APPENDIX A

State Enhanced Remedy – Performance Standards

I MADEP 401 Water Quality Program Standards: Dredge & Fill

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. Environmental Monitor. The contractor shall employ an "Environmental Monitor" (EM). An assistant to the EM shall be hired if needed. The EM shall have a minimum of five (5) years experience in wetlands protection, erosion and sedimentation control, water quality monitoring, site maintenance, site drainage, dredging operation management and general site construction. The EM shall verify the placement and performance of erosion/sediment/turbidity control measures and shall have the authority to halt construction for erosion control purposes or for other threats to public health, safety or the environment. The name and phone number(s) of the EM and his or her assistant, if needed, and back-up shall be provided to the Department and other governmental agencies charges with oversight of the project so that s/he may be contacted on a 24-hour basis, seven days a week to address any emergency situation. The EM shall be authorized to contact the Department directly for any matter involving wetland protection. The EM shall submit bi-weekly reports to the Department, following the commencement of construction and continuing until completion of work in resource areas. The bi-weekly reports shall summarize, by station location, the status of construction, the condition of the site, the weather conditions and shall report any erosion, sedimentation, discharge or pollution problems and how they were corrected, along with recommendations on how to prevent similar problems in the future. The EM shall immediately report any erosion, sedimentation or pollution problems to the Resident Engineer(s), who shall take immediate steps to correct those problems. The EM shall immediately report any unauthorized discharges of sediments to the Department and Resident Engineer(s) who shall take immediate steps to correct those problems. The EM shall submit annual reports for a minimum of five years to the DEP Greenbush Designee following completion of replication area construction and shall submit an outline of the report for approval by the Department prior to preparation of the first report.

4. All dredge and fill activities shall meet NOAA & MassDMF conditions to protect winter flounder spawning & the alewife fish run that passes through the harbor to the Acushnet Sawmill Pond spawning area.
5. A Storm Water Pollution Prevention Plan (SWPPP) for the entire project, proposing both non-structural and structural BMPs to limit erosion & sediment laden discharge during

land clearing filling and construction, shall be prepared and submitted to the Department for prior review and written approval prior to commencement of. The SWPPP shall emphasize measures to contain and prevent sediment laden water from being discharged from dewatering activities from areas within the bulkhead sheet pile that is to serve as a containment device. Further, the SWPPP shall meet the criteria established for such plans contained in the NPDES Construction General Permit. . All proposed dewatering shall be identified in the site specific SWPPPs and shall not exceed the following limits when discharged:

a) pH: pH shall be 6.5 to 8.5 for discharge to salt water bodies. The SWPPPs shall identify the specific measures to be taken to adjust the pH to acceptable limits [for example, carbon dioxide (CO2) bubbling when concrete pouring is also occurring].

6. As proposed, silt-curtains and absorbent booms shall be deployed to enclose the area being dredged and filled. The contractor's plan for deployment of the silt curtains/absorbent booms shall be submitted to the Department and 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.

7. Water Quality Monitoring:

    a. When the dredging and filling 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 activities commencing and once a week thereafter for dredging operations and during those times when dewatering activities are ongoing from the terminal fill operation :

        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-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.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 activities commencing and twice a week thereafter for dredging activities and during those times when dewatering activities are ongoing from the terminal fill operation:

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.

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.

8. 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.

9. 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.

12 The Resident Engineer and EM shall be responsible for anticipating the need for and installation of additional erosion/sediment/turbidity controls and shall have the authority to require additional control measures to protect the resource areas beyond what is shown on the plans, if field conditions or professional judgment dictate that additional protection is necessary.

13. Emergency Response/Spill Prevention Plan: Included in said Plan shall be the contact responsible for shutting down BMPs discharging to the New Bedford Harbor in the event of a spill and maintenance practices to be employed to make sure gate valves or other shut down measures work appropriately to prevent spills from entering the adjacent waters.

14. During dewatering, if necessary, the discharge point shall be protected. Water from dewatering activities shall be filtered via the use of a portable sedimentation tank that removes suspended solids, temporary sedimentation basins, or other means prior to discharge.

15. Diesel-powered equipment shall be fitted with after-engine emissions controls such as oxidation catalysts or particulate filters.

16. 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.

17. 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.

18. A baseline condition report detailing existing conditions of all areas proposed to be transformed to salt marsh shall be submitted to the Department, An annual progress report shall be produced at the end of each year following construction of the salt marsh area for a period of five (5) years, and shall be submitted by the EM to the Department, no later than December 30 of each year. All reports shall be prepared in the same format so that a comparison can be made from each year to the next. The first annual report shall be prepared and submitted no later than December 30 of the first year following the implementation of the salt marsh creation. The existing conditions report and all annual reports shall include, in textual, tabular and graphic formats, percent of vegetative cover, a list of plant species, coverage of wetland plants as a percentage of all plants, and an evaluation of relative plant vigor (i.e. mortality rate of existing species and number or new species) and any changes observed in soils or hydrology. Additionally, the report shall include representative photographs of site conditions and recommendations for improvement. These reports shall also summarize agency consultations pertaining to the restoration project, the

remedial responses to those problems and appropriate recommendations for future project.

19. Any changes made to documents submitted shall be immediately forwarded to the Department for review and comment.

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, 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. As part of the final design plan, the Proponent describes the means by which the public shall provide reasonable measure to provide on-foot public passage consistent with the need to avoid undue interference with the water=-dependent uses of the project.

5. The Proponent shall remove and properly dispose of all temporary structures no later than three (3) months after completion of the dewatering and amendment of the sediments. Temporary structures are defined as berms and dikes; lime silo; dewatering tanks, erosion and sediment control systems, pipes, and siltation curtains.

6. Modification to this Project: the SER PM, may review on an individual basis, modifications to construction activities and/or temporary structures which represent and 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 if each phase of the dredging.