

Association of Metropolitan Water Agencies (AMWA)
Comments On EPA Office of Water National Water Program Climate Change Strategy
June 9, 2008

As a voice for the nation's largest publicly owned drinking water systems, AMWA appreciates the opportunity to comment on the EPA Office of Water (OW) *National Water Program Strategy Response to Climate Change* (Strategy). The water sector is already mobilizing and has been working in many cases for years on a smaller, localized scale in planning and responding. Water systems would welcome EPA in supporting and augmenting the work that water utilities and associations are currently doing. Many utility managers are already investing resources and planning for the future in light of a changing climactic landscape which includes new hydrologic patterns. These changes indicate that planning for future water quality and quantity is likely not as reliable using the same algorithms and data trends of the past.

AMWA believes that much of the national debate on climate change has been limited to the effects of greenhouse gases, and as a result the association has sought to raise awareness on Capitol Hill and in the press about the implications of climate change on our nation's water resources. AMWA released a report in December 2007, *Implications of Climate Change for Urban Water Utilities* (available at <http://www.amwa.net/cs/climatechange>), which examines the impact of climate change on urban drinking water utilities.

In addition, AMWA joined seven other national water sector associations on May 20 in calling on Congress to recognize the severe impacts that global climate change will likely have on water resources in the United States. The *Water Sector Statement on Climate Change and Water Resources* (attached) urged senators and representatives to ensure that upcoming climate change legislation includes federal support and incentives to help drinking water providers, flood and stormwater agencies and wastewater systems confront the impacts of climate change.

The organizations identified three broad objectives that Congress should include in comprehensive climate change legislation:

1. Research to develop and improve climate prediction models, necessary data resources, alternative water sources, new water management techniques, and evaluations of new carbon control technologies;
2. Federal and other financial support for climate adaptation projects, including infrastructure enhancements, that may be needed to neutralize the regional impacts of climate change; and
3. Incentives that encourage utilities, along with other small-scale emitters, to voluntarily reduce their greenhouse gas emissions.

AMWA and other statement signatories believe that Congressional enactment of our recommendations would be a significant contribution toward the sector's efforts to continue providing critical water service in spite of the effects of climate change.

AMWA believes that OW can play a key role within its own regional offices and also with other federal agencies in raising awareness about the critical connection between climate change and adverse water resource impacts. This would be invaluable, especially with respect to seeing that important research is funded to help utilities adapt to changing water quality and quantity. EPA must also recognize that while much of the adaptation will need to happen outside of the regulatory framework, the agency should mobilize to support the adaptation needs of utilities within the regulatory construct.

The draft Strategy is defined as “an initial effort by the National Water Program to identify potential impacts of climate change for clean water and drinking water programs and define actions to respond to these impacts.” As such, the Strategy provides a good summary of background information with respect to the state of the science as it relates to water quality and quantity impacts. However, in many cases drinking water utilities are actively seeking to understand and respond to these impacts and changes and in many cases are already making plans to adapt. AMWA therefore suggests that OW should be focusing its efforts on:

- Assisting water utilities to plan for the effects of climate change on utility operations by raising awareness of the critical needs of the water sector within other federal agencies.
- Advocating with EPA headquarters and regional offices as well as other federal agencies for a comprehensive, unified, and coordinated federally sponsored applied research program to develop decision support tools, adaptation action plans, mitigation strategies and better information on the impacts of climate change on water quality and quantity, stormwater management and wastewater treatment. Key components of these research needs are data resources, including more hydrologic data to adequately assess the changes in the volume and timing of streamflows and snow melt runoff patterns. EPA acknowledges the need for additional data in Goal 2 of the Strategy and should play a strong role in asking its partners in research and the Climate Change Science Program (CCSP) to gather data to supplement the work EPA is planning.
- Encouraging the Office of Research and Development (ORD) to perform research aimed at helping water utilities adapt to climate change, such as developing decision support tools and assessments to determine the vulnerability of different regions and watersheds to the likely impacts of climate change over different timeframes. Water utilities need this information to ensure they have secured adequate water supplies as they plan ahead for the needs of the next 20-50 years.

The Strategy focuses heavily on the relationship of water and energy use. While there is an inherent incentive for water utilities to reduce their energy and utility expenses in response to the potential disruptive impacts of climate change, EPA must also place a strong emphasis on education and tools to assist federal, state and local agencies in the following areas:

- **Water Supply Planning:** EPA can help to educate other federal agencies, states and water utilities about the importance of conducting water supply planning. A lack of adequate planning will place increased uncertainties on those systems that have not appropriately evaluated the increased risk due to climate change. Ensuring adequate availability of water supply in the wake of hydrologic uncertainty should be a key objective of any national strategy on climate change impacts.
- **Regionalization:** In the wake of climate uncertainty, risk management can be best addressed by water utilities that manage water supply availability on a regional basis. The need for multiple and redundant sources of supply, managed on a risk adverse basis, by those who cooperate and develop adequate long-term water supply plans on a regional basis must be emphasized in any national strategy on climate change. EPA likewise needs to consider the regional differences in climate change effects when considering the development or revision of rules and standards and the development of adaptation tools.

- **Source Water Protection:** Changing water quality conditions that may result from climate change impacts necessitate a strong emphasis on source water protection programs. The potential of climate change to impact Clean Water Act (CWA) programs requires a strong commitment by EPA to compliance, enforcement and resources to manage discharges that may impact our drinking water sources. Further, EPA should enable water utilities to expand source water protection programs by demonstrating its commitment to these programs with additional resources.

The five major goals outlined in the Strategy are appropriate for EPA's OW to pursue. AMWA's climate change committee has ranked the goals, as follows:

1. Research
2. Adaptation
3. Management
4. Education
5. Mitigation of greenhouse gases

AMWA Climate Change Committee members ranked adaptation and research almost of equal importance. These rankings are not "either/or" choices, but rather prioritizations. AMWA sees the need for research that will enable utilities to have as much advanced insight into what is likely to happen with water resources as a first step toward developing adaptation and management strategies.

AMWA has several comments with respect to each goal and associated key actions of the Strategy:

Goal 1: Water Program Mitigation of Greenhouse Gases

With respect to the development of rules to govern the geologic sequestration of carbon dioxide (CO₂), AMWA strongly urges EPA to ensure that sufficient resources are allocated to the research and debate associated with geo-sequestration and its potential impacts on sources of drinking water. Additionally, EPA should assure that existing laws are adequate for the short- and long-term protection of the nation's water resources from geo-sequestration activities. AMWA agrees with the National Drinking Water Advisory Council's statement from November 2007, which acknowledged that there are a number of unresolved technical and policy issues associated with the geo-sequestration of CO₂, including potential adverse public health and environmental effects and unintended consequences to ground water resources.

The Strategy's discussion of CO₂ sequestration does not appear to consider what could potentially happen to the nation's water portfolio if this practice actually became accepted and widespread. For example, would there be a significant increase in electric power production due to the creation of new power plants near areas where CO₂ sequestration is allowed? How would the use of CO₂ sequestration affect water supplies?

AMWA therefore urges EPA to consider water sector impacts of the nation's energy portfolio as whole - especially if the national portfolio changes. If there is an increase in the use of carbon capture or nuclear technologies in electricity production, or if biofuels production increases, increased demands on water resources will emerge as well.

While water and wastewater utilities can play an important part in mitigation, energy use must be weighed as part of a flexible climate change adaptation portfolio, especially for utilities that need to ensure adequate water supplies for the future.

For example, with respect to key action #5, *Industrial Water Conservation, Reuse and Recycling*, AMWA encourages EPA to carefully consider the energy use of reuse and recycling. In some cases, depending on the amount of treatment and pumping required, water recycling could actually increase greenhouse gas emissions. Therefore AMWA encourages EPA to note in any technical guide it develops that recycling and reuse efforts for the purposes of reducing greenhouse gases needs to be evaluated on a case-by-case basis and in light of a complete water supply portfolio that must be adaptable in a climate change context.

AMWA asks EPA to better explain the meaning of the following statement in the Strategy,

“In addition, EPA recognizes that water pollution control processes can be energy intensive and, where authorized by statute, will consider the energy and potential climate change implications of clean water and drinking water regulations.” P. 24

AMWA encourages EPA to describe either in the final Strategy or in the Strategy Implementation Plan how it intends to consider these implications and how it plans to implement this concept within OW. The consideration of energy and climate change implications adds complexity to an already very complex issue. How will EPA consider the need for changes in the regulatory structure, or allow for flexibility for utilities in the event of an emergency situation with respect to energy availability?

AMWA agrees that promoting "Green Buildings" and "Green Infrastructure" and allowing for their use in stormwater permits (Key Action #7) can help in mitigating greenhouse gases with respect to water. EPA should also work to recognize and encourage these practices as a means to enhance the resiliency and adaptive capacity of water utilities and the urban and suburban areas they serve.

Goal 2: Water Program Adaptation to Climate Change

The Strategy identifies several climate change impacts on OW's programs and acknowledges the challenges that EPA will face in adapting these national programs to better address climate change needs. AMWA suggests that the Strategy better identify the process OW envisions to accomplish this.

The document implies the current regulatory and programmatic framework is sufficient to address the effects of climate change on water quality and quantity, yet it does not appear that this assumption has been critically appraised for its applicability to the climate change scenarios and implications that might occur, or are already occurring. If EPA has assessed the current regulatory and programmatic framework for its adaptability to the climate change and water nexus, then the Strategy should make this clear by describing the process EPA has developed.

For example,

- Will EPA use a sensitivity analysis to assess clean water microbial criteria and risks of waterborne disease (Key Action #13, p. 40)?
- What process will OW employ to determine when current standards or targets are no longer attainable because of a climate-stressed environment (p. 41)?
- Why is the Nonpoint Pollution Guidelines and Methods program identified (p. 47) as the only program that may require a critical look for revision in light of climate change? Has OW considered whether other programs will also be affected?

While it is true that the CWA and Safe Drinking Water Act (SDWA) have both been designed to

include periodic updates of rules and water quality standards and that these updates could be considered under climate change scenarios, the reality is that these rule revision processes take a long time and are often years behind schedule. EPA should begin to think about how this approach can be adapted or revised to respond to certain pre-determined thresholds. In its implementation report, OW should identify the types of impacts it believes climate change will have on SDWA and CWA standards. If the impacts are uncertain, AMWA suggests that EPA first consider which it believes might be affected by climate change, and then study how they would be impacted, before beginning any standard reviews or development that incorporates the potential impacts of climate change. EPA may also want to consider using more flexible permit conditions, such as monitoring requirements, to address future uncertainties as a result.

On page iv of the Executive Summary, AMWA suggests that EPA acknowledge the modifications to programs that might be required as a result of climate change could include modifications to *standards* as well as to programs. This concept is alluded to throughout the document and should be included in the executive summary.

AMWA encourages EPA to describe either in the final Strategy or in the Strategy Implementation Plan how it intends to consider the utilities' adaptation needs in emergency situations, such as hurricanes and floods. How will EPA consider the need for changes in the regulatory structure, or allow for flexibility for utilities in the event of an emergency situation caused by more severe weather patterns and water availability brought on by climate change?

AMWA agrees that OW must incorporate climate change into its watershed approach. However, it is not clear to readers outside of the agency what impact the policy memo described in the Strategy will have in effecting this change.

Goal 3: Climate Change Research Related to Water

Water utilities and others within the water sector have begun to identify research needs with respect to climate change. AMWA suggests that EPA's Office of Water advocate for more decision relevant research for the water sector within the CCSP. EPA should strengthen Key Action #35 beyond monitoring the development of CCSP reports to participating in the CCSP Water Cycle Working Group and promoting the need for the additional research directed at addressing the needs of the water sector.

AMWA also suggests that OW work not only with ORD but also with other federal agencies and the water sector research foundations (AwwaRF, WERF) in the development of water research related to climate change (Key Action #36). This action provides another opportunity for OW to work with water sector partners.

In addition, EPA should work with the water sector in general to incorporate its thoughts in revising ORD's Global Change Multi-Year Plan (Key Action #37).

As there are many initiatives underway to identify and perform needed research, OW should establish an ongoing process in partnership with other water sector stakeholders on identifying and shaping research that is direct and relevant to the needs of EPA and the water sector.

Research is needed within EPA's other goal areas. Some of the projects that will be coming through the AwwaRF strategic initiative on climate change could be excellent springboards for the education goal, for example.

Goal 4: Water Program Education on Climate Change

The Strategy says that OW will educate people working in water/wastewater about climate change, but does not indicate how this will be accomplished. The Strategy seems to downplay the importance of partnerships outside of the agency. As stated earlier, AMWA believes EPA should work with utilities and water sector associations to support and augment the work that is already being done to educate utilities, the public and other federal agencies about climate change impacts.

In many cases larger utilities are working in concert with their local or state governments to address climate change in their regional planning. Utility efforts to adapt and mitigate need to be closely aligned with other local and regional planning efforts to ensure a consistent approach towards public investment and protection of key assets. EPA can play an important role in raising awareness that climate change is more than greenhouse gas mitigation within its own regional offices and also with other federal agencies.

Another simple yet important way that EPA can improve education and communication with its partners in the federal and municipal family is to improve its climate change website. For example, the information in Appendix 1 of the Strategy, *Climate Change Impacts on Water in Regions of the United States*, is useful information that should be posted on OW's climate change website, and/or on EPA's agency-wide climate change website.

With exception of the health and environmental effects section, the agency-wide climate change site is all about the GHG emissions program – the major impacts to water resources are minimized. EPA's general climate change site should be linked to OW climate change site, which currently only mentions the climate change strategy. The OW site should be improved with respect to climate change and the many resources EPA identifies in the Strategy by providing the relevant links. The agency-wide climate change website should also be linked to the OW site on climate change policy.

With respect to Key Action #38, creating a climate change clearinghouse website will only be useful and effective if it is well organized, up-to-date, accurate and easy to use. AMWA is concerned about from where in EPA's budget the funds would come to keep this effort current. If OW intends to create a new site, it should incorporate the information already available on other EPA sites, as described above. AMWA is also concerned that it would be very difficult for the agency to track all worldwide research occurring in the climate change arena with respect to water resources. One area where AMWA has noted it is difficult to track research is within the CCSP. There is no single compilation of CCSP efforts related to water. AMWA has hired the University of Colorado to develop a database containing an overview of all federal water-related CCSP and non-CCSP research.

AMWA applauds EPA for its desire to keep the lines of education and communication open with stakeholders regarding progress on the strategy and new issues with respect to climate change. If EPA believes the best way to accomplish this is with a list-serve, then it must commit the resources and staff to do it.

Goal 5: Water Program Management of Climate Change

The strategy proposes a workgroup approach within OW to address the issues identified in the

Strategy. AMWA believes this is a weak management commitment tool, given the profound effects being observed and anticipated. In reading the Strategy it appears that EPA believes that most of its programs are structured to be able to adapt easily to effects of climate change. During a meeting with OW and water associations about the Strategy, it was communicated that a responsibility and benchmark plan exists. AMWA encourages OW to identify in the Strategy document the system of centralized responsibility and benchmarks to address the key actions identified. AMWA encourages OW to publicly release the strategy implementation plan.

AMWA supports the concepts of Key Actions #45 and #46 to identify regional additions to the Strategy and to work with other federal agencies with a significant interest in the water-related impacts of climate in a climate coordination group. This effort should tie in with the CCSP efforts. In addition, the Forest Service should be called out within USDA, as thousands of watersheds in the West are on Forest Service land. Federal policy related to how the Forest Service manages the land with respect to the connection between issues, such as endangered species and climate change, for example, plays a significant role in the West in particular.