Explanation of Significant Differences

for the

Upper and Lower Harbor Operable Unit

New Bedford Harbor Superfund Site

New Bedford, Massachusetts

August 2002

U.S. Environmental Protection Agency
Region I - New England
Boston, MA

www.epa.gov/ne/nbh

New Bedford Harbor Superfund Site
August 2002 Explanation of Significant Differences
U.S. EPA - New England

Table of Contents

Figures

Tables

Appendices

I. Introduction

A. Site Name and Location

Site Name: New Bedford Harbor, Upper and Lower Harbor Operable Unit (o.u.) #1
Site Location: Bristol County, Massachusetts

B. Lead and Support Agencies

Lead Agency: United States Environmental Protection Agency (EPA)
Contacts: David Dickerson, Co Remedial Project Manager (617) 918-1329
Jim Brown, Co Remedial Project Manager (617) 918-1308

Support Agency: Massachusetts Department of Environmental Protection (MA DEP)
Contact: Paul Craffey, Project Manager (617) 292-5591

C. Legal Authority for Explanation of Significant Differences

Section 117(c) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and Section 300.435(c)(2)(1) of the National Contingency Plan (NCP) requires that, if any remedial or enforcement action is taken under Section 106 of CERCLA after adoption of a final remedial action plan, and such action differs in any significant respect from the final plan, the EPA shall publish an explanation of the significant differences (ESD) and the reasons such changes were made. While not required by Section 300.435(c), EPA held a public comment period on this proposal to ensure that all interested parties had an opportunity to provide input to EPA before its final decision on this modification to the remedy.

D. Summary of Proposed ESD

The Record of Decision (ROD or ROD 2) for this phase or operable unit of the site cleanup was issued on September 25, 1998. The ROD's cleanup plan calls for approximately 450,000 cubic yards of PCB laden sediment to be dredged from the harbor bottom and surrounding wetlands, and to be disposed in perpetuity in four shoreline confined disposal facilities (CDFs A, B, C and D). See Figure 1. Since that time EPA has gathered additional site information and refined the cleanup approach for the upper and lower harbor area. A prior ESD was issued in September 2001 to address five of these refinements: additional intertidal cleanup areas; mechanical dewatering; use of the pilot study CDF as an interim TSCA (Toxic Substance Control Act) facility; change in CDF D wall design; and use of rail at CDF D.

This second ESD for ROD 2 modifies the remedy to include offsite disposal for the dredged sediments slated for CDF D instead of constructing CDF D and disposing PCB-contaminated sediments in it. At approximately 17 acres, CDF D is the largest of the ROD's four CDFs and has been sited for the north terminal port area of the harbor. As described more fully

in Section III, EPA has compared the refined cleanup approach discussed in the first ESD to a modified approach that eliminates CDF D, and instead disposes the sediment slated for CDF D at a licensed offsite facility. EPA believes that this modified approach is better and more cost-effective than constructing and filling CDF D.

While this ESD eliminates the 17 acre CDF D, it does not eliminate extension of the rail spur into this area discussed in the September 2001 ESD. Instead of CDF D, a smaller shoreline facility will now be constructed in the same area to support both the sediment dewatering building and the rail car (or truck or barge) loading area required for offsite disposal of the dredged sediments. See Figure 2 for the location of this smaller dewatering and transfer facility. Figure 3 illustrates the larger area of fill that would be required for CDF D, based on the original conceptual design. Figure 4 provides a closer overhead view of the smaller dewatering and loading facility, as currently designed.

It should be emphasized that this ESD only addresses the elimination of CDF D, and implements off-site disposal of only those sediments that would have been disposed in it. While the current cost-estimate (see Table 1) indicates that it would be cost-effective to dispose all site sediments at an offsite facility, thus eliminating construction of CDFs A, B and C as well as D, EPA stresses that this cost estimate will need to be reevaluated at least annually once actual offsite disposal costs are determined. Other project factors will be included in these reevaluations along with these actual disposal costs, such as the compliance status of the offsite facility(ies), potential growth of the total sediment volume requiring disposal, and annual funding levels for the harbor cleanup. If in the future construction and filling of one or more of CDFs A, B or C is deemed no longer necessary, EPA will issue an additional decision document.

Compared to the fully funded project cost of $325 million for the refined remedy discussed in the first ESD (disposal of dewatered dredged sediments in CDFs C and D), the modified remedy incorporated in this ESD - elimination of CDF D and offsite disposal of dredged sediment - is estimated to cost $317 million (a two percent difference). As described below in Section III, cost considerations are not the only reason EPA believes the offsite disposal alternative to be the best approach.

E. Public Comment Period

A draft of this ESD was issued in February 2002 to facilitate public comment on EPA's recommendation for the changes to the remedy incorporated herein. Since no commentors disagreed with the technical merits of the proposed change, this final ESD is not substantively different from the draft ESD. Readers should note, however, that the discussion in Section IV regarding initial (pre-full-scale) dredging activities in the north terminal and "north of Wood Street" areas has been updated to reflect EPA's most current plans for this work.

The formal public comment period was held from February 25, 2002 to April 10, 2002 after an extension of the original March 26, 2002 comment period end date. EPA allowed oral, written and e-mailed formal comments to be entered for the record. Oral comments were

provided at the public hearing portion of a March 6, 2002 public meeting at the New Bedford Free Public Library.

F. Public Record

EPA has considered and responded to all formal comments received during the comment period before issuing this ESD. EPA's response to these comments is attached as Appendix C. The public comments and EPA's response to them are now part of the official public record for the site that is available for public review at the two locations listed below.

EPA New England Records Center
1 Congress Street
Boston, MA 02114
(617) 918-1440
Monday-Friday: 9:00am - 5:00pm; (closed first Friday of every month and federal holidays)

New Bedford Free Public Library
613 Pleasant Street, 2nd floor Reference Department
New Bedford, MA 02740
(508) 961-3067
Monday-Thursday: 9:00am - 9:00pm
Friday-Saturday: 9:00am - 5:00pm

EPA supplemented the public administrative record file in October 2001 with various documents generated since the 1998 ROD, including those that supported the September 2001 ESD. The administrative record is now also supplemented with documents supporting this ESD.

II. Summary of Site History, Contamination Problems and Selected Remedy

A. Site History and Enforcement Activity

Identification of PCB (polychlorinated biphenyl) contaminated sediments and seafood in and around New Bedford Harbor was first made in the mid-1970s as a result of EPA region-wide sampling programs. In 1978, the manufacture and sale of PCBs was banned nationally by TSCA. In 1979, the Massachusetts Department of Public Health promulgated regulations prohibiting fishing and lobstering throughout the site due to elevated PCB levels in area seafood. Due to these concerns, the site was proposed for the Superfund National Priorities List (the NPL) in 1982, and finalized on the NPL in September 1983. Pursuant to 40 CFR 300.425(c)(2), the Commonwealth of Massachusetts (the Commonwealth) nominated the site as its priority site for listing on the NPL.

EPA's site-specific investigations began in 1983 and 1984. Site investigations continued throughout the rest of the 1980s and early 1990s, including a pilot dredging and disposal study in 1988 and 1989, computer modeling of the site completed in 1990, and an updated feasibility study for site cleanup also completed in 1990.

Collectively, these investigations identified the Aerovox manufacturing facility on Belleville Avenue in New Bedford as the primary source of PCBs to the site. PCB wastes were discharged from the facility's operations directly to the upper harbor through open trenches and discharge pipes, or indirectly throughout the site via CSOs (combined sewer overflows) and the City's sewage treatment plant outfall. Secondary inputs of PCBs were also made from the Cornell Dubilier Electronics, Inc. (CDE) facility just south of the hurricane barrier in New Bedford.

Based on the investigations' results, state and federal enforcement actions were initiated against both the Aerovox and CDE facilities as well as the City of New Bedford (though the City is not a Potentially Responsible Party for this site) pursuant to CERCLA, Massachusetts General Law c.21E, and other federal and state environmental statutes. For a summary of these enforcement actions and resulting settlements please see Section II of the 1998 ROD for the site (this ROD can be found as document 5.4.1 in the administrative record discussed above). The site cleanup is being managed by EPA, in partnership with the U.S. Army Corps of Engineers and the MA DEP.

In April 1990, EPA issued a ROD for the hot spot operable unit of the site (o.u. #2). The hot spot ROD called for dredging and on-site incineration of the site's most highly PCB-contaminated sediments located in the vicinity of the Aerovox facility. The ROD defined these hot spots as areas above 4,000 ppm (parts per million) PCBs. Dredging of these sediments - about 14,000 cubic yards (cy) in volume and 5 acres in area - began in April 1994 and was completed in September 1995. However, due to a vehement reversal in local support for on-site incineration, EPA suspended the incineration component of the hot spot remedy. Pursuant to an October 1995 ESD the dredged hot spot sediments were temporarily stored in a shoreline confined disposal facility at Sawyer Street in New Bedford, and then, pursuant to an April 1999 amendment to the 1990 Hot Spot ROD, the sediments were dewatered and transported to an offsite landfill for permanent disposal. This final phase of the hot spot remedy was completed in May 2000.

In September 1998, EPA issued the second ROD for the site for cleanup of the upper and lower New Bedford Harbor areas (o.u. #1). The remedy selected in this 1998 ROD (also known as ROD 2) is summarized in Section II.C below. As discussed above in Section I, the remedy was subsequently refined in a September 2001 ESD.

B. Contamination Problems

As noted above, the main site concern is the widespread PCB contamination in New Bedford Harbor sediments. Although the hot spot remedy removed approximately 14,000 cy of the most contaminated sediment, elevated levels up to and, in isolated areas, above 4,000 ppm total PCBs remain in both sediments and wetlands. The highest levels are generally found in the northern reaches of the upper harbor, with PCB levels decreasing in a southerly trend. Because of this sediment contamination, PCBs are also found in elevated levels in the water column and

in local seafood, and to a lesser extent in the air along certain areas of the shoreline. In addition to the PCB contamination, harbor sediments also contain high levels of other contaminants including heavy metals (e.g., cadmium, chromium, copper and lead).

As described more completely in Sections V and VI of the 1998 ROD, EPA found the PCB contamination to result in unacceptable risks to human health and the environment. The biggest human health risk was found to be from frequent (e.g., weekly) ingestion of local seafood, although secondary risks were also found from frequent human contact with PCB-contaminated shoreline sediments or soils. Ecologically, EPA's investigations concluded that the harbor's marine ecosystem is severely damaged from the widespread PCB contamination.

C. Summary of Remedy Originally Selected in the 1998 Record of Decision as Modified by the September 2001 ESD

Due to this contamination and risks to human health and the environment, EPA in the 1998 ROD selected a cleanup remedy for the entire upper and lower harbor areas. The ROD calls for the dredging and containment of approximately 450,000 cubic yards of PCB-contaminated sediment spread over about 170 acres. In the upper harbor north of Coggeshall Street, sediments above 10 ppm PCBs will be dredged, while in the lower harbor and in salt marshes, sediments above 50 ppm PCBs will be dredged. To protect human health against risks due to dermal contact with PCBs, intertidal sediments or soils in areas adjacent to homes will be removed if PCB levels are above 1 ppm, while those adjacent to parks or recreational shoreline areas where people spend less time than in areas adjacent to residences will be removed if PCB levels are above 25 ppm (the "beach combing standard").

As discussed above in Section I, the ROD originally called for the dredged sediments to be placed in four shoreline CDFs (CDFs A, B, C and D; see Figure 1). Seawater decanted from these sediments is to be treated to very stringent levels before discharge back into the harbor. The ROD also requires that institutional controls, including the continuation of a state-sanctioned fishing ban, be in place until PCB levels in seafood reach acceptable levels.

The September 2001 ESD set forth further refinements of the remedy that arose as the design phase progressed since 1998. These changes included the use of mechanical dewatering for the dredged sediments and the incorporation of a rail spur at CDF D.

III. Description of Significant Differences and the Basis for These Differences

As summarized in Section I, EPA has evaluated the benefits of eliminating CDF D and disposing its sediments offsite to those of the original remedy as modified by the September 2001 ESD. As described below, this evaluation leads EPA to believe that offsite disposal is a better approach than building and filling CDF D.

A. Use of a licensed, offsite TSCA-authorized facility (or facilities) instead of CDF D avoids filling approximately 15 acres of New Bedford Harbor

The most direct physical advantage of this ESD's modification is that it reduces the required filling of intertidal and subtidal areas from the original 17 acres to only 2 acres. By expanding existing filled tidelands with an additional 2 acres of fill, both the sediment dewatering and offsite loading facilities can be located within a smaller area, with a net savings of 15 acres of tidelands that are no longer disrupted. See Figures 2 and 3 attached. This decrease in the amount of filling, along with dewatering, is consistent with EPA's mandate under both state and federal laws to consider actions that are least damaging to the environment and to minimize, to the maximum extent possible, adverse environmental impacts.

B. Implementation of CDF D poses significant engineering challenges

During the course of an extensive post-ROD sediment boring program for CDF D, the Corps of Engineers identified a problematic layer of soft, fine grained sediments. From a geotechnical and structural standpoint, these soft underlying materials are an unsuitable base or foundation for any wall design for the CDF. As explained in the September 2001 ESD, a number of different CDF wall designs were examined but all required removal of these soft, weak sediments.

Even though these weak underlying sediments do not exceed ROD 2 cleanup levels, approximately 250,000 to 300,000 cubic yards of this material would need to be removed and disposed before building CDF D. This would be a large and costly sediment volume to manage which would not otherwise have been required by the harbor cleanup (i.e., the PCB levels would not be above the 50 ppm lower harbor cleanup level). It was primarily this fact, as well as market experience gained in sending the hot spot sediments to an offsite facility in 1999 and 2000, which prompted a closer evaluation of an offsite alternative in lieu of CDF D.

Elimination of CDF D would also avoid other engineering challenges, that, although less significant than managing these weak foundation sediments, could impact the harbor and surrounding communities. These include, among others, managing a complex, in-water construction and filling project within the busy harbor, dewatering the CDF prior to filling with filter cake (see Section IV) and controlling air emissions from within the large CDF footprint.

C. Given the strain on CERCLA funding nationally, eliminating CDF D and sending its sediment offsite avoids the possibility of having a partially completed and unusable CDF D linger amidst the working waterfront

To date the ROD 2 cleanup has been implemented using dedicated site-specific funds resulting from previous CERCLA litigation (see Section II.A above). During fiscal year 2002, however, these settlement funds will be exhausted, and the cleanup will be funded by a combination of the remainder of these funds and national Superfund program funds. Beginning in fiscal year 2003 (which begins in October 2002) the harbor cleanup will be entirely dependent on annual funding from the national Superfund program. This national funding is currently limited, and is projected to be insufficient to meet all needs across the country.

The specific affect on the harbor cleanup from a shortfall in annual funding, absent this ESD's modifications to the remedy, could either be a partially constructed CDF or a constructed CDF with insufficient funding to fill it. Not only would this present technical challenges in terms of managing air emissions and minimizing potential PCB leakage from an uncapped facility, it would also significantly delay the beneficial reuse of the CDF and stymie redevelopment of the working waterfront.

Instead, the modified remedy incorporated by this ESD provides an alternative that allows both dredging and redevelopment to move forward simultaneously. Once the dewatering and water treatment facilities are in place, dredging can begin and move forward as dictated by available funding.

D. Construction of the infrastructure required for offsite disposal has less adverse impacts on abutting waterfront dependent businesses than construction of CDF D

Although the ESD's modifications do impact certain abutters, the decreased size of the shoreline facilities will significantly lessen these impacts to abutters compared to the originally planned CDF D. Proceeding with CDF D would displace a number of water dependent businesses within the designated port area for an undetermined period until its completion. The smaller scale sediment dewatering and transfer facility reduces the number of businesses affected. EPA's coordination to date with impacted landowners and tenants regarding the sediment dewatering and transfer facility indicate that acceptable arrangements that accommodate both their needs and the project's needs are viable.

E. The shoreline facility required for offsite disposal can be more easily reused and integrated into the working waterfront than CDF D

In terms of beneficial reuse, this ESD's smaller facility presents significantly less challenges than the full scale CDF D. This is an important consideration since both facilities would be located in the state-designated port area (DPA) of the harbor (see p.32 of ROD 2).

Under the CDF D option, EPA would create a 17 acre area which would have to be capped and maintained to prevent the release of the stored PCB-contaminated sediments. Redevelopment of this new acreage would need to be carefully controlled and limited in order to preserve the integrity of the CDF. In addition, the full scale CDF D would require significant long term monitoring and maintenance (O&M) costs. These Superfund O&M costs would be eliminated with the smaller facility.

Under the offsite disposal option, the smaller scale shoreline facilities - the bulkhead, dewatering warehouse and rail spur - would be designed for future commercial marine reuse. Thus beneficial reuse of these facilities within the DPA once the cleanup is complete would be vastly streamlined and much less limited. Figure 4 shows a plan view of these features as currently designed.

F. The Modified Remedy Allows for a Quicker Cleanup of Contaminated Sediments North of Wood Street

Switching to offsite disposal in lieu of CDF D allows the "North of Wood Street" cleanup to be fast-tracked, since the excavated soils and sediments from this area can be disposed offsite rather than waiting for CDF D to be completed. Remediation of this area is important since it contains high contamination levels (up to 33,000 ppm PCBs) in a stretch of the Acushnet River with homes and two public parks along its shores.

Remediating this river stretch in 2002 also benefits the harbor cleanup by making use of property formerly occupied by a truss manufacturing facility as an important shoreline staging area. Since this property is slated to become a shoreline park in the City's Master Plan, an earlier cleanup avoids the dilemma of locating a park near the contaminated shoreline and allows the restoration and replanting process of the remediation to cost-effectively dovetail into the park design.

G. Offsite disposal in lieu of CDF D is estimated to save $8 million

As discussed above in Section I.D and below in Section III.H and Table 1, the current, fully funded cost estimate for this proposed modification to eliminate CDF D is $317 million, approximately $8 million less than the current $325 million estimate if CDF D is retained (see the September 2001 ESD). Since this represents only a two percent savings, and is likely to be within the margin of error of the estimates, EPA does not believe that this savings is an over-riding reason to implement the proposed modification. Rather, it is just one of the many reasons explained herein that point towards the elimination of CDF D and the remedy modification. EPA does believe, however, because less of the cost of the modified remedy would go towards in-water construction, that there is less potential for construction related cost growth.

H. Updated Cost Estimate

The current, fully funded cost estimate to implement ROD 2 as modified by this ESD is $317 million, using 2001 price levels, three percent per year inflation, and full contingency. Table 1 attached outlines the major cost components of this estimate. Note that the total project cost could become greater if actual funding levels are so low as to cause significant project delays and inefficiencies, or if the assumptions the cost estimate is based upon change significantly. Alternatively, total costs could decrease to an estimated $298 million if annual funding levels are high enough to allow the project to be implemented more efficiently.

As explained below, this current, fully funded $317 million estimate is a different type of cost estimate than used in the 1998 ROD. The ROD's estimate - $129 million for EPA costs - is a present worth estimate, and was based on 1995 price levels. The ROD's cost estimate included all dredging related costs as well as the costs of CDFs A, B, C and D.

Present worth is the amount required to fund a project assuming that amount can be invested at the start of the project for a given rate of return as the project progresses. Present worth estimates help evaluate various options on an equal basis, but they do not represent the actual funding levels that will be required for a project of this type. The fully funded estimate, on the other hand, includes inflation and reflects the total of the actual annual funding levels required to implement the harbor cleanup. In addition, since the ROD cost estimate is based strictly on a conceptual (rather than a more detailed) project design, EPA guidance acknowledges that actual project costs could be up to 50% higher than the cost estimate developed for the ROD (USEPA, 1999).

The following table shows the comparative process used by EPA and the Corps of Engineers to evaluate whether the current, fully funded estimate of $317 million is within the initial, present worth estimate of $129 million included in the ROD.

Type of Cost Estimate	**$ - in millions**
EPA ROD 2 cost at 1995 price level, **present worth**	129
EPA ROD 2 cost at 1995 price level, **present worth basis removed**	188
EPA ROD 2 cost **at 2001 price level, present worth basis removed** (increases due to inflation)	223
EPA ROD 2 cost at 2001 price level, acceptable upper limit (**$223 million times 1.5** per EPA guidance)	335
Current fully funded cleanup estimate (2001 price level including inflation)	317

Since the current, fully funded estimate for offsite disposal of $317 million as explained in this ESD is $18 million less than this last $335 million threshold, EPA believes that the remedy has been maintained within the acceptable range of the original ROD cost estimate.

IV. Offsite Disposal "ARARs" (Applicable or Relevant and Appropriate Requirements)

Consistent with ROD 2, PCB-contaminated sediment above EPA's clean up levels must be handled and disposed of in accordance with 40 CFR 761.61(c) of TSCA, which requires that the methods used will not pose an unreasonable risk of injury to health or the environment. See Table 8 of the ROD, Action Specific ARARs. This section describes the cleanup methods to be used that will be compliant with TSCA's standards.

Except for a limited amount of sediment removal discussed below, all dredged sediment over 50 ppm PCBs *in situ* (i.e, as measured in place) will be subject to a coarse material separation process and a dewatering process before being disposed in a CDF or, as modified in this ESD for CDF D, transported offsite for disposal at a licensed TSCA facility. After removing

larger debris such as large shells and stones at the dredging platform, the dredged sediments will be first piped to a coarse material separation facility located at the debris disposal area (DDA) at Sawyer Street. A temporary soil cap will be placed on top of the DDA as well as an asphalt pad before construction of this separation facility (see Section III.C of the September 2001 ESD for more information on the DDA).

At the separation facility, the sediment will be subjected to a mechanical process to separate coarse material (sand, gravel, shells, etc.) from the finer grained organic silts. This separation process will be done in an enclosed building where point source air emissions will be collected and treated. Removal of this coarse material will improve the efficiency of the dewatering process and reduce the wear and tear on the equipment used to dewater the organic silts.

As an additional benefit, EPA believes that the separated coarse material is likely to contain much lower PCB levels than the finer grained organic silts. Additional site specific studies are being performed to confirm this. The PCBs would not be lost or diluted by this process but rather the cleaner sand and gravel would be separated from the more highly contaminated organic silts. The resulting water from this process will be sent to the site's water treatment plant at Sawyer Street, treated to applicable water quality standards, and discharged into the harbor. The air and groundwater monitoring already in place at Sawyer Street will be tailored to the separation operations to ensure that emissions are within acceptable levels. Other engineering controls such as odor control or dust suppression will be implemented as necessary.

After coarse material separation at Sawyer Street, the remaining dredged sediments will be piped approximately 5,000 feet south via double-walled underwater pipes to a dewatering facility at Hervey Tichon Avenue. Here, the dredged material will be processed through filter presses to remove excess water, resulting in a dewatered "filter cake" similar to damp soil in texture. The process will be completely enclosed within the dewatering building, and point source air emissions within the building will be treated. If necessary, dust suppression measures will be implemented inside the building as well. Ambient air monitoring will be performed to ensure that neighboring workers and residents are not adversely impacted by the dewatering operations. Pursuant to this ESD, the filter cake will be sent offsite to a licensed TSCA-authorized facility or to CDFs A, B and C; the water removed by the presses will be sent back to Sawyer Street, again via underwater pipes, for water treatment.

The separated sand and gravel from the separation facility at Sawyer Street will be sampled and, if less than 50 ppm total PCBs, will be transported offsite to a non-TSCA facility, similar to disposal practices outlined in 40 CFR 761.61(a)(5)(ii) for self-implementation. As to the larger separated debris, it will be decontaminated or washed in a controlled process so as to avoid spills or releases. This debris will then be sampled to determine if it can be disposed as TSCA or non-TSCA waste. This process will capture regulated PCBs and dispose of them properly, most likely by treating the wash water at the onsite water treatment plant.

To optimize cost-efficiency, EPA may identify harbor sediments which contain PCBs above ROD 2 cleanup levels but below 50 ppm *in situ* as separate dredge management units

(DMUs). This material will be subjected to the same separation and dewatering processes explained above for sediment exceeding 50 ppm. However, provided confirmational sampling shows this dredged sediment to be below 50 ppm, the resulting filter cake will be sent offsite to a non-TSCA facility as allowed under 40 CFR 761.61(a)(5)(ii).

In addition to the full scale dredging process explained above, some construction related dredging will be required in the north terminal area of the harbor in order to allow the bulkhead construction and associated navigational dredging to proceed. This includes an estimated 6,000 cy of > 50 ppm PCB material and an estimated 37,000 cy of < 50 ppm PCB material. Since the full scale dewatering facilities won't be in place during this construction phase, EPA will use alternative methods to dewater this material. Alternatives being considered include active dewatering using temporarily mobilized desanding and dewatering equipment, or, for sediments <50 ppm PCBs, passive dewatering using geotubes in a bermed and impermeably lined area. Levels of pollutants in the effluent water from these processes are expected to exceed allowable discharge levels set in accordance with Section 402 of the Clean Water Act and the State's surface water discharge requirements. This effluent will thus be captured and sent to the City of New Bedford's publicly owned treatment plant (POTW) if it meets applicable Clean Water Act standards, 40 CFR 403. (See Table 8 of the ROD, Action Specific ARARs.) If the effluent does not meet applicable standards for discharge to the POTW, it will be treated on site or transported to EPA's water treatment facility at Sawyer Street. In either case the effluent will be treated to applicable discharge standards before being discharged either to the POTW or the Harbor.

The sediments from this north terminal dredging that are above 50 ppm PCBs *in situ* will be disposed at an offsite TSCA facility. For those sediments below 50 ppm PCBs *in situ*, the dewatered sediments will be sampled, and, if found to have 1 ppm or less of PCBs (and no longer regulated under TSCA), will meet state and federal standards for unlimited reuse or may be disposed of as Solid Waste. If found to be greater than 1 ppm but less than 50 ppm PCBs, the dewatered sediment will be disposed of as non-TSCA waste. The Sawyer Street facility will be one alternative for temporary disposal of this dredged material, consistent with the 2001 ESD's findings regarding the DDA.

Another area where sediment handling will be different than in the full scale separation and dewatering process is in the river stretch north of Wood Street. Because recent sampling has revealed extremely high shoreline PCB levels (up to 33,000 ppm), and since residences and two public parks are located in this stretch, EPA has prioritized the cleanup of this area to start in November 2002 (see Section III.F above). Because the full scale separation and dewatering facilities explained above will not be in place until approximately one year later, EPA will use other methods to dewater and dispose the estimated 12,000 cy of excavated sediments from this area. Alternatives being considered include a) use of the temporary mobilized active dewatering equipment discussed above, together with offsite disposal, or b) bringing the material to Sawyer Street (using water tight trucks) for temporary disposal in either the DDA or Cell #1, or for offsite disposal after stabilization with Portland cement. Any offsite disposal of this TSCA material would be at a TSCA-authorized facility. Any water removed from these methods will be treated as appropriate for discharge either to the POTW or directly to the harbor, and air

monitoring will be performed to ensure that neighboring residents and workers are not adversely impacted. Similar techniques may be used in other areas of the harbor (e.g., wetlands) where it may not be feasible to slurry or pump excavated material to the dewatering facility.

In accordance with Section 761.61(c) of TSCA, the Regional Administrator must make a determination that the proposed offsite disposal discussed above does not pose an unreasonable risk of injury to human health or the environment. Such a determination is attached to this ESD as Appendix A. This final determination was made after considering all public comments received by the Agency during the public comment period.

V. Supporting Agency Comments

In two letters dated February 21, 2002 and July 17, 2002 to EPA New England, the MA DEP expressed its agreement with the ESD's modifed remedy.

VI. Statutory Determinations

As discussed above in Section IV, this ESD includes EPA New England's Regional Administrator Robert W. Varney's determination under TSCA 40 CFR Sec. 761.61(c) that dewatering and offsite disposal does not pose an unreasonable risk of injury to health or the environment. This determination is attached as Appendix A.

EPA believes that the remedy as modified herein remains protective of human health and the environment, complies with all Federal and State requirements that are applicable or relevant and appropriate to this remedial action (and which were not waived in the 1998 ROD), and is cost-effective. In addition, the revised remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable for this site.

VII. Public Participation Activities

EPA and DEP meet regularly with site stakeholders to keep the community up to date with the site's cleanup status, including the issues described above in Sections III and IV. For example, EPA and DEP meet quarterly with the facilitated New Bedford Harbor Superfund Site Community Forum, as well as monthly with the Forum's subcommittee. Additional meetings and outreach efforts with other groups occur as necessary to successfully implement the cleanup program.

Also, as explained above in Section I.D, EPA held a public meeting on March 6, 2002 specifically to discuss the draft ESD's proposed modifications to the remedy, and to take formal comments on it.

Richard Cavagnero, Acting Director
Office of Site Remediation and Restoration
EPA New England

8-15-02
Date

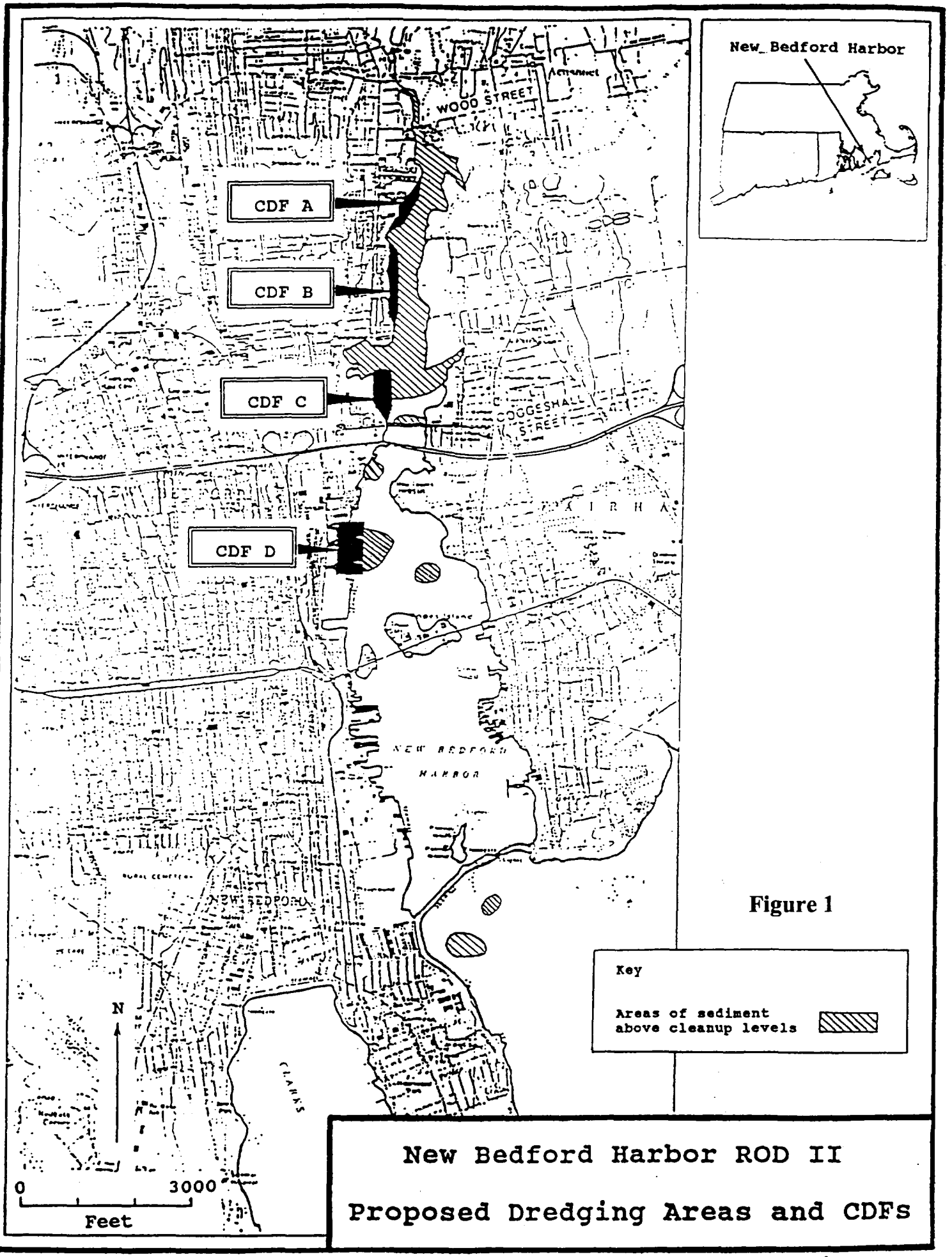


Figure 1

New Bedford Harbor ROD II

Proposed Dredging Areas and CDFs

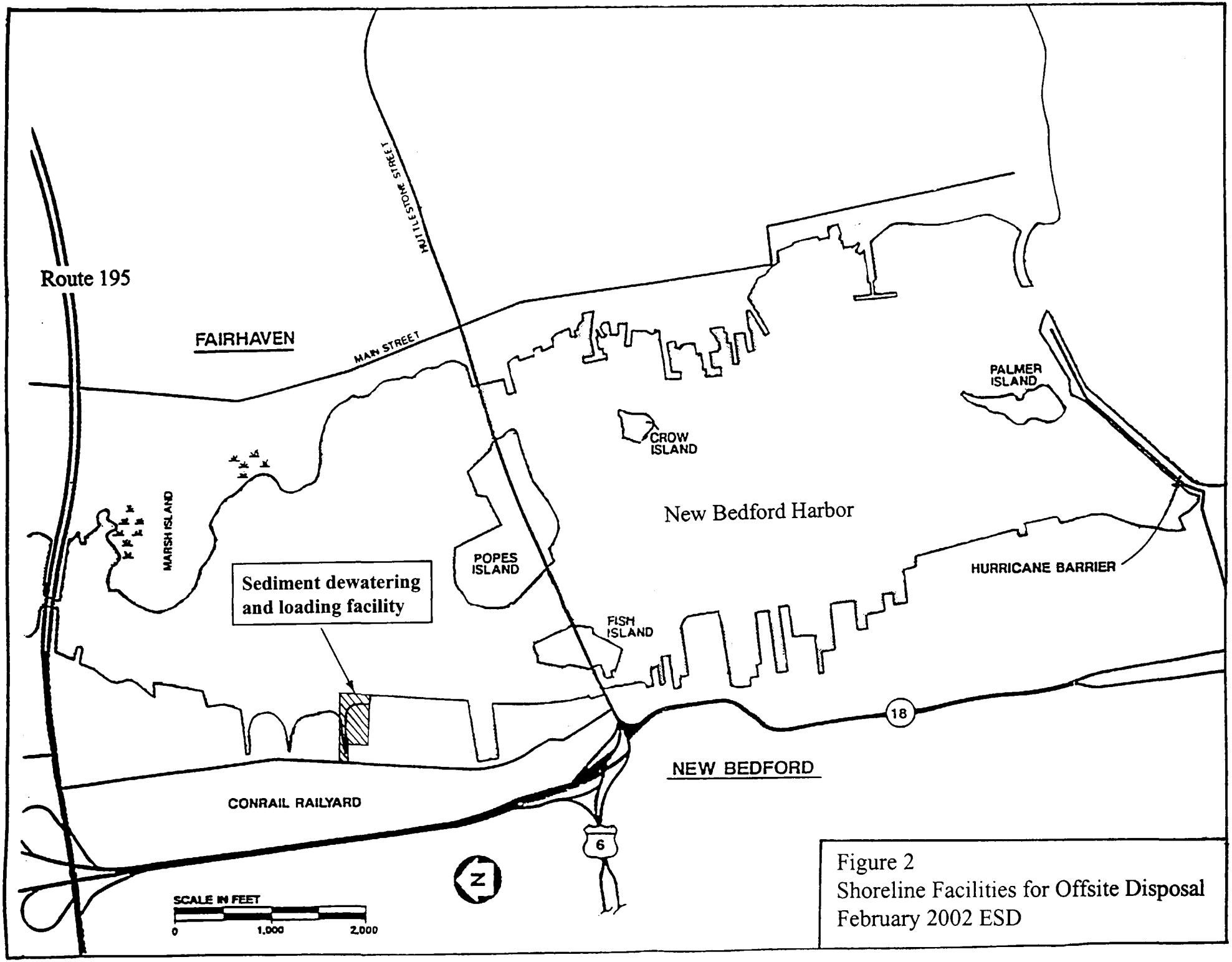


Figure 2
Shoreline Facilities for Offsite Disposal
February 2002 ESD

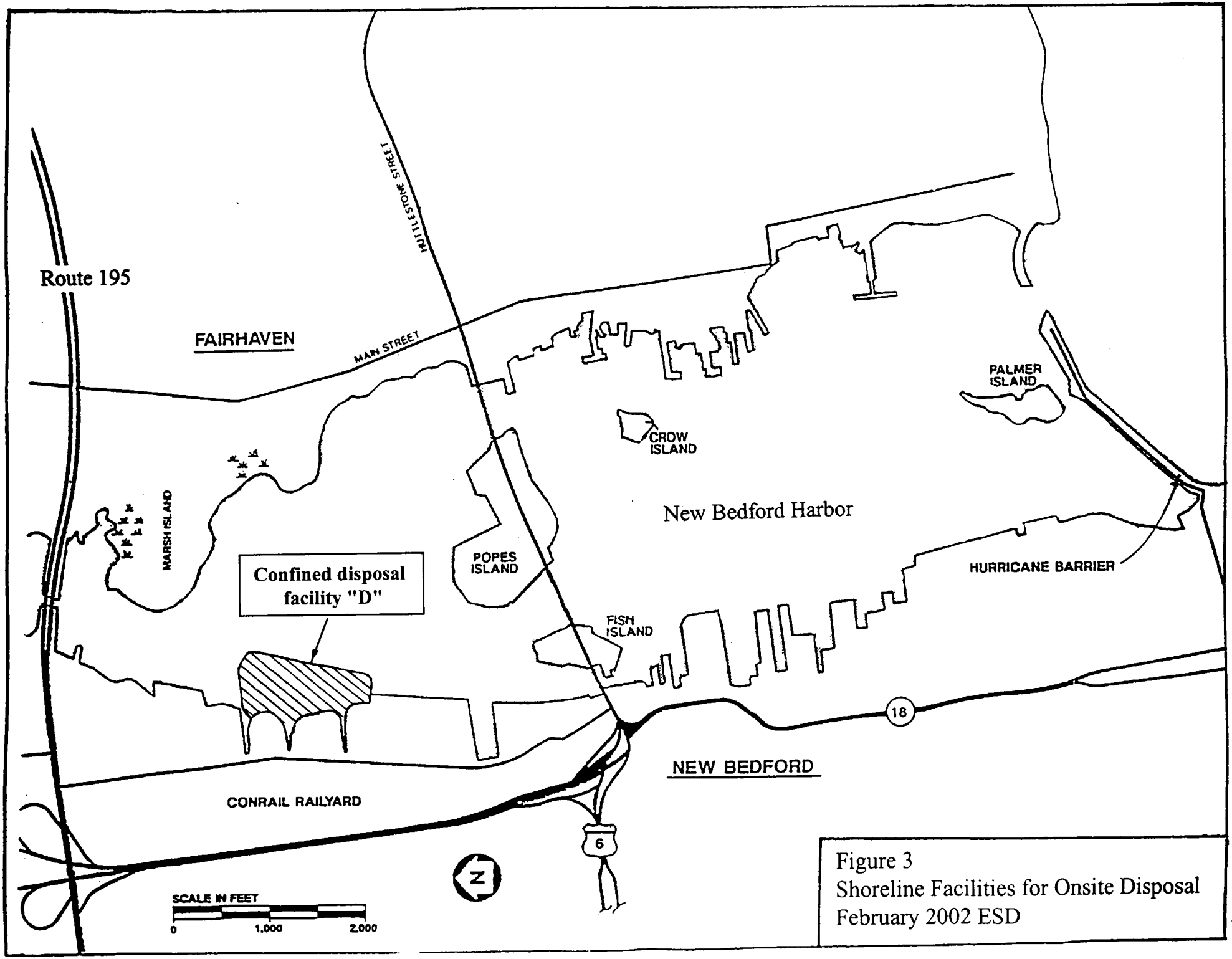
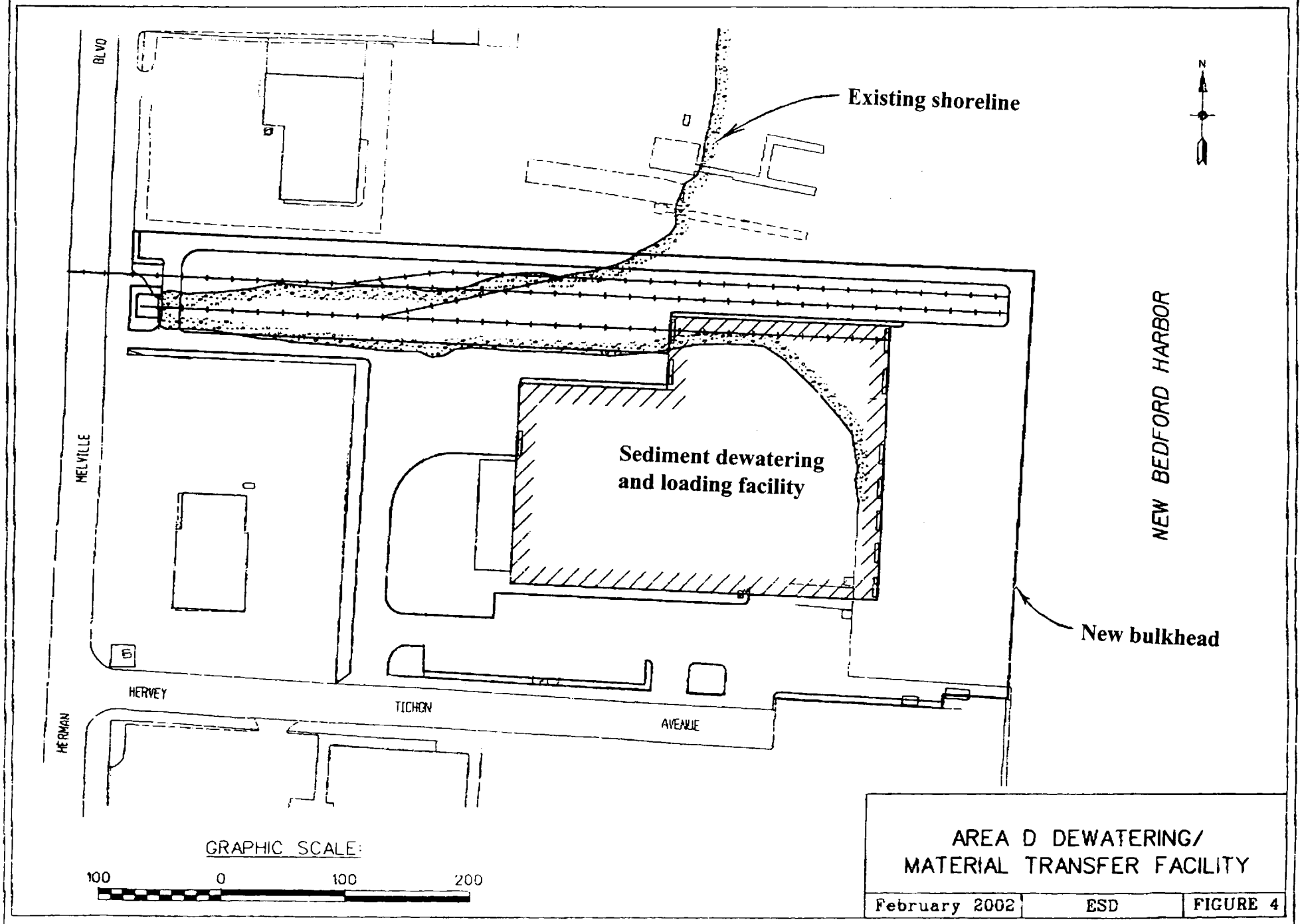


Figure 3
Shoreline Facilities for Onsite Disposal
February 2002 ESD



AREA D DEWATERING/
MATERIAL TRANSFER FACILITY

February 2002	ESD	FIGURE 4

Table 1

PROJECT CURRENT COST & BUDGET: TRANSPORT & DISPOSE by RAIL

T&D 387k tons@ Area D; Dredge/Excav. 507,100 CY Contaminated

COST SUMMARY

Restricted Funding--PRELIMINARY ESTIMATE

14-Feb-02

		Cost	Percent of Total
Debris Disposal Area (Surcharge & Cap)	$	574,000	0.2%
Combined Sewer Overflow @ CDF C (CSO C) w/ Mods & Mark-ups		2,614,900	1%
Build Water Treatment Plant & Water Treatment		2,589,000	1%
Area D: De-Watering Bldg, Transport Facility, RR Spur & Remove Vessels		21,972,200	7%
Combined Sewer Overflow for Area "D" (CSO D) w/mark-ups		2,736,380	1%
Harbor Dredging & Excavation (w/ Early Action & Confirm. Smpg & Channel)		33,969,100	11%
De-Water Harbor Sediments		24,500,000	8%
Transport & Dispose Harbor Sediments Off-Site (T&D)		43,459,000	14%
Wetland / Habitat Restoration		4,370,000	1%
Relocate Commonwealth Electric Power Cables w/ Ctg & Air Monitoring Mod		6,855,113	2%
Air/Water Quality, and Ecological Sampling & Monitoring thru 2022		9,194,710	3%
Soccer Field w/ Parking Area and Fence		415,000	0.1%
Site/Home Ofc. Mgt, Eng. During Construction, SS&H,QC, Admin., Overhead, Site Operations (15% on Construc. Costs + USACE Construction Oversight)		36,107,600	11%
Contingency on RA Dredging, De-Watering & T&D		41,071,066	13%
Contract Fee on Future TERC RA Costs		9,091,521	3%
Real Estate Acquisition		1,043,000	0.3%
USACE & Contract Remedial Design & Investigations w/Ctg		39,090,130	12%
Inflation @ 3%/Year Over Design/Construction/RA Monitoring Period		37,169,356	12%
Total (Not Rounded)	$	316,822,076	
Total Project Fully Funded Cost	**$**	**317,000,000**	100%
Total Fully Funded O&M through 2030	**$**	**2,000,000**	

Appendix A - TSCA 761.61(c) Determination

Consistent with Section 761.61(c) of the Toxic Substances Control Act (TSCA) I have reviewed the Administrative Record for the site and considered the offsite disposal of PCB contaminated sediment set out in the August 2002 Explanation of Significant Differences (ESD) for the first operable unit of the New Bedford Harbor Superfund Site. As required by that section of TSCA, I have determined that the ESD's plan to transport dredged PCB- contaminated sediment offsite for disposal instead of containing the sediment in Confined Disposal Facility D does not pose an unreasonable risk to health or the environment as long as the following conditions are met:

1. All dredged sediment is disposed of in accordance with TSCA based on *in situ* PCB levels and not subject to dilution.

2. Protocols, developed in accordance with TSCA, will be developed and maintained for the following activities:

A. Sampling of all dredged material (including separated sand and gravel) before it is transported offsite; and

B. Best efforts are used to rinse desanding and dewatering equipment when handling TSCA and non-TSCA material to avoid mixing.

3. Stockpiled material shall be bermed while awaiting transport to capture runoff. Runoff shall be collected and treated to applicable water quality standards.

4. Groundwater and air monitoring and dust suppression measures as described in the ESD are maintained until the desanding, dewatering and transporting of PCB-contaminated sediment ceases.

Robert W. Varney
Regional Administrator, EPA New England

August 16, 2002
Date

Appendix B - Reference Cited

1. USEPA, 1999. A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents. USEPA Office of Solid Waste and Emergency Response. EPA 540-R-98-031, OSWER 9200.1-23P, PB98-963241. July 1999. (Note: this guidance document is available at the EPA New England Records Center at the location listed in Section I.D above.)

Appendix C

Response to public comments on the

February 2002 Draft

Explanation of Significant Differences

New Bedford Harbor Superfund Site

August 2002

U.S. Environmental Protection Agency
Region 1 - New England
Boston, MA

1.0 Introduction

This response to comments summarizes and provides EPA's responses to formal comments regarding the New Bedford Harbor Site received as a result of the February 2002 draft Explanation of Significant Differences (ESD). That ESD proposed a modification to the 1998 Record of Decision's (ROD's) harbor cleanup plan by eliminating confined disposal facility (CDF) "D" in favor of offsite disposal of dredged PCB-contaminated sediment at a properly licensed offsite landfill.

The formal comment period was held from February 25, 2002 to April 10, 2002, after an extension of the original March 26, 2002 comment period end date. Comments were submitted in either of three formats: e-mail, oral (at a March 6, 2002 public meeting), or written. The format of each comment summarized below is indicated as one of these three types. The comments and responses are organized into the following categories:

2.0 Citizen Comments

2.1 Edward Fitzsimmons (oral comment)

Summary of comment: Mr. Fitzsimmons commented that he supported the proposed change to the remedy and was "100 percent behind it." He also suggested that the desanding facility "be put right exactly where the PCBs originally came from, which would enhance the building..." (Note that EPA believes this comment suggests use of the currently-abandoned Aerovox facility for the desanding phase of the dredging operation.)

EPA Response: EPA appreciates Mr. Fitzsimmons' full support of the ESD. Use of the Aerovox facility for desanding is not recommended, however, since the interior of the building is highly contaminated with PCBs. In addition, EPA can make use of its existing water treatment and truck loading/decontaminating facilities at Sawyer Street that were built for the hot spot cleanup.

2.2 Dave Glickman (oral comment)

Summary of comment: Mr. Glickman commented that the original plan for CDF D would make it difficult to reuse that area of the working waterfront, and that the alternative, City-

supported offsite plan involving the rail yard is very important to the City. He also commented that use of the Aerovox facility would not be viable economically, that pumping to the dewatering building made sense, and that use (proposed by Mr. Saunders in section 2.7 below) of the Acushnet quarry for sediment disposal would not be cost-effective.

EPA Response: EPA agrees with Mr. Glickman's comments.

2.3 Cynthia and Irwin Marks (e-mailed comment)

The Marks' commented that they were in favor of the offsite disposal.

EPA Response: EPA agrees with their comment.

2.4 John McCoy (written comment)

Summary of comment: Mr. McCoy commented that the offsite disposal approach would be a better plan than use of CDFs, and that he favored cleanup of the area north of Wood Street first. He also urged for aggressive implementation of the cleanup rather than further study.

EPA Response: EPA agrees with this comment.

2.5 Marie Mindle (e-mailed comment)

Summary of comment: Ms. Mindle commented that ESD's recommendation appeared to make sense, and that removing PCBs near parks as quickly and safely as possible is a priority. She also questioned whether EPA could "deliver what you promise?"

EPA Response: EPA agrees with this comment, and notes that successful implementation of the proposed cleanup will be dependent on adequate annual funding levels from the national Superfund program.

2.6 Antone Rodrigues (written comment)

Summary of comment: Mr. Rodrigues commented that he favored shipping all of the sediment offsite, especially since it was less expensive.

EPA Response: EPA agrees with this comment, but notes that the 2002 ESD only addresses the elimination of CDF D at this time. As discussed in the ESD, EPA will need to reevaluate all project factors as the cleanup proceeds to determine whether or not the other three CDFs are cost-effective. Additional decision documents would be required if and when these other CDFs are eliminated.

2.7 Paul Saunders (oral comment)

Summary of comment: Mr. Saunders commented that the Tilcon-Warren quarry in Acushnet, MA be considered for disposal of PCB-contaminated sediments

EPA Response: Use of this quarry has been considered, but EPA (and the MA DEP) do not believe that it would be practical for the quarry to be legally permitted as a permanent TSCA (Toxic Substance Control Act) and Massachusetts hazardous waste disposal facility.

2.8 Robert Wilkinson (oral comment)

Summary of comment: Mr. Wilkinson commented that he favors removing the contaminated sediment from New Bedford as soon as possible. He also expressed concerns about threats to human health from living near the river, including exposures to PCBs via airborne emissions at low tide and from residue on home grown vegetables.

EPA Response: EPA shares Mr. Wilkinson's sentiments regarding offsite disposal of the dredged material as soon as possible, and believes that the ESD's proposed approach is currently the best way to achieve this goal. EPA also shares his concerns about risks to human health from PCB exposures, but believes the two most significant routes of exposure are consumption of PCB-contaminated local seafood and dermal (skin) contact with contaminated shoreline sediments. EPA nevertheless will continue to consider potential airborne releases of PCBs during the cleanup, and will implement a comprehensive air monitoring program to ensure that the public is not adversely impacted by potential airborne PCBs. EPA also intends to implement a monitoring program of locally grown produce to provide information on the potential for agricultural related impacts from the site.

3. Local Government Comments

3.1 Matthew Thomas, City Solicitor, on behalf of New Bedford Mayor Fred Kalisz (oral comment)

Summary of comment: Mr. Thomas conveyed Mayor Kalisz's support of the proposal, and reiterated his belief that it was not a change of the cleanup remedy, but rather a change in the approach for disposal of the dredged sediments. He also thanked EPA for its coordination with the City, the HDC (Harbor Development Commission) and the abutters to the dewatering facility towards mitigating impacts from the project.

EPA Response: EPA agrees with Mr. Thomas, and appreciates the City's continued cooperation and support for the harbor cleanup.

3.2 Tom Kennedy, New Bedford City Councilor-at-Large (oral comment)

Summary of comment: Mr. Kennedy commented that the New Bedford City Council had voted to support the ESD, and emphasized the estimated reduction of approximately $8 million in project costs. He also questioned whether EPA could forgive certain costs owed by the City for work EPA performed on a cleanup site nearby.

EPA Response: EPA appreciates the City Council's support of the ESD. However, issues regarding cost recovery for other sites nearby is beyond the scope of this document.

3.3 New Bedford City Council (written comment)

Summary of comment: The City Council voted to endorse the ESD's proposed offsite disposal approach, and strongly agrees with EPA that the change will favorably impact both the cleanup process and the Harbor Redevelopment Plan.

EPA Response: EPA appreciates the Council's support, and agrees with their comments.

4. State Government Comments

4.1 William Straus, Massachusetts State Representative (e-mailed comment)

Summary of comment: Representative Straus gave his support for proceeding with offsite disposal instead of CDF D, citing both schedule and cost advantages. He also commented that no clear preference be given to the method of transportation for the offsite disposal approach (rail or road), in order to provide maximum competition in the bidding process.

EPA Response: EPA agrees completely with the Representative's comments.

5. Federal Government Comments

5.1 National Oceanic and Atmospheric Administration (NOAA; written comment)

Summary of comment: NOAA commented that it was pleased with the proposal to eliminate CDF D, since it would eliminate filling 15 acres of estuarine habitat. NOAA further commented that these 15 acres will likely become habitat for natural resources entrusted to NOAA. It also noted the proposed change would compliment the City's brownfields and waterfront revitalization efforts.

EPA Response: EPA agrees with NOAA's comments.

6. Other Organizations' Comments

6.1 Jim Simmons, President - Hands Across the River Coalition (HARC; oral comment)

Summary of comment: Mr. Simmons commented that HARC was "glad to see this process moving forward", but voiced concern with the fact that the offsite disposal approach did nothing to actually eliminate PCBs.

EPA Response: EPA agrees with Mr. Simmons' comments, and emphasizes that only licensed TSCA facilities will be used to safely dispose the dredged and dewatered PCB-

contaminated sediment. As discussed more thoroughly in the 1998 ROD's responsiveness summary, EPA also notes that sediment treatment technologies would add prohibitively expensive costs to an already costly remedy. Offsite disposal of these sediments is cost-effective and protective of human health and the environment.

7. AVX Corporation (AVX) Comments

a. Summary of comment: AVX's overarching comment is that the changes to the remedy proposed in this ESD "are wide reaching and fundamentally alter the basic features" of the 1998 ROD, and that these changes therefore constitute a ROD amendment rather than an ESD. AVX further commented that the fact that EPA allowed public comment on this ESD further indicates that a ROD Amendment should have been used.

EPA Response: EPA disagrees that the recommendation to delete CDF D from the remedy in favor of offsite disposal rises to the level of a fundamentally different remedy necessitating a ROD amendment. The NCP requires that the Agency look at the scope, performance and cost of the change and then determine where the type of change falls along a spectrum from minor to fundamental. In this case the most basic features of the remedy - the PCB cleanup levels used to define the overall scope of the cleanup, the removal from the harbor of contaminated sediment and wetlands above these levels, and the lack of active treatment to destroy the hazardous PCB molecules prior to disposal - remain absolutely unchanged. Furthermore, as explained in more detail within the ESD, three of the four CDFs originally selected for disposal of the dredged sediment remain as elements of the remedy.

The scope of the remedy remains the same; EPA is still addressing risks posed by PCB-contaminated sediment in New Bedford Harbor through removal and containment. Overall, the performance of the remedy remains intact in that dredging will proceed as well as containment in CDFs. The fact that one of the four shoreline CDFs will not be constructed and instead its contents will be contained in an off-site TSCA landfill, while a significant change to the original solution for that portion of the dredged sediment, does not rise to the level of a fundamental change. When fully funded costs of this remedy, as modified by this ESD, are compared to the fully funded cost of the original remedy, the cost remains within the acceptable range provided for in EPA guidance.

Furthermore, CDF D would essentially have been a shoreline landfill specifically for dewatered PCB-contaminated sediment. For the reasons summarized in the ESD, this ESD just shifts the location of this method of disposal (landfilling of untreated dredged sediment) for this particular CDF to an offsite landfill instead. The fact that this modification is more of a shift in disposal location rather than a shift in disposal type further underscores EPA's belief that it is not a fundamental change to the original remedy.

In comparison to the hot spot remedy, EPA believes the change to offsite landfilling from the original selection of on-site incineration in the 1990 ROD did fundamentally alter that remedy so as to require a ROD Amendment. While the scope of the remedy remained essentially

the same, performance and cost changed considerably in that the treatment component, incineration, was suspended due to a vehement reversal in public acceptance, and since the dredged sediment remained in the Sawyer Street CDF for many years longer than originally planned. So long, in fact that EPA issued an ESD to address the delay. After exploring various treatment technologies for the sediment, the remedy ultimately changed to a non-treatment option of offsite landfilling. These events served to delay performance of the remedy for approximately five years, and to increase costs significantly.

While EPA believes that use of an ESD was appropriate to document the elimination of CDF D in favor of offsite landfilling, EPA also believes it was crucial to seek public comment on this change given previous concerns by harbor communities during the hot spot remedy regarding the sending of contaminated sediment offsite to another community. As AVX quotes EPA in its own comment II.A.1, "the distinction between significant difference and ROD Amendment" is not clear and an Amendment is appropriate when "scope, performance, or cost, *is no longer reflective of the selected remedy in the ROD.*" EPA determined that this change did not rise to the level of an Amendment. Balanced against this determination, however, EPA believed that the significance of this change warranted public comment. EPA guidance allows the Agency to solicit public comment as a component of issuing an ESD.

b. AVX comment: Throughout its comments, AVX states that the cost estimate for the 1998 ROD was $115,545,872, and uses this cost to evaluate the ESD's recommendation and cost-effectiveness.

EPA Response: The very first page of the ROD (Abstract, page i) clearly states that the estimated present worth cost of the remedy is between $120 and $130 million. The ROD at pages 40, 42 and 45 explains the difference in the $115.5 million estimate of the 1996 Proposed Plan and the $120 to $130 million range used in the ROD. In fact, the Table 9 of the ROD used by AVX to support their use of the $115.5 million cost is clearly titled "Estimated Cost of the *1996 Proposed Remedy*" (emphasis added), as opposed to the cost of the 1998 ROD.

Since approximately $1 million was estimated for state operation and maintenance (O&M) costs in Table 9, EPA uses $129 million as the upper end of the ROD's estimated present worth cost ($130 - $1 million) in calculating EPA's fully funded non-O&M costs.

c. AVX comment: AVX had many comments regarding the 2001 ESD (see for example their entire section I.A). Since these comments are beyond the scope of this responsiveness summary, EPA will not respond to these comments except where they overlap with the 2002 ESD.

d. AVX comment (I.A.1, p.4): EPA, in revising the CDF D design, has "laid the groundwork for off-site disposal of sediments as the "most likely option." The likely option of off-site disposal of 300,000 CY of foundation sediments (which may or may not be contaminated) begs the question of why off-site disposal of the 473,000 CY of dredged sediments is not also "likely.""

EPA response: The only off site disposal of sediments potentially envisioned in the 2001 ESD was for the estimated 300,000 cy of soft (and not necessarily contaminated) foundation sediments underneath CDF D, and as a disposal contingency in case the overall volume of sediments to be disposed exceeded the capacity of the four CDFs selected in the ROD (2001 ESD, p.9). The 2002 ESD, on the other hand, makes clear that further information is required before a decision can be made on CDFs A, B or C - including actual market rates for offsite transport and disposal, compliance status of offsite facilities, overall sediment volume, etc. (2002 ESD, p.2). This information would then be balanced against the cost of constructing, filling and capping CDFs A, B and C.

e. AVX comment (I.A.3, pp.4-5): AVX commented that EPA's inclusion of the footprint sediments underlying CDFs A and B into the total volume equation (rather than keeping these sediments in place within the two CDFs) is proof that these two CDFs have been inappropriately eliminated from the remedy.

EPA response: The 2001 ESD makes clear that the determination to build these two CDFs is entirely dependent on the total volume of dewatered sediment requiring disposal. EPA has not made a final determination on this issue, and specifically mentioned in the 2001 ESD that worst-case computer modeling indicates that these two CDFs may in fact be necessary even with the volume reductions provided by the dewatering process (2001 ESD, p.6). The footprint sediments for CDFs A and B were included in the 2001 ESD's cost estimate in order to be internally consistent with the overall basis of the estimate.

The 2002 ESD further clarifies that other factors will also be considered before a decision is made as to CDFs A, B and C (see comment 7.d above). The 2002 ESD also makes clear that "(i)f in the future construction and filling of one or more of CDFs A, B or C is deemed no longer necessary, EPA will issue an additional decision document." (2002 ESD, p.2)

f. AVX Comment (I.A.4, p.5): EPA offers no explanation why the cost has increased $102 million. This cost increase calls into question other remedial alternatives that were rejected in the 1998 ROD due to cost-effectiveness.

EPA Response: Note that EPA assumes the $102 million being referred to is the difference between $223 million (the fully funded EPA ROD cost at the 2001 price level - line 3, Type of Cost Estimate table, section III.F, 2001 ESD) and the $325 million revised estimated cost in the 2001 ESD.

First, Table 1 of the 2001 ESD lists 22 of the cleanup's most significant cost categories. A comparison between this table and Table 9 of the ROD explains much of the difference between the two estimates. The ESD itself also discusses engineering challenges encountered post-ROD which impact site costs (e.g., soft foundation sediments and their disposal). These two cost tables are not structured exactly the same, but it is appropriate that as the design of the remedy has

advanced beyond the conceptual stage of the ROD that the cost estimates also become more refined. One of the purposes of an ESD is to better define concepts that were put forward in the ROD without the benefit of a detailed design; the changes in the 2001 ESD reflect information EPA learned during the design phase of the remedy.

On a more general level, EPA believes that a project of this scale and complexity can be empirically evaluated against the original estimate by utilizing the +50%/-30% cost range provided in agency guidance. The rationale behind this cost range is that it is generally accepted that conceptual stage cost estimates do not cover every eventuality or contingency of a cleanup, but that they are sufficiently acceptable for comparison of remedial alternatives. EPA and the Corps of Engineers' site team have managed the project to stay within this acceptable cost range. In addition, given the site's challenging scale and complexity, EPA believes that the ROD's other remedial alternatives would quite likely have experienced similar - if not greater - cost increases.

g. AVX Comment (pp.7-8): "It is clear that EPA's proposed remedy involves a radical change in the type of treatment and containment technology." AVX also commented that the 1998 ROD prescribed the "treatment of seawater from these CDFs at four separate facilities" and "mechanical dewatering at two facilities".

EPA Response: As explained above, EPA disagrees that this ESD's recommendation constitutes a radical change in the type of treatment or containment technologies used in the remedy. The remedy has never included the application of active treatment to destroy the hazardous PCB substances in the sediment (other than treatment of the decanted seawater to meet discharge criteria); dewatering does not destroy the PCB molecules it only removes water from the dredged material.

AVX correctly characterizes the ROD's description of four envisioned water treatment facilities. EPA notes, however, that the design approach for water treatment has changed since the ROD, and just one centralized water treatment facility at Sawyer Street is now planned. This central plant will make use of the existing water treatment building and ancillary facilities, as well as an additional water treatment building adjacent to the existing one. This is a cost-effective approach since it eliminates the need for real estate on which to locate additional treatment plants and further minimizes disruption to the community.

Regarding AVX's comments on the number of dewatering facilities, EPA clarifies that only one dewatering facility will be built (at Hervey Tichon Avenue). There will also be a coarse material separation (i.e., desanding) facility built at Sawyer Street, but the purpose of this facility is separation, not dewatering (nor destruction of PCB molecules).

h. AVX Comment (p.8): AVX commented that mechanical dewatering and off-site disposal were previously evaluated and expressly eliminated from the 1998 ROD. AVX further commented that "(c)ertainly, technologies such as mechanical dewatering and off-site disposal do not "reflect the selected remedy in the ROD" since these same technologies were considered and rejected in the 1998 ROD".

EPA Response: AVX correctly notes that these remedial features were considered but not selected during the remedy selection process. EPA notes, however, that the feasibility study for this operable unit was published in 1990. Since that time, as a result of EPA's design investigations, value engineering studies and experience with offsite disposal of the hot spot material, these two remedial elements have been determined to be cost-effective. Furthermore, EPA and the Corps have found ways to overcome the short-term effectiveness and implementability concerns regarding dewatering noted in the ROD and again by AVX in their comments. Now that these features are cost-effective and implementable, it would be irresponsible for EPA not to revisit their use for the harbor cleanup.

EPA disagrees that inclusion of dewatering (an element of the 2001 ESD, not this ESD) and the elimination of CDF D in favor of off-site disposal make the remedy modifications discussed in this ESD no longer reflective of the selected remedy in the ROD. Again, the most critical features of the remedy remain absolutely unchanged. Others within the local community agree with EPA on this analysis as well (see comments by Matthew Thomas in section 3.1 above). See response to comment 7.a for further discussion of this issue.

i. AVX Comment (p.8): AVX commented that the switch from on-site to off-site disposal has proven to be an important consideration in the selection of a ROD Amendment over an ESD at other Superfund sites across the country, and should play a similar role here.

EPA Response: EPA again notes that on-site disposal has not been eliminated from the remedy, since sediment disposal in CDFs A, B and C are still components of the remedy. Agency guidance emphasizes that remedy decisions are very site-specific, and that consideration of public comment, whether the document is an ESD or ROD Amendment, is critically important. Furthermore, EPA headquarters was consulted in this matter and concurred that an ESD could be used in this particular case.

j. AVX Comment (p.9): AVX commented that the offsite disposal would be achieved by rail at the New Bedford Harbor site.

EPA Response: As noted in response to State Representative Straus' comments above in section 4.1, EPA's remedy will allow transport by road as well as by rail. The method ultimately used will be based on cost-effectiveness and as a result of a competitive bidding process for the transport and disposal contract.

k. AVX Comment (p.9): AVX commented that "a ROD Amendment was the vehicle used to change the treatment and disposal location for dredged sediments at the "Hot Spot" operable unit. The same procedural protection should be extended to the remedial changes covered in the proposed ESD."

EPA Response: As discussed more fully in section 7.a above, the hot spot ROD Amendment involved the elimination of on-site incineration as a treatment element of that

remedy, in favor off-site disposal without active treatment. EPA viewed that change as fundamentally different from the original remedy. This ESD, and the 2001 ESD, on the other hand involve no such changes in (or elimination of) active treatment technology since treatment of the PCBs has never been a feature of the original or modified remedy for the whole harbor. Further, the basic features of the ROD remain the same - contaminated sediments and wetland soils above the ROD's cleanup levels will be removed and contained without treatment. EPA views the elimination of one of the four CDFs, CDF D, as a significant change to a component of the remedy and not a fundamental change in accordance with the NCP, 40 CFR Section 300.435(c)(2).

l. AVX Comment (p.9): AVX commented that the physical area of the cleanup has increased because EPA has changed the application of the ROD's target levels based on new information.

EPA Response: It is important to clarify that EPA has not changed the way it applies the 1998 ROD cleanup levels. The ROD set cleanup levels for residential and recreational shoreline areas (1 and 25 ppm, respectively) and identified approximate areas where these levels would be applied. Post-ROD sampling performed to define contaminated areas more succinctly identified an additional shoreline residential area contaminated well above the ROD's residential cleanup level (the Early Action cleanup area described in the 2001 ESD). Also, in two areas of the upper harbor shoreline land use has changed (or is in the process of changing) since the 1998 ROD, such that certain wetlands formerly considered "remote" with a 50 ppm cleanup level have changed to shoreline park land with a 25 ppm cleanup level (the future park at the former Reliable Truss site in New Bedford and, subsequent to the 2001 ESD, the small River View Park across the river in Acushnet). Again, EPA has not changed the way it applies the cleanup levels. Instead it has applied these levels consistent with the ROD to new areas, identified either through more focused sampling or through changes in land use, that exceed risk based levels for a particular use.

Furthermore, given that waterfront property is a finite resource, EPA believes that other similar changes in land use towards more frequent public or residential access is a possibility in the future.

m. AVX Comment (p.10): AVX commented that EPA improperly compared the revised sediment volumes of the 2001 and 2002 ESD to that in the 1998 ROD, and claimed that the sediment volume that should be used for the 1998 ROD is 332,000 cy (450,000 *in situ* cy reduced to account for dewatering).

EPA Response: Sediment volumes should only be compared when on an equivalent basis (e.g., *in situ* to *in situ* or dewatered to dewatered), otherwise the conclusions are meaningless. EPA appropriately compared the *in situ* volume of contaminated sediments from both the 2001 and 2002 ESDs (472,700 and 507,100 cy, respectively) to the *in situ* volume of the 1998 ROD (450,000 cy). AVX has done just the opposite by comparing the *in situ* volumes of the two ESDs to a calculated dewatered volume for the ROD.

n. AVX Comment (p.10): AVX commented that "EPA has also failed to explicitly acknowledge that by not constructing CDF D, there will be additional sediment to dredge from the area where the CDF would have been."

EPA Response: AVX correctly points out that elimination of CDF D requires that the contaminated sediments within what would have been its footprint be dredged and disposed rather than covered by the CDF. The volume assumed at the ROD stage for the CDF D footprint sediments was 31,200 cy.

o. AVX Comment (p.10): AVX commented, in reference to the discussion about the CDF D footprint sediments, that "volumes of these proportions made a critical difference in the evaluation of remedial alternatives in the 1998 ROD."

EPA Response: EPA is unclear as to exactly what AVX means by this statement. If, however, AVX's point is that the volume represented by the CDF D footprint sediments (31,200 cy, see above) would have made a critical difference in remedy selection, then EPA disagrees. This volume equates to only seven percent of the 450,000 cy total *in situ* sediment volume that formed the basis of the 1998 ROD.

p. AVX Comment (p.10): AVX commented, as elaborated further below, that the proposed change in remedy represents a fundamental alteration of the remedy's performance.

EPA Response: EPA refers the reader to response to comments 7.a, 7.i, 7.k and 7.q for discussion related to this comment.

q. AVX Comment (pp.11-12): AVX provided a "summary of EPA's analysis of these changes in performance" of the modified remedy.

EPA Response: Since the majority of the bullets in AVX's summary on pages 11 and 12 of their comments assume that all four CDFs will be eliminated, EPA disagrees with this summary. Other areas of the summary with which EPA disagrees are:

- CERCLA Criteria #3 (Long term effectiveness, permanence), 2nd bullet: EPA disagrees that "(g)reater long term beneficial use of the shoreline areas (for businesses and open space) will be possible after elimination of the CDFs." To the contrary, CDFs A, B and C would allow approximately 24 acres of new public open space along a shoreline that is currently inaccessible to the public due to the many mills built along the upper harbor waterfront.

- CERCLA Criteria #4 (Reduction of toxicity, mobility or volume through treatment): EPA does not agree that mechanical dewatering of the dredged sediments destroys PCB molecules in the sediment.

- CERCLA Criteria #8 (State acceptance): As indicated in the draft 2002 ESD, the MA DEP supports the recommended change in the remedy. This support is further defined in the MA DEP's July 17, 2002 letter which is included in the administrative record for this ESD.

- CERCLA Criteria #9 (Community acceptance): EPA disagrees with AVX's characterization that there was widespread community opposition to the remedy's CDFs. The 1996 Forum Agreement, while expressing community preference for a remedy that destroyed PCBs and treated metals rather than containment of contaminated sediments in CDFs, nevertheless documents the broad community consensus for use of CDFs A, B, C and D for the storage and containment of contaminated sediments (see paragraph #9 of the Forum Agreement). Further, with the exception of AVX, this responsiveness summary reflects widespread public acceptance of the ESD.

r. AVX Comment (p.12): AVX commented that a ROD Amendment should have been used instead of an ESD, since EPA specifically considered but rejected off-site disposal and mechanical dewatering in the 1998 ROD.

EPA Response: In contrast with AVX, EPA believes that the introduction of mechanical dewatering and offsite disposal would be a more significant modification to the remedy had they NOT been previously considered during the feasibility study and remedy selection process. As discussed herein, these remedial features WERE previously considered, but are being revisited due to market conditions and overall cost-effectiveness.

s. AVX Comment (p.12): AVX commented that the JFD Electronics site in Oxford, NC should be used as a model since a ROD Amendment was used to formalize a change from on-site treatment and disposal to off-site treatment and disposal, "in part because an alkaline chlorination treatment considered and ruled out in the original ROD had been re-introduced."

EPA Response: EPA disagrees with this example since it involves a remedy which includes treatment (and in this case the switch to a different type of treatment) for the destruction of hazardous substances. The 1998 remedy does not, and never has, included active treatment as a stand alone feature of the remedy. EPA again reiterates that the decision to issue a ROD Amendment or an ESD is based on the specific circumstances of each site.

t. AVX Comment (p.13): AVX commented that "the $94,000,000 increase in cost entailed in the proposed ESD represents a major escalation in cost" and that "EPA provides no explanation as to why the cost has increased by +42.15%."

EPA Response: See comment #7.f above and EPA's response to it.

u. AVX Comment (p.14, first paragraph): AVX commented that EPA's cost analysis is flawed since it is not based on a ROD cost of $115,545,872.

EPA Response: see comment #7.b above and EPA's response to it. Again, AVX inappropriately uses the cost of the 1996 proposed plan as the cost of the 1998 ROD.

v. AVX Comment (p.14, second paragraph): AVX commented that it would be improper to include the costs for relocating submerged power cables and CSOs to the proposed plan's present worth estimate of $115,545,872, without first reducing them to a present worth basis as well.

EPA Response: EPA does not believe that transforming the costs for CSO and power cable relocation to a present worth basis would have made a significant difference, since these two remedial elements were some of the first features implemented. The most dramatic cost "reductions" using present worth basis occur when the work being performed is many years in to the future. The main point is that EPA was aware that these two remedial features were not captured in the 1996 proposed plan cost estimate, and that the ROD estimate thus needed to be raised to be as representative as possible of future actual costs.

w. AVX Comment (p.14, third paragraph): AVX commented that EPA inappropriately "used 1995 as the beginning year for purpose of backing out the present worth discount and adjusting for inflation" since the 1998 ROD indicates that 1996 costs should be used instead.

EPA Response: Although EPA updated the cost estimate for the proposed plan in 1996, that does NOT mean that a 1996 cost-basis was used. Cost estimators use available costs and the construction cost index or CPI when updating costs. In the 1996 time frame that the costs were being updated, only costs at the 1995 price levels or the appropriate index through 1995 were available, thus costs updated in 1996 are at 1995 price levels.

x. AVX Comment (p.15, first bullet): AVX commented that "The cost for harbor dredging (row 3) in the proposed ESD is 41.4% more than in the 2001 ESD, yet sediment volume has increased by only 7.2%."

EPA Response: In addition to costs for the volume increase of approximately 34,000 cy, additional costs were added to this line item to reflect certain pre-full-scale dredging activities and to make the 2002 ESD cost estimate as accurate as possible. These included a conservative $5.6 million for "north lobe" dredging to accommodate a business relocation required for the dewatering facility, $3.7 million for the prioritized north of Wood Street cleanup, and additional funds for a more detailed confirmatory sampling effort.

y. AVX Comment (p.15, 2nd bullet): AVX commented that EPA inappropriately eliminated the costs of air emissions controls for the CDFs from the 2002 ESD, since it proposes elimination of only one of the four CDFs.

EPA Response: The 2002 ESD, as well as AVX's footnote #8, makes clear that the ESD's cost estimate is based on ALL sediments being disposed off-site, and that this cost-estimate will

need to be revised regularly based on, among other factors, the actual market prices experienced for the off-site disposal of CDF D's sediments. Since this cost estimate is based on the assumption that no CDFs would be used, it was appropriate to eliminate CDF-related air emissions controls.

z. AVX Comment (p.15, 3rd bullet): AVX commented that EPA inappropriately reduced project contingency by more than $18,500,000 for the 2002 ESD (compared to the 2001 ESD) because it applies the contingency only to three remedial activities (dredging, dewatering and transport and disposal).

EPA Response: The contingency is applied to the same features in both ESDs, but was reduced in the 2002 ESD from 40% to about 30% due to design refinement and less uncertainty and risk based on the lack of CDF D.

aa. AVX Comment (p.15, 4th bullet): AVX commented that both the 2001 and 2002 ESDs inappropriately failed to include O&M costs in the bottom line, as opposed to the 1998 ROD which did.

EPA Response: See EPA's response to comment 7.b above. $1 million in estimated state O&M costs were removed from the upper end of the 1998 ROD's cost estimate ($130 million) before changing from a present worth to a fully funded cost basis, since this is the amount that would in fact be fully funded by EPA. Thus EPA has been consistent in comparing the ESD costs to this ROD cost of $129 million, since both exclude any O&M that may be needed.

bb. AVX Comment (p.15, 5th bullet): AVX commented that "(t)he cost for inflation at 3% per year over the design and construction period (row 32) is almost $7,000,000 more in the proposed ESD than in the 2001 ESD although they were issued within a few months of each other. Further, the proposed ESD remedy cost is less than that in the 2001 ESD, which would suggest that the amount would be lower in the proposed ESD."

EPA Response: The 2002 ESD estimate reflects an assumption of restricted funding from the national Superfund program (about $25 to $30 million per year) resulting in the project being completed about 2011. The 2001 ESD on the other hand assumed unrestricted funding with the project being completed about 2007. Thus there are higher inflation costs with the 2002 ESD.

cc. AVX Comment (pp.16-17): AVX commented that "(t)he 1999 Hot Spot ROD Amendment and the proposed ESD involve virtually identical elements" and that, as a result, a ROD Amendment rather than an ESD should have been used to address the elimination of CDF D.

EPA Response: See EPA's response to comments 7.a, 7.i and 7.k above. Again, the fundamental difference between the hot spot ROD Amendment and this 2002 ESD is that the hot spot amendment involved the change from active treatment of the hazardous PCB substances (on-

site incineration) to off-site disposal of the PCB-contaminated dredged sediments WITHOUT such treatment. EPA agrees that this elimination of the treatment element of the original hot spot remedy fundamentally altered that remedy and warranted a ROD Amendment. The critical distinction with the 2002 ESD is that the 1998 ROD did not include an active treatment step, since the CDFs were believed to be protective without such treatment. Thus EPA strongly disagrees with AVX's assertion that "(t)he 1999 Hot Spot Amendment and the proposed ESD involve virtually identical elements."

dd. AVX Comment (p.18): AVX commented that "although not each aspect of EPA's proposed remedial changes at OU1 may constitute independently a fundamental alteration, when considered collectively they cross the threshold from discrete significant changes to a fundamental change, and therefore require a ROD Amendment."

EPA Response: Given the vast scale of the harbor cleanup, it is unreasonable to believe that each and every detail of the cleanup would be fully resolved at the ROD stage. Simply because there have been numerous refinements in the design approach for a cleanup of this magnitude does not in and of itself mean that the remedy has been fundamentally altered. EPA does not believe that in this case, even when these changes and refinements are considered collectively, that they constitute a fundamental alteration of the remedy. Again, the most basic features of the remedy - the PCB cleanup levels used to define the overall scope of the cleanup, the removal from the harbor of contaminated sediment and wetlands above these levels, and the lack of active treatment to destroy the hazardous PCB substances prior to landfilling - remain absolutely unchanged.

ee. AVX Comment (p.18): AVX commented that "(r)easonable indications that such frustration of the purpose of providing for public review and comment is taking place include the use of multiple ESDs within a short time-span of one another, and the use of any single ESD when there is the clear expectation that more will follow. Because the changes in the proposed ESD follow closely upon the heels of those in the 2001 ESD, and because the elimination of additional CDFs is clearly anticipated, EPA is treading dangerously close to thwarting the public process mandated by the NCP." They further commented that "EPA should acknowledge that the proposed changes in the proposed ESD, when considered in the context of the changes in the 2001 ESD and those that are likely to follow, constitute a fundamental alteration in the aggregate and should be adopted only through a ROD Amendment."

EPA Response: EPA disagrees with AVX's characterization of the decision documents in its comment. The 2001 ESD addressed modifications to the proposed remedy that either had already been conducted or which needed to be made due to technical issues that arose in implementing the remedy. This was done in compliance with CERCLA and the NCP which affords EPA the discretion to determine the magnitude of the modifications and the delay caused in implementing the remedy by issuing subsequent decision documents after the ROD has been finalized. As has been discussed in previous responses, this ESD addresses the limited question of whether to build and use CDF D or to send sediments slated for it to an off-site facility instead.

EPA has included a public comment period for this decision in order to solicit public review before a disposal option is selected for the sediments originally slated for CDF D.

ff. AVX Comment (pp.19-21): In sections IV.A.1 through IV.A.7 of their comments, AVX lists several features of the 1998 remedy which will be significantly changed by the 2002 ESD, and commented that, "when considered in the aggregate, constitute a fundamental alteration of the 1998 ROD."

EPA Response: Since many of the issues discussed in this section of AVX's comments are duplicative of those discussed above, EPA will not repeat its responses here. Three main responses should be emphasized, however. First, the most basic features of the 1998 remedy remain unchanged (see Response to Comment 7.a and 7.dd above). Second, for a cleanup of this magnitude and scope, it is not unreasonable to expect a long list of specific changes to the remedy as the design approach is advanced and refined. That the solutions to these many detailed issues can change over time does not necessarily mean that the remedy has been fundamentally altered, even when considered collectively, given that the remedy's most fundamental features remain constant. Third, many of AVX's comments here assume that all four of the CDFs will be eliminated from the remedy. Again, this decision has not been made at this time. EPA does not agree that elimination of just one of the four CDFs, and the related remedial elements that would disappear along with CDF D as listed here by AVX, constitutes a fundamental change to the harbor cleanup.

gg. AVX Comment (p.21): AVX commented that "the community has repeatedly gone on record saying it does not want and does not support CDFs to be operated in perpetuity along the shores of the harbor. EPA would face stiff community opposition to the construction of CDFs A through C now that it has published a strong technical argument that CDF D is neither required nor preferred."

EPA Response: see Response to Comment 7.q, 4th bullet, above. Again, paragraph 9 of the July 1996 Forum agreement makes clear that "(t)he Forum agrees with EPA's proposal to use CDFs A, B, C and D...for the storage and containment of contaminated sediments". Moreover, except for AVX, the public comment period for the ROD did not solicit significant negative public comment on the use of CDFs.

Unless EPA finds during its continual evaluation of the remedy that CDFs A, B and C no longer prove to be cost-effective, EPA believes that this community support for these CDFs will prevail - especially given the shoreline open space and recreational potential of these urban green areas.

hh. AVX Comment (p.21): AVX commented that "EPA should be required to address all these changes at once by a ROD Amendment rather than incrementally through multiple ESDs. It should not circumvent the statutory process by using serial discrete and overlapping modifications when one - a ROD Amendment - will do."

EPA Response: See EPA's response to comment 7.ee above. There is no prohibition under CERCLA against using multiple ESDs to address different changes to a remedy. The remedy changes addressed by the 2001 ESD are independent from the remedy change proposed in this ESD (shipping some of the contaminated sediment off-site). As explained above, EPA believes that, in contrast to the 2001 ESD's changes, the 2002 ESD's proposed changes were significant enough to warrant public comment.