NATIONAL WATER QUALITY MONITORING COUNCIL

Working Together for Clean Water

The National Water Quality Monitoring Network
for
U.S. Coastal Waters and Their Tributary Rivers

Recommendations for

Future Directions

http://water.usgs.gov/wicp/acwi_intranet/monitoring/network/design/

Advisory Committee on Water Information

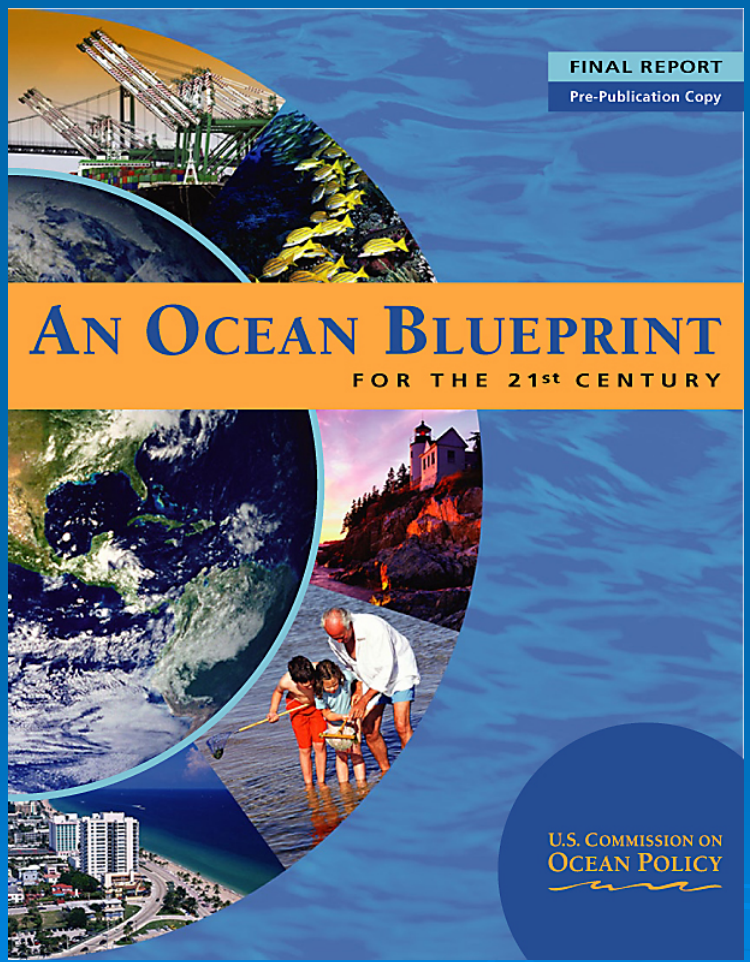
January 10, 2009

National Water Quality Monitoring Network for U.S. Coastal Waters and Their Tributaries

Background:

- The Network was recommended buy the U.S. Commission on Ocean Policy
- ACWI Charged by the:
  - Council on Environmental Quality (CEQ)
  - National Science and Technology Council (NSTC)
  - Subcommittee on Water Availability and Quality (SWAQ)
  - Joint Subcommittee on Oceans Science and Technology (JSOST)
- To design a national water quality monitoring "Network"

U.S. Commission on Ocean Policy



31 Chapters

200 + specific recommendations

Chapter 15

Creating a National Monitoring Network

Chapter 15: Recommendations for "Creating a National Monitoring Network"

- 15-1: Develop a national monitoring network that coordinates and expands existing efforts, including monitoring of atmospheric deposition

- 15-2: Ensure that the national monitoring network includes adequate coverage in both coastal areas and the upland areas that affect them, and ... linked to the IOOS

- 15-3: Ensure that the monitoring network has clear goals, specific core variables and an apporpriate sampling framework

Network Design Features

- Clear objectives linked to management questions
- Specified 149 estuaries and their tributaries
- Linked monitoring of linked resources
- Includes
  - metadata,
  - quality assurance, and
  - data management system that provides accessible data
- Flexibility over time

Structure of the Design

- Nine Resource compartments
- Sample framework: Fixed station and probabilistic designs
- Stations, parameters, 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

Network Design Did Not:

- Provide data on all water resources
  - Small rivers
  - Lakes and Reservoirs
  - Local aquifers
- Replace State Clean Water Act use attainments monitoring
  - 305 (b)
  - 303 (d)
- Deal with compliance monitoring

National Water Quality Monitoring Network for U.S. Coastal Waters and Their Tributaries

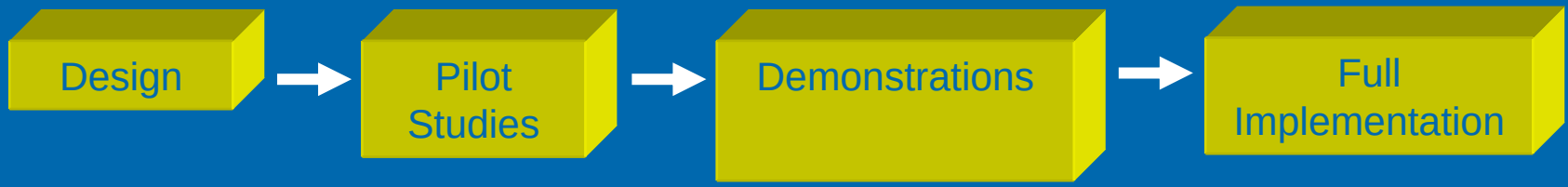
Components & Concepts

- Concepts
  - Water exists in a variety of linked components
  - A variety of monitoring approaches are needed
  - Data management is a Network function
  - Network will need to rely on existing efforts to extent possible
  - The Network needs to be flexible and to adapt over time
  - Network data needs to be visible to ensure the Network's utility

- Components
  - Nine resource compartments; a continuum of observations
  - Network components: fixed stations, probability samples, and continuous sensors are included and integrated
  - Design places major emphasis on
    - Data comparability
    - Data storage and access
  - A Network of Networks
    - Coordination With IOOS
    - Inclusion of other local monitoring
  - Flexible: Additions and enhancements are expected
  - The Network data needs to be used to provide information and be routinely analyzed and reported

Progress in Monitoring

- The ACWI approved the Network design and presented it to CEQ and the requesting organizations on April 5, 2006
- Next steps were defined as:



- At CEQ request, it undertook three pilot studies to examine the concepts and components of the design
  - San Francisco Bay
  - Delaware Bay
  - Lake Michigan
- Pilot Studies and Network refinements were reported to ACWI in 2008

Progress in Monitoring

Five important events were foreseen in the Network's design

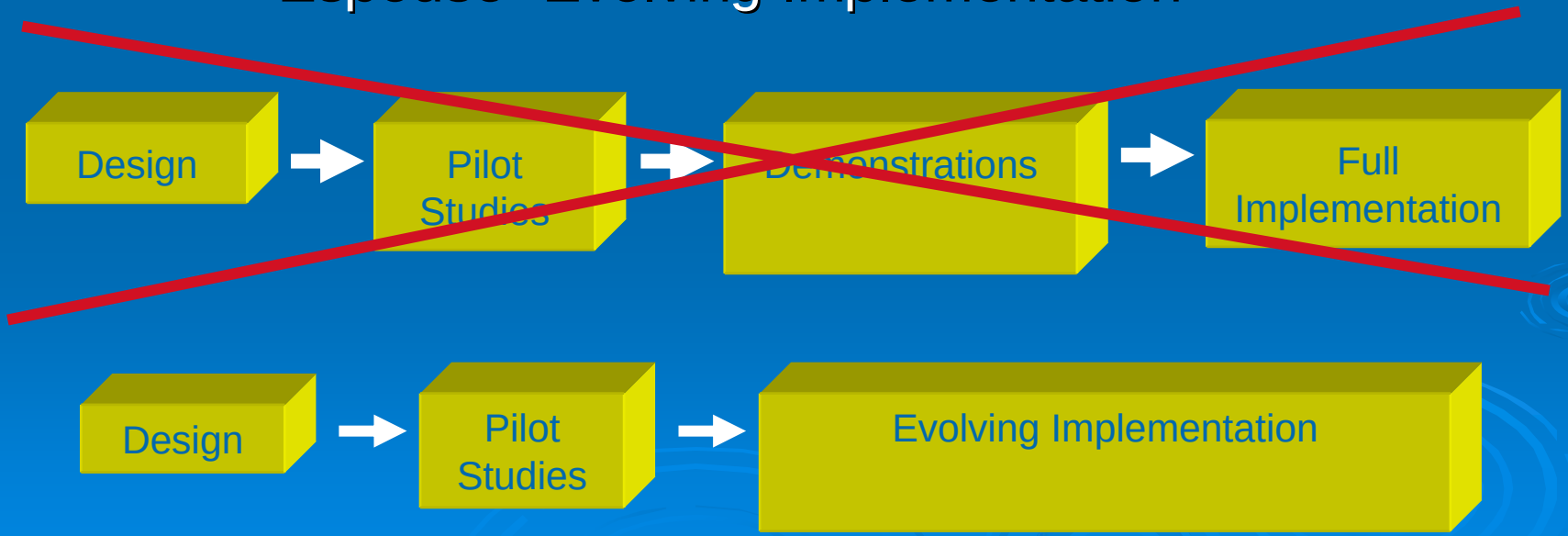
- **Joint Web Services:** Water-quality data from NWIS and in STORET can be produced in a common format
- **Additional Data Elements**: At ACWI's request, the Methods Board has added to ACWI's list of recommended data
- **NASQAN:** 5 stations added to the USGS National Monitoring Network, following protocols used for monitoring large rivers and the quality of water at the terminus of large watersheds
- **National Aquatic Resource Surveys:** These EPA/State surveys now cover estuaries, lakes, streams and rivers.
- **The State of the Nation's Ecosystems – 2008** just released

Expected Progress

- **National Ground Water Monitoring Network:**
  May embrace certain of the concepts and components of the Network
- **National Environmental Status and Trends:**
  Indicators for the Nation
- **Water Data Portal**:
  To the USGS and EPA Web services
- **Wetlands Assessment:**
  Wetland surveys are being designed for the year 2011
- **Advancing Sensors:**
  The Methods Board's Sensor Workgroup
- **Regional Ocean Observing Associations**
  Increasingly active
- **GEOSS**
  Increasingly recognized

Next Steps

- Monitoring Council Recommendations:
  - That ACWI adopt the implementation of the Network as a policy goal
    - Espouse “Evolving Implementation”



Next Steps

- Further explore whether the Network can be the roadmap for the adoption of the concepts and components of monitoring and information sharing

ACWI can do this by:

- Leading a continuing discussions of the components and concepts of the Network
- Identifying specific Federal and State programs that should be examined for their future contributions to the Network's evolving implementation
- Examining the degree to which elements of the proposed NGWMN embrace the *concepts and components* and the degree to which it may be incorporated (by reference) into the Network.

Next Steps

- That ACWI Communicate progress in the
  - pilot studies,
  - in the evolution of the Network,
  - and other monitoring programs

  to CEQ and the other requesting agencies

- The Council further recommends that ACWI add streams, lakes and rivers to the Network design and include all areas of the U.S.

You Have A Draft Resolution
Adopting
These New Directions

Questions ?