                                 |                      |
|---------------------------------|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|----------------------|
| <b>Vine</b><br>ASSOCIATES, INC. | 372 MERRIMACK STREET<br>NEWBURYPORT, MA 01950<br>Tel. (978)465-2640<br>Fax (978)465-2640 | 18 BEACH STREET<br>HINGHAM, MA 02043<br>Tel. (781)748-2530<br>Fax (781)748-2751 | VAI<br>FILE NO. 1516 |
| DES.                            | CHK.                                                                                     | CMP                                                                             | DR.                  |
| SCALE 1"=200'                   | DATE                                                                                     | JUNE 2009                                                                       | SHEET 5 OF 7         |



- NOTES:**
1. DATUM: MLLW=0.0; MLW=0.3; MHW=9.3; HTL=10.9
  2. PLANS & SECTIONS PREPARED BY THE U.S. ARMY CORPS OF ENGINEERS (USACE).
  3. TOPOGRAPHY, AS SHOWN, IS BASED UPON LIDAR SURVEY BY THE USACE IN 2007.
  4. RESOURCE AREA LIMITS, AS SHOWN, HAVE BEEN INTERPRETED BY VINE ASSOCIATES, INC. (VAI).
  5. LIMIT OF LAND CONTAINING SHELLFISH IS BASED UPON AVAILABLE INFORMATION FROM MASS GIS.

PLUM ISLAND



NOTE:  
SEE SHEET 5 OF 7 FOR NOTES.

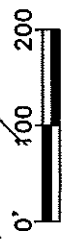
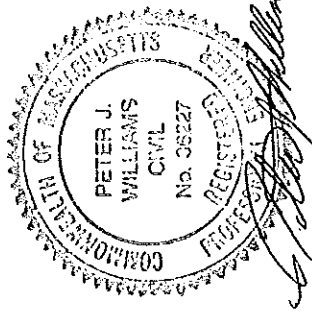
### PROPOSED FILL PLACEMENT PLAN PLUM ISLAND

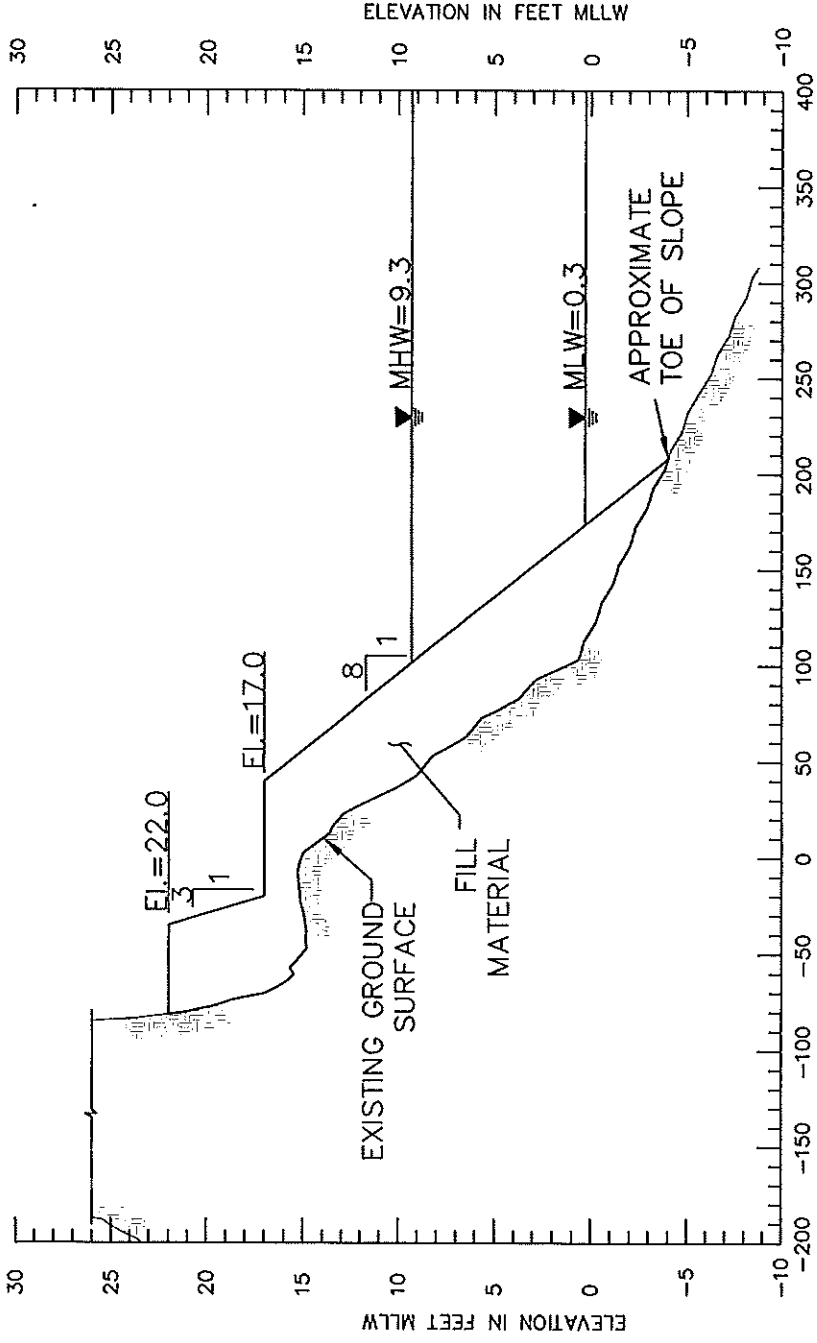
MA DEPT. OF CONSERVATION & RECREATION  
 NEWBURYPORT HARBOR  
 FEDERAL NAVIGATION PROJECT  
 NEWBURYPORT, NEWBURY & SALISBURY, MA

**Vine**  
 ASSOCIATES, INC.  
 372 MERRIMAC STREET  
 NEWBURYPORT, MA 01950  
 Tel. (978)465-1428  
 fax (978)465-2640

18 BEACH STREET  
 HINGHAM, MA 02043  
 Tel. (508)743-0390  
 fax (508)743-0391

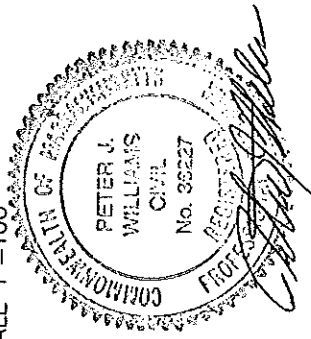
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| DES.          | CHK. | CMP. | DR. | DWG. | VAI  | FILE NO.  | 1516         |
| SCALE 1"=200' |      |      |     |      | DATE | JUNE 2009 |              |
|               |      |      |     |      |      |           | SHEET 6 OF 7 |





NOTE:  
SEE SHEET 5 OF 7 FOR NOTES.

**TYPICAL SECTION C-C**  
VERTICAL SCALE: 1"=10'  
HORIZONTAL SCALE 1"=100'



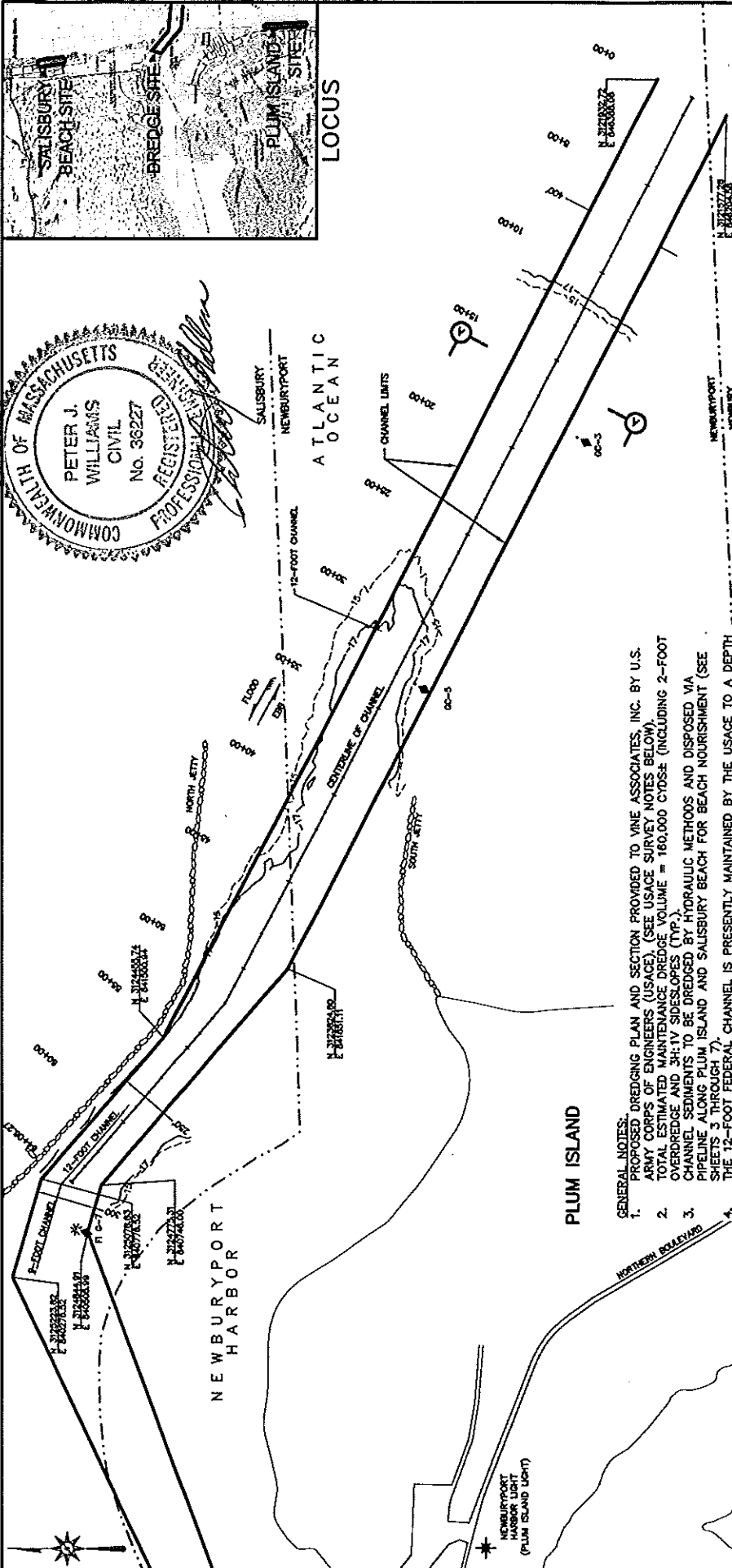
**PROPOSED FILL PLACEMENT SECTION  
PLUM ISLAND**

**MA DEPT. OF CONSERVATION & RECREATION  
NEWBURYPORT HARBOR  
FEDERAL NAVIGATION PROJECT  
NEWBURYPORT, NEWBURY & SALISBURY, MA**

**Vine ASSOCIATES, INC.**  
372 MERRIMACK STREET  
NEWBURYPORT, MA 01950  
Tel: (978)465-1428  
Fax: (978)465-2640

18 BEACH STREET  
MONUMENT BEACH, MA 02553  
Tel: (508)745-0390  
Fax: (508)745-0391

|                |      |     |           |     |              |          |      |
|----------------|------|-----|-----------|-----|--------------|----------|------|
| DES.           | CHK. | CMP | DR.       | DWG | VAI          | FILE NO. | 1516 |
| SCALE AS SHOWN | DATE |     | JUNE 2009 |     | SHEET 7 OF 7 |          |      |



**PROPOSED DREDGE PLAN**  
**NEWBURYPORT HARBOR ENTRANCE CHANNEL**  
**MA DEPT. OF CONSERVATION & RECREATION**  
**NEWBURYPORT HARBOR**  
**FEDERAL NAVIGATION PROJECT**  
**NEWBURYPORT, NEWBURY & SALISBURY, MA**

**Vine**  
 ASSOCIATES, INC.  
 372 MERRIMAC STREET  
 NEWBURYPORT, MA 01950  
 18 BEACH STREET  
 HIGHLAND, MA 02043  
 TEL: (978) 465-1428 FAX: (978) 465-2640  
 TEL: (508) 743-0390 FAX: (508) 743-0391

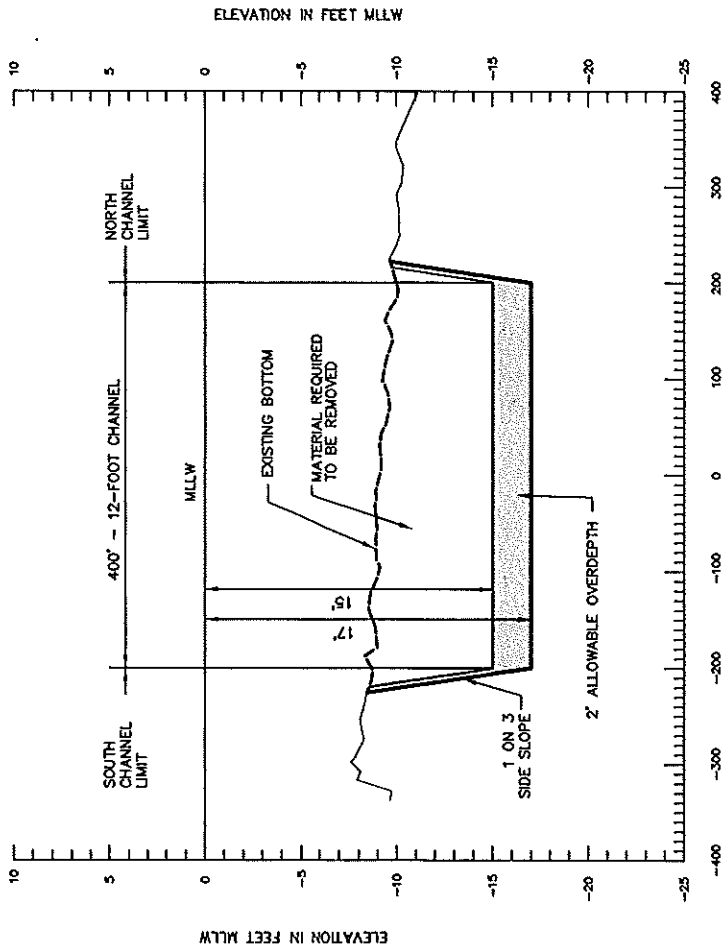
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| DES.          | CHK. | CMP | DR. | DWG | VAI            |
|               |      |     |     |     | FILE NO. 1516  |
| SCALE 1"=800' |      |     |     |     | DATE JUNE 2009 |
|               |      |     |     |     | SHEET 1 OF 7   |

- GENERAL NOTES:**
1. PROPOSED DREDGING PLAN AND SECTION PROVIDED TO VINE ASSOCIATES, INC. BY U.S. ARMY CORPS OF ENGINEERS (USACE). (SEE USACE SURVEY NOTES BELOW).
  2. TOTAL ESTIMATED MAINTENANCE DREDGE VOLUME = 160,000 CYD<sup>3</sup>± (INCLUDING 2-FOOT OVERDREDGE AND 3H:1V SIDESLOPES (TYP.)).
  3. CHANNEL SEDIMENTS TO BE DREDGED BY HYDRAULIC METHODS AND DISPOSED VIA PIPELINE ALONG PLUM ISLAND AND SALISBURY BEACH FOR BEACH NOURISHMENT (SEE SHEETS 3 THROUGH 7).
  4. THE 12-FOOT FEDERAL CHANNEL IS PRESENTLY MAINTAINED BY THE USACE TO A DEPTH OF -15 FEET MLLW.

- USACE SURVEY NOTES:**
1. SOUNDINGS ARE IN FEET AND TENTHS AND REFER TO THE PLANE OF MEAN LOWER LOW WATER (MLLW) 1983-2001 EPOCH TIDAL SURVEY.
  2. TOPOGRAPHY SHOWN IS FROM PREVIOUS SURVEYS AND/OR NOAA CHART NO. 13274. ALL TOPOGRAPHY INCLUDING SHORELINE, BRIDGES, PIERS, ETC. IS LOCATED APPROXIMATELY UNLESS OTHERWISE NOTED AND SHOULD BE USED AS A GENERAL REFERENCE ONLY.
  3. BEACH MARK DATA FROM VE 1 (1983) IS USACE'S TRAIL BEACH MARK DISK SET IN THE NORTHWEST CORNER OF THE CONCRETE FOUNDATION FOR THE WOODEN STAIRS BY THE SOUTH END OF THE U.S. COAST GUARD BUOY STA. 0972 FEET (298 M) EAST OF POWER POLE #1887A, 70.5 FEET (21.2 M) NORTH-NORTHEAST OF THE POWER POLE OF THE AUXILIARY STATION COMPOUND, 51.3 FEET (15.7 M) NORTHEAST OF THE NORTH CORNER OF THE EASTERN MOST OF TWO RED PUMPHOUSES, 27.6 FEET (8.4 M) SOUTHWEST OF THE EAST CORNER OF THE AUXILIARY STATION BUILDING, 1.8 FEET (0.5 M) ABOVE GROUND LEVEL. ELEVATION IS 11.96 FEET ABOVE MLLW.
  4. COORDINATES SHOWN ARE BASED ON THE LAMBERT GRID SYSTEM FOR THE COMMONWEALTH OF MASSACHUSETTS (MAINLAND ZONE 2001) & NAD 1983.
  5. SURVEY WAS PERFORMED USING AN ODOM MK2 ECHOTRAC ECHOSOUNDER. VESSEL POSITIONING WAS OBTAINED UTILIZING A TRIMBLE 4000 SSE GPS RECEIVER WITH U.S. COAST GUARD BEACON SYSTEM.
  6. THE SOUNDING INFORMATION SHOWN ON THIS MAP REPRESENTS THE SHOALEST SOUNDINGS OF THOSE OBTAINED FROM HYDROGRAPHIC SURVEYS CONDUCTED DURING JANUARY AND FEBRUARY 2009.
  7. THE SOUNDING INFORMATION DEPICTED ON THIS MAP SHOULD NOT BE USED TO DETERMINE VOLUMES. VOLUMES ARE DETERMINED FROM MORE SOUNDING INFORMATION THAN SHOWN. ADDITIONAL SOUNDING INFORMATION IS AVAILABLE UPON REQUEST.
  8. THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED, AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.
  9. FIELD BOOK: R8H 5068
  10. 15-FOOT DEPTH CONTOUR SHOWN THUS:
  11. DEPTHSOUNDING ROLLS: 09-978/01-02
  12. SURVEYED BY: PAUL K. O'BRIEN AND GREG



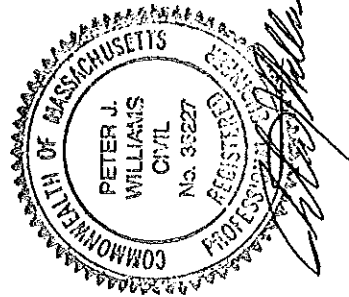




**TYPICAL SECTION A-A**

VERTICAL SCALE: 1"=10'

HORIZONTAL SCALE 1"=200'



**NOTE:**  
SEE SHEET 1 OF 7 FOR DREDGING NOTES.

**PROPOSED DREDGE SECTION  
NEWBURYPORT HARBOR ENTRANCE CHANNEL**

**MA DEPT. OF CONSERVATION & RECREATION  
NEWBURYPORT HARBOR  
FEDERAL NAVIGATION PROJECT  
NEWBURYPORT, NEWBURY & SALISBURY, MA**

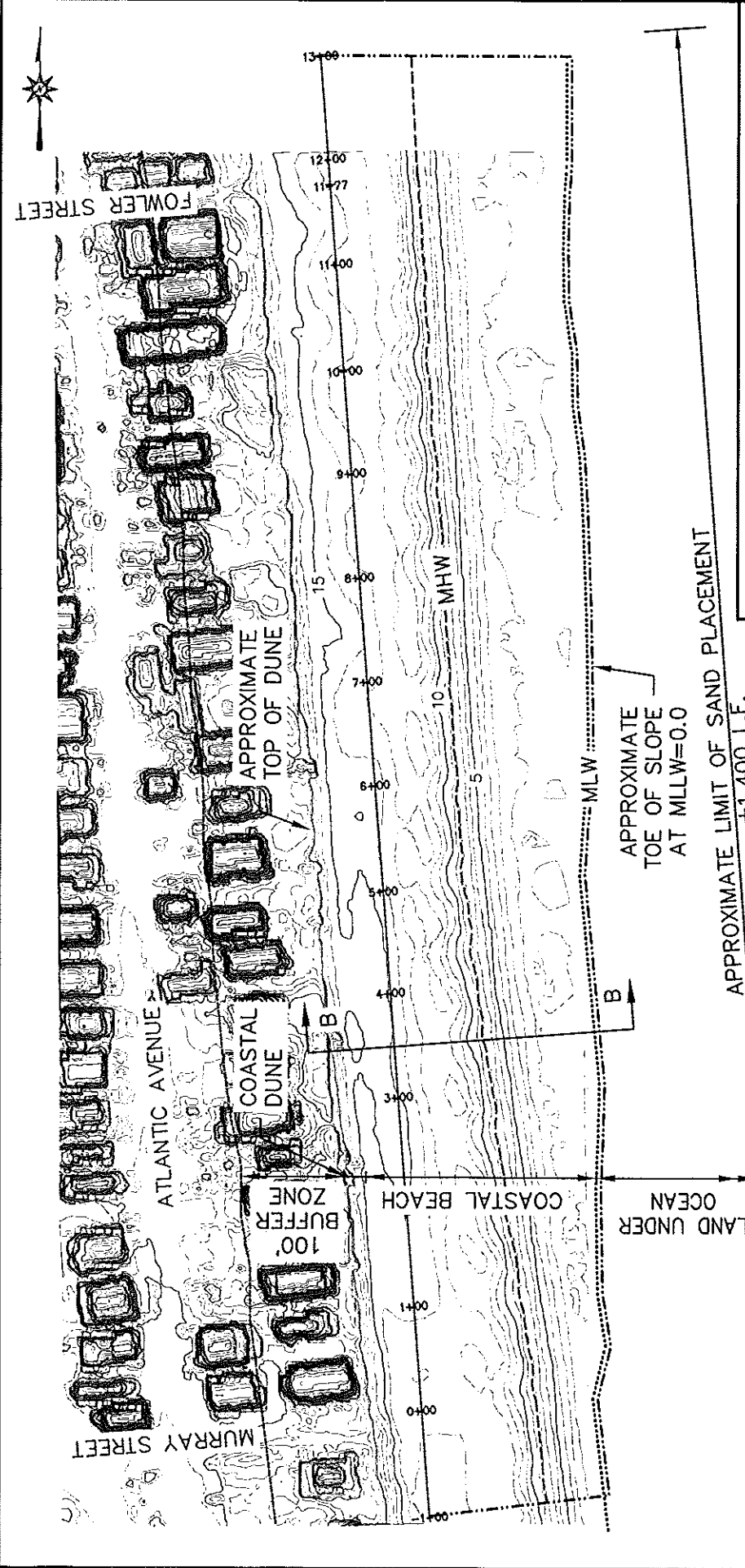
**Vine**  
ASSOCIATES, INC.

372 MERRIMAC STREET  
NEWBURYPORT, MA 01950  
tel. (978)465-1428  
fax (978)465-2840

190 OLD DERBY STREET  
MINCOR, MA 02943  
tel. (781)749-2530  
fax (781)749-2751

18 BEACH STREET  
MONUMENT BEACH, MA 02553  
tel. (508)743-0390  
fax (508)743-0391

|                |      |      |     |      |           |              |
|----------------|------|------|-----|------|-----------|--------------|
| DES.           | CHK. | CMP. | DR. | DMG. | VAI       | FILE NO.     |
|                |      |      |     |      |           | 1516         |
| SCALE AS SHOWN |      |      |     |      | DATE      | SHEET 2 OF 7 |
|                |      |      |     |      | JUNE 2009 |              |



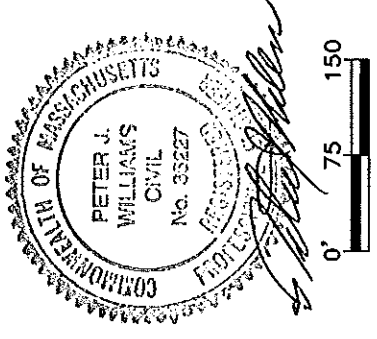
**PROPOSED FILL PLACEMENT PLAN**  
**SALISBURY BEACH STATE RESERVATION**

MA DEPT. OF CONSERVATION & RECREATION  
 NEWBURYPORT HARBOR  
 FEDERAL NAVIGATION PROJECT  
 NEWBURYPORT, NEWBURY & SALISBURY, MA

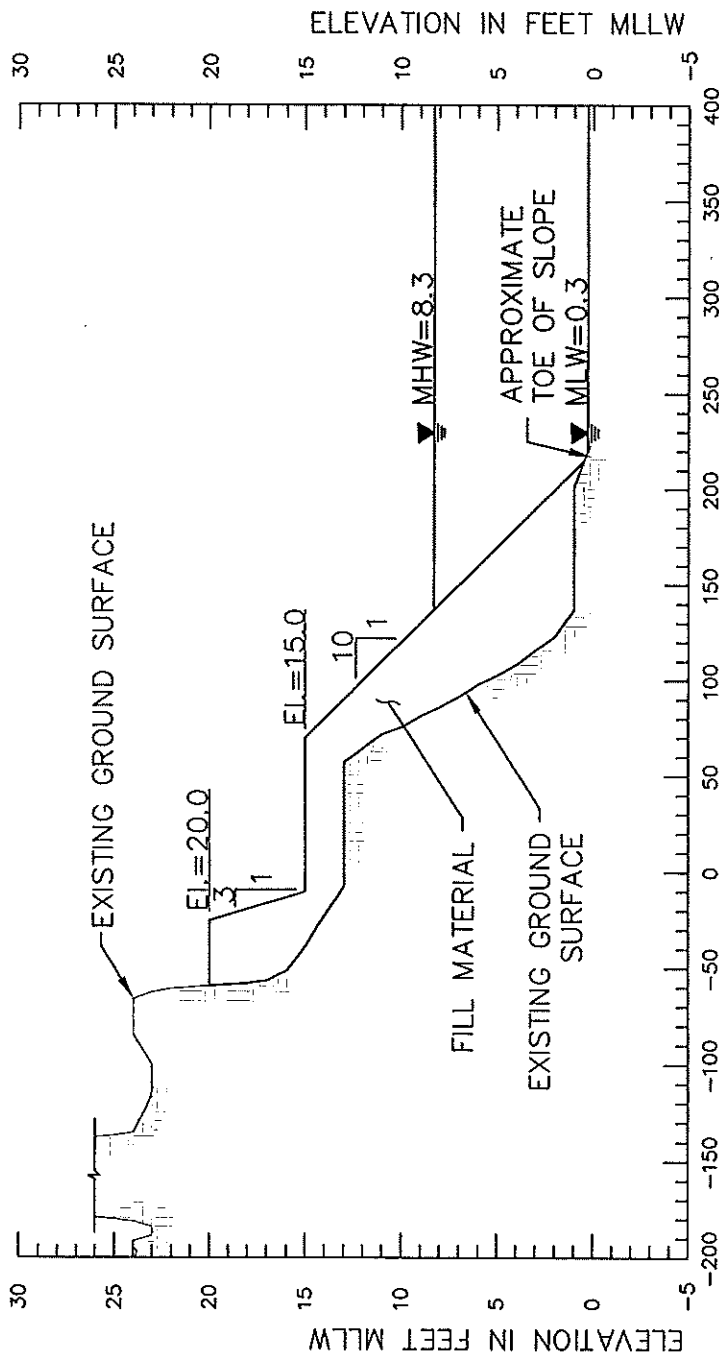
**Vine**  
 ASSOCIATES, INC.  
 372 MERRIMAC STREET  
 NEWBURYPORT, MA 01950  
 TEL. (978)465-1428  
 FAX (978)465-2640

18 BEACH STREET  
 MONUMENT BEACH, MA 02553  
 TEL. (508)743-0390  
 FAX (508)743-0391

|               |      |     |     |     |     |              |           |
|---------------|------|-----|-----|-----|-----|--------------|-----------|
| DES.          | CHK. | CMP | DR. | DMG | VAI | FILE NO.     | 1516      |
| SCALE 1"=150' |      |     |     |     |     | DATE         | JUNE 2009 |
|               |      |     |     |     |     | SHEET 3 OF 7 |           |



- NOTES:**
1. DATUM: MLLW=0.0; MLW=8.3; MHW=8.3; HTL=10.7
  2. PLANS & SECTIONS PREPARED BY THE U.S. ARMY CORPS OF ENGINEERS (USACE). TOPOGRAPHY, AS SHOWN, IS BASED UPON LIDAR SURVEY BY THE USACE IN 2007.
  3. RESOURCE AREA LIMITS, AS SHOWN, HAVE BEEN INTERPRETED BY VINE ASSOCIATES, INC. (VAI).
  - 4.



**NOTE:**  
SEE SHEET 3 OF 7 FOR NOTES.

**TYPICAL SECTION B-B**  
VERTICAL SCALE: 1"=10'  
HORIZONTAL SCALE 1"=100'

**PROPOSED FILL PLACEMENT SECTION**  
**SALISBURY BEACH STATE RESERVATION**

**MA DEPT. OF CONSERVATION & RECREATION**  
**NEWBURYPORT HARBOR**  
**FEDERAL NAVIGATION PROJECT**  
**NEWBURYPORT, NEWBURY & SALISBURY, MA**

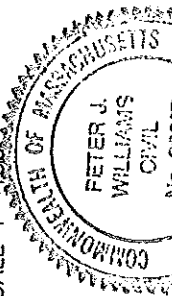
**Vine**  
ASSOCIATES, INC.

372 WERRMAC STREET  
NEWBURYPORT, MA 01950  
tel. (978)465-1428 fax (978)465-2840

190 OLD DEERY STREET  
HINCHAM, MA 02043  
tel. (781)748-2530 fax (781)748-2751

18 BEACH STREET  
MONUMENT BEACH, MA 02553  
tel. (508)743-0390 fax (508)743-0391

|                |      |      |      |           |     |              |      |
|----------------|------|------|------|-----------|-----|--------------|------|
| DES.           | CHK. | CMP. | DR.  | DMG.      | VAI | FILE NO.     | 1516 |
| SCALE AS SHOWN |      |      | DATE | JUNE 2009 |     | SHEET 4 OF 7 |      |



*Peter J. Williams*



Conservation Commission  
Town of Salisbury  
5 Beach Road  
Salisbury, Massachusetts 01952

Conservation  
Michelle Rowden, Agent

(978) 499-0358  
conservation@salisburyma.gov

Re: DEP No. 65-0905

July 29, 2009

Ron Silva  
DCR:

Enclosed please find the WPA Form 5 - Order of Conditions for your project. Please read them carefully. Please note **G. Recording Information**, which states that the original order *must be recorded at the Registry of Deeds or Land Court prior to the start of any work*. A copy of the stamped cover page from the Registry must be returned to the Salisbury Conservation Office prior to the issuance of a building permit.

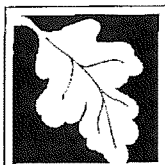
Should you have any questions do not hesitate to contact Agent Rowden.

Very truly yours,

*Agnes Donovan*  
Conservation Commission Secretary

Enclosure

cc: C. Player  
NHESP  
DEP  
Div. of Marine Fisheries



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

MassDEP File Number:

**WPA Form 5 – Order of Conditions**

065-0905

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

**A. General Information**

1. From: Salisbury  
Conservation Commission
2. This issuance is for (check one): a.  Order of Conditions b.  Amended Order of Conditions
3. To: Applicant:

a. First Name \_\_\_\_\_ b. Last Name \_\_\_\_\_  
MA Dept of Conservation & Recreation  
 c. Organization \_\_\_\_\_  
251 Causeway Street  
 d. Mailing Address \_\_\_\_\_  
Boston MA 02114  
 e. City/Town \_\_\_\_\_ f. State \_\_\_\_\_ g. Zip Code \_\_\_\_\_

4. Property Owner (if different from applicant):

a. First Name \_\_\_\_\_ b. Last Name \_\_\_\_\_  
 c. Organization \_\_\_\_\_  
 d. Mailing Address \_\_\_\_\_  
 e. City/Town \_\_\_\_\_ f. State \_\_\_\_\_ g. Zip Code \_\_\_\_\_

5. Project Location:

Salisbury Beach (Murray to Fowler) and Salisbury  
Merrimack River b. City/Town \_\_\_\_\_  
36/154 and 32 137, 138, 140, 141, 144, 147 - 149, 151 - 158,  
 c. Assessors Map/Plat Number \_\_\_\_\_ 161, 162  
 Latitude and Longitude, if known: e. Latitude \_\_\_\_\_ f. Longitude \_\_\_\_\_

6. Property recorded at the Registry of Deeds for (attach additional information if more than one parcel):

Essex \_\_\_\_\_  
 a. County \_\_\_\_\_ b. Certificate Number (if registered land) \_\_\_\_\_  
 c. Book \_\_\_\_\_ d. Page \_\_\_\_\_

7. Dates: 6/17/09 7/15/09 July 29, 2009  
 a. Date Notice of Intent Filed \_\_\_\_\_ b. Date Public Hearing Closed \_\_\_\_\_ c. Date of Issuance \_\_\_\_\_

8. Final Approved Plans and Other Documents (attach additional plan or document references as needed):

See attached list...  
 a. Plan Title \_\_\_\_\_  
 b. Prepared By \_\_\_\_\_ c. Signed and Stamped by \_\_\_\_\_  
 d. Final Revision Date \_\_\_\_\_ e. Scale \_\_\_\_\_  
Beach/Dune Nourishment and Maintenance Dredging Newburyport Harbor June 2009  
Fed Nav Project Notice of Intent g. Date \_\_\_\_\_

**DEP# 065-0905**

**Department of Conservation and Recreation Beach/Dune Nourishment and  
Maintenance Dredging of the Newburyport Harbor**

**List of Approved Plans:**

1. "Proposed Dredge Plan & Section Newburyport Harbor Entrance Channel" prepared by Vine Associates, Inc. dated June 2009 and stamped by Peter J. Williams.
2. "Proposed Fill Placement Plan and Sections Salisbury Beach State Reservation" prepared by Vine Associates, Inc. dated June 2009 and stamped by Peter J. Williams.
3. "Dune Planting, Fencing and Access Plan Salisbury Beach State Reservation" Figure A prepared by Vine Associates, Inc. dated June 2009.



**B. Findings**

1. Findings pursuant to the Massachusetts Wetlands Protection Act:

Following the review of the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act. Check all that apply:

- a.  Public Water Supply
- b.  Land Containing Shellfish
- c.  Prevention of Pollution
- d.  Private Water Supply
- e.  Fisheries
- f.  Protection of Wildlife Habitat
- g.  Groundwater Supply
- h.  Storm Damage Prevention
- i.  Flood Control

2. This Commission hereby finds the project, as proposed, is: (check one of the following boxes)

**Approved** subject to:

- a.  the following conditions which are necessary in accordance with the performance standards set forth in the wetlands regulations. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.

**Denied** because:

- b.  the proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect these interests, and a final Order of Conditions is issued. **A description of the performance standards which the proposed work cannot meet is attached to this Order.**
- c.  the information submitted by the applicant is not sufficient to describe the site, the work, or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the Act's interests, and a final Order of Conditions is issued. **A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).**

**Inland Resource Area Impacts:** Check all that apply below. (For Approvals Only)

|                                                                                                                                             |                     |                      |                      |                |                       |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------|----------------------|----------------|-----------------------|
| 3. <input type="checkbox"/> Buffer Zone Impacts: Shortest distance between limit of project disturbance and wetland boundary (if available) |                     |                      |                      | _____          | _____                 |
|                                                                                                                                             |                     |                      |                      | a. linear feet | Permitted Replacement |
| Resource Area                                                                                                                               | Proposed Alteration | Permitted Alteration | Proposed Replacement |                |                       |
| 4. <input type="checkbox"/> Bank                                                                                                            | _____               | _____                | _____                | a. linear feet | d. linear feet        |
| 5. <input type="checkbox"/> Bordering Vegetated Wetland                                                                                     | _____               | _____                | _____                | a. square feet | d. square feet        |
| 6. <input type="checkbox"/> Land Under Waterbodies and Waterways                                                                            | _____               | _____                | _____                | a. square feet | d. square feet        |
|                                                                                                                                             | _____               | _____                | _____                | e. c/y dredged | f. c/y dredged        |





**Massachusetts Department of Environmental Protection**  
 Bureau of Resource Protection - Wetlands  
**WPA Form 5 – Order of Conditions**  
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

MassDEP File Number:

065-0905

**B. Findings (cont.)**

| Resource Area                                                  | Proposed Alteration                              | Permitted Alteration                             | Proposed Replacement                          | Permitted Replacement                         |
|----------------------------------------------------------------|--------------------------------------------------|--------------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| 7. <input type="checkbox"/> Bordering Land Subject to Flooding | <u>                    </u><br>a. square feet    | <u>                    </u><br>b. square feet    | <u>                    </u><br>c. square feet | <u>                    </u><br>d. square feet |
| Cubic Feet Flood Storage                                       | <u>                    </u><br>e. cubic feet     | <u>                    </u><br>f. cubic feet     | <u>                    </u><br>g. cubic feet  | <u>                    </u><br>h. cubic feet  |
| 8. <input type="checkbox"/> Isolated Land Subject to Flooding  | <u>                    </u><br>a. square feet    | <u>                    </u><br>b. square feet    |                                               |                                               |
| Cubic Feet Flood Storage                                       | <u>                    </u><br>c. cubic feet     | <u>                    </u><br>d. cubic feet     | <u>                    </u><br>e. cubic feet  | <u>                    </u><br>f. cubic feet  |
| 9. <input type="checkbox"/> Riverfront area                    | <u>                    </u><br>a. total sq. feet | <u>                    </u><br>b. total sq. feet |                                               |                                               |
| Sq ft within 100 ft                                            | <u>                    </u><br>c. square feet    | <u>                    </u><br>d. square feet    | <u>                    </u><br>e. square feet | <u>                    </u><br>f. square feet |
| Sq ft between 100-200 ft                                       | <u>                    </u><br>g. square feet    | <u>                    </u><br>h. square feet    | <u>                    </u><br>i. square feet | <u>                    </u><br>j. square feet |

**Coastal Resource Area Impacts:** Check all that apply below. (For Approvals Only)

|                                                                               |                                                                                                                                 |                                               |                                               |                                               |
|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| 10. <input type="checkbox"/> Designated Port Areas                            | Indicate size under Land Under the Ocean, below                                                                                 |                                               |                                               |                                               |
| 11. <input checked="" type="checkbox"/> Land Under the Ocean                  | <u>77,667</u><br>a. square feet                                                                                                 | <u>77,667</u><br>b. square feet               |                                               |                                               |
|                                                                               | <u>20,000</u><br>c. c/y dredged                                                                                                 | <u>20,000</u><br>d. c/y dredged               |                                               |                                               |
| 12. <input checked="" type="checkbox"/> Barrier Beaches                       | Indicate size under Coastal Beaches and/or Coastal Dunes below                                                                  |                                               |                                               |                                               |
| 13. <input checked="" type="checkbox"/> Coastal Beaches                       | <u>274,466</u><br>a. square feet                                                                                                | <u>274,466</u><br>b. square feet              | <u>30,762</u><br>c. c/y nourishmt.            | <u>30,762</u><br>d. c/y nourishmt.            |
| 14. <input checked="" type="checkbox"/> Coastal Dunes                         | <u>30,877</u><br>a. square feet                                                                                                 | <u>30,877</u><br>b. square feet               | <u>5,891</u><br>c. c/y nourishmt.             | <u>5,891</u><br>d. c/y nourishmt.             |
| 15. <input type="checkbox"/> Coastal Banks                                    | <u>                    </u><br>a. linear feet                                                                                   | <u>                    </u><br>b. linear feet |                                               |                                               |
| 16. <input type="checkbox"/> Rocky Intertidal Shores                          | <u>                    </u><br>a. square feet                                                                                   | <u>                    </u><br>b. square feet |                                               |                                               |
| 17. <input type="checkbox"/> Salt Marshes                                     | <u>                    </u><br>a. square feet                                                                                   | <u>                    </u><br>b. square feet | <u>                    </u><br>c. square feet | <u>                    </u><br>d. square feet |
| 18. <input type="checkbox"/> Land Under Salt Ponds                            | <u>                    </u><br>a. square feet                                                                                   | <u>                    </u><br>b. square feet |                                               |                                               |
|                                                                               | <u>                    </u><br>c. c/y dredged                                                                                   | <u>                    </u><br>d. c/y dredged |                                               |                                               |
| 19. <input type="checkbox"/> Land Containing Shellfish                        | <u>                    </u><br>a. square feet                                                                                   | <u>                    </u><br>b. square feet | <u>                    </u><br>c. square feet | <u>                    </u><br>d. square feet |
| 20. <input checked="" type="checkbox"/> Fish Runs                             | Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above |                                               |                                               |                                               |
|                                                                               | <u>20,000</u><br>a. c/y dredged                                                                                                 | <u>20,000</u><br>b. c/y dredged               |                                               |                                               |
| 21. <input checked="" type="checkbox"/> Land Subject to Coastal Storm Flowage | <u>                    </u><br>a. square feet                                                                                   | <u>                    </u><br>b. square feet |                                               |                                               |



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### **C. General Conditions Under Massachusetts Wetlands Protection Act**

(only applicable to approved projects)

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.
2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.
4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
  - a. the work is a maintenance dredging project as provided for in the Act; or
  - b. the time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.
5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order.
6. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.
7. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.
8. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to this Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work.
9. A sign shall be displayed at the site not less than two square feet or more than three square feet in size bearing the words,

"Massachusetts Department of Environmental Protection" [or, "MassDEP"]

"File Number 065-0905 \_ \_ \_"



---

**C. General Conditions Under Massachusetts Wetlands Protection Act**

10. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before MassDEP.
11. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.
12. The work shall conform to the plans and special conditions referenced in this order.
13. Any change to the plans identified in Condition #12 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent.
14. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.
15. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.
16. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.
17. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.
18. **The work associated with this Order is (1)  is not (2)  subject to the Massachusetts Stormwater Policy Standards. If the work is subject to the Stormwater Policy, the following conditions apply to this work and are incorporated into this Order:**
  - a) No work, including site preparation, land disturbance, construction and redevelopment, shall commence unless and until the construction period pollution prevention and erosion and sedimentation control plan required by Stormwater Standard 8 is approved in writing by the issuing authority. Until the site is fully stabilized, construction period erosion, sedimentation and pollution control measures and best management practices (BMPs) shall be implemented in accordance with the construction period pollution prevention and erosion and sedimentation control plan, and if applicable, the Stormwater Pollution Plan required by the National Discharge Elimination System Construction General Permit.



**C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)**

- b) No stormwater runoff may be discharged to the post-construction stormwater BMPs until written approval is received from the issuing authority. To request written approval, the following must be submitted: illicit discharge compliance statement required by Stormwater Standard 10 and as-built plans signed and stamped by a registered professional engineer certifying the site is fully stabilized; all construction period stormwater BMPs and any illicit discharges to the stormwater management system have been removed; and all post-construction stormwater BMPs were installed in accordance with the plans (including all planting plans) approved by the issuing authority, and have been inspected to ensure they are not damaged and will function properly.
- c) Prior to requesting a Certificate of Compliance, the responsible party (defined in General Condition 18(e)) shall submit to the issuing authority an Operation and Maintenance (O & M) Compliance Statement for the Stormwater BMPs. This Statement shall identify the responsible party for implementing the Operation and Maintenance Plan and also state that: 1. "Future responsible parties shall be notified in writing of their continuing legal responsibility to operate and maintain the stormwater management BMPs and implement the Pollution Prevention Plan; and 2. The Operation and Maintenance Plan for the stormwater BMPs is complete and will be implemented upon receipt of the Certificate."
- d) Post-construction pollution prevention and source control shall be implemented in accordance with the long-term pollution prevention plan section of the approved Stormwater Report and, if applicable, the Stormwater Pollution Prevention Plan required by the National Discharge Elimination System Multi-Sector General Permit.
- e) Unless and until another party accepts responsibility, the issuing authority shall presume that the responsible party for maintaining each BMP is the landowner of the property on which the BMP is located. To overcome this presumption, the landowner of the property must submit to the issuing authority a legally binding agreement acceptable to the issuing authority evidencing that another entity has accepted responsibility for maintaining the BMP, and that the proposed responsible party shall be treated as a permittee for purposes of implementing the requirements of Conditions 18(f) through 18(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 18(f) through 18(k) with respect to that BMP shall be a violation of the Order of Conditions or Certificate of Compliance. In the case of stormwater BMPs that are serving more than one lot, the legally binding agreement shall also identify the lots that will be serviced by the stormwater BMPs. A plan and easement deed that grants the responsible party access to perform the required operation and maintenance must be submitted along with the legally binding agreement.
- f) The responsible party shall operate and maintain all stormwater BMPs in accordance with the design plans, the Operation and Maintenance Plan section of the approved Stormwater Report, and the Massachusetts Stormwater Handbook.
- g) The responsible party shall:
1. Maintain an operation and maintenance log for the last three years including inspections, repairs, replacement and disposal (for disposal the log shall indicate the type of material and the disposal location);
  2. Make this log available to MassDEP and the Conservation Commission upon request; and
  3. Allow members and agents of the MassDEP and the Conservation Commission to enter and inspect the premises to evaluate and ensure that the responsible party complies with the Operation and Maintenance requirements for each BMP set forth in the Operations and Maintenance Plan approved by the issuing authority.
- h) All sediments or other contaminants removed from stormwater BMPs shall be disposed of in accordance with all applicable federal, state, and local laws and regulations.
- i) Illicit discharges to the stormwater management system as defined in 310 CMR 10.04 are prohibited.



**WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

**C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)**

- j) The stormwater management system approved in the Final Order of Conditions shall not be changed without the prior written approval of the issuing authority. Areas designated as qualifying pervious areas for purpose of the Low Impact Site Design Credit shall not be altered without the prior written approval of the issuing authority.
- k) Access for maintenance of stormwater BMPs shall not be obstructed or blocked. Any fencing constructed around stormwater BMPs shall include access gates. Fence(s) shall be at least six inches above grade to allow for wildlife passage.

Special Conditions (if you need more space for additional conditions, please attach a text document):

**Please See Attached Document.**

**D. Findings Under Municipal Wetlands Bylaw or Ordinance**

1. Is a municipal wetlands bylaw or ordinance applicable?  Yes  No
2. The Salisbury Conservation Commission hereby finds (check one that applies):
  - a.  that the proposed work cannot be conditioned to meet the standards set forth in a municipal ordinance or bylaw specifically:
 

|                                 |             |
|---------------------------------|-------------|
|                                 |             |
| 1. Municipal Ordinance or Bylaw | 2. Citation |

Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides measures which are adequate to meet these standards, and a final Order of Conditions is issued.
  - b.  that the following additional conditions are necessary to comply with a municipal ordinance or bylaw:
 

|                                 |             |
|---------------------------------|-------------|
|                                 |             |
| 1. Municipal Ordinance or Bylaw | 2. Citation |
3. The Commission orders that all work shall be performed in accordance with the following conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, the conditions shall control.  
The special conditions relating to municipal ordinance or bylaw are as follows (if you need more space for additional conditions, attach a text document):  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## Special Conditions

Applicant: MA Dept. of Conservation and Recreation  
Address: Merrimack River, Salisbury Beach from Jetty to  
Fowler St.  
DEP File #: 065-0905

19. The Conservation Commission (Commission) shall be notified in writing at the time of any transfer in the title to the property or any change in contractor/developers prior to the issuance of the Certificate of Compliance. The name, address and telephone number of the new owner shall be included in the notification, as well as certification that the new owner has been provided with a copy of this Order of Conditions.

### Pre-Construction Conditions

Prior to the commencement of construction, the applicant shall:

20. Arrange for a pre-construction meeting with the Conservation Commission or its Agent no less than 72 hours prior to the commencement of work. Commencement of work includes any site clearing or grading. The purpose of this meeting is to review all conditions of this Order of Conditions with the applicant, contractor and sub-contractors as appropriate to ensure they are understood.
21. Provide to the Commission the name, address and telephone number of the person immediately responsible for supervision of all work, and maintaining compliance with this Order of Conditions. This person shall serve as **project manager** until a Certificate of Compliance is issued, or until another project manager is designated. Should the project manager change during the course of the project, the Commission shall be notified as soon as practical of this change.
22. Inform **all** contractors and subcontractors of the conditions and provisions of this Order. This Order shall be included in all construction contracts and subcontracts dealing with the work and shall supersede other contract requirements.
23. The limits of work in the field shall be clearly marked and all workers shall be instructed not to work beyond the limits.
24. The Commission shall be notified 24 hours in advance of the commencement of work at the site.

### Construction Conditions

During the Construction Phase of this project:

25. Accepted engineering and construction standards shall be followed in the conduct of all work.

26. No excavated material shall be disposed of in violation of any local, state or federal laws.
27. Equipment storage, maintenance and refueling areas shall be located at least 100 feet from resource areas or as otherwise approved by the Commission.
28. Any de-watering activities at the site shall make use of a de-watering filter, stilling basin or settling basin to remove sediment prior to discharge into resource areas.
29. During and after work on this project, there shall be no discharge or spillage of fuel, oil, or other pollutants into any part of the site governed by this Order.
30. As soon as possible, all disturbed areas shall be brought to final grade and shall be permanently stabilized within 30 days of that time by measures acceptable to the Commission.
31. The project manager shall submit to the Conservation Commission, during construction and until a Certificate of Compliance is issued, monthly written status reports prepared by a professional competent in such evaluation, summarizing the work that has been completed and compliance with the Order of Conditions. Such reports shall be submitted by the last day of each month.
32. Any resource areas (other than that which is covered by the approved plans) that are disturbed during construction are to be restored immediately, in accordance with a plan prepared by a professional coastal scientist and approved by the Conservation Commission.
33. Failure to comply with all Conditions shall constitute sufficient grounds for the Commission to order all work to cease until compliance is achieved.
34. **At least a portion of the southern parking lot designated as a staging area shall be kept open for the public during the project.**
35. **Applicant shall adhere to the following conditions as stated by the Division of Fisheries and Wildlife:**
  - a. *Shorebird Monitoring and Protection Plan* that includes the following:
    1. Each year, beginning April 1, a qualified shorebird monitor approved in writing by the NHESP shall determine whether territorial or nesting Piping Plovers or Terns are present at beach nourishment areas and if so, shall erect and maintain warning signs and symbolic fencing to protect nesting habitat and nests from disturbance or human-caused mortality.
    2. Monitoring shall occur at least 2 times per week until at least July 1. However, if plovers or terns are found to be using the site, then monitoring frequency shall be increased to at least 3 times per week, and shall continue until all nesting and brood-rearing activity has been completed.
    3. The applicant shall notify the NHESP prior to the start of work in the first year and before January 1st for each subsequent year as to what arrangements have been made for the aforementioned monitoring and site protection to occur. This notification shall include a written contract, memorandum of agreement, or some other formal written agreement with the individual(s) or organization that will undertake monitoring and protection efforts in the field.

4. A report shall be submitted to the NHESP each year, on or before September 30, on standard census forms provided by NHESP, that summarizes the results of the state-listed species monitoring and site protection activities.

*b. Revised Plans for Nourishment Area.* Please submit revised plans illustrating proposed vegetative plantings and sand fencing in the nourishment area.

#### **Post Construction Conditions**

The following conditions shall survive the Order of Conditions and remain in effect in perpetuity:

36. Prior to the issuance of a Certificate of Compliance, the applicant shall submit to the Conservation Commission for review and approval an ***as-built*** plan of the project, signed and stamped by a professional engineer. This plan shall be accompanied by a letter from the engineer of record stating whether the project has been constructed in accordance with approved plans, and if not, what deviations have been made from the approved plans.





**Massachusetts Department of Environmental Protection**  
 Bureau of Resource Protection - Wetlands

**WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

065-0905

MassDEP File Number

Document Transaction Number

Salisbury

City/Town

**E. Signatures and Notary Acknowledgement**

This Order is valid for three years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance. Please indicate the number of members who will sign this form.

This Order must be signed by a majority of the Conservation Commission.

The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office, if not filing electronically, and the property owner, if different from applicant.

July 29, 2009  
 1. Date of Issuance

Five  
 2. Number of Signers

Signatures:

[Signature] 7/15/2009

[Signature] 7/15/2009

[Signature] 7/15/2009

[Signature] 7/15/2009

[Signature] 7-15-09

**Notary Acknowledgement**

Commonwealth of Massachusetts County of Essex

On this 15<sup>th</sup> Day of July 2009

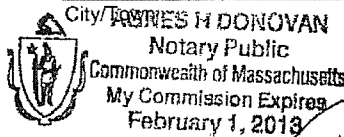
Before me, the undersigned Notary Public, personally appeared Sheila Albertelli  
 Name of Document Signer

proved to me through satisfactory evidence of identification, which was/were

Personally known to me  
 Description of evidence of identification

to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he/she signed it voluntarily for its stated purpose.

As member of Salisbury City/Town Conservation Commission



[Signature]  
 Signature of Notary Public

Agnes H. Donovan  
 Printed Name of Notary Public

February 1, 2013  
 My Commission Expires (Date)

Place notary seal and/or any stamp above.

This Order is issued to the applicant as follows:

by hand delivery on \_\_\_\_\_  
 by certified mail, return receipt requested, on July 29, 2009  
 Date



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## F. Appeals

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate MassDEP Regional Office to issue a Superseding Order of Conditions. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Request of Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant. Any appellants seeking to appeal the Department's Superseding Order associated with this appeal will be required to demonstrate prior participation in the review of this project. Previous participation in the permit proceeding means the submission of written information to the Conservation Commission prior to the close of the public hearing, requesting a Superseding Order or Determination, or providing written information to the Department prior to issuance of a Superseding Order or Determination.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40), and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal ordinance or bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.

**Section G, Recording Information is available on the following page.**





# WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40  
and the City of Newburyport Wetlands Ordinance

## A. General Information

**Important:**  
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



1. From: Newburyport  
Conservation Commission
2. This issuance is for (check one): a.  Order of Conditions    b.  Amended Order of Conditions
3. To: Applicant:

a. First Name \_\_\_\_\_ b. Last Name \_\_\_\_\_  
MA Department of Conservation and Recreation  
 c. Organization \_\_\_\_\_  
251 Causeway Street  
 d. Mailing Address \_\_\_\_\_  
Boston MA 02114  
 e. City/Town \_\_\_\_\_ f. State \_\_\_\_\_ g. Zip Code \_\_\_\_\_

4. Property Owner (if different from applicant):

a. First Name \_\_\_\_\_ b. Last Name \_\_\_\_\_  
 c. Organization \_\_\_\_\_  
 d. Mailing Address \_\_\_\_\_  
 e. City/Town \_\_\_\_\_ f. State \_\_\_\_\_ g. Zip Code \_\_\_\_\_

5. Project Location:

Atlantic Ocean/Plum Island Newburyport  
 a. Street Address \_\_\_\_\_ b. City/Town \_\_\_\_\_  
 c. Assessors Map/Plat Number \_\_\_\_\_ d. Parcel/Lot Number \_\_\_\_\_  
 Latitude and Longitude, if known: \_\_\_\_\_  
 e. Latitude \_\_\_\_\_ f. Longitude \_\_\_\_\_

6. Property recorded at the Registry of Deeds for (attach additional information if more than one parcel):

Essex  
 a. County \_\_\_\_\_ b. Certificate Number (if registered land) \_\_\_\_\_  
 c. Book \_\_\_\_\_ d. Page \_\_\_\_\_

7. Dates: 6/22/2009 7/21/2009 7/28/2009  
 a. Date Notice of Intent Filed    b. Date Public Hearing Closed    c. Date of Issuance

8. Final Approved Plans and Other Documents (attach additional plan or document references as needed):  
 See Plan List on Attached Document: "Standard and Special Conditions for Merrimack River Dredging Project"

b. Prepared By \_\_\_\_\_ c. Signed and Stamped by \_\_\_\_\_  
 d. Final Revision Date \_\_\_\_\_ e. Scale \_\_\_\_\_  
 f. Additional Plan or Document Title \_\_\_\_\_ g. Date \_\_\_\_\_



# WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40  
and the City of Newburyport Wetlands Ordinance

## B. Findings

1. Findings pursuant to the Massachusetts Wetlands Protection Act:

Following the review of the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act (the Act).

Check all that apply:

- a.  Public Water Supply
- b.  Land Containing Shellfish
- c.  Prevention of Pollution
- d.  Private Water Supply
- e.  Fisheries
- f.  Protection of Wildlife Habitat
- g.  Groundwater Supply
- h.  Storm Damage Prevention
- i.  Flood Control

2. This Commission hereby finds the project, as proposed, is: (check one of the following boxes)

**Approved** subject to:

- a.  the following conditions which are necessary in accordance with the performance standards set forth in the wetlands regulations. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.

**Denied** because:

- b.  the proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect the interests of the Act, and a final Order of Conditions is issued. **A description of the performance standards which the proposed work cannot meet is attached to this Order.**
- c.  the information submitted by the applicant is not sufficient to describe the site, the work, or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the Act's interests, and a final Order of Conditions is issued. **A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).**

**Inland Resource Area Impacts:** Check all that apply below. (For Approvals Only)

3.  Buffer Zone Impacts: Shortest distance between limit of project disturbance and Bank or Bordering Vegetated Wetland boundary (if available)

| Resource Area                                                    | Proposed Alteration | Permitted Alteration | Proposed Replacement | Permitted Replacement |
|------------------------------------------------------------------|---------------------|----------------------|----------------------|-----------------------|
| 4. <input type="checkbox"/> Bank                                 | a. linear feet      | b. linear feet       | c. linear feet       | d. linear feet        |
| 5. <input type="checkbox"/> Bordering Vegetated Wetland          | a. square feet      | b. square feet       | c. square feet       | d. square feet        |
| 6. <input type="checkbox"/> Land Under Waterbodies and Waterways | a. square feet      | b. square feet       | c. square feet       | d. square feet        |
|                                                                  | e. c/y dredged      | f. c/y dredged       |                      |                       |

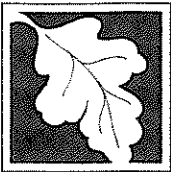
a. linear feet

Permitted Replacement

a. linear feet

d. square feet

d. square feet



**WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40  
and the City of Newburyport Wetlands Ordinance

**B. Findings (cont.)**

| Resource Area                                                  | Proposed Alteration | Permitted Alteration | Proposed Replacement | Permitted Replacement |
|----------------------------------------------------------------|---------------------|----------------------|----------------------|-----------------------|
| 7. <input type="checkbox"/> Bordering Land Subject to Flooding | a. square feet      | b. square feet       | c. square feet       | d. square feet        |
| Cubic Feet Flood Storage                                       | e. cubic feet       | f. cubic feet        | g. cubic feet        | h. cubic feet         |
| 8. <input type="checkbox"/> Isolated Land Subject to Flooding  | a. square feet      | b. square feet       |                      |                       |
| Cubic Feet Flood Storage                                       | c. cubic feet       | d. cubic feet        | e. cubic feet        | f. cubic feet         |
| 9. <input type="checkbox"/> Riverfront Area                    | a. total sq. feet   | b. total sq. feet    |                      |                       |
| Sq ft within 100 ft                                            | c. square feet      | d. square feet       | e. square feet       | f. square feet        |
| Sq ft between 100-200 ft                                       | g. square feet      | h. square feet       | i. square feet       | j. square feet        |

**Coastal Resource Area Impacts:** Check all that apply below. (For Approvals Only)

|                                                                    |                                                                                                                                 |                |                   |                   |
|--------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|----------------|-------------------|-------------------|
| 10. <input type="checkbox"/> Designated Port Areas                 | Indicate size under Land Under the Ocean, below                                                                                 |                |                   |                   |
| 11. <input checked="" type="checkbox"/> Land Under the Ocean       | 804,404                                                                                                                         |                |                   |                   |
|                                                                    | a. square feet                                                                                                                  | b. square feet |                   |                   |
|                                                                    | 140,000                                                                                                                         |                |                   |                   |
|                                                                    | c. c/y dredged                                                                                                                  | d. c/y dredged |                   |                   |
| 12. <input checked="" type="checkbox"/> Barrier Beaches            | Indicate size under Coastal Beaches and/or Coastal Dunes below                                                                  |                |                   |                   |
| 13. <input checked="" type="checkbox"/> Coastal Beaches            | 2,900 (temp)                                                                                                                    |                |                   |                   |
|                                                                    | a. square feet                                                                                                                  | b. square feet | c. c/y nourishmt. | d. c/y nourishmt. |
| 14. <input type="checkbox"/> Coastal Dunes                         |                                                                                                                                 |                | c. c/y nourishmt. | d. c/y nourishmt. |
| 15. <input type="checkbox"/> Coastal Banks                         | a. linear feet                                                                                                                  | b. linear feet |                   |                   |
| 16. <input type="checkbox"/> Rocky Intertidal Shores               | a. square feet                                                                                                                  | b. square feet |                   |                   |
| 17. <input type="checkbox"/> Salt Marshes                          | a. square feet                                                                                                                  | b. square feet | c. square feet    | d. square feet    |
| 18. <input type="checkbox"/> Land Under Salt Ponds                 | a. square feet                                                                                                                  | b. square feet |                   |                   |
|                                                                    | c. c/y dredged                                                                                                                  | d. c/y dredged |                   |                   |
| 19. <input type="checkbox"/> Land Containing Shellfish             | a. square feet                                                                                                                  | b. square feet | c. square feet    | d. square feet    |
| 20. <input checked="" type="checkbox"/> Fish Runs                  | Indicate size under Coastal Banks, Inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above |                |                   |                   |
|                                                                    | 140,000                                                                                                                         |                |                   |                   |
|                                                                    | a. c/y dredged                                                                                                                  | b. c/y dredged |                   |                   |
| 21. <input type="checkbox"/> Land Subject to Coastal Storm Flowage | a. square feet                                                                                                                  | b. square feet |                   |                   |



## WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40  
and the City of Newburyport Wetlands Ordinance

### C. General Conditions Under Massachusetts Wetlands Protection Act

The following conditions are only applicable to Approved projects.

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.
2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.
4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
  - a. the work is a maintenance dredging project as provided for in the Act; or
  - b. the time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.
5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order.
6. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.
7. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.
8. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to the Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work.
9. A sign shall be displayed at the site not less than two square feet or more than three square feet in size bearing the words,

"Massachusetts Department of Environmental Protection" [or, "MassDEP"]

"File Number 051-0830"



## WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40  
and the City of Newburyport Wetlands Ordinance

### C. General Conditions Under Massachusetts Wetlands Protection Act

10. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before MassDEP.
11. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.
12. The work shall conform to the plans and special conditions referenced in this order.
13. Any change to the plans identified in Condition #12 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent.
14. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.
15. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.
16. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.
17. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.

#### NOTICE OF STORMWATER CONTROL AND MAINTENANCE REQUIREMENTS

18. **The work associated with this Order (the "Project") is (1)  is not (2)  subject to the Massachusetts Stormwater Standards. If the work is subject to the Stormwater Standards, then the project is subject to the following conditions:**
  - a) All work, including site preparation, land disturbance, construction and redevelopment, shall be implemented in accordance with the construction period pollution prevention and erosion and sedimentation control plan and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Construction General Permit as required by Stormwater Condition 8. Construction period erosion, sedimentation and pollution control measures and best management practices (BMPs) shall remain in place until the site is fully stabilized.





## WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40  
and the City of Newburyport Wetlands Ordinance

### C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

- b) No stormwater runoff may be discharged to the post-construction stormwater BMPs unless and until a Registered Professional Engineer provides a Certification that:
- i.* all construction period BMPs have been removed or will be removed by a date certain specified in the Certification. For any construction period BMPs intended to be converted to post construction operation for stormwater attenuation, recharge, and/or treatment, the conversion is allowed by the MassDEP Stormwater Handbook BMP specifications and that the BMP has been properly cleaned or prepared for post construction operation, including removal of all construction period sediment trapped in inlet and outlet control structures;
  - ii.* as-built final construction BMP plans are included, signed and stamped by a Registered Professional Engineer, certifying the site is fully stabilized;
  - iii.* any illicit discharges to the stormwater management system have been removed, as per the requirements of Stormwater Standard 10;
  - iv.* all post-construction stormwater BMPs are installed in accordance with the plans (including all planting plans) approved by the issuing authority, and have been inspected to ensure that they are not damaged and that they are in proper working condition;
  - v.* any vegetation associated with post-construction BMPs is suitably established to withstand erosion.
- c) The landowner is responsible for BMP maintenance until the issuing authority is notified that another party has legally assumed responsibility for BMP maintenance. Prior to requesting a Certificate of Compliance, or Partial Certificate of Compliance, the responsible party (defined in General Condition 18(e)) shall execute and submit to the issuing authority an Operation and Maintenance Compliance Statement ("O&M Statement") for the Stormwater BMPs identifying the party responsible for implementing the stormwater BMP Operation and Maintenance Plan ("O&M Plan") and certifying the following: *i.*) the O&M Plan is complete and will be implemented upon receipt of the Certificate of Compliance, and *ii.*) the future responsible parties shall be notified in writing of their ongoing legal responsibility to operate and maintain the stormwater management BMPs and implement the Stormwater Pollution Prevention Plan.
- d) Post-construction pollution prevention and source control shall be implemented in accordance with the long-term pollution prevention plan section of the approved Stormwater Report and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Multi-Sector General Permit.
- e) Unless and until another party accepts responsibility, the landowner, or owner of any drainage easement, assumes responsibility for maintaining each BMP. To overcome this presumption, the landowner of the property must submit to the issuing authority a legally binding agreement of record, acceptable to the issuing authority, evidencing that another entity has accepted responsibility for maintaining the BMP, and that the proposed responsible party shall be treated as a permittee for purposes of implementing the requirements of Conditions 18(f) through 18(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 18(f) through 18(k) with respect to that BMP shall be a violation of the Order of Conditions or Certificate of Compliance. In the case of stormwater BMPs that are serving more than one lot, the legally binding agreement shall also identify the lots that will be serviced by the stormwater BMPs. A plan and easement deed that grants the responsible party access to perform the required operation and maintenance must be submitted along with the legally binding agreement.
- f) The responsible party shall operate and maintain all stormwater BMPs in accordance with the design plans, the O&M Plan, and the requirements of the Massachusetts Stormwater Handbook.



# WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40  
and the City of Newburyport Wetlands Ordinance

## C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

- g) The responsible party shall:
  - 1. Maintain an operation and maintenance log for the last three (3) consecutive calendar years of inspections, repairs, maintenance and/or replacement of the stormwater management system or any part thereof, and disposal (for disposal the log shall indicate the type of material and the disposal location);
  - 2. Make the maintenance log available to MassDEP and the Conservation Commission ("Commission") upon request; and
  - 3. Allow members and agents of the MassDEP and the Commission to enter and inspect the site to evaluate and ensure that the responsible party is in compliance with the requirements for each BMP established in the O&M Plan approved by the issuing authority.
- h) All sediment or other contaminants removed from stormwater BMPs shall be disposed of in accordance with all applicable federal, state, and local laws and regulations.
- i) Illicit discharges to the stormwater management system as defined in 310 CMR 10.04 are prohibited.
- j) The stormwater management system approved in the Order of Conditions shall not be changed without the prior written approval of the issuing authority.
- k) Areas designated as qualifying pervious areas for the purpose of the Low Impact Site Design Credit (as defined in the MassDEP Stormwater Handbook, Volume 3, Chapter 1, Low Impact Development Site Design Credits) shall not be altered without the prior written approval of the issuing authority.
- l) Access for maintenance, repair, and/or replacement of BMPs shall not be withheld. Any fencing constructed around stormwater BMPs shall include access gates and shall be at least six inches above grade to allow for wildlife passage.

Special Conditions (if you need more space for additional conditions, please attach a text document):

**See Attached Document: "Standard and Special Conditions for Merrimack River Dredging Project"**

## D. Findings Under Municipal Wetlands Bylaw or Ordinance

- 1. Is a municipal wetlands bylaw or ordinance applicable?  Yes  No
- 2. The Newburyport Conservation Commission hereby finds (check one that applies):
  - a.  that the proposed work cannot be conditioned to meet the standards set forth in a municipal ordinance or bylaw specifically:  
City of Newburyport Wetlands Ordinance

|                                 |             |
|---------------------------------|-------------|
| 1. Municipal Ordinance or Bylaw | 2. Citation |
|---------------------------------|-------------|

Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides measures which are adequate to meet these standards, and a final Order of Conditions is issued.



**WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40  
and the City of Newburyport Wetlands Ordinance

**D. Findings Under Municipal Wetlands Bylaw or Ordinance (cont.)**

- b.  that the following additional conditions are necessary to comply with a municipal ordinance or bylaw:

City of Newburyport Wetlands Ordinance

1. Municipal Ordinance or Bylaw

2. Citation

- 3. The Commission orders that all work shall be performed in accordance with the following conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, the conditions shall control.

The special conditions relating to municipal ordinance or bylaw are as follows (if you need more space for additional conditions, attach a text document):

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# City of Newburyport

## Standard and Special Conditions for Merrimack River Dredging Project

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**DEP File Number:** 051-0830

**Date:** July 28, 2008

**Applicant:** Mass Department of Conservation and Recreation

**Property Owner:** City of Newburyport and State of Massachusetts

**Project Location:** Atlantic Ocean/Plum Island and Merrimack River

**Project Description:** Dredging at the mouth of the Merrimack River and depositing the dredge materials via a pipeline that will extend along the shoreline of Plum Island beach in Newburyport.

These conditions are in addition to and part of the Order of Conditions (WPA Form 5) issued under DEP File #051-0830, in Newburyport, MA 01950.

This project shall conform to the following documents and plans unless otherwise specified:

1. Notice of Intent (NOI) and accompanying project narrative and figures prepared by Vine Associates, Inc., dated June 2009.
2. Proposed Dredge Plan & Section; Newburyport Harbor Entrance Channel; MA Dept. of Conservation & Recreation; Newburyport Harbor; Federal Navigation Project; Newburyport, Newbury & Salisbury, MA, prepared by Vine Associates, signed and stamped by Peter J. Williams, PE, dated June 2009 (also included in the NOI).

*Permitted Activities:*

- Dredging of the mouth of the Merrimack River of approximately 160,000 cubic yards (140,000 CY in Newburyport) of sand to restore elevation to -15.0 below MLLW with a 2 ft allowable overdredge to elevation -17.0 MLLW.
- Temporary placement of pipeline above MHW on 1,450 linear feet of Newburyport's beach in order to carry sand to the beach nourishment area in Newbury.

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### A. General Conditions

19. This Order shall be recorded at the Registry of Deeds in its entirety. The form provided at the end of WPA Form 5 (page 9) shall be completed and stamped at the Registry of Deeds after the expiration of the 10-day appeal period and within 30 days of the issuance if no request for appeal has been filed with the Department of Environmental Protection. This form shall be returned to the Commission within 21 days of recording **and prior to commencement of any activities subject to the Order of Conditions.**
20. The Conservation Commission shall be informed of all changes that may be made to the Plan(s) of Record by any other Board, Commission or Authority or as a result of changes by the Applicant. All changes shall require additional approvals from the Conservation Commission.
21. A member of the Newburyport Conservation Commission (the Commission) or its administrator may enter and inspect the property and the activity that are the subjects of this Order at all reasonable times, with or without probable cause or prior notice, and until a

Certificate of Compliance is issued, for the limited purpose of evaluating compliance with this Order.

22. The term "Applicant" as used in this Order of Conditions shall refer to the owner, any successor in interest or successor in control of the property referenced in the Notice of Intent, supporting documents and this Order of Conditions. The Commission shall be notified in writing within 30 days of all transfers of title of any portion of property that take place prior to the issuance of the Certificate of Compliance.
23. With respect to all conditions the Conservation Commission designates the Conservation Administrator, as its agent with full powers to act on its behalf in administering and enforcing this Order.
24. This document shall be included by reference in all contracts, plans and specifications dealing with the activity that is the subject of this Order, and that are created or modified after the issuance date of this Order, along with a statement that this Order shall supersede any conflicting contractual arrangements, plans or specifications.
25. The applicant shall provide a copy of this Order to the person or persons supervising the activity that is the subject of this Order, and shall be responsible for ensuring that all persons performing the permitted activity are fully aware of the terms and conditions of this Order.
26. Any person performing work on the activity that is the subject of this Order is individually responsible for understanding and complying with the requirements of this Order, the Act, 310 CMR 10.00.
27. The Commission reserves the right to impose additional conditions on this project, including but not limited to, additional or modified erosion/siltation controls during construction, if it deems that site conditions warrant such measures to mitigate potential impacts.
28. If any change are made in the above-described plan(s) which may or will alter an area subject to protection under the Wetlands Protection Act, 310 CMR 10.00 or the Newburyport Wetlands Ordinance, the applicant shall inquire from this Commission or its administrator, prior to implementing the change in the field, whether the change is significant enough to require the filing of a new Notice of Intent. Any errors in the plans or information submitted by the applicant shall be considered changes and the above procedures shall be followed.
29. It is the responsibility of the applicant to complete any review required by all agencies with jurisdiction over the activity that is the subject of this Order, and to procure all required permits or approvals. These reviews, permits and approvals may include but are not limited to the following:
  - a. Review by the U.S. Army Corps of Engineers for any Category 2 or Individual Permit Activity, and procurement of any permits or approvals identified by the Corps.
  - b. Review by the DEP and procurement of any permits or approvals identified by the DEP.
  - c. Review by the Massachusetts Natural Heritage and Endangered Species Program for any projects within estimated and/or priority habitat and any permits or approvals identified by the Program.
  - d. Review by local planning boards, boards of health, zoning boards, and building inspectors, and procurement of any permits or approvals required by these boards or agencies.
30. Any material placed in wetland resource areas or outside the Limit of Work by the applicant without express authorization under this Order shall be removed by the applicant upon

demand by the Conservation Commission or its administrator.

31. All construction materials, earth stockpiles, landscaping materials, slurry pits, waste products, refuse, debris, stumps, slash, or excavate may only be stockpiled or collected in areas as shown and labeled on the approved plan(s), or if no such areas are shown must be placed or stored outside all resource areas and associated buffer zones under cover and surrounded by a double-staked row of hay bales or other approved erosion control device to prevent contact with rain water.
32. This Order authorizes only the activity described on the approved plan(s) and approved documents referenced in this Order. Any other or additional activity in areas within the jurisdiction of the Commission shall require separate review and approval by the Commission or its agent.
33. If any changes in the scope of construction beyond those stated in the Notice of Intent must occur as a result of conditions encountered during the work, additional approval must be granted by the Conservation Commission before work can continue.

**B. Prior to Commencement of Work**

34. The sandbagging that is present in front of the property at 30 55<sup>th</sup> Street shall be added to the contractor's plans as a structure to be protected. Preconstruction photos of the sandbags shall be taken prior to the start of work.
35. The location of the pipeline shall be staked prior to the start of work. The Newburyport Conservation Administrator shall be notified (at 978-465-4462) after the staking is complete in order to schedule an inspection.
36. Beach and dune conditions where the pipeline is to be laid shall be documented with photos (or video) and measurements. Measurements shall be taken at low tide noting distance between historic MHW and the toe of the dune at minimum intervals of 100 feet, using stakes as reference points.
37. The extent to which the beach will be modified to accommodate the pipeline shall be detailed in a document to be approved by the Newburyport Conservation Administrator, including what vehicles and machinery will be needed for installation and restoration after removal of the pipeline and what routes will be used to access the beach for all activities.
38. As it is possible that the pipeline will be exposed to wave energy during at least some portion of the project, direct and indirect impacts on the coastal beach related to these conditions shall be addressed, including the potential for scour around the pipe as well as direct storm damage to the pipe itself. A Contingency Plan for storm damage to the pipeline or any potential damage to the beach (e.g., erosion) while it is present on the beach shall be submitted to the Newburyport Conservation Administrator at least 30 days prior to the start or work. At a minimum, this plan shall address actions that will be taken in the case of an upcoming storm event as well as actions that will be taken after a storm (if there is damage to the pipeline or erosion/damage to the beach or scour around the pipe).
39. A Coastal Geologist shall be assigned to monitor the pipeline while it resides on the Newburyport beach for potential erosion or negative effects to the beach, especially in the vicinity of 51<sup>st</sup> – 59<sup>th</sup> streets. The monitor shall perform inspections at least weekly and after any storm events and report conditions to the Conservation Administrator.
40. The Conservation Administrator shall be notified in writing (or by phone) at least 48 hours prior to the start of the work in order to schedule a pre-construction meeting with the

applicants' representative and the person(s) responsible for construction and compliance with this Order of Conditions.

41. Prior to the commencement of any activity on this site, the applicant or owner shall provide the name, address, and phone number of a contact person responsible for compliance with this Order. The applicant shall also display the Department of Environmental Protection (DEP) file number for this Order on a sign within the minimum dimensions of two feet by two feet at a location clearly visible from the street. This sign shall remain in place and visible until a Certificate of Compliance is issued for the activity.

#### C. Project Period

42. The Coastal Geologist (Monitor) shall perform inspections at least weekly and after any storm events and report conditions to the Conservation Administrator. (See Condition 39.)
43. A copy of this Order of Conditions, Plan(s) of Record shall be on the site upon commencement and during any site work for contractors to view and adhere to.
44. Trash dumpsters shall be located as far away from the resource areas as possible and shall be emptied at least once a week during construction.
45. No material of any kind may be buried, placed or dispersed in areas within the jurisdiction of the Commission by activities that are the subject of this Order.
46. Fuel, oil, urethanes, or other pollutants shall not be stored on the beach or dune areas. These shall be kept in covered containers, under protection at all times.
47. Trucks or other equipment shall not be washed out in or near resource areas.
48. Spill response equipment shall be available at all times during the dredging period in the event of a spill from hydraulic or other equipment. If any reportable leakages do occur, the Conservation Administrator shall be notified immediately at 978-465-4462.

#### D. Special Conditions

49. The pipeline (as proposed) shall be placed between Mean High Water and the toe of the existing dunes. The pipeline shall not be placed above the toe of the dune at any time during the project and there shall be no excavation directly adjacent to the toe of the dune.
50. The pipeline shall be removed from the shoreline as soon as possible after all sand has been deposited.
51. No work shall take place between April 1 – August 31 of any year per conditions set forth by the Natural Heritage & Endangered Species Program (NHESP) of the Massachusetts Division of Fisheries & Wildlife in order to avoid impact on Piping Plovers and Common Terns. No materials (including dredge pipes) shall be present on the beach during April 1 – August 31.

#### E. Post Project

52. All areas of the beach where the pipeline has been laid shall be restored to pre-construction conditions, including but not limited to, the addition of beach grade sand to compensate for any loss resulting from this project and grading. Pre-construction conditions are those that were documented prior to the commencement of work (see Condition #36).

53. Any damage to the sandbags noted in Condition #34 that may occur due to the installation, maintenance, removal or presence of the pipeline shall be restored to pre-construction conditions.
54. After the completion of project, the applicant shall submit the following to the Conservation Commission:
  - a. A completed Request for a Certificate of Compliance – WPA form 8A.
  - b. A letter from a registered professional engineer certifying compliance of the project with this Order of Conditions, and detailing any deviations that exist and their potential effect on the project. A statement that the work is in “substantial compliance” with no detailing of the deviations shall not be accepted.
  - c. A letter from the dredging contractor stating that there was no leakage of hydraulic fluid during the project or, if leakage did occur, a detailed report of how it was remediated.
  - d. Post-project photographs (or video) shall be taken at the same locations as specified in Condition #36 and submitted to the Conservation Administrator.
  - e. An “As-Built” plan showing post-dredging conditions, stamped and signed by a professional engineer or land surveyor. This plan shall note any deviations from the original Proposed Dredging Plan, dated September 16, 2008.





**E. Signatures and Notary Acknowledgement**

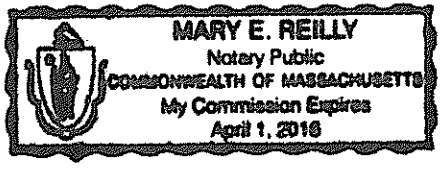
This Order is valid for three years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance. Please indicate the number of members who will sign this form. This Order must be signed by a majority of the Conservation Commission. The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office, if not filing electronically, and the property owner, if different from applicant.

7/28/2009  
 1. Date of Issuance  
4  
 2. Number of Signers

Signatures:  
Paul Healy  
Stephen Moore  
[Signature]  
Mary E. Reilly

**Notary Acknowledgement**

Commonwealth of Massachusetts County of Essex  
 On this 21<sup>ST</sup> Day of July 2009 Year  
 Before me, the undersigned Notary Public, the above four (4) Commissioners Name of Document Signer  
 personally appeared  
 proved to me through satisfactory evidence of identification, which was/were  
personal knowledge  
 Description of evidence of identification  
 to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he/she signed it voluntarily for its stated purpose.  
 As member of Newburyport City/Town Conservation Commission



Mary E. Reilly  
 Signature of Notary Public  
MARY E REILLY  
 Printed Name of Notary Public  
1/1/2016  
 My Commission Expires (Date)

Place notary seal and/or any stamp above.  
 This Order is issued to the applicant as follows:  
 by hand delivery on  
 Date \_\_\_\_\_

by certified mail, return receipt requested, on  
 Date 7/28/2009



# WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40  
and the City of Newburyport Wetlands Ordinance

## G. Recording Information

This Order of Conditions must be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Order. In the case of registered land, this Order shall also be noted on the Land Court Certificate of Title of the owner of the land subject to the Order of Conditions. The recording information on this page shall be submitted to the Conservation Commission listed below.

Newburyport

Conservation Commission

Detach on dotted line, have stamped by the Registry of Deeds and submit to the Conservation Commission.

To:

Newburyport

Conservation Commission

Please be advised that the Order of Conditions for the Project at:

Atlantic Ocean/Plum Island

Project Location

051-0830

MassDEP File Number

Has been recorded at the Registry of Deeds of:

Essex

County

Book

Page

for:

Property Owner

and has been noted in the chain of title of the affected property in:

Book

Page

In accordance with the Order of Conditions issued on:

Date

If recorded land, the instrument number identifying this transaction is:

Instrument Number

If registered land, the document number identifying this transaction is:

Document Number

Signature of Applicant



*The Commonwealth of Massachusetts*  
*Executive Office of Energy and Environmental Affairs*  
 100 Cambridge Street, Suite 900  
 Boston, MA 02114

Deval L. Patrick  
 GOVERNOR

Timothy P. Murray  
 LIEUTENANT  
 GOVERNOR

Ian A. Bowles  
 SECRETARY

Tel: (617) 626-1000  
 Fax: (617) 626-1181  
<http://www.mass.gov/envir>

July 24, 2009

CERTIFICATE OF THE SECRETARY OF ENVIRONMENTAL AFFAIRS  
 ON THE  
 NOTICE OF PROJECT CHANGE

PROJECT NAME : Plum Island and Salisbury Beach Nourishment (previously reviewed as Near-Shore Dredged Material Disposal off Plum Island Beach)  
 PROJECT MUNICIPALITY : Newbury, Newburyport and Salisbury  
 PROJECT WATERSHED : North Coastal  
 EOEA NUMBER : 13503  
 PROJECT PROPONENT : Department of Conservation and Recreation  
 DATE NOTICED IN MONITOR : June 24, 2009

Pursuant to the Massachusetts Environmental Policy Act (G. L. c. 30, ss. 61-62I) and Section 11.06 of the MEPA regulations (301 CMR 11.00), I hereby determine that this project change does not require the preparation of an Environmental Impact Report. In a separate Draft Record of Decision (DROD) also issued today, I propose granting a Waiver from the requirement to prepare a mandatory Environmental Impact Report (EIR) for the project. This Certificate sets forth the issues that must be addressed by the Proponent during permitting and discusses recommendations that were submitted on the project during the MEPA comment period.

Project Description

The project was the subject of previous review under MEPA as an Environmental Notification Form (ENF) in 2005 and did not require the submission of an Environmental Impact Report (EIR). The previously reviewed project involved the revision of the disposal site for approximately 150,000 cubic yards (cy) of sand to be dredged for maintenance purposes from the Federal Navigation Project in Newburyport Harbor, which was reviewed under MEPA as EEA

#6429. The dredged material had been previously approved for disposal at a sub-tidal site east of Plum Island, which is one of two near-shore locations that has been historically used for disposal of dredged material from Newburyport Harbor. The ENF proposed the extension of the previously approved disposal site by approximately 1,500 feet to the south, but still within the sub-tidal (near shore) area, in water depths ranging from about 10 to 18 feet below mean lower low water (MLLW) in order to indirectly nourish Plum Island Beach via in-shore migration of the deposited sand and to provide a measure of protection against further erosion of shoreline public utilities and private properties. This location was proposed with the support of both Newbury and Newburyport in order to address existing erosion issues along the Plum Island public beach in Newbury. Placement of the material in the near shore was to allow typical fair-weather summer wave patterns to transport the sand onto the beach.

The Department of Conservation and Recreation (DCR) is now proposing to change the disposal area for the dredged material to two eroded beach areas, totaling about 22 acres, on Plum Island (about 2,500 feet of beach between the State Groin #1 and the Newburyport Turnpike) and Salisbury Beach (about 1,400 feet of beach between Fowler and Murray Street). Dredged material will be pumped via temporary pipelines extending for 3,600 feet along Plum Island and 3,800 feet in Salisbury. During the construction, the temporary pipeline, which is expected to be approximately 22 to 24 inches in diameter, will be placed along the beach between mean high water (MHW) and the toe of the existing dunes, and will be removed when construction is complete. The newly nourished dune areas at both sites are expected to be planted with dune grass and protected from wind and foot traffic with sand/snow fencing along the dune toe and laterally at frequent intervals.

Since the ENF filing in 2005, the coastline in Salisbury, Newbury, and Newburyport has experienced significant erosion. According to a US Army Corps of Engineers (USACE) Section 204 Study referenced in the ENF, the area of beach to receive the dredged materials has been eroding at an average rate of 13 feet per year in recent years. To offset this loss for a period of approximately five years, DCR is now proposing to hydraulically dredge approximately 160,000 cys of accumulated marine sediment from the Newburyport Harbor Navigation Channel. Changing from a hopper dredge to a hydraulic dredge presents safety issues, as indicated in the ENF. A small hydraulic dredge which remains stationary will have difficulty operating safely in the high wave-energy environment of the entrance channel to Newburyport Harbor. In order to avoid delays which potentially may cause conflicts with time-of-year restrictions imposed by the Division of Marine Fisheries for the project and costs associated with those delays, a large hydraulic pipeline dredge with a stronger anchoring system will be required.

As described in the NPC, the project will impact 654,953 square feet (sf) of coastal beach (including 276,767 square feet of intertidal impacts within the coastal beach); 79,412 sf of coastal dune; 165,024 sf of land under the ocean; and 2,700 linear feet of fish run.

### MEPA Jurisdiction and Permitting Requirements

The project is undergoing review pursuant to Section 11.03(3)(a)(1)(b) and (3)(b)(4) of the MEPA regulations because it involves alteration of ten or more acres of wetlands (in this case, coastal beach, coastal dune, and land under the ocean) and the disposal of 10,000 or more cy of dredged material. The project will require a Chapter 91 Permit and a 401 Water Quality Certification from the Department of Environmental Protection (DEP). The proposed project is subject to federal consistency review by the Office of Coastal Zone Management (CZM) and, therefore, must be found to be consistent with CZM's enforceable program policies. The project will also require Orders of Conditions from the Conservation Commissions in Newbury, Newburyport and Salisbury.

Because the proponent is DCR, a state agency, MEPA jurisdiction for this project is broad and extends to all aspects of the project that are likely, directly or indirectly, to cause Damage to the Environment, as defined in the MEPA regulations.

### Permitting Issues

#### *Beach Management Plans*

The NPC states that post-construction management at both Salisbury Beach and Plum Island will be performed in accordance with approved beach management plans for these sites. While the Salisbury Barrier Beach Management Plan is already approved and in place, the Newbury and Newburyport Barrier Beach Management Plans are still in draft form, and must be finalized and approved before the nourishment project moves forward. At the request of the communities, state agencies provided comments on the draft plans in May 2009, and these comments are being incorporated into the documents. The implementation of the post-construction management practices contained in these plans will have an important impact on the effectiveness of the nourishment project over time. State agencies should be given the opportunity to review and comment on the content of the revised draft plans before they are finalized and approved.

To maximize the success and longevity of the project in addressing erosion concerns, each community should commit to implementation and enforcement of effective beach access plans to minimize impacts from pedestrian traffic and structures on the newly nourished primary dunes. Access plans, indicating approved access locations and design for pedestrian and vehicular access, should be included as part of the barrier beach management plans for each community.

#### *Resource Area Impacts*

The NPC discusses the impacts to coastal beaches that are directly related to the placement of sediment at these locations. During the permitting process, issues associated with the placement of the pipeline should also be thoroughly addressed to ensure that impacts are

minimized. Due to required time-of-year (TOY) restrictions, the project will be conducted between the months of October and March, which is typically the highest energy period for northeast facing beaches in Massachusetts. Because it is possible that the pipeline will be exposed to wave energy while the project is underway, direct and indirect impacts on the coastal beach related to these conditions should be addressed, including the potential for scour around the pipe as well as direct storm damage to the pipe itself. A contingency plan for storm damage to the pipeline should be detailed during permitting. Finally, the extent to which the beach will be modified to accommodate the pipeline should be detailed, including what vehicles and machinery will be required for installation and restoration after removal.

The project will require the construction of toe dikes and DCR has proposed using existing beach material to construct them. In its comments, MassDEP recommends that sand be imported to construct the dikes due to the proximity of the work zone to the tidal zone and the likelihood that construction of the toe dikes will contribute to the additional loss of sand from the beach system. In Newbury especially, the area to be nourished is within the tidal zone and will be subject to wave action.

#### *Rare Species*

The project site is located within *Priority* and *Estimated Habitat* as indicated in the 13th Edition of the Massachusetts Natural Heritage Atlas and therefore requires review through a direct filing with the Division of Fisheries and Wildlife (DFW) Natural Heritage and Endangered Species Program (NHESP) for compliance with the Massachusetts Endangered Species Act (MESA 321 CMR 10.00) and its implementing regulations.

In its comments on the NPC, NHESP states that it anticipates that the proposed project will need to be conditioned in order to avoid a “take” of state-listed bird species, specifically Piping Plovers and Terns that may be attracted to the beach nourishment areas, as well as their eggs and unfledged chicks. NHESP will likely require timing restrictions and development and implementation of a shorebird monitoring and protection plan. DCR should note the specific items requested by NHESP in its comments and submit this plan as soon as possible in order to expedite the MESA review process.

In its comments, NHESP states that it is especially concerned about any nourishment activities in the vicinity of 23rd Street in Newbury because this area currently provides habitat for state-listed species. If nourishment activities are proposed farther north than 21st Street, then DCR should provide the specific information requested by NHESP in its comments in order to complete its review under the Wetlands Protection Act and pursuant to MESA.

NHESP anticipates that all issues related to state-listed species can be addressed during the MESA review process. In particular, DCR should continue to work cooperatively with NHESP to ensure that proposed dune plantings, beach fencing, and pedestrian access do not adversely affect state-listed species. As the MESA review is not complete, no alteration to the

soil, surface, or vegetation and no work associated with the proposed project may occur until NHESP has made a final determination.

*Archeological Resources*

If, in the course of implementing the project, heretofore unknown cultural resources are encountered in conducting the project, DCR should notify the Board of Underwater Archeological Resources and work with the Board to develop and implement measures to avoid adverse effects.

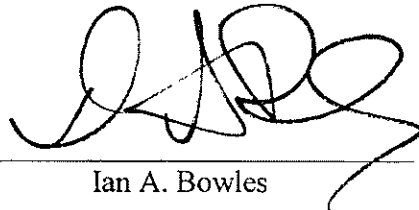
Conclusion

I am satisfied that the NPC has adequately described the general nature of the proposed project and proposed measures to avoid and minimize, or mitigate environmental impacts. Based on a review of the information provided in the NPC and after consultation with the relevant public agencies, I find that the potential impacts of this project do not warrant further MEPA review. Outstanding issues may be addressed during the permitting processes.

I have issued a DROD proposing to grant a Waiver from the requirement to prepare an EIR for the project. The DROD will be noticed in the August 12, 2009 issue of the *Environmental Monitor* for a 14-day public comment period ending August 26, 2009 in accordance with 301 CMR 11.15(2). Based on written comments received concerning the DROD, I shall either issue a Final Record of Decision (FROD) or a Scope for an EIR if the Full Waiver is not approved within seven days after the close of the public comment period, in accordance with 301 CMR 11.15(6).

July 24, 2009

Date



Ian A. Bowles

Comments received:

|         |                                                                                    |
|---------|------------------------------------------------------------------------------------|
| 7/13/09 | Board of Underwater Archaeological Resources                                       |
| 7/14/09 | Division of Fisheries & Wildlife - Natural Heritage and Endangered Species Program |
| 7/15/09 | Department of Environmental Protection Northeast Regional Office                   |
| 7/17/09 | Office of Coastal Zone Management                                                  |

IAB/RB/rb



# Division of Fisheries & Wildlife

Wayne F. MacCallum, Director

July 17, 2009

Salisbury Conservation Commission  
Town Hall  
5 Beach Road  
Salisbury, MA 01952

MA Department of Conservation and Recreation  
251 Causeway Street  
Boston, MA 02214

RE:                    Applicant:                    MA Department of Conservation and Recreation  
                          Project Location:            Atlantic Ocean/Salisbury Beach  
                          Project Description:       Maintenance dredging and beach/dune nourishment  
                          Wetlands File No.:        065-0905  
                          NHESP Tracking No.:      09-26646

To Whom It May Concern:

The applicant listed above has submitted a *Notice of Intent* with plans to the Natural Heritage & Endangered Species Program (NHESP) of the Massachusetts Division of Fisheries & Wildlife, in compliance with the rare wildlife species section of the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.37). Additional materials were submitted for review pursuant to the Massachusetts Endangered Species Act (MESA; M.G.L. c. 131A) and its implementing regulations (321 CMR 10.00) (MESA).

Based on a review of information that was submitted and the information that is contained in our database, the NHESP has determined that the proposed project occurs within the mapped habitat of the following state-listed species:

| Scientific Name           | Common Name   | Taxonomic Group | MA Status       |
|---------------------------|---------------|-----------------|-----------------|
| <i>Charadrius melodus</i> | Piping Plover | Bird            | Threatened*     |
| <i>Sterna hirundo</i>     | Common Tern   | Bird            | Special Concern |

These species and their habitats are protected pursuant to the Massachusetts Endangered Species Act (MESA, MGL c131A) and its implementing regulations (321 CMR 10.00). \*The Piping Plover is also federally protected pursuant to the U.S. Endangered Species Act (ESA, 50 CFR 17.11). Fact sheets for these species can be found at [www.nhesp.org](http://www.nhesp.org).

The NHESP has reviewed the submitted material and has determined that **additional information is required** in order for us to complete our review under the WPA and pursuant to the MESA (321 CMR 10.20). The applicant must provide us with the following additional information in order for us to complete our review:

1. **Shorebird Monitoring and Protection Plan.** The proponent has the responsibility of protecting breeding Piping Plovers and terns that may be attracted to the beach nourishment areas, as well as their eggs and unfledged chicks. Therefore, the NHESP requires that a shorebird monitoring and

[www.masswildlife.org](http://www.masswildlife.org)



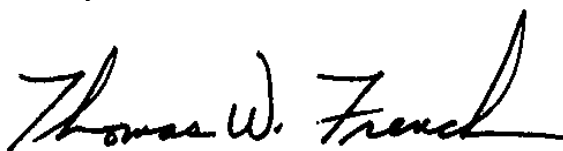
protection plan for beach nourishment areas is developed and submitted to the NHESP. The proposed arrangement for implementation of this plan shall be described in the plan (e.g., Town will annually fund a position or contract a 3<sup>rd</sup> party). At a minimum, this plan shall include the following:

- a. Each year, beginning April 1, a qualified shorebird monitor approved in writing by the NHESP shall determine whether territorial or nesting Piping Plovers or Terns are present at beach nourishment areas and if so, shall erect and maintain warning signs and symbolic fencing to protect nesting habitat and nests from disturbance or human-caused mortality.
  - b. Monitoring shall occur at least 2 times per week until at least July 1. However, if plovers or terns are found to be using the site, then monitoring frequency shall be increased to at least 3 times per week, and shall continue until all nesting and brood-rearing activity has been completed.
  - c. The applicant shall notify the NHESP prior to the start of work in the first year and before January 1st for each subsequent year as to what arrangements have been made for the aforementioned monitoring and site protection to occur. This notification shall include a written contract, memorandum of agreement, or some other formal written agreement with the individual(s) or organization that will undertake monitoring and protection efforts in the field.
  - d. A report shall be submitted to the NHESP each year, on or before September 30, on standard census forms provided by NHESP, that summarizes the results of the state-listed species monitoring and site protection activities.
2. ***Revised Plans for Nourishment Area.*** Please submit revised plans illustrating proposed vegetative plantings and sand fencing in the nourishment area. Currently, the proponent is working cooperatively with the NHESP to revise the plans to include proposed vegetative plantings and revise the locations of the proposed sand fencing to benefit state-listed species.

Please note that the NHESP does not typically approve beach nourishment activities proposed within state-listed shorebird habitat scheduled to commence during the period from 1 April to 31 August. Once the NHESP has determined all of the required materials have been received (321 CMR 10.20), we will determine whether or not the proposed project will result in an adverse effect to the Resource Area habitat of state-listed wildlife and determine whether or not the project will result in a “take” of state-listed rare species (321 CMR 10.18(1)).

The NHESP’s review under both the WPA and MESA are ongoing. **No soil or vegetation disturbance, work, clearing, grading or other activities related to the subject filing shall be conducted anywhere on this project site until the NHESP has completed its MESA review.** No approving Orders of Conditions shall be issued until the NHESP has completed its review of the project’s compliance with the rare species provisions of WPA and has issued a final letter to the Commission. If you have any questions about this letter, please contact Kristin E. Black, Endangered Species Review Biologist, at (508) 389-6367 ([kristin.e.black@state.ma.us](mailto:kristin.e.black@state.ma.us)) or for information related to the development and implementation of the Shorebird Monitoring and Protection Plan, please contact Scott Melvin at (508) 389-6345 ([scott.melvin@state.ma.us](mailto:scott.melvin@state.ma.us)).

Sincerely,



Thomas W. French, Ph.D.  
Assistant Director

cc: Susi von Oettingen, U.S. Fish and Wildlife Service's New England Field Office  
MA DEP Northeast Regional Office, Wetlands Program  
Christine M. Player, Vine Associates, Inc.  
Heather Warchalowski, MA DCR  
Todd Randall, US Army Corps of Engineers  
Mark Habel, US Army Corps of Engineers



# Division of Fisheries & Wildlife

Wayne F. MacCallum, *Director*

July 17, 2009

Newburyport Conservation Commission  
City Hall  
60 Pleasant Street  
Newburyport MA 01950

MA Department of Conservation and Recreation  
251 Causeway Street  
Boston, MA 02214

RE:                    Applicant:                    MA Department of Conservation and Recreation  
                          Project Location:            Atlantic Ocean/Plum Island, Newburyport  
                          Project Description:       Maintenance dredging, temporary pipeline on shoreline  
                          Wetlands File No.:        051-0830  
                          NHESP Tracking No.:     09-26646

To Whom It May Concern:

The applicant listed above has submitted a *Notice of Intent* with plans to the Natural Heritage & Endangered Species Program (NHESP) of the Massachusetts Division of Fisheries & Wildlife, in compliance with the rare wildlife species section of the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.37). Additional materials were submitted for review pursuant to the Massachusetts Endangered Species Act (MESA; M.G.L. c. 131A) and its implementing regulations (321 CMR 10.00) (MESA).

Based on a review of information that was submitted and the information that is contained in our database, the NHESP has determined that the proposed project occurs within the mapped habitat of the following state-listed species:

| Scientific Name           | Common Name   | Taxonomic Group | MA Status       |
|---------------------------|---------------|-----------------|-----------------|
| <i>Charadrius melodus</i> | Piping Plover | Bird            | Threatened*     |
| <i>Sterna hirundo</i>     | Common Tern   | Bird            | Special Concern |

These species and their habitats are protected pursuant to the Massachusetts Endangered Species Act (MESA, MGL c131A) and its implementing regulations (321 CMR 10.00). \*The Piping Plover is also federally protected pursuant to the U.S. Endangered Species Act (ESA, 50 CFR 17.11). Fact sheets for these species can be found at [www.nhosp.org](http://www.nhosp.org).

Based on a review of the information that was provided and the information that is currently contained in our database, the NHESP has determined that this project, as currently proposed, will not adversely affect the actual Resource Area Habitat of state-protected rare wildlife species (310 CMR 10.37) and will not result in a prohibited "take" of state-listed rare species (321 CMR 10.18) provided that the following conditions are met:

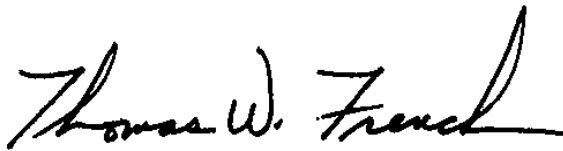
- All work shall be done outside the period of April 1- August 31. No materials (including dredge pipes) may be present on the beach during April 1 - August 31.

[www.masswildlife.org](http://www.masswildlife.org)

Please note that this determination addresses only the matter of state-listed species habitat and does not pertain to other wildlife habitat issues that may be pertinent to the proposed project. Any changes to the proposed project or any additional work beyond that shown on the attached site plans may require an additional filing with the NHESP pursuant to the MESA. This project may be subject to further review if no physical work is commenced within three years from the date of issuance of this determination, or if there is a change to the project.

This evaluation is based on the most recent information available in the Natural Heritage database, which is constantly being expanded and updated through ongoing research and inventory. Should your site plans change, or new rare species information become available, this evaluation may be reconsidered. If you have any questions about this letter, please contact Kristin E. Black, Endangered Species Review Biologist, at (508) 389-6367 ([kristin.e.black@state.ma.us](mailto:kristin.e.black@state.ma.us)).

Sincerely,

A handwritten signature in black ink that reads "Thomas W. French". The signature is written in a cursive, flowing style.

Thomas W. French, Ph.D.  
Assistant Director

cc: Christine M. Player, Vine Associates, Inc.  
Heather Warchalowski, MA DCR  
Todd Randall, US Army Corps of Engineers  
Mark Habel, US Army Corps of Engineers  
Susi von Oettingen, U.S. Fish and Wildlife Service's New England Field Office  
MA DEP Northeast Regional Office, Wetlands Program



**MassWildlife**

Commonwealth of Massachusetts

# Division of Fisheries & Wildlife

Wayne F. MacCallum, *Director*

July 14, 2009

Secretary Ian A. Bowles  
Executive Office of Environmental Affairs  
Attention: MEPA Office  
Rick Bourré, EEA No. 13503  
100 Cambridge St, Suite 900  
Boston, MA 02114

*Project Name:* Plum Island and Salisbury Beach Nourishment  
*Proponent:* MA Department of Conservation and Recreation  
*Location:* Newburyport, Newbury, and Salisbury, MA  
*Project Description:* Direct placement of approximately 160,000 cubic yards of dredged material from the federal entrance channel along eroded beach/dune areas at Plum Island and Salisbury Beach  
*Document Reviewed:* Notice of Project Change (NPC)  
*EEA File Number:* 13503  
*NHESP Tracking No:* 09-26646

Dear Secretary Bowles:

The Natural Heritage & Endangered Species Program (NHESP) of the Massachusetts Division of Fisheries & Wildlife has reviewed the Notice of Project Change (NPC) for the *Plum Island and Salisbury Beach Nourishment Project* (EEA No. 13503). At this time, the NHESP would like to offer the following comments regarding state-listed species and their habitats.

The project site is located within Priority and Estimated Habitat as indicated in the 13<sup>th</sup> Edition of the MA Natural Heritage Atlas and therefore requires review through a direct filing with NHESP for compliance with the Massachusetts Endangered Species Act (MESA 321 CMR 10.00) and its implementing regulations. The NHESP has received streamlined MESA/Wetlands Protection Act review filings for the project but has not completed its review. Based on a preliminary review of the information provided in the ENF and the information contained in the NHESP database, the NHESP anticipates that the proposed project will need to be conditioned in order to avoid a "take" of state-listed bird species. The NHESP will likely require timing restrictions and development and implementation of a shorebird monitoring and protection plan as part of the project.

The proponent has the responsibility of protecting breeding Piping Plovers and Terns that may be attracted to the beach nourishment areas, as well as their eggs and unfledged chicks. Therefore, the NHESP requires that a shorebird monitoring and protection plan for beach nourishment areas is developed and submitted to the NHESP for written approval during the MESA review process. The proponent should note that this plan should be submitted as soon as possible in order to expedite the MESA review process. The proposed arrangement for implementation of this plan shall be described in the plan (e.g., Town will annually fund a position or contract a 3<sup>rd</sup> party). This plan shall include the following:

[www.masswildlife.org](http://www.masswildlife.org)

Division of Fisheries and Wildlife

Field Headquarters, One Rabbit Hill Road, Westborough, MA 01581 (508) 389-6300 Fax (508) 389-7891

An Agency of the Department of Fish & Game

- a. Each year, beginning April 1, a qualified shorebird monitor approved in writing by the NHESP shall determine whether territorial or nesting Piping Plovers or Terns are present at beach nourishment areas and if so, shall erect and maintain warning signs and symbolic fencing to protect nesting habitat and nests from disturbance or human-caused mortality.
- b. Monitoring shall occur at least 2 times per week until at least July 1. However, if plovers or terns are found to be using the site, then monitoring frequency shall be increased to at least 3 times per week, and shall continue until all nesting and brood-rearing activity has been completed.
- c. The applicant shall notify the NHESP prior to the start of work in the first year and before January 1st for each subsequent year as to what arrangements have been made for the aforementioned monitoring and site protection to occur. This notification shall include a written contract, memorandum of agreement, or some other formal written agreement with the individual(s) or organization that will undertake monitoring and protection efforts in the field.
- d. A report shall be submitted to the NHESP each year, on or before September 30, on standard census forms provided by NHESP, that summarizes the results of the state-listed species monitoring and site protection activities.

The NHESP is especially concerned about any nourishment activities in the vicinity of 23<sup>rd</sup> Street in Newbury. This area currently provides habitat for state-listed species. If nourishment activities are to occur farther north than 21<sup>st</sup> Street, Newbury, then the NHESP requires the following information in order for the NHESP to complete its review under the WPA and pursuant to the MESA (321 CMR 10.20):

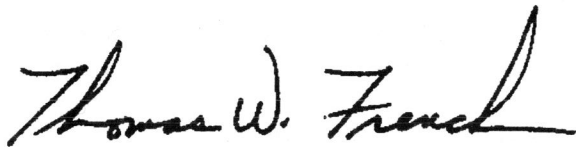
- a. Recent photos of the upper beach and dunes between 21<sup>st</sup> and 25<sup>th</sup> streets;
- b. Detailed profiles that depict the elevations, widths, and slopes of fill placement proposed for this section of the beach; and
- c. A description of how the proposed design of fill placement here will not adversely affect Piping Plover nesting and brood-rearing habitat on this section of beach.

Currently, the proponent is working cooperatively with the NHESP to revise the plans to include proposed vegetative plantings and revise the locations of the proposed sand fencing to benefit state-listed species. The NHESP looks forward to receiving revised plans.

The NHESP anticipates that all issues related to state-listed species can be addressed during the MESA review process. As the MESA review is not complete, no alteration to the soil, surface, or vegetation and no work associated with the proposed project shall occur on the property until the NHESP has made a final determination. We appreciate the opportunity to comment on this project.

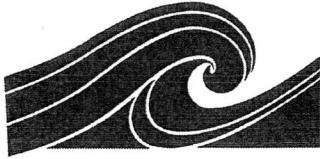
Please contact Kristin E. Black of our office with any questions about this letter at (508) 389-6367 or [kristin.e.black@state.ma.us](mailto:kristin.e.black@state.ma.us).

Sincerely,



Thomas W. French, Ph.D.  
Assistant Director

cc: Christine M. Player, Vine Associates, Inc.  
Heather Warchalowski, DCR  
Newburyport Board of Selectmen  
Newburyport Conservation Commission  
Newburyport Planning Board  
DEP Northeast Regional Office, MEPA Coordinator  
Newbury Board of Selectmen  
Newbury Conservation Commission  
Newbury Planning Board  
Salisbury Board of Selectmen  
Salisbury Conservation Commission  
Salisbury Planning Board  
Susi von Oettingen, USFWS  
Todd Randall, US Army Corps of Engineers  
Mark Habel, US Army Corps of Engineers



THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS  
OFFICE OF COASTAL ZONE MANAGEMENT  
251 Causeway Street, Suite 800, Boston, MA 02114-2136  
(617) 626-1200 FAX: (617) 626-1240

July 7, 2009

John R. Kennelly  
Department of the Army  
New England District, Corps of Engineers  
696 Virginia Road  
Concord, MA 01742-2751

RE: CZM Federal Consistency Review of Newburyport Harbor Federal Maintenance  
Dredging Project; Newburyport.

Dear Mr. Kennelly:

The Massachusetts Office of Coastal Zone Management (CZM) has received the necessary information to initiate our federal consistency review for the proposed modification to the Newburyport Harbor Federal maintenance dredging project.

The notice that this proposal is undergoing consistency review by CZM will be published in the next edition of the *Environmental Monitor*. The published date of that *Monitor* will initiate a 21-day public comment period. Enclosed please find a copy of the schedule that we will follow during our consistency review. Although we have 60 days (extendable with your permission) in which to review your determination and to concur or object, we will make a vigorous effort to complete our review shortly after the close of the comment period.

**Note:** We cannot complete our review and issue a decision of consistency with our program policies until all applicable state environmental agency permits, licenses, certificates and other authorizations have been issued. Further, if they are required, federal permits cannot be issued until the federal permitting agency receives a consistency concurrence letter from CZM for the proposed project. To keep our review timely, we suggest that you forward copies of applicable state environmental agency permits, licenses, etc. to CZM as you receive them.

Future communications with this office regarding the technical aspects of the above-referenced project should be directed to Kathryn Glenn who will be conducting the federal consistency review of this project for the CZM Office. Please call me at (617) 626-1050 if you have any procedural questions about the review process.

Sincerely,

Robert L. Boeri  
Project Review Coordinator

RLB/pb  
Enclosure  
czm#7501



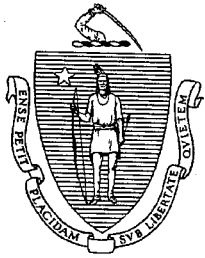


CZM Federal Consistency Review Schedule  
For a Federal Agency Activity\*

Review Steps

1. Document Receipt  
Received consistency determination on July 3, 2009.
  
2. Public Notice
  - (a) Notice of the initiation of this federal consistency review will appear in the next edition of the *MEPA Monitor* which will be published on or about July 22, 2009.
  
  - (b) Publication in the *Monitor* begins a 21 day public comment period which will close on or about Aug. 12, 2009.
  
3. CZM must issue its consistency decision within 60 days of commencement of our review unless granted an extension by the federal project proponent. The review period closes and a consistency decision will be issued no later than Sept. 4, 2009.

\* 301 CMR 21.01 – 21.04, 15 CFE 930.41



The COMMONWEALTH OF MASSACHUSETTS  
BOARD OF UNDERWATER ARCHAEOLOGICAL RESOURCES  
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS  
251 Causeway Street, Suite 800, Boston, MA 02114-2136  
Tel. (617) 626-1200 Fax (617) 626-1240 Web Site: [www.mass.gov/czm/buar/index.htm](http://www.mass.gov/czm/buar/index.htm)

July 6, 2009

Anthony T. Mackos, PE  
Acting Chief, Engineering/Planning Division  
US Army Corps of Engineers  
696 Virginia Road  
Concord, MA 01742-2751

RE: Newburyport Dredging and Beach Nourishment/Near Shore Disposal

Dear Acting Chief Mackos:

The Massachusetts Board of Underwater Archaeological Resources is in receipt of your letter of 26 June 2009 in regard to the above referenced project. The Board has completed its review of the letter and accompanying materials, and offers the following comments. The Board concurs that the planned activities as currently proposed will not adversely affect submerged cultural resources at this time.

The on-going needs for the proposed beach nourishment and near shore disposal activities are necessitated by the erosion occurring on a dynamic shoreline as well as in support of maintenance dredging. Given the coastal processes taking place along Salisbury Beach and Plum Island, circumstances and condition are likely to change. Therefore, the Board welcomes continued consultation in the event of any changes in the current plan and when future activities are considered even at the current disposal/nourishment locations.

The Board is encouraged that your agency has notified our permittee, Victor Ricardo, of the subject disposal. We request that these notifications continue when future proposed activities are in or near his permit area.

Should heretofore-unknown submerged cultural resources be encountered during the course of the project, the Board expects that the project's sponsor will take steps to limit adverse effects and notify the Board, as well as other appropriate agencies in accordance with the Board's *Policy Guidance for the Discovery of Unanticipated Archaeological Resources* (updated 9/28/06).

If you should have any questions, do not hesitate to contact me at 617-626-1141 or the address above.

Sincerely,

A handwritten signature in black ink, appearing to read "Victor T. Mastone".

Victor T. Mastone  
Director and Chief Archaeologist

/vtm

Cc: Brona Simon, MHC  
Marc Paiva, ACOE  
Robert Boeri, MCZM  
Victor Ricardo

COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
NORTHEAST REGIONAL OFFICE

205B Lowell Street, Wilmington, MA 01887 • (978) 694-3200

DEVAL L. PATRICK  
Governor

TIMOTHY P. MURRAY  
Lieutenant Governor

IAN A. BOWLES  
Secretary

LAURIE BURT  
Commissioner

ATTACHMENT A  
TO SETTLEMENT AGREEMENT DATED JANUARY 23, 2008  
OF ADJUDICATORY APPEAL DOCKET NO. DALA 07-0425,  
FORMERLY DEP DOCKET NO. 07-042

January 23, 2008

Ms. Nancy Colbert  
Director of Planning and Development  
City of Newburyport  
60 Pleasant Street  
Newburyport, MA 01950

Re: **FINAL 401 WATER QUALITY CERTIFICATION ("FWQC")**  
Application for BRP WW 07 Major project dredging,

At: Newburyport Harbor Entrance Channel  
Merrimack River, NEWBURYPORT and SALISBURY

Transmittal No: W075196  
Wetlands File No: 51-053

Dear Ms. Colbert:

In accordance with Department review of your application for Water Quality Certification, as referenced above, with settlement negotiations regarding an appeal of the initial Water Quality Certification issued pursuant to that application on February 13, 2007, and in accordance with the provisions of Section 401 of the Federal Clean Water Act as amended (33 U.S.C. §1251 et seq.), MGL c.21, §§ 26-53, and 314 CMR 9.00, it has been determined there is reasonable assurance the project or activity will be conducted in a manner which will not violate applicable water quality standards (314 CMR 4.00) and other applicable requirements of state law.

The waters of the Merrimack River Estuary (dredge site) and coastal waters of Newburyport, Newbury and Salisbury (disposal sites) are designated in the Massachusetts Surface Water Quality Standards as Class SA Waters. Such waters are intended "as excellent habitat for fish,

other aquatic life and wildlife and for primary and secondary contact recreation." Anti-degradation provisions of these Standards require that "existing uses and the level of water quality necessary to protect the existing uses shall be maintained and protected."

Proposed Project: The applicant proposes to dredge approximately 150,000 cubic yards of clean sand from an area 2700 feet long by 400 feet wide, in the outer portion of the Newburyport Harbor entrance channel. The Army Corps of Engineers is the Authorized Agent. A contracted hopper dredge or mechanical dredge will remove the sediments to a maximum depth of 17 feet Mean Low Water. Once full, the hopper dredge or dump scows will transport the sediments to the near shore placement site off Plum Island (Newbury) where the sediments will be discharged in long rows parallel to the shore in about 18 – 30 ft. of water. Keeping the sand within the littoral system would make it available for movement onto the beach for beneficial use as beach nourishment.

The project proposes to extend the Plum Island disposal site approximately 1,500 feet south of the current location as indicated by the longitude/latitude coordinates provided with the application and as shown on the plans. An alternate 40-acre, near shore disposal site with adequate capacity for this project is proposed at North Salisbury Beach. Water depths at the Salisbury disposal site range from 10-30 ft. MLW. Both sites have been used in the past as near shore placement sites for maintenance dredging of the inlet channel. The frequency of maintenance dredging is expected to be every three to five years.

Sediment sampling data: Sediment samples were done by surface grab method to a depth of 1-2 feet. Grain size analysis of the sediment samples taken from the dredging area indicates that the material is primarily sand, with less than 3% passing the No. 200 sieve. This is consistent with grain sizes of samples taken from both the Plum Island and Salisbury Beach near shore disposal sites and indicates that the dredge material is suitable for beach nourishment. The net effect of placement of sand at these sites is likely to be nourishment material for the eroding beaches at Plum Island and Salisbury.

The Department received no comments during the 21-day public comment period for the application, which began July 19, 2006. However, the Massachusetts Board of Underwater Archeological Resources has notified the U.S. Army Corps of Engineers by correspondence dated October 16, 2007, that there is an active archeological reconnaissance permit area in close proximity to the Salisbury Nearshore Disposal site, the southern boundary of which is located between 42°50.6'N, 70°48.9'W (SW) and 42°50.6'N, 70°47.3'W.

As part of the resource agencies review, National Marine Fisheries Services (NMFS) expressed concern that information presented in the draft Environmental Assessment for the Newburyport Harbor Federal Navigation Project (FNP) would not constitute an adequate essential fish habitat (EFH) assessment due to "lack of site-specific resource characterization for the proposed expanded area" and recommended that "the use of the proposed expansion area of the Plum Island Disposal site should not occur and the disposal of dredged material should be limited to the previously utilized Plum Island disposal site". Thus Condition No. 14 will require the applicant to limit the placement of dredged material to the existing area with the coordinates identified in Condition No. 7.

**Section 61 Findings:** Pursuant to M.G. L. Chapter 30, Sections 61 to 62H inclusive ("M.E.P.A."), this project was previously reviewed by the MEPA office as EOE A No. 6429 (Secretary's Certificate on the Notice of Project Change issued on April 24, 1996) and as EOE A No. 13503 (Secretary's Certificate on the Environmental Notification Form issued on June 6, 2005). The Secretary's Certificate on June 6, 2005 indicated that preparation of an Environmental Impact Report for the expansion of the existing disposal site off of Plum Island was not required. The Secretary's Certificate reiterates a CZM recommendation that the dredged material be placed at the northernmost reaches of the proposed placement site to maximize the effectiveness of the project to provide beach nourishment.

**Therefore, based on information currently in the record, the Department grants a 401 Final Water Quality Certification ("FWQC") for this project subject to the following conditions to maintain water quality, to minimize impact on waters and wetlands, and to ensure compliance with appropriate state law:**

1. The Contractor shall take all steps necessary to assure that the proposed activities will be conducted in a manner that will avoid violations of the anti-degradation provisions of Massachusetts Surface Water Quality Standards that protect all waters, including wetlands.
2. Prior to the start of in-water work, the Department shall be notified of any proposed change(s) in plans that may affect waters or wetlands. The Department will determine whether the change(s) require a revision to this FWQC.

Work in waters and wetlands shall conform substantially to plans submitted in application to this Department prepared by the Army Corps of Engineers.

4. The Department shall be notified, attention Ken Chin 617-292-5893, one week prior to the start of in-water work so that Department staff may inspect the work for compliance with the terms and conditions of this FWQC.
5. At least one week prior to the start of dredging, the Newburyport Harbormaster's office and the Salisbury Harbormaster's office shall be notified of the intended start date, so that local lobstermen and fishermen may be apprised of the upcoming work.
6. When sediment placement occurs in Salisbury, the sediment shall be deposited within an area with corner coordinates:
  - 42° 50.58' and 70° 48.75' (SW corner)
  - 42° 50.71' and 70° 48.75' (NW corner)
  - 42° 50.71' and 70° 48.40' (NE corner)
  - 42° 50.50' and 70° 48.40' (SE corner)
7. When sediment placement occurs in the previously approved Plum Island site, the sediment shall be deposited within an irregular area with approximate corner coordinates:
  - 42° 48.6' and 70° 47.9' (NW corner)
  - 42° 48.5' and 70° 47.7' (NE corner)
  - 42° 47.8' and 70° 47.85' (SE corner)

42° 47.8' and 70° 48.1' (SW corner)

8. When sediment placement occurs in the new extended Plum Island site, the sediment shall be deposited within an area with corner coordinates:

42° 48.20' and 70° 48.00' (NW corner)

42° 47.90' and 70° 47.85' (NE corner)

42° 47.60' and 70° 47.90' (SE corner)

42° 47.65' and 70° 48.20' (SW corner)

9. Future maintenance dredging is authorized by this FWQC for a period of five years, provided that:

- a. the initial project and any subsequent dredging has been conducted satisfactorily with no violations of the terms and conditions of this FWQC.
- b. sediment placement occurs within the coordinates in Condition Nos. 6, 7 and 8.
- c. a due-diligent evaluation to determine that no known spills of oil or other toxic substances have occurred which could have contaminated the sediment in the dredge area.
- d. Placement of dredged sediment will alternate between Plum Island and Salisbury, as proposed by the applicant. Such disposal shall commence with all of the sand from the initial dredging of the Merrimack River Estuary (the dredge site) that occurs after the effective date of this FWQC, which shall be deposited at Plum Island in the site specified in Condition No. 7, or the site specified in Condition No. 8 if appropriate studies are conducted and approved pursuant to this FWQC. Sand from the second dredging, if any, performed under the FWQC shall be deposited at Salisbury in the site designated in Condition No. 6. Sand from the third dredging, if any, shall be deposited at Plum Island and sand from subsequent dredgings, if any, under this FWQC shall be deposited at Salisbury and then Plum Island on an alternating basis at the sites designated in Conditions 6, 7 or 8 of this FWQC and in accordance with its terms.
- e. Any proposal to modify the schedule for disposal of dredged sand set forth in Condition 9.d. above shall afford reasonable notice to both the Town of Newbury and the Town of Salisbury and an opportunity for the towns to comment on the proposed modification and shall also comply with the state and federal emergency regulations set forth in paragraph 8 of the Settlement Agreement.

10. Dredging in accord with this FWQC may begin after the effective date of this FWQC and once all other permits have been received.
11. Within 30 days of the completion of the initial dredging, a bathymetric survey of the basin, depicting post-dredge conditions, shall be sent to the Department.
12. In order to protect the pathway with spawning and forage habitat for diadromous fish species and to avoid impacts of disposal activity to lobster resources and shellfish spawning activities, no dredging shall occur between March 15<sup>th</sup> and June 30<sup>th</sup> of any year.

The applicant, or their contractor, shall make every feasible effort to complete the project within the permitted timeframe. Should the applicant, or their contractor, fail to complete the project and wish to request an amendment to the Certification for incursion into the no-dredge period, the written request shall be received by the Department by March 1<sup>st</sup>. The following information shall be included in the request:

- a. project location and transmittal number,
- b. the date on which dredging started,
- c. the number of days and hours per day the dredge operated,
- d. expected daily average production rate and the actual daily average production rate,
- e. an explanation of why the project failed to remain on schedule,
- f. an account of efforts made to get the project back on schedule,
- g. a plan depicting the areas that remain to be dredged,
- h. the number of cubic yards that remain to be dredged,
- i. an accurate estimate of the number of days required to complete the project,
- j. an evaluation of the impact of continued dredging on the species of concern,
- k. a description of any efforts that will be made to minimize the impacts of the project on the species of concern, and
- l. a realistic assessment of any societal/financial effects of a denial of permission to continue dredging.

The Department will share the information with other resource agencies and a decision to grant or deny the amendment shall be made by March 15<sup>th</sup>. Requests for amendment received after March 1<sup>st</sup> will be considered at the Department's discretion.

13. Disposal of any volume of dredged material at any location in tidal waters is subject to approval by this Department and the Massachusetts Coastal Zone Management office.
14. To avoid adverse effects to the EFH, the use of the proposed expansion area of the Plum Island placement area should be off-limited. The applicant and or its authorized agent have the option to conduct a site-specific resource characterization. Upon review of the characterization, Division Marine Fisheries (DMF) and NMFS will determine whether impacts are acceptable to place dredged material at the expansion area.
15. The applicant and or its authorized agent shall consult with the Massachusetts Board of Underwater Archeological Resources prior to conducting any activities that may disturb underwater archeological resources in or proximate to the Salisbury Nearshore Disposal site.

This certification does not relieve the applicant of the obligation to comply with other applicable state or federal statutes or regulations. Any changes made to the project as described in the previously submitted Notice of Intent, 401 Water Quality Certification application, or supplemental documents will require further notification to the Department.

No activity may begin prior to the effective date of the final decision issued by the Department in connection with this FWQC.

Failure to comply with this certification is grounds for enforcement, including civil and criminal penalties, under MGL c.21 §42, 314 CMR 9.00, MGL c. 21A §16, 310 CMR 5.00, or other possible actions/penalties as authorized by the General Laws of the Commonwealth.

If you have questions on this decision, please contact Ken Chin at 617-292-5893.

Sincerely,



Glenn Haas  
Director  
Division of Watershed Management

cc:

- Jack Karalius, U.S. Army corps of Engineers, 696 Virginia Road, Concord, MA 01742-2751
- Newburyport Conservation Commission, 60 Pleasant Street, Newburyport, MA 01950
- Tay Evans, DMF, 30 Emerson Avenue, Gloucester, MA 01930
- Hans Erwich, City of Newburyport, 60 Pleasant Street, Newburyport, MA 01950
- Robert Boeri, CZM, 251 Causway Street, Suite 900, Boston, MA 02114-2119
- Newbury Board of Selectmen, 25 High Road, Newbury, MA 01951
- Newbury Conservation Commission, 25 High Road, Newbury, MA 01951
- Neil Harrington, Town Manager, Town of Salisbury, 5 Beach Road, Salisbury, MA 01952
- Salisbury Conservation Commission, 5 Beach Road, Salisbury, MA 01952
- Victor T. Mastone, Director, Massachusetts Board of Underwater Archeological Resources, 251 Causeway Street, Suite 800, Boston, MA 02114-2136

KC/W075196



March 15, 2007

Programs Project Management Division  
Programs & Civil Project Management Branch

Mr. Ken Chin  
Massachusetts Executive Office of Environmental Affairs  
Department of Environmental Protection  
One Winter Street  
Boston, MA 02108

Subject: Proposed Newburyport Harbor Federal Maintenance Dredging Project,  
401 Water Quality Certification, dated February 13, 2007  
Transmittal No. W075196, Wetlands File No. 51-053

Dear Mr. Chin:

Thank you for the subject Water Quality Certification (WQC). The Corps of Engineers requests, however, several modifications/changes to the following conditions of the WQC.

- Condition No. 9: This condition states that the WQC is valid for a period of 5 years. The Corps had requested a 10-year period, as stated in the original February 3, 2006 request. This would also coincide with the 10-year Federal Coastal Zone Management Consistency Certification, issued September 19, 2006. The Corps has been dredging the entrance channel into Newburyport Harbor since the late 1800's. All the information we have indicates that the material that was dredged was sand that had migrated through littoral processes from the adjacent beaches. We therefore expect the material from the subsequent 10 year period to remain the sandy material we've dealt with in the past. Prior to each dredging cycle within the 10 years we will review available information on potential oil or chemical spills in the area to determine if there would be any reason to suspect the material to be dredged would be contaminated. If there were any reason to suspect that additional sampling and testing will be undertaken and coordinated with your department.
- Condition No. 9d: The Corps requests a phrase be inserted such as "as needed". The Corps cannot commit to alternately place dredged material between Plum Island and Salisbury on an inflexible basis.
- Condition No. 12: The Corps does not concur that an environmental window should be imposed on this project. The window as provided in the WQC was based upon potential impacts to diadromous fish migration through the entrance

channel of the Merrimack River as well as lobster and shellfish activity at the disposal areas.

The Corps believes that the use of a hopper dredge to remove the material will not impede fish migration through the channel. Hopper dredges tow drag arms along the channel bottoms and hydraulically pump sediments into a hopper. This process allows the dredge plant to continuously move along the shoal areas to be removed. Based on these operating procedures, migrating fish species should have no trouble navigating in to or out of the Merrimack River in the presence of a hopper dredge. Additionally, the width of the mouth of the river is considerably larger than a typical hopper dredge. Turbidity plume impacts to migrating fish species should also be minimal as the material is sand and any plumes associated with barge overflow should be minimal and short-term.

As noted in the Environmental Assessment, lobster activity in the disposal areas is minimal as the disposal areas are wave-swept sandy nearshore environments. Therefore the Corps believes a restriction on disposal because of lobster activity is not warranted. There are shellfish resources in the area and the potential to impact adult and juvenile shellfish is a reality. However, based on the nature of the material to be dredged (sand) and the physical characteristics of the disposal areas (high-energy sand flats) the impacts to any shellfish in those areas should not be significant. The Corps contends that the placement of an approximately 17 inch layer of sand (which is similar in grain size to the existing sediment) over the disposal areas selected would not constitute a significant impact.

- Condition No. 14: Please reconsider the need for this condition. The Corps requests that it be eliminated, and that we be able to place the dredged material in the new extended nearshore Plum Island site described in Condition No. 8. The Corps believes that the expansion of the existing disposal area, which is being expanded to create a feeder berm for an eroding beach (a beneficial use), will not significantly impact marine resources in the area. The Corps has performed physical testing of the material (sand) and a benthic biological survey of the expansion area and has determined that the physical characteristics of the site as well as the benthic fauna are similar to that of the "approved" nearshore disposal area. Given the small scale of the expansion area, the limited time frame over which disposal activities occur, and the anticipated amount of the material to be placed at the site the Corps does not believe an extensive resource survey of the area is warranted. Attached is a letter to the National Marine Fisheries Service (NMFS) in which we did not concur with their Essential Fish Habitat (EFH) recommendations at the new expanded site. NMFS has not elevated the issue.

If you have any comments or questions, please call me at 978-318-8288.

Sincerely,

Jack Karalius  
Project Manager  
Navigation Section

Enclosure.

Copy furnished:

Mr. Hans Erwich, Chairman  
Newburyport Harbor Commission  
City Hall  
60 Pleasant Street  
Newburyport, MA 01950

Mr. Douglas Packer, Conservation Agent  
Town of Newbury  
Office of the Conservation Commission  
25 High Road  
Newbury, MA 01951



COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

MITT ROMNEY  
Governor

KERRY HEALEY  
Lieutenant Governor

ELLEN ROY HERZFELDER  
Secretary

ROBERT W. GOLLEDGE, Jr.  
Commissioner

February 13, 2007

Ms. Nancy Colbert  
Director of Planning and Development  
City of Newburyport  
60 Pleasant Street  
Newburyport, MA 01950

Re: **401 WATER QUALITY CERTIFICATION**  
Application for BRP WW 07 Major project dredging,

At: Newburyport Harbor Entrance Channel  
Merrimack River, NEWBURYPORT and SALISBURY

Transmittal No: W075196  
Wetlands File No: 51-053

Dear Ms. Colbert:

The Department has reviewed your application for Water Quality Certification, as referenced above. In accordance with the provisions of Section 401 of the Federal Clean Water Act as amended (33 U.S.C. §1251 *et seq.*), MGL c.21, §§ 26-53, and 314 CMR 9.00, it has been determined there is reasonable assurance the project or activity will be conducted in a manner which will not violate applicable water quality standards (314 CMR 4.00) and other applicable requirements of state law.

The waters of the Merrimack River Estuary (dredge site) and coastal waters of Newburyport and Salisbury (disposal sites) are designated in the Massachusetts Surface Water Quality Standards as Class SA Waters. Such waters are intended "as excellent habitat for fish, other aquatic life and wildlife and for primary and secondary contact recreation." Anti-degradation provisions of these Standards require that "existing uses and the level of water quality necessary to protect the existing uses shall be maintained and protected."

**Proposed Project:** The applicant proposes to dredge approximately 150,000 cubic yards of clean sand from an area 2700 feet long by 400 feet wide, in the outer portion of the Newburyport Harbor entrance channel. The Army Corps of Engineers is the Authorized Agent. A contracted

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DEP on the World Wide Web | <http://www.state.ma.us/dep>

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hopper dredge will remove the sediments to a maximum depth of 17 feet Mean Low Water. Once full, the hopper dredge will transport the sediments to the near shore placement site off Plum Island (Newbury) where the sediments will be discharged in long rows parallel to the shore in about 18 – 30 ft. of water. Keeping the sand within the littoral system would make it available for movement onto the beach for beneficial use as beach nourishment.

The project proposes to extend the Plum Island disposal site approximately 1,500 feet south of the current location as indicated by the longitude/latitude coordinates provided with the application and as shown on the plans. An alternate 40-acre, near shore disposal site with adequate capacity for this project is proposed at North Salisbury Beach. Water depths at the Salisbury disposal site range from 10-30 ft. MLW. Both sites have been used in the past as near shore placement sites for maintenance dredging of the inlet channel. The frequency of maintenance dredging is expected to be every three to five years.

Sediment sampling data: Sediment samples were done by surface grab method to a depth of 1-2 feet. Grain size analysis of the sediment samples taken from the dredging area indicates that the material is primarily sand, with less than 3% passing the No. 200 sieve. This is consistent with grain sizes of samples taken from both the Plum Island and Salisbury Beach near shore disposal sites and indicates that the dredge material is suitable for beach nourishment. The net effect of placement of sand at these sites is likely to be nourishment material for the eroding beaches at Plum Island and Salisbury.

The Department received no comments during the 21-day public comment period for the application, which began July 19, 2006.

As part of the resource agencies review, National Marine Fisheries Services (NMFS) expressed concern that information presented in the draft Environmental Assessment for the Newburyport Harbor Federal Navigation Project (FNP) would not constitute an adequate essential fish habitat (EFH) assessment due to "lack of site-specific resource characterization for the proposed expanded area" and recommended that "the use of the proposed expansion area of the Plum Island Disposal site should not occur and the disposal of dredged material should be limited to the previously utilized Plum Island disposal site". Thus Condition No. 14 will require the applicant to limit the placement of dredged material to the existing area with the coordinates identified in Condition No. 7.

Section 61 Findings: Pursuant to M.G. L. Chapter 30, Sections 61 to 62H including (M.E.P.A.) this project was reviewed as EOEA No 13503 and the Secretary's Certificate, issued on June 6, 2005, indicated that preparation of an Environmental Impact Report was not required. The Secretary's Certificate reiterates a CZM recommendation that the dredged material be placed at the northernmost reaches of the proposed placement site to maximize the effectiveness of the project to provide beach nourishment.

**Therefore, based on information currently in the record, the Department grants a 401 Water Quality Certification for this project subject to the following conditions to maintain water quality, to minimize impact on waters and wetlands, and to ensure compliance with appropriate state law:**

1. The Contractor shall take all steps necessary to assure that the proposed activities will be conducted in a manner that will avoid violations of the anti-degradation provisions of Massachusetts Surface Water Quality Standards that protect all waters, including wetlands.
2. Prior to the start of in-water work, the Department shall be notified of any proposed change(s) in plans that may affect waters or wetlands. The Department will determine whether the change(s) require a revision to this Certification.
3. Work in waters and wetlands shall conform substantially to plans submitted in application to this Department prepared by the Army Corps of Engineers.
4. The Department shall be notified, attention Ken Chin 617-292-5893, one week prior to the start of in-water work so that Department staff may inspect the work for compliance with the terms and conditions of this Certification.
5. At least one week prior to the start of dredging, the Newburyport Harbormaster's office shall be notified of the intended start date, so that local lobstermen and fishermen may be apprised of the upcoming work.
6. When sediment placement occurs in Salisbury, the sediment shall be deposited within an area with corner coordinates:
  - 42° 50.58' and 70° 48.75' (SW corner)
  - 42° 50.71' and 70° 48.75' (NW corner)
  - 42° 50.71' and 70° 48.40' (NE corner)
  - 42° 50.50' and 70° 48.40' (SE corner)
7. When sediment placement occurs in the previously approved Plum Island site, the sediment shall be deposited within an area with corner coordinates:
  - 42° 48.6' and 70° 47.9' (NW corner)
  - 42° 48.5' and 70° 47.7' (NE corner)
  - 42° 47.9' and 70° 47.85' (SE corner)
  - 42° 47.9' and 70° 48.05' (SW corner)
8. When sediment placement occurs in the new extended Plum Island site, the sediment shall be deposited within an area with corner coordinates:
  - 42° 48.20' and 70° 48.00' (NW corner)
  - 42° 47.90' and 70° 47.85' (NE corner)
  - 42° 47.60' and 70° 47.90' (SE corner)
  - 42° 47.65' and 70° 48.20' (SW corner)
9. Future maintenance dredging is authorized by this Certification for a period of five years, provided that:
  - a. the initial project and any subsequent dredging has been conducted satisfactorily with no violations of the terms and conditions of this Certification.
  - b. sediment placement occurs within the coordinates in Condition No. 6, 7 and 8.

- c. a due-diligent evaluation to determine that no know spills of oil or other toxic substances have occurred which could have contaminated the sediment in the dredge area.
  - d. Placement of dredged sediment will alternate between Plum Island and Salisbury.
10. Dredging in accord with this Certification may begin following the 21-day appeal period and once all other permits have been received.
11. Within 30 days of the completion of the initial dredging, a bathymetric survey of the basin, depicting post-dredge conditions, shall be sent to the Department.
12. In order to protect the pathway with spawning and forage habitat for diadromous fish species and to avoid impacts of disposal activity to lobster resources and shellfish spawning activities, no dredging shall occur between March 15<sup>th</sup> and November 1<sup>st</sup> of any year.

The applicant, or their contractor, shall make every feasible effort to complete the project within the permitted timeframe. Should the applicant, or their contractor, fail to complete the project and wish to request an amendment to the Certification for incursion into the no-dredge period, the written request shall be received by the Department by March 1<sup>st</sup>. The following information shall be included in the request:

- a. project location and transmittal number,
- b. the date on which dredging started,
- c. the number of days and hours per day the dredge operated,
- d. expected daily average production rate and the actual daily average production rate,
- e. an explanation of why the project failed to remain on schedule,
- f. an account of efforts made to get the project back on schedule,
- g. a plan depicting the areas that remain to be dredged,
- h. the number of cubic yards that remain to be dredged,
- i. an accurate estimate of the number of days required to complete the project,
- j. an evaluation of the impact of continued dredging on the species of concern,
- k. a description of any efforts that will be made to minimize the impacts of the project on the species of concern, and
- l. a realistic assessment of any societal/financial effects of a denial of permission to continue dredging.

The Department will share the information with other resource agencies and a decision to grant or deny the amendment shall be made by March 15<sup>th</sup>. Requests for amendment received after March 1<sup>st</sup> will be considered at the Department's discretion.

13. Disposal of any volume of dredged material at any location in tidal waters is subject to approval by this Department and the Massachusetts Coastal Zone Management office.
14. To avoid adverse effects to the EFH, the use of the proposed expansion area of the Plum Island placement area should be off-limited. The applicant and or its authorized agent have the option to conduct a site-specific resource characterization. Upon review of the

characterization, Division Marine Fisheries (DMF) and NMFS will determine whether impacts are acceptable to place dredged material at the expansion area.

This certification does not relieve the applicant of the obligation to comply with other applicable state or federal statutes or regulations. Any changes made to the project as described in the previously submitted Notice of Intent, 401 Water Quality Certification application, or supplemental documents will require further notification to the Department.

Certain persons shall have a right to request an adjudicatory hearing concerning certifications by the Department when an application is required:

- a. the applicant or property owner;
- b. any person aggrieved by the decision who has submitted written comments during the public comment period;
- c. any ten (10) persons of the Commonwealth pursuant to M.G.L. c.30A where a group member has submitted written comments during the public comment period; or
- d. any governmental body or private organization with a mandate to protect the environment which has submitted written comments during the public comment period.

Any person aggrieved, any ten (10) persons of the Commonwealth, or a governmental body or private organization with a mandate to protect the environment may appeal without having submitted written comments during the public comment period only when the claim is based on new substantive issues arising from material changes to the scope or impact of the activity and not apparent at the time of public notice. To request an adjudicatory hearing pursuant to M.G.L. c.30A, § 10, a Notice of Claim must be made in writing, provided that the request is made by certified mail or hand delivery to the Department, with the appropriate filing fee specified within 310 CMR 4.10 along with a DEP Fee Transmittal Form within twenty-one (21) days from the date of issuance of this Certificate, and addressed to:

Docket Clerk  
Office of Administrative Appeals  
Department of Environmental Protection  
One Winter Street, 2<sup>nd</sup> Floor  
Boston, MA 02108.

A copy of the request shall at the same time be sent by certified mail or hand delivery to the issuing office of the Wetlands and Waterways Program at:

Department of Environmental Protection  
One Winter Street, 6<sup>th</sup> Floor  
Boston, MA 02108.

A Notice of Claim for Adjudicatory Hearing shall comply with the Department's Rules for Adjudicatory Proceedings, 310 CMR 1.01(6), and shall contain the following information pursuant to 310 CMR 9.10(3):



- a. the 401 Certification Transmittal Number and DEP Wetlands Protection Act File Number;
- b. the complete name of the applicant and address of the project;
- c. the complete name, address, and fax and telephone numbers of the party filing the request, and, if represented by counsel or other representative, the name, fax and telephone numbers, and address of the attorney;
- d. if claiming to be a party aggrieved, the specific facts that demonstrate that the party satisfies the definition of "aggrieved person" found at 314 CMR 9.02;
- e. a clear and concise statement that an adjudicatory hearing is being requested;
- f. a clear and concise statement of (1) the facts which are grounds for the proceedings, (2) the objections to this Certificate, including specifically the manner in which it is alleged to be inconsistent with the Department's Water Quality Regulations, 314 CMR 9.00, and (3) the relief sought through the adjudicatory hearing, including specifically the changes desired in the final written Certification; and
- g. a statement that a copy of the request has been sent by certified mail or hand delivery to the applicant, the owner (if different from the applicant), the conservation commission of the city or town where the activity will occur, the Department of Environmental Management (when the certificate concerns projects in Areas of Critical Environmental Concern), the public or private water supplier where the project is located (when the certificate concerns projects in Outstanding Resource Waters), and any other entity with responsibility for the resource where the project is located.

The hearing request along with a DEP Fee Transmittal Form and a valid check or money order payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100) must be mailed to:

Commonwealth of Massachusetts  
Department of Environmental Protection  
Commonwealth Master Lockbox  
P.O. Box 4062  
Boston, MA 02211

The request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority. The Department may waive the adjudicatory-hearing filing fee pursuant to 310 CMR 4.06(2) for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file an affidavit setting forth the facts believed to support the claim of undue financial hardship together with the hearing request as provided above.

No activity may begin prior to the expiration of the appeal period or until a final decision is issued by the Department if an appeal is filed.

Failure to comply with this certification is grounds for enforcement, including civil and criminal penalties, under MGL c.21 §42, 314 CMR 9.00, MGL c. 21A §16, 310 CMR 5.00, or other possible actions/penalties as authorized by the General Laws of the Commonwealth.

If you have questions on this decision, please contact Ken Chin at 617-292-5893.

Sincerely,



Glenn Haas

Director

Division of Watershed Management

enclosure: Departmental Action Fee Transmittal Form

cc:

Jack Karalius, U.S. Army corps of Engineers, 696 Virginia Road, Concord, MA 01742-2751  
Newburyport Conservation Commission, 60 Pleasant Street, Newburyport, MA 01950  
Tay Evans, DMF, 30 Emerson Avenue, Gloucester, MA 01930  
Hans Erwich, City of Newburyport, 60 Pleasant Street, Newburyport, MA 01950  
Truman Hanson, CZM, 251 Causway Street, Suite 900, Boston, MA 02114-2119

KC/W075196



THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS  
OFFICE OF COASTAL ZONE MANAGEMENT  
251 Causeway Street, Suite 800, Boston, MA 02114-2136  
(617) 626-1200 FAX: (617) 626-1240

September 19, 2006

Jack Karalius  
Department of the Army  
New England District, Corps of Engineers  
696 Virginia Road  
Concord, MA 01742-2751

RE: 10 Year Federal Consistency Certification: Newburyport Harbor Federal  
Maintenance Dredging Project; Newburyport

Dear Mr. Karalius:

The Massachusetts Office of Coastal Zone Management (MCZM) has completed its review of the proposed maintenance dredging of the Newburyport Harbor Federal Navigation Project. This project entails the periodic maintenance dredging of the entrance channel to Newburyport Harbor at the mouth of the Merrimack River, with the placement of the dredged material in designated near-shore locations off either Plum Island to the south or Salisbury Beach to the north. Additionally, the proposal calls for the expansion of the previously used site off Plum Island. The Corps of Engineers has requested that this certification be valid for a period of ten (10) years.

We concur with your certification and find that the activity as proposed is consistent with the CZM enforceable program policies.

If the above-referenced proposal, which has received this concurrence from CZM, is modified in any manner or is noted to be having effects on the coastal zone or its uses that are substantially different than originally proposed, please submit an explanation of the nature of the change to this Office pursuant to 301 CMR 21.17 and 15 CFR 930.66.

Thank you for your continued cooperation with CZM and best of luck with the project.

Sincerely,

Susan Snow-Cotter  
Director

BKL FOR SSC

SSC/rlb





**DEPARTMENT OF THE ARMY**  
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS  
696 VIRGINIA ROAD  
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO  
ATTENTION OF

August 3, 2006

Programs Project Management Division  
Programs & Civil Project Management Branch

Mr. Alex Strysky  
Project Review Coordinator  
Massachusetts Office of Coastal Zone Management  
251 Causeway Street, Suite 800  
Boston, MA 02114

Re: Proposed Newburyport Harbor Federal Maintenance Dredging Project

Dear Mr. Strysky:

The U.S. Army Corps of Engineers requests that your office review the proposed Newburyport Harbor Federal Maintenance Dredging project for consistency with the Coastal Zone Management (CZM) Program.

The proposed work involves the Federal maintenance dredging of about 150,000 cubic yards of sand from the Newburyport Harbor entrance channel. Nearshore disposal sites will be alternated between previously-used nearshore sites off Plum Island and Salisbury Beach – but, in addition to the previously-used site off Plum Island, a new expanded site, averaging about 800 yards by 400 yards, and extending about 1,500 feet south of the previously-used site, is proposed. (Please see attached drawing). We intend to utilize this new, expanded Plum Island nearshore disposal site during the next dredging project. The work will be performed by contract (private) hopper dredge, and will take approximately 3 to 5 weeks. The entrance channel will be dredged to -15 feet mean lower low water (MLLW), plus 2 feet of allowable (but not required) overdepth to -17 feet MLLW.

The last 3 times we performed maintenance dredging in the entrance channel were July-August 1999, September 1996, and April-May 1993. Disposal was nearshore off either Plum Island or Salisbury Beach.

We are requesting a long-term (10-year) CZM consistency concurrence from your office. Our previous 10-year CZM consistency concurrence was issued March 13, 1996.

We believe that the proposed maintenance dredging in the authorized navigation project is consistent with the program policies established as a result of the Coastal Zone Management Act of 1972. The dredging operations will be conducted in a manner that is consistent with the CZM Management Plan.

The proposed project complies with the following CZM policies:

•**WATER QUALITY POLICY #1** - Ensure that point-source discharges in or affecting the coastal zone are consistent with federally approved state effluent limitations and water quality standards.

Consistency: The placement of dredged sand at the nearshore disposal site will temporarily increase turbidity in the waters in and adjacent to the disposal site. However, the impacts will be short-term and localized. The placement/disposal of the dredged sand will not significantly affect water quality in the vicinity of the site. Therefore, this project is consistent with this policy.

•**WATER QUALITY POLICY #2** - Ensure that nonpoint pollution controls promote the attainment of state surface water quality standards in the coastal zone.

Consistency: The dredging and disposal of the sandy material will be performed using the best management practices to control non-point pollution sources. Therefore, this project is consistent with this policy.

•**WATER QUALITY POLICY #3** - Ensure that activities in or affecting the coastal zone conform to applicable state and federal requirements governing subsurface waste discharges.

Consistency: The dredged material to be placed nearshore off either Plum Island or Salisbury Beach is clean sand. Therefore, this project is consistent with this policy.

•**HABITAT POLICY #1** - Protect coastal resource areas including salt marshes, shellfish beds, dunes, beaches, barrier beaches, salt ponds, eelgrass beds, and fresh water wetlands for their important role as natural habitats.

Consistency: The dredging of material from the Newburyport Harbor entrance channel will not significantly impact coastal resource areas. We intend to utilize the dredged sandy material beneficially by placing the material nearshore, where it will act as a feeder berm to nourish the nearby beach. Any adverse impacts from this project are anticipated to be short-term and highly localized. Therefore, this project is consistent with this policy.

•**HABITAT POLICY #2** - Restore degraded or former wetland resources in coastal areas and ensure that activities in coastal areas do not further wetland degradation but instead take advantage of opportunities to engage in wetland restoration.

Consistency: No wetland areas will be impacted by this project. Therefore, this policy is not applicable.

•**PROTECTED AREAS POLICY #1** - Preserve, restore, and enhance complexes of coastal resources of regional or statewide significance through the Areas of Critical Environmental Concern program.

Consistency: No Areas of Critical Environmental Concern will be impacted by this project. All work is in the water. Therefore, this policy is not applicable.

•**PROTECTED AREAS POLICY #2** - Protect state and locally designated scenic rivers and state classified scenic rivers in the coastal zone.

Consistency: No scenic rivers will be impacted by this project. Therefore, this policy is not applicable.

•**PROTECTED AREAS POLICY #3** - Ensure that proposed developments in or near designated or registered historic districts or sites respect the preservation intent of the designation and that potential adverse effects are minimized.

Consistency: No developments are proposed. Therefore, this policy is not applicable.

•**COASTAL HAZARD 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.

Consistency: We intend to utilize the dredged sandy material beneficially by placing the material nearshore, where it will act as a feeder berm to nourish the nearby beach. This project is therefore consistent with this policy.

•**COASTAL HAZARD POLICY #2** - Ensure construction in water bodies and contiguous land areas will minimize interference with water circulation and sediment transport. Approve permits for flood or erosion control projects only when it has been determined that there will be no significant adverse effects on the project site or adjacent or downcoast areas.

Consistency: This project will not significantly interfere with water circulation patterns and sediment transfer. We intend to use the mechanism of sediment transfer beneficially, as stated above, by placing the dredged sand nearshore, where it will act as a feeder berm to nourish the nearby beach. Therefore, this project is consistent with this policy.

•**COASTAL HAZARD 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, and
- not promote growth and development in hazard-prone or buffer areas, especially in Velocity zones and ACECs, and
- 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.

Consistency: This project will not damage natural buffers, promote development, or reconstruct structures. The proposed dredging will improve navigation by removing shoaling/sediment build-up which is causing a navigation hazard. Therefore, this project is consistent with this policy.

•**COASTAL HAZARD POLICY #4** - Prioritize public funds for acquisition of hazardous coastal areas for conservation or recreation use, and relocation of structures out of coastal high hazard areas, giving due consideration to the effects of coastal hazards at the location to the use and manageability of the area.

Consistency: Not applicable.

•**PORTS POLICY #1** - Ensure that dredging and disposal of dredged material minimize adverse effects on water quality, physical processes, marine productivity and public health.

Consistency: The dredging and disposal of sandy material from the Newburyport Harbor entrance channel will not significantly impact water quality, physical processes, marine resources, or public health. Dredging and disposal will impact existing benthic resources in the project footprint, but recolonization of benthic species from adjacent areas will allow the impacted areas to recover to pre-dredge conditions. Water quality impacts at the dredge and disposal sites will be limited to short-term increases in turbidity. Therefore, this project is consistent with Ports Policy #1.

•**PORTS POLICY #2** - Obtain the widest possible public benefit from channel dredging, ensuring that designated ports and developed harbors are given highest priority in the allocation of federal and state dredging funds. Ensure that this dredging is consistent with marine environment policies.

Consistency: The dredging of material from the Newburyport Harbor entrance channel is required to allow for safe navigation for recreational and commercial vessels. As previously stated, this project is consistent with marine environmental policies since no long-term adverse impacts are anticipated. This project is consistent with this policy.

•**PORTS POLICY #3** - Preserve and enhance the capacity of Designated Port Areas (DPAs) to accommodate water-dependent industrial uses, and prevent the exclusion of such uses from tidelands and any other DPA lands over which a state agency exerts control by virtue of ownership, regulatory authority, or other legal jurisdiction.

Consistency: Not applicable.

•**PORTS MANAGEMENT PRINCIPLE #1** - Encourage, through technical and financial assistance, expansion of water dependent uses in designated ports and developed harbors, re-development of urban waterfronts, and expansion of visual access.

Consistency: Not applicable.

•**PUBLIC ACCESS POLICY #1** - Ensure that developments proposed near existing public recreation sites minimize their adverse effects.

Consistency: Not applicable.

•**PUBLIC ACCESS MANAGEMENT PRINCIPLE #1** - Improve public access to coastal recreation facilities and alleviate auto traffic and parking problems through improvements in public transportation. Link existing coastal recreation sites to each other or to nearby coastal inland facilities via trails for bicyclists, hikers, and equestrians, and via rivers for boaters.

Consistency: Not applicable.

•**PUBLIC ACCESS MANAGEMENT PRINCIPLE #2** - Increase capacity of existing recreation areas by facilitating multiple use and by improving management, maintenance and public support facilities. Resolve conflicting uses whenever possible through improved management rather than through exclusion of uses.

Consistency: Not applicable.

•**PUBLIC ACCESS MANAGEMENT PRINCIPLE #3** - Provide technical assistance to developers of private recreational facilities and sites that increase public access to the shoreline.

Consistency: Not applicable.

•**PUBLIC ACCESS MANAGEMENT PRINCIPLE #4** - Expand existing recreation facilities and acquire and develop new public areas for coastal recreational activities. Give highest priority to expansions or new acquisitions in regions of high need or limited site availability. Assure that both transportation access and the recreational facilities are compatible with social and environmental characteristics of surrounding communities.

Consistency: Maintenance dredging of the Newburyport Harbor entrance channel will improve access to Newburyport Harbor and will restore safe navigation for public boating and recreational and commercial access to the harbor and the Merrimack River. Therefore, this project is consistent with this policy.

•**ENERGY POLICY #1** - For coastally dependent energy facilities, consider siting in alternative coastal locations. For non-coastally dependent energy facilities, consider siting in areas outside of the coastal zone. Weigh the environmental and safety impacts of locating proposed energy facilities at alternative sites.

Consistency: Not applicable.

•**ENERGY MANAGEMENT PRINCIPLE #1** - Encourage energy conservation and the use of alternative sources such as solar and wind power in order to assist in meeting the energy needs of the Commonwealth.

Consistency: Not applicable.

•**OCEAN RESOURCES POLICY #1** - Support the development of environmentally sustainable aquaculture, both for commercial and enhancement (public shellfish stocking) purposes. Ensure that the review process regulating aquaculture facility sites (and access routes to those areas) protects ecologically significant resources (salt marshes, dunes, beaches, barrier beaches, and salt ponds) and minimizes adverse impacts upon the coastal and marine environment.

Consistency: Not applicable.

•**OCEAN RESOURCES POLICY #2** - Extraction of marine minerals will be considered in areas of state jurisdiction, except where prohibited by the MA Ocean Sanctuaries Act, where and when the protection of fisheries, air and marine water quality, marine resources, navigation and recreation can be assured.

Consistency: Not applicable.

•**OCEAN RESOURCES POLICY #3** - Accommodate offshore sand and gravel mining needs in areas and in ways that will not adversely affect shorelines areas due to alteration of wave direction and dynamics, marine resources and navigation. Mining of sand and gravel, when and where permitted, will be primarily for the purpose of beach nourishment.

Consistency: Not applicable. There is no mining of sand and gravel in this project. Maintenance dredging of sand from the Newburyport Harbor entrance channel will be placed nearshore, where it will act as a feeder berm to nourish the nearby beach. This project is therefore consistent with this policy.

•**GROWTH MANAGEMENT PRINCIPLE #1** - Encourage, through technical assistance and review of publicly funded development, compatibility of proposed development with local community character and scenic resources.

Consistency: Not applicable.

•**GROWTH MANAGEMENT PRINCIPLE #2** - Ensure that state and federally funded transportation and wastewater projects primarily serve existing developed areas, assigning highest priority to projects that meet the needs of urban and community development centers.

Consistency: The dredging of the Newburyport Harbor entrance channel will maintain waterborne transportation access to an existing developed public harbor. Therefore, this project is consistent with this policy.

•**GROWTH MANAGEMENT PRINCIPLE #3** - Encourage the revitalization and enhancement of existing development centers in the coastal zone through technical assistance and federal and state financial support for residential, commercial and industrial development.

Consistency: Not applicable.



Enclosed are the following:

- A copy of the draft Environmental Assessment (EA).
- Plan view of the dredge area and the Plum Island nearshore disposal area, including the proposed, expanded area.
- Plan view of the dredge area and the Salisbury Beach nearshore disposal area.
- Detailed plan view of the dredge area, and a cross-section, on an 11" x 17" sheet.
- Environmental Notification Form (ENF) Certificate, dated June 6, 2005.
- Memorandum, dated April 28, 2005, from MA Office of Coastal Zone Management.
- Previous 10-year CZM consistency concurrence letter from the MA Office of Coastal Zone Management dated March 13, 1996.

If you need anything else, or have any comments or questions, please call me at 978-318-8288.

Sincerely,

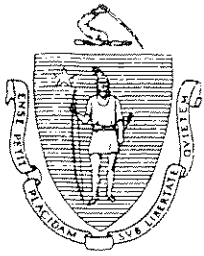


Jack Karalius  
Project Manager  
Navigation Section

Enclosures.

Copy Furnished (no enclosures):

Mr. Hans Erwich, Chairman  
Newburyport Harbor Commission  
City Hall  
60 Pleasant Street  
Newburyport, MA 01950



The Commonwealth of Massachusetts

Executive Office of Environmental Affairs

100 Cambridge Street, Suite 900

Boston, MA 02114-2524

MITT ROMNEY  
GOVERNOR

KERRY HEALEY  
LIEUTENANT GOVERNOR

ELLEN ROY HERZFELDER  
SECRETARY

*Handwritten notes:*  
4/9/05  
2/17/05  
E

Tel. (617) 626-1000  
Fax. (617) 626-1181  
<http://www.mass.gov/envi>

June 6, 2005

CERTIFICATE OF THE SECRETARY OF ENVIRONMENTAL AFFAIRS  
ON THE  
ENVIRONMENTAL NOTIFICATION FORM

PROJECT NAME : Near-Shore Dredged Material Disposal  
off Plum Island Beach  
PROJECT MUNICIPALITY : Newbury/Newburyport  
PROJECT WATERSHED : Merrimack  
EOEA NUMBER : 13503  
PROJECT PROPONENT : City of Newburyport  
DATE NOTICED IN MONITOR : April 9, 2005

Pursuant to the Massachusetts Environmental Policy Act (G. L. c. 30, ss. 61-62H) and Section 11.06 of the MEPA regulations (301 CMR 11.00), I hereby determine that this project **does not require** the preparation of an Environmental Impact Report.

Project Description

As described in the Environmental Notification Form (ENF), the project involves the revision of the disposal site for approximately 15,000 cubic yards (cy) of sand to be dredged for maintenance purposes from the Federal Navigation Project in Newburyport Harbor (EOEA #6429). The material was previously approved for disposal at a sub-tidal site east of Plum Island, which is one of two near-shore locations historically used for disposal of dredged material from Newburyport Harbor. The newly proposed disposal site entails the extension of the previously approved disposal site by approximately 1,500 foot to the south

in order to indirectly nourish Plum Island Beach via in-shore migration of the deposited sand and to provide a measure of protection against further erosion of shoreline public utilities and properties. Benthic and physical sampling indicates that both the sediments and benthic community of the proposed disposal site are similar to the adjacent, previously-approved disposal site.

#### MEPA Jurisdiction and Permitting Requirements

The project is undergoing review pursuant to Section 11.03 (3)(b)(1)(f) and (3)(b)(4) of the MEPA regulations because the project involves alteration of one-half or more acres of wetlands (in this case, Land Under the Ocean) and the disposal of 10,000 or more cy of dredged material. The project will require a Chapter 91 License and a 401 Water Quality Certification from the Department of Environmental Protection (DEP) and may require Federal Consistency Review by the Office of Coastal Zone Management (CZM). The project will also require Order of Conditions from the Newbury Conservation Commission, which was issued on February 5, 2005, and has not been appealed.

The proponent is not seeking financial assistance from the Commonwealth for the project. Therefore, MEPA jurisdiction applies to those aspects of the project within the subject matter of required permits with the potential to cause Damage to the Environment. In this case, MEPA jurisdiction is limited to issues of wetlands, waterways and tidelands.

#### Permitting Issues

In its comments, DEP states that the proponents have provided sufficient information to proceed to permitting for a 401 Water Quality Certificate. However, the proponent should provide the additional items listed in DEP's comment letter when applying for the 401 Water Quality Certificate in order to ensure that the project avoids and minimizes impacts to the aquatic ecosystem. In its comments, CZM indicates its support for the project, but recommends that the dredged material be placed at the northernmost reaches of the proposed disposal site to maximize the effectiveness of the project to provide beach nourishment.

In its comments, the Board of Underwater Archeological Resources states that the U.S. Geological Survey and CZM will soon be conducting a remote sensing survey of the near-shore area off Plum Island and that results of this survey should be available in September 2005. If the survey indicates the presence of shipwrecks or other archeological sites in the proposed disposal area, the proponent should work with the Board to develop and implement measures to avoid adverse effects, including but not limited to adjusting the disposal area boundaries to ensure avoidance of submerged cultural resources. This may necessitate the submission of a Notice of Project Change (NPC).

### Conclusion

The impacts of the project within MEPA jurisdiction do not warrant the preparation of an EIR. I conclude that no further MEPA review is required. The proponents may resolve any remaining issues during the state and local permitting processes.

June 6, 2005

Date



Ellen Roy Herzfelder

### Comments received:

04/25/05 Board of Underwater Archeological Resources  
 05/02/05 Office of Coastal Zone Management  
 05/31/05 Department of Environmental Protection Northeast  
 Regional Office

ERH/RAB/rab