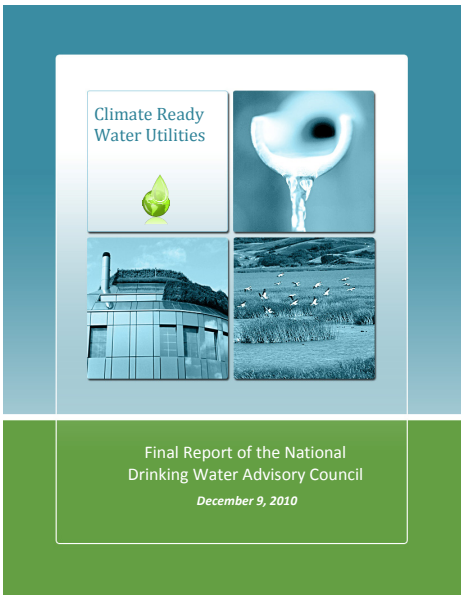
United States Environmental Protection Agency

National Drinking Water Advisory Council:

Overview of Climate Ready Water Utilities Working Group Report

The U.S. Environmental Protection Agency (EPA) convened a Climate Ready Water Utilities (CRWU) Working Group under the National Drinking Water Advisory Council (NDWAC) to:

1) **Identify the behaviors that will characterize a climate ready utility**
2) **Identify climate change-related tools, training, and products needed to enable climate ready utility behaviors**
3) **Identify mechanisms that would facilitate adaptation and mitigation by the drinking water and wastewater (water) sector**



The working premise for all deliberations was that climate change represents an important challenge for drinking water and wastewater utilities and should be considered in all aspects of utility planning. Part of this challenge stems from the evolving nature of climate science and the uncertainty regarding the timing, nature, direction, and magnitude of localized climate change impacts. Despite this uncertainty, these impacts have the potential to compromise the ability of water systems to meet their public health and environmental missions, necessitating the integration of climate considerations into long-term utility planning and investments. The final NDWAC CRWU report includes eleven (11) findings and twelve (12) recommendations, an adaptive response framework to guide climate ready actions, and the identification of needed resources and incentives to support and encourage utility climate readiness.

Findings The findings in the NDWAC report identify current water sector needs and challenges utilities face when attempting to mitigate and adapt to the impacts of climate change.

1. The water sector faces important and potentially substantial climate change adaptation challenges, but also opportunities.
2. Proactive Climate Ready actions will enhance water sector utility resilience.
3. Different local conditions will dictate different Climate Ready responses.
4. Utility "Climate Readiness" is an emerging concept that must therefore reflect an adaptive learning and management framework.
5. An expanded concept of "water system infrastructure" is a key element of utility climate readiness.
6. To succeed, individual utilities need a robust enabling environment.
7. Many utilities do not have the capacity to become Climate Ready.
8. Climate change impacts create challenges for current "regulatory stationarity."
9. Water sector utilities are overwhelmed with climate change information and lack of coordination by federal agencies, state agencies, and other water sector actors.
10. The water sector is underserved by actionable climate science and by information regarding adaptation and mitigation costs and benefits.
11. Water sector utility greenhouse gas mitigation efforts are an important aspect of the sector's climate-related strategy.

Recommendations The recommendations in the NDWAC report focus substantially on the actions necessary to overcome the obstacles identified in the findings.

1. EPA should develop a well-coordinated program to articulate and support the adoption of Climate Ready activities by utilities.
2. EPA should build out the concept of Climate Ready utilities based on the Findings and CRWU Adaptive Response Framework in the NDWAC report.
3. Establish for utility staff a climate change continuing education and training program.
4. Build on and strengthen advanced decision support models and tools to support utility climate change efforts.
5. Increase interdependent sector knowledge of water sector climate-related challenges and needs.
6. Improve and better integrate watershed planning and management in response to climate uncertainty and impacts.
7. Improve access to and dissemination of easy-to-understand and locally relevant climate information.
8. Better integrate climate change information into existing utility technical assistance initiatives.
9. Develop an adaptive regulatory capacity in response to potential climate change alteration of underlying ecological conditions and systems.
10. Develop a comprehensive water sector, climate change research strategy.
11. Advocate for better coordination of federal agency climate change programs and services.
12. EPA should take early action steps in close cooperation with applicable federal agencies, non-government organizations, and water sector professional associations.[1]

[1] Early action steps in Recommendation 12: (a) Articulate the elements of the adaptive response framework; (b) Develop and articulate strategies for integrating climate change adaptation and mitigation approaches into existing utility priorities, ongoing asset management and infrastructure repair and replacement efforts, and emergency response, capacity, and capital planning; (c) Assure funding and other resources currently available for climate change is well coordinated, aligned to water sector needs, and available for a full range of adaptation strategies; (d) Inform other federal agencies about federally funded project design opportunities that will support water sector climate resilience and stress the importance of ensuring federally funded projects account for climate change considerations; (e) Link climate ready adaptive response framework activities with EPA's Effective Utility Management (EUM) and Climate Ready Estuaries programs to ensure climate readiness becomes part of ongoing utility planning and management efforts, and post this report on the EUM website; and (f) Establish a climate ready information sharing community and include climate ready criteria in current awards programs to spotlight current and incentivize future utility activity.

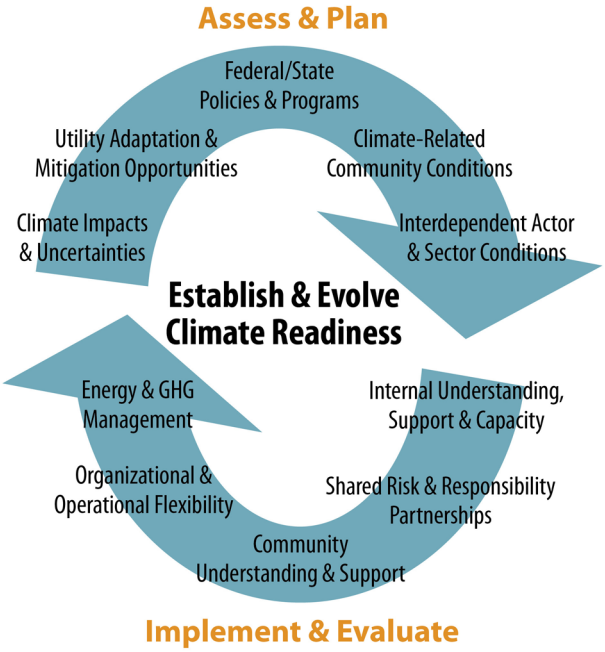
Incentives to Encourage Climate Readiness

The NDWAC also outlined potential incentives to support utilities in becoming climate ready, including the establishment of a communication forum for utilities to share experiences about their climate ready activities and the inclusion of these activities in the evaluation of existing awards programs. Beyond these incentives, the NDWAC provided additional suggestions that include (a) establishing a new climate ready utility recognition program, (b) leveraging existing funding sources for utilities, such as the EPA's Clean Water and Drinking Water State Revolving Fund programs, and (c) establishing the relationship of climate readiness and lower operational risk to improve capital financing options for climate ready activities.

Climate Ready Adaptive Response Framework

Many drinking water and wastewater utilities will need focused support in order to become climate ready because the water sector faces significant challenges in deciding how to allocate time, attention, and other resources to competing priorities. To address this issue, the NDWAC Working Group developed a Climate Ready Adaptive Response Framework. The framework guides utilities through an iterative process for taking immediate actions that build resilience to climate change impacts. This framework reflects the flexible response strategy that utility managers and water sector experts use to address climate change considerations.

The Adaptive Response Framework divides utility engagement into two stages, Assess and Plan and Implement and Evaluate. The Assess and Plan stage enhances a utility's awareness and understanding of methods to address climate challenges, while the Implement and Evaluate stage encourages utilities to design and carry out short and long-term adaptation initiatives and actions.



CLIMATE READY ADAPTIVE RESPONSE FRAMEWORK

Integration with Other EPA Programs

The NDWAC encourages EPA to integrate the activity areas outlined in the report with existing EPA programs, such as the Climate Ready Estuaries and Effective Utility Management programs. Integrating Climate Ready Water Utilities within these programs and others will help encourage the water sector to deal with climate change more holistically as part of their operations rather than as a separate issue.

Resources Needed to Support Climate Readiness

After developing the Adaptive Response Framework, the NDWAC identified resources needed (e.g., tools, training, and technical assistance) to support successful adoption of climate ready activities. The report organized these needs into five main categories: 1) Internal Understanding and Education; 2) Partnership Building; 3) Climate Impact Assessment; 4) Climate Adaptation Decision Support; and 5) Stakeholder Communication.

More Information

To access the complete NDWAC report or for more information on EPA's Climate Ready Water Utilities initiative, email **CRWUhelp@epa.gov** or visit **http://water.epa.gov/infrastructure/watersecurity/climate**

CLIMATE READY WATER UTILITIES

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