SEDIMENT MANAGEMENT CONSIDERATIONS - A SMWG PERSPECTIVE

Steven C. Nadeau
Coordinating Director
Sediment Management Work Group
October, 2004

SMWG BACKGROUND

- SMWG formation - May 1998
- Coordinated approach by parties responsible for developing/implementing contaminated sediment management strategies

Current membership:
- 40 Members
- 31 Sponsors

SMWG MISSION AND OBJECTIVES

- ***Our Mission ...*** To advance risk-based, scientifically sound approaches for evaluation of sediment management decisions

Our Objectives ... To collect, develop, analyze, and share data and information on the effectiveness of sediment management technologies and approaches

MAGNITUDE OF THE PROBLEM

- The nationwide sediments issue is pervasive and is not at all limited to a handful of “mega” sediment sites.
- Even the non-“mega” sites are resource intensive and pose many complex issues that will be technically difficult to address.
- Managing these sites is going to consume an incredible amount of the nation’s resources.

MAGNITUDE OF THE PROBLEM (Cont.)

Typical Mega-Site During Its Infancy!

BIOAVAILABILITY / BIOACCESSIBILITY

- Concept
  - Contaminants that are not within the bioavailable zone are not a source of significant exposure and risk to fish or higher organisms (provided they are stable)
  - Contaminants that are not biologically available to organisms, even though they may reside in the biologically accessible zone, are also not a source of risk (provided they are stable)
- Application
  - Determine the bioavailability/bioaccessibility of the contaminated sediments

SEDIMENT STABILITY

- Evaluate the stability of the sediment bed
- Evaluate the stability of the chemicals in the sediment
- Determine whether natural events or human actions are likely to significantly disrupt conditions in a manner that creates an unacceptable risk

COMPARATIVE EVALUATION OF NET RISK REDUCTION

- Determine the net risk reduction potential of each of the sediment management options under consideration on a site-specific basis
- Each remedial action has its own attendant risks, e.g.:
  - Implementation risks associated with dredging and capping
  - Residual concentrations and resuspension losses associated with dredging
  - Stability issues with respect to in-situ remedies

RISK REDUCTION EFFECTIVENESS REVIEW

- Dredging
  - Determine the impact on risk reduction of likely dredging losses (implementation losses through resuspension and solubilization)
  - Determine the impact on risk reduction of likely range of concentrations of post-dredging contaminant residuals
  - Determine the risk-reduction potential of post-dredging conditions

RISK REDUCTION EFFECTIVENESS REVIEW

- Capping
  - Undertake an evaluation of the impact on risk reduction of the potential loss of portions of the cap based on site-specific conditions
- MNR
  - Determine whether MNR will acceptably reduce risks within a reasonable time frame
  - Determine the impact on risk reduction of the potential loss of stability

APPLICATION OF RISK MANAGEMENT PRINCIPLES

- Considerations in Risk Evaluation
  - Risk management actions should be linked to reduction of key (significant) human and ecological risks
  - Management goals should be framed within a realistic time period; it is not practical to achieve all goals in the short term
  - Eco-risks should be characterized at a level of assessment appropriate for the site

REMEDY SELECTION

- The full array of sediment management options should be considered in the context of site-specific circumstances, including innovative approaches
- Natural recovery should be fully compared and contrasted to the other sediment management options, typically dredging and capping

UNCERTAINTY RESOLUTION

- Sediment stability uncertainty often plays a key role in the ultimate sediment management decision made at many sites
- Sediments (and the chemicals within them) should not be presumed to be inherently unstable (sediment stability should be thoroughly evaluated based on valid scientific tools and models, calibrated where feasible with site specific information)

UNCERTAINTY RESOLUTION

- Most would agree that good decisions often must be made without perfect knowledge.
- However, decisions made with imperfect knowledge where the tools exist to provide better knowledge should not be considered good decisions.

For Further Info ...

- Contact:

Steven C. Nadeau, Esq., Coordinating Director
Sediment Management Work Group
Honigman Miller Schwartz and Cohn LLP
Phone: (313) 465-7492
Fax: (313) 465-7493
email: snadeau@honigman.com

– Visit the SMWG website: www.smwg.org