

NEWEA Position Paper

Climate Change and Water Resources

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 by the New England Water Environment Association



The United Nations Intergovernmental Panel on Climate Change (IPCC), established in 1988 by the World Meteorological Organization and the United Nations Environment Programme, presents increasingly convincing evidence that man-made emissions of greenhouse gases—mainly carbon dioxide (CO₂)—are influencing global climate. Based on this evidence, NEWEA supports the scientific conclusions that the Earth's climate is changing; that the climate changes are due in part to human activities; and that the probable consequences of the climate changes will be significant and blind to geopolitical boundaries. Furthermore, the potential implications of global climate change and the time scale over which such changes will likely occur require active, effective, long-term planning.

To address the water resource challenges that climate change will bring, NEWEA calls on the U.S. Congress to ensure that water resources are a central element of any federal legislation that establishes a framework for a comprehensive national response to climate change. The nation's existing drinking water, stormwater, flood management, and wastewater infrastructure is already in need of significant investments to maintain current levels of service over the coming decades, and climate change only increases the need for additional resources.

Federal law and policy on climate change must fully consider the effects on water supply and all elements of water management and treatment, and include provisions for increases in federal financial support and incentives to stimulate other forms of investment for responses ranging from research to mitigation and adaptation tools to infrastructure improvements. These responses will be most effective when support and investments are undertaken in partnership with states, local governments, and the private sector.

Many of the most critical impacts of global climate change will manifest themselves through the hydrologic system, and there is strong evidence that climate change is already having an impact on the world's water resources. These impacts include changing precipitation patterns that may result in more severe drought or floods, changing snowpack amount



and elevation, varying stream flow patterns, and rising sea levels along the coasts. Because the exact effects of climate change on water resources are uncertain and will vary by region, the drinking water, wastewater, flood management, and stormwater utilities responsible for managing water resources for local communities face daunting challenges. As such, NEWEA strongly encourages that the following efforts be undertaken:

1. Congress should establish a comprehensive, coordinated and federally sponsored applied research program that addresses:
 - Predictive and decision-support tools, including necessary data resources, to help water resource managers plan for the future impacts of climate change. These tools and resources should include climate models that forecast precipitation changes and address other issues pertinent to water quantity and quality on a national, regional, and sub-regional scale; climate models that address sea level rise and its effect on coastal water supplies; and assessments to determine—on a national, regional, and subregional scale—the vulnerability of different regions to the anticipated impacts of climate change over different time frames.
 - Mitigation and adaptation strategies focused specifically on impacts of climate change on water quality and quantity, stormwater and flood control management, and decentralized and centralized wastewater treatment.

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Examples of areas where research is needed include methods to increase water conservation; energy efficiency management techniques that help water and wastewater utilities reduce their greenhouse gas emissions; the development of alternative water sources such as reuse, recycling, and desalination; the recharge of water by dispersing it into the ground versus a piping system; and multiple benefit quantification analysis of such practices as urban tree cover and green roofs to both control stormwater runoff and help cities adapt to the consequences of climate change.

- Surface and ground water resource impacts of new energy technologies such as bio-fuel development and mitigation strategies such as carbon sequestration.
2. Increase federal and other financial support, including the utilization of greenhouse gas emission auction revenues, to help drinking water, stormwater, flood management, and wastewater utilities adapt to climate change and address the environmental and public health risks that could result from changes to the hydrologic environment. For example, we anticipate that potential public health risks could result from higher water temperatures breeding higher concentrations of certain organisms, from changes in ambient water quality, and from more intense

rainfall events. These developments could compromise treatment processes, restrict wastewater utilities' ability to discharge effluent, and cause greater risk of sewage overflows. We also anticipate that drinking water, wastewater, and stormwater infrastructure enhancements will be necessary to deal with the regional impacts of these consequences of climate change.

3. Provide federal support and incentives to enable water related utilities to reduce greenhouse gas emissions when feasible. While most greenhouse gas reductions will come from other sectors, water related utility managers around the country are nevertheless engaged in a variety of efforts to lower the greenhouse gas emissions of their utilities. Utilities that have taken proactive steps to reduce their emissions should be given credit for these advanced efforts under any new regulatory program that is implemented, including cap-and-trade programs. Drinking water, wastewater, flood management, and stormwater utilities will be among the principal actors dealing with the challenges that climate change will force upon our communities.

The New England region is already in a daily struggle to meet the demands placed on our water infrastructure, and climate change will only put more pressure on the people and the systems needed to provide safe, clean water to the American people. We call upon our nation's leaders to consider water resources as a key element in upcoming climate change legislation and to provide the necessary support and leadership to ensure that the nation's water resource professionals have the tools and resources necessary to address the climate change challenge (Water Sector Statement on Climate Change and Water Resources, May 20, 2008).