Update on Contaminated Sediment External Advisory Group

October 7, 2016

Background

- Brownfield Study Group identified a number of concerns in 2015 Report Investing in Wisconsin Reducing Risk Maximizing Return

- Lead to creation of Contaminated Sediment External Advisory Group (CSEAG)

Background

- Strategic Development Plan identified need to develop a common understanding and approach to address contaminated water-related clean-up projects, including contaminated sediments and wetlands

- Integrated Sediment Team was reconstituted with representatives of appropriate programs

Brownfield Study Group Recommendations

Clarify the roles and responsibilities of the RR, Water and Waste programs:

- Determine whether NR 700 applies to sediment sites
- Provide guidance on the interface between NR 700, NR 347, NR 500 and NR 105
- Process for resolving resource management conflicts

Brownfield Study Group Recommendations

Clarify definitions of sediment and soil, to provide certainty and consistency

- Guidance on sediment definition among the three bureaus.
- Guidance on how soil is different from sediment.
- Guidance on whether sediment can become soil and soil can become sediment.
- Clarify the applicability of NR 720 to sediments.

Brownfield Study Group Recommendations

Develop process for upland redevelopment to occur before sediment remediation is complete.

- Clarify whether DNR can/should approve the upland cleanup before the sediment is cleaned up.

Brownfield Study Group Recommendations

- Develop sediment cleanup standards to provide certainty and consistency.
  - Develop PAH standards for sediment cleanups.

- Develop a process for management of sediment spoils in locations other than a licensed landfill.

Brownfield Study Group Recommendations

Address the issues associated with GIS Registry and case closure at sediment sites.

- Provide guidance on recognized issues such as limitations of GIS (e.g. no exact line of demarcation).
- What is the definition of a “site” when DNR approves soft boundaries and containment with continuing obligations?
- Include sediment cleanups in the GIS registry.

Brownfield Study Group Recommendations

Support DNR efforts to modify s. 292.12, Stats. to address sediment cleanups with continuing obligations.

Changes should include:

- Financial security for engineered remedies in water.
- Transparency in long-term care obligations, both as to agreements to perform and financial responsibilities.
- Notice to property owners of any residual sediment contamination and engineered controls.
- Clarify responsibilities of RPs, off-site owners, future owners of the source property, etc.
- Should a cap maintenance plan incorporate provisions from other statutes or laws (e.g. Chapter 30, Stats.?)

Brownfield Study Group Recommendations

- Clarify limitations on leasing authority for submerged lands in public trust waters. (i.e. Can BCPL issue a lease for a contaminated sediment cap?)
- Clarify how Wisconsin property laws regarding riparian ownership and control impact sediment investigations, cleanups and continuing obligations.
- Provide guidance to address soil/groundwater vs. sediment sampling in wetlands and smaller aquatic environments.

Brownfield Study Group Recommendations

Modify VPLE law (s. 292.15, Stats.) to allow sediment cleanups to qualify for VPLE

- Should upland sites be eligible for VPLE through a partial exemption if fully remediated while sediment cleanup is still in progress?
- Is a financial assurance mechanism (insurance) necessary and how could this be accomplished?
- Expand the type of liability protections provided through this process.

RR Strategic Direction Plan

- Actions and Steps
  - Create external advisory group for sediment cleanups
  - Develop environmental sampling and analysis guidance for sediment
  - Support development of department sediment quality criteria
  - Develop a definition of soil versus sediment
  - Determine jurisdiction of sediment cleanup projects
  - Management of dredge material
  - Clarify the applicability of Spill Law and ch. NR 700 series to sediment cleanups

Integrated Sediment Team

- Co-leaders
  - Marsha Burzynski Kristin DuFresne
- Members
  - Margaret Brunette Sarah Yang
  - Lis Olson Marty Griffin
  - Scott Inman John Morris
- Co-Sponsors
  - Steve Galarneau John Robinson
- Others
  - Judy Fassbender Jess Kramer Darsi Foss

CSEAG and IST - Subgroups/Priority Issues

- ***Site Specific Standard Development***
- ***Default Standard Development***
- ***Ordinary High Water Mark (OHWM)/Transition Zone Issues***

- Risk Management
- Continuing Obligations
- Path Determination and Site Investigation
- Risk Assessment
- Tracking
- VPLE
- Innovative Recommendations

Contaminated Sediment External Advisory Group

- **Subgroup 1 - Site Specific Standards**
- **Subgroup 2 - Default Standards**
- **Subgroup 3 – Ordinary High Water Mark/Transition Zone**

- Focused Workgroups
  - Internal
    - Tracking of sites
  - External
    - Background

APPROACH

- Whatever approach is developed (i.e. numbers or process) it needs to:
  - Be legally defensible
  - Meet the 80/20 rule
  - Provide consistency
  - Result in reproducible numbers/process (i.e. same inputs will equal similar outputs)
  - Ensure selected numbers are achievable
- CSEAG Charter is to develop recommendations, not rules

What has happened?

- Act 204
  - Extended VPLE to Sediment Sites
  - Created a statutory definition for “sediment” and “contaminated sediment”
  - Addressed responsibility for continuing obligations at sediment sites

Legal Authority

- When a person possess or controls contaminated sediment or causes the discharge of a hazardous substance to sediment, the following apply:
  - § 292.11(3), Wis. Stats.,
  - chs. NR 700 to 754, Wis. Adm. Code.

What is sediment?

- Section 292.01(17g), Wis. Stats., defines sediment as, “particles in the bed of a navigable water **up to the ordinary high-water mark** that are derived from the erosion of rock, minerals, soil, and biological materials and from chemical precipitation from the water column that are transported or deposited by water.”

What is Contaminated Sediment?

Section 292.01(1s), Wis. Stats., defines contaminated sediment as:

“sediment that contains a hazardous substance.”

Working on Process to Evaluate Sediment Quality

- Guidelines/process versus rule
- Consistent with regulatory authority
- What is clean/default value?

What do sediment default numbers mean?

- **≤ Default Number and ≤ Background Concentration**
  - No additional assessment /action needed
  - Location tracked in DNR database

- **> Default Number and/or > Background Concentration**
  - Additional assessment needed (follow NR 700 process)
  - Use default numbers or pursue site specific numbers
  - Location tracked in DNR database

Possible Options for Default Sediment Numbers

- **Consensus Based Sediment Quality Guidelines (CBSQG)**
  - Pro: Guidelines are still relevant based on results provided in State Comparison Table
  - Con: Guidance developed as a screening tool

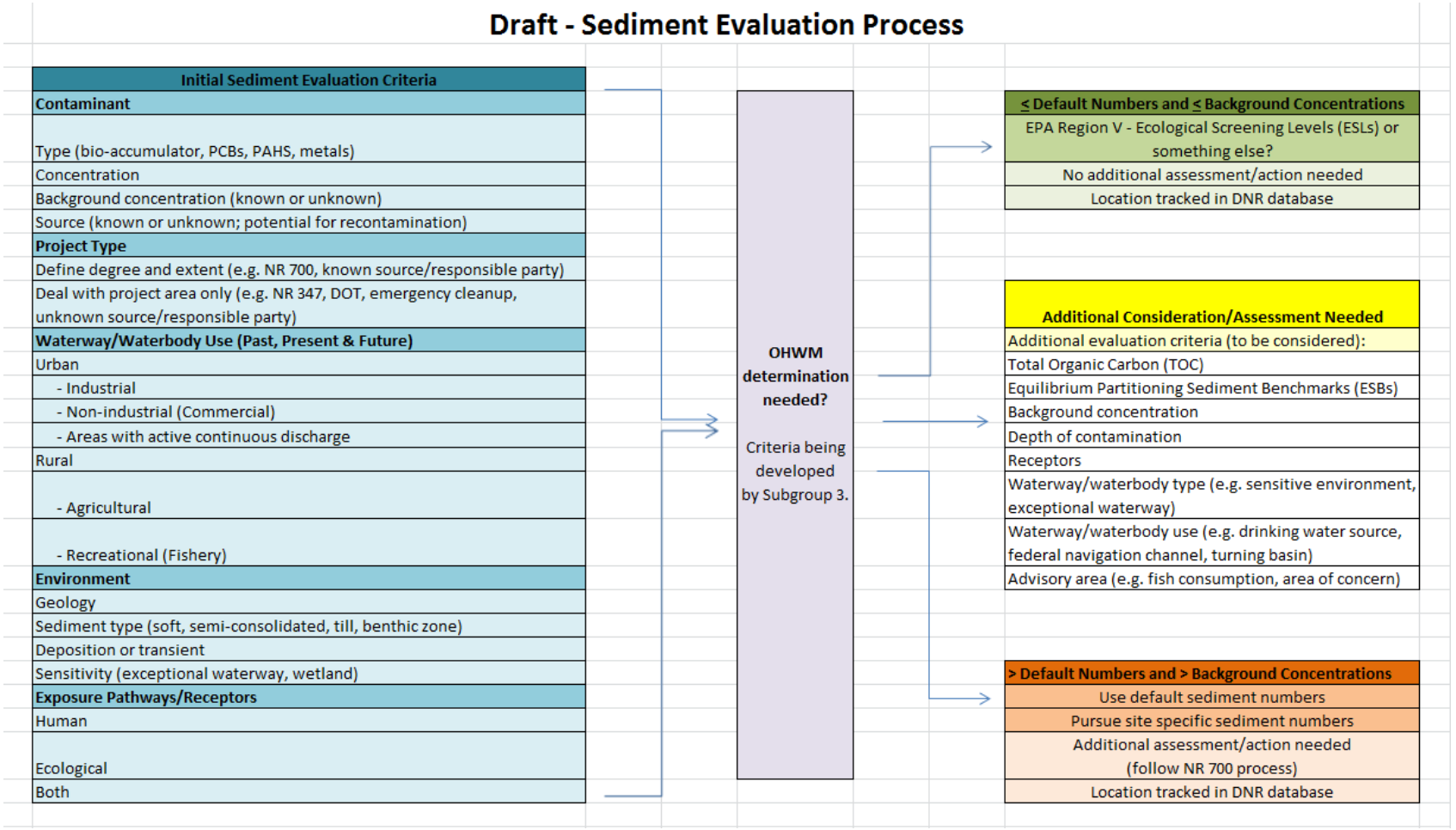
- **Water Quality Basis for Default Numbers (NR 102 – NR 106)**
  - Pro: Existing process for back calculating a sediment number
  - Undetermined: Legal authority has not been evaluated
  - Con: 1) Workload concern within DNR and 2) EPA was not willing to accept a back calculation approach in the past

- **EPA Region V – Ecological Screening Levels (ESLs)**
  - Pro: 1) Takes ecological risk into consideration, 2) Similar approach being used for soil and 3) consistent with CBSQG
  - Undetermined: Legal authority has not been evaluated

Priority Factors
(in no specific order)

- Source
- Background
- Contaminant Type/Characteristics/Depth
- Waterbody
- Environment
- Project Type
- Geology
- Practicality
- Other

Sediment Evaluation Process (i.e. Factor Prioritization)



Transition Zone Issues

- What standards apply between the OHWM and the water's edge?

- Does DNR have the authority to apply soil numbers in the "transition zone"?
  - Act 204 the material below the OHWM is sediment.
  - Evaluate *exposure pathways* of concern per NR 722.07(3)

Sediment vs. Soil w/ Respect to the OHWM

UPLAND – SOIL

(Above OHWM)

Use NR 720 unless NR 716.07(8)(a), (b) and/or (c) apply

Site specific number(s) may be necessary for sites that meet NR 716.07(8) criteria.

Ordinary High Water Mark (OHWM)

TRANSITION AREA

(Exposed sediment between the Edge of Waterway/Waterbody and OHWM)*

Use Default Number(s) *or* Pursue Site Specific Number(s)

Evaluate all exposure pathways

* "Below OHWM Sediment" – Sediment that is permanently or periodically out of water

EDGE OF WATERWAY/WATERBODY - SEDIMENT

(Permanently under water)

Use Default Number(s) *or* Pursue Site Specific Number(s)

TRANSITION AREA

Ordinary High Water Mark

UPLAND - SOIL

When in the NR 700 process is an OHWM determination needed?

- Site Scoping/Discovery
- Site Investigation Work Plan/Report
- Remedial Action Options Report
- Remedial Action Design Report
- Remedial Action Documentation Report

When should an OHWM determination be updated?

- Trained department field staff determine the OHWM through on-site investigation and analysis of physical and biological indicators on a case-by-case basis

- There is no statute of limitations on OHWM determinations and no set cycle where they need to be redone

  - Example scenarios where an OHWM was already done and may be redone:
    - Creation of Public Rights Stage
    - Water Level Order Change
    - New Dam Construction
    - Dam Removal
    - Catastrophic Flooding Event

  - Typically the department does not redo OHWM determinations except in situations where someone wants to challenge the accuracy of the current OHWM
    - 30.102 gives the public the ability to undertake this challenge
    - s. 227.41 is the mechanism for the public to challenge OHWM determinations

ACT 204

Engineering Control means:

An object or action designed and implemented to contain contamination or to minimize the spread of contamination including cap, soil cover, or in-place stabilization, but not including a sediment cover

ACT 204

"SEDIMENT COVER " …MEANS

- a layer of uncontaminated sand or similar material that is deposited on top of contaminated sediment.

- "Sediment cover" is not a sediment "engineering control"

Sediment Covers vs. Engineering Controls

Table 1. Sediment Cover and Engineering Control Comparison Table			
Comparative Metric		**Cover**	**Engineering Control (i.e. cap)**
Function		enhances natural processes through dilution, dispersion, mixing, and burial	physical and chemical isolation of contaminants from the sediment surface
Design Criteria	Physical Isolation	not explicitly designed for but potential by-product of placement	designed to withstand a site-specific water velocity, shear stress, or scour event
	Chemical Isolation	not explicitly designed for but potential by-product of placement	design criteria can include advection, diffusion, and ebullition
	Layers	not typical	typical to have multiple layered systems that consider intra layer, physical, and chemical compatibility; erosion protection is a common feature

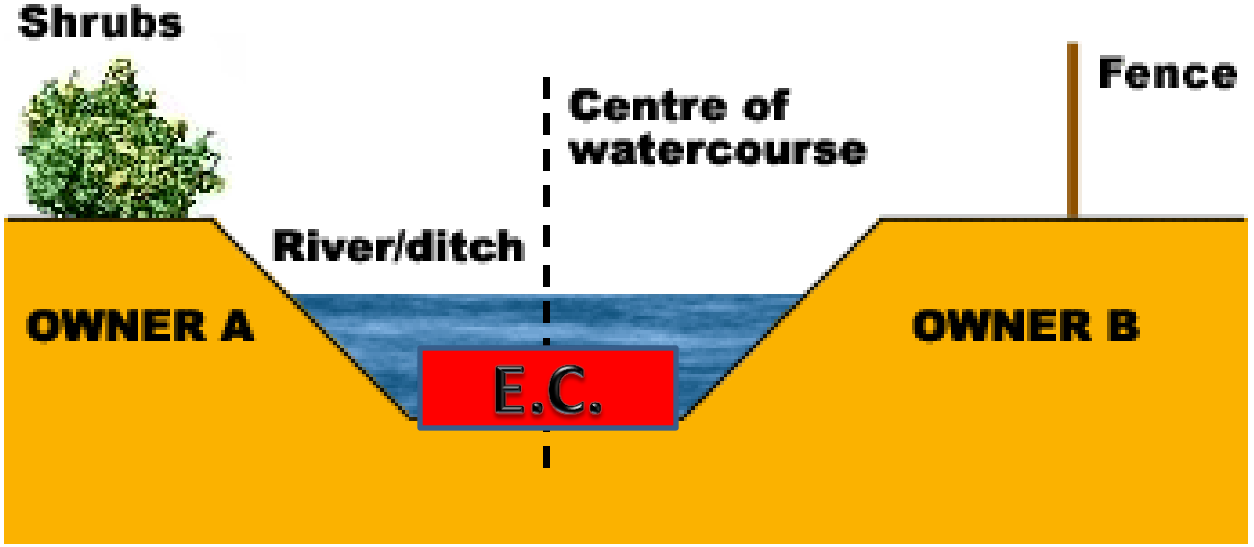
ACT 204

Clarifies **“who”** Is responsible for Continuing Obligations (C.O.) at cleanups

- **CURRENT LAW:**
  - Owner must comply with C.O.s for soil, groundwater and vapors
  - Occupant (tenant) must not interfere with C.O.s
- **NEW:**
  - RPs are responsible for C.O.s for engineering controls used to address contaminated sediments
  - Owners and occupants who are not RPs must not interfere with sediment E.C.s

WHO IS RESPONSIBLE for Sediment Engineering Control?

Person undertaking response is action is responsible for continuing obligation/engineering control.



Riparian owner who is not “causer” protected by off-site exemption.
Cannot interfere with engineering control. Must provide access.

ACT 204

For contaminated sediment sites, RPs undertaking response action must:

- List sites on database if rely on an engineering control (EC) to address contaminated sediment.
- Submit plan and schedule for maintenance and repair of EC.
- Submit agreement between parties if there is one.
- Provide proof of financial responsibility if E.C. used for sediment.

Classification of Material

- Dredged/excavated sediment is treated as waste once excavated treated similar to soil
  - NR 720 can be used to make waste management decisions
  - NR 347 analytical process applies
- Material below the OHWM is sediment
- Material above OHWM is soil
- Fill material is treated as waste

QUESTIONS?