



Best Management Practices for the Management of Dredged Material

What is dredged material?

Dredged material includes material that is excavated at or below the Ordinary High Water Level of water basins, watercourses, public waters, or public waters wetlands, as defined by Minn. Stat. § 105G.005. Examples of dredged material include sediment from the navigational dredging for shipping cargo and freight in Minnesota's commercial ports, including material from the dredging in the main navigational channel as well as from the main navigational channel to a particular commercial shipping dock within the commercial port; and, dredge projects that require the removal of sediment from Minnesota waters at marinas and recreational boating areas.

Sediment removal projects from constructed collection and conveyance systems shall follow the stormwater sediment Best Management Practices (BMP), "Managing Stormwater Sediment Best Management Practice Guidance for Municipalities." This guidance can be found here:

<http://www.pca.state.mn.us/index.php/view-document.html?qid=18075>

Environmental considerations

Dredged material has the potential to impact the environment. Carriage water and hydrostatic water from hydraulic or mechanical dredging processes, as well as stormwater runoff from dredged material management, transfer and off-loading sites, has the potential to pollute surface water when discharged to waters of the state. The management of dredged material also has the potential to affect ground water through on-land management methods, if not managed in consideration of environmental risk factors.

This fact sheet is intended to address the proper management of dredged material, once excavated, and the control of discharges from the project site and/or management unit site(s), including stormwater. Issues related to dredging activity itself are addressed by other regulatory entities, and is not the focus of this fact sheet.

Does my project require a permit?

The Minnesota Pollution Control Agency's (MPCA) permitting role in the dredge program is authorizing the on-land disposal or reuse of dredge materials, not the dredge activity itself. In-water disposal of dredged material is an activity that is regulated by the Minnesota Department of Natural Resources (MDNR) and/or the U.S. Army Corps of Engineers (USACE), depending on the destined site of placement of the dredged material.

A State Disposal System (SDS) permit is required based on the location of the dredge and the size of the project and how the material is going to be re-used/disposed.

A SDS permit may be required to store, treat, dispose and/or reuse dredged materials on-land in Minnesota if the dredged material originates from pollution remediation projects or from navigational channels and associated bays, harbors, docks and marinas from the following areas:

- Mississippi River downstream of River Mile 857.6 (which is approximately at the Soo Line Rail crossing near St. Anthony Parkway in Minneapolis)
- Minnesota River downstream of River Mile 27 (which is approximately two miles upstream of the CSAH crossing a Shakopee)
- St. Croix River downstream of River Mile 26 (which is approximately three miles upstream of the East Chestnut Street crossing at Stillwater)
- St. Louis River downstream of the State Highway 23 crossing
- St. Louis Bay or Duluth/Superior Harbor
- Out of state projects

Note: If the project is not located in the areas above, an SDS permit for the management of dredged material is not required.

Figure 1 is intended to guide users through the process of determining appropriate management options for dredged material, and the associated permitting requirements for various management methods. Answering “yes” or “no” to a question will lead to the respective answer, in terms of how to proceed through the flow diagram, and the regulatory controls of a particular management route.

For projects requiring a permit, refer to the MPCA document “Managing Dredged Material in the State of Minnesota” (wq-gen2-01), for additional details and management requirements.

Some types of projects do not require a permit from the MPCA. For example, the following types of projects do not require a permit from the MPCA for the management of dredged material:

- Projects involving the removal of less than or equal to 3000 cubic yards of material with no surface water discharge, and is either:
 - More than 93 percent sand, as determined by the grain size analysis
 - Characterized as having contaminant values less than the relevant soil reference values for the proposed disposal option
 - Disposed at a site or landfill that already has an MPCA permit that is approved to manage dredged material (industrial waste management plan).
- Projects involving the removal of more than 3000 cubic yards with no surface water discharge that is disposed at a site or landfill that already has an MPCA permit that is approved to manage dredge material (industrial waste management plan).

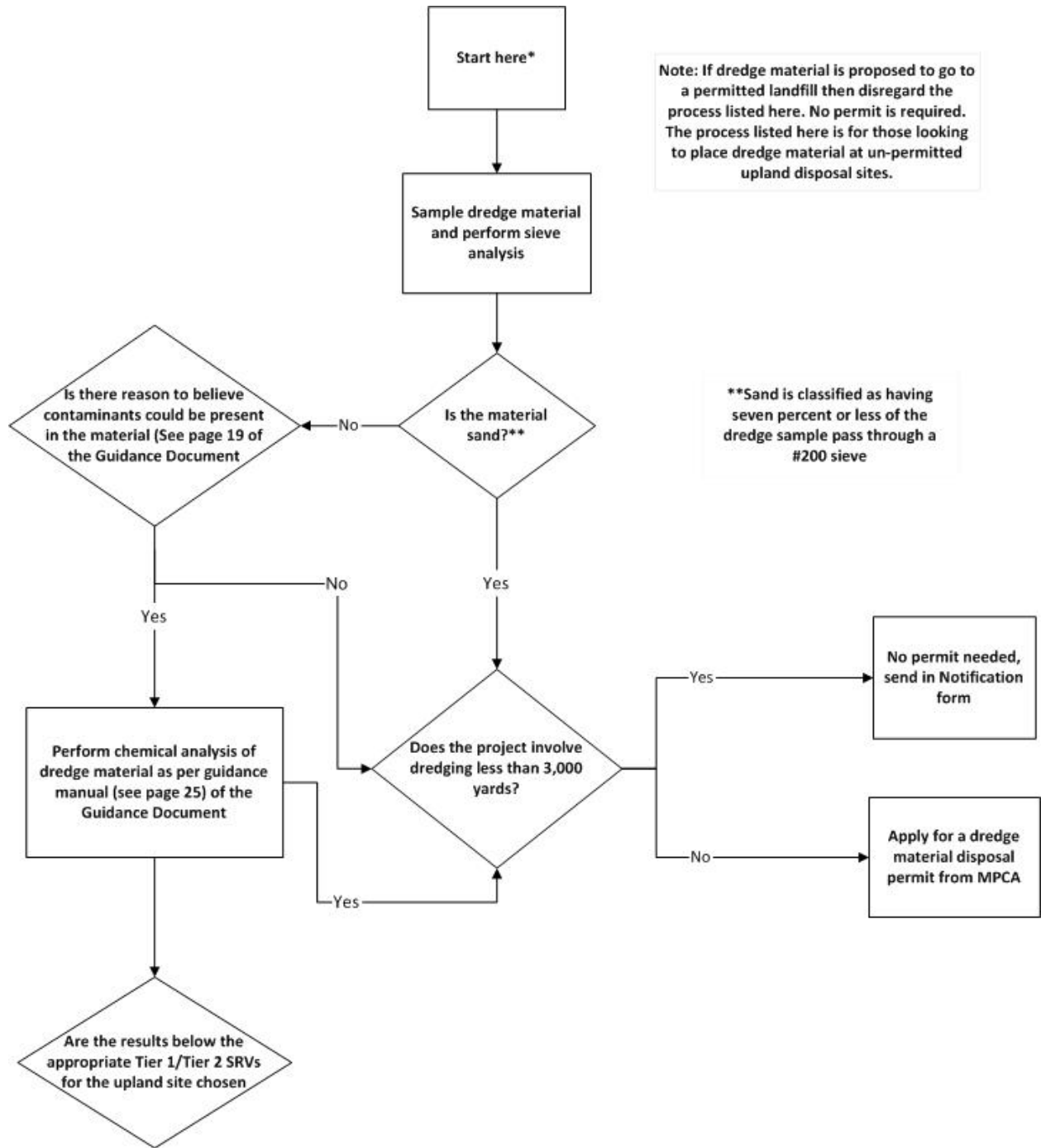
If managed in accordance with specified BMPs, permit coverage for industrial stormwater activities is also not required for projects not requiring a permit for the management of dredged materials.

For the purposes of making the de minimis determination, a “project” is defined as a discrete one-time excavation of material, or a series of dredging activities, such as with maintenance dredging, which involves multiple projects and multiple stages of a single project that are connected or phased actions. Dredged material from connected or phased actions are to be summed over the course of a five year permitting window and considered in total in making the de minimis determination.

Construction activities associated with dredge projects and dredged material management however, are not exempted from the requirement to obtain a Construction Stormwater permit, if required.

Information about the construction stormwater program, permit information and permit application forms can be found on the MPCA webpage located at: <http://www.pca.state.mn.us/wfhy5b>.

Figure 1. Permit decision flow diagram for dredge projects



Management requirements for unpermitted projects

For projects not requiring a permit, information pertaining to the project must be submitted to the MPCA for review at least 30 days prior to the initiation of dredge activities; in some cases, MPCA staff may be able to reduce the amount of time needed for MPCA review. A "Notification to Manage Dredged Materials without a Permit" (Notification) is used for notifying the MPCA of unpermitted dredge projects.

In addition to completing and submitting the Notification form, dredged materials must be managed in accordance with the management standards and BMPs outlined on this fact sheet.

Discharges to surface water

The MPCA is not authorized to issue National Pollutant Discharge Elimination System (NPDES) permits for discharges of dredged or fill material from dredge activities [40 CFR § 122.3 (b)]. The USACE Regulatory Programs include Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act. The St. Paul District's regulatory jurisdiction covers the states of Minnesota and Wisconsin.

An NPDES/SDS permit is required for any surface water discharge not authorized by Section 404 of the Clean Water Act, including stormwater.

In general, sites for the management of dredged material must be managed to control runoff, including stormwater, from the facility to prevent the exceedance of water quality standards specified in Minn. R. chs. 7050 and 7060.

Discharges associated with dredge projects and/or activities are not authorized, except for the following:

- Incidental discharges associated with re-handling off-loading and/or transportation activities
- Stormwater discharges originating from outside the boundaries of the project site that are diverted around the project site.
- BMPs for stormwater management at dredge project and management area(s) are discussed below.

In addition, use of materials at the facility that may cause exceedances of groundwater standards specified in Minn. R. ch. 7060 must be limited and controlled. These materials include, but are not limited to, detergents and cleaning agents, solvents, chemical dust suppressants, lubricants, fuels, drilling fluids, oils, fertilizers, explosives and blasting agents.

Re-handling and off-loading activities

All of the following standards apply specifically to sites used for the re-handling and off-loading of dredged material:

- Dredged materials must be managed in a manner so as to minimize the amount of material returned by spillage, erosion or other discharge to waters of the state during re-handling and/or off-loading activities.
- Areas for the re-handling and/or off-loading of dredged material must be sloped away from surface water.

Transportation of dredged material

All of the following standards apply specifically to dredged material transportation activities:

- Dredged materials must be managed in a manner so as to minimize the amount of material returned by spillage, erosion or other discharge to waters of the state during transportation activities.
- Dredged material hauled on federal, state, or local highways, roads, or streets must be hauled in such a way as to prevent dredged material from leaking, spilling, or otherwise being deposited in the right-of way. Dredged material deposited on a public roadway must be immediately removed and properly disposed.
- The Permittee must minimize vehicle tracking of soil or dredged material off-site at locations where vehicles exit the dredging, storage, disposal and/or reuse facility onto impervious surfaces by BMPs such as stone pads, concrete or steel wash racks, or equivalent systems.
- Tracked soil and/or dredged material must be removed from impervious surfaces that do not drain back to the dredged material storage, disposal and/or reuse facility within 24 hours of discovery, and placed in the storage, disposal and/or reuse facility site.

Use/reuse of dredged materials

Based on the type and level of pollutants in the material in comparison to established Soil Reference Values (SRVs), dredged material is categorized into one or more management levels. The management level of a dredged material dictates the appropriate disposition of the material.

Dredged material is categorized into three management levels:

- Level 1
- Level 2
- Level 3

Level 1 dredged material is characterized as being at or below analyte concentrations for **all** of the Tier 1 SRVs listed.

Tier 1 SRV spreadsheet: <http://www.pca.state.mn.us/index.php/view-document.html?gid=3153>

Level 1 dredged material is suitable for use or reuse on properties with a residential or recreational use category.

Level 2 dredged materials is characterized as being at or below analyte concentrations for **all** of the Tier 2 SRVs listed.

Tier 2 SRV spreadsheet: <http://www.pca.state.mn.us/index.php/view-document.html?gid=3154>

Level 2 dredged material is suitable for use or reuse on properties with an industrial use category.

Level 3 dredged material is characterized as having significant contamination, as demonstrated by one or more analyte concentrations being greater than the Tier 2 SRVs. Contact MPCA staff for additional information on regulatory requirements for disposal of Level 3 dredged materials.

If subsets of management levels exist within the project, dredged material may be managed separately by subsets, i.e. each subset of dredged material is managed at the relevant management level; managed at the most restrictive management level, if separation and management by subset is not feasible or desired; or, managed at the most restrictive management level if subsets from a given project or multiple project, such as at a use/reuse staging area, are co-mingled prior to disposal.

BMPs for stormwater management

In general, management of dredged material should take place at upland sites, with the material being spread out, seeded, mulched and stabilized in place.

Control runoff

Temporary sediment basins should be considered for stormwater leaving the dredge project and/or management area(s). Where temporary sediment basins are not attainable due to site limitations, equivalent sediment controls, such as smaller basins, and/or sediment traps, silt fences, vegetative buffer strips, or any appropriate combination of measures should be used for all down slope boundaries of the area(s).

- Divert stormwater away from disturbed or exposed areas of the project site.
- Plan the movement and use of equipment so as to minimize soil disturbance at the project site.
- Minimize clearing and expedite re-vegetation of cleared areas.
- Stabilize drainage ways.
- Minimize the amount of exposed soil.
- Identify and protect areas where existing vegetation, such as trees, will not be disturbed by construction activity.
- Inspect surface waters, including drainage ditches and conveyance systems, for evidence of sediment being deposited by erosion.

If evidence of sediment deposition is found in surface water, remove all deltas and sediment deposited and re-stabilize the areas within seven days of discovery. Be sure to contact all local, regional, state and federal authorities and obtain any applicable permits prior to conducting any work.

Prevent erosion at the site(s)

Careful planning is an important part of erosion and sediment control. With careful planning, problem areas can be avoided, which will minimize both the erosion potential and the cost of sediment-control measures. Plan for and implement appropriate construction phasing, vegetative buffer strips, horizontal slope grading, and other construction practices that minimize erosion.

- Stabilize exposed soil.
 - Vegetate, mulch, or otherwise stabilize all exposed areas as soon as land alterations have been completed.
- Protect steep slopes.
 - Rough grade or terrace slopes.
 - Break up long slopes with sediment barriers, or under drain, or divert stormwater away from slopes.
 - Exposed soil areas with a continuous positive slope within 200 lineal feet of a surface water must have temporary erosion protection or permanent cover for the exposed soil areas year round, according to the following table of slopes and time frames:

Table 1. Exposure time allowed

Type of slope	Time*
Steeper than 3:1	7 days
10:1 to 3:1	14 days
Flatter than 10:1	21 days

*This is the maximum time an area can be exposed if it is not actively being worked.

- Protect waterways.
 - Plan and design skid trails, yard areas, and truck access roads to minimize stream crossings and avoid disturbing vegetated areas.
 - Construct stream crossings so that they minimize erosion and physical changes to streams.
 - Protect streams, stream buffers, wild woodlands, wetlands, or other sensitive areas from disturbance or construction activity by fencing or otherwise clearly marking these areas.
 - Lack of vegetation on stream banks can lead to erosion. Vegetate riparian areas along waterways.
 - Protect and install vegetative buffers along water bodies to slow and filter stormwater runoff.
 - Maintain buffers by mowing or re-planting periodically to ensure their effectiveness.

Delineate the location of areas not to be disturbed on development site before work begins and maintain erosion control at the site(s).

Stabilized ditches and outlets

- Phase construction
 - Sequence construction activities so that the soil is not exposed for long periods of time.
- Schedule or limit grading to small areas.
- Install key sediment control practices before site grading begins.
- Schedule site stabilization activities, such as landscaping, to be completed immediately after the land has been graded to its final contour.

Control sediment leaving the site(s)

Sediment control practices must be established on all down gradient perimeters before any up-gradient land disturbing activities begin. These practices shall remain in place until final stabilization has been established.

- Install perimeter controls.
 - All down gradient perimeter sediment-control BMPs must be in place before any up-gradient land-disturbing activity begins.
- Install sediment trapping devices.
 - Inspect and maintain silt fences after each rainstorm.
 - Make sure the bottom of the silt fence is buried in the ground.
 - Securely attach the material to the stakes.
 - Don't place silt fences in the middle of a waterway or use them as a check dam.
 - Make sure stormwater is not flowing around the silt fence.
- Minimize vehicle tracking of sediment
 - Vehicle tracking of sediment from the construction site must be minimized by BMPs such as stone pads, concrete, or steel wash rack, or equivalent systems.
 - Street sweeping must be used if such BMPs are not adequate to prevent sediment from being tracked onto the street.
 - Construction site vehicle exit locations must be inspected for evidence of off-site sediment tracking onto paved surfaces. Tracked sediment must be removed from all off-site paved surfaces, within 24 hours of discovery.

- Provide inlet protection
 - Use rock or other appropriate material to cover the storm drain inlet to filter out trash and debris.
 - Make sure the rock size is appropriate (usually one to two inches in diameter).
 - If you use inlet filters, maintain them regularly.
 - All storm drain inlets must be protected by appropriate BMPs during construction until all sources with potential for discharging to the inlet have been stabilized.

The timing of the installation of sediment control practices may be adjusted to accommodate short-term activities such as clearing or grubbing, or passage of vehicles. Any short-term activity must be completed as quickly as possible and the sediment control practices must be installed immediately after the activity is completed. However, sediment control practices must be installed before the next precipitation event even if the activity is not complete.

Implement good housekeeping practices

- Inspect and maintain erosion prevention and sediment control measures to ensure integrity and effectiveness. All nonfunctional BMPs must be repaired, replaced, or supplemented with functional BMPs.
- Repair, replace, or supplement silt fences when they become nonfunctional or the sediment reaches 1/3 of the height of the fence. Repairs must be made within 24 hours of discovery, or as soon as field conditions allow access.
- Construction Entrances
 - Remove mud and dirt from the tires of construction vehicles before they enter a paved roadway.
 - Properly size entrance BMPs for all anticipated vehicles.
 - Make sure that the construction entrance does not become buried in soil.
- Dirt Stockpiles
 - Cover or seed all dirt stockpiles.
 - Temporary soil stockpiles must have silt fence or other effective sediment controls, and cannot be placed in surface waters, including stormwater conveyances such as curb and gutter systems, or conduits and ditches.

Final stabilization

Stabilize the site(s) after all soil disturbing activities at the site have been completed. Final stabilization consists of a uniform perennial vegetative cover with a density of 70 percent over the entire pervious surface area, or other equivalent means necessary to prevent soil failure under erosive conditions.

Other regulatory entities and permits required

Projects that impact Minnesota's water resources are regulated by a variety of state, local, and federal agencies. Initiation of dredge activities must not be initiated until all applicable federal, state and/or local approvals that may be required for a particular project have been obtained. This includes, but is not limited to, state permits regulating activities in the bed of public waters as defined in Minn. Stat. § 105 from the MDNR, federal permits for dredged or fill material from the USACE, and local permits from the appropriate Soil and Water Conservation District, county or local unit of government.

An overview of environmental regulations pertaining to dredged material is summarized on the U.S. Environmental Protection Agency webpage located at:

<http://www.epa.gov/glnpo/sediment/gltem/regul.htm>.