NATIONAL WATER QUALITY MONITORING COUNCIL

Working Together for Clean Water

Network Pilot Studies Summary Report

National Water Quality Monitoring Conference

May 19, 2008

Structure of the Design

- Nine resource compartments
- Fixed station and probabilistic designs
- Core variables and sampling frequencies specified
- Provisions for data comparability, management & access

A continuum of Observations

- Estuaries
- Nearshore
- Offshore and EEZ
- Great Lakes
- Coastal Beaches (BEACH Act)
- Wetlands

With Flow and Flux from

- Rivers
- Atmosphere
- Groundwater

Multi-year Effort

- Phase I - **Network Design** **(FY 05 & 06)**
- Phase II - Develop and carry out **Pilot Studies** **(FY 07 & 08)**
- Phase III - **Demonstration Projects** **(FY 08 & 09)**
- Phase IV – **Implementation**; fill gaps and provide necessary enhancements to existing monitoring programs **(FY 10 and beyond)**

Pilot Study Tasks

- Identify Management Issues
- Inventory Current Monitoring
- Identify Gaps
- Investigate Data Comparability and Data Sharing Issues
- Estimate Costs of Current and Needed Monitoring
- Prepare Report

Pilot Study Characteristics

	Delaware	L. Michigan	S.F. Bay
Watershed area (sq.mi)	13,539	45,000	68,600
Area	782	22,300	548
Land Use	9% urban 24% ag 60% forest	9% urban 44% ag 41% forest	6% urban 25% ag 68% un-developed
Population	8 million	15 million	11.4 million
Partners	14	24	22

Management Issues

- Habitat Degradation
- Contaminants
- Sediment Management
- Nutrient Enrichment
- Non-indigeneous Species
- **Oxygen Depletion**
- Harmful Algal Blooms
- Pathogens
- Habitat Restoration
- Loss of Native Species
- Wetland loss, alteration, status

Data Management, Access, and Delivery

	Delaware	Michigan	SF Bay	Survey
Machine to machine transfer	50%	30%	70%	5%
Search by location, retrieve individual	44%	32%	70%	24%
Metadata-ACWI stds	24%	21%	0%	0%
Archived at multiple sites	38%	27%	47%	11%

Gap Analysis

- Detailed comparison of on-going monitoring and Network design
- Monitoring in Pilot Studies does not fully meet the Network design
- Gaps in number of sites, sampling frequency, and need for additional analytes

Gap Analysis

- Need for local flexibility in adding tributary rivers (Delaware and Lake Michigan)
- Flexibility in decisions about biological measurements incorporated into refinement of Network design (San Francisco)

Cost Estimates (in $1000s)

	Delaware	Michigan	SF Bay
Existing; Network design	1,950	2,100	13,300
Incremental cost to fill gaps	2,500	9,900	1,350
Total	4,450	12,000	14,650
Existing; beyond Network	7,300	9,100	9,000

FY 08 Plans

- Improve data sharing capability
- Add gaging stations and/or data collection at important tributaries for Network estuaries
- Begin to fill gaps identified by Pilot Studies

FY 08 Plans

- Mississippi River near Vicksburg, MS
- Hudson River below Poughkeepsie, NY
- Delaware River at Trenton, NJ
- Brazos River near Rosharon, TX
- Apalachicola River near Sumatra, FL

FY 08 Plans
Lake Michigan Pilot

- Add nutrient monitoring as necessary at 20 river sites to bring monitoring up to tier 1 suite of measurements
- Possibly add measures of contaminants in fish tissue

FY 08 Plans
San Francisco Bay

- Physical measures of flow between and among different parts of the Bay
- Investigate controls on nutrient levels--phytoplankton density and nutrient measurements

FY 08 Plans
Delaware Bay

- Add nutrient monitoring in river, estuary, and Bay
- Improve the watershed-to-ocean observing system web site to facilitate data sharing

Questions

- http://acwi.gov/monitoring/network/pilots
- http://acwi.gov/monitoring/network/index.html