RETURN TO SER AR INDEX

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

DEVAL L. PATRICK
Governor

TIMOTHY P. MURRAY
Lieutenant Governor

IAN A. BOWLES
Secretary

LAURIE BURT
Commissioner

March 22, 2010

Mr. Curtis Spalding, Regional Administrator
U.S. EPA Region 1 - New England
5 Post Office Square
Boston, MA 02109-3912

Re: State Enhancement of Remedy Request
New Bedford Harbor Superfund Site

Dear Administrator Spalding:

The Massachusetts Department of Environmental Protection (MassDEP) received your response to our request that an expansion of the State Remedy of Enhancement (SER) be included in the Explanation of Significant Differences (ESD) for the New Bedford Harbor Superfund Site. I appreciate your support for the SER and your prompt and detailed response to our request. MassDEP strongly believes that the SER is an essential component of a comprehensive and cost effect remediation that will provide lasting benefits to the environmental and economic welfare of the City of New Bedford. Your February 11, 2010 letter requested information germane to MassDEP's request. In the response that follows, we provide information in what we believe to be sufficient detail regarding environmental, logistical, public participation, and other issues to allow you to make the threshold determination to include the SER in the ESD. We affirm our commitment to provide additional information that will need to be developed as the components and final designs of the SER are refined.

Background

It is of paramount importance that the remedy includes the construction of Confined Disposal Facilities (CDFs) to address the complex disposal challenge associated with the Harbor clean-up. The Enhancement is central to the construction of Confined Aquatic Disposal (CAD) facilities within New Bedford Harbor due to the lack of placement options for the large quantity of material that will be generated during construction of the CAD facilities.

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

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Key to adopting the CDF approach is an understanding of the character of Port of New Bedford/Fairhaven and the legal parameters that govern development in the Harbor. The Port serves as the City's greatest natural resource and most critical asset to stimulate investment, attract new industry, create jobs and sustain and grow the local economy. Over 4,400 people are employed by the commercial port. The Port of New Bedford is currently undertaking a more than $200 million commercial make-over: deepening channels and berths and repairing and enlarging Marine Terminals and Wharfs to accommodate the needs of the growing shipping industry. The CDFs proposed as part of the SER will be in an invaluable component of the City's strategic plan for the Harbor's green-industry development. It should be further noted that the areas being considered for CDF's are far from pristine. These areas are within an industrialized portion of New Bedford, and are within a designated port area (DPA), which is intended for maritime industrial use. Attachment 1 shows several photographs which highlight the nature of the properties in question.

Enhancement inclusion in the ESD: MassDEP understands your concern about combining the ESD and the SER at this point in the process because of information gaps and the additional complexity to the public comment process. MassDEP and the City are fully committed to closing the information gaps as quickly as feasible and ensuring that the public comment process is inclusive and transparent. We also recognize that the design and construction of the CDF needs to be implemented so progress on the CAD is not delayed. Attachment 2 is a draft schedule for the construction of the CAD and the South Terminal CDF. The preliminary design process for the South Terminal CDF has commenced and is scheduled to receive sediments by the close of 2010. MassDEP acknowledges that it may ease the administrative burden if EPA were to address the South Terminal CDF first, and focus on the North Terminal at a later date. MassDEP believes that the best result would be for EPA to include both in this ESD, but would not object if EPA opts to address only the South Terminal CDF at this time.

The SER concept is an essential element of the ESD because the disposal of the Superfund sediment in the ESD requires an on-site CAD facility. A CDF could provide for disposal capacity for the contaminated sediment generated in the construction of the CAD. We have also requested that contaminated sediment generated from navigational dredging also be managed by a CDF. The construction of the CAD will also generate "clean material" that would otherwise require disposal at the Cape Cod Bay Disposal Site (CCDS). For both environmental and logistical reasons, MassDEP and the Office of Coastal Zone Management (MCZM) do not support the use of the CCDS for significant volumes of clean material that could otherwise be put to beneficial reuse. As discussed in greater detail below, disposal at the CCDS would not represent beneficial reuse as required by state water quality regulations and would significantly diminish the capacity of the disposal site, likely requiring designation – with attendant future impacts – of new disposal area. Logistically, this disposal site has a time of year restriction which may potentially impact when the Superfund dredging may start. Linking the SER and ESD will allow for both the appropriate reuse of the CAD material and the effective coordination and phasing of the different components, eliminating the likelihood that procedural and process mechanics would frustrate progress. Different elements of the SER can be granted conditional approval contingent on the maturation of design and technical issues.

MassDEP believes that substantial environmental and cost opportunities for the agencies and the City and long term public benefits will not be realized without integrating the ESD and the SRF. MassDEP feels strongly that this request is reasonable; however, if the requested Enhancements could fall under the existing ROD, we look forward to a discussion about how best to proceed to meet both our agencies' goals.

Resource Agencies Consultation and Analysis:

MassDEP fully concurs that the requested enhancement would benefit from additional input from resource agencies. As discussed further herein, that consultation process has already commenced among agencies within the Executive Office of Energy and Environmental Affairs. Based on consultation with the Division of Marine Fisheries, Natural Heritage and Endangered Species Program, and MCZM; MassDEP has developed a summary of the applicable or relevant and appropriate requirements (ARARs) regarding CDF construction and an initial demonstration that the project meets these ARAR's, as discussed below. To supplement this analysis, we understand that the next Joint Processing meeting run by the U.S. Army Corp of Engineers will present a venue to solicit additional information and input on habitat delineation and mitigation from the natural resource agencies as the basis for refining the information presented herein.

ARARs for CDFs:

Several of the questions you raised in your letter speak to the applicable regulatory performance standards that MassDEP would apply in reviewing the SER projects and in consulting with the resource management agencies, and what MassDEP's views are with respect to whether the CDF's meet those standards. Set out below is a review of those standards as they relate to the CDFs.

The activities proposed under the SER would be subject to three MassDEP regulatory programs: waterways, also known as c. 91, wetlands, and 401 water quality certifications. Two central factors associated with these regulations control the regulatory performance standards applicable to the SER's proposed activities. First, the construction of the CDF's will be occurring within the Designated Port Area (DPA) and will be designed and operated for marine industrial purposes. Second, the habitat impacts associated with the construction of the CDF are an integral component of a site remediation action that will result in improved water quality.

Waterways (310 CMR 9.00)

The licensing of structures in filled or flowed Commonwealth Tidelands is regulated pursuant to 310 CMR 10.00, the Waterways Regulations. The CDFs would be considered water-dependent uses as facilities and activities undertaken or required by a public agency for the purposes of decontamination, capping, or disposal of polluted aquatic sediment. 310 CMR 9.12(2)(a)14. The water dependency designation would be applicable to CDFs regardless of the amount, if any, of contaminated sediments within the facility because MassDEP views the CDF as integral to the remedial purpose of the Superfund clean-up. The CDFs would also qualify as water dependent as they are associated with a marine industrial use operation within a DPA. 310 CMR 9.12(2)(b)7. Accessory uses to a water dependent facility include any use integral to the

construction or operation of the water dependent activity. Water dependent projects are presumed to serve a proper public purpose which provides greater benefit than detriment to the rights of the public in said land. 310 CMR 9.21(2)(a).

The Regulations contain provisions at 310 CMR 9.40(2) governing dredging and dredged material disposal that require the timing of dredging and dredge disposal to be conducted to avoid interference with fish runs and to minimize adverse impacts on shellfish beds, fishery resources and submerged aquatic vegetation. (See Impacts to Natural Resources, below.) MassDEP affirms that in its oversight of this work, it would ensure that the project meets these performance standards.

The Waterways regulation allows for fill and structures in tidelands within DPAs provided that pile or floating structures are not reasonable alternatives. Disposal of clean sediments associated with CAD and CDFs construction cannot be viewed independent of removal and sequestering of contaminated materials since the construction of CADs and CDF necessitate removal of clean sediments to achieve the necessary capacity. Additionally, the very reason that CDFs are being considered in the Harbor is that they represent a beneficial use alternative to open-ocean dumping of material that is excavated to create CAD Cells. Pile-supported structures would not provide the storage capacity required to enable the CAD/CDF/capping process to work. Floating temporary storage would not provide sufficient capacity and could create significant navigational obstructions in the busy port. Thus, we do not believe that pile or floating structures are reasonable alternatives to meet the project's overall objectives.

As discussed below, the Water Quality regulations ban disposal if a reasonable reuse alternative exists. Both MassDEP and EEA have indicated a strong preference for identifying alternative placement sites (to the ocean dump sites) for the non-contaminated CAD excavation material, as the ocean dumping sites should be reserved for other navigational projects. As such, the CDFs represent preferential alternatives for the disposal/placement of excavated materials from CAD Cells. In addition, disposal of these volumes of clean sediments at ocean dump sites would not be a reasonable cost-effective alternative and would reduce the capacity of the designated ocean dump sites to receive future sediments. As such, failure to approve the CDFs would result in additional impacts to ocean habitat within unused portions of ocean dump sites or designation of new ocean dump sites at an earlier time in the future.

Wetlands (310 CMR 10.00)

The Wetland regulations have separate performance standards for activities occurring within a DPA that are less stringent than the standards applicable outside of a DPA consistent with the broader policy determination regarding the marine and commercial functions that DPAs serve. The Wetlands regulations at 310 CMR 10.26 provide that a project in DPA must be designed and constructed, using best practical measures, to minimize adverse effects on marine fisheries due to changes in water circulation and water quality and to adjacent coastal banks or structures from storms. (See Impacts to Natural Resources, below.) MassDEP affirms that through its oversight, the project will be designed and constructed to meet this performance standard.

Loss (or gain) of flood storage associated with areas subject to coastal storm flowage from Atlantic Ocean is also an issue under the Wetlands regulations. However, in this case the Harbor provides virtually no additional protection from flooding since the amount of displaced flood waters is proportional to the size of the basin, which in this case is the Atlantic Ocean. The Wetland regulations do not require compensatory flood storage for shoreline areas subject to coastal storm flowage. It is expected that evaluation of impacts caused by deepening the ocean bottom to construct the CAD and dredging to create navigational channels will show no appreciable increase in the potential for storm damage or flooding due to a storm surge Additionally, the Hurricane Gate system installed at the mouth of New Bedford Harbor was specifically constructed to actively dampen flood water effects, making the potential for damage due to storm surge in the Harbor from the construction of the proposed facilities far less of an issue (in terms of real flood hazard). Nevertheless, the City has indicated to us that it is willing to quantify of the impact to flood storage capacity as necessary and investigate potential mitigation for the loss of flood storage as CDF projects are proposed and reviewed.

Water Quality (314 CMR 9.00)

The development of the CDFs addresses a core regulatory requirement of the water quality regulations. 314 CMR 9.07(1)(e) provides that dredged material shall not be disposed of if a feasible alternative exists that involves the reuse or other non-disposal options. As discussed in the Waterways section, this requirement for reuse over disposal recognizes the public benefit in preserving limited disposal capacity.

There is a legitimate concern regarding the potential habitat impacts associated with the filling necessary to construct the CDFs. The regulations make plain, however, that concern must be balanced against the benefits of remedial actions to water quality. 314 CMR 9.06(8) and 9.07(1)(l) provide that notwithstanding any of the performance standards applicable to the discharge of dredged or fill material, the Department may allow a project that will restore or otherwise improve the natural capacity of any water of the Commonwealth. Similarly, 314 CMR 9.06(2) provides that the Department may waive 1:1 restoration or replication for projects impacting wetland resource area, including land under the water or the intertidal zone, for projects that restore or improve the natural capacity of the wetland or other water of the Commonwealth. The Department has applied these regulations to activities that were associated with remedial action projects, and issuance of waivers here would be consistent with MassDEP precedent. It is also consistent with the approach taken by EPA in the construction of the first set of CDFs

The design criteria for CDFs are set out at 314 CMR 9.07(d)(1). The performance standards preclude siting a facility within 500 feet sensitive receptors areas. The Feasibility Study documented that these receptors are not within this buffer zone. The criteria prohibit adverse effect on species listed by the Natural Heritage Endangered Species Program (NHESP). The area proposed for the South Terminal is the only area subject to this provision as it is mapped as a feeding area for terns. MassDEP has consulted with the Natural Heritage and Endangered Species Program, and understands that since this area is not a nesting area and should not disrupt tern feeding, the use of this site for dredge material storage should not be a problem for these species, and would not require a permit under the Massachusetts Endangered Species Act.

Impacts to Natural Resources:

As part of our continued discussions with the resources agencies, we will further refine the characterization of resources and the potential impacts of the CDF construction, which will include the type and amounts of habitat, wetlands, and/or potential opportunities to mitigate and/or minimize impacts (if required). Below is a preliminary estimate of resource areas associated with the construction of the CDFs at North and South Terminal.[1]

Proposed North Terminal CDF Area:	
Coastal bank:	0.75 Acres
Shellfish Suitability Area/Land Under Ocean/Estimated Habitat of Rare or Endangered Species	3.69 Acres
Land Under Ocean/Estimated Habitat of Rare or Endangered Species:	7.37 Acres
Proposed South Terminal CDF Area:	
Coastal Dune:	2.71 Acres
Coastal Beach:	1.42 Acres
Shellfish Suitability Area/Land Under Ocean/Estimated Habitat of Rare or Endangered Species:	3.57 Acres
Land Under Ocean/Estimated Habitat of Rare or Endangered Species:	1.77 Acres

We further understand, based on communications from the Division of Marine Fisheries, that the South Terminal and North Terminal areas may have some natural resource value for finfish, invertebrates, and various crustaceans, although both areas are classified as Restricted (harvest is prohibited; harvesting for depuration and short term transplants, aka relays, is permitted) as is identified on the most recent Designated Shellfish Growing Area Maps (September 10, 2009). Consistent with MassDEP practice as a permitting agency, MassDEP will consult further with DMF to ascertain the actual value of these areas.

Public Involvement

We agree that a continuation of an already robust public process is advisable. NBHDC has had an extensive public process for the renewal of the New Bedford/Fairhaven Municipal Harbor

[1] Note that the areas of these potential resources are not cumulative, as many of the resource areas noted overlap. Please note that the resource areas estimated above have been calculated by superimposing GIS Resource layers downloaded from MassGIS over the anticipated footprints of the South Terminal and North Terminal CDFs. The presence or size of the resource areas have not been field verified (although field-verification is part of the process of design for each facility). It is currently understood that the MassGIS layers that estimate resources are generated via aerial photo (and not via field delineation). The aerial photo mapping process is a process that provides generalized information concerning likely resource areas over a broad geographic area that needs to be field verified, which is being conducted as part of the design for these facilities.

Master Plan & Designated Port Area (DPA) Plan ("Harbor Plan"). The formal planning process began in January 2008. Monthly meetings of the harbor planning committee occurred from January through June. Specific working group meetings were took place throughout the first half of 2008 covering topics including: recreational boating, commercial fishing, dredging, and tourism/public access/environment. While all these meetings were open to any interested individuals, the early planning process also included a formal public meeting on April 3, 2008. Following development of a draft plan a second public meeting was held on May 19, 2009, and the city held a third public meeting on November 18, 2009. Separately as part of the EEA acceptance of the plan for eventual review and approval, a formal public hearing on the plan was held on November 12, 2009. As dredging and the CDF concept were central themes in the Harbor Plan Renewal, they were mentioned at all three public meeting and one public hearing held for the Plan Renewal. Additionally, the dredging working group meeting discussed dredging, CAD cells, and CDFs, including proposed locations and general future uses. Through an earlier effort the USEPA conducted a feasibility study investigating the use of CDFs under the Superfund process that included a public process. Finally, the Dredge Materials Management Plan formulated for determining a suitable disposal site for materials dredged under the State Enhanced Remedy also involved a public process.

MassDEP agrees that as additional design, construction and mitigation information is developed additional project specific public involvement will be implemented to promote public input into conceptualizing these facilities. We will be working with the New Bedford Harbor Development Commission (NBHDC), the City of New Bedford, and the Town of Fairhaven to develop a public process that meets the Standard of Care for similar projects in similar situations. Currently we envision the elements of the public outreach efforts to start in the near future and proceed throughout the entire CDF design, review, and implementation. MassDEP, with assistance from the NBHDC, will immediately begin development of a short one to two page summary describing the CDFs preliminary designs, their need, the approval process, environmental impacts and benefits, and projected marine industrial uses. MassDEP will update the summary document periodically as the CDFs moves toward implementation. EPA will have opportunity to review and comment on draft versions of the summary documents before presentation to the public. In approximately mid-April, an informational presentation describing the proposed CDFs will be given to the maritime business owners along the waterfront, specifically targeting those nearby the South Terminal and North Terminal CDFs. Shortly after this targeted presentation, a broader public informational meeting will be held in New Bedford to describe the CDFs in greater detail than what was originally in the harbor plan. This will include the opportunity for the general public to ask questions. The need for additional broad or targeted outreach will be determined following this meeting.

Mitigation

There are several different, interrelated responses to your question regarding specific mitigation measures for impacts to natural resources. In the first instance, all the activities associated with the CDF would be designed and implemented with best management practices to avoid, minimize or mitigate impacts. Examples include time of year scheduling for fish runs, methodologies to confine or minimize sediment dispersion and water quality monitoring for turbidity. There will also be opportunities to work with City and NBHDC to identify and

implement opportunities for the incorporation of enhanced storm-water runoff protection, non-point-source pollution elimination systems, and/or other best-management practices that will improve the overall resource.

As outlined in the previous section on ARAR compliance, an alternatives analysis and mitigation in the form of replication or restoration of habitat is not required because the SER would occur within a Designated Port Area (DPA) and is integral to the remedial activities that will bring significant improvements to water quality. In fact, the water quality regulations explicitly require reuse rather disposal of dredged sediments and allow for waivers of 1:1 restoration for activities that result in improvements in water quality.

In regard to water quality improvements, construction of CDFs will facilitate the proper disposal of between 30 and 70 acres of PCB impacted sediment, which will provide a very significant improvement to the benthic habitat within New Bedford Harbor, and which standing alone provide a significant measure of mitigation for the unavoidable loss of resource areas within the CDF locations. Moreover, because of the extensive PCB contamination in the Harbor, the natural resources noted above are severely negatively impacted by contamination, and the resource use is very restricted. As construction of the noted facilities will remove and/or sequester these highly degraded sediments from contact with the rest of the resources in the Harbor, the construction of these facilities will also contribute to the mitigation of shellfish and finfish habitat contamination and will have the net effect of enhancing the resources located in the harbor to perform their ecological functions.

Nevertheless, we realize that resource agencies will be interested in further refining the functions and values of the resource areas that will be impacted by CDF implementation. Therefore, we will be working with the NBHDC to collect and present relevant environmental information that would normally be required by the resource agencies, in order to provide sufficient information for the SER Committee and the relevant resource agencies to assess the impacts of the facilities and options to mitigate for the displacement of significant marine habitat, should such mitigation be required.

Business Relocation

There will be no impact to water dependent businesses within the South Terminal CDF area as the City will purchase the involved lands from the current owners who are interested in seeing an extension of the South Terminal facility. The NBHDC is the current owner of the area in which the North Terminal CDF is proposed. We understand that NBHDC and EPA have met and agreed that detailed planning and allocation of responsibilities for the relocation of the businesses potentially affected by the North Terminal should be deferred until additional details on the extent and timing of remediation activities and CDF design are clarified. For example, determining the navigational impact of the North Terminal on Tisbury Towing would be a factor in determining whether or not to incorporate that facility into the North Terminal.

CDFs Size and Cost

The exact design for the CDFs has not yet been finalized and therefore the final size of the CDFs is still being developed. Attachment 3 shows that 1.8 million cubic yards of clean sediment will be generated as a result of the CAD construction, with 130,000 cy and 200,000 cy allocated to the South and North Terminals, respectively. Approximately, 850,000 cy of clean material would be available for capping. The actual size of the final facilities will be determined as part of the design process. At present, the South Terminal CDF has been conceptualized as an 800-foot long extension to the existing bulkhead. Attachment 1 contains a post construction rendition of the South Terminal area. The North Terminal CDF is in an earlier stage of design, but concept plans in the Harbor Plan envision an extension of the North Terminal bulkhead to be approximately 900-feet long. The costs associated with construction of CDFs will vary depending upon the construction timeline for each CDF, the price of steel, logistical issues associated with placement of clean fill, etc.

CSOs and Storm Drains: Unless specifically requested, it is currently anticipated that existing outfalls would be extended through the CDFs out to the Harbor. Creation of CDFs would not necessarily be directly linked to CSO separation, unless the opportunity presented itself in such a manner as to make limited integration of the two projects ideal. City of New Bedford outfalls 038, 020, 037, and 036 are currently located within the area being considered for the North Terminal CDF. There do not appear to be outfalls currently located within the area proposed for the South Terminal CDF or for the 3rd CDF. As part of the design review process conducted for the facilities, MassDEP will require that project proponents incorporate best-management practices into the proposed constructed facilities. It is anticipated that these actions will improve the environment of the Harbor overall, further mitigating impacts that might be generated from the facilities.

On-site Capping Using Clean CAD Material

The proposal to cap contaminated areas is consistent with an alternative identified in EPA's Feasibility Study. EPA has used material from a previous navigational CAD cell construction to cap the Bay portion of the Superfund Site. We acknowledge that EPA can not approve use of the clean sediment for proposed SER capping until more specifics are developed in the design development phase. We believe, however, that there is sufficient information to make a conditional decision that reuse of a significant volume of CAD generated sediment (800,000 cy) for on-site capping is reasonably likely to be a cost-effective remedial solution. The possible locations for capping from the EPA's FS are shown on the attached figure. This figure shows all locations south of Coggeshall Street. The areas requested in the Enhancement are less that the locations in the FS, since the area(s) identified south of the hurricane barrier are mostly capped and EPA will be dredging the areas above 50 ppm PCBs

Disposal of Contaminated Sediment into CDFs

We agree that if the areas used for CDFs have Superfund levels of contamination (>50 ppm for the Harbor) or if contaminated material (>50 ppm) were placed into a CDF, then the State would

be obligated to assure the O&M for the CDFs. The State will enter into an agreement with the NBHDC and City to require the NBHDC or City to perform and fund the O&M and monitoring at all CDFs. The State will oversee all O&M and monitoring activities.

We do not feel that a liner will be needed to separate the clean material from the contaminated material. The contaminated material will be placed first and the "clean" material will be placed in such a way to prevent extensive mixing. Also, it is expected that some portion of the CDFs should be available for use even if "clean" material is being stored at the CDFs. It is anticipated that material to be re-used for capping will be above the edge of the CDFs and sufficient distance away from the contaminated material that a liner for separation will not be required. However, if a liner is needed then it will be used.

Repair of Piers Impacted by Navigational Dredging

EPA has already accepted Navigational Dredging as part of the remedy. Unless the issue of pier stability is addressed, dredging required to remove contamination from areas near less stable piers will be significantly delayed or not performed, thus limiting the navigational dredging portion of the remedy. It is our position that this request be included as part of remedy enhancement. We are willing to consider modifying our request to eliminate any extra filling of waters, thus the final areas of any piers repaired under this enhancement request will be the same or smaller than before the repair. It is assumed that EPA may face a similar situation on the New Bedford side of the area being dredged, since some of the New Bedford shoreline has bulkheads, and EPA is not expected to obtain permits to perform this part of the remedy.

Conclusion

As outlined in our previous letter, MassDEP strongly believes that the requested enhancements have significant environmental benefits to the ongoing EPA remedy and future proposed ESD, and that these enhancements of the remedy warrant inclusion in the upcoming ESD for the New Bedford Harbor Superfund Site because of the on and off-Site environmental benefits, cost savings and broader economic benefits. MassDEP appreciates the opportunity to address your questions, and is certain that any issues that are unresolved at this time will be fully addressed through a robust process involving other natural resource agencies and the public. We therefore ask that you include the SER proposals be incorporated into your proposed ESD.

Thank you for your consideration of this request. If you have any questions regarding MassDEP's request, please contact me at (617) 292-5775.

Sincerely yours,

Gary Moran,
Deputy Commissioner for
Operations and Environmental Compliance

cc: Dave Dickerson, EPA Remedial Project Manager
Ian Bowles, Secretary, Executive Office of Energy and Environmental Affairs
Kenneth Kimmell, General Counsel, Executive Office of Energy and Environmental Affairs
Deerin Babb-Brott, Assistant Secretary and Director, Coastal Zone Management Agency
Congressman Barney Frank
New Bedford Mayor Scott Lang
State Senator Mark Montigny
Representative Robert Koczera
Representative Stephen Canessa
Representative Antonio Cabral
Representative John Quinn
Representative William Straus
Paul Craffey, MassDEP

e-file: 20100322_StateEnhancedLETTER

Attachment 1 - South Terminal Photos

Shoreline – Looking North

Shoreline – Looking West

North Side – Looking South

North Edge – Looking South

Shoreline – Looking Southwest

Shoreline – Looking South

Shoreline – Looking West

South Terminal – Current Conditions

South Terminal – After Construction

Attachment 2
PROPOSED TIMELINE – SEQUENCING FOR THE SOUTH TERMINAL AND PHASE IV DREDGING PROJECTS
NEW BEDFORD/ FAIRHAVEN HARBOR
(Version 2: 3/18/10 Draft)

SOUTH TERMINAL MARINE PARK			**CAD CELL #3 & PHASE IV DREDGING**		
Start Date	**Description**	**End Date**	**Start Date**	**Description**	**End Date**
11/1/09	Conceptual Layout Design	3/1/10	12/1/09	Conceptual Layout Design	3/15/10
3/1/10	Regulatory Approvals / Design	8/15/10	6/1/10	CAD Design	9/1/10
8/15/10	Drive Sheets South Terminal	12/1/10	9/1/10	Procure Dredger	12/1/10
			10/1/10	Top of CAD #3 Construction	12/1/10
12/1/10	Fill Bulkhead South Terminal and Surcharge	3/15/11	12/1/10	Bottom of CAD #3 Construction	4/1/11
3/15/11	Dredge South Terminal	8/1/11	2/1/11	Final Navigational Dredge Design	7/1/11
3/1/11	Concrete Paving	6/1/11			
5/1/11	Building Construction	8/1/11			
8/1/11	Begin Operations at South Terminal	NA	7/1/11	Dredge other Phase IV Areas into CAD Cell #3	9/1/12

Attachment 3
Engineers Estimate of Volumes for New Bedford/Fairhaven Dredging

Volume of Contaminated Sediment to be Removed (cubic yards)		**Clean Material to be removed for CAD Construction (cubic yards)**	
HDC/Town of Fairhaven[1]	1,148,000	Volume for Storage[3]	1,600,000
ACOE[2]	450,000	Additional Volume to allow for Navigation above CADs[4]	200,000
TOTAL:	**1,598,000**	**SUBTOTAL:**	**1,800,000**
		Amount of Clean Material that could be used in Capping[5]	
		SUBTOTAL:	**850,000**
		Clean Material that could used for CDF Construction[6]	
		South Terminal	130,000
		North Terminal	200,000
		White's Terminal (Popes)	90,000
		SUBTOTAL:	**420,000**
		Total Volume of Clean Material to be Beneficially Reused In New Bedford Harbor	
		TOTAL :	**1,270,000**

SUMMARY:
1) Amount of "Clean" Material that will need to be disposed of off-site if Enhancement IS NOT APPROVED: 1,800,000 cubic yards (approx.)
2) Amount of "Clean" Material that could potentially be Re-Used in the Harbor if the Enhancement IS APPROVED: 1,270,000 cubic yards (estimated).
3) Estimated Result is that IF the Enhancement is included, as much as 70% of the material could potentially be re-used on-site (assuming the timing works).

Notes (Information Sources):
1) Volume from 2009 update to the New Bedford/Fairhaven Harbor Plan properties to be dredged.
2) Volume form January 19, 2010 e-mails from USACE to SER Group concerning Army Corps Dredge Project Volume Update.
3) Volume of CAD Storage that would need to be generated to accommodate total contaminated dredging in Harbor (approximate and estimated).
4) Est. Volume of material that needs to be removed from the CAD Cell area to allow for boats/scows to navigate (ie, can't be refilled with Contaminated Material).
5) Estimated amount of "Clean" Material that could be used for Capping of residual contamination areas (also includes CAD Caps and OU#3 Cap additional volume).
6) Estimated amount of material that could be reused behind CDFs - CDF shapes are from 2009 Harbor Plan Update, and may change as part of final engineering.
Prepared by JAB/GED/CM - 3/10/2010

LEGEND

AREAS SUITABLE FOR CAPPING

FIGURE 7-8
AREAS SUITABLE FOR CAPPING IN LOWER HARBOR AND BAY
ESTUARY AND LOWER HARBOR AND BAY
FEASIBILITY STUDY
NEW BEDFORD HARBOR