

## Introduction to Watershed-Based Decision-Making

Jaci Ferguson, EPA R7  
Missouri Clean Water Forum  
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## Integrate Water Programs

- Drinking Water Supplies
- NPDES Permits
- Non-Point Source – Section 319
- TMDL's/ WQ Standards
- Wetlands Permitting – Section 404

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## Drinking Water Supplies

- Source Water Protection Plan
- Well-head Protection Plan
- Primary & Secondary Maximum Contaminant Levels (MCLs)
  - Toxic chemicals/metals
  - Pathogens
- Quality vs. Quantity
- Infrastructure

“An ounce of prevention is worth a pound of cure.”

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## Watershed-Based Permits

- Develop NPDES\* permits for multiple point sources within a watershed to meet water quality standards.
- Consider all stressors within a watershed rather than individual sources discharge-by-discharge.

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## EPA's Suggested Permit Approach

1. Select Watershed and determine boundaries
2. Identify Stakeholders and facilitate their participation
3. Collect & Analyze data for Permits
4. Develop Watershed-Based Permit Conditions and Documentation
5. Issue Watershed-Based Permit
6. Measure and Report Progress

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## Types of Watershed-Based Permitting\*

- General Permit – common sources
  - All POTWs or CAFOs in watershed
- General Permit – collective sources
  - All Point Sources/sub-category discharges
  - E.g., Stormwater discharge for industry sector
- Individual Permit – multiple permittees
  - Several Point Sources under a permit
- Integrated Municipal NPDES permit
  - All NPDES requirements in single permit
  - Stormwater, Combined Sewer Overflows, Biosolids, Pretreatment
  - Reflect watershed-specific Water Quality Standards

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## State Examples of 5-year Permit Synchronization

- Michigan – 1983 – coordinates monitoring, inspections, and permits
  - Challenging for general permits
- North Carolina – 1998 – coordinates monitoring, modeling, TMDLs, NPS planning, and NPDES permits
- Ohio – began 1990 – synchronize permitting with basin monitoring
- Washington – permitting occurs in last year of 5-year process

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## Philadelphia, PA Water Dept.

- 7 watershed partnerships (sub-basins)
- Combines services with watershed approach
  - Combined Sewer Overflow
  - Drinking Water Protection
  - "Green City" – Low Impact Development, parks
  - Stormwater and Flood Prevention
  - Watershed Monitoring and Assessment
  - Ecosystem Restoration
  - Integrated Watershed Planning

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## Portland, OR Water Bureau

- Team annually evaluates factors affecting drinking water supply/demand including:
  - Water Quality
  - Native Fish Population
  - Water Demand
  - Regional Conservation Programs
  - Public health Protection
  - Weather Predictions

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## Coordinate Planning Efforts

- Watershed Management Plans
- Source Water Protection Plans
- Well-head Protection Plans



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## Measure “W” Watersheds

- EPA Strategic Plan Goal – Remove five HUC-12’s from 303(d) impaired list by 2012. (Measure W)
- Criteria for selecting watersheds
  - On 2002 303(d) list
  - Active watershed group in place
  - Recent/On-going water quality projects
    - AgNPS SALT
    - 319
    - EQIP
    - Others

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## Trading

- Quantify tradable units
  - Pollutant Loads
  - Load Reductions
  - Incorporate into TMDLs and NPDES permits
- Favorable Factors
  - Reason for reduction – TMDL, NPDES limit
  - Different control costs
  - Surplus reductions to sell or purchase
  - Willingness for innovative approach

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## Trading Case Studies

- Long Island Sound - Nitrogen TMDL for 79 POTWs
- Barron Co., WI – No-fill cost-share to reduce P funded by Cumberland, WI
- Lancaster Co., PA – Streambank stabilization and dairy waste storage facility to reduce P funded by Conservation Innovation Grant
- Washington Co., OR – Tree-planting to reduce Temp. funded by local public utility
- 2007 Targeted Watershed Trading grant RFP anticipated

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## Challenges

- Political Boundaries/Jurisdictions
- Resource sharing
- Differences in existing permit limits
- Limited Infrastructure Funding
  - O&M
  - Capital (current and future)

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## Opportunities

- Improved coordination increases efficient resources use at all levels
  - Marshfield WWTP – Multi-agency committee saved city \$2M in selecting site for expanding WWTP services.
- Identify possible trading opportunities

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## "The Environmental Future: Emerging Challenges and Opportunities for EPA"\*

- Recommendations included:
  - Integrate water efficiency with water quality standards and other regulations
  - Develop wholistic approach to water and the environment.
  - Redouble efforts to effectively include NPS in water management program.

\* National Advisory Council for Environmental Policy and Technology – Jan. 2002

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