

# FACT SHEET:

## Dredging

### Description:

Excavation of sediment from a waterway. Removed sediment will require subsequent management. Typical process options include hydraulic (e.g., cutterhead, horizontal auger, dust pan, matchbox, plain suction); mechanical (e.g., clamshell bucket, backhoe, bucket ladder, dipper, dragline); and specialty (e.g. PNEUMA<sup>®</sup> Pump, Dry Dredge<sup>™</sup>, SoliFlo<sup>SM</sup>).

### Scale of Implementation:

#### Full-Scale

#### Precedence (full-scale):

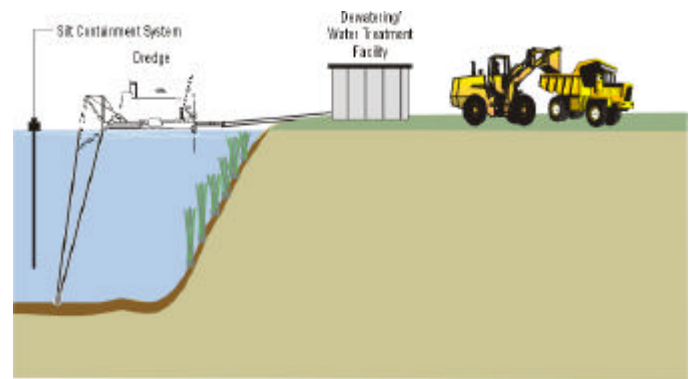
- ✓ Sheboygan River and Harbor (WI)
- ✓ Grasse River (NY)
- ✓ St. Lawrence River (NY)
- ✓ New Bedford Harbor (MA)
- ✓ Manistique River and Harbor (MI)
- ✓ Marathon Battery (NY)
- ✓ Shiawassee River (MI)
- ✓ Willamette River (OR)
- ✓ Duwamish Waterway (WA)
- ✓ Waukegan Harbor (IL)
- ✓ River Raisin (MI)
- ✓ Monguagon Creek (MI)
- ✓ Willow Run Creek (MI)
- ✓ Lake Jarnsjon (Sweden)

#### Documented Effectiveness Toward Risk Reduction:

- ✓ permanently removes sediment from aquatic environment

#### For More Information:

- ✓ National Research Council. *Contaminated Sediments in Ports and Waterways: Cleanup Strategies and Technologies*. National Academy of Sciences. 1997
- ✓ USEPA ARCS Program. *Remediation Guidance Document*. EPA-905-R94-003. October 1994.
- ✓ Herbich, J.B. *Handbook of Dredging Engineering*. McGraw Hill, Inc. 1992



Typical Dredging Components

### Critical Engineering Design Issues

#### Influencing Effectiveness:

- ✓ desired solids concentration
- ✓ desired production rate
- ✓ dredging accuracy
- ✓ sediment/dredging depth
- ✓ ability to handle debris
- ✓ water depth
- ✓ water velocity
- ✓ navigational traffic
- ✓ access constraints
- ✓ the presence of boulders/debris
- ✓ bottom conditions
- ✓ disposal requirements
- ✓ weather
- ✓ location, configuration, and extent of targeted sediment

#### Short-/Long-Term Issues:

- ✓ residual sediment due to mixing of constituent-containing material with underlying material or surrounding sediment during dredging
- ✓ areas missed by dredge
- ✓ sediment resuspension/downstream migration
- ✓ elevated chemical levels in residual sediments
- ✓ long- or short-term increases in chemical bioavailability
- ✓ alteration or destruction of benthic community
- ✓ achieving low chemical cleanup levels unlikely
- ✓ presence of boulders/debris
- ✓ exposure of more highly contaminated sediments
- ✓ cannot achieve 100% removal; remaining residuals available for future exposure