June 10, 2008

Attention: National Water Program Draft Climate Change Strategy
Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
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Subject: National Water Program Draft Climate Change Strategy

The Water Environment Federation ("WEF") submits the following comments on the *National Water Program Strategy: Response to Climate Change ("Strategy").* Formed in 1928, WEF is a not-for-profit technical and educational organization with more than 34,000 individual members and 81 affiliated Member Associations representing an additional 50,000 water quality professionals throughout the world. WEF and its member associations proudly work to achieve our mission of preserving and enhancing the global water environment. In the WEF Resolution on Climate Change, approved by our Board of Trustees in October, 2006, WEF identified climate change as a priority concern for our membership and acknowledged our responsibility to lead efforts to mitigate and reduce the impacts of global climate change among water quality professionals.

WEF applauds the U.S. Environmental Protection Agency (EPA) for taking this step toward addressing the issue of climate change and water resources and appreciates the opportunity to provide comments on the public review draft. By issuing the *Strategy*, EPA has raised the profile of water issues in the on-going discussion of climate change within the Federal government. It is vitally important that water resources are a central element of any Federal actions to establish a comprehensive national response to climate change.

GENERAL COMMENTS

WEF challenges EPA to continue efforts to evaluate how best to meet clean water and safe drinking water goals in the context of a changing climate, which is the stated intent of the *Strategy*. The Key Actions are general statements of the Agency's intent to evaluate and develop information on various aspects of the water program to provide a basis for further actions. While the document is an appropriate initial step, WEF suggests that EPA consider the following comments as it begins to address climate change and its impacts on water resources.

Water Program Impacts on Climate Change

While the *Strategy* discusses the effects of climate change on water resources and how the National Water Program will adapt, it does not sufficiently address the impacts that the Water Program can have on mitigating climate change. EPA should consider placing a greater emphasis on identifying and implementing logical mitigation efforts. For example, EPA should encourage the development and use of innovative, energy-efficient water and wastewater treatment, collection, and distribution technologies and pollution prevention measures that minimize the carbon footprint of drinking water and wastewater management systems.

Further, EPA should consider estimating the carbon emissions of Safe Drinking Water Act and Clean Water Act program requirements and activities. This type of assessment will be useful to EPA and stakeholders when balancing technology options and regulatory requirements with the impacts of climate change. For example, technology-based effluent limitation guidelines (ELGs) are based on treatment technologies that can require significant energy and chemical usage, as well as increased air pollution, which can further contribute to climate change. As it reevaluates existing ELGs and establishes new ones, EPA should evaluate the carbon footprint of the current requirements and project the change in the footprint of the various alternatives it is evaluating in order to compare the environmental benefits of treatment with the impacts on climate change resulting from the treatment process.

WEF supports the statement on page 24 of the *Strategy*: "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." WEF encourages EPA to act on this statement and to consider the possibility that the rate or extent of change due to climate modification may require a broader evaluation of how to meet the requirements of the Safe Drinking Water and Clean Water Acts. Recognizing that science cannot currently answer the question of how fast climate change will occur, nor what the effects will be at local scales, it is important not to limit thinking to what can be done within the current program structure.

Coordination within EPA and with other Agencies

Given the potential for significant climate change-related impacts, EPA should give more detailed consideration to the large-scale implementation and coordination challenges between EPA and other Federal, state, tribal, and local agencies.

WEF encourages EPA to place greater emphasis on communication and coordination across all of its Offices. Actions taken to mitigate climate change and adapt to its impacts must be coordinated and integrated into EPA programs involving air, water, solid waste, and enforcement. The *Strategy* is written with only the water program in mind. While a good first step, this single-program approach will not facilitate selection of options to address mitigation and adaptation issues with the greatest environmental benefit in mind. Much more coordination among the Agency's programs and offices and between Federal agencies will be required to mitigate climate change and adapt to its impacts.

In the face of global climate change, EPA and other Federal agencies need to operate outside of their traditional boundaries and establish a coordination network to address

issues in an integrated way. Under Goal 5, Water Program Management for Climate Change, EPA lists other Federal agencies "with an interest in water-related climate change issues" (page 68). The *Strategy* should address how the Office of Water will collaborate with these agencies to implement the Key Actions and for future planning beyond 2009. For example, the U.S. Department of Energy (DOE) has an Energy-Water Nexus program. How is EPA's Water Program coordinating with DOE's program? Considering the importance of Goal 5 to the overall success of the *Strategy*, EPA should devote more time and consideration to this issue in the final document.

Implementation Plan

WEF understands that EPA plans to issue a companion document addressing implementation soon after finalizing the *Strategy*. This is an essential step towards accomplishing the Key Actions, which lay the groundwork for future actions by gathering baseline data, strengthening partnerships, and reviewing current regulatory programs. WEF provides the following comments for consideration as EPA develops its implementation plan.

- The implementation plan should provide details on how EPA will establish a coordination network within EPA, among Federal agencies, and with regional, state, and local governments and stakeholders.

- WEF supports EPA's decision to periodically review and revise the *Strategy*. Such an approach will ensure that new science and technologies related to mitigating the impacts of climate change on water resources are incorporated into EPA's *Strategy*. WEF also supports EPA's recommendation that regional EPA offices supplement the *Strategy* with actions to address the most significant climate change impacts within their region. This approach will afford regions the flexibility to promote and address the impacts in their regions in the most effective manner. The implementation plan should include a schedule for both of these activities.

- In addition to gathering information from EPA regions on their priorities and actions, EPA should include a statement in the *Strategy* or implementation plan regarding the applicability or priority of Key Actions by region. The implementation of Key Actions may vary depending on geopolitical boundaries (i.e., State or region), or geographic boundaries (e.g., arid west, watershed, or coastal).

- While the Key Actions contained in the *Strategy* may help provide an in-depth demonstration of the need for action, the implementation plan should provide more detail and specific examples in order to be useful to regulators who implement water programs.

- Although EPA states in the Executive Summary that they will initiate the Key Actions in Fiscal Years 2008 and 2009, no other deadlines or schedules are provided for the majority of the individual Key Actions. WEF recommends incorporating timelines in either the implementation plan or the final *Strategy*. Clearly established schedules will allow stakeholders to anticipate when these actions will occur and coordinate their efforts to help achieve EPA's goals. It will

also provide a needed benchmark against which EPA's implementation efforts can be judged.

- The *Strategy* does not adequately address funding to implement the Key Actions, nor does it attempt to provide an estimate of the costs associated with implementation. The implementation plan should explicitly acknowledge the reality of limited resources. WEF recommends that EPA further refines the Key Actions with deliverables and assess the financial impacts of those efforts on water and wastewater utilities, where appropriate. EPA should consider which Key Actions could achieve the most environmental benefit at the least cost when attempting to prioritize Key Actions. This would help guide regulators and other decision-makers.

- WEF agrees with EPA's statement on page 37 of the *Strategy* that "adaptation of water programs to climate change will be a long and iterative process." The implementation plan should incorporate and discuss how to utilize the principles of adaptive management to address climate change mitigation and adaptation efforts.

- WEF encourages EPA to involve other agencies and stakeholders early and frequently in the development of the implementation plan so that it will have broad review and discussion prior to being issued as a final document.

Prioritize Key Action Items

The Key Actions described in the *Strategy* cover a wide range of spatial, temporal, hydrodynamic, and weather-based scales; and their importance to the issue of climate change and the National Water Program varies widely from one action to another. Some actions will have greater impact in the near future while the impact of others will not be known for many decades and may be relatively inconsequential. It is critical, given limited resources and the fact that many Federal agencies play some role in the nation's efforts to address climate change, that EPA and its Federal partners prioritize the Key Actions in the *Strategy*.

WEF understands that different regions may have different priorities; however, some prioritization of the Key Actions is needed at the national level. WEF suggests that EPA approach the prioritization of the Key Actions in a collaborative manner, working with other programs within EPA and other Federal agencies addressing climate change.

WEF considers the following Key Actions, presented in the order they appear in the *Strategy*, as high priority:

<u>Goal 1: Greenhouse Gas Mitigation Related to Water</u>

1) Improve Energy Efficiency at Water and Wastewater Utilities
5) Industrial Water Conservation, Reuse, and Recycling Technology Transfer

WEF supports EPA's efforts to identify and implement mitigation efforts at water and wastewater utilities. WEF also believes that water reuse plays an important role in achieving water sustainability. WEF supports the use of reclaimed water for nonpotable

uses to conserve and extend freshwater supplies and supports the use of treated reclaimed water for indirect potable reuse.

Goal 2: Adapting Water Programs to Climate Change

16) Link Ecological and Landscape Models
21) Assess Fresh Waterbody Spatial Changes Due to Climate Change
26) Review and Adapt NPDES Permit Program Tools
27) Evaluate Opportunities to Address Wet Weather/Climate Impacts at Municipal and Industrial Operations
28) Assess Climate Impacts at Animal Feeding Operations
29) Implement the Sustainable Water Infrastructure Initiative and Adapt Decision Support Tools to Include Climate Change
31) Clarify Use of the Clean Water and Drinking Water SRFs to Support Adaptation to Climate Change

Several of the Key Actions listed above are issue areas in which WEF members have knowledge and expertise, such as modeling, permitting, addressing wet weather flows in municipal wastewater treatment systems, maintaining and improving infrastructure, and working with multiple sources within a watershed to address water quality impairments. WEF encourages EPA to engage other organizations in the planning process for implementation of Key Actions.

Goal 3: Climate Change Research Related to Water

The objective of Goal 3 is to strengthen the link between EPA water programs and climate change research. WEF urges EPA to reach outside of the Office of Research and Development and engage in research efforts with other agencies, organizations, and academia. EPA should establish a process by which the water program will identify and fund specific research beyond the list in Appendix 5 and decide how to incorporate the research results into water program implementation.

Goal 4: Water Program Education on Climate Change

39) Annual Public Reports on Strategy Implementation
40) Outreach to Partners

WEF believes that education on climate change is essential to facing its challenges and encourages EPA to begin acting on this goal immediately. The establishment of an EPA climate change website with information from multiple offices, not just the water program, would help share information and enhance coordination. WEF strongly supports the publication of annual reports describing progress on implementation of the *Strategy*.

Goal 5: Climate Change Management

As stated earlier, WEF believes that EPA should give more detailed consideration to the large-scale implementation and coordination challenges between EPA and other Federal, state, tribal, and local agencies and place greater emphasis on communication and coordination across all of its Offices.

SPECIFIC COMMENTS

Goal- and Action-Specific Comments

Goal 1: Greenhouse Gas Mitigation Related to Water

Efforts to reduce greenhouse gas emissions from water and wastewater utilities should not focus exclusively on energy consumption. EPA should consider adding a discussion in Section A that addresses greenhouse gas emissions from wastewater treatment systems independent of off-site power generation (i.e., nitrous oxide and methane).

In the discussion of water conservation under Section B, EPA identifies industry and water utilities as heavy water users. Agriculture should be included in this discussion, considering that water consumed for irrigation is typically heavily subsidized, resulting in less incentive to conserve.

Co-digestion of carbon substrates (i.e., fats, oils, and grease; source-separated organic municipal solid waste; animal wastes; and industrial process wastes) with wastewater solids provides an opportunity to generate green power while offsetting greenhouse gas emissions. The *Strategy* should specifically encourage the investigation of opportunities to integrate wastewater and solid waste management.

In Section D, EPA states, “agricultural producers have the potential to reduce nitrous oxide releases by expanding use of manure, biosolids or other organic residuals.” WEF supports the land application of biosolids and recommends that EPA promote this activity as an alternative to commercial fertilizers.

Goal 2: Adapting Water Programs to Climate Change

Goal 2 is well organized into the five major program areas in the Office of Water. The climate change crosscutting themes listed on pages 37 and 38 are also appropriate for the *Strategy*. WEF recommends adding, "Emphasize Adaptive Management in Developing Key Actions" to the list. This reiterates EPA’s statement that adaptation to climate change will be a "long and iterative process." There is a great deal of uncertainty about when and how climate change impacts will occur. Adaptive management is an essential process for addressing the uncertainty inherent in climate change.

On page 43, EPA states: “Using the watershed approach, utilities, agricultural producers and other stakeholders look holistically at infrastructure planning, water pollution control, waterbody restoration, and soft path technologies, such as low impact development....” WEF encourages EPA to be proactive in its efforts to enable holistic planning. The agency is responsible for a host of environmental policies and regulations that often run counter to a comprehensive approach to mitigating climate change. EPA should consider how to address those disparities.

Under Key Action 26, EPA addresses potential changes in the hydrologic cycle and the resulting impacts of climate change on water quality standards, mixing zones, TMDLs, and more. WEF urges EPA to carefully consider all options and potential outcomes when revising regulatory programs to incorporate climate change projections so that the

end result is environmental benefit, not new policies or requirements that further compartmentalize water resource management.

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WEF suggests including impacts on wastewater infrastructure as part of Section B. WEF recommends that EPA research address issues such as the impact of higher constituent concentrations to the collection system and pumping stations; the impact of higher constituent concentrations on processes and treatment plant infrastructure; how to handle extreme flows (low and high); and the generation of odors and air emissions by the treatment process.

According to Section C, the EPA Office of Research and Development will be developing a new "decision assessment" process to help in prioritizing future research needs related to climate change and its impacts on water resources management. The *Strategy* indicates that this process will provide a foundation for future research. WEF urges EPA to include outside involvement in developing this process, as organizations such as WEF and the Water Environment Research Foundation (WERF) could provide valuable input and expertise.

EPA's Key Questions to Stakeholders

Can the Description of Climate Change Impacts on Water Resources/Water Programs Be Improved?

In general, the description of climate change in both the Executive Summary and Section 2 is appropriate and complete. Highlighting impacts on water resources and EPA's water programs is an effective way to organize discussion of a complex issue across the five inter-related climate change categories (air/water temperature increases, changes in rain/snow levels and distributions, storm intensity changes, sea level rise, and changes in coastal and ocean characteristics). Quotes from the Intergovernmental Panel on Climate Change 2007 report and graphics summarizing North American impacts also effectively convey the potential impacts of climate change.

In its description of impacts; however, EPA failed to adequately discuss the impacts of climate change on aquatic communities. Some forecasts have the ranges of entire species "shifting" northward. Conveying this information will communicate the potential impacts of water-related climate changes to the public and decision-makers in a way that is compelling and easy to understand.

Are the Response Actions Appropriate and Complete?

WEF recommends adding or revising the following Key Actions:

- On page 45, under Protecting Coastal Estuaries, EPA describes an important action that is not listed as a Key Action: "The National Water Program will work

with individual estuary programs to promote climate change as a priority for NEP's Comprehensive Conservation and Management Plan Revisions." This should be added to the list of Key Actions.

- On page 46, under Restoring Impaired Waters, EPA states, "The National Water Program will consider the long range implications for waterbody impairment associated with climate change and will make needed revisions to TMDL guidance." This action should be included as a Key Action and could lead to establishing a separate category for waters considered impaired because of climate change impacts rather than specific pollutants. Another possible outcome of this evaluation would be to require that TMDL recommendations for controls be based on a comprehensive evaluation that considers greenhouse gas emissions and other relevant environmental end-points in the decision-making process.

- On pages 40 and 41, as part of the discussion on Water Quality Standards, EPA should add a Key Action to streamline the Use Attainability Analysis (UAA) process so that “where conditions have changed or are anticipated to change" as a result of climate change, designated uses can be reclassified in a sound, but non-resource intensive process.

- On pages 42 and 43, under Effluent Standards, EPA should add a Key Action to consider climate change impacts when making potential Best Available Control Technology (BACT) and Best Available Technology (BAT) designations as new effluent standards are considered and existing ones are undergoing their periodic reviews. Available technologies that will significantly increase the generation and emission of greenhouse gases should not be designated BACT or BAT unless there is a substantial and needed benefit of the technologies when compared to others that generate less greenhouse gas emissions.

- On pages 44 and 45, as part of the discussion on Water Monitoring and Data, EPA should add a Key Action to link increases in water body temperature (and the other physical/chemical changes that accompany increased temperature) with anticipated shifts in aquatic populations. This information will help identify waters that need priority attention and be instrumental in educating the public and decision-makers regarding the impacts of climate change. EPA should coordinate with the U.S. Fish and Wildlife Service and the National Marine Fisheries Services on this action.

- On page 41, EPA states, "Dischargers and watershed activities may need to change to reflect the increased degree of difficulty in meeting current standards…." WEF recommends revising this statement to read, "The activities of both point and nonpoint source dischargers may need to change…" to provide a clearer and more balanced statement. In many cases, nonpoint source discharges are an equal if not greater cause of impairment to watersheds than point source discharges. As written, the statement implies that point source discharges are the main concern. The absence of a Key Action to promote agricultural practices that improve water quality or mitigate climate change, including those for concentrated animal feeding operations, further emphasizes EPA’s focus on point sources.

- WEF recommends adding a Key Action on increasing EPA's focus on source control and pollution prevention through strengthened and expanded nonpoint source management strategies. The *Strategy* indicates that climate change may lead to increased and more intense precipitation in some areas, resulting in increased storm water runoff that will wash additional sediment and other contaminants into receiving waters. Enhanced emphasis on the implementation of effective nonpoint source controls will be critical in addressing these effects of climate change.

WEF appreciates the opportunity to comment on the *Strategy* and looks forward to working cooperatively with EPA to address the challenges of mitigating climate change and adapting to the potential impacts associated with water resources. If you have questions on these comments, please contact Sharon Thomas, WEF Manager of Regulatory Affairs (703-684-2423).

Sincerely,

Tim Williams
Managing Director, Government Affairs