

# NEW BEDFORD HARBOR DEVELOPMENT COMMISSION AND TOWN OF FAIRHAVEN

## WORK PLAN FOR THE PRE-DESIGN INVESTIGATIONS NEW BEDFORD HARBOR DREDGE – PHASE III UNDER THE STATE ENHANCED REMEDY

New Bedford and Fairhaven, Massachusetts  
August, 2006

Distributed By:  
New Bedford Harbor Development Commission (NBHDC)  
New Bedford, Massachusetts  
And  
Town of Fairhaven, Massachusetts

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New Bedford, Massachusetts  
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STATE ENHANCED REMEDY**

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## ABBREVIATIONS AND ACRONYMS

APEX	Apex Environmental, Inc
ARAR's	Applicable, Relevant and Appropriate Regulations
CAD	Confined Aquatic Disposal
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
cy	cubic yards
CZM	The Office of Coastal Zone Management
EFHA	Essential Fish Habitat Assessment
ESA	Endangered Species Act
ESD	Explanation of Significant Differences
HASP	Health and Safety Plan
HTRW	Hazardous, Toxic, Radioactive Waste
iscy	in situ cubic yards
MassDEP	Massachusetts Department of Environmental Protection
MADMF	Massachusetts Division of Marine Fisheries
MA EOEA	Massachusetts Executive Office of Environmental Affairs
MLLW	mean lower low water
MOA	Memorandum of Agreement
NBH	New Bedford Harbor
NBHDC	New Bedford Harbor Development Commission
NBRA	New Bedford Re-Development Authority
NCP	National Contingency Plan
NGVD	National Geodetic Vertical Datum
NHESP	Natural Heritage and Endangered Species Program
NMFS	National Marine Fisheries Service
NOAA	National Oceanographic and Atmospheric Administration
NPL	National Priorities List
O&MP	Operations and Maintenance Plan
OU	Operable Unit
PCB	polychlorinated biphenyls
ppm	parts per million
QA	Quality Assurance
QA/QCP	Quality Assurance/Quality Control Plan
QC	Quality Control
RFQ	Request for Qualifications
ROD	Record of Decision
SAP	Sampling and Analysis Plan
SER	State-Enhanced Remedy
TSCA	Toxic Substance Control Act
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency

## **1.0 GENERAL INFORMATION**

### **1.1 Introduction**

The New Bedford Harbor Development Commission (NBHDC) [and its consultant, Apex Companies, LLC (Apex)] and the Town of Fairhaven have prepared this Work Plan for the characterization and design of the dredging of contaminated and non-contaminated sediments for the New Bedford Harbor Dredge – Phase III Dredge Project. This work is to be performed under the State Enhanced Remedy (SER). See Section 2.0 for a description of the SER. See Figure 1-1 for Site Locus Map showing site layout, locations of the New Bedford Harbor Dredge – Phase III dredge areas.

As indicated by the Town of Fairhaven and the City of New Bedford, the proposed dredge areas for the Phase III dredging include:

- the AGM Marine Facility (located at the South End of Fish Island, in New Bedford, Massachusetts);
- Hathaway Braley Wharf (currently housing the Steamship Authority in Fairhaven, Massachusetts);
- Portions of D.N. Kelley & Son, Inc. piers, docks, and boat slips (in Fairhaven, Massachusetts);
- Portions of the Warren Alexander’s properties (in Fairhaven, Massachusetts);
- The Town of Fairhaven’s Union Wharf (in Fairhaven, Massachusetts);
- The Sal Ingrande area (in Fairhaven, Massachusetts);
- An area north of Linberg Marine (in Fairhaven, Massachusetts); and
- The Acushnet River Boat Club (Coast Guard Auxiliary) piers (in Fairhaven, Massachusetts).

The New Bedford Harbor Dredge - Phase III will be conducted in harbor areas within and adjacent to New Bedford’s and Fairhaven’s existing marine facilities.

The New Bedford/Fairhaven Harbor Plan, approved by the Secretary of the Massachusetts Executive Office of Environmental Affairs (EOEA) on September 24, 2002, represents the City of New Bedford’s and Town of Fairhaven’s joint harbor maintenance and future development plans. The New Bedford Harbor Dredge – Phase III work scope for this project represents a number of the high-priority areas requiring dredging under the Harbor Plan. Please note that the dredging for AGM Marine Facility is not in the New Bedford/Fairhaven Harbor Plan, and is thus not included in the SER. Permitting for this maintenance dredging shall be completed outside the SER; however this area will be included in this Work Plan, as tasks for this facility shall be performed concurrently as for the other areas included in the New Bedford Harbor Dredge – Phase III and the AGM facility dredge material will be disposed of in the New Bedford Harbor CAD cell under the SER.

### **1.2 Project Purpose and Summary**

The intent of the maintenance dredging is to restore areas surrounding the piers, docks and wharfs to their approved depths at the designated facilities. To that end, the New Bedford Harbor Dredge – Phase III Work Plan calls for maintaining the following areas:

- Portions of the area adjacent to piers and docks at the AGM Marine Facility (AGM Marine Dredge Area);
- Portions of the area adjacent to the Hathaway Braley Wharf (the Steamship Authority’s dock) (Hathaway Braley Dredge Area);
- Additional portions of the area adjacent to D.N. Kelley & Son’s piers, docks, and boat slips not dredged during Phase II (D.N. Kelley Dredge Area Dredge Area);

- Additional portions of the areas adjacent to the Warren Alexander properties not dredged during Phase II (Warren Alexander Dredge Areas);
- Additional portions of the areas adjacent to and north of the Linberg Marine, Inc. property (Linberg Marine Dredge Area);
- The area adjacent to the Sal Ingrande property (Sal Ingrande Dredge Area);
- Portions of the area adjacent to the Town of Fairhaven's Union Wharf (Union Wharf Dredge Area); and
- Portions of the areas adjacent to the piers, docks and slips of The Acushnet River Boat Club (Coast Guard Auxiliary) (Acushnet River Boat Club Dredge Area).

Dredged sediments from the maintenance dredging of the above-listed locations is to be placed into a proposed new CAD cell; please note that the design and construction of the proposed new CAD Cell is not part of this Work Plan. After preliminary review of the structural information available for Hathaway Braley Wharf, it is apparent that dredging cannot proceed in that location without repair and reconstruction of the wharf. Replacement of the granite block and solid fill wharf with a sheet pile and solid fill wharf is one preferred alternative. It is proposed that this activity be conducted as part of the State Enhanced Remedy Dredging at Hathaway Braley Wharf, as the reconstructed wharf can act as a repository for sands and gravels removed from the proposed new CAD cell during its construction, thereby reducing pressures to send materials from the proposed new CAD cell offshore.

**Figure 1-1 Site Locus Map**



Figure 1-1: Site locus map for New Bedford Harbor Dredge – Phase III Areas.

In order to achieve the above-noted activities, the following work scope items will be completed under the SER:

- Activity 1: Site Surveys and Background Data Collection, including:
  - Bathymetric surveys; and
  - Underwater archeology.
- Activity 2: Geotechnical and Environmental Sampling and Analysis Program;
- Activity 3: Completion and Submission of Regulatory Documents, including the Essential Fish Habitat and Endangered Species Assessment, Dredge Materials Disposal Plan, and an Underwater Archaeological & Hazards Analysis. (Please note that additional material will likely need to be completed for permitting of maintenance dredging at the AGM Marine Facility, as it is currently not within the SER process; and
- Activity 4: Preliminary Engineering Design of the New Bedford Harbor Dredge – Phase III dredge areas.

All work associated with the New Bedford Harbor Dredge – Phase III and sediment transfer operations will be managed by the NBHDC. Work will be conducted under the State Enhanced Remedy (SER) as set forth in the Memorandum of Agreement (MOA) between the NBHDC and the Massachusetts Department of Environmental Protection (MassDEP). Section 2.0 provides further detail regarding the SER process.

This Work Plan is divided into four sections. Section 1.0 provides an introduction and overview of the project, including a brief outline of the project's major work elements that affect the development of this Work Plan. Section 2.0 is a discussion of the State Enhanced Remedy (SER) approach and identification of the performance standards. Section 3.0 is the Scope of Work. Section 4.0 presents the Project Schedule for the referenced work.

This Work Scope is intended to present an outline of the project flow and process that will be undertaken in order to achieve the stated project goals. Project-specific design elements, field data collection, and construction activities will be determined and detailed in subsequent design documents as the project progresses.

### **1.3 Site Description and Background Information**

The New Bedford Harbor Superfund Site consists of approximately: 1,000 acres of urban tidal estuary and shoreline areas along the Acushnet River Estuary and New Bedford Harbor; and approximately 17,000 acres in Buzzards Bay. From the 1940's until the mid 1970's, PCBs were discharged into the Estuary, Harbor, and Bay by direct discharges and the sewer system of the City of New Bedford. These discharges contaminated the sediments at levels ranging from a few parts per million (ppm or mg/Kg) to over 200,000 mg/Kg PCBs. Other contaminants (such as heavy metals and PAHs) have also been discharged into the Site at various times since the 1800's. There are PCB contaminated wetland/salt marsh areas in the Estuary next to the shoreline of the Towns of Acushnet and Fairhaven. The current human health risks from the site are from direct contact with PCBs in the sediments, and ingestion of fish and shellfish.

In addition to the public health and environmental impacts, contamination of the harbor area has had tremendous economic impacts on the local communities. The commercial fishing industry has suffered, and contamination of the sediments has made it difficult to conduct any maintenance dredging for navigational purposes. Lack of maintenance dredging has resulted in limiting the size of commercial ships that can enter the harbor, thus limiting its use as a regional port facility.

The Superfund related dredging will remove contamination down to a level that no longer poses a risk to human health and the environment. This work is anticipated to cost up to \$300 million and take more than 20 years to complete, depending on EPA's funding. Even with the Superfund dredging, the maintenance dredging would still have to be done and the problems with handling and disposal of large amounts of lightly contaminated sediments would remain.

A Dredged Material Management Plan (DMMP), EOE No. 11669 Final Environmental Impact Report (FEIR) was prepared for the Office of Coastal Zone Management (CMZ) and the Cities of New Bedford and Fairhaven, MA. This report was prepared by the Maguire Group Inc. in association with Apex Companies, LLC, ASA, Inc., ENSR International and SAIC. The purpose of the FEIR was to provide a state designation of a disposal site in New Bedford/Fairhaven Harbor for dredged material determined to be unsuitable for open-water disposal due to contamination. The FEIR identifies the Popes Island North site (one of the areas to the north of the Route 6 Bridge in New Bedford Harbor) as the preferred alternative disposal site, as well as the least environmentally damaging practicable alternative (LEDPA) under the Clean Water Act.

Work completed to date (both under and not under the SER) under the New Bedford Harbor Dredge – Phase II has included construction of an initial CAD Cell and dredging of the following areas: the maritime Terminal in New Bedford, White's Terminal in New Bedford, Fish Island in New Bedford and a portion of the Federal Navigational Channel south of the Route 6 swing bridge in New Bedford, as well as several areas within the Town of Fairhaven, such as Linberg Marine, D.N. Kelley and Sons (Part I), the Warren Alexander property (Part I) and the Pease Park Boat Ramp. Dredge spoils from dredging conducted thus far (under Phase II) has been placed within New Bedford Harbor CAD Cell #1.

It is anticipated that dredge spoils from New Bedford Harbor Dredge – Phase III will be placed in a newly created CAD Cell; however, pre-design investigations and design of this additional CAD cell are not included within this Work Scope.

#### **1.4 Summary of Scope of Work**

The Scope of Work for this Work Plan involves conducting pre-design investigations in support of preliminary design of dredging for the New Bedford Harbor Dredge – Phase III areas. In addition, the Scope of Work includes tasks required to obtain regulatory approvals for the dredging to move into the construction stage. In the case of the AGM Marine facility, full regulatory permitting will be required. For all other locations, only planning and information documents for resource agencies under the SER will be required. The following is a summary of the four activities included in the Scope of Work:

- **Activity 1 - Site Surveys and Background Data Collection:** Completion of a detailed bathymetric survey of the proposed dredge area to update existing hydrographic information in support of the regulatory permit applications and the dredge design. Review of existing information concerning the dredge area and adjacent structures will also be completed. Geophysical investigations (to include Side Scan Sonar and magnetometry) will also be performed in order to submit the required marine archaeology clearance data to the Mass. Board of Underwater Archaeology.
- **Activity 2 - Geotechnical and Environmental Sampling and Analysis Program:** Completion of a sampling and analysis program which will include sampling for both chemical and geotechnical properties of the sediment and subsurface.

Information collected during Activity 1 will be used to determine geotechnical and environmental sample locations. The information collected during the field work will be used during the design of the dredging and disposal for the project.

- **Activity 3 - Completion and Submission of Regulatory Documents:** Preparation of documents required by Regulatory Agencies as part of the SER Process. For AGM Marine, preparation and submittal of the regulatory documents for a dredge permit under the normal minor dredge project process will be necessary and will be conducted under a separate and parallel track to the SER process.
- **Activity 4 - Preliminary Engineering Design:** Preparation of engineering and design services for the New Bedford Harbor Dredge – Phase III. Engineering design includes: design drawings of footprints and cut depths, volume analysis, side slope analysis, adjacent structures analysis, material character analysis, dredge methods assessment, and the determination of the preliminary performance standards for the dredge areas noted above. The design task does not include contractor procurement and the preparation of detailed construction contract documents. Engineering for CAD Cell #2 is also not included under this work scope at this time.

## 1.5 Assumptions

This section outlines major assumptions made during Work Plan preparation.

NBHDC had developed this Work Plan based upon the following assumptions:

- All contaminated material removed will be transported to CAD Cell(s) in New Bedford Harbor.
- An aggressive schedule will be undertaken in order to complete this project as dictated by the needs of the users of the Harbor.
- The schedule for overall project completion will be based upon obtaining necessary stakeholder support and the Harbor needs.

## **2.0 STATE ENHANCED REMEDY PROCESS**

The sections below discuss various decisions and/or agreements that preceded and/or are part of the implementation of the State Enhanced Remedy (SER).

### **2.1 Discussion of the State Enhanced Remedy Process**

Attachment A presents sections from the USEPA 1998 Record of Decision (ROD) for the New Bedford Harbor Superfund Site regarding the SER.

The regulation covering Superfund, the National Contingency Plan (NCP), contains a little used provision called Enhancement of Remedy (40 CFR 300.515 (f)). This provision allows a state to propose extending the scope of a remedy to cover additional remediation, and allows the additional remediation to be included in the Superfund process. For the New Bedford Harbor Superfund remedy, MassDEP requested the use of this provision to link Navigational Dredging to the Superfund process, and this enhancement is referred to as the State Enhanced Remedy (SER). While this request did not ask EPA to pay for the additional remediation, it does provide many benefits. It allows the State to coordinate certain activities with the Superfund work and utilize work already being done, thereby avoiding duplication of efforts. Since CERCLA allows for the on-site disposal of remedial contamination, the SER will also help provide options for the on-site disposal of contaminated sediments, not already being dredged by EPA's Superfund cleanup, but necessary for the navigational dredging, a major impediment to maintenance dredging in any harbor. And it will also help to reduce the administrative requirements of doing this type of dredging outside of the Superfund process. These factors together could lead to significant time and cost savings to the local communities and the Commonwealth, and help to restore the harbor economy of the New Bedford area.

MassDEP, as the lead regulatory authority, will provide oversight and review of the project documents, inspections and audit functions, interpretation and coordination with other Resource agencies and serve as technical liaison relative to State or Federal agencies. MassDEP will have overall approval authority for the projects conducted by the NBHDC under the SER and will also have stop-work authority for actions that it interprets are in conflict with this agreement, the Performance Standards, or the Federal and State laws and/or regulations. MassDEP will name a SER Project Manager, who will coordinate communications, approvals and oversight with MassDEP, other appropriate State and Federal agencies. Off-site disposal or reuse of dredged sediment will be conducted in compliance with permitting requirements of the appropriate regulatory agencies.

### **2.2 Memorandum of Agreement (MOA)**

A NBHDC/MassDEP MOA establishes a relationship between the NBHDC and MassDEP, lays the framework for the SER process and establishes the roles, responsibilities and relationships between NBHDC, MassDEP and the other Federal and State Agencies involved as set forth in the USEPA 1998 Record of Decision (ROD) for the New Bedford Harbor Superfund Site. Projects conducted under the auspices of the SER will be conducted as Phases (Specific areas in New Bedford and Fairhaven will be New Bedford Harbor Dredge Phase III). (Note: Phase I was conducted by the City of New Bedford and did not fall under the SER process. Phase II did fall under the SER process and was completed in 2005.) All subsequent Phases will follow the same process as that utilized for the EPA's New Bedford Harbor Superfund project, including the preparation of various guiding documents that detail the plan for the work to be conducted under this Phase.

The following agencies will be involved in the SER Process:

- U.S. Environmental Protection Agency (USEPA)
- U.S. Army Corps of Engineers (USACE)
- National Marine Fisheries Service (NMFS)
- Massachusetts Executive Office of Environmental Affairs (EOEA)
- Massachusetts Department of Environmental Protection (MassDEP)
- The Office of Coastal Zone Management (CZM)
- Massachusetts Division of Marine Fisheries (MA DMF)
- National Oceanic and Atmospheric Administration (NOAA)
- Other State, Local, and/or Federal Agencies as necessary

### 2.2.1 Performance Standards

Under the Superfund process, section 121(e) of CERCLA exempts response actions conducted entirely on-site from having to obtain federal, state, or local permits; these actions need only comply with the substantive aspects of applicable or relevant and appropriate requirements (ARARs). ARARs are cleanup standards, standards of control or other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law that either apply to the remediation at the site or address problems or situations sufficiently similar to those encountered at the site that their use is well suited to the particular site. Because the SER was included in the New Bedford Harbor Site ROD, the SER will benefit from the permit exemption for activities conducted onsite. Likewise, the substantive requirements of the regulations identified as Performance Standards must be complied with for onsite actions. For any off-site activities (such as disposal), all administrative and substantive requirements of all standard regulatory laws must be met. The NBHDC and MassDEP Project Manager have met and will continue to meet with all the Resource Agencies to identify and discuss the Performance Standards for this project.

### 2.2.2 Additional Performance Standards

Identified below are the more significant performance standards and a brief description of the actions to be taken to comply with them. The NBHDC will be the entity to perform coordination and consultation tasks. A comprehensive list of Performance Standards is included in Attachment B. ARARs are included as Tables 1-1 and 1-2.

- Clean Water Act, Sections 404, Dredge and Fill Activities, including Section 401 Water Quality Certification and State Water Quality Standards (314 CMR 4.00), Massachusetts Certification for Dredging, Dredged Material Disposal and Filling in Waters (314 CMR 9.06 (1-2)):  
The substantive water quality standards identified in the Project Performance Standards (Attachment B) will be incorporated in contract documents. Dredge and fill activities will be implemented as to minimize to the maximum extent possible any adverse environmental impacts through environmental controls.
- Rivers and Harbors Act, Section 10:  
Dredging and disposal activities will comply with the substantive requirements and conditions normally associated with the issuance of a U.S. Army Corps of Engineers regulated dredging project. These activities will be carried out in coordination with the Corps and other Resource Agencies.

- Endangered Species Act, Magnuson-Stevens Act, Massachusetts Natural Heritage and Endangered Species Program, and Fish and Wildlife Coordination Act:  
Consultations will occur with the National Marine Fisheries Service, the U.S. Fish and Wildlife Services and the Massachusetts Division of Marine Fisheries. The NBHDC will review the previously submitted Essential Fish Habitat Assessment for Phase II work and update it with project specific information and evaluate essential fish habitat impacts associated with this project, along with any endangered species affected by the project. Avoidance where possible and mitigation measures will be proposed to address any EFH and endangered species impacts.
- Preservation of Historical and Archaeological Data Act of 1974 and Massachusetts Board of Underwater Archaeological Resources (MGL Ch. 6 Section 179-180):  
Coordination will occur with the appropriate tribal entities concerning the project in accordance with the Act (in the spirit of the Memorandum of Understanding (MOU) between the New Bedford Superfund Project and the local Native American Tribes). Additionally, coordination will occur with the Massachusetts Board of Underwater Archaeology and cultural surveys will be completed where necessary.
- Massachusetts Coastal Zone Management Federal Consistency:  
Project documents will be provided to the Massachusetts Office of Coastal Zone Management (CZM) for review and comment relative to consistency with CZM enforceable program policies.
- Massachusetts Administration of Waterways Licenses Law, Chapter 91:  
Activities will comply with the substantive standards as well as any appropriate special waterways permit conditions identified in the Project Performance Standards in Attachment B.
- Wetland Protection – Federal Executive Order 11990, Part 6, Appendix A, Massachusetts Wetland Protection Act, Floodplain Management – Executive Order 11988, Part 6, Appendix A:  
The New Bedford Conservation Commission will be informed through meetings with the NBHDC of the intended project plans and Commission concerns and comments will be incorporated into contract documents as appropriate. Best Available measures will be used to minimize adverse effects on identified resource areas and buffer zones. Efforts will be made to minimize destruction, loss and degradation of wetlands and associated buffer zones as much as possible. Efforts will be taken to minimize potential harm to the floodplain.
- Toxic Substances Control Act (TSCA):  
Because some of the dredged sediment contains PCB concentrations in excess of 50 ppm, a risk-based disposal method that will not pose an unreasonable risk of injury to human health or the environment will be utilized and a determination secured (by EPA) under 40 CFR 761.61(c).

### 2.2.3 Submittals for Agency Review

Key documents will be submitted for agency review at appropriate design milestones. The MassDEP SER Project Manager will first route the Scope of Work (SOW) to USEPA for a consistency review in order to determine if the work is consistent with and does not conflict with the Superfund remedy. The SOW will then be returned to the MassDEP SER Project Manager with comments (if applicable) or with a SOW Consistency Determination. If EPA has not issued a determination, EPA comments will be given to the NBHDC (and NBHDC agents) for consideration and/or incorporation into the document, then returned to the EPA for a SOW Consistency Determination. Once the Determination is issued, MassDEP Project Manager will forward the Determination to the NBHDC, which will then submit a Draft Work Plan to the MassDEP Project Manager. The MassDEP Project Manager will coordinate with Resource Agencies review and comment, and identification of Performance Standards. All comments will then be returned

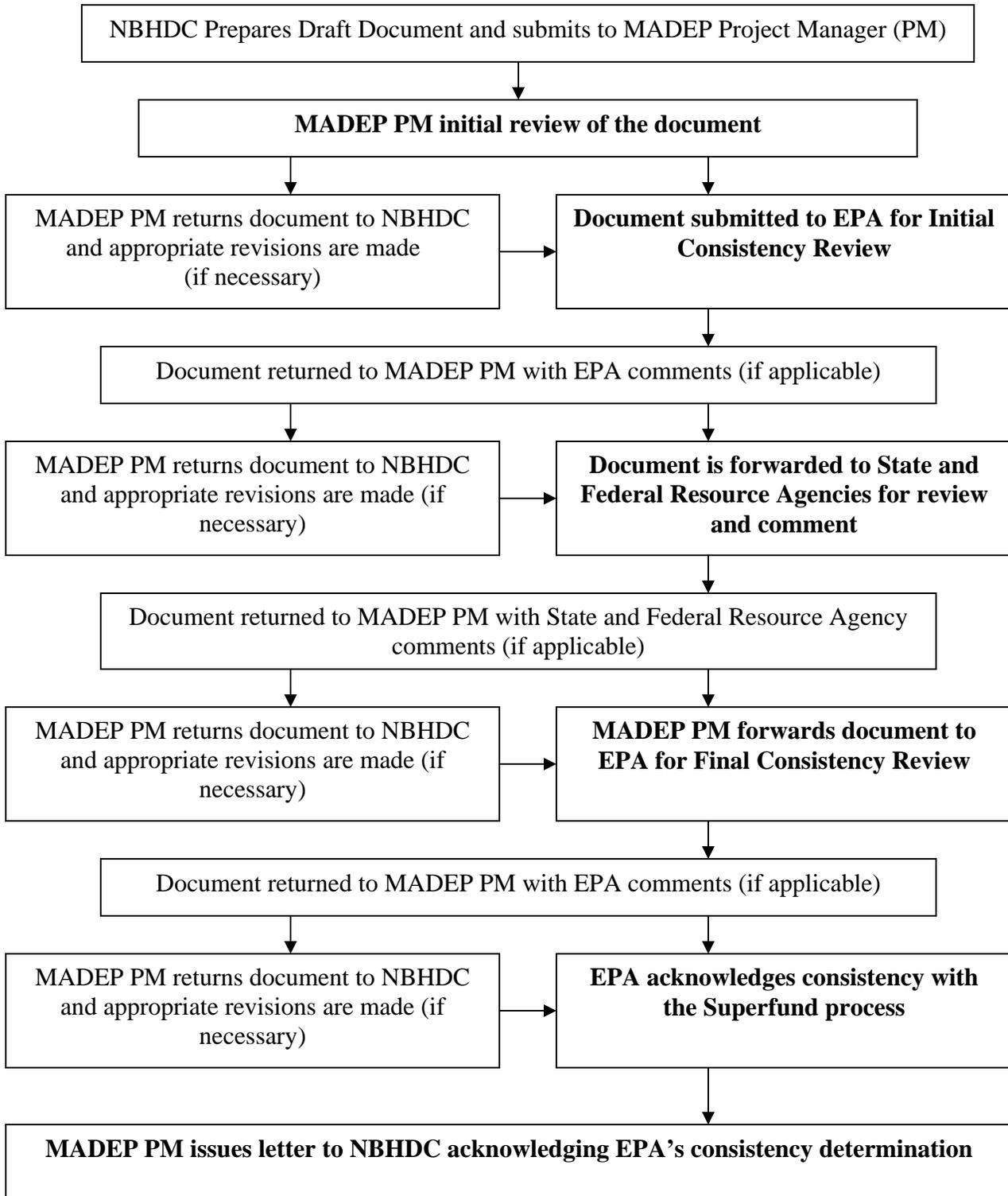
by the MassDEP Project Manager to the NBHDC for consideration and/or incorporation into the Draft Work Plan. All comments will be returned by the MassDEP Project Manager to the NBHDC for consideration and/or incorporation in the Draft Work Plan. Upon completion, MassDEP will send the Draft Work Plan to EPA for a Work Plan Consistency Determination to determine that the Work Plan and Performance Standards are consistent with and do not conflict with the Superfund remedy. The draft Work Plan will be returned to the MassDEP Project Manager with EPA comments or with a Work Plan Consistency Determination. If EPA has not issued a determination, EPA comments will be given to the NBHDC (and NBHDC agents) for consideration and/or incorporation into the draft Work Plan, then returned to EPA for a Work Plan Consistency Determination. Upon receiving the Determination, the MassDEP Project Manager will issue a letter to the NBHDC to proceed. Figure 2-1 presents the SER document review process as a flow chart diagram. It should be noted that the review process described herein is the formal SER review process. It is anticipated and encouraged that informal discussions, reviews and information sharing occur in order to expedite the review and approval process when appropriate and possible.

The following is a list of submittals currently identified for SER review:

- Statement of Work
- Sampling and Analysis Plan (SAP) – to include field and analytical QA/QC
- Design Documents (Basis of Design Summary Report, contract drawings & specifications, project data)
- Dredging Quality Assurance/Quality Control Plan (QA/QC Plan) - for construction
- Health and Safety Plan (HASP) – for construction
- Operation and Maintenance Plan (O&M Plan)

**Figure 2-1 SER Document Review Process**

Figure 2-1: SER DOCUMENT REVIEW PROCESS



### **3.0 SCOPE OF WORK**

As stated earlier in this document, the Scope of Work for this Work Plan involves conducting pre-design investigations in support of preliminary design of dredging for the New Bedford Harbor Dredge – Phase III areas. In addition, the Scope of Work includes tasks required to obtain regulatory approvals for the dredging to move into the construction stage. In the case of the AGM Marine facility, full regulatory permitting will be required. For all other locations, only planning and information documents for resource agencies under the SER will be required. The following is a more detailed description of the four activities included in the Scope of Work:

#### **3.1 Activity 1: Site Surveys and Background Data Collection**

Several site surveys are proposed in order to obtain detailed bottom characteristic information in the proposed dredge area. The surveys to be conducted include:

- Bathymetric,
- Side Scan Sonar, and
- Magnetometry Surveys.

The information generated by these surveys is needed for both the future dredge plan and regulatory submittals, as well as for the dredge program engineering design. A detailed bathymetric survey is needed over the proposed dredge area in order to provide accurate “existing conditions” information concerning the depth in the areas to be dredged. The existing conditions bathymetric survey will be used as a “basis for design” for the planned engineering design of the dredging, and will be included in the documents provided to the dredge contractor. Additionally, a geophysical Archaeological and Hazards Identification Survey is proposed over the proposed dredge area. This survey will include geophysical instrumentation (including Side-Scan Sonar and magnetometry), and will be conducted in order to image the harbor bottom and sub-bottom in the proposed dredge area to determine what hazards to dredging may exist and if there are any items of archaeological concern in the area.

Once field measurements have been collected, data evaluation and reduction will be performed to help characterize the topography of the sediment bottom in the proposed dredge area. The data reduction will allow further evaluation of the dredging and disposal parameters. Geosoft’s “Oasis Montaj” computer modeling program will be used to plot the survey data onto a map of the proposed dredge area.

#### **3.2 Activity 2: Sampling and Analysis Program**

A Pre-design Chemical and Geotechnical Sampling and Analysis Program will be performed within the footprint of the proposed dredge areas. The purpose of this program is to provide subsurface sediment information over the full depth of the proposed dredge areas for determination of geotechnical engineering parameters, and to identify possible environmental limitations for the design. Actions to be undertaken as part of this activity include:

- An Environmental Sampling and Analysis Program; and
- A Geotechnical Sampling and Analysis Program.

##### **3.2.1 Subactivity 1: Environmental Sampling and Analysis Program**

The Environmental Sampling and Analysis Program will consist of sample collection utilizing a research vessel equipped with a sampling platform. Sampling equipment will include a 3” diameter core tube unit

and a clamshell-type grab sampler. Samples will be collected at a frequency currently estimated at approximately one location for each thousand yards of material to be dredged, based upon the “basis of design” dredge volume estimates calculated during Activity 1. The following is a list of the currently proposed sampling frequencies:

- AGM Marine Dredge Area: approximately 5-7 samples;
- Hathaway Braley (Steamship Authority) Dredge Area: approximately 5-8 samples;
- D.N. Kelley Dredge Area Dredge Area: approximately 3-5 samples;
- Warren Alexander Dredge Area: approximately 3-5 samples;
- Warren Alexander Dredge Area (2): approximately 3-5 samples;
- Sal Ingrande Dredge Area: approximately 3-5 samples;
- Union Wharf Dredge Area: approximately 3-5 samples; and
- Acushnet River Boat Club Dredge Area: approximately 3-5 samples.

Apex proposes to analyze a subset of the collected samples for polychlorinated biphenyls (PCBs), metals, extractable petroleum hydrocarbons (EPH), volatile organic compounds (VOCs), total organic carbon (TOC), reactive sulfides and percent moisture. All analyses will be performed by a certified laboratory under a proper chain of custody. Once field measurements and all analytical data have been collected and analyzed by the laboratory, data evaluation and analysis will be performed to help characterize the sediment bottom in the proposed dredge area. The sampling is conducted in order to characterize the area to be dredged (to potentially identify hot spots), and to characterize the materials that will be deposited into CAD cell(s) to be designed and constructed for that purpose.

### 3.2.2 Subactivity 2: Geotechnical Sampling and Analysis Program

To support dredge design and engineering, a Geotechnical Sampling and Analysis Program of the proposed areas will be performed. This sampling program will be conducted at the same time as the environmental sediment sampling program. The primary purpose of the program will be to determine the geotechnical attributes of the sediment, and the soft and denser sediment thicknesses within the dredge area. The geotechnical sampling effort will utilize coring and grab equipment similar to that proposed for the environmental sampling, which will be conducted concurrently. Geotechnical samples will be logged in the field in order to determine the range and extent of the sediment types present within the dredge area. A subset of the samples collected, representing one sample from each of the identified sediment types from the dredge area, will be analyzed for geotechnical properties, including grain size and atterberg limits (if needed). The analytical testing will be conducted at a certified offsite laboratory. The geotechnical data will be utilized to assist in determining side-slope angles, cut depths, and disposal methods.

### 3.3 Activity 3: Permitting: Completion and Submission of Regulatory Documents

All project areas under this Work Plan will follow the above-noted SER regulatory process with the exception of the AGM Marine Dredge Area. As stated earlier in this document, the AGM Marine Dredge Area will require the Full Permit process. Both processes require data to be collected and documents to be submitted to appropriate regulatory agencies. As most of the regulatory submittals are the same for both processes, the processes will be completed concurrently.

### **SER Process**

The State Enhanced Remedy (SER) under the New Bedford Harbor Superfund Site requires coordination with a number of Federal, State and Local authorities including the Massachusetts Department of Environmental Protections (MassDEP), U.S. Army Corps of Engineers (USACE), the U.S. Environmental Protection Agency (USEPA), the National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Division of Marine Fisheries (DMF), Massachusetts Coastal Zone Management (MACZM), and Executive Office of Environmental Affairs (EOEA).

### **AGM Marine Dredge Area Process**

Applications and supporting documentation will be prepared and submitted as required by applicable Regulatory Agencies of the State of MA and the US Army Corps of Engineers for the AGM Marine Dredge Area. It is anticipated that the following regulatory filings will need to be completed.

- Underwater Archaeological & Hazards Analysis Report – MA Board Underwater Archaeology;
- Chapter 91 Permit application– MA DEP;
- Army Corps 404 Permit application– US Army Corps of Engineers;
- Waterways 401 Water Quality Certification – MA DEP;
- CZM Coordination; and
- Conservation Commission NOI.

Any comments made by agencies will be addressed and revisions to the documents will be made as necessary. It is assumed that the dredge project will involve less than 10,000 cubic yards and less than 10 acres in area, and, therefore, can follow the small dredge project regulatory process (no ENF or EFH required).

### **3.4 Activity 4: Preliminary Engineering Design**

Preliminary engineering design will be completed. Activities under this task include developing plan drawings, requirements, and scopes of work for the dredging and disposal facets of the project. Chemical and geotechnical analytical data of the sediment will be used along with the site surveys as a basis for the design conducted under this scope of work.

Actions to be undertaken to complete this activity include:

- Preparing a design, to include: dredge requirements and plan drawings (as required by the design process).

The engineering associated with the procurement of a contractor is not proposed to be conducted as part of this work. This activity does not include preparation of specifications and contract terms for procurement/bidding or construction oversight; these tasks will be performed under a subsequent scope of work in a subsequent Work Plan. It is assumed that the plan drawings will consist of: cut depths, side slopes, and footprints for dredging. Further, it is assumed that dredging requirements section of the design documents will include: environmental protection requirements and monitoring, disposal requirements, and debris handling requirements.

#### **4.0 PROJECT SCHEDULE**

The following critical path project milestones have been identified:

- Scope of Work (SOW)
- Conduct Site Surveys
- Conduct Underwater Archaeological & Hazards Analysis
- Conduct Geotechnical and Environmental Sampling and Analysis Program
- Complete Engineering Design

All tasks listed above are anticipated to be completed during the Summer/Fall of 2006. Actual construction schedule will be based on the schedule developed during design and in coordination with the regulatory agencies, the City, and Dredging Contractor. The schedule presented is conceptual. As the New Bedford Harbor Dredge – Phase III project is dynamic, actual schedule dates will change and certain items may be added and/or deleted. The Project Schedule will be updated as needed to reflect actual work.

In order for the construction portion of this dredge project to be completed, a new CAD cell (CAD Cell #2) will need to be designed and constructed in New Bedford Harbor. This Work Plan will be amended in the future in order to incorporate that work as soon as funding and approvals for the additional CAD Cell are received.

## **5.0 REFERENCES**

Maguire Group, Inc. 2003. Dredged Material Management Plan (DMMP) Final Environmental Impact Report (FEIR) for New Bedford and Fairhaven, Massachusetts: Prepared for The Office of Coastal Zone Management; Foxborough MA.

## **TABLES**

**Table 1-1: FEDERAL PERFORMANCE STANDARDS  
New Bedford Harbor Dredge - Phase III**

REQUIREMENT	CITATION	STATUS	REQUIREMENT SYNOPSIS	ACTIONS TO BE TAKEN TO ATTAIN ARARS
<b>Federal</b>				
Clean Water Act (CWA), Water Quality Criteria	33 USC 1313, 1314	Relevant and Appropriate	Federal surface water quality standards are incorporated into Massachusetts Surface Water Quality Standards.	Please refer to the Massachusetts Surface Water Quality Standards.
Fish and Wildlife Coordination Act	16 USC Part 661 et seq.; 40 CFR 6.302(g)	Applicable	Requires consultation with appropriate agencies to protect fish and wildlife when federal actions may alter waterways. Must develop measures to prevent and mitigate potential loss to the maximum extent possible.	Appropriate agencies will be consulted prior to implementation to find ways to minimize adverse effects to fish and wildlife from harbor dredging and construction of disposal cells.
Preservation of Historical and Archeological Data Act of 1974	16 USC 469 et. seq.	Applicable	Requires recovering and preserving significant historical or archeological data when such data is threatened by a federal action or federally licensed action which alters any terrain where such data is located.	An assessment of the Harbor for potential locations of historical or archaeological cultural resources will be conducted. Located objects will be recovered in accordance with requirements.
Coastal Zone Management Act	16 USC Parts 1451 et seq.	Applicable	Requires that any actions must be conducted in a manner consistent with state approved management programs.	The entire site is located in a coastal zone management area. Dredging activities will comply with state approved management programs.
Toxic Substances Control Act (TSCA), PCB Disposal Requirements	15 USC 2601 - 2692; 40 CFR 761.50(a)(3); (b)(3)(i)(A)	Applicable	General PCB Disposal requirements for all actions and provides jurisdiction for State Enhanced Remedy cleanup.	Dredging and disposal of TSCA material will be jointly managed by the EPA and implemented in accordance with TSCA requirements.
CWA, Section 404, Dredge and Fill Activities	40 CFR 230	Applicable	Control of discharges of dredged or fill material in order to restore and maintain the chemical, physical and biological integrity of waters in the United States.	Dredging of sediments and filling of CAD cells will be implemented so as to minimize to the maximum extent possible any adverse environmental impacts through engineering controls such as type of dredge used, or rate of dredging.
Rivers and Harbors Act	33 USC 401-426m	Applicable	Requires coordination and approval of U.S. Army Corps of Engineers (USACE) for dredging and for construction of future use of CAD cells in navigable waters of the United States.	All dredging and disposal activities will comply with substantive requirements of this chapter. Dredging will be coordinated with the USACE.
Magnuson-Stevens Fishery Conservation and Management Act	Public Law 94-265	Applicable	Provides for conservation and management of fishery resources within the U.S. and allows for the preparation of Fishery Management Plans (FMPs) for the those needing management.	Appropriate agencies will be consulted prior to implementation to find ways to minimize adverse effects to fish and wildlife from harbor dredging and construction of disposal cells.
Floodplain Management - Executive Order 11988	40 CFR Part 6, Appendix A	To be considered	Federal agencies are required to reduce the risk of flood loss, minimize the impact of floods, and to restore and preserve the natural and beneficial values of floodplains.	No floodplains are proposed to be impacted during this project. If any construction does occur within a floodplain, potential harm will be minimized.
Wetland Protection - Executive Order 11990	40 CFR Part 6, Appendix A	Applicable	Federal agencies are required to avoid adversely impacting wetlands whenever possible, minimize wetland destruction and preserve the value of wetlands.	The destruction, loss and degradation of wetlands will be minimized as much as possible given the extent and location of contaminated sediment.
Endangered Species Act	16 USC Part 1531 et. Seq; 40 CFR 6.302(h)	Applicable	Requires consultation with appropriate agencies if a threatened or listed species or their habitat may be affected.	The appropriate agencies will be consulted to consider any mitigation measure necessary for remedial activities affecting the feeding grounds of the roseate tern.

**Table 1-2: MASSACHUSETTS PERFORMANCE STANDARDS  
New Bedford Harbor Dredge - Phase III**

REQUIREMENT	CITATION	STATUS	REQUIREMENT SYNOPSIS	ACTIONS TO BE TAKEN TO ATTAIN ARARS
<b>Massachusetts</b>				
Surface Water Quality Standards	21 MGL 27; 314 CMR 4, 03(1)(3)(c)04 (1),(2),(4),(6); 4.05(4)(a-b),(5)	Relevant and Appropriate	MADEP surface water quality standards incorporate the federal Ambient Water Quality Criteria (AWQC) as standards for surface waters of the state. Standards establish acute and chronic effects on aquatic life for contaminants including PCBs, cadmium, chromium, copper, and lead.	Site specific water quality criteria will be established for the project. Dredging controls will be implemented such that water quality criteria are not exceeded. Water quality monitoring will be implemented during dredging.
Hazardous Waste Management - Identification and Listing	12C MGL 4 and 6; 310 CMR 30.100	Applicable	Establishes standards for identifying and listing hazardous waste.	Testing as appropriate will assess whether hazardous wastes are present in dredge sediment.
Hazardous Waste Management - Requirements for Generators of Hazardous Waste	21C MGL 4 and 6; 310 CMR 30.300	Applicable	Establishes standards for various classes of generators.	Any hazardous process wastes will be managed in accordance with the substantive requirements of these regulations.
Hazardous Waste Management - Management Standards for all Hazardous Waste Facilities	21C MGL 4 and 6; 310 CMR 30 et seq.	Applicable	Establishes standards for treatment, storage, and disposal of hazardous waste. Sec. 30.501(3)(a) exempts facilities which treat, dispose or store hazardous waste containing 50 ppm or more of PCBs if they are adequately regulated under TSCA, 40 CFR 761.	Any hazardous process wastes will be managed in accordance with the substantive requirements of this section. Any off-site transportation/disposal will comply with the appropriate regulations.
Rules for the Prevention and Control of Oil Pollution in the Waters of the Commonwealth	21 MGL 26-53; 314 CMR 15.03 (1),(3-5); 15.06(1-5)	Applicable	Regulates the discharge of oil or sewage, industrial waste or other material containing oil into waters of the Commonwealth. PCBs contain oil, some of which floats on surface water.	The remedy will comply with the substantive requirements of the provisions.
Certification for Dredging, Dredging Material Disposal and Filling in Waters	21 MGL 26-53; 314 CMR 9.06(1-2)	Applicable	Establishes procedures and criteria for the administration of Section 401 of the federal Clean Water Act for the discharge of dredged or fill material in waters of the United States within the Commonwealth.	All dredging and discharge of dredged material will comply with the substantive requirements of the provisions.
Wetlands Protection Act	MGL 131 Sect. 40; 310 CMR 10 et seq.	Applicable	Standards regulate dredging, filling, altering, or polluting of coastal and inland wetland resource areas. Protected resource areas within and adjacent to the site include: Land Subject to Coastal Storm Flowage 10.02(1)(d); Coastal Wetlands 10.24(7)(b); Land Under Ocean 10.25(5)(6); Designated Port Area 10.26(3)(4); Land Containing Shellfish 10.34(5)(7); Banks...Land Under...Fish Runs 10.35(3-4); and Riverfront Area 10.58(4)(a),(c)(1and3),(d)(2),(d)(5),(a-b and f-g).	Best available measures will be used to minimize adverse effects on identified resource areas during construction. DMF will be consulted for activities affecting fish and shellfish habitat.
Administration of Waterways Licenses Law	91 MGL 1.00 et seq.; 301 CMR 9.00	Applicable	Criteria for work within flowed and filled tidelands. Focus on long term viability of marine uses and protecting public rights in tidelands. Applicable provisions are Restrictions on Fill and Structures 9.32(1)(a)(2,3)(b)(3,4); Preserving Water-Related Public Rights 9.35(1),(2)(a)(1 and 3 (a and b)); Protecting Water Dependent Uses 9.36 (2)(3)(4)(5)(a)(1,2)(5)(b); Engineering and Construction Standards 9.37(1)(c),(3)(a),(b)(4); and Dredging and Dredged Material Disposal 9.40(2),(3)(e).	Temporary unavoidable impacts to water dependent users will occur. Impacts will be minimized, and alternate access will be available.
Coastal Zone Management	301 CMR 21.00	Applicable	Requires that any actions must be conducted in a manner consistent with state approved management programs.	The entire site is located in a coastal zone management area. Actions taken will be consistent with substantive portions of identified policies of CZM.

**Attachment A**

**1998 Record of Decision – State Enhanced Remedy Excerpt**

# **EPA Superfund Record of Decision: NEW BEDFORD OU 01, NEW BEDFORD, MA 09/25/1998**

## XI. The State-Enhanced Remedy

In addition to the selected remedy described above, the Commonwealth of Massachusetts has petitioned EPA to allow the inclusion of navigational dredging in New Bedford Harbor as an enhancement of the remedy. Such enhancements are envisioned in the implementing regulations of CERCLA at 40 CFR 300.515(f). The enhancement requested by the Commonwealth would link as appropriate the dredging and disposal of sediments dredged from the harbor's navigational channels (located in the lower and outer harbors) with CERCLA and the Superfund program. Although these navigational sediments fall below the 50 ppm lower harbor TCL (and thus do not overlap with sediments stated for remedial dredging), they are nevertheless contaminated with heavy metals, and lower levels of PCBs. Thus these navigational sediments, approximately 1.7 million cy in volume, are most likely unsuitable for open water disposal (Maguire Group, 1997), and alternative disposal approaches are required if shipping channels are to be maintained to their federally-approved depths. As discussed further below, and provided consistency with 40 CFR 300.515(f)(1)(ii) as well as other dredging-related regulations is maintained, EPA accepts the Commonwealth's request to include navigational dredging as an enhancement of the selected remedy.

EPA believes that the primary benefits of linking the two dredging programs, while not sacrificing the normal regulatory review process for federal navigational projects, will be a streamlined permitting process for on-site navigational disposal facilities (if any), coordinated rather than separate environmental monitoring programs, where feasible, and increased overall coordination between the two dredging projects. In fact, the overall environmental benefit of the remedial CDFs is increased by using the CDFs to contain a portion of the navigational sediments (as part of the interim caps) as well as the more highly contaminated remedial sediments. Such a scenario should also reduce cleanup costs since at least some of the costs for the clean fill that would otherwise be required for the preliminary caps would no longer be necessary.

Incorporating the enhanced remedy shall not jeopardize or delay the overall implementation or funding of the selected remedy. Rather, implementation of the navigational dredging project, including solicitation of public comment on it, will be the responsibility of those parties normally involved in such projects, namely the MA Coastal Zone Management office, the US Army Corps of Engineers, the National Fisheries Management Service and other relevant state and federal regulatory programs. Consistent with 40 CFR 300.515(f)(1)(ii)(A), the EPA Superfund program will not be responsible for funding any part of the enhanced remedy.

## **RESPONSIVENESS SUMMARY (Enhancement of Remedy Comments in Red)**

### 2.3 Comments From Local Government

#### 2.3.1 Mayor Rosemary S. Tierney

Mayor Tierney commented that she supports the proposed cleanup plan, with the recognition that it "is not a perfect solution to the problem" but one that "permits further consideration of a better remedy." She encouraged EPA to continue studies of treatment alternatives prior to final capping of the CDFs, as well as to work with the City to determine the best future uses and engineering design for the proposed CDFs. **She also expressed full support for the enhancement of the remedy to include navigational dredging, provided neither project delays the other. Should that occur, the Mayor noted that both projects should proceed separately.**

#### EPA Response

EPA appreciates Mayor Tierney's comments and has agreed to pursue literature reviews of potential advances in and implementation experiences with sediment treatment technologies, especially prior to final capping of the CDFs. EPA's engineering design for the CDFs will be done with full openness and coordination with not only the City but the Community Forum and natural resource trustees as well. EPA will also work with the City and other CDF abutters to determine the best future uses of the CDFs once

they are completed. EPA will cooperate with the Commonwealth in its efforts to implement an effective and timely navigational dredging program.

#### 2.4 Comments From State Government

##### 2.4.2 Representative William Straus

Representative Straus commented orally at the November 20, 1996 Public Hearing that the phase two cleanup proposal enjoys a greater degree of public support because the community was involved in the discussions and overall decision making process. He made reference to the Community Forum's agreement with the EPA for this remedy, and noted that the remedy is not a perfect one but one that does contribute greatly to the public health and offers other enhancements for the harbor.

Representative Straus also commented that the proposed enhanced remedy linking navigational dredging would, in addition to an economic benefit, provide benefits to public health and natural resources due to the removal of lower levels of PCBs. With regard to the remedy enhancement, the Representative noted that although the proposed plan conditions navigational dredging on available state funding, the U.S. Army Corps of Engineers may be able to contribute some funding for this dredging (as opposed to disposal) project as well, and that that possibility should be explored.

Finally, Representative Straus commented that the proposed remedy does offer the possibility for eventual treatment of the contaminated sediments should technologies develop further. However, if treatment remains cost-prohibitive, the Representative noted that the remedy could nevertheless provide an enhancement to the community through inclusion of the CDFs in the harbor development process.

##### EPA Response

EPA appreciates Representative Straus' support of the remedy and participation in the consensus building Community Forum process, and notes the clarification regarding funding for navigational dredging. Since the main channels in the harbor are federally authorized, it is possible that dredging (as opposed to disposal) of navigational sediments could be at least partially financed by the Corps of Engineers. Since the Commonwealth requested the enhancement, it has taken the lead in pursuing additional funding. The Corps' dredging, however, cannot be implemented absent a viable disposal alternative. EPA recognizes the interplay between the two projects and will continue to work with the Commonwealth in their efforts to implement an effective navigational dredging program.

##### 2.4.3 Massachusetts Executive Office of Environmental Affairs (EOEA)

Secretary Coxe representing EOEA commented both orally at the November 20, 1996 Public Hearing and in writing on a number of issues, noting the site "presents one of the most complex remediation challenges in Massachusetts" and crediting the Community Forum participants with the hard work required to "craft an effective and workable solution." In summary, the Secretary commented that both EOEA and Governor Weld support the proposed plan because it "will remove the vast majority of PCBs from the site" and since it "greatly reduces the risks to human health and the marine ecosystem." The Secretary gave this support with the understanding that it "is not the perfect solution, because it does not destroy the PCBs, (but) it is the best solution technology will currently allow."

Secretary Coxe encouraged EPA to continue the review of potential treatment technologies, and in the event that a method to destroy the PCBs is not found, to consider the maximum beneficial uses of the CDFs. Noting "that marine economic development of New Bedford Harbor has been impeded by the presence of PCBs and metals" she identified as perhaps the biggest opportunity for water related economic reuse to be the proposed CDF D. Secretary Coxe also underscored the importance of the Commonwealth's commitment to long term monitoring of the CDFs, and the consequent importance of building high quality CDFs that will effectively contain the PCBs.

Secretary Coxe also commented that the dredging and disposal operations be completed with as little environmental damage as possible, and addressed three specific areas of concern regarding the dredging operations: a) escape of contaminants and particulate matter must be minimized, b) impacts to fisheries must be limited and c) the continued function of the saltmarshes must be ensured. She added that the ROD should specify that the area north of Wood Street and in the ditches, creeks and mosquito control channels of the saltmarshes be investigated further and included in the remedy if above TCLs.

Secretary Coxe also gave support for the proposed enhanced remedy for inclusion of navigational dredging, saying that benefits of such a linkage could include permit streamlining, cost-effectiveness and ultimately "improved environmental and economic

conditions" of the harbor. She made clear that this proposed enhancement would be contingent on state funding, and that if a non-Superfund approach to navigational dredging could be implemented faster than that approach would be pursued.

Finally, Secretary Coxe requested that EPA include additional dredging of areas near the Cornell Dubilier plant outfall above 10 ppm PCBs as part of this remedy (areas above 10 ppm near the plant and the old sewage treatment plant outfall were included in the May 1992 proposed plan addendum). Citing a preference for removing these sediments "sooner rather than later" after proposed additional investigation of the outer harbor area, she added that funding for this additional remediation could be secured from a portion of the funds specifically set aside for the harbor cleanup and/or restoration as part of the legal settlement for the site.

#### EPA Response

EPA appreciates the Commonwealth's support, and agrees with Secretary Coxe's comments (except as noted herein). EPA will continue its review of potential treatment technologies and will work with the Commonwealth as well as the Community Forum to ensure that the CDFs are designed and constructed to effectively contain PCB migration.

All sediments above the relevant TCL in the upper or lower harbor will be remediated including those above the Wood Street bridge and in the ditches, creeks and mosquito control channels in the upper harbor saltmarshes. EPA will implement this remediation in a manner that minimizes short term environmental damage (note EPA response to MA DMF below).

EPA plans to coordinate with all stakeholders throughout the remedial design and construction of the project, particularly in defining the maximal beneficial reuse of the CDFs and in coordinating with the navigational dredging project. EPA does believe that some parts of CDFs A, B and C (e.g, the shoreline and intertidal areas) should be targeted as natural resource enhancements.

The Commonwealth's concern about contamination near the Cornell Dubilier plant beyond those addressed in the remedy are noted. After reviewing comments on the May 1992 Addendum Proposed Plan EPA concluded that we had insufficient information about the nature and extent of contamination in the upper Bay to determine an effective remedy. EPA also believes that the possible effects of the ROD 1 and 2 cleanups should be evaluated before a final remedy decision is made for the entire outer harbor area. EPA will continue to study this area in consultation with the Commonwealth and will issue another decision document when those studies are complete.

## 2.5 Comments From Federal Government

### 2.5.1 National Oceanic and Atmospheric Administration (NOAA)

NOAA commented that it generally agrees with the proposed remedy, but disagrees with several specific technical issues discussed below. NOAA supports the hybrid TCL approach "due to the implementability problem of moving below 10 ppm" and the fact that, as explained in the Proposed Cleanup Plan, the lower harbor is a state designated port area and is predominantly lined with industrial and commercial facilities.

NOAA disagreed with the criteria evaluation for the sitewide 50 ppm TCL on pages 10 and 11 of the Proposed Cleanup Plan, noting that "in no way does a uniform 50 ppm cleanup level protect the environment." NOAA also voiced concern regarding the saltmarsh cleanup strategy: It recognizes the objective of using a 50 ppm TCL to minimize the amount of saltmarsh destruction, but is unconvinced that a 50 ppm TCL would necessarily protect biota that use the saltmarsh. NOAA requested that EPA monitor effects on living resources in and near the saltmarshes, and to entertain additional remediation should unacceptable bioaccumulation levels be found.

NOAA also expressed an interest "in including a comprehensive cleanup in the outer harbor in this remedy rather than putting it off" until phase three (for the outer harbor). Assuming that a 10 ppm PCB TCL would be selected for phase three, NOAA speculated that given the time required to close the proposed phase two CDFs, sediments above 10 ppm PCBs in the outer harbor could be identified, removed and placed in the phase two CDFs.

Finally, NOAA's National Marine Fisheries Service (NMFS) expressed concern about "the significant lack of detailed information regarding the request by the state to include navigational dredging as an enhancement of the remedy." It urged that "a thorough alternatives analysis that identifies the least environmentally damaging practicable alternative" be performed for the navigational dredging and disposal needs. Given the

large size of the envisioned navigational dredging project, without such an evaluation and additional information, NOAA/NFMS commented that it would not be able to concur with the proposed remedy enhancement.

#### EPA Response

EPA appreciates NOAA's support for the remedy and understanding of the difficulties presented by site cleanup. EPA understands that a sitewide 50 ppm TCL is not completely protective of ecological resources; the reduction of the TCL from 50 to 10 ppm in the upper harbor reflects this understanding that a greater degree of ecological protectiveness was appropriate. EPA further believes that, coupled with institutional controls to combat contaminated seafood consumption, the remedy is protective of human health. Regarding the 50 ppm saltmarsh TCL, EPA realizes that coordination with NOAA and other resource agencies is critical to development of a saltmarsh monitoring program that will effectively measure the ecological integrity of these areas. EPA expects that bioaccumulation will be one of many monitoring parameters used to measure the success of the saltmarsh restoration as well as the overall site cleanup.

In terms of NOAA's interest in a comprehensive outer harbor cleanup approach at this point, EPA reiterates the need for additional sediment sampling and data gathering before this additional cleanup can take place. EPA will consider NOAA's hypothetical remedial sequence for the outer harbor operable unit, but notes that phase two CDF capacity may be more critical than the phase two schedule for CDF closing.

EPA also appreciates NOAA's concern about the preliminary nature of the discussion regarding the Commonwealth's request for a navigational dredging enhancement of the remedy EPA's understanding of the Commonwealth's approach in this regard is that any such enhancement would NOT obviate the normal substantive regulatory review process for such a navigational dredging project.

**Attachment B**

**Proposed Project Performance Standards**

# NBH Dredge – Phase III

## Proposed Performance Standards

### I MADEP 401 Water Quality Program Standards:

1. Anti-degradation provisions of the Massachusetts Surface Water Quality Standards protect all waters, including wetlands. The Contractor shall take all steps necessary to assure that the proposed activities will be conducted in a manner, which will avoid violations of said standards.
2. Prior to the start of in-water work, the SER Project Manager (SER PM) shall be notified of any proposed change(s) in plans that may affect waters or wetlands.
3. As proposed, silt-curtains and absorbent booms shall be deployed to enclose the area being dredged. The contractor's plan for deployment of the silt curtains/absorbent booms shall be submitted to the SER PM for review prior to the start of in-water work. Should the deployment of silt-curtains prove not feasible or be unsuccessful, the SER PM will be notified prior to any dredging without silt curtains.
4. Water Quality Monitoring:
  - a. **When the dredging operation is contained within a silt-curtained area,** the following water-quality monitoring program shall be carried out daily for the first three days of dredging and once a week thereafter:
    - i. A reference location shall be established outside of and approximately 200-feet from the silt-curtained area and a monitoring location shall be established outside of and within 15-feet of the silt-curtain.
    - ii. Turbidity shall be measured, using an optical backscatter sensor, at both the reference and monitoring locations, at established depths: near the water's surface, at the mid-point of the water column and near the bottom. The three values obtained shall be averaged, such that a single, representative turbidity value is calculated for the monitoring site and a single, representative value is calculated for the reference site.
    - iii. Turbidity shall be measured at both the monitoring and reference site prior to the start of dredging, and once every two hours during dredging.
    - iv. An exceedance of the project turbidity standard shall be attributed to project activities when the average turbidity at the monitoring site exceeds the average reference site turbidity plus the permissible turbidity increase, as outlined in the following table:

Reference Site Turbidity (NTUs)	Permissible Turbidity Increase
<10	Reference plus 20 NTUs
11-20	Reference plus 15 NTUs
>21	Reference plus 30% of reference

- v. If, in two consecutive monitoring events, the average turbidity at the monitoring site exceeds the average turbidity at the reference site by more than the permissible turbidity increase, then water samples, composited over the entire water column, from both the monitoring and reference sites shall be collected and submitted for analysis of Total Suspended Solids, dissolved PCBs, arsenic, cadmium, copper, chromium, lead, mercury, nickel, and zinc. When samples are submitted to the laboratory, a 36-hour turn-around time shall be requested. Additionally, the Proponent, or their contractor, shall take operational action(s) designed to limit such exceedences, such as increasing the dredge cycle time, inspection and any necessary repair, of the silt curtains, deployment of an additional row of silt curtains or other mitigation measures. Turbidity monitoring shall continue on the schedule outlined in Section 6.a.iii, until compliance is reestablished.
  - vi. If compliance can not be reestablished within 48 hours, dredging shall cease and Department and any other interested local, state, or federal agency staff, in consultation with the Proponent, their contractors and/or consultants shall review the operational actions undertaken, the results of the analyses of the water samples and evaluate the biological significance of the available data and determine the requirements for additional mitigation, if any.
- b. **Should the deployment of silt-curtains prove not possible or be unsuccessful**, the following water-quality monitoring program shall be carried out daily for the first three days of dredging and twice a week thereafter:
- i. A reference location shall be established approximately 200-feet up-current from the dredge and a monitoring location shall be established 200-feet down-current from the dredge at the edge of the mixing zone.
  - ii. Turbidity shall be measured, using an optical backscatter sensor, at both the reference location and the monitoring location, at established depths: near the water's surface, at the mid-point of the water column and near the bottom. The three depth values obtained shall be averaged, such that a single, representative turbidity value is calculated for the reference location and a single, representative turbidity value is calculated for the monitoring location.
  - iii. Turbidity shall be measured at both the reference location and at the edge of the mixing zone prior to the start of dredging, and once every two hours of dredging.

- iv. An exceedance of the project turbidity standard shall be attributed to project activities when the average turbidity at the edge of the mixing zone exceeds the reference site turbidity plus the permissible turbidity increase, as outlined in the following table:

Reference Site Turbidity (NTUs)	Permissible Turbidity Increase
<10	Reference plus 20 NTUs
11-20	Reference plus 15 NTUs
21-30	Reference plus 10 NTUs
>31	Reference plus 30% of reference

- v. If, in two consecutive monitoring events, the average turbidity at the edge of the mixing zone exceeds the average turbidity at the reference site plus the permissible turbidity increase, then water samples, composited over the entire water column, from both the reference location and the edge of the mixing zone shall be collected and submitted for analysis of Total Suspended Solids, dissolved PCBs, arsenic, cadmium, copper, chromium, lead, mercury, nickel, and zinc. When samples are submitted to the laboratory, a 36-hour turn-round time shall be requested. Additionally, the Proponent, or their contractor, shall take operational action(s) designed to limit such exceedences, such as increasing the dredge cycle time, inspection and any necessary repair, of the silt curtains, deployment of an additional row of silt curtains or other mitigation measures. Turbidity monitoring shall continue on the schedule outlined in Section 6.b.iii, until compliance is reestablished.
  - vi. If compliance cannot be reestablished within 48 hours, dredging shall cease and the Department and any other interested local, state or federal agency staff, in consultation with the Proponent, their contracts and/or consultants shall review the operational actions undertaken, the results of the analyses of the water samples and evaluate the biological significance of the available data and determine the requirements for additional mitigation, if any.
5. As proposed, dredging of contaminated, silty sediment shall be done using a closed, environmental, clamshell bucket. Where pilings or other debris are found to interfere with environmental bucket closure or equipment operation, a conventional clamshell bucket may be used to extract the pilings/debris. Sediment removal during such activity shall be minimized to the greatest extent practicable. Should dredging with the environmental bucket become unfeasible or unsuccessful, the SER PM must be notified prior to any contaminated sediment dredging not using the environmental bucket, and the contractor must also continue to meet the project water quality standard performance standards.
  6. Water discharged from the barge shall be appreciably free of suspended sediment and meet the water quality criteria established in Section 4 (above). Any free liquid

flowing from the barge in the harbor shall be passed through a sand media filter or equivalent filtration system (which must be approved by the project Resident Engineer) prior to discharge.

7. Diesel-powered equipment shall be fitted with after-engine emissions controls such as oxidation catalysts or particulate filters.
8. Within 30 days of the completion of the initial dredging, a bathymetric, survey of the dredge footprint, depicting post-dredge conditions, shall be sent to the MADEP SER Project Manager.
9. Disposal of any volume of dredged material at any location in tidal waters is subject to approval by the Department and the Massachusetts Coastal Zone Management office.

## **II MADEP Chapter 91 Waterways Standards:**

1. Acceptance of these Waterways Conditions shall constitute an agreement by the Proponent to conform to all terms and conditions herein.
2. All subsequent maintenance dredging and transportation and disposal of this dredge material, during the term of this Project shall conform to all standards and conditions applied to the original dredging operation performed under this Project.
3. After completion of the work authorized, the Proponent shall furnish to the Department a suitable plan showing the depths at mean low water over the area dredged. Dredging under this Project shall be conducted so as to cause no unnecessary obstruction of the free passage of vessels, and care shall be taken to cause no shoaling. If, however, any shoaling is caused, the Proponent shall at his/her expense, remove the shoal areas. The Proponent shall pay all costs of supervision, and if at any time the Department deems necessary a survey or surveys of the area dredged, the Proponent shall pay all costs associated with such work.
4. The Proponent shall assume and pay all claims and demands arising in any manner from the work authorized herein, and shall save harmless and indemnify the Commonwealth of Massachusetts, its officers, employees, and agents from all claims, audits, damages, costs, and expenses incurred by reason thereof.
5. The Proponent shall, at least three days prior to the commencement of any dredging in tide water, give written notice to the Department of the time, location, and amount of the proposed work.

### **Special Waterways Conditions**

1. Dredge material shall be transported to suitable disposal facilities; unregulated dumping of dredge materials is not permitted.

2. The Proponent shall develop and implement a Navigation Plan to address and mitigate temporary impacts to navigation during dredging activities.
3. The Proponent shall provide and maintain in good working order appropriate United States Coast Guard (USCG) approved navigation aids to assist mariners in avoiding work areas as required by the USCG.
4. The Proponent shall maintain vehicular access to water-dependent users throughout construction activities.
5. The Proponent shall remove and properly dispose of all temporary structures and debris no later than three (3) months after completion of the dredging and disposal, the dewatering and amendment of the sediments.
6. Modification to this Project: the SER PM, may review on an individual basis, modifications to construction activities and/or temporary structures which represent an insignificant deviation from original specifications, in terms of configuration, materials or other relevant design or fabrication parameters as determined by DEP within all areas of construction. Such review shall be in accordance with the following procedure:
  - a. The Proponent shall submit a written request describing the proposed modifications to the work accompanied by plans, for prior review of the DEP. The DEP will consider comments submitted within ten (10) days of the DEP's receipt of the request. The DEP will send any significant modifications to the Resource Agencies for review and comment and to identify any future Performance Standards, if necessary. EPA will also have the opportunity to make a consistency determination if the change is significant, as necessary. The DEP will notify the Resource Agencies of any minor modifications.
7. After completion of the work authorized the Proponent shall furnish the Department a suitable plan showing the depths at mean low water over the areas dredged within 90 days of completion of each phase of the dredging.