

Trends and Implications for Wastewater and Stormwater Agencies



Oregon Association of Clean Water Agencies
Annual Conference

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Office of Science and Technology
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Proposed Agenda

Quick Review of National Issues and Trends

- Nutrients (e.g. Criteria and Standards, TMDL)
- Secondary Treatment Petition
- Stormwater
- SSOs

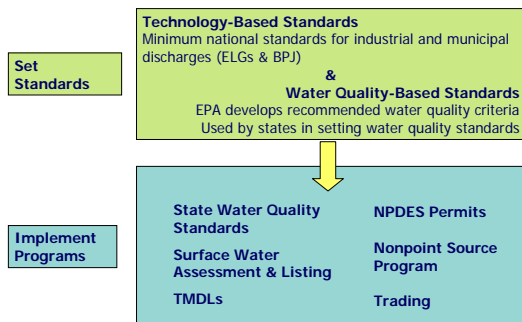
Discussion: Implications for Local Wastewater and Stormwater Agencies

Discussion: ACWA Members' Future Roles for Local Water Resource Protection

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Clean Water Framework



Environmental Challenges

Myriad of Pollutants

- Nutrients: nitrogen & phosphorus
- Microbial pathogens: bacteria, viruses, protozoa
- Contaminants of emerging concern (CECs): pharmaceuticals & personal care products (PPCPs)

Lots of Waters & Lots of Impairments

- 3.5 million stream & river miles nationally
- 47% of assessed waters are impaired, primarily by nutrients, sediments and bacteria
- 6,237 coastal and Great Lakes beaches
- Extensive Fish Advisories

Changing Environment

- Climate change: changing water flow, quantity, and temperature conditions
- Energy Development and Production
- Budget and Resource Challenges



Forum: Coming Together for Clean Water

EPA hosted a forum *Coming Together for Clean Water* on April 15, 2010

- Approximately 100 local, state and federal “thought leaders” to support a “clean water agenda”
- EPA Administrator Lisa Jackson’s desire: “to see a huge leap forward in water quality”
- Key themes:
 - Health Watersheds: Protect healthy watersheds, restore degraded waters, and prevent nutrient pollution
 - Sustainable Communities: Create healthier, livable and sustainable communities

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Nutrient Water Quality Standards

• Nutrients Innovation Task Group (NITG)

- Formed to explore new and innovative ways to assess and solve nutrient pollution. Focus areas:
 - Extent of problem and sources
 - Tools to address the problem
 - Call to action- findings and recommendations
 - *Summary report finalized last fall; identifies need for national leadership to support and require a more consistent and full utilization of existing tools from state to state and source to source*

• Implement OW Response to Inspector General (IG) Numeric Standards Report (2009)

- States slow to adopt numeric nutrient criteria
- Action needed to protect downstream uses
- Greater accountability needed

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Nutrient Water Quality Standards

- **Florida Rulemakings**
 - August 2009 Settlement Agreement w/Florida Wildlife Federation
 - For flowing waters- published proposal in January 2010; comment period extended to April 28, 2010, final rule will be signed October 15, 2010
 - For estuarine and coastal waters- Administrator must sign proposal by January 14, 2011
- **Litigation/Petitions**
 - Gulf Restoration Network Mississippi petition evaluation is ongoing
 - Other Litigation (Wisconsin – NOI alleging EPA obligation)
- **Technical Support for State Nutrient Criteria Development**
 - Financial support to States for field data collection
 - Advanced statistical analysis of nutrient data sets

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Secondary Treatment Petition

- **NRDC petitioned EPA (November 2007) to initiate rulemaking to establish POTW effluent limits for nitrogen and phosphorus.**
- **NRDC suggested:**
 - 8.0 mg/L TN and 1.0 mg/L TP can be met with existing biological treatment technology.
 - 3 mg/L TN and 0.3 mg/L TP are attainable with advanced treatment.
- **Petition also claimed:**
 - EPA's case-by-case permitting approach is not working.
 - EPA failed to comply with CWA requirement for assessing, from time to time, the capabilities of secondary treatment.
- **OW is working on a report addressing the capability of current secondary treatment technology.**
- **NACWA has raised concerns about legal authority to redefine secondary treatment, costs, and energy impacts.**
- **No decision yet on whether EPA will grant or deny the petition.**

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National Rule for Stormwater Management

- **Long term stormwater discharges from developed and redeveloped sites can significantly alter hydrology of a site & impact receiving waters.**
 - increased stormwater volume
 - pollutants such as fertilizers and deposition of vehicle emissions
- **Rulemaking development is underway.**
 - Federal Register Notice sought input to shape the Program (December 28, 2009)
 - Six listening sessions held (January – March 2010)
- **Next steps:**
 - EPA expected to distribute questionnaires/surveys in Summer 2010
 - Propose a rule for public comment in September 2011.
 - Final action by November 2012.

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Areas Under Consideration – National Stormwater Rule

1. Expand the area subject to Federal stormwater regulations
2. Establish substantive post-construction requirements for new and redevelopment
3. Develop a single set of consistent requirements for all MS4s, in place of existing “Phase I” and “Phase II” rules
4. Address existing development through retrofitting
5. Consider additional requirements for the Chesapeake Watershed (e.g. Buffer requirements, Additional requirements on active construction, Further extending area of coverage)

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A Paradigm Change for Storm Water Management

“Stormwater management is reflected by a complex system of conveyances used to collect and remove precipitation and resulting runoff from the site...”

Water Pollution Control Textbook, Circa 1977

Sanitary Sewer Overflows (SSOs)

EPA held 5 listening sessions (June – July 2010) on modifications to the NPDES program concerning SSOs & peak flows:

1. Standard permit conditions for SSO reporting, recordkeeping and public notification?
2. Standard permit condition with requirements for capacity, management, operations, and maintenance (CMOM) programs based on asset management principles?
3. Costs and benefits of CMOM programs and asset management of sanitary sewers?
4. Should EPA require permit coverage for municipal satellite collection systems?
5. What is the appropriate role of NPDES permits in addressing unauthorized SSOs that are caused by exceptional circumstances?
6. How should EPA address peak flow diversions at POTW treatment plants?
7. How to balance all of the needs to meet water quality requirements?

Submit written comments to www.regulations.gov, Docket ID No. EPA-HQ-OW-2010-0464 by August 2, 2010

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Analytical Methods Update Rule

- EPA establishes approved methods for NPDES and other compliance monitoring.
- EPA periodically updates the list of approved methods to reflect advances in technology and provide more choices.
- Proposal expected by the end of summer 2010 includes:
 - New and revised wastewater methods
 - New Alternate Test Procedures
 - Clarifications and corrections to previously approved methods
 - Revisions to preservation and holding times
 - Revisions to method modification provisions

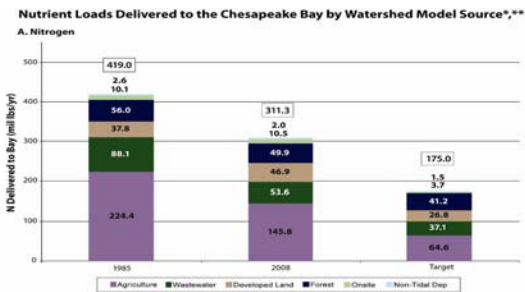
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Chesapeake Watershed TMDL



Nitrogen Loads and Targets

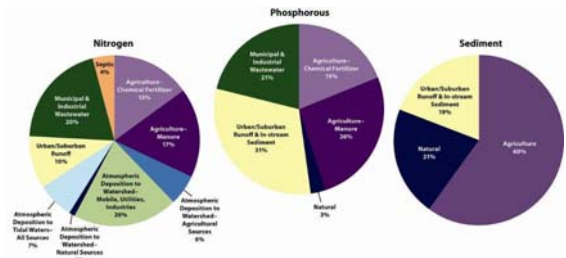


* 1985 loads based on Chesapeake Bay Program Watershed Model Phase 3.1 Scenario 2008 and Target loads are estimated. Jurisdictions would include in their Clean Water Act (CWA) program commitments to meeting the source sector loading targets that computer forecasts national caps. For comparison, full implementation of tributary strategies developed by states and DC to meet 2003 allocations would result in 244 million lbs N and 16 million lbs P delivered to the Bay annually.

** Atmospheric deposition to tidal waters is a direct input to the Water Quality and Sediment Transport Model and is not included in the Watershed Model source illustration here. The Watershed Model accounts for loads from atmospheric deposition to the watershed based on where they are deposited. Changes in atmospheric deposition contribute to reductions in loads from forest, agriculture and developed land, and direct deposition to non-tidal waters.

Main Sources of Pollution

- Agriculture – animal manure, commercial fertilizer
- Urban/suburban runoff – a growing problem
- Air pollution – tailpipes, power plants
- Wastewater – sewage treatment plants



Note: Does not include loads from tidal shoreline erosion or the ocean. Urban/suburban runoff loads due to atmospheric deposition are included under atmospheric deposition loads. Wastewater loads based on measured discharges; other loads are based on an average hydrology year using the Chesapeake Bay Program Airshed Model and Watershed Model Phase 4.3 (CBPO 2009).

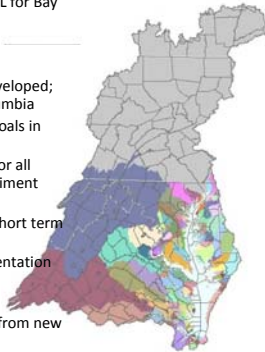
Chesapeake Bay TMDL

Drivers

- EPA is legally required to establish a TMDL for Bay and Watershed by December 31, 2010

Scope and Approach

- Largest and most complex TMDL ever developed; includes six states and the District of Columbia
- Detailed plan for meeting water quality goals in the Bay and its 92 impaired segments.
- Includes wasteload and load allocations for all sources of nitrogen, phosphorus and sediment
- States required to develop watershed implementation plans including specific short term milestones
- Some States pursuing local scale implementation
- EPA has communicated expectations and consequences for States
- Will consider "offsets" of pollution loads from new or expanding sources



Federal Consequences

For failure to meet EPA expectations for Watershed Implementation Plans and 2-year milestones

Consequences could include:

- Expanding coverage of NPDES permits to sources that are currently unregulated
- Increasing oversight of state-issued NPDES permits
- Requiring additional pollution reductions from point sources such as wastewater treatment plants
- Increasing federal enforcement and compliance in the watershed
- Prohibiting new or expanded pollution discharges unless sufficient offsets are provided
- Conditioning or redirecting EPA grants
- Revising water quality standards to better protect local and downstream waters
- Other federal actions as authorized, including cooperation with DOT and USDA to consider additional actions

Discussion – Implications for Local Wastewater and Stormwater Agencies?

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Discussion – Implications for Local Wastewater and Stormwater Agencies

Additional Regulatory Expectations

Increased Emphasis on Nutrients

Greater Expectations for Reducing Pollution from all Sources

Greater Accountability and Transparency for Results

Greater Emphasis on Local Action and Local Partnerships

Continued Challenges over Resources

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Discussion – Potential Roles for Local Wastewater and Stormwater Agencies?

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Discussion – Potential Roles for Local Wastewater and Stormwater Agencies

Raise the Bar – Lead by Example

Catalyst for Local Action and Partnerships (e.g. Watershed Councils)

Critical Source for Ambient Monitoring and Technical Assistance

Create Greater Accountability and Measures for Local Watersheds

Help Make the Case for Action and Resources

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