State Comprehensive Monitoring & Assessment Strategies: EPA's Expectations for Achieving Comprehensive Coverage, Good Science and Effective State Monitoring Programs

EMAP SYMPOSIUM

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Monitoring & Assessment

- 305(b) Water Quality Inventory (incl. 314)
- 303(d) List of Waters Needing TMDLs
- 205(j) Water Quality Problems
- 106(e)(1) Monitoring Program Abilities
- 319
- SDWA
- Others

National Monitoring and Assessment Vision

- Integrated monitoring programs that support decision making–
  - Meet CWA/SDWA/State objectives
  - Generate data that are accessible and of documented quality
  - Use strategic combination of monitoring designs and assessment tools
  - Coordinate among monitoring partners

Elements of a State Monitoring and Assessment Program

I. **Strategy**
II. **Objectives**
III. **Design**
IV. **Indicators**
V. **Quality Assurance**
VI. **Data Management**
VII. **Data Analysis**
VIII. **Reporting**
IX. **Program Evaluation**
X. **General Support & Infrastructure**

I. STRATEGY

- ✓ Comprehensive
  - ✓ Statewide
  - ✓ All water types
  - ✓ All designated uses/applicable standards
- ✓ Up to 10-Year Time-line
  - ✓ Annual milestones
- ✓ Implementable
- ✓ Defines resource needs
- ✓ Identifies priorities
- ✓ Updated periodically

II. OBJECTIVES

- ✓ Linked to CWA, State & other applicable goals
- ✓ Providing data & information for management decisions
- ✓ All types of water resources
- ✓ Determination of narrative & numeric WQ standards attainment
- ✓ Effectiveness of voluntary & required pollution control programs
- ✓ Identifying & defining scope of emerging issues/threats

III. DESIGN

- ✓ Comprehensive coverage
- ✓ All waters
- ✓ Design selections
  - ✓ Census
  - ✓ Targeted
  - ✓ Probabilistic/Random
- ✓ May need to prioritize
- ✓ Statewide summary

IV. INDICATORS

- ✓ Core set
- ✓ Supplemental indicators
- ✓ Designated Uses in applicable WQ standards
- ✓ May need to prioritize
  - ✓ Aquatic Life Use
  - ✓ Fish Consumption
  - ✓ Primary Contact
- ✓ Physical/habitat, chemical/toxicological, biological/ecological

V. QUALITY ASSURANCE

- ✓ Quality Management Plans
- ✓ QA program/project plans
- ✓ Maintains QA/QC documentation
- ✓ Where QAPPs are maintained on file
- ✓ SOP location & maintenance
- ✓ Process for generating & approving QA plans
- ✓ Requirements for State & others' data
- ✓ Delegation of QA approval to state a nice goal, but not required

VI. DATA MANAGEMENT

- ✓ Accessible electronic data system
- ✓ All data used in 305(b)/303(d), etc.
- ✓ National STORET Uploads
- ✓ Assessment Data Base or equivalent reporting system
- ✓ NHD as available & at resolution needed

VII. DATA ANALYSIS

- ✓ Written Assessment Methodology
  - ✓ Various types of data (chem/phys/bio/etc.)
  - ✓ Compiling & integrating from multiple sources
- ✓ Identifies statistical applications & assumptions
- ✓ Determination of WQ standards attainment, designated uses support
- ✓ Unbiased assessment of attainment vs. nonattainment of WQ standards
- ✓ Use of data from one to many sources

VIII. REPORTING

- ✓ Federal & State required reporting
- ✓ Schedule for preparing reports to meet content & deadline requirements
- ✓ Electronic & hard-copy as necessary
- ✓ Review and finalization process (internal, EPA & public)
- ✓ Public availability (e.g., web-access)

IX. PROGRAM EVALUATION

- ✓ Periodic review of water monitoring & assessment program
- ✓ Applies to all State waters
- ✓ Progress toward meeting goals
- ✓ Recommendations for improving structure & effectiveness of program
- ✓ Annual milestones toward implementation goals
- ✓ “Tweaking” periodically based on progress, available resources
- ✓ Strategy review every 3 years (Diane recommends)

X. GENERAL SUPPORT & INFRASTRUCTURE

- ✓ Current & future resource requirements
- ✓ Direct funding
- ✓ Staffing
- ✓ Training
- ✓ Laboratory
- ✓ Necessary improvements needed
- ✓ Outside support (e.g., statisticians, modeling, special lab analysis, periodic intensive field efforts)

Strategy Development in New England

- FY2004 – Drafting, review, finalization of State strategies
- FY2005 - Begin implementation of State strategies, incorporate in PPA process
- FY2005 – EPA New England develops Regional strategy

EPA Contacts

- EPA Web site
  - *Elements of a State Water Quality Monitoring and Assessment Program* (March 2003) http://www.epa.gov/owow/monitoring/repguid.html
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