PUGET SOUND CONFINED DISPOSAL SITE STUDY

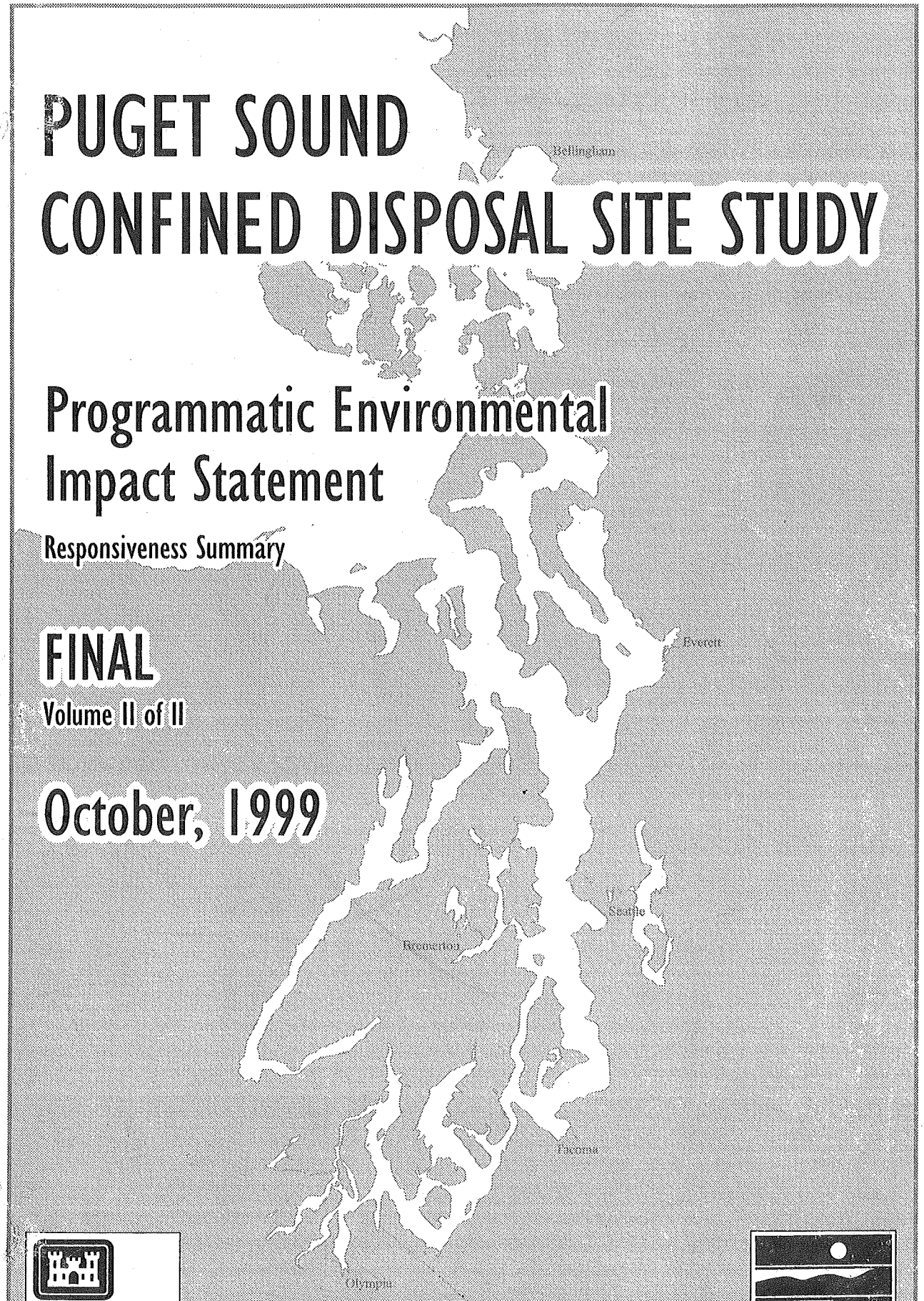
Programmatic Environmental Impact Statement

Responsiveness Summary

FINAL

Volume II of II

October, 1999



US Army Corps of Engineers
Seattle District

WASHINGTON STATE DEPARTMENT OF Natural Resources

WASHINGTON STATE DEPARTMENT OF ECOLOGY

PUB.NO. 99-09-903

PUGET SOUND CONFINED DISPOSAL SITE STUDY
PROGRAMMATIC NEPA/SEPA
ENVIRONMENTAL IMPACT STATEMENT

RESPONSIVENESS SUMMARY

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Volume II of II

October 1999

United States Army Corps of Engineers, Seattle District (NEPA)
Washington Department of Ecology (SEPA)
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Section I. RESPONSES TO THEMATIC COMMENTS.

Each of the following six comments has been worded to capture a basic "theme" that was identified in more than one letter submitted in response to the draft PEIS and/or in oral testimony offered during a public hearing held in Bremerton, Washington. The responses that follow, however, address all aspects of the corresponding comment found in each letter.

1. The MUDS Feasibility Study Team should carefully re-evaluate the regional need for a MUDS facility.

The regional need for decontamination/treatment or confined disposal capacity is based on a) the total volume of contaminated sediment that is estimated to remain exposed to overlying waters and organisms in the year 2003, b) the relative lack of cost-competitive alternatives for managing contaminated dredged material, and c) the assumption that it is both more environmentally protective and economically sound to build relatively few large, MUDS or treatment facilities than it is to build numerous single-user facilities.

The assessment of the need to build one or more MUDS facilities in the Puget Sound region contained in Section 1 of the Draft Programmatic EIS was based in part on the estimated volume of contaminated sediment associated with the various cleanup projects. This information was collected approximately a year prior to release of the Draft EIS. The MUDS Feasibility Study Team has since collected more current information on the known and projected volumes of contaminated sediment in Puget Sound (Gries 1999). More current information (updated July 1999) is now reflected in the Final PEIS text and Table 1-1. It shows that the majority of contaminated sediment is still found in central Puget Sound, but that the proportion of the total found in various sub-areas has changed.

Large cleanup projects make up the majority of the total volume constituting the regional need for confined disposal capacity. Experience shows that many parties responsible for these cleanups have adequate resources to build single-user facilities or to dispose of the contaminated dredged material at existing solid waste landfills. Commenters claim that a MUDS facility cannot be justified solely by the volume of contaminated sediment to be cleaned up by smaller parties who often lack the resources needed to decontaminate/treat or dispose of it using existing options.

The MUDS Feasibility Study Team finds part of the reasoning behind this comment to be valid. Large cleanup projects do appear to comprise most of the regional need. However, the MUDS agencies have for years argued that it is more environmentally protective and cost-effective to site, design, build, manage, close and monitor only a few strategically-located large MUDS sites. This strategy is preferred to one that allows the same actions to be repeated many times over for individually-owned sites that serve only single-user needs. The agencies assume that a fully operational and cost-competitive MUDS facility, with major liability issues resolved in Contingency Management Agreements, would provide a better alternative to parties both small and large.

2. Aquatic disposal should not be chosen as the preferred alternative to manage contaminated sediment.

As described in CONCLUSIONS section of the final PEIS Summary, the MUDS agencies have not chosen a single preferred alternative, believing that a combination of different approaches and alternatives will probably be needed to address the regional need for greater disposal capacity.

The intent of the PEIS is to evaluate **all** feasible alternatives for disposing of or treating contaminated sediment. Some alternatives involve aquatic sites and designs and others do not. The document provides evidence that all of the disposal alternatives identified are technically feasible, and that even large-scale treatment of contaminated sediment may be feasible in the not-too-distant future. In addition, conceptual design and impact analysis in the PEIS indicate that various aquatic disposal alternatives can have environmental advantages (minimal rehandling and potential for contaminant remobilization) and/or economic aspects that warrant full evaluation (cost-competitive with current alternatives). The feasibility, environmental impacts, cost and political viability of an aquatic MUDS facility will be determined during any site selection and site-specific EIS development phase of this project.

3. The PEIS should provide more information on performance of local contained aquatic disposal (CAD) facilities.

The final programmatic MUDS EIS presents much more information on existing Puget Sound level bottom cap, CAD and nearshore CDFs. Please refer to Sections 2.2 and 2.3. There have been six in-place capping projects, two CAD sites, and three relatively large nearshore confined disposal facilities built in the region during the past fifteen years (see Tables 2-1 and 2-4). There are several more being considered as alternatives for individual disposal actions in the next few years.

Based on available evidence summarized in the final PEIS, there appears to be a very low probability that contaminants have migrated through caps or dikes at these facilities and been released to the ambient environment. Recontamination of caps and some combined erosion at one in-place cap (Eagle Harbor) has been documented to occur and this remains an issue to be addressed in siting and construction of any aquatic MUDS (or single-user) facility.

4. The PEIS should provide an expanded evaluation of sediment decontamination/ treatment as a stand-alone alternative.

Several commenters requested that the draft PEIS include a more complete and current description of the feasibility of various strategies or technologies for treatment of contaminated dredged material. This alternative was introduced and discussed only briefly in the Draft PEIS (see Section 2.8, pages 2-72 through 2-77). As the document states, treatment was not explored more fully because: 1) the costs of establishing a full-scale treatment option were projected to be significantly greater than the costs of disposal at an existing landfill or other confined disposal facility in the region; 2) treatment technologies for remediation of contaminated sediments have

primarily been tested on bench and pilot scales and not on a commercial scale; and 3) selection of a suitable treatment technology depends on the contaminant types and their relative concentrations in the sediments to be handled. This section of the Draft PEIS concludes, however, that "when or if sediment treatment is shown to be cost and technically effective, treatment will be evaluated as an alternative (or more likely as part of a combination alternative) for addressing contaminated sediments from Puget Sound".

The Final PEIS has been revised to describe more accurately the various technologies being developed for decontamination/treatment of contaminated sediment. For example, a federally-funded, collaborative effort in the New York/New Jersey Harbor area has yielded significant progress toward developing two different decontamination/treatment technologies. The first removes contaminants from sediment by various means (chemical, high pressure washing, cavitation, hydrocyclone, etc.) and produces a reusable soil. The second uses high temperature to strip organic contaminants from sediments and immobilizes the remaining inorganic contaminants in a produced cement. Large-scale decontamination/treatment using one of these approaches may be cost-competitive in one to two years. Sections 2.7 now summarize this and other new information on the feasibility, cost and environmental impacts of various treatment technologies. In addition, recent literature on the current status of treatment technology development and application is reviewed in a new appendix to the PEIS - Appendix F.

5. The PEIS does not adequately describe the implications for the MUDS project of listing Puget Sound Chinook salmon as a threatened species.

Comments submitted by NOAA/NMFS and others regarding the listing of Chinook salmon as a threatened species in Puget Sound under the Endangered Species Act (ESA) are timely and much appreciated. The Final PEIS now contains additional information on possible implications of ESA species listings. Please refer especially to Sections 4.4.3 and 4.5. For example, the concept of critical habitat for salmon has been distinguished from critical habitat for other threatened or endangered species (e.g. spotted owls).

It appears that one result of listing various fish species as threatened or endangered in Puget Sound will be that candidate shallow water MUDS sites will be more difficult to justify, unless it can be concluded in biological assessments that they would have "no effect" or that they are "not likely to adversely affect" threatened or endangered species. For this and other reasons, the MUDS Feasibility Study Team will proceed with the project in close coordination with the NMFS and other fisheries agencies.

6. The MUDS Study Team has not adequately involved the public (e.g., agencies, businesses, civic groups, environmental organizations) in the early phases of the Feasibility Study.

First, it should be noted that the Puget Sound Confined Disposal Site, or "MUDS", Feasibility Study is only the most recent step in a long process evaluating alternatives for the identification, cleanup, and disposal of contaminated sediments. The process began even before it was specifically listed as a key element of the first Puget Sound Water Quality Management Plan (PSWQA, 1987). A subsequent report concluded that construction of a MUDS facility was

SECTION I REFERENCES

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Various authors. 1995c. Newsletters containing articles related to the MUDS project published and mailed by the U.S. Army Corps of Engineers - Seattle District (June 1995, Summer 1997), Washington State Department of Ecology (Fall 1997, Winter 1998-1999), U.S. Environmental Protection Agency (Spring 1999), Puget Sound Action Team (Winter, 1998-1999), Washington Public Ports Association (Spring-Summer, 1999)

Washington State Department of Ecology. 1991. Multiuser Sites for the Confined Disposal of Contaminated Sediments from Puget Sound.

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http://www.wa.gov/ecology/sea/smu/muds/FS_Hist.htm
http://www.wa.gov/ecology/sea/smu/muds/RevisedFAQ.htm

Section II. RESPONSES TO COMMENT LETTERS.

The following persons, agencies, businesses and organizations submitted written comments on the Draft Programmatic EIS for the Puget Sound Confined Disposal Site ("MUDS") Feasibility Study.

1. **Citizens for a Healthy Bay** 2-1
   Leslie Ann Rose, Senior Policy Analyst
2. **City of Bremerton** 2-27
   Ms. Lynn Horton, Mayor
3. **City of Lynnwood, Environmental Review Committee** 2-43
   Mr. Darryl Eastin, Senior Planner
4. **City of Mukilteo, Department of Planning** 2-45
   Ms. Heather McCartney, Director
5. **City of SeaTac, Department of Planning and Community Development** 2-47
   Mr. Stephen Butler
6. **Friends of the Earth** 2-50
   Mr. Eric Espenhorst, Policy Analyst
7. **Kitsap County, Department of Community Development** 2-56
   Mr. Bruce Freeland
8. **Nooksack Indian Tribe, Fish and Wildlife** 2-58
   Mr. Dale Griggs, Biologist
9. **Pacific International Terminals** 2-61
   Mr. Wayne Schwandt, Project Manager
10. **Pierce County, Department of Public Works and Utilities** 2-64
    Ms. Sally Sharrard, Senior Planner
11. **Port of Port Angeles** 2-74
    Mr. Kenneth Sweeney
12. **Suquamish Indian Tribe** 2-78
    Phyllis Meyers, Environmental Program Director, Fisheries Department
13. **U.S. Department of Commence National Oceanic and Atmospheric Administration/National Marine Fisheries Service (NOAA/NMFS)** 2-84
    Mr. Steven Landino, Washington State Habitat Branch Chief
14. **U.S. Department of Health and Human Services, Public Health Service Centers for Disease Control and Prevention (CDC)** 2-94
    Mr. Kenneth Holt, MSEH
15. **U.S. Department of Interior, Fish and Wildlife Service (USFWS) North Pacific Coast Ecoregion** 2-98
    Mr. Gerry Jackson, Supervisor
16. **U.S. Department of Interior, Office of Environmental Policy and Compliance** 2-104
    Mr. Preston Sleeger, Regional Environmental Officer
17. **U.S. Department of Transportation, U.S. Coast Guard (USCG)** 2-111
    Mr. John Vogel, Environmental Engineer

18. U.S. Environmental Protection Agency, Region 10 Geographic Implementation Unit (USEPA) 2-113
Mr. Richard Parkin, Chief
19. Washington Department of Natural Resources, Aquatic Resources Division 2-119
Mr. Tim Goodman, P.E.

CITIZENS FOR A HEALTHY BAY

917 Pacific Avenue
Suite 406
Tacoma, WA 98402
Phone (253) 383-2429
Fax (253) 383-2446
chb@wa.net

April 8, 1999

Dr. Stephen Martin
U.S. Army Corps of Engineers
P. O. Box 3755
Seattle, WA 98124-3755

Re: Puget Sound Confined Disposal Site Study
Programmatic Environmental Impact Statement

Dear Dr. Martin:

Citizens for a Healthy Bay (CHB) appreciates the opportunity to review and comment on the PEIS for a regional confined disposal facility. CHB is an active stakeholder in the cleanup and disposal of contaminated sediments in Commencement Bay and, as such, has provided citizen oversight and comment on, a number of past disposal site issues.

CHB is firmly opposed to confined aquatic disposal of contaminated sediments. This method is the least protective methods commonly used to disposal of contaminated sediments. Our position reflects the Corps own rating as to the relative protectiveness of disposal options. We cannot support development of any sediment disposal facility that uses confined aquatic or similar methods. Furthermore, CHB does not support any option that requires State-owned [public] lands be used for contaminated sediment disposal.

1

After a careful review of the options presented in the PEIS, Citizens for a Healthy Bay strongly urges that treatment be selected as the preferred method to dispose of contaminated sediments dredged from Puget Sound. In the past 10 years, costs for treatment of contaminated sediments have steadily decreased and there is no reason to indicate that this downward trend won't continue. Treatment provides a highly protective and permanent means to eliminate toxic contaminants from our aquatic environments. Treatment does not require use of aquatic or terrestrial

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lands as waste disposal sites and eliminates long term concerns regarding monitoring and adverse environmental impacts. Treated sediments can also be disposed of in existing PSDDA sites or incorporated into local projects for beneficial use.

3 In those instances where treatment of contaminated sediments is not possible, CHB would support use of existing upland confined disposal facilities. Construction of a new facility does not make environmental or economical sense while facilities exist that accept these contaminated materials.

4 We are very concerned by the large number of data gaps in Section 3.0 - Affected Environment. While we do understand that the PEIS was intended as a wide-angle view of existing environmental and habitat conditions in Puget Sound, a number of issues were omitted that need to be addressed.

5 Lastly, we strongly urge the Corps to include citizen stakeholders into the work teams and committees involved in development and siting of this project.

Again, thank you for the opportunity to comment on the Puget Sound Confined Disposal Site PEIS. Our remarks are enclosed with this letter.

Sincerely:

Leslie Ann Rose
Senior Policy Analyst
Citizens for a Healthy Bay

Enclosure - 14 pages

Citizens for a Healthy Bay
Response and Comments to the
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GENERAL COMMENTS

Purpose & Need

6 Final site selection must focus on the fact that 65% of the need for a MUDS project is being generated from a single geographic area, with the remain 35% generated from geographically disconnected areas. It makes far more sense to select a site central to the area of greatest need in order to reduce costs and the possibility of accidental spills to uncontaminated areas of the Sound.

Alternatives

7 The PEIS fails to cite treatment of contaminated sediments as a viable option. Costs associated with treatment technologies have been steadily decreasing as new technologies become available. Given the amount of contaminated sediments that will require removal in the next 15 years, failure to examine the viability of contaminated sediment treatment is irresponsible.

A number of benefits can be gained by treatment of contaminated sediments:

8
1. The treated sediments could be disposed of in existing PSDDA sites.
2. Provides a true solution to the problem of toxic chemical cleanup.
3. Reduces the adverse environmental impacts associated with sediment disposal.
4. Does not require contaminating State-owned aquatic lands.

1.0 PURPOSE AND NEED

1.1 - Study Purpose

9 *[4th paragraph]* "The overall goal of the PSCDSS is to find environmentally sound and practicable solutions to the lack of confined disposal capacity for contaminated sediments."

[Response] This statement limits the solution solely to a confined disposal facility without regard to treatment being a viable option.

1

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1.1 - Study Purpose- Cont.

[6th paragraph] List of alternatives

10 *[Response]* Treatment of contaminated sediments must be included as an option under the proposed project.

1.2 NEPA/SEPA Study Process

We are concerned that the lack of a fine view for the PEIS may ignore issues associated with specific sites under consideration. It has been our experience that once a site or an option has been selected, the process becomes fairly inflexible from an agency standpoint.

11 Public input then becomes an item to be checked off and is not really considered. Furthermore, given the extreme impact of human activities in Puget Sound and critical aquatic habitat areas, it is vital that each potential site be examined in relationship to its overall function to other ecosystems, both aquatic and terrestrial, in the surrounding region.

1.3 Program Background

[6th paragraph] "This summary document concluded that multi-user disposal sites were both needed and viable, and...."

12 *[Response]* This statement tends to eliminate Options 1, 4 and 5 as well as any consideration of treatment as a viable option.

1.5 Assessment of Need

Delays, in part, stem from the current trend to dispose of contaminated sediments into

13 CAD sites on State-owned aquatic lands which are managed by the Washington State Department of Natural Resources (DNR). DNR has adopted sound management policies to protect State owned aquatic lands. Use as contaminated sediment disposal sites may be a poor use of these resources.

Consequently, true cleanup efforts must address all available options, including treatment,

14 as well as determining both short- and long-term impacts, both environmental and economic, of using State-owned (i.e., Public) lands as potential disposal sites for sediments contaminated with toxic substances.

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1.5 Assessment of Need - Cont.

15 It is CHB's contention that, were economic worth assigned to the functions and values of aquatic habitats and related issues of concern, CAD disposal quickly becomes more costly than options providing greater environmental protection. We recommend that DNR be contacted to establish economic values associated with:

1. Disruption of function to established on-site aquatic communities as well as each community that interacts with the area to be directly impacted.
2. The time it would take to return the adversely impacted area to a fully-functioning system.
3. Short- and long-term loss of recreational use, especially for non-consumptive uses such as kayaking, bird watching, sailing, swimming, etc.
4. Loss of aesthetics to surrounding community and to the region as a whole.

1.5.1.1 Contaminated Sediment Site Cleanups

16 Tables 1.1 and 1.3 indicate that Commencement Bay activities will generate no materials requiring disposal in a MUDS facility. Additionally, cleanup activities in Bellingham Bay are anticipated to generate only minimal potential use for such a facility. In fact, 88% of the anticipated use for the facility is expected to come from the Seattle-Bremerton region of Puget Sound.

17 Common sense dictates that, if a MUDS facility is to be constructed, the site must be located closest to the areas with the greatest need, thus eliminating excessive handling and transport of contaminated sediments. The more times these materials are handled, the greater the potential for accidental spillage and contamination to other areas in Puget Sound. Locating a facility closest to the area of greatest need also reduces the cost of disposal.

18 Inclusion of materials from sites not anticipated to use a MUDS facility as a means of determining the need for such facility gives a strongly biased conclusion. After examining Tables 1.1 and 1.3, the Regional necessity for such a facility is doubtful. Obviously, the need for a MUDS facility primarily serves the Elliot Bay and Sinclair Inlet area.

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1.5.2 Distribution of Contaminated Sediments

19 Table 1.3 indicated that 88% of the anticipated need comes for the Seattle-Bremerton region, 10% from the north Puget Sound region and 2% from the south Puget Sound region. Given the centralized locale of the bulk of contaminated materials as well as that region's accessibility to direct rail lines, disposal to a certified upland site, such as Roosevelt, is another viable and environmentally protective option.

1.5.3 Range of Contamination in Puget Sound Sediments

20 We are very concerned by the lack of evaluation procedures and standards for confined disposal. Before the type of disposal is selected, we believe that these standards and procedures must be established up front in order to provide citizens with information to adequately address issues of need and risk.

21 Additionally, Table 1.4 must be expanded to include **all** hazardous chemicals to be disposed of, the risk posed by these chemicals and whether or not they have been identified by Washington State Department of Ecology as persistent, bioaccumulative toxins.

1.6 Institutional, Planning and Regulatory Needs

22 Table 1.5 -- Elements of PSCDS, omits planning to include private citizens. CHB believes it is entirely appropriate that citizens and environmental watchdog organizations be included as full participants in all teams and executive committees formed in connection with this project. As many of these citizen-based organizations are founded on principles of sound science, work teams and committees will be able to comfortably add the private sector into its workings without suffering any undue loss of effectiveness.

Additionally, development of elements detailed on page 1-22 must include:

23
1. "Siting process that includes all stakeholders...", must be expanded to specify the entities considered to be stakeholders. The list of stakeholders must also include adequate representation of citizens' groups and the environmental community.
2. All committee and work team meetings must be succinct and scheduled at times that allow for full public participation by all citizen stakeholders.
3. Transportation of sediments to the disposal site, possible pathways of accidental contamination and measures that will reduce the potential of accidental release of contaminants during transport.

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1.6 Institutional, Planning and Regulatory Needs - Cont.

4. Established economic worth for impacted aquatic communities, loss of function and loss of recreational access. These costs must be included in all site assessments.
5. Habitat mitigation for any lands used in facility construction and restoration to these lands once the disposal facility is closed.
6. Define acreage of land to be used for site disposal; i.e., how much acreage to dispose of 100,000 cubic yards of contaminated sediments.
7. Storage of contaminated materials during so-called "fish windows", when in-water work cannot be conducted.

2.0 ALTERNATIVES

As has been previously stated, treatment of contaminated sediments must be added as a viable method in order to balance environmental protectiveness with cleanup. In keeping with the advances in technologies, the costs of treatment technologies have been on a steady decline in the past 10 years. For the purposes of the MUDS PEIS, it must be assumed that this trend will continue, thus making treatment a viable and economical option.

24

2.1 No-Action Alternative

[1st paragraph] Consider the fact that individual projects can be dovetailed to allow PRP's to develop local disposal sites that will accommodate the disposal needs of more than a single project.

25

In some instances, a lesser amount of contaminated sediments generated by dredging activities in smaller sites, may prove easier to dispose of to upland landfills or by treatment technologies than larger amount generated by bigger projects.

[2nd paragraph] The definition of cost effectiveness, as applied to cleanup and removal of sediment disposal, must be expanded to incorporate possible adverse impacts to aquatic ecosystems by the construction of a MUDS facility. Doing so requires that economic worth be assigned to the functions and values of aquatic ecosystems and these values be considered along with cleanup and removal costs.

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5

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2.1 No-Action Alternative - Cont.

[4th paragraph] Existing laws, regulations and policies currently recognize the importance and need for cleanup of contaminated sediments in Puget Sound. Amending
27 the existing laws, regulations and policies to specify disposal to a MUDS facility, presupposes the need to construct such a facility and eliminates other options from consideration.

2.2 Level-bottom Capping and Confined Aquatic Disposal

2.2.1 Description

[1st paragraph] It is CHB's position that neither of these options affords a true cleanup to the problem of sediments contaminated with toxic substances. In fact, these options
28 provide little more than collection of contaminated sediments to a single, often unaffected site, much like sweeping the floor and hiding the collected dirt under the carpet. Most LBC and CAD projects are fairly recent and still in post-construction monitoring phases.

Weight must be given to the following questions, as well:

29
1. How long is required to reestablish the function of an aquatic community and it's full interaction with associated communities after the community has been thoroughly disturbed by a construction project of this size?
2. What is the extent of impacts to associated communities caused by the interruption of the disposal site community? How long will it take the associated community to recover from those impacts?

2.2.2 Contaminant Pathways

[1st paragraph] Monitoring protocols need to be established sufficiently to permit early
30 detection of recontamination.

2.2.3 Regional Examples

No examples of sufficient duration were cited that addressed our concerns regarding recontamination and potential of adverse impacts to aquatic communities and associated
31 communities. Most of the examples cited are still in post-monitoring phases and none provide a basis to presume conclusive, long-term protectiveness to potentially impacted ecosystems.

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2.2.4.2 Conceptual Design and Cost

32 We cannot support any project that requires use of State-owned aquatic lands. These are a finite resource, the loss of which cannot be fully mitigated. As there is little long-term analysis as to the possible adverse impacts to these systems when used as a toxic sediment disposal site, use of State-owned, (i.e., Public) resources should not be an option.

33 We recommend that costs for benthic/epibenthic studies be increased to $400,000 to better express the realities of field sampling in aquatic environments and need for multiple sampling rounds.

34 Overall, we find the cost analysis is far too conservative and recommend that rates for indirect costs be increased to 20%, and contingencies to 25%. Additionally, to provide an accurate cost analysis over the life of the project, a factor for inflation must be added. Failure to include land acquisition costs and fees severely understates the costs, providing a biased outlook as to the economical viability of this option.

35 No mention has been made as to the implications of listing of Puget Sound Chinook salmon under the ESA as regards this project. There are serious questions whether or not NMFS will support a project of this nature or if required mitigation will make such a project economically infeasible.

2.3 Nearshore Confined Disposal

2.3.4 Feasibility and Implementation

36 We cannot support any project that requires use of State-owned aquatic lands. These are a finite resource, the loss of which cannot be fully mitigated. As there is little long-term analysis as to the possible adverse impacts to these systems when used as a toxic sediment disposal site, use of State-owned, (i.e., Public) resources should not be an option.

We recommend that costs for benthic/epibenthic studies be increased to $400,000 to better express the realities of field sampling in aquatic environments and need for multiple sampling rounds.

Overall, we find the cost analysis is far too conservative and recommend that rates for indirect costs be increased to 20%, and contingencies to 25%. Additionally, to provide an accurate cost analysis over the life of the project, a factor for inflation must be added.

7

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2.3.4 Feasibility and Implementation - Cont.

No mention has been made as to the implications of listing of Puget Sound Chinook salmon under the ESA as regards this project. There are serious questions whether or not NMFS will support a project of this nature or if mitigation required will make such a project economically infeasible.

37 In light of the ESA listing of Puget Sound Chinook salmon and recent positions taken by NMFS in matters pertaining to habitat mitigation/restoration, $550,000 / acre best represents the true cost for habitat mitigation.

38 Additionally, using a mean value of $4.00 / square foot for real estate acquisition does not reflect true current value of nearshore aquatic lands. $6.00 / square foot plus a factor for inflation over the life of the project provides better cost analysis.

39 Adjust assumptions to reflect that groundwater and effluent chemical monitoring will indicate some migration will occur and biological monitoring will be required.

2.4 Upland Confined Disposal Facility

40 Use of existing Solid Waste Landfills, such as Roosevelt and Columbia Ridge, are a better option over constructing a new facility. Using existing facilities for disposal of contaminated sediments is appropriate and avoids additional environmental impacts created by construction of a new facility. The costs considerations for using an existing facility are comparable to those of constructing a new facility.

2.5 Solid Waste Landfill Disposal

41 CHB strongly supports treatment of contaminated sediments as the preferred alternative. Secondary to treatment, CHB views disposal to an existing solid waste landfill as the second most protective and cost effective of all options presented in the Draft PEIS.

2.6 Multi-user Disposal Facilities

42 Multi-user facilities, developed close to the sources of contaminated sediments, provide a means of disposal that addresses the localized need for such a facility.

2.7 Combination of Alternatives

43 Again, this option can be employed to address the need for disposal relative to the specific area generating the contaminated material. Disposal methods can be developed that address area specifics, including: the amount of material being generated, types of contaminants present in the sediments, and contaminant levels existent in the sediments.

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2.8 Treatment

As has been previously stated, treatment must be added to the PEIS as a viable option. Considering the quantity of materials discussed in the PEIS, CHB is at a loss to understand why this option was not seriously reviewed. The public benefits gained by employing a highly protective and permanent solution to removal of contaminants in our waters, require treatment technologies be included as a highly desirable option in the MUDS Project. CHB strongly supports employing treatment technologies to solve the problem of contaminated sediment disposal.

44

Treatment of contaminated sediments does not require use of aquatic or terrestrial lands as waste disposal sites, thus eliminating long term concerns regarding monitoring and adverse environmental impacts. Treated sediments can be disposed of in existing PSDDA sites or incorporated into localized beneficial use.

45

Costs of treatment have been steadily decreasing and, as new technologies become available, there is no reason to assume this downward trend will not continue. The costs of treatment, as presented by the PEIS, are not far out of line with costs associated with other options.

46

If the goal of the MUDS project is to provide long-term, protective solutions for removal of contaminated sediments from our aquatic ecosystems, treatment and its many associated benefits, must be a serious consideration.

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3.0 AFFECTED ENVIRONMENT

3.1.1 Geology

Past seismic activity, as well as activity predicted to occur in the near future, must be better defined. No mention is made regarding the prospect this region faces that a magnitude 7 or better event will occur in the foreseeable future. Known faults are located very near the Commencement Bay CAD. Their location must be identified and mapped in the EIS.

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3.1.2 Soils

Upland soils in the Puget Sound basin are generally moderately to extremely well drained. Contaminants can very easily migrate through these soil types and enter groundwater systems.

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3.1.4 Surface Water

50 Current land use trends make use of 100-year event floodplain maps inappropriate, especially when developing a plan to dispose of contaminated materials. To the best of our knowledge the 100-year event floodplain maps have not be updated to reflect the increasing occurrence of this type of event due to intensified development throughout our region. We recommend use of 500-year event maps be used in the planning of this project.

3.1.4.1 Surface Water Quality

51 A large number of surface water bodies in the region are on the 303(d) list for impaired water quality, with increased water temperature often cited as the reason. It is entirely reasonable to expect that this information would be represented in the MUDS PEIS. Total Maximum Daily Load (TMDL) considerations must also be represented.

3.1.5 Groundwater

52 This section needs to be expanded to address the contribution of groundwater to maintaining in-stream flows. Furthermore, in developing project criteria, serious consideration must be made regarding anticipated future withdrawals to aquifers and the impacts development may have to recharge of these areas.

3.2 Wildlife

53 Overall, we find many data gaps in Figure 3.7. These gaps create serious concerns as to the methods employed to develop the data as well as to the validity of the data itself. Specific concerns will be presented for Commencement Bay in the appropriate subsections, as this is the area of Puget Sound with which we have the greatest expertise. Using the errors and omissions for Commencement Bay as a gauge for the accuracy of the overall data presented, CHB recommends that another source be used to:

- Address the region's role in migration of avian and marine mammals along the Pacific Coast and into Puget Sound.
- Address numerous small sites throughout Puget Sound that are used in the life histories of all wildlife species. This is especially important due to the extreme habitat modifications created by human activities along our shorelines and inland waters. Only a few areas of historic habitat remain that are capable of supporting sizable populations. However, numerous smaller areas do exist that are consistently used by a variety of species and these smaller sites must be recognized. Overall, criteria used to

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establish areas of viable habitat must be redefined on a finer scale in order to locate all sites that are or can be used as habitat for all wildlife species in the Puget Sound region.

- Address the movements of Orca as well as other whales and dolphins throughout the Puget Sound region.
- Salmon species are mapped only as runs moving through the Sound and does not address the use of estuaries and shallow sub-tidal and intertidal areas as juvenile rearing habitat. Also, consideration must be made as to all habitats used by both out- and in-migrating salmon, whether for feeding, resting, etc.
- No effort has been made to interpret the interconnectedness of one habitat type or community to another.
- No watershed-wide riparian corridors are represented. These are critical habitat areas and must be addressed.

Figure 3.7 – Commencement Bay Affected Environment

54 As previously stated, we are limiting our comments regarding specific data inaccuracies to the Commencement Bay area. However, presumably, other figures will share many of the same problems.

Peregrine Falcon: Presently, a pair have established in downtown Tacoma, adjacent to the shoreline of Commencement Bay. Furthermore, these birds routinely hunt along the shoreline. Their prey includes shorebirds and a large population of urban pigeons.

Waterfowl Concentration: Commencement Bay routinely supports populations of over-wintering migratory waterfowl as well as providing a staging area for upstream migration to nesting grounds for many species in the upper Puyallup River Watershed. Additionally, the area serves as a feeding/resting area for many species during Spring and Fall Migration. Sufficient habitat exists to support good numbers of over-wintering waterfowl despite the impacts of human activity on the area. Use of this habitat prevents overuse of more recognized habitat areas as well as reducing the potential problems associated with intense population concentrations.

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Figure 3.7 – Commencement Bay Affected Environment - Cont.

54 (Cont.)

Shorebird Population: Commencement Bay routinely supports populations of over-wintering and migratory shorebirds in flocks suitable to the available habitat Additionally, it provides a staging area for upstream migration to nesting grounds for Spotted Sandpiper into the upper Puyallup River Watershed. The area also serves as a feeding/resting area for many species during Spring and Fall Migration. Sufficient habitat exists to support good numbers of over-wintering shorebirds despite the impacts of human activity on the area. Use of this habitat prevents overuse of more recognized habitat areas as well as reducing the potential problems associated with intense population concentrations.

Bald Eagle: Currently, 5 individuals are known to consistently use the Commencement Bay environs daily for feeding, resting and roosting. Commencement Bay is directly connected to a known nesting site. Additionally, several other viable areas exist along the shoreline of Commencement Bay that may also contain unidentified nesting sites for these species. Of the 5 individuals inhabiting the area, 2 are an established breeding pair. Additionally, there is 1 other adult, a two-year old and a three-year old. These are the known individuals. Likely, there may be others that have not been singled out or use the area randomly.

Marbled Murrelet: The northern portion of Commencement Bay contains an isolated sheltered site that provides over-wintering habitat for an established population of Marbled Murrelet. The population size is consistent at 12-18 birds, however their routine presence at that site has been documented for a number of years. Additionally, to the best of our knowledge, habitat suitable for nesting does exist at nearby Point Defiance Park, however we are unclear as to whether or not nesting activity is present there.

White River Spring-run Chinook Salmon: The Puyallup River estuary in Commencement Bay provides critical juvenile rearing habitat for the only native spring-run Chinook species in South Puget Sound.

Salmon species in general: All 5 species of Pacific salmon are present in the watersheds that drain into Commencement Bay. Juveniles of all species use nearshore and intertidal habitats. Lack of sufficient habitat that can be used by these species has been identified as a limiting factor in Commencement Bay.

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Figure 3.7 – Commencement Bay Affected Environment - Cont.

54 (Cont.) ***Great Blue Heron***: an established nesting colony has existed along the northeast shore of Commencement Bay for the past 6 years. The colony is sited within a greenbelt corridor established by the City of Tacoma and remains viable and active. Furthermore, studies of this colony confirm that the breeding birds use the mudflat areas in close proximity to the colony site for feeding during breeding and nesting.

The final omission points up a grave concern as to the limited scope of this particular section of the PEIS. Addressing only the needs of those species and/or habitats protected by law fails to make a connection of all species to an ecosystem. Furthermore, by addressing only those species mandated by law, we risk overlooking critical natural connections that may well place undue stress on other species or systems.

3.2.3 Shellfish

55 We are alarmed by the use of the phrase "***no major populations....***". Considering the severe impacts of human activity on aquatic systems and species in the Puget Sound region, even small populations must be considered viable and deserving of consideration.

56 This subsection must be expanded to address areas of historical populations where cleanup and remediation activities may return existing populations to viable numbers.

3.2.4 Fish

57 Fails to address those species of salmon presently listed under the Endangered Species Act and other species predicted to be listed in the near future. True Cod has been extirpated in many areas of Puget Sound for reasons to include over-fishing and destruction of eelgrass beds.

3.2.5 Birds

58 We challenge the use of Speich and Wahl 1989 report in the PEIS. More comprehensive and up-to-date resources are available and must be used in developing a project of regional proportions.

Additionally, the data used for this project must be expanded to include all state and federal species/habitats of concern that may be impacted by any phase of development of this project. For example, Purple Martin, a neo-tropical migrant species, commonly nests in suitable nearshore areas close to areas of human occupation. This species is a regular

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3.2.5 Birds - Cont.

resident of the Puget Sound region during the breeding season and loss of nesting areas for this species would adversely impact this species.

58 (Cont.) Considering the position of the region within the Pacific Flyway, a wide-angle view must be made of activities outside the Puget Sound region, which may very well increase avian dependence on our region. A good example of this is the consideration being given to severely decreasing the nesting of Caspian Terns on Rice Island on the Columbia River. Presumably this activity, if successful, will force large numbers of these birds to seek suitable nesting elsewhere. As sites suitable for large colonies are rare, it is realistic to assume smaller colonies will be established throughout the area.

3.2.6 Mammals

Movements of whales as well as a number of other aquatic mammals may well be tied to numbers of in-migrating salmon. While the precise movements of these animals cannot be

59 predicted throughout the Puget Sound region, they must be planned for in any area where it can reasonably be expected they will appear.

4.0 ENVIRONMENTAL CONSEQUENCES

4.4.3.1 Habitat

The PEIS fails to answer a number of questions regarding the long-range impacts to any area used in the development of a MUDS facility. Specifically, how long would it take to return a disturbed site to a fully functional ecosystem that equals its pre-use capacity? In

60 developing this assumption, what natural or human factors may interfere with the area's ability to recover to its pre-use condition? What are the potential adverse impacts to other systems or aquatic communities, to what extent will these impacts be felt and how long before these recover? Overall what measures will be sufficient in advance of disturbance to fully mitigate for these impacts?

4.4.3.5 Birds and Mammals

This subsection needs to be expanded to include all temporary and/or permanent impacts

61 to all species in association with disturbances to habitat.

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Responses to Citizens for a Healthy Bay Comment Letter

1 Please refer to Thematic Comment Response #2.

Neither the Army Corps of Engineers nor any other member of the MUDS Feasibility Study Team agrees with the CHB's statement that in-water disposal of contaminated sediment is programmatically the least protective disposal alternative. It is well known, for example, that many upland solid waste landfills have failed to contain contaminated leachate. The Final PEIS concludes that all conceptual MUDS facility designs are technically feasible and are capable, if designed and built properly, of effectively preventing release of contaminants to the environment. The site-specific design for any aquatic or upland MUDS facility, however, might either provide successful long-term confinement or fail, depending on many factors.

There is no requirement, in this PEIS or elsewhere, for disposal of contaminated sediment to occur on State-owned aquatic land. Land ownership and the long-term liability associated with building a MUDS facility on it will be included as factors to consider when evaluating and ranking candidate sites.

2 Please refer to Thematic Comment Response #4.

The major participants in the MUDS Feasibility Study have discussed identifying the decontamination/treatment of contaminated sediment as the preferred alternative. But after a more extensive evaluation of this programmatic alternative (see Section 2.7 and APPENDIX F), it appeared more accurate to conclude that "large-scale, cost-competitive decontamination or treatment of contaminated sediment does not appear to be technically feasible today, but is very promising." So promising that the agencies are discussing how to pursue development of treatment capacity in the Puget Sound region *in addition to* proceeding with the site-specific phase of the MUDS project.

Part of the reason for such an independent effort is that treatment of contaminated sediment is very likely to reduce both the need for land on which to build a MUDS facility and the need for upland disposal capacity. It is also possible, as CHB contends, that some treated sediment could be used beneficially or placed at unconfined, open-water PSDDA disposal sites. However, it is questionable whether or not any treatment process can completely eliminate all need for upland disposal or facility monitoring.

3 Comment noted.

4 Additional information has been provided in Section 3.0. See responses to specific comments.

5 Please refer to Thematic Comment Response #6.

6 The Final MUDS PEIS agrees with the CHB, concluding that the "central Puget Sound appears to be the most logical geographic focus of initial siting efforts". See the Conclusions section of the PEIS Summary.

7 Please refer to Thematic Comment Response #4 and Response #2.

8 Please refer to Thematic Comment Response #4 and Response #2.

9 Although the goal statement does not preclude developing sediment treatment capability as an environmentally sound solution to the lack of disposal capacity, the Final MUDS PEIS has been revised to explicitly include treatment as an important alternative (see Section 2.7 and APPENDIX F).

10 The decontamination/treatment of contaminated sediment has been included in the list of alternatives.

11 Please refer to Thematic Comment Response #6.

If it appears that the public interest is best served by a MUDS facility that is owned and operated by a public entity, then the process of selecting one or more preferred sites will be a very open one. If, on the other hand, a private party proposes to build a MUDS or treatment facility, then there is no guarantee that the siting process will be equally open, only that it will need to comply with SEPA and/or NEPA requirements. In this case, the MUDS Feasibility Study Team will work to keep all parties informed.

12 The CHB comments pertain to an eight year-old report that primarily examined the concept of a MUDS facility (Ecology 1991). If the MUDS Feasibility Study Team had initially believed that the report's narrow conclusion was still valid and there were no other alternatives, then "Options 1, 4 and 5 as well as any consideration of treatment as a viable option" would not have been included in the Draft PEIS. But all known plausible alternatives were evaluated in the EIS, including the use of solid waste landfills (Section 2.4), a privately developed MUDS facility (Section 2.5) and treatment of contaminated sediment (Section 2.7). Please note that "Option 1" - the No Action alternative - is a requirement of both the NEPA and SEPA.

13 Comment noted.

14 The Final PEIS evaluates all feasible alternatives that address the lack of adequate cost-competitive disposal capacity in the Puget Sound region. A more comprehensive EIS that examines short- and long-term environmental impacts, as well as mitigation strategies, will be prepared during any site-specific phase.

15 The MUDS Feasibility Study Team recognizes that all of the real costs of building and operating a MUDS facility on State-owned aquatic lands have not been quantified. Cost estimates will become more quantifiable, during any siting process and site-specific studies when actual potential sites are identified. It is also important to note that the Washington Department of Natural Resources, a SEPA co-lead agency responsible for preparing this PEIS, is currently developing land valuation methods to quantify the opportunity costs lost due to disposal of contaminated sediment on State-owned aquatic land, e.g., building a MUDS facility. This method was not available for inclusion in the final PEIS, but it will be defined for any site-specific MUDS effort.

16 Comment noted.

Also, note that the geographic distribution of contaminated sediment eligible for a MUDS facility has been revised (see Table 1-3 of the Final PEIS).

17 The text in the CONCLUSIONS section of the PEIS SUMMARY agrees with the CHB comment.

18 Please refer to Thematic Comment Response #1.

The estimate of need in the PEIS is for the entire Puget Sound because it is expected that more than one confined disposal or treatment facility will be needed to accommodate the regional demand. It is possible, depending in part upon the site and design of the first MUDS facility, that its construction in the central Puget Sound area may also facilitate the cleanup of contaminated sediment sites located elsewhere in the Sound.

19 Although the geographic distribution of contaminated sediment has been revised, the general conclusion is the same - most of it is located in central Puget Sound. For the

reasons cited by CHB, disposal of some of this material in existing solid waste landfills is a viable option. It will likely remain so because one of the PEIS conclusions is that a single approach or design for a confined disposal facility is not likely to address the regional need.

As noted in Section 1-6, additional evaluation procedures and standards for confined disposal of contaminated sediment will have to be developed during the process of siting, designing and building the first MUDS facility.

21 Table 1-4 is not an exhaustive list of chemical compounds found in Puget Sound sediments, but merely a list of the chemicals most commonly detected in regional sediment evaluations and their respective concentrations. The PEIS concludes that all three MUDS conceptual designs can effectively prevent the release of these chemicals at these levels. On a site-specific and project-by-project basis, however, the potential for release of additional chemicals may need to be evaluated.

22 Please refer to Thematic Comment Response #6. Also, any site-specific phase of this project that is sponsored by one or more public entities will include expanded public outreach and greatly increased public participation. Table 1-5 has been revised to reflect this.

23 Please note the revisions that have been made to the list of elements that will have to be developed in Section 1.6. Any MUDS siting process led by a public entity will include all appropriate stakeholders, including adequate representation by citizen and environmental groups. If public meetings cannot in all cases be scheduled so that all stakeholders are able to attend, then the missing stakeholders will be invited to comment on any resulting recommendations or to participate in making decisions in some other manner. Topics identified in #3-#7 either fall under the auspices of existing bullets, such as "siting process" (acreage, storage), "permitting" (mitigation) "site operation and management" (transportation, releases and prevention), or they have been added to the list.

24 Please refer to Thematic Comment Response #4.

25 The MUDS Feasibility Study Team generally agrees that these comments are true in theory but not in practice. For example, contaminated sediment from several coordinated cleanup projects could justify construction of a privately-owned and operated MUDS facility. However, no such facility has ever been built because of uncertainty about long-term liability and other concerns. It should also be noted that there have been several relatively

small cleanup projects that have been indefinitely postponed because treatment and disposal in an existing landfill is too costly.

26 The text throughout the Final PEIS reflects the most current programmatic cost information available. "Cost-effective" has been replaced with "cost-competitive", which is compared to the current existing disposal alternative that is least costly, e.g., disposal in an existing solid waste landfill. The MUDS Feasibility Study Team agrees that all costs, including those associated with lost natural resources, need to be considered in determining whether or not a disposal alternative is cost-competitive. However, it is exceedingly difficult to balance the dollar value of opportunities lost due to construction of a MUDS facility with those due to delayed cleanup actions that would have been facilitated by having a MUDS facility available. A more complete valuation of candidate MUDS facilities will be conducted during any siting and site-specific EIS phase.

27 "Existing laws, regulations and policies currently recognize the importance and need for cleanup of contaminated sediments in Puget Sound." But, they do not fully recognize the potential benefits that one or more operating MUDS or treatment facility would have on sediment cleanup activities in the Puget Sound region. These laws, regulations and policies could be amended in ways that would foster development of multiuser disposal and/or treatment alternatives. The MUDS Feasibility Study Team does not propose amendments intending to mandate the use of a MUDS facility or to "eliminate other options from consideration".

28 There are no doubt different views of what constitutes "true cleanup". If "true cleanup" is defined as the complete disappearance of a chemical contaminant from a sediment cleanup site or MUDS facility by means other than migration, then none of the disposal alternatives identified in the Final PEIS represents "true cleanup" for compounds that are extremely persistent in the environment. "True cleanup" according to this definition can perhaps only be achieved through complete chemical or thermal destruction by some treatment processes. Until the latter are technically feasible on a commercial scale, the goal of any confined disposal facility is to prevent releases to the environment that exceed state and federal water quality standards. The Final PEIS suggests that a level-bottom cap or contained aquatic disposal MUDS facility can be designed to achieve this goal.

29 The length of time after an aquatic MUDS facility is built that is required to re-establish the pre-existing aquatic community, and its associations with other nearby communities, depends on many site-specific factors. Evidence suggests that benthic communities (which are intrinsically adapted to dynamic environmental settings) are generally re-established within one and three years following a major disturbance (Section 4.4.3). However, the impact of building an aquatic MUDS facility on the benthic communities at specific

candidate sites, the time most likely required for communities to completely recover, and appropriate mitigation measures will need to be fully evaluated during any siting phase and preparation of any site-specific EIS.

30 A detailed facility monitoring program will be designed during any site-specific phase to provide early detection of unacceptable erosion, contaminant release and/or recontamination of the LBC/CAD cap. The need for monitoring at a LBC/CAD facility is discussed in Section 2.2.4.

31 The Final PEIS includes additional information on the Puget Sound LBC and CAD disposal facilities (see Section 2.2.3). CHB is correct in pointing out that the history of monitoring these aquatic disposal facilities is limited (15 years). Monitoring data do reveal, however, that all of the caps effectively confine contaminants. There are aquatic disposal facilities located outside this region, e.g., Long Island Sound, that have effectively isolated contaminated sediments for as much as 20 years. Based in part on extensive data from monitoring aquatic disposal sites, the MUDS Feasibility Study Team believes the risk from contaminant releases is extremely small if a) the location for an aquatic MUDS facility is chosen carefully, and if b) the facility is designed, engineered, constructed and monitored carefully. The Team further believes that substantially longer-term confinement of contaminants is possible, even if cap material occasionally needs to be supplemented.

Although Long Island Sound disposal facilities successfully withstood events such as the passage of strong coastal hurricanes, local experience suggests that cap erosion and recontamination are issues that will need to be addressed during any site-specific phase of the MUDS project.

Please also refer to Thematic Comment Response #3.

32 On a site-specific basis, a MUDS facility located and built on State-owned aquatic lands might prove to be the most feasible alternative from the standpoint of environmental risk, potential habitat and wildlife benefits, political/public acceptability, and overall cost. In this event, the CHB comment would indicate that they would prefer substantially delayed cleanup activities to cleanups facilitated by building and operating a MUDS facility on State-owned aquatic lands. The MUDS Feasibility Study Team disagrees with this reasoning, but does agree that justifying construction of an MUDS facility on State-owned aquatic lands will be difficult.

33 The planning level estimates include a cost range that encompasses this amount. The potential impacts on total project cost ($/cy) due to variations are provided in Footnote 1, Table 2-3.

34 The indirect and contingency cost factors have been increased as recommended. Land acquisition costs were incorporated into the conceptual design for the nearshore and upland CDF alternatives. However, at the time the PEIS was prepared, the valuation method for the use of state-owned aquatic lands for contaminated sediment disposal was in development. Therefore, this cost was not included in the estimate for the CAD/LBC alternative and its absence is pointed out.

The MUDS Feasibility Study Team agrees that to provide an equal-basis analysis for all alternatives, land acquisition costs need to be considered for the CAD/LBC alternative during any site-specific phase. The Final PEIS also recognizes and lists several factors which could either increase or decrease overall costs (Section 2.2.4.2). Finally, the reader is reminded that a cost analysis is included only for general comparative purposes and does not exclude any alternative from further cost evaluation during a site-specific EIS.

35 Please refer to Thematic Comment Response #5 for the possible implications of listing Chinook salmon under the ESA.

36 Please refer to the responses provided above to the same CHB comments made about LBC and CAD facilities (Section 2.2.4.2). Also refer to Thematic Comment Responses #2 and #5.

37 The MUDS Feasibility Study Team has no new information that justifies using $550,000 per acre as a more realistic cost for habitat mitigation and restoration in the Final PEIS . However, the cost of mitigation and restoration will need to be reconsidered for each candidate site during any subsequent phase.

38 The cost of real estate acquisition for a nearshore CDF is highly site-specific and likely to be quite variable. For this reason, it has not been revised in the Final PEIS, but real estate costs will need to be carefully re-evaluated during any site-specific phase.

39 The cost estimate in the Final PEIS for building a nearshore CDF has been revised to include long-term, post-closure monitoring for effluent chemistry, in addition to the costs of monitoring during construction and use of the facility. Biological monitoring, other than habitat/migration studies has not been included as it is not required as part of the monitoring programs that have been developed for existing CDFs in Puget Sound.

40 Disposal of contaminated sediment in existing solid waste landfills is a technically feasible alternative, as described in the Final PEIS. One can argue that it is a "stand alone" alternative because this capacity exists today, yet certain cleanup and dredging projects have been delayed because the cost of disposal in landfills was prohibitive. Even if costs declined and this alternative was promoted, there are different opinions about the wisdom of using solid waste disposal capacity for contaminated sediment.

41 Comment noted.

42 It is important to recognize that there has never been a MUDS facility built, owned and/or operated by one or more private parties.

43 Comment noted.

44 Please refer to Thematic Comment Response # 4.

45 Section 2.7 of the Final PEIS describes various treatment technologies that are being developed and possible uses for post-treated sediments or other end-products. Depending on its physical, chemical and toxicological characteristics, the reduced volume of post-treatment sediment would either be reused beneficially or placed in a MUDS, an existing solid waste landfill, or a PSDDA disposal site.

46 It does appear that the costs of various treatment technologies may some day approach the costs for disposal. However, the first commercial-scale facility designed specifically to decontaminate or treat contaminated sediment has yet to be built.

47 Please refer to Thematic Comment Response # 4.

48 The MUDS Feasibility Study Team largely agrees with this CHB comment. Seismic activity and known faults will need to be carefully considered during any siting process that identifies candidate locations and designs for a MUDS, as well as during preparation of any site-specific EIS.

49 Comment noted.

50 Comment noted.

51 The Final PEIS has been revised to describe the current 303(d) list of impaired waters (see Section 3.1.4.1). It will become important during site-specific phase of this project to evaluate each candidate MUDS facility site, and any return flows resulting from its use, relative to the 303(d) list and areas with existing TMDLs.

52 The importance of local aquifers, their use and rate of recharge, and their relationship to surface water flows will be evaluated during any site-specific phase of this project.

53 The maps found in this section of the Draft and Final PEIS were developed to provide a programmatic evaluation view of wildlife in the entire Puget Sound basin. They were developed using limited resources and were not intended to provide the level of detail sought by CHB for such a vast area. The perceived "data gaps in Figure 3.7" and the items listed by CHB will be useful during any siting process and as part of site-specific studies conducted.

54 Thank you for the constructive comments and detailed information provided on wildlife resources in the Commencement Bay area.

55 The Final PEIS describes "ecologically important populations of shellfish" and acknowledges "former shellfish habitat" as important.

56 This is beyond the scope of the programmatic study, but would likely be addressed as part of site-specific habitat and mitigation studies.

57 The text in the Final PEIS has been revised to address CHB comments. Please refer also to Thematic Comment Response #5.

58 Additional scrutiny will be given to bird populations and habitat during any site-specific phase of this project.

59 Comment noted.

60 Although very site-specific, the benthic community at and near a LBC or CAD MUDS facility is likely to re-establish itself to pre-construction, fully functional conditions within 3 years (see Section 4.4.3). The surface of a nearshore CDF, once all disposal activities have ceased and it is closed, may never be restored to pre-construction conditions; formerly low quality subtidal or intertidal aquatic habitat will either be converted to land above the Mean High Water level or deeper, low quality subtidal habitat will be converted to shallower, higher quality intertidal habitat. In both of these cases, mitigation will probably be an important pre-requisite to construction and the costs associated with mitigation will have to be carefully evaluated during the siting process, preparation of any site-specific EIS and application for permits.

61 These kinds of impacts would be evaluated as part of site-specific MUDS efforts.

CITY OF BREMERTON • 239 4th Street • Bremerton, WA 98337

April 2, 1999

Dr. Stephen Martin
U.S. Army Corps of Engineers
P.O. Box 3755
Seattle, Washington 98124-3755

Re: Draft Programmatic Environmental Impact Statement on Puget Sound Confined Disposal Site Study

Dear Dr. Martin,

1 The City of Bremerton appreciates the opportunity to review the above referenced document. While we have some specific comments on the document, our overall concern is with the multi-user disposal sites (MUDS) program this document is promoting. Generally, it appears that this program is the initial basis to justify disposing of sediments in and around smaller communities in Puget Sound, particularly communities such as Bremerton and Kitsap County, for the benefit of larger cities and their respective port authorities. The document gives the impression that the need for such a facility in Sinclair Inlet is greater then actual data would support. Further, the document indicates, based on incomplete criteria, that there are virtually no viable sites in Elliot and Commencement Bays, the greatest sources of these sediments. But the document identifies a great extent of potential sites in Sinclair and Dyes Inlets. The details of these observations will be discussed below.

2 We are concerned that the waters and upland areas in and around the City of Bremerton and Kitsap County become the "dumping ground" for contaminated sediments from other more industrialized areas. As will be identified below, the U.S. Navy is addressing the sediment issue in Sinclair Inlet on its own. Given the large ~~size of the~~ sediment sources ~~in Puget Sound~~, other communities should be taking the same approach of addressing their own needs.

3 It also needs to be noted that the members of the partnership (i.e. committee) guiding this program includes Washington Public Ports Association along with U.S. Army Corps of Engineers (another agency benefitting from the program) and Federal, State and regional resource agencies. No public, tribes, local governments or governmental associations were involved. In other words, the process up to this point has not had balanced representation.

4 While Appendix B of the document identifies a three tier process which would include these and other interested parties at a later date, the process appears to be flawed. All stakeholders should have been involved at the beginning of the process. The issue being addressed through this program is based as

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much (or more so) on political considerations as it is on technical analysis. In addition, our concern is further compounded by the fact that the City of Bremerton has been totally unaware of this program until the PEIS was released. This contrasts with the U.S. Navy's program to dispose of contaminated sediments in Sinclair Inlet which has been totally open to the public and the City to participate.

5 The City also questions the perceived need for such a program. The document mentions that smaller scale operations would benefit from a MUDS facility (page 4-3). While that may be true, the data in the report identified that most of the sediments for such a facility comes from the U.S. Navy and other large CERCLA and MTCA sites (page 1-8 and Table 1-1). It may be uneconomic to provide a MUDS facility for these smaller users. (While we recognize that such economic analysis is not required in an EIS, it is fundamental component of the feasibility of any of the options. Further, the document did include other economic considerations in its alternative analysis such as concept costs for upland facilities.) There is no evidence in the document that a MUDS facility can be supported by these smaller operators. It may be that disposal of these smaller amounts may be more appropriate at a landfill without developing a MUDS program.

6 Further, there is nothing in the document to indicate that it would be economically or environmentally unfeasible for these larger sites to proceed with single user disposal. The U.S. Navy will be taking this approach in Sinclair Inlet and the document cites other single user examples.

7 The document also argues that a MUDS program would streamline the siting process (Section 4.2.2). Such a process would still have to comply with the Clean Water Act and CERCLA requirements as well as other programs. Our review of the document did not indicate any proposed revisions with the current regulatory program to facilitate such an expedited review process.

SPECIFIC COMMENTS

8 **Page S-3, Section 1.5.1 - Estimated Volumes of Contaminated Sediment Requiring Confined Disposal, and Section 1.5.2 - Distribution of Contaminated Sediments in Puget Sound:** These portions of the PEIS include incorrect data concerning the amount of contaminated sediments and the availability of these sediments for a MUDS facility from Sinclair Inlet. Table 1-1 on page 1-10 indicates that Sinclair Inlet has 645,000 to 2,578,000 cubic yards of this material and that this area would be a potential user of a MUDS facility. The CERCLA site under the responsibility of the Puget Sound/U.S. Navy is the identified source of the sediments for the area. The Navy has identified 250,000 cubic yards that is to be disposed with a target date of May, 2000 to perform the clean-up.

Based on the above information, the data in the report overstate the amount of contaminated sediments by at least twice the amount. The 21 percent of the total contaminated sediments attributed in the report to Sinclair Inlet - Bremerton needs to be significantly reduced to 2.7 to 7.5 percent of the total. Further, the clean-up for Sinclair Inlet is anticipated to be

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completed prior to the year 2003 date for a MUDS facility and should not be identified as a potential user of such a facility. Thus, the 34 percent of the total contaminated sediments needing treatment after 2003 that is attributed to Sinclair Inlet is also substantially overstated. Upon completion of the Navy's proposed remediation, this percentage should be zero.

9 **Section 1.3 - Program Background:** This section on page 1-4 discusses the development of the program. It is apparent that in May 1994, only federal and state agencies were involved in the agreement for the Cooperative Sediment Management Program, and the formation of the Sediment Cleanup Work Group. Additionally, only federal and state agencies were involved in the subsequent steps leading to this PEIS. The lack of involvement of local stakeholders is starkly apparent.

10 **Section 1.5 - Assessment of confined Sediment Disposal Need:** This section on page 1-7 asserts that a discrepancy between estimated and actual dredged contaminated sediments was caused in part by delays in resolving regulatory requirements. The City disagrees that such delays are inherent in the cleanup of CERCLA sediments. The City cites the Navy efforts in Sinclair Inlet as an example of a speedy process for clean up. The Navy has progressed to the point of publishing the *DRAFT Feasibility Study* in May 1999 for the sediments in Sinclair Inlet. The delay in their progress was due to the Remedial Investigation and comments from Department of Ecology and the U.S. Environmental Protection Agency. Once their issues were settled, the Navy has demonstrated remarkable progress through a cooperative process of involving Federal, State, local agencies and the public early in the process of evaluating and selecting a proposed alternative. The authors of the PEIS should consider the stakeholder involvement process in individual clean-ups as compared to control by a small group of Federal and State agencies for a multi-user disposal site.

11 **Section 1.6 - Institutional, Planning, and Regulatory Needs:** Local stakeholders are not involved in the process until the siting process proceeds. Local stakeholders must be involved in the process much earlier. The elements identified are numerous and extremely time-consuming. These elements are currently performed on a project basis. The City of Bremerton finds that the current process results in confinement and disposal of contaminated sediments in a timely fashion.

12 **Section 2.0 - Alternatives:** Seven alternatives are identified. Ocean open-water disposal is an alternative which is not evaluated. This alternative should be explored or an explanation why it is not included.

13 **Section 2.1 - No Action Alternative:** The City has concerns about description of the No Action Alternative on pages 2-1 to 2-5 of the report. The four examples of sediment disposal programs provide excellent examples of the responsible party to work with State, Federal and local stakeholders to move the clean up process forward. It is false to say that the No Action

City of Bremerton
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Alternative provides a need to reform the current regulatory framework. The regulatory framework under CERCLA, CWA and MTCA provides these projects to move forward resulting in clean up of contaminated sediments.

14 The examples of possible regulatory framework changes would be time consuming and unnecessary. To reform the *Shoreline Management Act* for promoting the need for confined disposal sites would be unacceptable to natural resource agencies such as DNR, Fish and Wildlife, Tribes, NMFS and NOAA. This becomes a greater concern in light of the recent endangered species determination. The current *solid waste regulations* allow the disposal of sediments which are not classified by the Washington Administrative Code (WAC) as dangerous waste in Class C landfills. Most of the sediments identified in the "Needs" section of the PEIS are not classified as dangerous waste and can be accepted by landfills in the region. In addition, these potential sites are not identified or discussed in the report and should be evaluated.

15 Developing a *management framework* would be redundant to the current projects underway. Responsible parties have access to experienced consulting firms which have been through the siting, permitting and performance of sediment disposal. Another layer of management framework would be costly with little benefit.

16 **Section 2.2.4.2 - Conceptual Design and Cost:** On page 2-25, the authors identify the use of natural depressions for a site to eliminate the need for excavation, thereby saving cost. Natural depressions in Puget Sound provide valuable habitat and function for aquatic life. While the document generally discussed habitat impact, the environmental impact of this cost saving measure was not and needs to be included in the report.

17 **2.3.4 - Feasibility and Implementation:** Dike construction must include an impervious core. On page 2-31, the report discusses the use of a pervious core to reduce in construction cost and provided instances where it appeared to be successful. However, we did not find any data either in the impact evaluation or in an appendix showing the results of the cited studies. Further, the discussion does not provide evidence of long-term success. Considering the facility is designed to confine CERCLA and MTCA sediments, which are considered such due to an increased risk to the environment and human health, the impact analysis should discuss the potential short and long-term impacts from the use of a pervious core.

18 **Section 2.4 - Upland Confined Disposal Facility Alternative:** Considering that the Upland CDF is designed to drain the sediment runoff into a receiving water, permitting for this discharge is not properly addressed in the PEIS. The discharge may require permit under NPDES and the CWA. Also, the discussion regarding a dewatering facility is sketchy, providing little detail. In addition, the report, on page 2-50, claims that the aerobic process may reduce the contaminant levels of organic chemicals. However, the levels of

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bioaccumulative contaminants, such as PCBs and mercury, are not reduced by aerobic microbial activity. Mercury and PCBs are the major contaminant found in Puget Sound sediments.

19 **Section 2.5 - Solid Waste Landfill Disposal Alternative:** It seems that the inclusion of this approach as a MUDS alternative seems pointless. Landfills are currently available which can accept these sediments, and it is not difficult for the responsible party to arrange transport to the landfill. An additional layer of regulations to the process of performing these tasks under MUDS seems costly and the same result is achieved. The dewatering facility is what would be a MUDS function. However, this facility is not adequately described.

20 **Section 4 - Environmental Consequences:** Risk assessment is an integral component of evaluating alternatives under CERCLA and MTCA. However, in the PEIS, none of the alternatives are evaluated under the risk assessment framework. Recognizing that this is a programmatic document, the City of Bremerton requests that a preliminary risk assessment for each alternative be completed.

21 **Section 4.2.1 - Current Contaminated Sediment Disposal Options:** This discussion indicates that the entities that do not have disposal options available are small ports, marinas, and other waterfront operations and that the larger groups, such as the U.S. Navy and Army Corps of Engineers, are able to dispose of sediments. However, the need identified for MUDS in terms of great volumes of sediments were derived from sediments from the U.S. Navy, and large CERCLA and MTCA sites (Table 1-1). It appears that the need for a MUDS may be only for a very small group, and therefore, small volumes of material. As we noted above, there is no economic analysis to indicate whether a MUDS facility would be feasible only for these small users.

Paragraph 5 of this section again states that the existing regulatory framework is not currently working. The City of Bremerton differs with this view and cites the U.S. Navy clean-up plan for Sinclair Inlet as an example of the clean-up of a site progressing under the current regulatory framework.

22 **Section 4.2.2 - Potential Impacts of No Action:** In this section the authors try to show that under the current regulatory framework where the site is subject to CWA and CERCLA, MUDS would provide a streamlined framework. The City of Bremerton questions this assertion. There is no proposal to amend such environmental laws to create a streamlined process. These sites must go through the current regulatory framework.

23 **Section 4.4.3.6 - Threatened and Endangered Fish:** Since the in-water sites would occur at depths of 25-100 feet, one important aspect of impact to fish has been omitted from the analysis of CAD and LDC facilities. Collier, et al, at the University of Washington has shown

City of Bremerton
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that juvenile salmonids that feed in nearshore areas of poor sediment and water quality are more susceptible to disease and have poorer ocean survival. This data has been based upon mercury and PCB sediment data. The levels of mercury and PCBs that impact fish are in the range found in contaminated sediments destined for a MUDS. Under ESA, it would be difficult to show that performing disposal of sediments through a 6-month window on an annual basis would have no impact on juvenile salmonids.

In addition, many in-water areas identified in the Preliminary Site Investigation Maps (Appendix A) are in the South Puget Sound ESU for Chinook. Under ESA, it would be very difficult to site an in-water MUDS in the South Puget Sound ESU. These issues should be discussed in the report.

The City would also note that the mitigation described in section 4.4.9.2 is not adequate. To anticipate ceasing dredging during the late summer and early fall is only for the purpose of salmonid migration and does not address the issue of juvenile feeding. Overall, the impact of ESA on siting is not properly addressed by the PEIS and should be reanalyzed.

24 **Sections 4.6.7 and 4.7.7 - Potential Impacts to Air, Noise, and Aesthetic for Upland Facilities:** The issue of odor from upland facilities is not addressed in the PEIS. Since the sediments will be dried it is likely that microbial aerobic processes will begin and can cause considerable odor.

25 **Section 6.1.3 - Public Participation and Outreach:** The public participation program as described in this section and in Appendix E is, in our opinion, insufficient public participation and outreach for a project of this magnitude. To develop a pool of citizens and local agencies during the public comment period of the PEIS is inadequate. The pool of citizens and local agencies should have been formed at the beginning of the process or at least prior to the development of the PEIS. Additionally, outside technical and scientific participation should have occurred earlier in this process when the PEIS was being developed. The lack of public and local agency participation would give the appearance that the MUDS Interagency Team is not genuinely interested in input from these groups.

26 **Section 6.1.5 - Coordination with Other Programs:** Only the Bellingham Bay Project is mentioned. There are other sediment clean up programs occurring, such as for Sinclair Inlet. Awareness of the progress of these programs has been ignored in the PEIS.

27 **Section 6.2.1 - Existing Regulatory Structure for Contaminated Sediments Management:** A site would be regulated under CERCLA regardless if disposal is in-water or upland. The PEIS incorrectly leads the reader to think that a CERCLA site would not be regulated under CERCLA if the sediment is disposed upland.

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28 **Map A-1 - Wash. Dept of Ecology Cluster Data:** This map shows regional sediment data. However, for Sinclair Inlet map insert 6, the darkened areas are those that the Navy sampled, and not areas targeted for clean-up for PCBs. The actual targeted areas for clean-up are those with PCB levels greater that 12 ppm/kg. This map is very misleading.

29 **Map A-2 - Geographic Areas of Interest for Preliminary Upland Siting:** This map shades five areas to varying intensities for preliminary upland siting investigation. According to the map (we could not find any explanation in the text), "The degree of shading is proportional to the maximum volume of contaminated sediment that may require dredging with confined disposal." We presume the intensity of the shading represents the amount of sediment for each geographical area. If so, then the map misrepresents the amount in Sinclair Inlet (see above comments) and should be revised.

30 **Maps A-3 through A-7 - Preliminary Siting Investigation:** The City is concerned with the impression these maps leave and should not have been included in the report since they are based on only a few of the criteria identified in Appendix B. The report indicates in the text that the siting of MUDS close to the source of sediment to minimize barge hauls. However, for the Central Puget Sound area, the maps indicate that there are virtually no sites in Elliot Bay or Commencement Bay where major volume of sediment exists. Rather, the maps suggests that these MUDS facilities should be sited in the shallow, pristine embayments and less populated areas such as in Kitsap County. Further, the potential in-water sites identified are only based on a few of the criteria and may result in misleading conclusions. In addition, there is no justification or explanation of the criteria used to prepare the maps. Why were water depths between 25 to 200 feet? According to Figure 2-11, near shore facilities require a depth of 33 feet below MLLW and we did not find any water based facility requiring any shallower depths. Further, why didn't the maps depict the 100 foot and 200 foot depths? According to page 2-10, CAD facilities are difficult to construct beyond a depth of 100 feet and only LBC facilities are the only types reasonably feasible beyond the 100 foot depth.

The City is also concerned that the Preliminary Siting Maps incorrectly indicate the amount of undeveloped shoreline. It indicates that virtually all of the shoreline within West Bremerton (with the exclusion of PSNS) is undeveloped. This designation also is applied for much of the shoreline in Sinclair and Dyes Inlets of which many of these areas are developed. This situation brings to question as to the definition used for undeveloped shoreline, which was not explained in the document.

Also, the PEIS does not seem to be the place to begin evaluated siting criteria. The PEIS identifies siting criteria to be evaluated at a later date, but then also begins to evaluate for sites based on a few criteria. The maps are so small in scale that they give the false impression that there are few suitable sites in Elliot Bay and Commencement Bay, as compared to Sinclair Inlet. If the scale were adjusted to be larger, it would be likely become apparent that there are numerous sites available in Elliot Bay and Commencement Bay. In fact, a majority of the CDF

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activities occur in these areas.

31 **Appendix B - Siting Process and Criteria:** This appendix provides the explanation of the overall process with which the City is concerned. The appendix indicates that the approach has been to limit the number of partners in the developing of a siting process and expand the partnership as necessary when regions, areas and sites are identified. This apparently takes place through a three tiered process, of which this document represents to outcome of the first tier.

As was mentioned above, only certain Federal and State agencies as well as the Washington Public Ports Association were involved with this first tier process. As indicated above, this part of the process should have involved more stakeholders to provide viewpoints from a variety of perspectives before this document was released.

Further, this limited involvement is critical since tier one established the scoring and exclusionary to evaluate potential nearshore CFD, LBC or CAD facilities in tier two. There is no explanation to justify the scoring values associated with various criteria provided in Tables B-1 and B-2. In the end, these values will likely reflect the personal/professional bias from the persons who assigned the numbers and the evaluation results will reflect such a bias. Other perspectives involved with the tier one process could have resulted in scoring values and exclusionary criteria that may likely reflect greater consensus.

We are also concern in tier two of using this point system to evaluate individual sites. It is recognized that the point system allows the reviewer to "get their arms" around conducting evaluations. However, this approach tends to focus the evaluation on "how many points" is appropriate for a site. Issues such as the appropriateness of applying particular criteria to a site or converting qualitative concerns to numeric values tend to get loss in the process, and the numbers become more important than dealing with critical technical and political issues.

As was mentioned above, we appreciate the opportunity to comment on the Draft PEIS, but the City of Bremerton is concerned with the implications of the MUDS program on our community and Kitsap County. If you have any further questions, please do not hesitate to contact Phil Berry, Director of Community and Economic Development at (360) 478-5282.

Sincerely

Lynn D. Horton

LYNN HORTON,
Mayor

Responses to City of Bremerton Comment Letter

1 Please refer to Thematic Comment Response #1. Also, the purpose of the MUDS PEIS is to " ... address the regional need for confined disposal (capacity) ... " (see SUMMARY, pages S-1 and S-2), not to justify disposal of contaminated sediment from large cities and port authorities in smaller communities that have more site options. In addition, Table 1-1 has been revised in the Final PEIS and now shows that much less contaminated dredged material than indicated in the draft PEIS will be generated from the Bremerton and Kitsap County area. Furthermore, while it appears that Bremerton and the Kitsap County area may contain more candidate aquatic and upland disposal sites than King County, there are a number of areas identified in King County (see APPENDIX A) that may eventually be highly ranked. Also, please note that the maps contained in APPENDIX A do not identify potential sites, they simply use exclusionary principles to identify geographic areas of interest based on the defined, very preliminary screening factors.

2 The MUDS Feasibility Study Team does not agree that other communities or responsible parties should necessarily address their own needs in isolation. Moving forward with individual cleanup actions is desirable, but a more regional and cooperative approach should yield both environmental (e.g., fewer resource impacts) and cost advantages (e.g., economy of scale).

3 Please refer to Thematic Comment Response #6.

4 Siting criteria were included for illustrative purposes only. The final siting process and criteria will be defined by a regional siting advisory committee or board having a much broader membership. Also, see Thematic Comment Response #6.

5 The MUDS Feasibility Study Team agrees that relatively few large cleanup projects appear to "drive" the need for a MUDS facility. The volume of contaminated sediment likely to be dredged by smaller proponents that cannot afford to build single-user, on-site facilities, appears to be relatively small. However, the Team does not believe this negates the need for one or more MUDS facilities for at least two reasons:

(a) First, there may be substantially greater environmental risk and long-term liability to the State associated with building, operating, closing and monitoring numerous single user CDFs throughout Puget Sound region. (b) Second, areas of contaminated sediment that remain exposed to organisms and the food web, although perhaps not all having a high volume of contamination, need to be dredged and disposed of in an environmentally safe manner. The MUDS Feasibility Study Team is convinced that many such areas will

remain unremediated unless one or more cost-competitive MUDS disposal or treatment facilities are built.

6 The single-user alternative described by The City of Bremerton is essentially the "No Action" alternative. The latter is technically feasible because successful cleanup actions do occur now. But this alternative is not acceptable for reasons explained in the CONCLUSIONS section of the PEIS Summary: "Although this alternative will continue to result in successful sediment cleanup actions, current disposal alternatives provide a lack of adequate disposal capacity and/or the cost continues to impede the dredging of contaminated sediment for remediation, habitat restoration, channel/harbor maintenance and industrial development. No action results in lost opportunities to dispose of some contaminated sediments that need to be dredged."

7 The selected MUDS siting process will be no different from the current facility siting process, e.g., environmental review and permitting, because it still must comply with all applicable federal and State statutes, laws and regulations. However, it can be argued that an open and well-coordinated, interagency program and process for siting one or a few multiuser confined disposal facilities will require far less time than a similar process repeated many times for many single-user facilities.

Under the "No Action" alternative, the MUDS Feasibility Study Team has assumed that Ecology or others could still propose to change statutes, laws and regulations that would facilitate cleanup activities. Please refer to the latter part of Section 2.1.

8 Please refer to Thematic Comment Response #1. Table 1-1 of the Final PEIS has been revised to reflect EPA and Ecology's updated (July 1999) information on the Navy's current and planned cleanup volumes and schedules.

9 Please refer to Thematic Comment Response #6.

10 Note that all CERCLA cleanup actions are not as speedy as the one currently proposed by the Navy in Sinclair Inlet.

11 The MUDS Feasibility Study Team plans to greatly increase the opportunities for public and other stakeholder participation during any siting process and subsequent preparation of a site-specific EIS.

12 Ocean open-water disposal was not considered beyond the original project scoping because it is not cost-competitive relative to other alternatives that exist in the Puget Sound area, e.g., solid waste landfills. This is due largely to the large distances and difficulties (i.e., open ocean conditions that can be encountered in transit) associated with transport to the open ocean from Puget Sound's major ports. In addition, there are significant regulatory and public acceptance obstacles to the ocean disposal of contaminated sediments.

Also, The Marine Protection, Research and Sanctuaries Act of 1972, as amended (MPRSA) was passed in recognition of the fact that the disposal of material into ocean waters could potentially result in unacceptable adverse environmental effects. Under Title I of the MPRSA, the U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (Corps) were assigned responsibility for developing and implementing regulatory programs to ensure that ocean disposal would not "... unreasonably degrade or endanger human health, welfare, or amenities, or the marine environment, ecological systems, or economic potentialities." The implementing regulations for the Act can be found at 40 CFR 220-229.

The EPA administers and enforces the overall program for ocean disposal. Under Section 102 of the MPRSA, the EPA in consultation with the Corps, established environmental criteria that are to be addressed before an ocean dredged material disposal permit can be granted. The Corps issues permits for the transportation of dredged material for the purpose of ocean disposal, after consultation with the EPA, that is in compliance with these criteria. While the Corps does not administratively issue itself a permit, the requirements that must be met before dredged material derived from Corps projects can be discharged into ocean waters are the same as those where a permit would be issued.

The MPRSA (also known as the Ocean Dumping) Criteria (40 CFR, Part 228) state that final site designation under Section 102(c) must be based on environmental studies of each site and on historical knowledge of the impact of dredged material disposal on areas similar to such sites in physical, chemical, and biological characteristics. General criteria (40 CFR 228.5) and specific factors (40 CFR 228.6) that must be considered prior to site designation are described and evaluated in this appendix. Related federal statutes that may influence the site designation process include the National Environmental Policy Act of 1969, as amended; the Coastal Zone Management Act of 1972, as amended; and the Endangered Species Act of 1973, as amended. As required by Section 104(a)(3) of the MPRSA, ocean disposal of dredged material can occur only at a site that has been designated to receive dredged material. Pursuant to Section 102(c), the EPA has the responsibility for site designation. Section 103(b), while encouraging use of EPA-designated sites where feasible, does provide for alternative site selection by the Corps when a suitable EPA-designated site is not available. However, the same Ocean Dumping Criteria (40 CFR 228.5 - .6) are used in the evaluation process that leads to alternative site selection and the EPA must concur with the selection.

An EPA-designated site requires a site monitoring and management plan (SMMP). Use of the designated site is subject to any restrictions included in the SMMP and EPA's

designation regulations. These restrictions are based on an in-depth evaluation of the site pursuant to the regulations (40 CFR 220-229) and potential disposal activity as well as public review and comment. Designation of an ODMDS in itself does not result in disposal of dredged material. A separate evaluation of the suitability of dredged material for ocean disposal must be undertaken for each proposed use of the site by either the Corps or non-Corps permit applicant. Typically this involves evaluation of the specific disposal activity under the Criteria, circulation of a Public Notice (which can include multiple years of use), and specific coordination with stakeholders as well as concurrence by the appropriate EPA Region.

Suitability for disposal of dredged material into the Ocean is demonstrated by chemical and biological testing of the material. National guidance on testing is contained in the joint EPA/Corps national *Evaluation of Dredged Material Proposed for Ocean Disposal - Testing Manual*, dated February 1991 (formerly known as the "Green Book"). Regional guidance, which supplements the national guidance, is provided by various documents prepared by Region 10 EPA and the appropriate Corps Districts, usually in coordination with the appropriate states. These include the Puget Sound Dredged Disposal Analysis (PSDDA) [now Dredged Material Management Program (DMMP)], the Grays Harbor/Willapa Bay Dredged Material Evaluation Procedures Manual the State of Washington's Sediment Management Standards, and the Lower Columbia River Dredged Material Evaluation Framework. Fundamentally, sediments that are unsuitable for unconfined aquatic disposal under these regional procedures have been determined by EPA not to comply with the MPRSA Criteria and would therefore be prohibited from disposal into the ocean. Ocean disposal of such sediments is not an alternative.

13 Section 2.1 of the PEIS, about which the City of Bremerton is concerned, cites four examples of cleanup projects that have proceeded in the absence of a MUDS facility or program. It could easily be argued that it is more efficient to select a single site and build a single MUDS facility to receive contaminated sediment from all four of these cleanup projects, and that all four would have proceeded more rapidly had a MUDS facility been available for disposal. Nevertheless, the intent of this section is to clarify that lack of adequate disposal capacity and current costs do not prevent disposal but can delay progress. The section does not claim that major regulatory reform is needed, just that some relatively straightforward changes to existing regulations may facilitate cleanup actions. The examples of potential regulatory changes listed in this section are just that - examples. Some may be more reasonable to pursue than others.

14 The Draft PEIS does identify disposal of contaminated sediment in existing landfills as a feasible alternative (see Section 2.5.3, and CONCLUSIONS, Feasibility).

15 The MUDS Feasibility Study Team disagrees that a MUDS management framework would be costly and of little benefit. The framework would presumably be beneficial in the same ways that the PSDDA/DMMP management framework, which serves as a model of efficiency for the rest of the nation, is beneficial. For example, it is beneficial that experienced staff collaboratively review project proposals, testing results, disposal activities, and monitoring data because it requires less time, ensures greater consistency and expedites joint decisions.

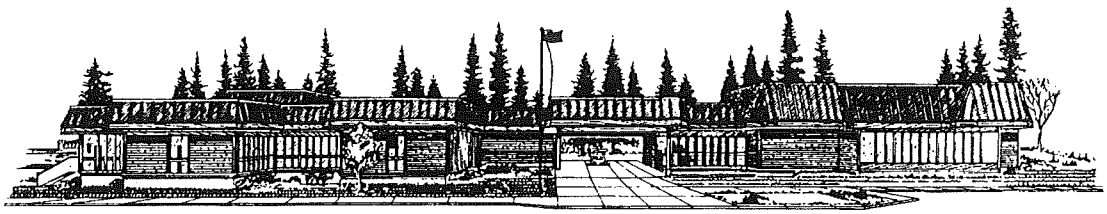
16 A natural depression in shallow water would probably not be ranked highly as a potential MUDS during any siting process, precisely because of habitat and aquatic resource values, unless its current condition is already contaminated and its use as a CAD site might ultimately improve conditions. However, habitat and benthic communities that occur in natural depressions at the depth of a likely CAD facility - 50 to 200 feet - are not expected to be of high value. Thus, the "... environmental impacts of this cost-saving measure" probably would not be substantial as they would be sited in relatively low resource value areas. A detailed evaluation of potential environmental impacts associated with building and operating a CAD facility will be required for any site-specific EIS.

17 An impervious dike core may be necessary in some specific cases, but may not be in others. If a final, site-specific MUDS design involved a pervious core, then the design would be based on a) biodegradation of contaminants within the dike and b) show migration of contaminants through the dike at levels that meet all water quality standards. Because the latter are established specifically to be protective of environmental and human health, the resulting risks would be extremely low. Please refer to Sections 2.3.4.1, 4.5.1, 4.5.9.1 and 4.6.9.2.

18 Discharges resulting from any process associated with an upland CDF, e.g., the dewatering facility described in Section 2.4.4.2, are subject to the permit processes described in Section 6.2.2. Elevated concentrations of biodegradable PAHs are known to occur at over one-third of all cleanup sites. Most, but not all, organic contaminants will biodegrade under aerobic conditions. The City does correctly point out that two important Puget Sound contaminants, mercury and PCBs, are extremely resistant to degradation or transformation.

19 The purpose of including existing solid waste landfills as a contaminated sediment disposal alternative was to evaluate whether or not they have adequate capacity and whether or not the current cost of landfill disposal may delay cleanup actions. The MUDS Feasibility Study Team believes that the capacity is adequate, but questions the wisdom of using that capacity for disposal of contaminated sediment when it was intended for municipal waste. The Team also believes that the current cost for this alternative does delay some smaller

31 Appendix B, *Siting Process and Criteria*, was intended to outline a process for siting a MUDS facility based on previous studies by the Department of Ecology. The *preliminary* list of screening criteria and associated scoring factors were presented to illustrate the kinds of criteria that the Study Team deems to be important. However, neither the criteria nor the weighting factors should be considered final. As illustrated in Figure B-1 and discussed in Appendix B, if a site-specific MUDS effort is pursued, then local stakeholders will be asked to join the site-specific partnership. The site-specific partnership will then be tasked with finalizing the Tier 2 and 3 siting criteria and the scoring factors. This process is designed to ensure that all affected stakeholders have the opportunity to discuss and reach consensus on siting criteria for upland, nearshore, and aquatic facilities.



CITY OF LYNNWOOD

PHONE (425) 775-1971

ENVIRONMENTAL REVIEW COMMITTEE

May 10, 1999

5/13/99

Dr. Stephen Martin
US Army Corps of Engineers
PO Box 3755
Seattle, WA 98134-3755

RE: PUGET SOUND CONFINED DISPOSAL SITE STUDY

Dear Mr. Martin:

The Environmental Review Committee (ERC) has reviewed the Programmatic Environmental Impact Statement (PEIS) for the above proposal and believes that it may have adverse environmental impacts. Therefore, the ERC requests that the following issues and concerns be evaluated for the PEIS and appropriate mitigation measures identified to minimize any probable adverse environmental impacts.

1. Protection of existing sewer outfalls; **1**

2. Identify probable damage to the existing environment where the storage area for dredge materials will be stored and identify mitigation measures for probable damage. **2**

3. Prioritize alternative placement sites. Possibly land sites may be the best suited for storage of dredge materials and those on or near the shoreline the least suited. **3**

We understand these comments are after the April 5, 1999 deadline, but we hope you will still consider them. We appreciate the opportunity to comment on this proposal.

Sincerely,

CITY OF LYNNWOOD

Darryl Eastin

Darryl Eastin, AICP
Senior Planner

DIRECT ALL CORRESPONDENCE TO CITY OF LYNNWOOD P.O. BOX 5008 LYNNWOOD, WA 98046-5008

CITY HALL / COUNCIL CHAMBERS
19100 44TH AVENUE WEST
FAX (425) 771-6144

PLANNING / PARK ADMIN.
19000 44TH AVENUE WEST
FAX (425) 771-6585

FIRE DEPT. HEADQUARTERS
3600 196TH AVENUE WEST
FAX (425) 771-7977

POLICE / MUNICIPAL COURT
19321 44TH AVENUE WEST
POLICE FAX (425) 672-6835
COURT FAX (425) 774-7039

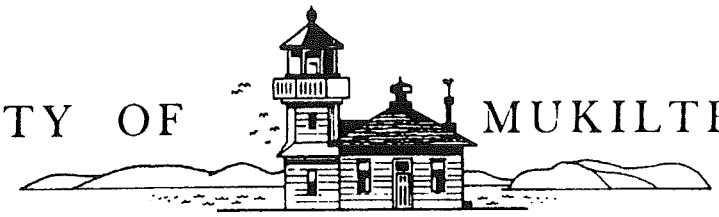
RECREATION CENTER
18900 44TH AVENUE WEST
FAX (425) 771-1363

Responses to City of Lynnwood Comment Letter

1 The potential impact of a constructed MUDS facility to nearby sewer (or other) outfalls will be evaluated during any site-specific phase of this study. Similarly, appropriate mitigation measures will be proposed if there are significant unavoidable impacts to the environment near an outfall.

2 Not all possible designs for an aquatic or upland MUDS facility will require an area for temporary storage and handling of contaminated sediment before disposal. If the volume of contaminated sediment within the geographic area of interest, specific site and final facility design indicate that storage area is needed, then the environmental impacts for using an upland area as such will have to be assessed. Likely mitigation measures for using several acres of land for such a purpose include those described in the PEIS (Section 4.6.9).

3 If the MUDS Feasibility Study enters a site-specific phase, then one of the first steps will be to conduct a comprehensive and public siting process. Part of that process will be to identify, investigate, and prioritize various aquatic and upland disposal and treatment sites based on the relative merits of each site. However, on a programmatic level, the MUDS agencies cannot conclude that any one disposal alternative identified in the EIS is preferred to any other.



4480 CHENNAULT BEACH ROAD • MUKILTEO, WASHINGTON 98275
(425) 355-4141

March 17, 1999

Dr. Stephen Martin
U.S. Army Corps of Engineers
P.O. Box 3755
Seattle, WA 98134-3755

RE: Puget Sound Confined Disposal Site Study, Draft PEIS, February 1999

Dear Dr. Martin:

1 The City of Mukilteo would like to thank you for the opportunity to review the Programmatic Environmental Impact Statement for Puget Sound Confined Disposal Site Study. While we have limited technical expertise and experience in this type of disposal, but we feet an alternative that treats contaminated dredged materials should be included and would be preferable to burying contaminated dredge materials.

2 Our preference on the alternatives identified, would be to have the waste contained in a deep water, aquatic disposal facility, with placement by a barge with tremie, or upland facility, rather than near shore which could have significant impacts to this environment. Regardless, the alternative should be sensitive to wildlife, fisheries and water quality and not endanger or limit the use of the affected property.

3 We would also like more information about the types and location of dredge materials that are identified to come from Mukilteo. Your assistance regarding this would be very helpful.

Sincerely,

Heather McCartney

Heather McCartney, AICP
Planning Director

cc: Rich Leahy, City Administrator
Dennis Gregoire, Port of Everett

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Responses to City of Mukilteo Comment Letter

1 The City's preference for the treatment of contaminated dredged material over its burial is noted. An expanded description of the decontamination/treatment alternative is provided in the final programmatic EIS (Section 2.7 and Appendix F).

2 The City's clear preference for the CAD or upland CDF alternatives over the nearshore MUDS facility alternative is valuable information. Similar general preferences will no doubt be raised and considered during any site-specific phase of the MUDS project that may follow publication of this programmatic EIS. Programmatic or general alternatives, however, should not be eliminated from consideration when they may be appropriate for a specific location or site. Please refer also to Thematic Comment Response #2 and the CONCLUSIONS section of the PEIS Summary.

The MUDS Feasibility Study Team assures the City of Mukilteo that if one of the "constructed" MUDS alternatives is chosen as a result of any site-specific phase, then the design, operation and closure of the facility will reflect the importance of maintaining environmental quality and future use of the property.

3 Please refer to Thematic Comment Response #1. Table 1-1 lists, by location, the volumes of contaminated sediment that have been identified as part of the MUDS estimate of need (Section 1-5). The table is based in part on the "Sediment Management Standards Contaminated Sediment Site List" (Ecology, 1996) and conversations with Ecology's regional sediment cleanup staff. The former document can be requested by calling Mr. Brett Betts (360/407-6914) or Ms. Michelle Wilcox at the Washington Department of Ecology (360/407-7557).

City of SeaTac Department of Planning and Community Development

April 5, 1999

Dr. Stephen Martin
U.S. Army Corps of Engineers,
P.O. Box 3755
Seattle, WA 98134-3755

Dear Mr. Martin:

SUBJECT: PUGET SOUND CONFINED DISPOSAL SITE STUDY DRAFT PEIS

Thank you for the opportunity to comment on the Draft Programmatic Environmental Impact Statement. SeaTac has serious concerns regarding the potential impacts of siting a Confined Disposal Site (CDF) within the City. Following are the City's comments.

Protection of Human Health and the Environment

1 The constructed alternatives would involve the irretrievable commitment of upland land resources to a sediment containment function. The City of SeaTac is an urban area supported by two single source aquifers and several Class II Streams (with salmonids). These aquifers supply drinking water to the residents of the City of SeaTac, the City of Seattle, and feed the DesMoines Creek. The siting of a CDF in close proximity to this urban area could result in significant impacts to the drinking water supply and may have serious consequences to integrating salmon recovery in our Class II streams.

2 The DPEIS Figure 3-5. Elliott Bay – Affected Environment shows wetlands and wildlife. The SeaTac area contains wetlands and Class II streams with salmonids that are not indicated on this map.

Zoning

3 Although the City of SeaTac has no zoning regulations that specifically address upland CDF, the City of SeaTac's Municipal Code prohibits this type of facility except by providing conditional use requirements for siting Hazardous Waste Treatment Facilities in the Industrial Zone. Section 15.22.,035 addresses siting of Essential Public Facilities (EPF) and establishes a formal process for identifying and siting an EPF.

Should you have any questions regarding the City's comments, please contact me or Glynis Casey at 206/ 241-1893

Sincerely,

Stephen C. Butler

Stephen C. Butler, AICP
Director of Planning and Community Development

Cc: Calvin Hoggard, City Manager
Bruce Rayburn, Public Works Director
Don Monaghan, Asst. Public Works Director
Craig Ward, Principal Planner
Jack Dodge, Principal Planner

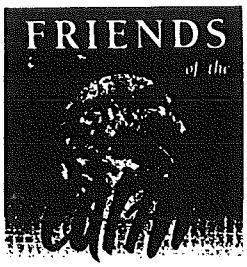
Responses to City of Seatac Comment Letter

1 Table 4-5 describes the potential impacts and mitigation associated with construction of an upland dewatering facility and CDF. Chapter 5 (Probable Irreversible and Irretrievable Commitments of Resources) also identifies the potential for loss of upland land resources, that would need to be further evaluated during preparation of any site-specific EIS.

The team also notes the City of SeaTac comments about local sole-source aquifers and Class II streams and will certainly evaluate them in any site selection process that may occur. However, candidate upland CDF sites located near these resources are not expected to be highly ranked relative to other possible upland or aquatic disposal sites.

2 Figure 3-5 shows the significant areas of habitat and resources in the vicinity of Elliott Bay that would likely be avoided during any site selection process. The figure is based on the information that was readily available. Updated information on SeaTac wetlands and Class II streams will be identified during any eventual search for candidate sites in site-specific studies.

3 An upland CDF for contaminated sediments would neither qualify as a Hazardous Waste Treatment Facility nor as a Hazardous Waste Disposal Facility. However, it could easily be considered an essential public facility. The MUDS Study Team is interested in reviewing any pertinent City of SeaTac ordinances and codes (e.g., Section 15.22.035).



April 5, 1999

Dr. Stephen Martin
U.S. Army Corps of Engineers
P.O. Box 3755
Seattle, WA 98124-3755

Re: Puget Sound Confined Disposal Site Study Programmatic Environmental Impact Statement (PEIS)

Dear Dr. Martin,

Thank you for the opportunity to comment on the Programmatic Environmental Impact Statement (PEIS) for the Puget Sound Confined Disposal Site Study. Friends of the Earth, NW Office (FoE) is a non-profit group dedicated to protecting the environment and enhancing the quality of people's lives.

1 FoE recognizes that current levels and distribution of contaminated sediment present an environmental risk that is dangerous to aquatic species, wildlife, and ultimately people. Confined aquatic disposal (CAD) may help reduce that risk. We welcome progress cleaning up contaminated sediments and restoring the health of Puget Sound. However, that cleanup must occur on a schedule faster than the current one and in a manner that keeps financial responsibility assigned to the parties responsible for the contamination. Moving contaminants from one place to another and shifting financial responsibility onto the state would not necessarily be an improvement over current conditions.

2 If the information is available, the final PEIS should quantify the quality and quantity of toxic release to Puget Sound resulting from the current contamination and compare this release with what may occur during the process of dredging, dumping, and possible releases from the confined disposal sites. The draft PEIS refers to computer models available to estimate at least some of the exposure but does not present any results. The final should present a formal risk analysis of all alternatives including no action and treatment as well as require the same for the site-specific CADs.

3 The PEIS appears to assume that treatment for contaminated sediments is not an option. The discussion of treatment in Section 2.8 is not nearly as comprehensive as the discussion that disposal receives. In light of the permanent nature of treatment and drastic reductions in volume, relative to disposal, the final PEIS as well as site-specific investigations should include equal consideration of treatment options along with the confined disposal options.

6512 23rd Ave NW #320 98117 297-9460 297-9468 foenw@wolfnet.com
~~4512 University Way, NE~~ • Seattle, WA ~~98105~~ • Phone: (206) ~~633-1661~~ • Fax: (206) ~~633-1935~~ • E-mail: ~~foewase@ige.apc.org~~
Northwest Office

4 The final PEIS should consider all costs associated with confined disposal options, especially the long term and opportunity costs, which the draft omits. The final PEIS and site specific reviews should include costs for monitoring and possibly repair or relocation over a time period that lasts as long as the sites contain contaminants and present a possible threat to the environment and human health. Many contaminants will present human and environmental health risks for decades or centuries. The cost comparison must consider all costs including contingencies for recapping or moving the disposal site and ultimately treating the contaminants. The PEIS should, but does not, quantify the long-lasting financial responsibility that results from confined disposal sites nor who will guarantee those costs. Furthermore, the PEIS assumes that state-owned aquatic lands may be used for free. This is a poor proxy for at least two costs. First, the final PEIS should establish how to shield the state from any financial liability regarding CADs on state-owned land while providing certainty that the site will be properly maintained, monitored, and if necessary fixed for the entire period the site present human and environmental health hazards. In addition to legal and contractual guarantees, this should include a bond, lien, or some other financial instrument to ensure that the responsible parties, not the state, are financially responsible for any site long term. Second, the cost comparison should include an estimate of the opportunity cost of the lost use of state lands as well as a contingent valuation study estimating the public value of uncontaminated aquatic lands with and without confined disposal sites.

5 Adding an economist or someone with financial expertise to the project team for the final and site-specific environmental reviews would facilitate the full consideration of the costs of the different alternatives. Engineers and economists often consider "costs" differently and that can have consequences for project selection, implementation, and funding. For example, the PEIS does not discuss how construction would be financed; if any entity would issue debt to finance construction, that significantly increases the cost of the project.

6 In those cases where the cost of important components of an alternative includes a range, the summary should present that range. In going from cost ranges to point estimates, the PEIS selects means, medians, and point estimates often without providing any reason why. The FPEIS should present the range of costs, as is the case for the landfill option.

7 The final PEIS should address how the state would be shielded entirely from any liability resulting from disposal of contaminated sediments on state-owned lands. In light of the legal and other costs resulting from landfill and Superfund sites, this is a significant issue that the final PEIS and all site-specific reviews should address before proceeding. The state should not be the dumping ground of convenience.

8 The final PEIS and site-specific reviews should more fully consider monitoring and sampling requirements. These requirements must last as long as the contamination. Furthermore, the frequency of sampling must be based on a rigorous statistical methodology to ensure that if contaminants are leaving the CADs that such leaks are discovered before human or environmental health risks occur. The PEIS provides no basis

for sampling twice per year. At a minimum, the final PEIS and all site-specific reviews should consider more frequent sampling, at least in the early years to gather more data to assess reliability.

9 The final PEIS should provide more information on existing CADs especially regarding short and long term costs, monitoring, releases, and lessons learned. If available, this review should include a comparison of projected characteristics of the CADs with how they actually turned out regarding cost, reliability, hazardous releases to the environment, and other relevant factors.

10 Lastly, a bill before the Washington State Legislature, House Bill 1448, would strip the authority for management of state-owned aquatic lands from the Department of Natural Resources. This does not place FoE in a position where we feel assured that the many concerns about CADs will be addressed to the satisfaction of the current manager of the state-owned aquatic lands.

Please keep this office informed as to developments in this matter. If you have any questions, feel free to call me.

Sincerely,

Eric Espenhorst

Responses to Friends of the Earth Comment Letter

1 A key presumption for building one or more MUDS facilities is that providing disposal capacity at a competitive price will hasten cleanup actions. Disposal at a MUDS facility, whether in water or on land, will not be "moving contaminants from one place to another". Any specific MUDS facility will be designed to provide effective, long-term isolation of sediment contaminants.

Funding for all or part of the construction, operation, closure, and monitoring of a MUDS may be provided entirely or partly by government entities, but the responsible party or parties will almost certainly pay a fee to dispose of contaminated sediment at the facility. The fee will recover all or part of facility costs.

It has not been determined how the long-term liability for the contaminated sediment placed at a MUDS will be allocated, but the comment is duly noted. Liability may or may not be transferred from the responsible party to the owner/operator of the facility. The final "Contingency Management Agreement", which will be developed as part of an open process during the site-specific phase, will clearly define the relative responsibilities of MUDS participants and clarify where liability will fall given different circumstances. Please refer to the discussion of "CMA" in APPENDIX D, Section 1.0.

2 This is beyond the scope of the MUDS feasibility study. Whether to actively remediate a particular contaminated sediment site (i.e., dredge and dispose of the contaminated sediments elsewhere) is a project-specific decision that would be made based on consideration of relative environmental risks, the need and cost to dredge, regulatory requirements, and technical feasibility. The goal of the MUDS Feasibility Study is to assess the feasibility of various disposal (and treatment) options for project proponents, who determine on a project-specific basis, that their preferred remedy is to dredge the contaminated sediments.

3 Please refer to Thematic Comment Response #4.

4 The cost estimates for each alternative were revised to incorporate long-term (30 years following construction) monitoring costs. However, no attempt was made to capture the costs of all potential contingencies. There are too many uncertainties associated with each disposal option and their potential contingencies to allow a complete costing of all possible permutations. As revised, the cost estimates provided in the PEIS consider the major costs associated with each alternative from site preparation through each site's active life-span and through 30 years of post-closure monitoring, with an assumption that each facility performs as designed throughout this period. In addition, where specific cost factors were not available (e.g., use of State-owned Aquatic Lands), this is noted. The intent of this

approach is to allow an "apples to apples" comparison of the relative costs of each major disposal alternative. During site-specific studies, additional cost elements (e.g., actual real estate costs) will be incorporated as the specific alternatives are more fully defined.

5 The MUDS Feasibility Study Team generally agrees that at least one economist should participate in the MUDS project, during the siting process and during preparation of the site-specific EIS.

6 Cost range information is provided in the footnotes to the cost estimate tables, when there is significant uncertainty in the costed item. However, the objective of the costing exercise was to provide a comparison of the relative costs between the major disposal alternatives under a similar set of assumptions.

7 Please refer to the response to Comment #1. The allocation of liability in case of various eventualities, e.g., contaminant release, dike failure, etc., will need to be clear before the State decides it should own and operate a MUDS facility, or before it leases land to a private owner/operator of a MUDS. Liability issues will be evaluated and defined during any site-specific phase.

8 First, there needs to be mutual agreement on the definition of "long-term" monitoring. Long-term site management monitoring plans, whether 30 years or until contamination is no longer measured at the MUDS facility, will need to be developed during the site-specific phase of developing a MUDS facility as part of individual site-specific efforts. The management plan would include clear objectives and monitoring requirements over time. The plan would define contingency monitoring and corrective actions in response to unexpected evidence of cap erosion, recontamination, or contaminant releases.

9 Please refer to Thematic Comment Response #3. The MUDS Feasibility Study Team has provided additional information on Puget Sound, CAD facilities and nearshore CDFs in the Final PEIS. There is substantially more information that can be obtained from the Corps of Engineers, Waterways Experiment Station (Vicksburg, MS).

10 House Bill 1448, had it not been vetoed by the governor, would have transferred the ultimate authority for cleanup of contaminated State-owned aquatic lands to the Department of Ecology. This would have affected less than 1% of all State-owned aquatic lands.

The comment seems to imply that the Department of Ecology has a strong preference for aquatic disposal, a claim that cannot be substantiated by any evidence. Participants in the MUDS Feasibility Study may have agency and/or personal preferences for the "best" solution to inadequate disposal capacity, or a preference for a certain type or design of the first MUDS facility, but no participant considers any of the constructed alternatives to be technically infeasible on a site-specific basis. All participants agree that a MUDS facility that is wisely sited, designed, and operated will be environmentally protective and facilitate contaminated sediment cleanups.

KITSAP COUNTY DEPARTMENT OF COMMUNITY DEVELOPMENT
614 DIVISION STREET MS-36, PORT ORCHARD WASHINGTON 98366-4682 BRUCE FREELAND, DIRECTOR
(360) 337-7181 FAX (360) 337-4925 HOME PAGE - www.wa.gov/kitsap

April 5, 1999

Dr. Stephen Martin
U. S. Army Corps of Engineers
P. O. Box 3755
Seattle, Washington 98124-3755

Re: Draft Programmatic EIS for the Puget Sound Confined Disposal Site Study

Dear Dr. Martin:

1 Kitsap County appreciates the opportunity to review and comment on the DPEIS for the Puget Sound Confined Disposal Site. The County is concerned with any proposal that would consider importing contaminated dredged material into Dyes Inlet or Sinclair Inlet, two poorly flushed embayments with acute sensitivity to further sources of contamination. While the Kitsap County has worked cooperatively with the U. S. Navy and the City of Bremerton, over many years, to resolve locally generated waste material problems, there is little interest in becoming a waste recipient for contaminated dredge material for other communities within Puget Sound.

2 Dyes Inlet is a, largely residential, shallow bay with the largest salmon run in the County. Last year the run was accompanied by the J-pod of Orcas that spent most of a month there. Sinclair Inlet is also a shallow bay that is fed by Blackjack Creek and Gorst Creeks as well as several smaller salmon streams. Gorst Creek is of particular importance to the Suguamish Tribes fishery. Both of these bays are the subject of adopted Watershed Action Plans and ongoing efforts to restore water quality and habitat. It would seem highly questionable that these areas are even considered as alternatives.

3 Kitsap County shares the concerns, of both process and content of the DPEIS, submitted by the City of Bremerton in their letter of April 2, 1999.

Sincerely,

Bruce Freeland
Director and Responsible Official

RK:rk

TOLL FREE FROM: BAINBRIDGE IS. 842-2061 • OLALLA 851-4147

Responses to Kitsap County Comment Letter

1 Kitsap County's history of cooperation with the U.S. Navy and City of Bremerton in dealing with contaminated sediments and its reluctance to accept material from other areas is appreciated. However, building one or more MUDS disposal and/or treatment facilities may be in the best interest of the Puget Sound region (see CONCLUSIONS section of the PEIS Summary). To this end, all reasonable alternatives should be explored. It is not yet known if there are reasonable sites for a regional MUDS facility in Kitsap County. Whether or not the Navy could expand some of its current disposal plans to accommodate some regional needs or a cooperative effort involving the Navy, State, county and city could result in a MUDS facility that would solve some local and regional cleanup needs is not known. However, the relatively poor circulation that typifies Dyes and Sinclair inlets, as well as many other factors, would merit great attention in any siting process that occurs.

2 The listing of various species of salmon as endangered and/or threatened by the National Marine Fisheries Service, raises many questions for the MUDS Feasibility Study. Increased need to protect and/or restore habitat for salmonids and other fish may eliminate many sites previously thought to be reasonable candidates for an aquatic MUDS facility. The Team admits that identifying and choosing an aquatic site on which to build an MUDS facility is becoming more difficult. Yet it may still be possible, given that a) there may be substantial net benefit from facilitating cleanup of extensive aquatic habitat that sacrifices limited aquatic habitat elsewhere, and b) it may be even more difficult to site an upland CDF. See also Thematic Comment Response #2.

3 Please see responses to the City of Bremerton comment letter.

Nooksack Indian Tribe
Fish & Wildlife
5048 Mt. Baker Hwy. • P.O. Box 157 • Deming, WA 98244
(360) 592-5176 • Fax (360) 592-5753

April 5, 1999

Dr. Steve Martin
U.S. Army Corps of Engineers
P.O. Box 3755
Seattle, WA 98134-3755

Dear Dr. Martin:

1 The Muds or Puget Sound confined disposal site study programmatic NEPA/SEPA Environmental Impact Statement is not as progressive and visionary as is needed for the long term pollution solutions.

2 The Nooksack tribe has concerns about the long-term storage of toxic pollutants in the marine environment. The slow release of these chemicals maybe significant even with extensive engineering for natural events over the long haul. Any type site should allow toxic pollutants to be retrieved. The projected amounts of sediments that need to be handled is an order of magnitude too low. As scientists learn more about the effects and biological pathways of many of these chemicals the clean-up standards are lowered.

3 This tribe will strongly object to any increases in vessel traffic within their usual and accustomed fishing areas due to this EIS.

4 How long will it really take for a marine site to become fully productive after the final cap is installed? Does it make any cost effective sense to clean-up when source controls are known to be inadequate?

Dale T. Griggs, Biologist

Nooksack Natural Resources
(360) 592-2632

Responses to Nooksack Tribe Comment Letter

1 The MUDS Feasibility Study Team is incorporating a great deal of additional information on decontamination and treatment of contaminated sediment into the Final PEIS (see Thematic Comment Response #4). However, the Team is interested in making future elements of the MUDS project even more "progressive and visionary", and so would appreciate any more specific ideas that the Nooksack Tribe may have.

2 The MUDS Feasibility Study Team and agencies echo the Tribal concern about long-term storage of contaminants in the marine environment. Unfortunately, the same concern exists about releases to the terrestrial environment. Slow release of contaminants into *any* surrounding environment is not desirable, so a MUDS facility would be designed and built to prevent this from happening.

To evaluate the long-term performance of any MUDS facility, monitoring plans will be developed that include detection of slow releases of contaminants. Contingency management plans developed simultaneously will describe procedures designed to prevent slow releases from occurring, and the appropriate corrective actions if they do. It is clear that any slow release that is found to occur must be in compliance with federal, state and Tribal regulations and rules.

None of the conceptual designs for a MUDS facility (Sections 2.2, 2.3 and 2.4) precludes contaminated dredged material from being removed for future decontamination and/or reuse.

Regarding the MUDS estimate of need, the Final PEIS identifies numerous factors that may alter the estimated volume of contaminated dredged material needing treatment or confined disposal (see Section 1.5.1). For example, completion of individual cleanup actions may decrease the projected need for confined disposal. Discovery of new areas needing habitat restoration or remediation may cause the estimates to rise. The "adoption of stricter water quality and/or sediment criteria (e.g., human health criteria) could increase the volume of material requiring confinement".

The volume of contaminated dredged material projected to be dredged and confined as part of future sediment cleanup activities has been revised to reflect current information (Table 1-1). If the Nooksack Tribe knows of contaminated sediment not listed in Table 1-1, please contact the MUDS Feasibility Study Team. Also refer to Thematic Comment Response #1.

3 Use of an individual aquatic MUDS facility site, as conceived, will probably not result in greatly increased vessel traffic (see Sections 4.3.3 and 4.4.6). Nevertheless, we are sensitive to this concern and assure the Tribe that any siting process and site-specific EIS

will fully consider vessel traffic in evaluating the impacts of the alternatives. If the effort to site a MUDS facility is successful and results in a CAD or nearshore CDF, then appropriate mitigation measures would be implemented. These might include guidelines for operating the facility that clearly describe how to minimize the effect of any increase in vessel traffic on Tribal fishing activities.

4 An extensive body of scientific literature provides evidence that the time required for benthic communities to fully recover from burial and/or the effects of exposure to sediment contamination varies considerably. Many factors influence this length of time. The expected time required for benthic communities in Puget Sound to recover from placement of clean cap material over contaminated sediment is approximately 3 years. Please refer to Section 4.4.3.

Ideally, adequate source control measures should be in place before proceeding with extensive contaminated sediment remediation. However, in many cases it may be preferable to reduce the existing ecological risks by removal and confinement of contaminated sediment, recognizing that some exposure to contaminants will continue to occur until sources are better controlled. These "interim" cleanup actions may be environmentally beneficial, even if some contaminant discharges remain.

Prior or simultaneous source control is particularly important for any MUDS built in the subtidal or intertidal zone (LBC or CAD designs).

PACIFIC INTERNATIONAL TERMINALS

April 9, 1999

Dr. Stephen Martin
U.S. Army Corps of Engineers
P.O. Box 3755
Seattle, Washington 98124-3631

Re: Puget Sound Confined Disposal Site Study Programmatic Environmental Impact Statement

Dear Dr. Martin:

Thank you for the opportunity to comment on this Puget Sound Confined Disposal Site Programmatic Environmental Impact Statement (PEIS).

Our company, Pacific International Terminals (PIT) is currently in the final permit review process for a major, deep-water international shipping terminal at Cherry Point in Whatcom County, Washington.

1 The specific terminal project encompasses approximately 200 acres of a 1,100 acre site which is being acquired by our company. We have been exploring other upland uses of the non-terminal industrially zoned property. In our review, we found that the property had been identified by the Whatcom County Health Department as a site with superior geographic attributes as a landfill site. That set of physical attributes, coupled with our proposed terminal activities raised the possibility that the non-terminal industrially zoned property could be a good disposal and remediation site for contaminated dredge spoils from the Puget Sound region.

2 We have undertaken a preliminary engineering review of the site for both upland disposal and remediation of contaminated dredge spoils. In comparing our data and information from our studies with the PEIS, we find from our research that remediation is more cost-competitive than is indicated in the PEIS. For example, through our affiliate PhytoWorks, Inc., of Gladwyne, Pennsylvania, we have found that sediment processing, including de-watering, soil washing and phyto-remediation represents a viable treatment approach with costs in the $40 to $50 per cubic yard range.

1801 Roeder Avenue, Suite 156, Bellingham, Washington 98225 Telephone: 206/734-0680 or 604/946-4491 Facsimile 206/734-6963

PACIFIC INTERNATIONAL TERMINALS

Dr. Stephen Martin
April 9, 1999
Page 2

3 We have undertaken a preliminary engineering review of the site for both upland disposal and remediation of contaminated dredge spoils. In comparing our data and information from our studies with the PEIS, we find from our research that remediation is more cost-competitive than is indicated in the PEIS. For example, through our affiliate PhytoWorks, Inc., of Gladwyne, Pennsylvania, we have found that sediment processing, including de-watering, soil washing and phyto-remediation represents a viable treatment approach with costs in the $40 to $50 per cubic yard range.

4 It should also be noted that phyto-remediation is not limited to treating organic contamination. PhytoWorks has successfully treated mercury-contaminated soils through the use of genetically altered plants and are aggressively pursuing a full range of contaminants.

5 Unfortunately we have not had the PEIS long enough for a thorough review allowing for a detailed response based on the work we have undertaken. However, we wanted to advise you of our efforts to date and respectfully request that we be placed on any mailing list concerning this project.

Sincerely,

Wayne Schwandt
Project Manager

Responses to Pacific International Terminals Comment Letter

1 Although the PIT property described is not close to the major sources of contaminated sediment (central Puget Sound), the PIT property may nevertheless represent a future candidate site.

2 The MUDS Feasibility Study Team gathered additional information on sediment decontamination and treatment technologies (see Thematic Comment Response #4). Some information on the phytoremediation treatment scheme described has been incorporated into the Final EIS (see Appendix F).

3 The Feasibility Study Team is aware that some plants preferentially take up trace metals, thereby reducing their concentrations in the source material. However, we have yet to see evidence that this is feasible on a commercial "MUDS" scale - 50,000 to 200,000 cubic yards of sediment decontaminated per year.

4 Pacific International Terminals has been placed on the mailing list developed for the MUDS Feasibility Study.

Pierce County
Public Works and Utilities

JOHN O. TRENT, P.E.
Director

Environmental Services
Gravelly Lake Plaza
9116 Gravelly Lake Drive S.W.
Tacoma, Washington 98499-3190
(253) 798-4050 • FAX (253) 798-4637
pcutilities@co.pierce.wa.us

April 5, 1999

Dr. Stephen Martin
U.S. Army Corps of Engineers
PO Box 3755
Seattle, Washington 98124-3755

Dear Dr. Martin:

The following comments are about the Draft Programmatic Environmental Impact Statement on the **Puget Sound Confined Disposal Site Study**.

1 **Treatment of Dredged Material (Section 2.8)** - The discussion about potential treatment alternatives should be expanded to evaluate the potential for using existing private treatment facilities in the region to remove contaminants or reduce contaminant concentrations of some of the dredged material. This section indicates that costs for most treatment processes are much greater than for disposal costs, but do the costs summarized in Table 2-10 include both the cost to site a new facility as well as to process? What would be the cost for using existing regional private facilities?

2 Western Washington and Oregon have a number of such private facilities that use bio-remediation and thermal desorption processes, which are briefly discussed as alternatives in this DPEIS. This section should evaluate the capacity available in the region and, for comparison purposes with Table 2-10 and with other alternatives, should include a table which illustrates a $/cy range for using one or more of these existing facilities for some portion of the dredged material. Certainly, it must be possible from past dredging history to estimate what proportion of the waste might be treatable, particularly since this document indicates that "most of the contaminated sediments in Puget Sound do appear near the low end of the possible contaminant range" (Section 1). (Attached is a list of permitted facilities in Pierce County.).

3 This Draft PEIS lists "Combination of Alternatives" as an alternative but states it hasn't been evaluated because the combination would "not be identified until completion of the PEIS and initiation of the site-specific site selection process." Wouldn't it be important in sizing a disposal facility of any kind to know if some of the dredged materials could be treated at existing facilities at less then the costs listed in Table 2-10 which date from five year-old studies? And less than the cost of disposal? In the waste management field, there has been substantial growth in this industry during the last few years. The document acknowledges that agencies on the East Coast are moving in this direction.

4 It would seem important to the "Combination Alternative" to provide a more detailed discussion of the "bench and pilot-scale tests" as well as the "full-scale projects" that have been completed elsewhere rather than dismissing the treatment alternatives as too costly. This is

Administrative Services | Sewer Utility | Solid Waste | Water Programs

Page 2

particularly true since this document acknowledges that it may be possible to treat some of the contaminated soils to the point that disposal is not an issue and the material could be used for other beneficial uses. Providing a more complete evaluation of existing treatment alternatives and costs would give more credence to this section as an alternative.

5 **Upland Confined Disposal Facility Alternative** - There is an internal inconsistency within this document as to which set of landfill rules apply to the design and siting of this landfill facility. Is it to be built to WAC 173-304 or WAC 173-351 standards and procedures? Section 2.4.4.2, page 2-57, states that this disposal alternative "must meet the basic construction requirements for municipal landfills" and refers to Section 2.5.4.2. However, section 2.5.4.2 summarizes WAC 173-304 Minimum Functional Standards which apply to other wastes and problem landfills, not municipal landfills. This inconsistency occurs in a number of places within the document.

6 Section 4.6.4 states that local comprehensive and other plans and zoning regulations do not specifically address contaminated sediment disposal facilities. Dredge spoils are discussed in the 1989 and 1992 versions of the *Tacoma-Pierce County Solid Waste Management Plan.* In the Pierce County Development Regulations, problem waste landfills are identified as Special Waste Landfills (P.C.Code, Chapter 18A) which are permitted in specific zones as a Level 5 under the category of Waste Disposal Facilities. They require a public hearing process. Such a public hearing process would require compliance with the goals and policies of the Solid Waste Management Plan.

7 **Solid Waste Landfill Alternative** - In section 4.7.5, the Draft PEIS acknowledges that the addition of contaminated sediments to existing municipal solid waste landfills "may possibly hasten the closure of existing landfills by using up capacity...." The criteria for evaluating this alternative should include the impact on a particular facility and the impact upon local jurisdictions using the facility who have been required to plan for 20-year capacity in their solid waste management plans.

If you have any questions, please call me.

Sincerely,

Sally Sharrard, Senior Planner, Solid Waste Division
Public Works & Utilities

cc: Tony Tipton, Interim Manager

s01608.sis

PIERCE COUNTY DEPARTMENT OF PUBLIC WORKS AND UTILITIES
Gravelly Lake Office
9116 Gravelly Lake Drive SW
Tacoma, WA 98499-3190

FAX TRANSMISSION SHEET

TO: Name Stephen Martin

Dept/Co. _____ Rm # _____

FAX _____

PHONE _____

NUMBER OF PAGES TO FOLLOW: 5

TODAY'S DATE: May 5, 1999

FORWARD TO (If different from above):

SPECIAL INSTRUCTIONS: Steve's — he'll make sure the right person sees it. Address is: PCSolidWaste@co.pierce.wa.us.

FROM: Sally Shepard

IF ANY QUESTIONS, PLEASE CALL:
Administrative Services Division
Sewer Utility Division
Solid Waste Division
at
Telephone Number: (253) 798-4050
To Reply By Fax: (253) 798-4637

( ) PLEASE VERIFY RECEIPT (only when checked)

SIGNATURE _____ DATE _____

wpforms\faxsht97.adm

05/05/99 WED 12:49 FAX 2537984637 PW/U GRAVELLY LK 002

Page 3

Demolition, Woodwaste, & Metal Recycling, Recovery I, Inc., Attn: Terry Gillis, General Manager, 1630 East 18th Street, Tacoma, WA 98421. Location: 1630 East 18th Street, Tacoma Type: Recyclable Materials - Woodwaste, steel, and metal. Who delivers solid waste to facility: General contractors and residents of Pierce County. 7 a.m. - 5 p.m. Monday - Friday and 8 a.m. - 4 p.m. Saturday.

Inert/Demolition Waste Recycling, Woodworth & Company - Lakeview Recycling Center, Inc., Attn: Dave Lewis, 1200 East "D" Street, Tacoma, WA 98421. Location: Interchange of SR-512 and Northeast corner of I-5; 2800 - 104th Street S., Tacoma. Type: Inert demolition wastes, primarily concrete and asphalt concrete from demolition of concrete structures and paving. Recyclable materials: Cement concrete, asphalt paving, masonry bricks, sand blast grit, foundry sand, cedar roofing shingles, selected non-asbestos asphalt roofing. Who delivers solid waste to facility: Demolition and paving contractors deliver by truck, Monday through Friday between 7:30 a.m. and 4 p.m.

Inert Waste Recycling, R.W. Rhine, Inc., Attn: R.W. Rhine, 1124 112th St. East, Tacoma, WA 98445. Location: Southeast corner of the Port of Tacoma just North of the Hylebos Creek. Type: Construction concrete and asphalt, brick, and masonry. Recyclable materials: Sand, gravel and inert recycling wastes (such as concrete and asphalt). Who delivers solid waste to facility: Approved trucks during normal operating hours.

Inert Waste & Land Clearing Debris Recycling, Randles Sand & Gravel, 19209 Canyon Road East, Puyallup WA 98373. Location: Same Type: Concrete, asphalt, and landclearing debris. Who delivers waste to this facility: general public, contractors, and Randles Sand & Gravel personnel.

Inert Waste Recycling, Tucci & Sons, 4224 Waller Road, Tacoma, WA 98443-1623. Location: 11102 Steele Street, Lakewood, WA. Type: Concrete and asphalt. Who delivers waste to this facility: Tucci & Sons.

Organics Transfer Station, Land Recovery Organic Recycling Center, P.O. Box 73057, Puyallup, WA 98373. Location: 10308 Sales Road, Lakewood Type: Residential and commercial yard waste, landclearing debris, urban woodwaste. Recyclable materials - residential and commercial; cans, plastic, cardboard, glass, newspaper. Who delivers solid waste to facility: Organic waste generators and their contractors via pickups, cars, packers, and semi trucks. 7 a.m. - 5 p.m., 7 days a week.

Petroleum Contaminated Soils Recycling, Fife Sand & Gravel, Attn: Mike Kelly, 3120 Freeman Road East, Puyallup, WA 98371-1838. Location: 3120 Freeman Road East, Puyallup. Type: Solid Waste: Petroleum contaminated soils from tank removals and spill sites. Recyclable materials: Petroleum contaminated soils and wood mulch. Who delivers solid waste to facility: Deliveries are made by dump trucks, privately or publicly owned, 7:30 a.m. - 4 p.m., Monday through Friday (other arrangements can be made).

need to add Tucci & Sons

Pierce County Petroleum Contaminated Soils Recycling Facilities

Facility	Treatment Process	Quantity Processed	Treated Soil Use
Fife Sand and Gravel 3120 Freeman Road East Puyallup	Bio-remediation		• Topsoil
TPST Soil Recyclers of Washington 2800 104th St. Court South (Sales Road Area) Lakewood	Thermal Desorption	68,584 tons[1] (1996)	• Topsoil and Fill • Gravel Base
Fort Lewis (Treats only soils from military property)	Bio-remediation, Aeration	30 tons (1996)	• Landfill cover material and landfilled
RPW Industries Corp. of Kirkland, WA Proposed Buckley facility (it has obtained a land use permit but is not yet built)	Bio-remediation	When built, the facility will treat 50-60,000 tons annually. An application for a solid waste permit has not been submitted to the Health Dept. The facility has an approved land use permit.	• Topsoil and Fill

[1] Only 16,608 tons of total came from Pierce County

temperature incineration chamber where they are oxidized. This method is particularly effective in reducing diesel contaminants. Another treatment process involves aeration of the contaminated soil. This process is accomplished over a period of time sufficient to volatize the hydrocarbons contained in the soil and release them to the atmosphere. Tilling of the material is necessary to maintain the oxygen levels required for contaminant destruction. This process only works well for small quantities of contaminated soil because it is dependent on large storage and aeration areas.

A third treatment process is bio-remediation, which involves the addition of bacterial agents to the soil to enhance contaminant destruction rates. It also works much faster than aeration. This can be accomplished through the addition of sludge, fertilizer and wood mulch, or other organic matter, nitrogen, phosphorous, microorganisms, and water.

Fife Sand and Gravel operates a bio-remediaton facility. The reclaimed soil accounts for one quarter of the material that goes into their topsoil mix. Another bio-remediation facility near Buckley is under development by RPW Industries, Corp.

Thermal hydrocarbon destruction is a relatively new process which produces asphalt or gravel base materials. The contaminated soil is fed into a rotating ceramic cylinder inserted between the burner and dryer of a hot-mix asphalt plant. The soil is brought to a minimum temperature of 500°F to completely remove the hydrocarbons which volatize and burn. The treated soil is dropped into the dryer and mixed with virgin aggregate to cool the material down to the normal 300°F to 350°F range. The mixed material can then be made into asphalt or stockpiled for use as gravel base.

9-8

Mobile units utilizing the thermal hydrocarbon destruction process for treatment of contaminated soils are commonly available.

Petroleum contaminated soils can also be disposed at municipal solid waste landfills. Using petroleum contaminated soils for daily cover material is an efficient allocation of valuable landfill space. A portion of the petroleum contaminated soils generated within the Tacoma City limits is used as a daily cover material at the City of Tacoma Landfill.

Currently, Pierce County has substantial capacity for handling contaminated soils with existing facilities.

Arsenic contaminated soils: Arsenic contaminated soils resulted from past operation of the ASARCO Plant located in both Tacoma and Ruston. Remediation has been divided into three areas (or phases): the Upland-Tacoma Area, the Smelter Site, and the Off-Shore area. Remediation is not anticipated to be complete until after the turn of the century.

Remediation is currently underway in the Upland-Tacoma Area, which consists of residential and light commercial properties surrounding the smelter plant. Properties located within this area are sampled for arsenic contamination to determine if remediation is required. Properties may experience only partial remediation based on sampling results (arsenic concentrations). The contaminated soils are excavated, replaced with "clean" soil, stockpiled at the smelter site, and covered with plastic to prevent leachate generation. The arsenic contaminated soils will be disposed at either an on-site containment facility designed to meet RCRA Subtitle C requirements, an on-site location using another approval method of disposal, or the Roosevelt Regional Landfill in Klickitat County, Washington.

Remediation design for the smelter site has not begun and is scheduled to take more than two years. Site remediation will involve building demolition, capping the entire site, shoreline armoring to prevent slag erosion into Commencement Bay, replacement of the on-site surface water control system, and construction of an on-site containment facility.

Studies are currently being completed for the Off-Shore Area. Alternatives for remediation include capping, dredging, and natural recovery, or a combination of all three. Cleanup of this area cannot begin until remediation of the smelter site has been completed in order to avoid further contamination of off-shore areas from the smelter site cleanup.

Dredge spoils: In 1989, the Puget Sound Dredge Disposal Analysis designated open-water, unconfined disposal sites for clean dredge spoil sediments, two of which are located in Pierce County. These sites, although in use, do not allow for disposal of contaminated dredge spoils.

Contaminated dredge spoils, classified as a problem waste by WAC 173-304, Minimum Functional Standards for Solid Waste Handling, result from the dredging of surface waters where contaminants are present at concentrations not suitable for open-water disposal. Contaminated spoils must be disposed of at confined sites, which contain the dredged material so that migration of contaminants and adverse effects to the environment and human health are minimized.

A six-agency team is currently developing an action plan for multi-user contaminated dredge spoil disposal sites from dredging navigation channels, waterfront development projects, environmental cleanup, and aquatic habitat restoration projects. The United States Army Corps of Engineers, the Washington State Department of Ecology,

Responses to Pierce County Comment Letter

1 The Final PEIS includes extensive additional information on contaminated sediment treatment technologies. For this and the following comments on sediment treatment, please refer to Thematic Comment Response #4.

The MUDS Feasibility Study Team has updated the estimated treatment costs and this information is presented in Section 2.7 of the Final PEIS. These reflect both the costs of facility construction and operation. In general, the "process" costs reported must recover most other facility costs, with amortization over some set time period. The costs do not include those associated with actual dredging and transportation.

2 The MUDS Feasibility Study Team contacted the list of Pierce County facilities provided as an attachment to your comment letter and none can or have successfully treated large commercial quantities of contaminated sediment from Puget Sound. The Team is aware that some limited quantities of contaminated sediment have been managed at local asphalt and/or concrete manufacturing facilities. TPST Soil Recyclers of Washington is reported to have thermally treated 68,384 tons of contaminated soil during 1996. It is not known whether or not contaminated sediment would be amenable to the company's thermal desorption process, especially if the sediment contained high levels of trace metals. It is also noted that the reported throughput at this facility does not approach the 50,000 to 200,000 cubic yards per year capacity envisioned by the MUDS Feasibility Study Team.

3 If large volumes of contaminated Puget Sound sediment can be legitimately treated within the region at less than the cost of existing disposal alternatives or the projected range of costs for a MUDS facility, then it should be factored into the sizing of the latter. But if this is true, then why is it not occurring? The MUDS Feasibility Study Team will continue to gather information on treatment technologies and costs, with the goal of making it a reality in the Puget Sound region.

4 The final MUDS PEIS has been revised to include more information on the development and economics of treatment technologies at bench, pilot, and commercial scale.

5 Sediment is regulated by the State as a solid waste, but within that designation it is considered a special waste and subject to WAC 173-304, Minimum Functional Standards. The Final PEIS has been revised throughout to clarify the references to the applicable regulations.

6 Comment noted.

7 There are a number of solid waste landfills in the region that might accept dewatered, contaminated sediment. For this reason, the analysis of using existing landfills and the potential impacts on their individual capacities and local solid waste plans is more appropriately conducted during preparation of any site-specific EIS.

Public Comment Sheet
Puget Sound Confined Disposal Study
MUDS PEIS

Please print your name, address and zip code clearly. Your phone number is optional.

Name: Kenneth Sweeney

Address: PO Box 1350

Port Angeles, WA 98362

Phone: _____

My comments pertain to:

- ☒ Project need/purpose
- ☐ CAD/LBC Alternative
- ☐ Nearshore CDF Alternative
- ☐ Upland CDF or Solid Waste Alternative
- ☐ No Action Alternative
- ☐ Affected Environment
- ☐ Cost/Contingency Management
- ☐ Other _____

Comments:

See attachment

Comments must be mailed by April 12, 1999 to:
Seattle District, U.S. Army Corps of Engineers
ATTN: Environmental Resources Section
PO Box 3755
Seattle, WA 998124-3755

Comments re:
Puget Sound Confined Disposal Study
MUDS PEIS

In reviewing Part 1 of the PEIS, which addresses need for the MUDS facility, I noted that the emphasis is on disposing of sediments with chemical contamination. Table 1-3 on page 1-15 identifies the locations of those chemically contaminated sediments. All locations are in inner Puget Sound.

1 There appears to be a new development at the Washington State Dept. of Ecology that could substantially expand the volume of material needing disposal at a MUDS site. This development also could significantly expand the geographic area needing disposal of contaminated sediments.

In a report dated February 5, 1999, with the title of *Port Angeles Harbor Wood Waste Study,* DOE identified woody debris as a material contaminating sediments in the Port Angeles harbor. A consultant hired by the DOE surveyed and mapped the extent of wood waste on the harbor bottom and assessed the biological impact due to its accumulation. The consultant concluded the following:

- Wood waste covers approximately 25 percent, or 500 acres, of the bottom of the Port Angeles harbor;
- Accumulation of fine wood waste (pulp) has contributed to apparent high sediment oxygen demand (SOD) conditions in the western harbor, the public log dump, and the booming grounds.
- Degraded benthic habitat (OSI less than zero) was observed in near shore areas of the western harbor. Such habitat is of little value to fish.

In the public meeting held on March 3, 1999, the DOE study director stated that conditions in the harbor are bad enough that cleanup is required.

PSDDA requires that there be less than 50 percent organic material for disposal at deepwater sites. A cleanup of the woody debris on 500 acres in the Port Angeles harbor is unlikely to meet this requirement. Therefore disposal options will include the same alternatives discussed in the Puget Sound Confined Disposal Site Study: confined aquatic, nearshore or upland disposal sites, or solid waste landfills.

2 In conclusion, if the Dept. of Ecology is embarking on a program to require cleanup of woody debris in all areas of Puget Sound where there is significant accumulation, the geographic distribution of cleanup areas will expand beyond the areas identified in the programmatic EIS. All aquatic areas where log booming, log loading, sawmilling, etc. have occurred may require cleanup. Locations such as Grays Harbor, Shelton, Port Gamble, Port Ludlow, Port Townsend, locations in Hood Canal, Port Blakely, and Seabeck for example

could be included. Along with the geographic expansion, the volume of material for which disposal is required would also grow significantly. These points should be considered and discussed in the programmatic EIS.

Responses to Port of Port Angeles Comment Letter

1 The Port makes a good comment about areas in Puget Sound that need remediation due to the effects of woody debris on the benthic community. Adverse effects from sediments having a high content of wood waste are just becoming better recognized and understood. The MUDS Feasibility Study Team agrees that this type of sediment may be more frequently implicated in future cleanup actions and therefore may increase the overall estimate of need reported in Table 1-1.

Because woody debris typically has substantially different characteristics from other contaminated sediment, it will likely have different requirements when dredged and placed in a confined disposal facility. A MUDS facility could be designed specifically to confine woody debris or, alternatively, it could be designed such that only a portion of the facility could receive woody debris.

Any site-specific EIS that may be prepared following this programmatic PEIS will potentially include woody debris in the estimation of need within the geographic area of interest (GAI). The EIS would have to consider this unique need in the site selection process, the final MUDS facility design, and the description of potential environmental impacts.

2 Comments noted. Also, to the extent it can, the estimate of need presented in Section 1.5 of the Final MUDS PEIS considers all areas in Puget Sound where log booming, loading and other logging activities have occurred to be potential sources of sediment for a MUDS facility.

FISHERIES DEPARTMENT
Area Code (360)
598-3311
Fax 598-4666

THE SUQUAMISH TRIBE
P.O. Box 498 Suquamish, Washington 98392

February 4, 1999

Dr. Stephen Martin
U.S. Army Corps of Engineers
P.O. Box 3755
Seattle, WA 98134-3755

Re: Draft Programmatic Environmental Impact Statement, Puget Sound Confined Disposal Site Study

Dear Dr. Martin:

1 The Suquamish Tribe's treaty defined "Usual and Accustomed Hunting and Fishing Area" (U&A) extends through Puget Sound from the northern end of Vashon Island to the Canadian border (see enclosure a). Within the U&A area, the Tribe holds treaty rights to natural resources which could be jeopardized by this proposal. Protection of treaty reserved resources is a right upheld by numerous legal precedent. The Tribe strongly supports removal of contaminated marine sediments. However, the Tribe does not support disposal of these materials within the waters or nearshore areas of Puget Sound.

2 The Tribe supports upland disposal of contaminated sediments. The upland option is the only method currently being considered that would minimize adverse impacts to treaty-reserved resources. The cumulative impact of shoreline development has resulted in a significant loss of nearshore habitat in Puget Sound. Further fill and subsequent development of the aquatic or nearshore disposal methods will continue to erode the quantity and quality of this habitat to the detriment of natural resources.

3 The Tribe understands that a site-specific EIS may be pursued in the region that might benefit most from such an effort. The current Puget Sound Confined Disposal Site Study Siting Partnership does not currently include any Tribal representation. To ensure that proposals adequately address issues of the Suquamish Tribe will require tribal involvement in the partnership process.

The Tribe also submits specific comments on the draft document in enclosure (b). Please direct any questions to Chris Stevenson or myself at (360) 598-3311.

Sincerely,

Phyllis Meyers, Environmental Program Director
Fisheries Department

THE SUQUAMISH TRIBE

ADDITIONAL COMMENTS
on
Draft Programmatic Environmental Impact Statement
Puget Sound Confined Disposal Site Study

4 What is the history of Confined Aquatic Disposal projects in Puget Sound? Page S-6 states that 2 successful CAD projects have been completed in Puget Sound. How many years have they been in operation? What issues have arisen from these projects? Are there documented impacts?

5 Monitoring and maintenance of disposal sites must be in perpetuity, unless contamination is eventually removed from the contained sediments.

6 The Port Madison Indian Reservation Boundary is incorrect in figure 3-11. Please use the enclosed map to correct the boundaries.

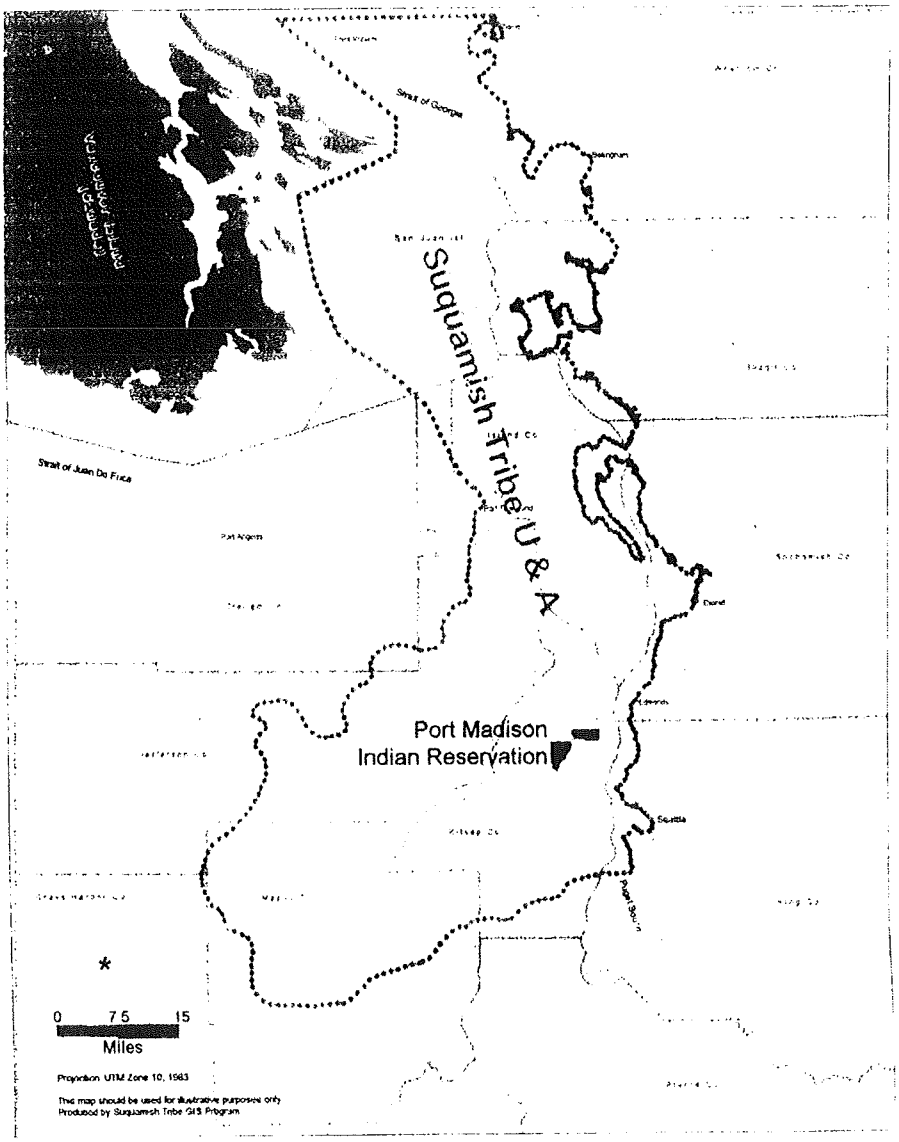
7 The Utilities section doesn't discuss underwater fiberoptic lines (page 3-28). The Suquamish Tribe has reviewed several public notices regarding installation of underwater fiberoptic lines throughout Puget Sound.

8 How will areas be screened for high probability of archaeological resources? Page 4-24 and others state that all archaeological or cultural sites would be excluded from possible site selection. The site selection process appears to only consider existing resource information currently in GIS format, and does not include gathering of site-specific information. There may be significant natural or cultural resources that have not been identified previously.

9 Shellfish areas currently closed to shellfish harvest should also be excluded from siting consideration. Page 4-40, section 4.5.9.2 states: "Also, during the siting process, only nearshore areas with relatively low habitat value or areas already contaminated or disturbed would be considered (i.e. critical habitats would be excluded . . .)." According to the 1997 Annual Inventory of Commercial & Recreational Shellfish Areas in Puget Sound, the first goal of the Washington Department of Health Shellfish Office restoration program is "to upgrade the classification of commercial and recreational shellfish beds which have been closed or reclassified due to contaminated growing waters." It is critical to protect these areas from further contamination.

10 Areas shown as "undeveloped shoreline" in Kitsap County on maps A-3 and A-4 include significant amounts of residential development. These areas are not "undeveloped."

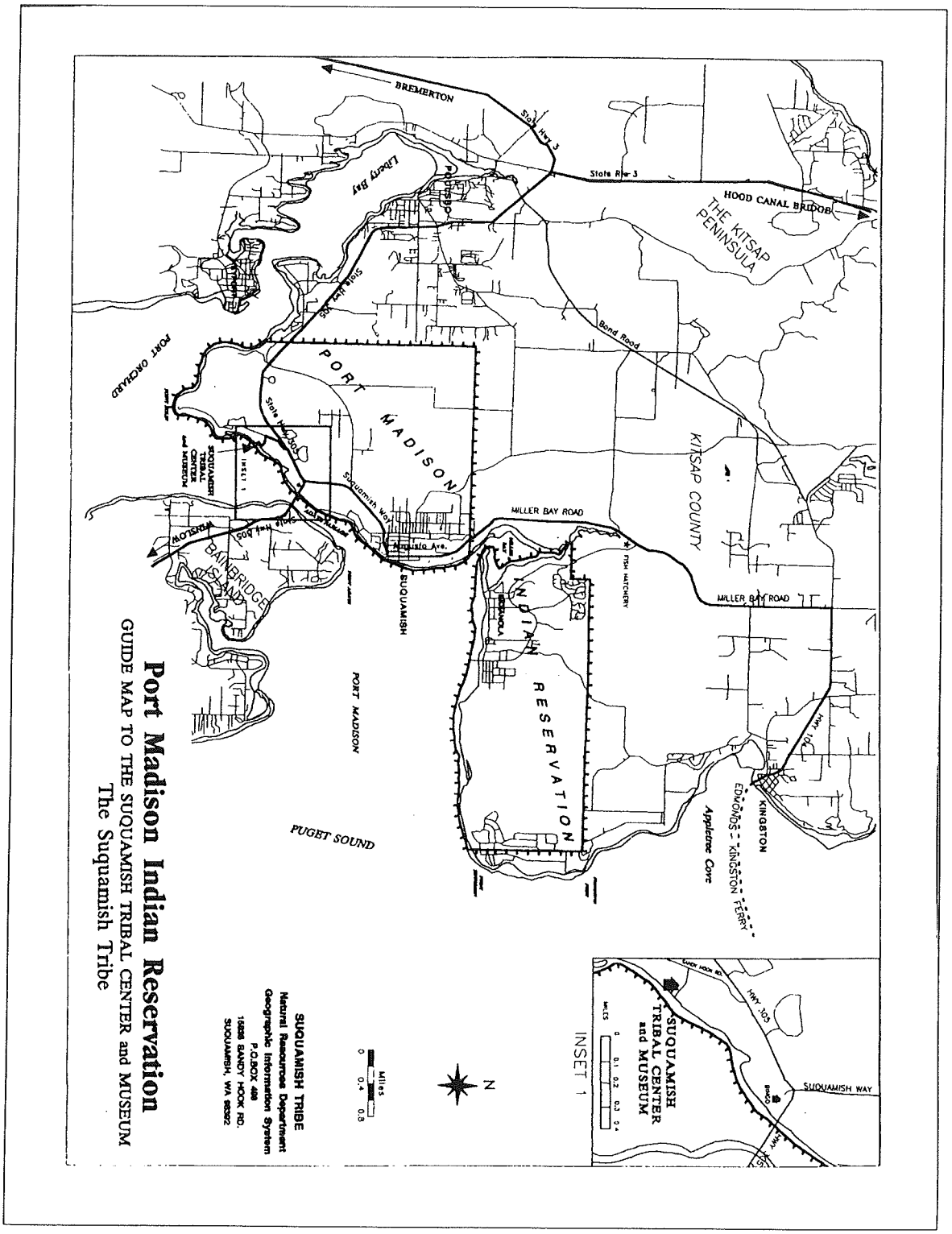
3



Suquamish Tribe U & A

"The usual and accustomed fishing places of the Suquamish Tribe include the marine waters of the Puget Sound from the northern tip of Vashon island to the Fraser River including Haro and Rosario Straits, the streams draining into the western side of this portion of Puget Sound and also Hood Canal."

UNITED STATES v. WASHINGTON, No. 9 Order April 18, 1975


BREMERTON
State Rte 3
HOOD CANAL BRIDGE
THE KITSAP PENINSULA
Liberty Bay
POULSBO
Bond Road
PORT ORCHARD
PORT MADISON
KITSAP COUNTY
SUQUAMISH TRIBAL CENTER and MUSEUM
MILLER BAY ROAD
Suquamish Way
BAINBRIDGE ISLAND
SUQUAMISH
INDIAN RESERVATION
PORT MADISON
PUGET SOUND
KINGSTON
Appletree Cove
EDMONDS - KINGSTON FERRY
Port Madison Indian Reservation
GUIDE MAP TO THE SUQUAMISH TRIBAL CENTER and MUSEUM
The Suquamish Tribe
SUQUAMISH TRIBE
Natural Resources Department
Geographic Information System
P.O.BOX 498
15838 BANDY HOOK RD.
SUQUAMISH, WA 98392
INSET 1
Miles
N

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
HABITAT PROGRAM/OLYMPIA FIELD OFFICE
510 Desmond Drive SE/Suite 103
LACEY, WASHINGTON 98503

April 1, 1999

Dr. Stephen Martin
U.S. Army Corps of Engineers
P.O. Box 3755
Seattle, Washington 98134-3755

RE: Puget Sound Confined Disposal Site Study Draft Programmatic Environmental Impact Statement

Dear Dr. Martin:

1 Thank you for the opportunity to review the Draft Programmatic Environmental Impact Statement (DPEIS) for the Puget Sound Confined Disposal Site Study (MUDS). This document is intended to facilitate development of any forthcoming site-specific disposal EIS through incorporation of relevant points. On balance, this document will serve that purpose well. However, there are a few general comments and a number of specific comments that need to be addressed prior to development of the final EIS.

2 As you know, the chinook salmon (*Oncorhynchus tshawytscha*) was listed in the Federal Register as threatened in Puget Sound under the Endangered Species Act (ESA) on March 24, 1999 (40 CFR Parts 223 and 224), effective on May 24, 1999, and chum salmon (*O. keta*) was also listed as threatened in Hood Canal on the same date. While the designation of critical habitat for chinook and chum salmon was proposed in the Federal Register on March 9, 1998, the recent notice did not include such designation. This was due to the fact that the National Marine Fisheries Service (NMFS), which is responsible to protect and enhance marine, estuarine and anadromous fish resources and their habitats, needs additional time to complete necessary biological assessments and evaluate special management considerations affecting critical habitat. NMFS has extended the deadline for designating critical habitat for 1 year.

3 Despite this delay in designation of critical habitat, NMFS appreciates the fact that this DPEIS proposes to exclude the siting of three alternatives, level bottom capping/confined aquatic disposal (LBC/CAD), nearshore confined disposal (CDF) and upland disposal from threatened and endangered species habitat during Tier 2 of the siting process. This exclusion stated as such, however, could preclude siting within the entire Puget Sound based on the proposed critical habitat designation language. The March 9, 1998 Federal Register notice defined critical habitat as "(i) the specific areas within the geographic area occupied by the species on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management consideration or protection; and (ii) specific areas outside the geographic area occupied by the species...". Critical habitat in Puget Sound included most of the major rivers and estuaries, as well as smaller rivers and streams. Based on the varied life cycle needs of the chinook salmon, specific activities such as dredging and filling have been identified as potentially requiring special management consideration. In order to avoid preclusion of siting

2

of a MUDS in Puget Sound, yet avoiding, minimizing, or mitigating for the loss of critical salmonid habitat, we recommend close coordination between NMFS and the lead agencies for this DPEIS both during the finalization of this document, as well as during the development of a site-specific MUDS. This concept should be addressed globally throughout the document.

4 Our last general comment pertains to the issue of mixing of sediments from multiple dredging sites in a MUDS. During an Army Corps of Engineers (COE) sponsored training, in 1995, on Dredged Material Assessment and Management, Mike Palermo stated that both the physical and chemical nature of the sediments to be disposed of needed to be considered in the design of a disposal facility. He stressed that the design of the disposal facility was based, in part, on those two characteristics, and that the size of the facility could be significantly altered as a result. This DPEIS did not adequately address this issue as an element that should be considered when speculating about the design and engineering of all in-water disposal facilities. While this DPEIS identified two general volumes for disposal in order to simplify the technical discussion, acknowledgment should be given to the fact that certain types of grain sizes and contaminants in dredged material will potentially warrant larger facilities than that identified.

Specific Comments

5 1. P. 2-24, Monitoring, first paragraph. Pre-construction monitoring both on-site and off-site of the CAD site should occur in order to determine whether bioaccumulative chemicals exist in the sediments and whether those chemicals have, in fact, bioaccumulated into higher trophic species, such as fish. Monitoring during construction should also occur on-site and off-site to determine whether bioaccumulation above the pre-disposal condition is occurring. Contingencies should be developed to mitigate an increase in levels of such chemicals in the higher trophic species.

6 2. P. 2-37, Transport and Placement, second paragraph. A contingency plan should be developed for the CDF site to monitor and potentially mitigate for the overflow of excess water associated with the dredged material.

7 3. P. 2-42, Nearshore CDF Cost Estimates, second bullet. Are the assumptions underlying these cost estimates based on a habitat "no net loss" policy? Given the recent listing of chinook salmon in Puget Sound and the forthcoming designation of critical habitat, ESA may warrant consideration of the provision of a net gain in critical habitat.

8 4. P. 2-44, last four bullets. Two other factors that may make the CDF project costs greater than the conceptual design estimates include grain size distribution as discussed in the general comments, and ESA mitigation considerations.

3

9 5. P. 2-47, Dewatering Facility. Unless dewatering only occurs with the 3 dry months of the year, we wonder whether such a facility could be truly operational. If dewatering operates year round, there is a need to include contingencies for overflow with monitoring of water and sediment quality parameters at the point of discharge and within a zone of potential impact. If impact occurs, mitigation of ESA critical habitat would need to be addressed.

There is no discussion of the locations of where dewatering facilities could be constructed and what the impacts from those facilities could be.

10 6. P. 2-50, Dewatering and Long-term management, last paragraph. More discussion is needed about the fact that dewatering creates an aerobic environment which may increase the mobilization of organic and metal contaminants. Please provide a discussion about how to mitigate for metals mobilization. Are there treatment processes that could diminish this potential?

11 7. P. 2-51, Treatment of Discharges to Surface Water, second paragraph. What is the general thinking about treatment processes that remove multiple metal species?

12 8. P. 2-61, Water Treatment and Management, first paragraph. This section should speak to the proper disposal of all solids settled from this process to avoid reintroduction of contamination into the environment.

13 9. P. 2-69, first paragraph. The same comment as #8 above applies.

14 10. P. 3-5, Surface Water Quality. Please incorporate the findings from the Clean Water Act 303(d) listing of impaired waterbodies into this discussion to provide more specificity.

15 11. P. 3-18, fourth full paragraph. Please correct and update this paragraph. Chum and chinook salmon were proposed as threatened in the March 9, 1998 Federal Register notice. At the same time, coho salmon (*O. kisutch*) was identified as a candidate for listing in Puget Sound. On March 24, 1999, Puget Sound chinook and chum salmon were listed as threatened under the ESA, to become effective on May 24, 1999. Coho salmon remains a candidate for listing. Although candidate species are not afforded protection under the ESA, it would be prudent to incorporate project design features that avoid or minimize impacts to this anadromous fish resources should it become listed at a later date.

In addition, NMFS has jurisdiction over threatened and endangered marine mammals and sea turtles. At this time the following species have ESA protection in Puget Sound : Humpback Whales (*Megaptera novaeangliae*), Stellar Sea Lion(*Eumetopias jubatus*), and Leatherback Sea Turtle (*Dermochelys coriacea*). Please include the discussion of these species in the appropriate locations throughout the document.

4

16 12. P. 4-11, second paragraph. Verification of additional site-specific closures or restriction as a result of ESA listings should be coordinated with both the Department of Fish and Wildlife as well as NMFS.

17 13. P. 4-12, Unavoidable, Adverse Impacts. The change in the bottom elevation and grain size distribution could represent a significant habitat shift. This document needs to identify that depths and grain size distribution will be confirmed prior to construction and mitigated for if significantly modified.

In addition, it is imperative that following dredging the quality of the remaining sediment be determined. If the level of contamination is greater or equal to the original level prior to dredging, addition remediation measures will have to be employed.

18 14. P. 4-21, Fish, first paragraph. Fish other than bottom feeders have been shown to be susceptible to contaminants that they encounter during migration periods. Arkoosh (1998a and 1998b) and Stein (1995) have shown that outmigrating juvenile salmon can suffer increased levels of contaminants in tissues and organs, as well as reduced growth and suppressed immune systems as a result of migrating through contaminated estuaries. Please add this information to this document. These issues must be considered during the siting of LBC/CAD, particularly if it will be located in shallow subtidal locations.

19 15. P. 4-25, Site Design. Page 4-18 speaks to potential siting locations for an LBC/CAD facility in 25-100 foot depths. We recommend reconsideration of the shallower depths due to the use of those shallow subtidal areas by both juvenile salmonids and bait fish. These depths can also contain vegetation such as eelgrass and macroalgae beds which serve extremely important ecological functions. The shallower the LBC/CAD, the greater the potential impact and the more stringent the permit conditions, if not outright permit denial.

20 16. P. 4-27, Site Design, first paragraph. Following from the previous two comments, the shallower the LBC/CAD, the greater the potential for bioaccumulation to occur in the outmigrating juvenile salmonids who might rest on or in the vicinity of the facility.

21 17. P. 4-27, Siting. Water depth should be a critical decision factor in siting an LBC/CAD facility.

22 18. P. 4-40, Site Design and Siting. Given the recent ESA listings and the potential magnitude for habitat loss stemming from a CDF, NMFS strongly recommends that advance mitigation be required. Given that mitigation of certain types of habitat, > 0.25 acre of eelgrass and herring spawning beds are much more difficult to mitigate than other types of projects (Williams, 1999), construction of CDFs should either be certain to locate away from such areas, or plan to provide many more acres in mitigation than those being lost.

5

23 19. P. 4-54, Nearshore Confined Disposal. This paragraph should also contain the same language as that for the Contained Aquatic Disposal and Level Bottom Capping that states that "contributions to cumulative impacts on a variety of resources from implementation of the ... alternative could be significant." While the majority of the document provided a balanced presentation of the alternatives, the lack of this type of statement associated with CDF gives one pause regarding potential bias.

24 20. P. 5-1. Habitat, first paragraph. The statement that the LBC/CAD would result in an irreversible loss of existing habitat is contradictory with the latter part of the paragraph which states that the overall habitat type would remain the same, and recolonization by benthic organisms would occur within a few years of closure. Perhaps use of the term "temporary loss" would be more appropriate in this situation.

Once again, thank you for the opportunity to review this document. We have included two tables which list the current status of ESA species under NMFS' jurisdiction. Please feel free to contact Rachel Friedman-Thomas at 360/753-4063 or at the above letterhead address with questions or concerns.

Sincerely,

Steven W. Landino
Washington State Habitat Branch Chief

Enclosures

cc: Rachel Friedman-Thomas, NMFS
Fred Seavey, USFWS

References

Arkoosh, M.R., E, Casillas, P. Huffman, E. Clemons, J. Evered, J.E. Stein, and U. Varanasi. 1998. Increased Susceptibility of Juvenile Chinook Salmon from a Contaminated Estuary to *Vibrio anguillarum*. Transaction of the American Fisheries Society 127: 360-374.

Arkoosh, M.R., E. Casillas, E. Clemons, A. N. Kagley, R. Olson, P. Reno, and J.E. Stein. 1998. Effect of Pollution on Fish Diseases: Potential Impacts on Salmonid Populations. Journal of Aquatic Animal Health 10: 182-190.

Stein, J.E., T. Hom, T.K. Collier, D.W. Brown, and U. Varanasi. 1995. Contaminant Exposure and Biochemical Effects in Outmigrant Juvenile Chinook Salmon from Urban and Nonurban Estuaries of Puget Sound, Washington. Environmental Toxicology and Chemistry, Vol. 14. No. 6: 1019-1029.

Williams, B. 1999. Department of Fish and Wildlife. Personal Communication.

11 The final design for a dewatering facility must result in discharges that meet federal and state water quality standards. This will require settling of particles with or without the aid of added flocculents. If this alone is not adequate to meet standards for dissolved metals, then some combination of ion exchange, precipitation and/or methods may be applied to further reduce metals concentrations to meet the standards. Other technologies that are being developed for treatment of contaminated sediment are described in Section 2.7 and Appendix F.

12-13 The Team agrees with the comments. Solids resulting from treatment of return flow discharges would most likely be placed in a LBC/CAD, nearshore CDF or existing landfill. In the latter case, regulations are in place that are designed to protect the environment, e.g., testing of dredged material elutriate/leachate prior to disposal.

14 The Final PEIS has been revised to describe findings of the most recent Clean Water Act Section 303(d) list of impaired water bodies (Section 3.1.4.1).

15 Section 3.2.7 of the Final PEIS has been revised to incorporate these comments.

16 Please refer to Thematic Comment Response #5. The MUDS Feasibility Study Team intends to coordinate closely with NMFS and the Washington Department of Fish and Wildlife. Also note that the 401 review and permit process requires coordination and consultation with both agencies.

17 The Final PEIS has been revised to address the NOAA comment.

Current processes and practices in various regulatory programs, e.g., DMMP/CERCLA/SMS, already ensure that the surface sediment remaining after cleanup or maintenance dredging will be of better quality than the sediments removed.

18 The Final PEIS has been revised to recognize the susceptibility of juvenile outmigrating salmonids to high levels of contaminants.

19 The MUDS Feasibility Study Team generally agrees with these NOAA comments. Candidate CAD sites located in shallower areas would likely not receive a high score during any successful siting process due to resource values.

20 The potential for bioaccumulation to occur at or near a LBC/CAD site identified as a feasible alternative in a site-specific EIS will need to be evaluated further during that phase of the MUDS project.

21 Depth is implied to be an important factor in siting; it is inherent in "critical habitat" and "migration routes", etc. However, the Final PEIS has been revised to make this more clear (Section 4.4.9.2, Siting).

22 Any nearshore CDF would require mitigation for the consequent loss of habitat. The implications of ESA listings, critical habitat designations, habitat loss and mitigation measures will be considered during any site selection process and preparation of any site-specific EIS (Section 4.5.9.3, Siting Design and Siting).

23 The Final PEIS has been revised accordingly. The MUDS Feasibility Study Team has no intentional bias toward a nearshore CDF design in preparing this PEIS; the Conclusions section of the final PEIS Summary states there is no preference for one alternative disposal site or design over any other.

24 The Final PEIS has been revised accordingly.

DEPARTMENT OF HEALTH & HUMAN SERVICES — Public Health Service

Centers for Disease Control
and Prevention (CDC)
Atlanta GA 30341-3724

April 5, 1999

Dr. Stephen Martin
U.S. Army Corps of Engineers
P.O. Box 3755
Seattle, WA 98134-3755

Dear Dr. Martin:

Thank you for the opportunity to comment on the proposed Draft Environmental Impact Statement (DEIS) for the Puget Sound Confined Disposal Site Study. We are responding on behalf of the U.S. Public Health Service, Department of Health and Human Services.

Because of the volume of DEISs available for review each year and our limited resources, a comprehensive review of every document developed under the National Environmental Policy Act (NEPA) is not conducted. However, we screen most of the documents and select for review those which, in our view, pose the most significant potential for impacts upon human health.

With the long standing history of the NEPA process, and the fact that many projects are similar in scope, our experience in reviewing EISs allows us to anticipate areas of potential health concerns typically associated with these projects. Therefore, instead of providing project specific review comments on each DEIS prepared, we are providing a list of topics which may involve potential public health concerns which are of particular interest to us.

1 We recommend that during the NEPA process the sponsors ensure that the topics below are considered along with other necessary topics/concerns, and be addressed if appropriate for the proposed project. Mitigation measures/plans which are protective of the environment and public health should be described in the EIS wherever warranted for adverse impacts.

AREAS OF POTENTIAL PUBLIC HEALTH CONCERN:

I. Water Quality/Quantity
- special consideration to private and public potable water supply, including ground and surface water resources
- compliance with water quality and waste water treatment standards
- ground and surface water contamination (e.g. runoff and erosion control)
- body contact recreation

II. Air Quality
- dust control measures during project construction, and potential releases of air toxics
- potential process air emissions after project completion
- compliance with air quality standards

III. Wetlands and Flood Plains
- potential contamination of underlying aquifers
- construction within flood plains which may endanger human health
- contamination of the food chain

IV. Hazardous Materials/Wastes
- identification and characterization of hazardous/contaminated sites
- safety plans/procedures, including use of pesticides/herbicides; worker training
- spill prevention, containment, and countermeasures plan

V. Non-Hazardous Solid Waste/Other Materials
- any unusual effects associated with solid waste disposal should be considered

VI. Radiation
- proper management to avoid exposure which may adversely affect human health during and after construction of project

VII. Noise
- identify projected elevated noise levels and sensitive receptors (i.e. residential, schools, hospitals) and appropriate mitigation plans during and after construction

VIII. Occupational Health and Safety
- compliance with appropriate criteria and guidelines to ensure worker safety and health

IX. Land Use and Housing
- special consideration and appropriate mitigation for necessary relocation and other potential adverse impacts to residential areas, community cohesion, community services
- demographic special considerations (e.g. hospitals, nursing homes, day care centers, schools)
- consideration of beneficial and adverse long-term land use impacts, including the potential influx of people into the area as a result of a project and associated impacts
- potential impacts upon vector control should be considered

While this is not intended to be an exhaustive list of possible impact topics, it provides a guide for typical areas of potential public health concern which may be applicable to various federal projects. Any health related topic which may be associated with this NEPA project should receive consideration when developing draft and final EISs.

Sincerely,

Kenneth W. Holt

Kenneth W. Holt, MSEH
Emergency and Environmental Health Services Division
Chemical Demilitarization Branch (proposed) (F16)
National Center for Environmental Health

Responses to US Dept. of Health & Human Services Comment Letter

1 The items identified by the Department of Health and Human Services either have been addressed in the Final PEIS or will be addressed in preparing any Site-Specific EIS.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
North Pacific Coast Ecoregion
Western Washington Office
510 Desmond Drive SE, Suite 102
Lacey, Washington 98503
Phone: (360) 753-9440 Fax: (360) 753-9008

April 29, 1999

5/10/99

Colonel James M. Rigsby
District Engineer
Seattle District, Corps of Engineers
P.O. Box C-3755
Seattle, WA 98124-2255
Attention: Steve Babcock, EN-PL-CP and Steve Martin, EN-PL-ER

Re: Planning Aid Letter, Puget Sound Confined Disposal Site Study

Dear Colonel Rigsby:

This planning aid letter addresses the Corps of Engineers' (Corps) recently published draft programmatic environmental impact statement (PEIS) for the Puget Sound Confined Disposal Site study. The PEIS is the first of a two phase feasibility study to find environmentally sound and affordable solutions for disposing contaminated sediments from Puget Sound. Based on the agency and public response to the PEIS and continued sponsor participation, the Corps may proceed with the second phase, constructing one or more multiuser disposal facilities for Puget Sound contaminated sediments.

The purpose of this letter is to provide our position on the PEIS and to suggest some investigations that may be needed during the project's second phase. We participated throughout the development of the PEIS as a study team member. Our specific comments on the PEIS were provided as part of the Department of the Interior's Aril 16, 1999, letter to you.

POSITION

1 We are supportive of this effort for three reasons. First, disposal capacity (and the liability associated with disposal) is one of the primary issues that is impeding the Sound's cleanup. Second, an interagency coordinating approach, similar to the Dredged Material Management Program (DMMP), would provide a higher level of regulatory certainty that safe disposal sites are built. And third, fewer multiuser facilities would pose less of an environmental risk than many single user sites that the current regulatory approach promotes.

2 The PEIS provides a fair assessment of all the disposal alternatives as well as adequate support to move forward to the next phase. The PEIS:

1. Established a significant need in Puget Sound for the disposal of contaminated sediments;

2. Determined that there were a number of feasible dredging and disposal technologies for contaminated sediments; and,

3. Concluded that the large volume and wide distribution of contaminated sediments in Puget Sound makes it unlikely that the current regulatory process could meet the demand in a timely manner.

3 We believe the next phase should include developing an interagency coordinating approach, establishing evaluation and testing procedures, and siting a facility. There is insufficient information in the PEIS to select a preferred facility alternative (treatment, level bottom capping, confined aquatic disposal, nearshore confined disposal, or upland confined disposal) at this time since that decision depends on site specific conditions. The PEIS does present enough information to select a geographic area of interest - central Puget Sound (Elliott Bay and Sinclair Inlet) contains 88 percent of the contaminated sediments that would likely be disposed at a multiuser facility.

TREATMENT

4 Treatment should be addressed as an alternative in the PEIS. Although some treatment techniques are still being refined, others have been used successfully for some time (e.g., solidification). Although treatment does not function like the other alternatives presented in the PEIS (confined disposal), it does meet the objective of the study, which is to find environmentally sound solutions to the lack of confined disposal capacity for contaminated sediments. Treatment would immobilize or reduce the contaminants in the sediments to a safe level so that confinement would not be necessary.

5 The current focus of treatment research promoted by incentives in the 1992 and 1996 Water Resources Development Acts promises much faster development of treatment techniques than we have seen in recent years. Jones et al. (1998) reported that the research program initiated by these Acts has already progressed through bench-scale (liter size demonstrations) and pilot-scale (cubic meter size) trials and is now testing operational-scale (76,000 cubic meters) techniques. Full-scale (380,000 cubic meters per year) results are expected within the next year or two. The techniques include a variety of treatment processes ranging from the manufactured soil production for material with the lowest contamination to plasma torch temperature treatment for the most contaminated sediments. Jones' results found, contrary to past work, that it may be possible to use treatment techniques for decontamination at a total cost that is equal to and possibly less than current disposal techniques. The beneficial reuse of the material is essential in reducing large-scale treatment cost to reasonable levels. These uses range from potting soil and construction-grade cement to high

quality glass tiles. Jones also presents a conceptual plan for developing public-private partnerships and a government incentive system that may be useful to incorporate into an approach for Puget Sound. Other reports on this progress (Stern et al. (1998), Jones et al. (1998). and Jones et al. (1999)) provide more detailed summaries of the findings.

INFORMATION NEEDS

6 Most of the programmatic phase was completed by synthesizing existing information. During the next phase of the project, there will be questions that need to be answered which may require new investigations. A scientific advisory board could play an important role in identifying information gaps and developing a prioritized list of these studies needed during the site specific phase.

7 The following are the investigations that we believe are needed for the next phase. This list was developed through our work on the study team and our June 1996 planning aid report. The list is preliminary since the Corps hasn't identified a specific proposal:

1. One or more years of biological baseline surveys should be conducted for each selected location.

2. A habitat based model, such as Habitat Evaluation Procedures (HEP), should be used for comparing alternatives and developing mitigation strategies. A HEP team should be established to develop appropriate Habitat Suitability Index (HSI) models that could be applied to candidate sites. A literature synthesis will be required to develop the life history requirements of the species and/or communities representing each site. Field studies will be needed to collect HSI model parameters and may also be needed to provide basic life history information for some species.

3. The PEIS provides preliminary information that characterizes the Sound's contaminated sediments and volume on a broad scale. A more refined characterization of the sediments is needed once the study team selects a region to focus on. This work may require additional sediment testing to provide more information on the region's sediment chemistry and contaminated sediment volumes.

4. A scientific peer review should be completed for any models that are used for evaluating the alternatives. The study team should develop the questions for the reviewers and the peer review results should be available to all participants.

5. The PEIS recognized that several facilities may have to be constructed to handle all of Puget Sound's contaminated sediment needs and that one facility would be considered in the project's site specific phase. We agree with this phased approached because it allows enough future flexibility to include other technologies as they are developed over time. A phased program should be developed as a management objective that identifies the steps needed to eventually provide disposal facilities for most of the contaminated sediments in Puget Sound.

6. Sediment standards used for monitoring the facilities should be developed that consider the trophic effects of the contaminants. A standard that considers trophic level effects may be more stringent than the state's Sediment Quality Standard for some contaminants. We believe higher standards should be considered since the operation of a facility over a decade or more could result in localized contamination from the small loss of contaminants through various pathways. Taken alone, these losses may be small but, collectively, they could result in a cumulative effect that impacts fish and wildlife resources at the site.

7. An interagency coordinating approach, similar to the DMMP, needs to be fully developed prior to constructing a facility. This would include establishing criteria for siting, funding, designing, permitting, constructing, operating, monitoring, and closing a facility. Specific topics would include siting criteria, public-private partnership process, sediment evaluation and testing procedures, and liability management as well as ways to evaluate the program's effectiveness, assimilate new information, and to adaptively manage the program. The PEIS also identified the need to develop an interagency program during the second phase.

8. Additional work is needed to define the "upper limit" of contamination that will be accepted at the facility. This definition will have to consider the synergism of a variety of compounds and the resulting toxicity.

9. The mobility of contaminants in the different environments (in-water, nearshore, and upland) should be evaluated for Puget Sound.

Thank you for the opportunity to comment. If you have any questions, please contact Fred Seavey at 360-753-4124.

Sincerely,

Gerry A. Jackson
Supervisor

fs/jmc
Enclosures
c: EPA, Seattle (John Malek)
WDE, Olympia (Tom Gries)
WDNR, Olympia (Tim Goodman)
Puget Sound Water Quality Authority, Olympia
Striplin Environmental Associates, Tacoma (Gene Revelas)
Washington Public Ports Association, Olympia (Eric Johnson)

4

REFERENCES

Jones, K. W., A. J. Guadagni, E.A. Stern, K.R. Donato, and N.L. Clesceri. 1998. Commercialization of Dredged Material Decontamination Technologies. Remediation, Special Issue: Innovative Remediation Technology, Volume 8, p. 43-54.

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Jones, K.W., E.A. Stern, K.R. Donato, and N.L. Clesceri. 1998. Decontamination of Dredged Material for the Port of New York and New Jersey. 5th International Petroleum Environmental Conference. Albuquerque, New Mexico.

Stern, E.A., K. Jones, K. Donato, J.D. Pauling, N.L. Clesceri, M.C. Mensinger, and C.L. Wilde. 1998. Maintaining Access to America's Intermodal Ports/Technologies for Decontamination of Dredged Sediment: New York/New Jersey Harbor. Technical Paper #8007. Roy Weston Inc. For presentation at the S.A.M.E. National Conference. New York, New York.

Responses to US Dept. of the Interior, Fish and Wildlife Service Comment Letter

1 The MUDS Feasibility Study Team agrees with the USFWS position described.

2 Comment noted.

3 The Final PEIS concludes that a) all disposal alternatives are feasible, b) there is no preferred single alternative, and c) a combination of the different alternatives will probably be needed to meet the regional demand for disposal and/or treatment capacity (see Conclusions section of the PEIS Summary).

The next phase of the MUDS Feasibility Study will begin with a further evaluation of facility management options and an assessment of how to facilitate the development of contaminated sediment treatment methods and capacity in the Puget Sound region.

If sediment evaluation and testing procedures are needed to supplement those already required by the Dredged Material Management Program and local solid waste regulations, then they are most appropriately developed during preparation of a site-specific EIS or soon thereafter.

4 Comments noted. Also please refer to Thematic Comment Response #4.

5 Comments noted. Also please refer to Thematic Comment Response #4.

6 The MUDS Feasibility Study Team has discussed the importance and advantages of establishing a "science advisory board". Such a board may be established during the site-specific phase of the project.

7 The MUDS Feasibility Study Team appreciates the detailed list of informational needs and investigations identified by the USFWS. All appear to have merit. It is hoped that the Team will have funding to pursue most, if not all, during the next phase of the MUDS Feasibility Study.

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
500 NE Multnomah Street, Suite 356
Portland, Oregon 97232-2036

IN REPLY REFER TO:

April 16, 1999

ER 99/00172

Stephen Martin, PhD
U.S. Army Corps of Engineers
Seattle District
P.O. Box 3755
Seattle, Washington 98124-3755

Dear Dr. Martin:

The Department of the Interior (Department), has reviewed the Draft Programmatic Environmental Impact Statement (DPEIS) for the Puget Sound Confined Disposal Site Study (Study), Washington. The following comments are provided for your information and use when preparing the Final Programmatic Environmental Impact Statement (FPEIS)

GENERAL COMMENTS

1 The Department supports this Study because it would provide the disposal capacity for the environmental cleanup of Puget Sound (and the liability associated with disposal). It would also provide an interagency coordinating program, an approach similar to the Puget Sound Dredged Disposal Analysis program (Disposal Analysis Program), to achieve a much higher level of regulatory certainty in producing safe disposal sites. Thirdly, it would involve fewer multiuser facilities which would pose less of an environmental risk than many single user sites that the current regulatory approach promotes. In general, the DPEIS makes a fair assessement of all the disposal alternatives and provides adequate support for moving forward to the next phase for developing an interagency approach, establishing evaluation and testing procedures, and siting a multiuser disposal facility. The Department also support creating an interagency framework for managing contaminated sediment disposal in Puget Sound. Establishment of an interagency coordinating program should be a high priority for the study team during the second phase of the Study. The Institutional Studies Appendix is a helpful approach for developing this framework.

2 Treatment of contaminants should be addressed as an alternative in the FPEIS. Although some treatment techniques are still being refined, others have been used successfully for some time (e.g., solidification using the STC™ and TBS™ methods). The current focus in research and development promoted by the treatment incentives in the 1992 and 1996 Water Resources Development Acts promises much faster development of treatment techniques than we have seen

Stephen Martin, PhD
U.S. Army Corps of Engineers

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in recent years. Although treatment of contaminants would function differently than the other alternatives presented in the DPEIS (confined disposal), it does meet the objective of the Study, which is to find environmentally sound solutions to the paucity of confined disposal capacity for contaminated sediments. Treatment would immobilize or reduce the contaminants in the sediments to a safe level eliminating the necessity of confinement. In many cases, contaminated sediment can be used after treatment as paving fill or cover material or in a concrete mix. Further, the Pauyallup Tribe has also expressed some interest in building a treatment facility for contaminated sediments based on the biogenesis SM sediment washing process (edge ll 1999).

3 The FPEIS needs to explicitly address the long-term commitment needed to monitor and maintain the facilities after their closure.

SPECIFIC COMMENTS

4 Page S-10, Table S-1 Under the confined aquatic disposal (CAD) alternative, one unavoidable adverse impact consists of a "minor" amount of sediment would settle outside the facility. The portion of material that could be lost during disposal and cap placement may be low (from 1 to 5 percent) and could be considered minor by some. However, a small loss from a large volume is still a large volume and should not be considered minor. The FPEIS should discuss lost material being readily available to marine organisms in the water column and as surface sediments.

5 In the nearshore confined disposal facility, the FPEIS should clarify the "minor" long-term release of contaminants from these facilities. Since the facilities in Puget Sound have been constructed recently, long-term data from a variety of sites is not available to support a contention that the contaminant releases would be minor.

6 Page 2-32, 3rd Paragraph We do not agree that direct disposal from a barge is viable for a multiuser facility that would be operated for up to a decade. The notch in the dike would provide a major contaminant pathway as well as allow marine organisms to enter (and possibly colonize) the site.

7 Page 3-14, Section 3.2.4 This section should include native char (Dolly Varden and bull trout) in the discussion.

Page 3-17, Section 3 2.7 Bull trout should be included in this discussion. The U.S. Fish and Wildlife Service proposed to list bull trout in Puget Sound and other regions in 1998 (Federal Register, Vol. 63, No. 111, Pg. 31693, June 10, 1998).

8 Page 4-18, 3rd Paragraph The analysis on the effects of open-water dredge material disposal is based on reviews completed in the 1970s. The analysis should be based on current literature.

Stephen Martin, PhD
U.S. Army Corps of Engineers

3

9 Page 4-20, 2nd Paragraph A benthic equilibrium community could take much longer than three years depending on the conditions and continued disturbance (sedimentation from excavating and filling adjacent cells). The Jones and Stokes (1998) literature summary was very tentative in predicting benthic recovery rate. When addressing the East Waterway, they surmised that the "complexity of factors influencing recovery and the small number of previous studies on recolonization in Puget Sound...[made] it impossible to accurately predict community development patterns" and that "the few studies from other locations and the Denny Way Cap suggest that relatively stable communities may be expected after a minimum of 1 to 3 years." The FPEIS should indicate this uncertainty in predicting recovery rates for the benthic community.

10 Page 4-41, 5th Paragraph Disposal for the level bottom capping or confined aquatic disposal (LBC/CAD) alternative should also consider the impact of sensitive larval stages near the site and possible schedule restrictions.

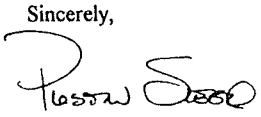
11 Page 4-53, Section 4.10.1 The FPEIS should clarify why the cumulative impact of LBC/CAD could be significant. Whether the discussion on the Washington Department of Natural Resources' reluctance to permit confined disposal on state owned land is appropriate when addressing cumulative impacts should be checked.

12 Page 4-54, Section 4.10.2 For this alternative, cumulative impacts should be broadened in the FPEIS to consider other development projects that would also reduce nearshore habitat as well as the historic loss of this habitat type in Puget Sound.

13 Page 5-1, 4th Paragraph The FPEIS should not assume that an equilibrium benthic community would occur within a few years of site closure. The site could take much longer (or much shorter) to fully develop a "recovered" benthic community.

Thank you for the opportunity to comment.

Sincerely,



Preston Sleeger
Regional Environmental Officer

REFERENCES

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Jones and Stokes Associates. 1998. Subtidal Epibenthic/Infaunal Community and Habitat Evaluation Report for the East Waterway Channel Deepening Project. Preliminary Draft. Prepared for US Army Corps of Engineers. Seattle District. Jones and Stokes Associates, Inc. Bellevue, WA

Responses to US Dept. of the Interior, Office of Environmental Policy and Compliance Comment Letter

1 The MUDS Feasibility Study Team generally agrees with the comments contained in this paragraph, many of which were also contained in the comment letter from the Department of Interior, U.S. Fish and Wildlife Service. While an interagency coordinating program and framework for managing contaminated sediment does exist, the Team believes it can be improved though clarification of authorities and roles, as well as a more formalized coordination strategy that includes frequent communication and adequate public involvement. The DMMP/PSDDA programs serve as a model for successful management of contaminated sediment.

2 Please refer to Thematic Comment Response #4.

3 A strategy for long-term monitoring will likely be included as part of any site-specific EIS. Detailed monitoring requirements could also be developed during construction phase, possibly as a pre-condition for the MUDS facility to receive certain permits. Also see responses to other comments about monitoring "in perpetuity".

4 The Final PEIS has been revised to briefly discuss the potential impacts to aquatic organisms from exposure to contaminated sediment suspended temporarily in the water column and/or settling outside the boundary of the disposal site (Sections 4.4.2 and 4.4.3). Both potential impacts are expected to be minimal for candidate LBC or CAD sites, but both will need to be evaluated more carefully during any site selection process and preparation of any site-specific EIS.

5 Monitoring of existing nearshore CDFs in Puget Sound has occurred for approximately 13 years. Monitoring has generally shown that caps on LBC and CAD facilities may represent somewhat less of a barrier to contaminant migration than the dikes of nearshore CDFs. In addition, monitoring of Puget Sound nearshore CDFs has not shown water quality standards to have been exceeded. The final monitoring plan for any nearshore aquatic MUDS facility will need to address the issues of: (a) detecting contaminants that may migrate through a dike, (b) the rates of contaminant release (if any), and (c) any potential impacts to habitat and the biota near the facility.

6 One feasible method of placing contaminated sediment at a nearshore CDF entails use of barges that enter the facility through a open notch in the containment dike, then bottom dump or offload using a front end loader. This method of unloading is retained in the Final PEIS because there is experience with it in Puget Sound. However, these "notch" disposal

activities at the single-user facilities in Elliott Bay and Port Gardner occurred over a relatively short period of time, thus limiting environmental impacts, especially to fish and waterfowl. Disposal at a nearshore MUDS facility would occur over many years, increasing the magnitude of environmental impacts. However, construction of a notch may not receive substantive support during formulation of plans for a MUDS CD facility.

7 The PEIS has been revised to include mention of native char.

8 References in the Final PEIS have been updated. The MUDS Feasibility Study Team has two observations about recent open water disposal activities in the Puget Sound region. First, there has not been a single observation between 1989 and 1999 of significant water column impacts associated with the activities at PSDDA unconfined, open water disposal sites. Second, based on ten years of monitoring results, these open water disposal sites only show minimal impacts.

9 The Final PEIS has been revised to acknowledge some uncertainty in the time required for full, post-disposal recovery of imported benthic communities (Section 4.4.3.3) in Puget Sound. However, extensive studies from similar nearshore, marine environments in Puget Sound and elsewhere indicate that benthic assemblages generally recover from major disturbances (e.g., burial by dredged material disposal) in these time frames.

10 The MUDS Feasibility Study Team presumes that any candidate LBC and CAD sites that would be highly ranked will either be located in relatively deep water and/or in areas of relatively low resource value. The Final PEIS describes the potential impacts of disposal activities on overall benthic communities, including sensitive organisms and their life stages. (Section 4.5.3)

11 The cumulative impacts that might be associated with a LBC or CAD facility involve the native benthic community and other wildlife that interact with it. The exact nature of the likely cumulative impacts will need to be assessed during preparation of any site-specific EIS. The Final PEIS has been revised to be less specific about the difficulty that may be involved in building a future MUDS on State-owned aquatic lands. (see Section 4.10.1)

12 It is not possible to evaluate cumulative impacts in any detail as part of this PEIS because they will be specific to the geographic area of interest, site and facility design. Therefore, potential cumulative impacts associated with construction, operation and closure of a nearshore CDF will be evaluated, to the extent practical, during preparation of any site-

specific EIS. Even this will be a difficult task given that cumulative impacts from decades of past shoreline practices have not been fully documented or studied.

13 Please refer to the response to comment #10, immediately above.

U.S. Department of Transportation
United States Coast Guard

Commanding Officer
Facilities Design and
Construction Center Pacific

Federal Building; 915 Second Avenue
Seattle, WA 98174-1011
Staff Symbol:
Phone: (206) 220-7387
FAX: (206) 220-7390

16452
April 2, 1999

U.S. Army Corps of Engineers
Attn: Dr. Stephen Martin
Post Office Box 3755
Seattle, WA 98134-3755

Gentlemen:

Please refer to the draft Programmatic Environmental Impact Statement (PEIS) for the Puget Sound Confined Disposal Site Study. The United States Coast Guard has an interest in confined disposal of sediment, which is not acceptable for open water disposal, from both a navigational and environmental standpoint. The need for a multi-user disposal facility is evident by the many dredging projects, which have been indefinitely deferred due to lack of sediment disposal options.

1 In general, the draft PEIS reflects the experience and foresight of the federal, state and local agencies involved in the study. It accurately analyzes the potential impacts of the various types of confined disposal. Unfortunately, the timing of the draft PEIS is such that the evolving impacts of the listing of Puget Sound Chinook salmon under the Endangered Species Act can not be fully addressed. As you are aware, the National Marine Fisheries Service (NMFS) listed the Puget Sound Chinook salmon, effective May 24, 1999. However, NMFS deferred the designation of critical habitat for up to one year. What area NMFS designates could profoundly affect several alternatives evaluated in the PIES. In March 1988, NMFS proposed to designate "all marine, estuarine and river reaches accessible to chinook salmon in Puget Sound" as critical habitat. In section 4 and appendix B of the draft PEIS, siting of a multi-user confined disposal facility is excluded from the critical habitat of threatened and endangered species. If NMFS follows through with their proposed critical habitat designation, the siting criteria utilized in the PEIS will effectively eliminate the alternatives of LBC, CAD, and nearshore CDF. I believe that it is premature to eliminate those alternatives during the PEIS phase. Although these alternatives may adversely modify the proposed critical habitat, they are best evaluated in a site-specific EIS and formal consultation with NMFS.

If you have any questions concerning this matter, feel free to contact me at (206)-220-7387 , or email JVogel@pacnorwest.uscg.mil).

Sincerely,

JOHN R. VOGEL
Environmental Engineer
By direction

Copy: CG MLCP(se)

Responses to US Dept. of Transportation, US Coast Guard Comment Letter

1 The MUDS Feasibility Study Team agrees with the comments submitted by the U.S. Coast Guard. The endangered species listing process could greatly impact any future aquatic MUDS siting process as the proposed designation of critical habitat for salmon could include all of Puget Sound. While impacts to critical habitat could not be entirely avoided by the aquatic options, these impacts could potentially be minimized or mitigated such that the proposed action would not be likely to jeopardize the continued existence of the species or result in permanent loss or adverse modification of habitat. If the MUDS Feasibility Study proceeds to a site-specific phase, then close coordination will be initiated with the National Marine Fisheries Service (NMFS) to ensure compliance with the requirements of the ESA.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

April 13, 1999

Reply To
Attn Of: ECO-088

Ref: 99-013-COE

Dr. Stephen Martin
U.S. Army Corps of Engineers
P.O. Box 3755
Seattle, WA 98124-3755

Dear Dr. Martin:

1 In accordance with our responsibilities under the National Environmental Policy Act (NEPA) and §309 of the Clean Air Act, we have reviewed the *Draft Programmatic Environmental Impact Statement (PEIS) for the Puget Sound Confined Disposal Site Study*. The draft PEIS analyzes six action alternatives that were deemed environmentally sound and affordable for the confined disposal of contaminated sediments in Puget Sound. All of them are considered to be viable alternatives and they will serve as the basis for disposal decisions in site-specific EISs in the future.

2 Based on our review, we have rated the draft PEIS EC-2 (Environmental Concerns - Inadequate Information). This rating and a summary of our comments will be published in the *Federal Register*. We have enclosed a summary of the rating system used in our review.

3 We have commented on: 1) the clearly demostrated need to address contaminated sediments in Puget Sound, 2) the unclear purpose of the PEIS, 3) the need for the PEIS to include long term management and monitoring plans for contained disposal sites, 4) methods of disposal that could facilitate future remediation, 5) preventing or minimizing the risk and effects of invasive species, and 6) Section 404 mitigation efforts. Enclosed please find our detailed comments.

4 We are interested in working closely with the Army Corps of Engineers and other cooperating agencies and I encourage you to contact John Malek at (206) 553-1286 or Chris Gebhardt at (206) 553-0253 at your earliest convenience to discuss our comments and how they might best be addressed. Thank you for the opportunity to review this draft PEIS.

Sincerely,

Richard B. Parkin

Richard B. Parkin, Chief
Geographic Implementation Unit

Printed on Recycled Paper

Environmental Protection Agency
Comments on the Puget Sound Confined Disposal Site Study
Draft ProgrammaticEnvironmental Impact Statement (PEIS)

Introduction

5 We have completed our review of the February 1999 draft Programmatic Environmental Impact Statement (PEIS) for the *Puget Sound Confined Disposal Site Study*. We have commented on: 1) a clearly articulated purpose and need statement, 2) the need for the PEIS to include plans for the long term management and monitoring of contained disposal sites, 3) methods of disposal that could facilitate future remediation, 4) preventing or minimizing the risk and effects of invasive species, and 5) Section 404 mitigation efforts.

6 In addition to our role as National Environmental Policy Act (NEPA) reviewers, EPA has cooperated in the development of this PEIS. In 40 CFR 1500.2(c), NEPA states that federal agencies shall coordinate the development of NEPA documents with other planning and environmental review procedures. EPA anticipates that through this coordinated study process, the siting of disposal sites will be accomplished in an organized and environmentally acceptable manner, and that the development of specific regional sites will be facilitated.

Purpose and Need

7 We are pleased to see that, consistent with 40 CFR 1502.13, the purpose and need statement adequately addresses, in a manner understandable by technical experts as well as the public, the issue of establishing a confined disposal site. Although the quantity of contaminated sediments proposed for confined disposal may change between the present and the time of designation of a specific site, the need for such confinement is clearly laid out. However, the purpose of this PEIS is not clear. What policy or program decision is to be made? What role will this PEIS play in future site-specific sediment disposal projects?

Long Term Management and Monitoring (Paragraph 1.6 and Table 1-5)

8 The PEIS indicates that a quantity of highly-contaminated sediment exists that precludes open water disposal and requires a more contained disposal site. These sites might be upland, nearshore or aquatic, and thus will have different long-term monitoring and protection needs. Despite it's apparent necessity, the PEIS does not appear to address the issue of long-term management of confined disposal sites.

9 The PEIS should describe an overarching framework for managing the confined sites which explains the management strategy and designates site management responsibilites. The management strategy should include guidelines for land use protection to ensure the integrity of operating and closed sites. In addition, types of long-term monitoring, including a plan to finance management and monitoring should also be addressed. If the agencies developing the PEIS

1

believe management direction should be determined later in site specific documents, that should be indicated in the final PEIS. A possible template for site management and monitoring might resemble the Dredged Material Management Program cooperative management strategy (RCW 79.90).

Remediation (1.5.3.)

10 With the recent advances in remediation technology for contaminated sediments (particularly since the inception of this study), it would be appropriate to revisit or reconsider treatment when considering appropriate sediment disposal options. Explanations of more recent remediation technology should be included in the PEIS. This information might indicate the benefits of disposing at the same sites, sediments containing similar contaminants or levels of contamination. If technology or resources became available at a later time to treat a type of contaminated sediment, the placement of these sediments in the same location would increase the effectiveness and efficiency of remediation efforts.

Invasive Species

11 Transferring sediments allows for the potential introduction of an invasive or exotic species from one area in Puget Sound to another. Confined nearshore disposal would appear to be the disposal method that would have the greatest likelihood of such transfer, however deeper aquatic sites might also be at risk.

The President recently issued an Executive Order on Invasive Species on February 3, 1999 that directed federal agencies to prevent the introduction of invasive species, provide for their control and limit their environmental and human impacts. The PEIS should list invasive species in the areas proposed for dredging, indicate the risk of their transfer, and include preventative measures to minimize or eliminate this risk. At minimum, a management strategy should be outlined.

Section 404 Dredge and Fill Requirements

12 Projects entailing filling nearshore areas require mitigation before or immediately after project completion as described in Section 404(b)(1) of the Clean Water Act. In the case of a nearshore Contained Aquatic Disposal (CAD) site, filling might take place for multiple years. During the period of filling, adjacent fish and wildlife habitat in that nearshore area would be impaired. If a nearshore area is identified as a CAD site, would mitigation occur before, during or after a potentially lengthy period of filling? If mitigation is delayed until the site is filled, are project proponents required to increase mitigation measures to compensate for the lost habitat use during this lengthy filling period? Programmatic issues related to mitigation should be discussed in the PEIS. Site specific issues can tier off with the project level EIS.

2

Responses to US Environmental Protection Agency Comment Letter

1 Comment noted.

2 Additional information has been added to the EIS on a variety of topics, including Need and Treatment, which provides adequate information for decision-making in phase I.]

3 Comment noted. Please see our specific responses below.

4 Comment noted.

5 Comment noted.

6 The MUDS Feasibility Study Team shares your anticipation that, largely through this coordinated NEPA/SEPA process, siting of contaminated sediment disposal sites can be accomplished in an organized, environmentally acceptable manner, and that selection of specific disposal and/or treatment sites will be facilitated.

7 The purpose of the programmatic EIS is clearly laid out in the document. On page 1-2, second paragraph, it states that "The purpose of the PEIS is to evaluate the environmental and economic impacts of various alternatives for addressing the regional contaminated sediment disposal problem. In the following paragraph, it states, "In addition to the programmatic evaluation of disposal alternatives, this PEIS identifies geographic areas of interest for possible future project-level efforts (Appendix A), outlines a MUDS siting process, and proposes a preliminary set of siting criteria for aquatics, nearshore, and upland multiuser disposal sites (Appendix B). Further, on the last paragraph, it states that "One purpose of a programmatic EIS is to provide a broad initial environmental review of a program or action to expedite the review process for possible future site-specific projects. Subsequent project-specific EIS(s) can use the programmatic EIS through "tiering" or "phasing" by incorporating and referencing the relevant aspects of the programmatic EIS."

Tiering is the procedure which allows an agency to avoid duplication of paperwork through the incorporation by reference of the general discussions and relevant specific discussions from an EIS of broader scope into one of lesser scope (40 Questions, Federal Register, 46:55, No. 24c).

Implicitly the PEIS assumes that some action on the part of the CSMP agencies, either singly or cooperatively, will occur to address a recognized problem of disposal site capacity for the region's contaminated sediments. The PEIS evaluates the concept of multiuser disposal sites geographically (actions occurring in the same general region), as well as generically (actions which have relevant similarities, i.e. confined dredged material disposal). This is in accordance with CEQ Guidelines (1502.4©). Also, according to 40 Questions(FR 46:55, No. 24b), "the preparation of an area-wide or overview EIS may be particularly useful when similar actions, viewed with other reasonably foreseeable or proposed agency actions, share common timing or geography". In this case, "similar actions" refers to the PEIS alternatives for confining contaminated sediment.

Resulting from this phase 1 evaluation, the agencies will decide whether to proceed with phase 2, site-specific studies. At the end of phase 2, decisions will be made by the MUDS agencies whether or not to pursue construction of a MUDS facility, whether that facility will involve federal participation, who will own/manage the facility, and so on. During phase 2 or in subsequent phases, specific management plans will be developed for the specific site(s), either by the collective agencies or the owner/operator of the facility.

8 The PEIS acknowledges the issue of long-term management of confined disposal sites. Specific operational management for the short-term, as well as long-term use and closure of the site(s) must be developed as part of permitting of such sites by the various federal and/or state authorities. On page 1-19, paragraph 3, the text states that "In addition to site-specific siting and design studies, the institutional and regulatory frameworks for siting, funding, permitting, operating, and closing a MUDS need to be established. Then reference is made to Table 5, which lists institutional and management needs associated with the MUDS study. The paragraph continues, "The specific arrangement (e.g. who owns or operates a MUDS) might vary depending on the region and range of alternatives selected. Then, on page 1-22, it states that under most scenarios, several elements will need to be developed, including: a siting process that includes all stakeholders, institutional arrangements for disposal site management, regulatory requirements and legislative actions, liability and contingency management plans, sediment evaluation procedures, disposal site performance standards, and site management plans for operation, monitoring, and closure.

Appendix D, Institutional Studies, drawing on the findings of two excellent institutional studies referenced at the beginning of the chapter, presents discussions on MUDS management scenarios, institutional options, the process for selecting institutional options for evaluation, selected institutional options, and evaluation of institutional options.

The issue of long-term management of a MUDS will be further addressed by the MUDS agencies immediately following finalization of this EIS.

9 Refer to the above response. The MUDS Feasibility Study Team will be addressing confined site management options in the very near future and will evaluate several issues, including those that you delineate. Site management decisions will be an integral part of the site-specific EIS(s).

10 Please refer to Thematic Comment Response #4.

11 Relative to transfer of non-indigenous species from one area of Puget Sound to another, this will be addressed in the site-specific EIS. The only plausible scenario for transfer is the capped aquatic disposal (CAD) alternative, involving dredging from one area and disposal in an open water area some distance away, wherein exotic species could be spread during disposal and prior to capping. The site-specific EIS will address the invasive species issue using the most recent scientific findings and literature available. If known, it will address any known species in areas to be dredged, the species' risk of transfer, any known impacts of transfer, and any reasonable preventative measures to minimize or eliminate this risk.

12 Selected nearshore site(s) for placement of contaminated dredged material would be subject to meeting all NEPA regulations and those of Section 404(b)(1) of the Clean Water Act. If a nearshore site is selected, mitigation planning would be initiated by the MUDS Study Team. All aspects of mitigation (including avoidance, minimization, and compensation) would be evaluated. In the case of compensation, the selected site and region would be closely examined for potential fish and wildlife habitat improvement sites. Our preference would be to coordinate extensively with the resource agencies and stakeholders to develop acceptable habitat mitigation plans well in advance of site construction. We agree that site specific issues (including mitigation) can tier off this programmatic document.

WASHINGTON STATE DEPARTMENT OF
Natural Resources

JENNIFER M. BELCHER
Commissioner of Public Lands

April 19, 1999

Dr. Stephen Martin
US Army Corps of Engineers
PO Box 3755
Seattle, WA 98124-3755

Dear Dr. Martin:

Subject: Draft Programmatic Environmental Impact Statement on Puget Sound Confined Disposal Site Study.

The Department of Natural Resources (DNR), as SEPA co-lead, would like to reaffirm its support of the above-referenced study and clarify the issues that must be addressed subsequent to completion of the Programmatic Environmental Impact Statement (PEIS) as well as the principles that are the basis for DNR's continued involvement. We look forward to providing input through the MUDS Workgroup and Executive Committee to finalize the PEIS and design a detailed siting process that considers comments received during the public review process and any new ideas from participating agencies.

1 **Siting Process** - Appendices A and B of the PEIS present a three tiered model for site selection with exclusionary criteria for tier 1 and a list of suggested criteria for tiers 2 and 3. It is DNR's understanding that the siting model itself has not been the subject of SEPA/NEPA review and as such is one of many possible models that may be considered subsequent to the PEIS. It is also DNR's understanding that the suggested criteria for tier's 2 and 3 are demonstrative only and will be expanded and changed based on input from participating agencies and others subsequent to finalizing the PEIS. This is an important consideration as DNR desires a siting process consistent with its ongoing baywide planning and other ecosystem management efforts.

2 **Value of State-Owned Aquatic Land** - DNR hopes to incorporate into the site selection process a full accounting of the costs of utilizing state-owned aquatic land and other state-owned lands as well as displaced or impacted state resources when comparing the costs and benefits of competing alternatives. DNR is developing valuation methods which may be utilized for that purpose. These methods are not complete and could not be explicitly discussed in the PEIS, but are allowed by the Feasibility Cost Sharing Agreement. DNR will work with other agencies to create a mutually acceptable way of applying DNR's land valuation methods.

1111 WASHINGTON ST SE ▮ PO BOX 47000 ▮ OLYMPIA, WA 98504-7000
FAX: (360) 902-1775 ▮ TTY: (360) 902-1125 ▮ TEL: (360) 902-1000
Equal Opportunity/Affirmative Action Employer

Dr. Stephen Martin
Page 2
April 19, 1999

3 **Management and Liability** - DNR will be completing the second phase of its contingency management contract work in June 1999. This work will help provide the basis for determining ownership and management scenarios acceptable to DNR. In addition, it will help DNR decide whether liability risks can be effectively managed. DNR's continued support is contingent on the resolution of these issues.

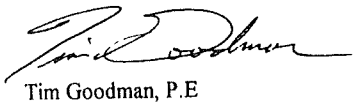
4 **Ecosystem Management and ESA** - It is important to DNR, as steward of state-owned lands, that we fully understand and satisfy the requirements of the Endangered Species Act. This should be done in parallel with the design of a detailed siting process and before initiating a site-specific EIS.

5 **Geological** - As we move into siting design, we will need to establish acceptable levels of risk for slope failures, seismic concerns, and liquefaction. Slope failure can be expected near the slope breaks of alluvial deltas and at other aquatic locations, but an acceptable level of risk of failure has not been agreed upon.

6 **Facility Consolidation** - DNR sees one of the primary benefits of a MUDS to be the consolidation of regional needs thereby limiting the proliferation of many small disposal facilities. Many small facilities are harder to track and manage. A large facility, whose location and management are overseen by multiple agencies, can be more easily configured to optimize regional habitat and economic needs.

I hope this information facilitates continued coordination between our agencies and helps clarify DNR's issues as we proceed beyond the PEIS. If you have questions, please call me.

Sincerely,



Tim Goodman, P.E
Department of Natural Resources
Aquatic Resources Division
PO Box 47027
Olympia, WA 98504-7027
(360) 902-1057

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Responses to Washington Dept. of Natural Resources, Aquatic Resources Division Comment Letter

1 The DNR correctly understands that Appendices A and B describe a model siting process and examples of siting criteria.

2 The MUDS Feasibility Study Team agrees that a full cost accounting of State-owned aquatic resources should be incorporated into any site selection process. However, developing consensus methods for valuation of aquatic resources should be a collaborative effort that involves other parties having vested interests.

3 The second phase of the CMA contract was somewhat limited in scope, evaluating the state's liability under only four of the most likely management scenarios among many that are possible. The DNR may find other management scenarios that were not evaluated to be acceptable, too. Regardless, the MUDS Feasibility Study Team will first evaluate numerous management scenarios that are most likely to lead to a successful siting process and construction of a MUDS facility.

4 Please refer to Thematic Comment Response #5. The MUDS Feasibility Study Team agrees that it is desirable to have a complete understanding of ESA requirements. For this reason, it intends to work "in parallel with" the appropriate resource agencies during any siting process and preparation of any MUDS site-specific EIS. However, fully understanding ESA implications may require many months or years. Protection and restoration of the environmental may not be well served by such delays.

5 This issue needs to be discussed among the MUDS Feasibility Study Team and any private party that proposes to build a MUDS facility.

6 Comment noted. Also, please also refer to Thematic Comment Response #1.

Section III. RESPONSES TO VERBAL COMMENTS.

A NEPA/SEPA public hearing on the MUDS Draft Programmatic EIS was held in Seattle, Washington, on March 16, 1999. No public testimony was offered or recorded.

A second SEPA public hearing was conducted in Bremerton, Washington, on March 23, 1999. The following persons gave oral testimony on the Draft Programmatic EIS for the MUDS Feasibility Study:

Ms. Chris Stevenson (Suquamish Tribe)
Mr. Donald Brewer Jr. (Clean Technologies)
Mr. Ken Sweeney (Port of Port Angeles)
Ms. Elaine Manheimer (Union River Basin Protection Association)
Mr. Gary Vogner (Citizen)

Each testimony is transcribed below, followed by responses prepared by the MUDS Study Team.

Ms. Chris Stevenson (Suquamish Tribe)

Comment: The Suquamish Tribe's treaty-defined usual and accustomed fishing areas extends from Puget Sound into Vashon Island to the Canadian border. Within this area, the Tribe holds treaty rights to natural resources which could be jeopardized by this proposal.

Response: Thank you for clarifying the geographic area subject to the Tribe's U&A treaty rights. The MUDS Feasibility Study Team assures the Tribe that any siting process that may follow issuance of this Final PEIS will involve the potentially affected tribes, and any site-specific EIS that is prepared will carefully evaluate impacts to aquatic resources and tribal rights to harvest fish and shellfish.

Comment: Protection of treaty resources is a right upheld by numerous legal precedents. The Tribe strongly supports removal of contaminated marine sediments. However, the Tribe doesn't support disposal of these materials within the waters or nearshore areas of Puget Sound. The Tribe supports upland disposal of contaminated sediments. The upland option is the only method currently being considered that would minimize adverse impacts to treaty-reserved resources. The cumulative impact of shoreline development has resulted in a significant lack of nearshore habitat in Puget Sound. Further fill and subsequent development of the aquatic or nearshore disposal methods will continue to erode the quantity and quality this habitat to the detriment of natural resources.

Response: Please refer to Thematic Comment Response #2 in Section I.

Comment: The Tribe understands that a site-specific EIS may be pursued in the region that might benefit most from such an effort. The current Puget Sound Confined Disposal Site Study siting partnership does not currently include any tribal

representation. To ensure that proposals adequately address issues of the Suquamish Tribe will require tribal involvement in the partnership process.

Response: Please refer to Thematic Comment Response #6.

Comment: What is its history of confined aquatic disposal projects in Puget Sound? The document states that two successful CAD projects, and in this hearing it's been stated that two more have been completed in Puget Sound. How many years have they been in operation? What issues have arisen from these projects, and are there any documented impacts?

Response: Please refer to Thematic Comment Response #3, as well as Sections 2.2.3 and 2.3.3 and Table 2-1 in the final PEIS.

Comment: Monitoring and maintenance of the disposal sites must be in perpetuity, unless contamination is eventually removed from the contaminated sediments.

Response: An appropriate monitoring plan will be developed when a MUDS site and design have been chosen, e.g., during any site-specific phase of this project. The MUDS Feasibility Study Team agrees, in principle, that monitoring for release of contaminants should be required in perpetuity or until the material can be decontaminated/treated and beneficially reused. However, extensive monitoring of the site during use and after closure might indicate that it would be safe to decrease the frequency of monitoring, or possibly even curtail it.

Comment: How will areas be screened for a high probability of archaeological resources? The document states that all archaeological or cultural sites are to be included for possible site selection. The site selection process appears only to consider existing resource information currently in DEIS format, and does not include gathering of site-specific information. There may be specific natural or cultural resources that have not been identified previously.

Response: The Feasibility Study Team has not determined how to identify these resources because that will occur during any siting process or preparation of a site-specific EIS. One might assume that archeological and cultural resources might be identified following the approach used to select the unconfined, open-water PSDDA disposal sites. The Washington Department of Archeology and Historic Preservation, the University of Washington, other educational institutions, nearby Tribes, local community governments and many others may be contacted for information. Also refer to the text in Sections 4.4.8, 4.5.8 and 4.6.8.

Comment: Shellfish areas currently close to shellfish harvest should also be excluded from siting considerations. The document states, and I quote, "Also during the siting process, only nearshore areas with relatively low habitat value, or areas already contaminated or disturbed would be considered," end quote. According to the '97 annual inventory of commercial and recreational shellfish areas in Puget Sound, the first goal of the Washington Department of Shellfish Restoration Program, is to upgrade the classification of commercial and recreational shellfish beds which have been closed or reclassified due to contaminated growing water. It's critical to

protect these areas from further contamination. And the initial site survey in the back of this document shows any residential areas within Kitsap County are classified as undeveloped shoreline, then that incorrectly shows boundaries of the Port Madison Indian Reservation.

Response: Any site that is a candidate location for an aquatic MUDS facility is not likely to score or be ranked very highly if it is close to Tribal shellfish beds or harvesting activities. See APPENDIX B – SITING PROCESS AND CRITERIA. Also, the Port Madison Indian Reservation boundaries have been corrected in the final PEIS.

Mr. Donald Brewer Jr. (Clean Technologies of Washington)

Comment: The question I have about the Environmental Impact Statement is the relative lack of consideration of alternative technologies. So I would just ask that it would be increased to include technology that could clean the sediment; that would do away with the large landfill, any runoff of the landfill, that would eliminate the long-term liability. Of course, the main thing is bottom line. And I believe there is technology available that can do that. I have a company called Clean Technologies of Washington, which has such a technology. So I'll be talking with some of the folks involved. Thank you.

Response: The MUDS Feasibility Study Team has compiled information on decontamination/treatment technologies and their feasibility on test, pilot and commercial scales. This information, including the approach used by "Clean Technologies", can be found in Section 2.7 and APPENDIX F of the Final PEIS. Also see Thematic Comment Response #4 in Section I.

Mr. Ken Sweeney (Port of Port Angeles)

Comment: I have a question about the Need section. It seems, in a quick review of the description of contaminated materials, the concern is primarily with chemical contaminations. My question arises from the fact that recently the Department of Ecology conducted a study and released the results on wood contamination in Port Angeles Harbor. I know from comments made at the presentation on March 3rd on that study, that the statement was made by a representative of the Department of Ecology, Jessica Barecca, I think it was, that some cleanup of the wood waste in the harbor would be necessary. I know that the business standards cannot allow material with high wood content to be disposed of in open water disposal sites. So that would seem to indicate that maybe there's an additional need for material of this type for disposal throughout Puget Sound, and specifically in the Port Angeles Harbor.

Response: The MUDS Feasibility Study Team recognizes that this type of material exists and may require confined disposal capacity in the future. Unfortunately, there is no good information about the extent of the problem in the Puget Sound region - the volume of contaminated sediment having a high wood content - or how it might affect the estimate of need for a MUDS. The Final PEIS estimates one million

cubic yards of "Contaminated Sediments Yet To Be Identified", some of which may have a high wood content, as part of the need for a MUDS (see Table 1-2).

Ms. Elaine Manhemier (Union River Basin Protection Association)

Comment: The comments I would like to make is, I think it's a good idea. This has been a good idea; there's been a lot of work put into it.
Response: Comment noted.

Comment: I'm concerned about a no-action. I would never think, after spending the time and money, that no-action is good. If you've isolated contaminants, they should be taken care of.
Response: All NEPA/SEPA Environmental Impact Statements must evaluate the environmental impacts of a "No Action" alternative. The Final MUDS PEIS argues strongly that the "No Action" alternative would result in greater environmental impacts than the other alternatives. This is because building one or more MUDS facilities would facilitate isolation and confinement of contaminated sediments, and thereby reduce environmental impacts due to their exposure to overlying waters and local biota. (Please refer to the CONCLUSIONS section of the final PEIS Summary)

Comment: I mentioned previously in my comments, there's been incomplete enforcement to see that this pollution does not continue. And I'm concerned about where the dredging is taking place.
Response: Effective "source control" will have to be an important element of any strategy that is ultimately successful at cleaning up areas of contaminated sediments in Puget Sound. While each MUDS disposal alternative is believed to be technically feasible for confinement of this material (see CONCLUSIONS section of the final PEIS Summary), the extent to which source control has been implemented near any candidate aquatic MUDS site will be carefully weighed in evaluating that site (see Appendix B - Siting Process and Criteria).

Comment: In the disposal in this Confined Disposal Site Study, you mention "level bottom capping and containing of aquatic disposal nearshore, upland, and disposal in existing landfills." All of them have probably some good potentials, but they have to be addressed at site-specific levels.
Response: The various disposal alternatives, including the conceptual MUDS designs, will be evaluated for their potential application to each eventual geographic area of interest (GAI) and different candidate sites identified within. For example, if central Puget Sound is selected as the first GAI, the technical and cost, feasibility of more specific facility designs will be examined for both the selected aquatic and upland sites.

Comment: So that brings us to this statement about a combination of alternatives, which is probably the only thing that can be adequately considered in the Puget Sound lowlands.

Response: The CONCLUSIONS in the Final PEIS tend to support this comment.

Comment: I would be concerned as to how these decisions were made, and what type of board would be making this decision to propose sites, which then, I would assume, would be available for public comment as to individual sites at any time.

Response: One step in the next phase of the MUDS project will be evaluate various management scenarios, e.g., determining who will own and operate such a facility, and deciding which scenario would be the most likely to successfully site and build the first MUDS. If a private entity is to own and operate a MUDS with government oversight, then the early siting process and decisions between alternative sites and designs may not be very public. (However, preparing an EIS for the proposed MUDS facility would have to be a public process). If it is in the public's interest for a public entity to own and operate the first MUDS facility, then the siting and design processes will be open to many participants and commenters.

The Final PEIS envisions a siting board or regional advisory committee that will work with public input to finalize the siting process, siting criteria, and site ranking "rules". Such a board or committee will likely be composed of approximately fifteen persons representing many more interests than the MUDS Feasibility Study agencies alone. See Appendix E - Public Participation and Outreach.

The nature of the site selection process may vary depending in part on whether a proposed MUDS facility is to be owned and operated by a private or public entity. If government agencies proceed with the siting process, as is currently anticipated, there will be an expanded public outreach effort and many opportunities for the public to participate (see response to the last comment). Regardless, the development of a site-specific EIS will have to comply with the public process requirements of National and/or State Environmental Policy Acts (NEPA/SEPA).

Comment: And I feel it would be necessary that there would be an environmental impact statement on each and every site so that it could be considered fully by the community at any time that it might be proposed to put one here, there, or somewhere.

Response: There are clear federal and state EIS requirements for any project that is determined to have significant environmental consequences. For each MUDS facility that is proposed, the lead entity preparing the EIS is required to evaluate the environmental impacts of several candidate disposal sites, including the environmentally preferred alternative and the "No Action" alternative.

Mr. Gary Vogner (Citizen)

Comment: I'd be interested in seeing the EIS include a summary of all existing disposal sites in the Puget Sound Basin, including creation, costs of operation impacts, level of contaminants and monitoring results. And that's for all the different types that exist, And where those current sites are located, included in the EIS.

Response: This comment was mentioned by other reviewers often enough that it was designated Thematic Comment #3 in Section I of this Responsiveness Summary. Readers should refer to the response found therein. In additional, the Final Programmatic EIS contains an expanded description of existing facilities (Chapter 2, Sections 2.2.3 and 2.3.3 and Tables 2-1 and 2-4).

Comment: Also to consider, I'd reiterate what someone else has said, consider the treatment technologies that might be possible that are commercially available.

Response: Regarding additional information on sediment decontamination/treatment technologies, please refer to Thematic Comment Response #4 in Section I. Also see Section 2.7 and APPENDIX F of the Final PEIS, where this topic is discussed in much more detail.

Comment: Consider upland disposal with full cost indications.

Response: The MUDS Feasibility Study Team has reviewed and updated the cost for disposal of contaminated sediment in an upland CDF (Section 2.4.4.2) and an existing landfill (Section 2.4.5.2). However, it is important to understand that many of the associated costs are either difficult to quantify or highly variable due to site-specific factors.