

## **DMMP CLARIFICATION PAPER**

### **DETERMINING WHEN MATERIAL ABOVE MEAN/ORDINARY HIGH WATER WILL BE CHARACTERIZED UNDER THE DMMP**

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#### **INTRODUCTION**

Since 1989, dredged material in the Puget Sound region has been managed mainly by the Dredged Material Management Program (DMMP) - formerly the Puget Sound Dredged Material Disposal Analysis program (PSDDA). The intent of the program was to provide a regulatory framework and sediment quality evaluation procedures, as well as regional open-water disposal capacity and guidelines for managing disposal sites. These features, which were largely lacking in already-established regulatory programs, have facilitated consistent, environmentally sound and timely decisions on management of dredged material in Washington.

The focus of the original PSDDA program and current DMMP has been dredging projects that support navigation and commerce. However, the participating agencies<sup>1</sup> recognize that program guidelines can also be applied to projects whose primary purpose for dredging is environmental restoration or other economic development. Dredging projects that create valuable new aquatic habitat, or enhance existing habitat, are generally desirable. So too are projects that enable new commercial enterprise.

In recent years, the DMMP has evaluated an increasing number of projects that propose dredging for all of these reasons - navigation, restoration and development. Some of these projects begin to blur the line between the dredging of sediments from areas of Puget Sound, as originally intended by the program, and the excavation of upland soils.

#### *Definition of “Dredged Material”*

The DMMP derives much of its authority from Section 404 of the Clean Water Act, which applies both to “dredged material” and material used as “fill”. The federal definition of dredged material is “material that is excavated or dredged from the waters of the United States” (40 CFR 232.2). The Evaluation Procedures Technical Appendix or

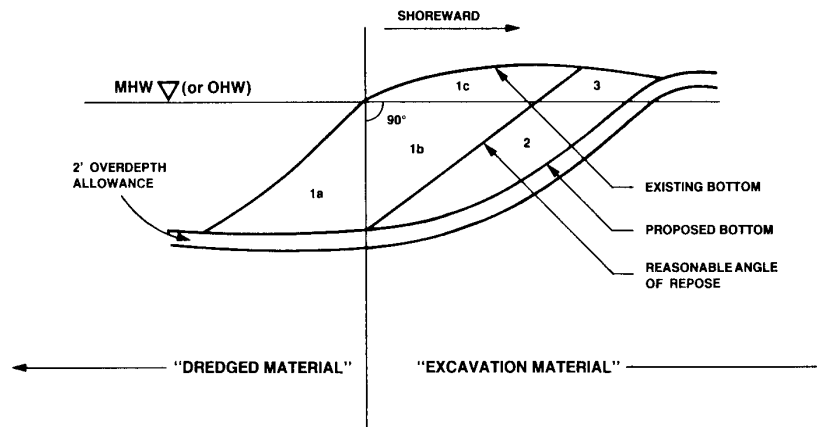
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\* U.S. Army Corps of Engineers Seattle District and Environmental Protection Agency, Washington Departments of Ecology and Natural Resources

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“EPTA” (PSDDA, 1988) provides a similar definition in its glossary: “sediments excavated from the bottom of a waterway or water body”.

A strict interpretation of the federal definition would limit dredged material to that which lies waterward of a vertical line intersecting the Mean or Ordinary High Water mark (Figure 1, 1a). However, such a vertical cut results in slumping of bank material lying above the “reasonable angle of repose” (1b and 1c), so EPTA also considers this to be dredged material.



**Figure 1. Cross-section of a dredging prism. Taken from EPTA, 1988, page I-13**

EPTA makes two further statements:

- “... bank material excavated from below the angle of repose (i.e., areas labeled 2 and 3 ...), or other land excavation material, has been permitted, and will continue to be included, as dredged material only if there would be an ecological benefit (e.g., habitat improvement) at the disposal site.”
- “bank material ...(excavated from below the angle of repose) ... also should be considered dredged material for possible open-water disposal if an ecological benefit can be shown at the dredging site.”

Thus, dredged material is broadly defined and can include some volume of material excavated from upland locations (sections 2 and 3 in Figure 1 above) as long as projects have demonstrable ecological benefits to either the dredging or disposal site. Examples of ecological benefits to the dredging site include enhancing fish habitat by replacing sheet pile with riprap and “fish mix”, replacing riprap with even more fish-friendly material, reworking fish passage structures, daylighting culverted creeks, removing contaminated sediment and rerouting stormwater. Creating more open water area by cutting the shoreline back and reinstalling a similar sheet pile seawall may or may not impart substantial ecological benefit to the project site. This determination will be made in consultation with resource agencies and other entities. Examples of ecological benefits

of placing dredged or excavated material at an open-water disposal site include “capping” it with material having fewer contaminants and, possibly, adding organic carbon or nutrient content that enhances re-colonization and leads to greater benthic community diversity.

The original PSDDA program may have anticipated dredging for purposes other than maintaining navigation and commerce, but it was not intended to regulate or manage upland soils at open-water disposal sites. Chapter 332-30-166 of Washington Administrative Code (WAC) states:

*“Open water disposal sites. (1) Open water disposal sites are established primarily for the disposal of dredged material obtained from marine or fresh waters. These sites are generally not available for disposal of material derived from upland or dryland excavation except when such materials would enhance the aquatic habitat.”*

Regulation of excavated soils as solid wastes should occur under authorities of the Resource Conservation and Recovery Act (RCRA, Title 42 Chapter 82) and Washington statutes and regulations (e.g., 70.95 RCW, Chapters 173-304, 173-350 WAC).

In summary, “dredged material” as currently defined in DMMP documents is:

- below mean or ordinary high water
- defined in a broad/practical manner
- managed primarily under DMMP because other programs lack an adequate regulatory framework, evaluation procedures, and/or other pertinent features
- managed primarily to maintain navigation and commerce, but also to encourage creation of aquatic habitat and economic development
- managed primarily at open-water disposal sites established to receive dredged material, not upland soils or other fill material, unless the latter has ecological benefits to either the dredging or disposal site

## **PROBLEM IDENTIFICATION**

Recent and proposed dredging projects have resulted in the DMMP agencies needing to clarify the program’s working definition of dredged material and, perhaps more importantly, the process for determining that a project will be reviewed by the DMMP. Several of these projects took place in the Blair Waterway, Tacoma, and resulted in substantial dredged material found suitable for open-water disposal and placed at the nearby Commencement Bay site. Some 237,000 cubic yards (cy) of material characterized for the Blair Graving Dock Project was found suitable for open-water disposal in 1994. The 1995 West Blair Terminal Development Project and the 2001 Pierce County Terminal Project (PCT) involved approximately 525,000 cy and 2,100,000 cy, respectively.

In all these cases, the agencies used the guidance provided in EPTA to determine if these projects involved “dredged material” and met the intent of the program. The agencies

documented their decision more carefully for the PCT project (USACE, 2000) because the extent of the proposed shoreline cutback and volume of material involved was so great. The letter listed the following lines of evidence for a weight-of-evidence determination that the project could be evaluated under the DMMP:

- the project site was within the DNR harbor line on former mudflat that had been filled with side-cast dredged material earlier this century
- the project was believed to have environmental benefits to Commencement Bay that included conversion of uplands to aquatic habitat, exposing a portion of Wapato Creek and various stormwater improvements
- all work was to be conducted adjacent to the waterway
- all dredging was to be done by water-based mechanical dredge
- the sediment was too fine and damp to be used for structural fill

However, it should also be noted that a) conducting marine toxicity tests was complicated by presence of terrestrial material, b) substantial work was done using land-based equipment, and c) there were two modifications of the original project to “dredge” further inland.

The DMMP agencies have only recently learned of a second phase of the PCT project. The work proposed for Phase II would widen portions of the Blair Waterway by cutting back sections of both western and eastern shores, removing approximately 2.5 million cubic yards of material and potentially placing up to 3 million cubic yards of material at the Commencement Bay open-water disposal site. With increasing maritime commerce and the need for dredging/excavation to accommodate it, it seems likely that the DMMP will be asked to review more large-scale expansion projects.

## **PROPOSED CLARIFICATION**

The DMMP agencies have carefully reviewed and discussed the existing definition of dredged material, together with the text that accompanies it, and do not find sufficient reason to amend EPTA at this time. Staff does believe there is a need to propose a process and clarify the factors that will be used on a site-specific basis to determine whether or not a future project will be evaluated as dredged material by the DMMP.

### *Proposed Process*

The earliest formal communication between permit applicants and regulators usually occurs in a pre-application meeting. DMMP staff recommends that applicants identify at that meeting whether or not they propose to excavate or dredge any material above MHW that lies beyond the “reasonable angle of repose”<sup>2</sup> (Figure 1). If not, then the project will be evaluated under the DMMP. However, if the proposed project was preceded by other shoreline cutbacks, then the DMMP may require additional information for its Tier I “reason-to-believe” evaluation. For example, site use history and/or results from soil

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<sup>2</sup> The DMMP agencies may, on a site-specific basis, require the project proponent to justify the default slope of 1 vertical : 2 horizontal (30°) as a “reasonable angle of repose”.

borings and groundwater testing becomes more important for a dredging project that once was clearly well above MHW. The DMMP might require measurement of additional chemicals of concern, depending on site use history.

If it is learned at the pre-application meeting that the proposed work involves shoreline cut back or other excavation that lies beyond the reasonable angle of repose, then the permit applicant must provide to the DMMP agencies information relating to the factors listed below.

The major factors that the DMMP agencies will use on a site-specific basis to determine whether or not expansion-type dredging projects involve dredged material include:

- There must be ecological benefit to either the dredging or disposal site.
  - The original PSDDA program and EPTA guidance was developed in part to facilitate creation/enhancement of aquatic habitat. But benefit to the dredging site was not intended to extend beyond the dredging site itself. Thus, benefit to the dredging site does not include those associated with required off-site mitigation<sup>3</sup>. It also might not include additional hard-armored open water habitat.
  - Benefits to the disposal site are considered relative to the condition of the open-water site before being routinely used for dredged material disposal.
- There must be ample reason to believe that the characteristics of the material to be dredged or excavated are substantively similar to the marine/estuarine sediments that are the basis of regional sediment quality criteria and guidelines. Some reasons are:
  - the material was once dredged from a nearby waterway and placed in its current location as fill
  - the work is located in or adjacent to an existing water body and will be conducted from the water (generally, only de minimis land-based excavation will be allowed)
  - groundwater/interstitial water is influenced by the adjacent water body (from which dredging would occur)
  - there is little evidence for or reason to suspect presence of toxic compounds/elements other than those on the PSDDA/DMMP list of chemicals of concern
  - total organic carbon of the dredged material is similar in quantity and quality to that found in sediments of the adjacent water body

Open-water disposal capacity exists and is provided on a regional basis, so available capacity of the nearest open-water disposal site should not be a factor in this determination.

The DMMP evaluation of expansion-type dredging projects determined to involve dredged material may require a new definition of dredged material management units

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<sup>3</sup> The DMMP agencies may consider a future amendment to EPTA explicitly stating that the enhancement or creation of off-site aquatic habitat within the local environs (but not at the actual dredging site) may constitute “ecological benefit”. This would potentially enable additional material that lies beyond the “reasonable angle of repose” to be evaluated as dredged material.

(DMMU) and/or measurement of a different suite of suspected contaminants that are each appropriate for the specific site.

If the DMMP agencies determine that excavating material lying beyond the reasonable angle of repose does not have clear ecological benefits to either the dredging or selected disposal site, then that material will not be reviewed for suitability for disposal at an open-water site. The applicant will be notified as soon as this determination is made. In this event, the agencies could still evaluate the dredged material if the applicant proposes that it be used in some other beneficial manner, e.g., off-site habitat enhancement, slope stabilization, etc.

## **REFERENCES**

PSDDA, 1988. Evaluation Procedures Technical Appendix – Phase I (Central Puget Sound).

U.S. Army Corps of Engineers – Seattle District, 2000. Letter to Ms. Sally Fisher, (GeoEngineers) representing the Port of Tacoma, August 10, 2000.