



Focus on Washington's Dredged Material Management Program

From Ecology's Shorelands and Environmental Assistance Program



Overview: Why dredging is important

Dredging affects nearly anyone who lives in or visits Washington State. Across the Puget Sound region, our harbor areas, ports, and marinas naturally silt in. This means that routine maintenance dredging is needed regularly to remove the mud and sand that can get in the way or cause safety problems for navigation. Washington's economy depends on access to U.S. and world markets through shipping. Dredging helps keep navigation and commerce moving.



Together, the ports of Seattle and Tacoma make Puget Sound the second largest U.S. harbor for container traffic. This includes:

- \$14 billion in exports that are made or grown in Washington pass through Puget Sound ports.
- 62.58 million metric tons of cargo pass through Puget Sound ports.
- Water-based activities by the Port of Seattle alone provide 31,000 jobs and \$1.9 billion in income.



Dealing with dredged material

Between 2000 and 2007, about 22.5 million cubic yards of material were dredged and disposed of at open-water disposal sites in Washington. Around 9 million cubic yards came from the Puget Sound region and 13.5 million cubic yards from the Willapa Bay and Grays Harbor region. If put in a single pile, all this material would fill nearly two football fields a mile deep. However, we cannot put dredged material just anywhere. Federal and state laws require that dredged material must be scientifically evaluated and disposed of in a manner that doesn't cause harm to people or the environment.

Dredged Material Management Program

A group of experts led by the U.S. Army Corps of Engineers formed the Dredged Material Management Program (DMMP) in 1985 to ensure that disposed dredge material does not cause human or environmental health problems in Washington. The DMMP includes sediment specialists, biologists, chemists and other environmental experts from:

- U.S. Army Corps of Engineers Seattle District (lead agency).
- U.S. Environmental Protection Agency (EPA), Region 10.
- Washington Department of Ecology (Ecology).
- Washington Department of Natural Resources (DNR).

DMMP provides the structure and system to manage publicly approved, environmentally acceptable open-water disposal sites in Puget Sound, Grays Harbor, and Willapa Bay.



Disposal proposals: Assessment and evaluation

Anyone who wants to dredge and dispose of 1,000 cubic yards or more of material must submit a “sampling and analysis plan” (SAP) to the USACE, the lead DMMP agency. A project’s size and site history affects how intensely the sediments are assessed. Experts from all four agencies review the plan to find out if it does enough to fully describe the materials being removed and exposed by dredging. The DMMP considers many factors to determine the number of samples needed for a proposed project. These include:

- Historical uses and existing sediment chemistry data in the area.
- Nearness to existing federal and state cleanup sites.
- Makeup of materials at the site.
- How much and where material is proposed to be disposed.

Once an SAP is approved by the DMMP, the party wanting to dredge conducts sampling and sediment characterization. A report goes to the DMMP. They document their evaluation in a “Suitability Determination,” which includes a project summary, an evaluation of the data, and DMMP interpretation of the sediment characterization results relative to disposal alternatives. Dredged material may be:

- Disposed of in-water at an approved site.
- Transferred to land for fill projects.
- Used for beneficial shoreline uses.
- Sent to an approved landfill.

Guidance details are found in the most current DMMP Users Manual. The manual describes region-specific requirements and screening values for different kinds of contaminants. The current manual is posted on the DMMP website. The DMMP should release its final manual by early 2008. Visit the DMMP website at:)

Public involvement opportunities

When DMMP issues a Suitability Determination for a proposal, it is included in the Joint Aquatic Resource Permit Application (JARPA). State and federal regulatory agencies use JARPA to decide whether to issue all the different permits required for a dredge and disposal project to move forward. The public has opportunities to comment when public notices are posted for USACE sediment dredging and disposal permits or Ecology’s certification that a project meets state water quality standards.

Highly contaminated sediments handled through different process

If the DMMP finds highly contaminated sediments, the dredging project goes through a different regulatory process with cleanup authorities like the EPA Superfund Program or Ecology’s toxics cleanup program.

DMMP process protects the environment

The DMMP evaluation and review process for dredged material works. Between 2000 and 2007, 1.5 million cubic yards were deemed unsuitable for in-water disposal and removed from the Sound. Testing and monitoring reveal that disposal site use has not led to unacceptable increases in chemical concentrations and biological effects either in or around the disposal sites. At some sites, the concentrations of many compounds in sediments are lower than the concentrations in surrounding

areas. In fact, repeated monitoring at the Elliott Bay in-water disposal site has shown the sediment quality is better now than before the DMMP assessment and evaluation process.

Endangered species considered

In the Puget Sound region, there are eight DMMP in-water disposal sites for dredged material. Another five sites are found in Grays Harbor and Willapa Bay. Both the National Oceanic and Atmospheric Administration (NOAA) and the U.S. Fish & Wildlife Service have agreed the Puget Sound in-water dredge material disposal sites pose “no significant impact” on endangered fish species like salmon and steelhead or marine mammals like orcas. Their findings are posted on the DMMP website.

DMMP adapts to new data and technology

The DMMP routinely evaluates what are acceptable and unacceptable levels of contamination for a wide range of pollutants. As science advances, the program updates and refines its guidance for assessing dredged material. Recent examples include:

- In 2003, DMMP updated its lists of “bioaccumulative” contaminants of concern. These chemicals do not break down easily, move up in the food chain, and can concentrate at levels that may be harmful to human, wildlife and ecosystem health.
- In 2006, DMMP adopted new interim guidance for freshwater sediments.
- In 2007, DMMP began revising the framework for assessing dioxins in dredged material.

Whenever the DMMP proposes to change its management plan guidance and assessment methods, the public gets a chance to review the draft updates at the Sediment Management Annual Review Meeting. Meeting materials get posted on the DMMP website ahead of time so the public and regulated parties have time to review the documents.

‘Dispersive’ and ‘non-dispersive’ disposal sites

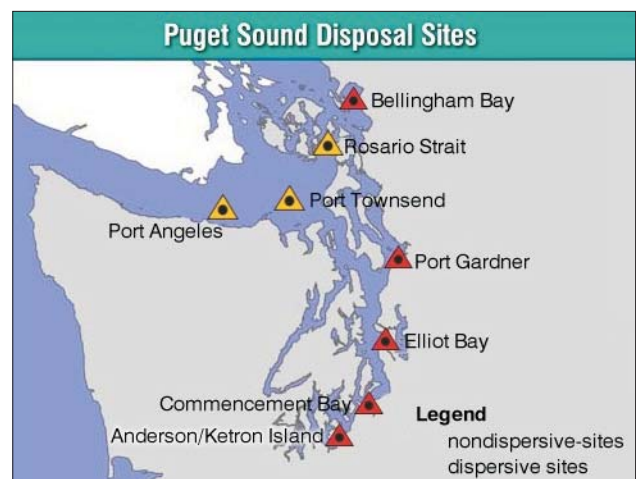
There are two types of in-water disposal sites for dredged material in Washington. “Dispersive” sites are in locations that have high current velocities so dredged material is quickly washed away with the tides. The DMMP doesn’t allow any material that could harm humans or sediment-dwelling organisms to be disposed of at dispersive sites.

“Non-dispersive” sites are in locations with low current velocities so dredged material stays on-site. DMMP guidance allows sediments that are placed at these sites to have minor adverse effects on sediment-dwelling organisms within the site, but no effects outside the site boundary. For human health effects, both site conditions are restricted to 1 in 100,000 estimated incremental lifetime cancer risks.

In the Puget Sound region, there are five non-dispersive and three dispersive disposal sites for dredged material. The five non-dispersive sites are located at:

Bellingham Bay

- Port Gardner
- Elliott Bay
- Commencement Bay
- Anderson/Ketron Island

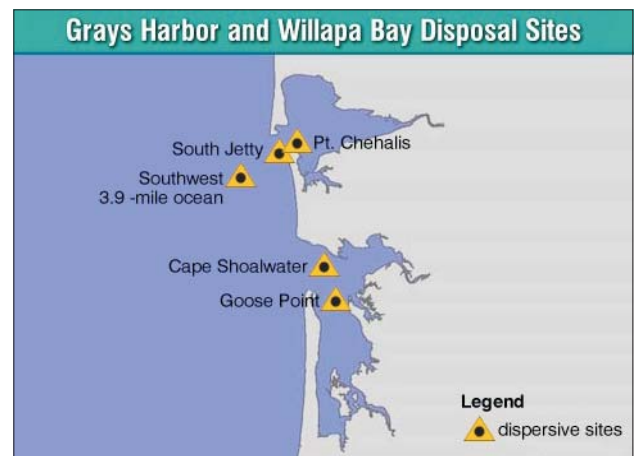


The three dispersive sites are at:

- Rosario Strait
- Port Townsend
- Port Angeles

The Willapa Bay and Grays Harbor area has five dispersive sites located at:

- Point Chehalis
- South Jetty
- Southwest
- Cape Shoalwater
- Goose Point



Site monitoring

DNR collects a user fee for all 13 disposal sites. The fees pay for site management and environmental monitoring at the five non-dispersive sites in Puget Sound. All five sites receive post-disposal physical, chemical, and biological monitoring. The USACE also conducts periodic bathymetric monitoring at all sites to evaluate the mound status at non-dispersive sites and to insure that mounding is not occurring at the dispersive sites. Site monitoring and disposal activity summaries are posted on the DMMP Web site.

History

The DMMP formed in 1985 after NOAA studies raised concerns about environmentally degraded sediment and water quality in Puget Sound. The studies lowered public confidence about the skill of federal and state regulatory and land management agencies to effectively deal with dredged material in the Sound. The City of Seattle withdrew its shoreline permit for a former Elliott Bay disposal site. The Puget Sound Dredged Disposal Analysis was launched to stave off an economic and shipping crisis and to develop a transparent program to restore public confidence in DMMP regulatory agencies.

The four-and-a-half year interagency study was done in two phases and cost \$4.5 million. At the end of each phase, an environmental impact statement (EIS) was completed for a specific area. The study helped build publicly acceptable and environmentally protective management plans to govern the unconfined, open-water disposal of dredged material. Study milestones include:

- In December 1988, the first phase of the study was completed and a final EIS finished for dredged material disposal sites within central Puget Sound.
- In 1989, the second study phase and final EIS were completed for sites in north and south Puget Sound.
- In 1995, a long-term strategy was developed for Grays Harbor and Willapa Bay, based on the Puget Sound program.
- In 1998, a long-term strategy was developed and put in place for the lower Columbia River.

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Web sites:

Dredged Material Management Program (includes ESA concurrence letters, DMMP Users Manual, and other information):

<http://www.nws.usace.army.mil/PublicMenu/Menu.cfm?sitename=dmmp&pagename=home>

U.S. Army Corps of Engineers Regulatory Home Page (includes links to public notices):

http://www.nws.usace.army.mil/PublicMenu/Menu.cfm?sitename=REG&pagename=Who_Needs_Permit

USACE Section 404 Clean Water Act permit information:

http://www.nws.usace.army.mil/PublicMenu/Menu.cfm?sitename=REG&pagename=Home_Page

Ecology Section 401 water quality certification (includes links to public meetings):

<http://www.ecy.wa.gov/programs/sea/fed-permit>

Ecology's Coastal Zone Management requirements:

<http://www.ecy.wa.gov/programs/sea/czm/prgm.html>

DNR's DMMP website (includes site use application and fee structure):

<http://www.dnr.wa.gov/htdocs/aqr/dmmp>

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