

DMMP CLARIFICATION PAPER

USE OF FLAT-TOP BARGES AT DMMP DISPERSIVE DISPOSAL SITES

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Introduction

During the development of the Puget Sound Dredged Disposal Analysis (PSDDA), now known as the Dredged Material Management Program (DMMP), specific guidelines were established for the type of material to be disposed at designated sites. These guidelines are described in the Management Plan Technical Appendix, Phase I. The Plan describes the type of material suitable for the sites, barge positioning requirements, debris removal and other aspects of disposal. Regarding the type of equipment to be used, the Management Plan states that bottom-dump barges, also known as split or hopper barges, should be used at disposal sites (Section 3.4.7.1). The goal was to minimize turbidity and to limit the mixing of sediment in the water column (PSDDA 1988). Use of bottom-dump barges allows the dredged material to remain in a relatively consolidated mass as it descends through the water column.

Problem Identification

In recent years, there has, at times, been a shortage of bottom-dump barges available for dredging projects in Washington State. This shortage has led to the request for the use of flat-top barges, also known as deck or top-load barges, for transport and disposal of material at the DMMP open-water disposal sites. In an effort to meet project deadlines, applicants have asked that flat-top barges be allowed at some of the DMMP open-water disposal sites.

The DMMP manages two types of open water disposal sites, known as non-dispersive and dispersive sites. At non-dispersive sites, the material does not disperse but remains on site for further monitoring. Dispersive sites, on the other hand, have been sited to transport sediment away from the target zone through high current velocities. Since dispersion of the dredged material is desirable at these sites *material must pass stricter sediment quality guidance*, and mixing of material with the water column and transport off site are less of a concern for these sites than for non-dispersive sites; thus, turbidity is not an issue.

Proposed Clarification

The use of flat-top barges for disposal of dredged material will be permitted in certain cases at dispersive disposal sites. Using flat-top barges will not interfere with the site management plans for the dispersive disposal sites. Dispersive site management plans require that material move off-site within one to two days, and this will be maintained with the use of flat-top barges.

However, current velocities and weather at DMMP dispersive sites can be extreme and use of front-end loaders to unload flat-top barges can be hazardous. Therefore, due to safety considerations, use of flat-top barges will only be allowed when absolutely necessary to complete the dredging project in question. Use will be decided on a project-by-project basis.

The use of flat-top barges is not allowed at the non-dispersive disposal sites. As mentioned above, site management and monitoring plans for these sites emphasize that the material stay on site, and the use of a flat-top barge would result in greater dispersion of material, and potential off-site disposal. The use of flat-top barges in non-dispersive areas would result in an increase in turbidity and increased mixing in the water column at the disposal site. By using bottom-dump barges, the material will remain relatively well-consolidated as it passes through the water column, limiting turbidity and mixing.

References

PSDDA, 1988. Management Plans Technical Appendix – Phase I. U. S. Army Corps of Engineers – Seattle District; U.S. Environmental Protection Agency – Region X; Washington State Department of Natural Resources; Washington State Department of Ecology