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**Comments to U.S. Environmental Protection Agency,  
National Remedy Review Board (NRRB),  
Regarding Lower Passaic River Restoration Project Early Action Proposals**

**Prepared by**

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**&**

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### **Overview:**

When the Passaic River Coalition (PRC) was founded in 1969, the Passaic River was considered one of the most polluted rivers in the United States. Much has been done to clean up the river since then, and the PRC has been actively involved in these efforts. However, the Lower Passaic River remains badly contaminated. Studies of the contamination in the Lower Passaic River, Newark Bay, and the New York-New Jersey Harbor Estuary have been going on for many years. Representatives of the PRC have been active public participants in the Diamond Alkali Superfund case, Harbor Estuary programs, and other efforts to remediate this contamination since 1993.

The Lower Passaic River Restoration Project study was initiated in 2003.<sup>1</sup> During the course of this study, “sediments in the lower eight miles of the river were identified as a major source of contamination to the 17-mile” tidal portion of the river and to Newark Bay.<sup>2</sup> The draft Focused Feasibility Study (FFS), released in June 2007, “was undertaken to evaluate a range of remedial alternatives that might be implemented as an early action to control that major source.”<sup>3</sup>

In July 2007, after a decade of study, reports on the Contamination Assessment & Reduction Project (CARP) findings were issued. The report on modeling for the evaluation and management of contaminants of concern in water, sediment, and biota in the NY/NJ Harbor Estuary lists the following implications for port and harbor management:<sup>4</sup>

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<sup>1</sup> U.S. Army Corps of Engineers, New York District; U.S. Environmental Protection Agency, Region II; New Jersey Department of Transportation, Office of Maritime Resources. April 2003. Project Management Plan, Lower Passaic River, New Jersey, Investigation and Feasibility Study for Remediation and Ecosystem Restoration.

<sup>2</sup> Malcolm Pirnie, Inc. June 2007. Draft Source Control Early Action Focused Feasibility Study (FFS), Executive Summary, page i. Prepared for US Environmental Protection Agency, *et al.*

<sup>3</sup> *Ibid.* (FFS), Executive Summary, page i.

<sup>4</sup> HydroQual. 2007. Contamination Assessment & Reduction Project (CARP), A Model for the Evaluation and Management of Contaminants of Concern in Water, Sediment, and Biota in the NY/NJ Harbor Estuary, Contaminant Fate & Transport & Bioaccumulation Sub-models. July 2007. Page C-3.

- “Historical sources of most contaminants were much larger than current sources.” Most of the contaminants of greatest concern, such as dioxin and PCBs, are no longer getting into the river. Therefore, dredging and removing the contaminants from “legacy sources” that persist in sediments in the Lower Passaic River and Newark Bay should significantly reduce future risks.
- “Of the current sources of contamination, runoff and head-of-tide appear to be dominant for many of the contaminants.” The CARP analyses indicate that current contaminant inputs from Combined Sewer Overflows (CSOs) and permitted discharges are relatively low. Storm water runoff does contribute significant loadings of contaminants such as PAHs, and better management of storm water runoff is needed throughout the region.

“A HARS suitable Newark Bay, in terms of PCB and dioxin/furan levels of contamination in worms, may be attained in the future if ... a cleanup of the in-place sediments in the Passaic River is undertaken.”<sup>5</sup> The CARP models predict that if most of the contaminated sediments in the Lower Passaic River were removed, then someday in the future sediments in Newark Bay might be clean enough for fish and crabs to thrive again, and for port channels to be dredged as needed.

For ten years the New York Academy of Sciences Harbor Consortium has studied the following five contaminants in the New York/New Jersey Harbor, and issued reports and recommendations on each: Mercury, Cadmium, PCBs, Dioxins, and PAHs. In January 2008 the Consortium reported that “dioxins were selected for study by the Consortium because of their impacts on fish and shellfish in the NY/NJ Harbor Watershed, their relatively high toxicity even at low concentrations, their ubiquity in sediments in the Harbor (e.g., the lower Passaic River, Newark Bay), and, thus, their potential impact on the economy of the region, especially the Port of NY & NJ.”<sup>6</sup> The Consortium’s recommendations include the following statement:<sup>7</sup>

Cleanup of PCB-contaminated sites – particularly along Passaic River – as well as the dioxin-contaminated Diamond Alkali Superfund site and its effects on the nearby Harbor, remains a (if not the) major priority. The Consortium has urged all litigating parties to focus their efforts on achieving early and effective action. (Progress to assess and address issues associated with the Diamond Alkali contamination has been made subsequent to the Consortium’s dioxin report.)

In May 2008 Malcolm Pirnie reported to the Remedial Options Workgroup on revisions to the alternative actions that might be taken to implement an Early Action project to remediate the sediment pollution in the lower eight miles of the Passaic River. These revisions were made in response to comments on the earlier draft Focused Feasibility Study, which included comments from the Passaic River Coalition, dated 15 August 2007.

In June 2008 the U.S. Environmental Protection Agency (EPA) secured an agreement with Occidental Chemical Corporation and Tierra Solutions, Inc. to remove 200,000 cubic yards of dioxin-laden sediment from the river adjacent to the Diamond Alkali Site.<sup>8</sup> The details of how the work will be done are being worked out, and public comment on the technical details for Phase 1, the removal of about 40,000 cubic yards of the sediments most highly contaminated with dioxin, will probably be requested early in 2009. The estimated cost of both phases of this project is \$80 million dollars, which would be borne by a primary “polluter”. However, this project will remove less than 2% of the estimated 11 million cubic yards of contaminated fine sediments that should be removed from the lower eight miles of the Passaic River.<sup>9</sup>

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<sup>5</sup> “A HARS suitable Newark Bay “ would have sediments clean enough so that dredged material from the bay could be placed in a Historical Areas Remediation Site (HARS) in the Atlantic Ocean.

<sup>6</sup> New York Academy of Sciences Harbor Consortium. January 2008. “Safe Harbor: Bringing People and Sciences Together to Improve the New York/New Jersey Harbor. Page 46.

<sup>7</sup> *Ibid.* Page 47.

<sup>8</sup> Kluesner, David, U.S. EPA, Region 2, Public Affairs Division. June 2008. EPA Signs Agreement with Companies to Remove Major Source of Passaic River Contamination.

<sup>9</sup> *Op. cit.* 2. (FFS). Executive Summary, page x.

This report summarizes our recommended approach to an Early Action program for cleaning up the contaminated sediments in the lower eight miles of the Passaic River. It also suggests ways to pay for the expensive costs of this cleanup effort. We would like to highlight the following recommendations:

- Our preferred alternative for Early Action is “Dredging with Full Decontamination of Dredged Material” (Alternative 4), because it would be most effective at reducing risks to human health and the environment, and at helping to revitalize both the ecology and the economy of the Lower Passaic River and the New York-New Jersey Harbor Estuary.
- The Federal government should be considered a “responsible party” in this Superfund case.
- The navigational channels of the Lower Passaic River should be restored to their authorized depths by the U.S. Army Corps of Engineers.
- A processing facility, which would store dredged sediments temporarily on land, and then treat them so that they could be used beneficially, should be developed in the Newark Bay area. Such a facility has long been needed so that harbors along the East Coast can be dredged and revitalized, and so that Brownfields can be reused to the economic benefit of the region.
- Funding for this project must reflect a practical division of responsibility.

### **Development of Remedial Action Objectives:<sup>10</sup>**

We concur with the Remedial Action Objectives for the Source Control Early Action articulated in the draft Focused Feasibility Study (FFS).<sup>11</sup> Working towards these objectives is the critical first step towards restoring the Lower Passaic River to healthier conditions. In the Lower Passaic River the contaminants of greatest concern that are getting into fish and shellfish and making them unhealthy to eat are substances that persist for decades in the river sediments. The Potential Remedial Goals for these sediment contaminants that would be most protective of human and ecologic health are described in the FFS.<sup>12</sup> However, cleaning up the sediments in the Lower Passaic River to conform to most of these Risk Based Remedial Goals could not be implemented in an Early Action project. Therefore, background contributions of contaminants to the sediments of the Lower Passaic River were considered. In the Superfund (CERCLA) Cleanup Program, cleanup levels are usually not set below background concentrations of the contaminants of concern.<sup>13</sup> The suspended solids that come over the Dundee Dam from the Upper Passaic River to the Lower Passaic River are the most significant source of sediment contaminants of concern, with the exception of dioxin (2,3,7,8-TCDD), from outside the Superfund site, which is the Lower Passaic River below Dundee Dam and its drainage area. Background concentrations of the contaminants of concern were measured in the recently deposited sediments from a core collected from the Upper Passaic River immediately above Dundee Dam in 2007.<sup>14</sup> The Background Concentrations found are reported in Table 1. “... the CERCLA program, generally, does not clean up to concentrations below natural or anthropogenic background levels.”<sup>15</sup> The anthropogenic background levels of many of the contaminants in the sediments above Dundee Dam pose unacceptable risks. Nevertheless, it is proposed that these background levels be selected as the Preliminary Remedial Goals (PRGs) for the Early Action project. This selection, with which we concur, should make the Early Action project to be proposed capable of being implemented within the near future.

### **Identification of Potential Target Areas for Remediation:<sup>16</sup>**

Tidal currents in the Lower Passaic River continuously cause surface sediments to resuspend, mix and move, and redeposit. After studying data from eight bathymetric surveys of the lower eight miles of river bed

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<sup>10</sup> FFS, Sections 2.1 to 2.4, pages 2-1 to 2-18.

<sup>11</sup> FFS, page 2-2.

<sup>12</sup> FFS, Sections 2.4.1 & 2.4.2, pages 2-11 to 2-14, Tables 2-3 and 2-4.

<sup>13</sup> FFS, Section 2.4.3, page 2-16.

<sup>14</sup> FFS, Sections 2.4.3 and 2.4.4, pages 2-15 to 2-18, including Table 2-6.

<sup>15</sup> FFS, Page 2-18.

<sup>16</sup> FFS, Sections 2.5 to 2.7, pages 2-18 to 2-32.

conducted between 1989 and 2004 it was concluded that the target area for remediation should be the Area of Focus.<sup>17</sup> This includes the entire (bank-to-bank) river area from River Mile (RM) 0 to RM8.3. The Area of Focus encompasses the Primary Inventory Zone, the Primary Erosional Zone, and the remaining fine-grained sediment, which contain elevated concentrations of the contaminants of concern, and which are at risk of being eroded and transported due to high flow events as well as typical flow and tidal conditions. It does not include the area above RM8.3 to Dundee Dam (RM8.3 to RM17) because only about 11% of the total fine-grained sediment is found in the upstream portion of the Lower Passaic River.<sup>18</sup> Active remediation of the entire Area of Focus to reduce concentrations of contaminants of concern to within background concentrations of sediments coming over the Dundee Dam would reduce human health risks from eating fish from the Lower Passaic River by 95 to 98%.<sup>19</sup>

**Table 1 – Background Levels of Selected Contaminants in Sediments above Dundee Dam**

<i>Sediment Contaminant</i>	<i>Maximum Concentration in Lower Passaic River (ppb)</i>	<i>Background Concentration, Selected Remedial Goal (ppb)</i>	<i>Ratio of Maximum to Background</i>	<i>Risk Based Remedial Goal (ppb)</i>	<i>Ratio of Background to Risk Based Remedial Goal</i>
Dioxin (2,3,7,8-TCDD)	14	0.002	7,000	0.00027	7
Dieldrin	270	4.3	63	0.02	215
Total DDx (DDT <i>et al.</i> )	5,980	91	66	1.58	58
Low Molecular Weight PAHs	1,410,000	8,900	158	552	16
Total PCBs	17,200	660	26	14	47
High Molecular Weight PAHs	1,400,000	65,000	22	1,700	38
Lead	2,200,000	140,000	16	10,606	13
Copper	2,470,000	80,000	31	13,318	6
Mercury	12,400	720	17	2,814	0
Chlordane	210	92	2	72	1

**Remedial Technology and Process Options:<sup>20</sup>**

A No Action response must be considered because it is legally required.<sup>21</sup> However, leaving the contaminated sediments in place without treatment or containment should be considered unacceptable when all the other alternatives proposed should reduce the risks. *In situ* treatment of sediments involves chemical, physical, or biological techniques to reduce risks while leaving the contaminated sediment in place. None of these techniques would sufficiently reduce the risks from the fine-grained sediments in the Area of Focus, so it is appropriate that none of these techniques will be considered for further evaluation.<sup>22</sup> The process options that were retained for further evaluation in the FFS were relevant to the conditions in this case.<sup>23</sup>

**Development of Remedial Action Alternatives:<sup>24</sup>**

The alternatives outlined in Table 2 were proposed by Malcolm Pirnie in May 2008 as potential remedial actions for contaminated sediment in the Area of Focus. As required by the Comprehensive Environmental

<sup>17</sup> FFS, Section 2.5.1.3, pages 2-20 to 2-21.

<sup>18</sup> FFS, Section 2.5.1.3, page 2-21.

<sup>19</sup> FFS, Section 2.7, page 2-32.

<sup>20</sup> FFS, Section 3.0.

<sup>21</sup> FFS, Section 3.1.1, page 3-2.

<sup>22</sup> FFS, Section 3.3.5, pages 3-10 to 3-13.

<sup>23</sup> FFS, Section 3.5, page 3-27.

<sup>24</sup> FFS, Section 4, pages 4-1 to 4-35.

Response, Compensation, and Liability Act (CERCLA), Section 121(d), these proposed Superfund remedial actions should comply with federal and state applicable requirements (ARARs).<sup>25</sup> Sediment removal would involve mechanical dredging, transporting the sediments to a processing facility for dewatering, transporting the processed dredged material for further treatment and/or placement, and backfilling or capping of the dredged area.<sup>26</sup>

**Table 2 -- Alternatives Suggested for Early Action**

<i>Alternative</i>	<i>Dredging Volume (million cubic yards)</i>
No Action	0
Dredging: Removal of Fine Grained Sediment from Area of Focus	11
Capping with Navigation in Lower 1.9 miles	4.8
Capping without Navigation	3.3

Three possible scenarios are suggested for Dredged Material Management. One scenario assumes that dredged material would be permanently disposed of in a near-shore Confined Disposal Facility (CDF).<sup>27</sup> Another scenario proposes “off-site treatment and disposal”. The third scenario would encompass “full decontamination with beneficial use (local/regional)”. The details of these scenarios have yet to be worked out.

**Analysis of Alternatives:**<sup>28</sup>

The following alternatives are unacceptable for the reasons cited.

*No Action Alternative:* As noted in the FFS, “Active remediation of the Area of Focus followed by monitored natural recovery will achieve any threshold for 2,3,7,8-TCDD, which is responsible for about 65 percent of the risk, 40 years faster than it would be achieved by the No Action alternative.”<sup>29</sup> The No Action alternative will not reduce the risks to human health and the environment for too many years, will increase the risks from flooding, and will decrease navigability due to increased sediment build up in the Lower Passaic River. The potential impacts on flooding from climate change have not been considered in this report, but it is predicted that the ocean could rise by as much as two feet by the end of the century.<sup>30</sup> Such a rise would have significant impacts on the areas flooded along the Lower Passaic River, Newark Bay, and the New York-New Jersey Harbor Estuary.

*Capping:* With these alternatives, as now proposed, some of the contaminated sediments would be removed from the river, and flooding would not be worsened by these actions. However, these alternatives require engineered capping, and the problems caused by engineered capping make these alternatives objectionable. Engineered capping requires on-going monitoring and maintenance to assure that parts of the cap are not washed out, which would expose contaminated sediments. These Operations and Maintenance costs would be high. The contaminated sediments would persist in the river untreated. “Capping does not satisfy the CERCLA statutory preference for treatment.”<sup>31</sup> The navigational uses, which are very impaired at present because most of the Lower Passaic River has not been dredged since the 1940s, would not be improved at all with the “Capping without Navigation” alternative, and only downstream of River Mile 1.9 with the other capping alternative. We call for the navigational channels to be restored to their legally authorized depths.<sup>32</sup>

*Dredged Material Management Scenario, Confined Disposal Facility:* In this scenario it is assumed that the contaminated dredged material would be placed in a near-shore Confined Disposal Facility (CDF) “in water

<sup>25</sup> FFS, Section 4.3, page 4-9.

<sup>26</sup> FFS, Section 4.3.1.3, pages 4-10 to 4-12.

<sup>27</sup> FFS, Section 4.3.1.6, pages 4-18 to 4-19.

<sup>28</sup> FFS, Section 5 and Section 6, pages 5-1 to 5-27.

<sup>29</sup> FFS, Section 5.2.1, page 5-16.

<sup>30</sup> Union of Concerned Scientists. 2007. Climate Choices, Northeast.

<sup>31</sup> FFS, Section 5.1.2.2, page 5-9.

<sup>32</sup> FFS, Executive Summary, page x.

within the Area of Contamination (which is the Lower Passaic River, Newark Bay, and areal extent of contamination)” as a final disposal site.<sup>33</sup> This alternative would move the contaminated sediments to another location but it would not treat them. “This approach would not reduce the toxicity of the dredged material, and would not meet the CERCLA statutory preference for treatment.”<sup>34</sup> Like capping, near-shore Confined Disposal Facilities (CDFs) would have high, long-term operations and maintenance costs. Furthermore, they would be likely to increase risks from flooding. We objected to the use of such CDFs in Newark Bay in 1995. In a letter to the U.S. Army Corps of Engineers we wrote the following:<sup>35</sup>

CDFs are only short term, temporary fixes. We feel an obligation to future generations of people and other biota living in and around the estuary to restore it to greater vitality than presently exists. Recently we met with people from the New Jersey Department of Environmental Protection, Division of Science and Research, who are educating people about the hazards of consuming fish from the lower Passaic River and the estuary. We asked when the fishing bans might be lifted. The answer was essentially, "Not in a hundred years!" This is unacceptable!

The use of CDFs in Newark Bay for the management of dredged materials is as unacceptable today as it was thirteen years ago. This Scenario should be rejected.

*Dredged Material Management Scenario, Off-site Treatment and Disposal:* Appropriate transport and treatment of dewatered contaminated sediments dredged from the Area of Focus to Texas or Kansas or Canada would be very expensive. This alternative should be considered, but for economic reasons we would prefer that the scenario of “Full Decontamination” be pursued.

#### **Preferred Alternatives:**

*Dredging, Removal of Fine Grained Sediment from Area of Focus:* The objective of this alternative is to remove as much of the contaminated fine-grained sediment as practicable by mechanical dredging, resulting in the exposure of the underlying sandy material. Two feet of backfill material would be placed on the sandy material to mitigate residual contamination, but this backfill material would not need to be monitored or maintained.<sup>36</sup> Some of the benefits from this alternative, as opposed to the others, are as follows:

- ☺ Most of the contaminated sediments in the lower eight miles would be permanently removed from the Lower Passaic River so they could no longer move upstream or into Newark Bay and the New York-New Jersey Harbor Estuary.
- ☺ This alternative would maximize the reductions in risks to human health and in ecological hazards. Over time it might make the Lower Passaic River “fishable”.
- ☺ Flooding would be reduced.
- ☺ The potential uses of the Area of Focus for navigation would be vastly improved.
- ☺ Ongoing Operation and Maintenance Costs would only be needed for sediment, water, and biota monitoring, not for cap monitoring and maintenance, thereby making this alternative much more cost effective.
- ☺ Recreational uses of the river and river front would become more abundant.
- ☺ Cleaning up the Lower Passaic River should help to revitalize the economy of the region.

*Dredged Material Management Scenario, Full Decontamination:* This Scenario assumes that the dredged material “would be dewatered and treated by an onsite thermal treatment facility.”<sup>37</sup> This is an appropriate type of treatment for much of the sediment to be dredged from the Lower Passaic River. We concur with the finding that “thermal destruction would irreversibly destroy contaminants in the treated sediment” and that “thermal

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<sup>33</sup> FFS, Section 4.2, page 4-9, and Section 4.3.1.6, page 4-19.

<sup>34</sup> FFS, Section 5.1.2.2, page 5-9.

<sup>35</sup> Filippone, Ella F. & Anne L. Kruger, Passaic River Coalition. 1995. Letter to Mr. Joseph J. Seebode, Chief, Regulatory Branch, U.S. Army Corps of Engineers. Re: Public Notice Number 95-04370-J1, Scoping for the Preparation of an Environmental Impact Statement for the Construction and Operation of a Confined Disposal Facility in Newark Bay, New Jersey.

<sup>36</sup> FFS, Section 4.3.2.1, pages 4-26 to 4-27.

<sup>37</sup> FFS, Section 4.3.1.6, page 4-19.

treatment residuals could be used beneficially as a product.”<sup>38</sup> The Cement-Lock® technology has been demonstrated in pilot projects to be effective in treating contaminated sediments dredged from the Area of Focus in the Lower Passaic River.<sup>39</sup> This technology produces a beneficial use product, construction-grade cement.<sup>40</sup> This component of Dredged Material Management should be included in the Early Action project proposed.

### **Recommendations for Dredged Material Management:**

There has long been a need for a facility in the New York, New Jersey region that would move dredged materials from water to land and that would treat them so they can be used beneficially. Such facilities exist along waterways in the Netherlands and Germany. At present nearby facilities for dewatering and storing dredged materials are all temporary, and the closest thermal treatment facility that could treat the sediments from the Lower Passaic River is in Ontario, Canada.<sup>41</sup> A processing facility for dredged sediments and contaminated soils should be developed in New Jersey that would serve New York, New Jersey, and other areas on the East Coast. Because dredging the harbors of the East Coast is critical to maintaining shipping, providing a dredged materials processing facility in New Jersey would provide tremendous economic benefits in the future to the entire country. The FFS outlines some of what is needed for a dredged materials processing facility.<sup>42</sup> The study has identified eight potential sites greater than 50 acres that are located within ten miles of the area between RM2.4 and RM4.6. However, the study fails to propose a dredged material processing facility that will beneficially manage the sediments dredged in the Early Action project as well as the contaminated materials from many other sites in the region that need to be treated and used beneficially. We strongly recommend that a processing facility that would serve the Port of New York and New Jersey district be designed and sited, preferably on the waterfront of Newark Bay, as soon as feasible. This facility should be economically beneficial to the communities involved because it will facilitate dredging to improve navigation and reduce flooding throughout the Port of New York and New Jersey, and reduce the risks to human and ecological health from sediment contamination throughout the New York-New Jersey Harbor Estuary. It should also help in efforts to clean up the waterfront so that people “Face the River, Fix the River!”

### **Costs:**

The estimated costs for the 2008 alternative early actions have yet to be released, but they will be high. For the preferred Early Action project, Dredging with Full Decontamination of Dredged Material, the estimated cost is likely to be over \$2 billion.

In the 2007 FFS the estimated capital costs for dredging were two times higher than for capping.<sup>43</sup> However, if capping were the chosen alternative, the future costs that would be imposed by increased flooding and reduced navigability have not been included in these estimates. In the Early Action plan to be proposed by EPA a benefit-to-cost analysis for the chosen alternative as compared with the No Action alternative would be informative.

For the preferred alternative some monitoring of conditions in the river after dredging would be needed. However, long-term monitoring of the condition of caps or CDFs would not be needed. In our judgment, the monitoring requirements for this alternative should be reevaluated. The Operation & Maintenance costs most probably will be considerably lower than estimated in this study.<sup>44</sup>

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<sup>38</sup> FFS, Section 5.2.4.4, page 5-22.

<sup>39</sup> FFS, Appendix H, pages H-87 to H-162.

<sup>40</sup> FFS, Section 3.3.7.4, page 3-17.

<sup>41</sup> FFS, Section 4.3.1.5, page 4-17.

<sup>42</sup> FFS, Section 4.3.1.7, pages 4-22 to 4-23.

<sup>43</sup> FFS, Appendix J, page J-2.

<sup>44</sup> FFS, Appendix J, pages J-35 & J-36.

The critical component of these cost estimates is the estimate for dredged material management. In the 2007 FFS the estimated cost for “Near-shore Confined Disposal, Storage, Thermal Treatment, and Beneficial Use” is 42% higher than for CDF Dredged Material Management.<sup>45</sup> The estimated costs of CDF Disposal are so much lower than those for Full Decontamination because the costs of the risks from in-water CDF disposal of the contaminated sediments have not been added into the costs. Instead of the development of a near-shore CDF, the development of a dredged materials processing facility, which would store dredged sediments temporarily on land, and then treat them so that they could be used beneficially, would be preferred. The costs of developing such a facility to treat dredged materials from throughout the New York-New Jersey harbor area and beyond might be higher than estimated. However, a new industry with new jobs would be created in an economically deprived area, which will benefit from the income to be derived from such a facility in the future. This investment is needed at this time in this area. We suggest that the preliminary costs for the development of such a facility should be borne by federal and state governments with the aid of private investors.

### **Responsibility for the Costs of an Early Action Project:**

With No Action, as conditions are at present in the Lower Passaic, the people who are paying the most are residents and businesses in the communities along the river, such as those who get sick from eating fish, who are flooded out, who cannot navigate the river, or who cannot enjoy the wildlife that should be there. An Early Action project is needed to reduce these costs. However, the municipalities that would benefit most from the project cannot afford to spend over \$2 billion.

Implementation of an Early Action project would be the responsibility of the U.S. Environmental Protection Agency (USEPA) under the Superfund Program, the U.S. Army Corps of Engineers (USACE) and New Jersey Department of Transportation (NJDOT) under the Water Resources Development Act, and by the U.S. Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration (NOAA), and New Jersey Department of Environmental Protection (NJDEP) as Natural Resource Trustees.<sup>46</sup> Funding should also be available from federal and state governments in order to restore the navigational capacity of the New York-New Jersey Harbor, which includes the Lower Passaic River. The issue of how the costs of an Early Action project might be apportioned needs to be addressed as soon as possible. Some of our observations follow.

*Funding under the Superfund Program:* The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, was enacted in 1980.<sup>47</sup> This law created a tax on the chemical and petroleum industries, which went to a trust fund for cleaning up abandoned or uncontrolled hazardous waste sites when no responsible party could be identified. Over five years \$1.6 billion was collected, but the tax was discontinued. The Lower Passaic River is part of the Superfund Site which was listed on the National Priorities List in 1984. As of today there are 71 corporations that are listed as “Potentially Responsible Parties” (PRPs) in this Superfund case.<sup>48</sup> These parties have agreed to fund a continuing Remedial Investigation/Feasibility Study (RI/FS) for the entire 17 miles of the Lower Passaic River and its watershed. However, this agreement does not address the responsibility for funding an Early Action project. Funding can be sought from these PRPs, but they are unlikely to fund an Early Action project costing over \$2 billion. Furthermore, there are many unidentified responsible parties, most of whom are no longer in business. The Lower Passaic River watershed was “one of the major centers of the American industrial revolution.”<sup>49</sup> For more than two centuries industrial and municipal waste streams have discharged many contaminants, including dioxins, petroleum hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), pesticides, and metals to the Lower Passaic River. Furthermore, industries along the Lower Passaic River were major contributors to war

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<sup>45</sup> FFS, Appendix J, page J-2

<sup>46</sup> FFS, Executive Summary, page i.

<sup>47</sup> USEPA. 2007. CERCLA Overview. Website: <<http://www.epa.gov/superfund/policy/cercla.htm>>

<sup>48</sup> Kluesner, David, US EPA, Region 2. 2007. Proposed Amendment to Administrative Settlement for the Lower Passaic River Study Area. Website: [www.ourpassaic.org](http://www.ourpassaic.org).

<sup>49</sup> FFS, Executive Summary, Description of the River, page ii.

efforts, including the Spanish-American War, World War I, World War II, the Korean War, and the Vietnam Conflict, when the US Defense Department used Agent Orange. The role of the Federal government in degrading the environment at this Superfund site is well documented in a paper entitled “Wartime Mobilization and the Newark Bay Home Front Environment: A Case Study Revealing Opportunity for Federal Leadership in Resolving Mega Site Problems.”<sup>50</sup> In two judicial cases that have been heard by the United States Court of Appeals, the courts have ruled that under CERCLA the Federal government is liable for some portion of response costs based on government’s role in operation of facilities during war.<sup>51</sup> The responsible parties in this Superfund case should include the Federal government, which instituted these wars and commanded that war supplies be produced by companies along the Lower Passaic River and others.

*Funding under the Water Resources Development Act:* The U.S. Army Corps of Engineers (USACE) lists the mission priorities of their civil works program as follows:<sup>52</sup>

- Navigation (Deep draft)
- Ecosystem Restoration
- Flood Damage Reduction (Coastal and Riverine)

An Early Action project that dredges and restores navigational capacity to the lower eight miles of the Lower Passaic River, and that develops a dredged materials processing facility that would treat and use the dredged materials beneficially would meet all these mission priorities. In the Water Resources Development Act of 1999, the Passaic River is listed as one of eight priority sites. Funding up to \$50 million per year may be used to “remove and remediate contaminated sediments from the navigable waters of the United States for the purpose of environmental enhancement and water quality improvement if such removal and remediation is requested by a non-Federal sponsor and the sponsor agrees to pay 35 percent of the cost of such removal and remediation.”<sup>53</sup> This is a source of funding that can be used to remove and remediate the fine grained sediments in the Area of Focus that are outside of the navigational channel, an estimated 36% of the sediments to be dredged and treated under the preferred alternative. The State of New Jersey should be the non-Federal sponsor, and should request that the USACE bear 65% of the costs of removing the contaminated sediments from outside of the navigational channel.

*Funding to Restore Navigational Channels:* “The Federal interest in navigation derives from the Commerce Clause of the Constitution.”<sup>54</sup> The U.S. Army Corps of Engineers (USACE) is the Federal agency responsible for maintaining the navigational channels of the New York-New Jersey Harbor, including the channels in the Lower Passaic River. Most of the Lower Passaic River has not been dredged since the 1940s.<sup>55</sup> The USACE abandoned its responsibilities without authorization by Congress, and the authorized navigational channels have been filled in with contaminated sediments. Therefore, in our judgment Congress should demand that the USACE fulfill its responsibilities to dredge and restore the navigational channels of the lower eight miles of the Lower Passaic River, and that the Federal government should fully fund this aspect of the Dredging alternative.

*Funding to Develop a Dredged Materials Processing Facility:* The development of a dredged materials processing facility, which would treat the dredged materials so that they could be used beneficially, and which would eliminate the need for ocean disposal or in-water confined disposal facilities, would facilitate future

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<sup>50</sup> Reis, Michael. 2006. Wartime Mobilization and the Newark Bay Home Front Environment: A Case Study Revealing Opportunity for Federal Leadership in Resolving Mega Site Problems. *Environmental Claims Journal*, 18(4/Fall):293-320 (2006), pages 293-320.

<sup>51</sup> United States Court of Appeals, Third Circuit. 1994. *FMC Corporation vs. United States Department of Commerce*. & United States Court of Appeals, Ninth Circuit. 2002. *Cadillac Fairview/California, Inc., vs. Dow Chemical Company vs. United States of America*.

<sup>52</sup> U.S. Army Corps of Engineers. 2007. *Passaic River Basin, New Jersey, Congressional Staff and Stakeholders Briefing*, April 5, 2007.

<sup>53</sup> Water Resources Development Act of 1999, Section 224.

<sup>54</sup> U.S. Army Corps of Engineers. 2000. ER1105-2-100, 22 April 2000. Appendix E, Civil Works Missions and Evaluation Procedures, Section II-Navigation, page E-18.

<sup>55</sup> FFS, Executive Summary, pages ii-iii.

dredging to improve the navigational capacities of the harbor, to restore ecosystems, and to reduce flood damage. Such a facility could also be designed to treat contaminated soils from Brownfield sites and other contaminated sites. Such a facility could provide far reaching environmental benefits. It also could provide many economic benefits for the region. Since this facility would be selling usable products, such as clean soil for rehabilitating Brownfield sites, and thermally treated materials that can be used in road repair, the facility would have an income. In the past there has been much discussion and study about how contaminated sediments and soils should be cleaned up, which is not reflected in this study, but no action has been taken. Now is the time to design, build, and use a facility that will turn contaminated sediments and soils into useful products. Agencies involved in implementing this part of the project, which is of paramount importance, should include the USEPA, the USACE, the NJDOT, the Port Authority of New York and New Jersey, the NJDEP, the New Jersey Environmental Infrastructure Trust, and private investment concerns.

*Potential Sources of Funding to Implement Preferred Early Action Project:* Table 3 lists suggestions for potential sources of funding for the preferred Early Action project. The suggestions for potential sources of funding and the percentages that each might pay are intended to start stimulating a discussion among involved parties so that we can find mutually acceptable ways to fund and implement this project as soon as practicable. The National Remedy Review Board could be extremely helpful in this process. The 71 cooperating parties who are Potentially Responsible Parties (PRPs) in this Superfund case should decide among themselves how to apportion their share of the costs. Federal and State governmental funding will require legislative and executive actions. Such actions can be forthcoming if there is widespread support for the Early Action project proposed.

**Table 3 – Potential Sources of Funding for Preferred Early Action Project Alternative, Dredging with Full Decontamination of Dredged Material**

<i>Cost</i>	<i>Source of Funding</i>	<i>% of Funding</i>
Capital Costs for Dredging Navigational Channel	USACE, Federal Government	100%
Capital Costs for Dredging beyond Navigational Channel	WRDA, USACE	65%
	Superfund, PRPs	35%
Development of Dredged Material Processing Facility	State of New Jersey, Environmental Infrastructure Trust	60%
	Private investors	40%
Decontamination of Dredged Material	Superfund, PRPs	100%
Operations & Maintenance Costs	State of New Jersey	100%

**State and Community Acceptance:**<sup>56</sup>

Since 1969 the Passaic River Coalition has been actively trying to have the Lower Passaic River cleaned up so that the millions of people living and working in the area, as well as visitors from around the world, can enjoy the ecologic and economic benefits of a healthy river and harbor. Acceptance by the State of New Jersey and the communities involved of the costs and benefits of the Early Action project proposed will be critical to the implementation of this project. Framing the issues so that there can be productive dialogue among state leaders, community leaders, and interested stakeholders, including the Cooperating Parties, will be a challenge, but must be done now.

**Suggested Revisions to the Draft Focused Feasibility Study:**

Many studies made in the past sixteen years document the fact that the sediments of the Lower Passaic River are highly contaminated with persistent pollutants. There is no need for further delays in cleaning up the river in the near future. Neither the Federal nor State governments should abdicate their responsibilities. An Early Action project should be implemented. However, the following issues need to be clarified before an Early Action project is proposed:

- Design and operation of a dredged material processing facility;
- Responsibilities for payment of the costs involved.

<sup>56</sup> FFS, Section 5.1.3, pages 5-15 to 5-16.