National Water Program Strategy: Response to Climate Change

National Water Program
U.S. Environmental Protection Agency
June 2008
Presentation Outline

- **How Was the Draft Strategy Developed?**
  - EPA Water Program Climate Workgroup

- **What Is In the Draft Strategy?**
  - Background: Water and Climate Change
  - 5 Goals and Supporting Program Response Actions

- **Next Steps**
  - Publish Final Strategy Based on Public Comments
  - Implementation Plan
Water Climate Change Workgroup

- Workgroup Created in March 2007 to:
  - Review Climate Change Information
  - Evaluate Potential Impacts on Water Programs
  - Identify Potential Response Actions
  - Develop a Climate Change *Strategy* for the National Water Program

- Includes HQ Water Program Offices, Regions, OAR, ORD
Water Climate Change Workgroup

- **Key Steps in Process:**
  - Stakeholder “Listening Sessions” – May/August
  - Agency Climate Meeting in Seattle - June
  - National “Fly-in” for Water Directors - July 20
  - Workgroup Draft *Strategy* – September
  - OMB Review - January
  - Public Review - Spring
  - National Webcast May 8th
  - Final Strategy - Summer
Water Climate Change Strategy

**Structure of the Draft *Strategy***:

- Executive Summary/Introduction
- Background: Climate Change Impacts on:
  - Water Resources
  - Water Programs (Clean Water/Safe Drinking Water)
- 5 Major Goals and 46 Supporting Program Response Actions
- Appendices
Water Climate Change Strategy

Overview: Climate Change Adverse Impacts on Water Resources:

- Increases in Water Pollution Problems
- More Extreme Water-Related Events
- Changes in Availability of Drinking Water Supplies
- Waterbody Movement and Displacement
- Changing Aquatic System Biology
- Collective Impacts on Coastal Areas
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- **Background: Climate Change Impacts on Water Resources:**
  - Air/Water Temperature Increases
  - Rain/Snow Levels and Distribution
  - Storm Intensity
  - Sea Level Rise
  - Coastal/Ocean Characteristics
“Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level.”

Source: Intergovernmental Panel on Climate Change (IPCC) Working Group I Summary for Policymakers, 2007
For additional information: [www.ipcc.ch](http://www.ipcc.ch) and [www.epa.gov/climatechange]
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- **Warmer Air/Water: Program Impacts**
  - More Impaired Waters/TMDLs
  - Adjustments to Clean Water and Drinking Water Standards
  - Reduced Quality of Drinking Water Supplies
  - More Complex Discharge Permit Conditions
  - More Complex Runoff Conditions
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Rain/Snow Changes: Program Impacts

- Less Water:
  - Drinking Water Supply Challenges
  - Dischargers Challenged by Lower Streamflows
  - Wildfires Increase Runoff/Flooding Impacts

- More Water:
  - Increased Sewer Overflows
  - Increased Runoff and Nonpoint Pollution
  - Water Infrastructure Investments Needed
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- **Storm Intensity: Program Impacts**
  - Expanded Emergency Planning
  - Relocation of Some Water Infrastructure
  - Redesign of Urban Stormwater Systems
  - Increased Demand for Watershed Solutions (smart growth, green roofs, wetlands)
  - Demand for Biological Assessment Techniques
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- **Sea Level Rise: Program Impacts**
  - Expanded Long Range Infrastructure Planning
  - Relocation of Some Water Infrastructure
  - Demand for Integrated Coastal Watershed Plans
  - Demand for Wetlands Management Strategies
  - Need for Interagency Coordination
    (e.g.; EPA, NOAA, FEMA)
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- **Ocean Characteristics: Program Impacts**
  - Adjustment of Coral Reef Protection Efforts
  - Revision of Coastal Programs to Account for Changing pH and Salinity Levels
  - Need for Federal Agency Coordination to Address Coastal Issues
  - Wetlands Management to Account for Changing Salinity and Other Impacts
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Five Major Water Program Goals:

- Goal 1: **Mitigation** of Greenhouse Gases
- Goal 2: **Adaptation** to Climate Change
- Goal 3: Climate Change **Research** Related to Water
- Goal 4: **Education** on Climate Change
- Goal 5: **Management** of Climate Change
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Summary of Program Response Actions:

- Total Number of Actions: 46
  - Actions Related to Mitigation: 11
  - Actions Related to Adaptation: 23
  - Actions Related to Research: 3
  - Actions Related to Education: 5
  - Actions Related to Management: 4

- All Actions to be Initiated in FY 2008 or 2009 with Assumption of Level Funding
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- Goal I: Water Program Mitigation of Greenhouse Gases:

  *Use core water programs to contribute to greenhouse gas mitigation.*
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- **Selected Mitigation Actions:**
  - Improve Energy Efficiency at Drinking Water and Wastewater Facilities
  - Continue Implementing “WaterSense” Program
  - Publish Federal Agency Water Conservation Guidance
  - Promote Green Buildings
  - Evaluate Geologic Carbon Sequestration
  - Study Options for NPS Biological Sequestration
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Goal 2: Water Program Adaptation to Climate Change:

Adapt implementation of core water programs to maintain and improve program effectiveness in the context of a changing climate.
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Adapting Water Programs to Climate Change: Key Topics

- Drinking Water, Clean Water, and Effluent Standards
- Watershed Protection
- NPDES Permits
- Water Infrastructure
- Wetlands Protection
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- Adaptation: Drinking Water and Clean Water Standards
  - Assess Impacts on Drinking Contamination
  - Assess Criteria for Waterborne Disease
  - Develop Biological Indicators/Methods
  - Assess Criteria for Sediment/Velocity
  - Link Ecological/Landscape Models
  - Review Effluent Guidelines (Existing and New)
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- Adaptation: Watershed Protection
  - Develop Watershed/Climate Change Policy Memo to Support Watershed Resiliency
  - Assess Fresh Waterbody Spatial Changes
  - Promote BASINS Climate Assessment Tool
  - Encourage “Climate Ready Estuaries”
  - Review/Revise NPS Guidelines
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- Adaptation: NPDES Permits
  - Expand Technical Assistance
  - Adapt Permit Program Tools for Climate Change
  - Evaluate Impacts on Wet Weather Permit Program
  - Address Climate Impacts at Animal Feeding Operations
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- **Adaptation: Water Infrastructure**
  - Implement Sustainable Infrastructure Initiative
  - Develop Sustainability Handbook
  - Clarify Use of State Revolving Fund Loans
  - Develop/Expand Emergency Response Planning

- **Adaptation: Wetlands Protection**
  - Effective Implementation of Wetlands Regulatory Framework
  - Finalize National Wetlands Mapping
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- **Goal 3: Climate Change Research Related to Water:**

  *Strengthen the link between EPA water programs and climate change research.*
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Selected Research Actions:

- Communicate Results of U.S. Interagency Research (CCSP) to Water Managers
- Expand Water Program Role in EPA Global Change Research Program Planning
- Adjust Water Research Priorities to Reflect Climate Impacts
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- Goal 4: Water Program Education on Climate Change:

_Educate water program professionals and stakeholders on climate change impacts on water resources and programs._
Water Climate Change Strategy

- Selected Education Actions:
  - Outreach to Partners and Stakeholders
  - Clearinghouse/Website Water and Climate Change
  - Annual Reports on _Strategy_ Implementation
  - Expand Existing Training to Address Climate
  - Develop Climate Change Background Papers
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- Goal 5: Water Program
  Management of Climate Change:

  Establish the management capability within the National Water Program to address climate change challenges on a sustained basis.
Water Climate Change Strategy

Selected Management Actions:

- Maintain Water Program Climate Workgroup
- Include Climate Change in Annual Water Program Guidance and Agency Strategic Plan
- Develop Regional Supplements to Strategy as Needed
- Establish Federal Agency Water/Climate Coordination Group
Strategy Comment Period

- **Comment Period:**
  - Extended to June 10
  - Meetings with National Stakeholders
  - Webcast May 8th
  - Subject Matrix for Comments

- **Next Steps:**
  - Consider Key Changes: As Received
  - Final Strategy: Summer
  - EPA and OMB Review: Summer/Fall
  - Publish Final *Strategy*
Strategy Implementation Plan

- Implementation Proceeding During Comment Period
- Draft Implementation Plan
  - Description of Key Actions
  - Schedule of Milestones
  - Coordination Linkages
  - HQ Staff/Resources/Link to Grants
- Final Implementation Plan with Final Strategy
HQ/Regional Coordination

- **Continue Climate Workgroup**
  (HQ/Regions/Others)

- **Regional Support for Climate Education and Outreach**

- **Regional Climate Strategies:**
  - Regions 1, 8, and 10

- **Option:** Regional Supplement to National *Strategy* Where Needed
Federal Agency Coordination

- **National Level:**
  - Informal Interagency Workgroup (EPA, NRCS, FS, BRec, USGS, ACE, NOAA, DOE)
  - Organization Options
  - Summary of Climate/Water Activities

- **Regional Level:**
  - Northwest, Southeast, Denver Region

- **Adaptation/Programs vs. Research**
- **Adaptation Generally vs. Water Only**
Coordination with Other Efforts

- GHG Reporting Rule
- Renewable Fuels Rule/Biofuels
- OAR Methane Programs/POTW's
- Climate Legislation
  - Climate Cap and Trade (S. 2191)
  - NAS Study Water/Climate (H.R. 5770)
- Utility Group on Climate Change
Climate Strategy

For More Information Contact:

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