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April 27, 2007

Global Change Research Program  
National Center for Environmental Assessment  
Office of Research and Development  
U.S. Environmental Protection Agency  
Via Electronic Mail: [ORD.Docket@epa.gov](mailto:ORD.Docket@epa.gov)

Attn: Docket ID No. EPA-HQ-ORD-2007-0239 and EPA-HQ-ORD-2007-0240

Dear Sir or Madam:

The National Association of Clean Water Agencies (NACWA) appreciates the opportunity to comment on the external review drafts of two screening assessments on the potential impacts of climate change on water quality. The reports, *A Screening Assessment of the Potential Impacts of Climate Change on Combined Sewer Overflow (CSO) Mitigation in the Great Lakes and New England Regions (CSO Report)* and *A Screening Assessment of the Potential Impacts of Climate Change on the Costs of Implementing Water Quality-Based Effluent Limits at Publicly-Owned Treatment Works in the Great Lakes Region (WQBEL Report)*, highlight two of the many potential impacts global climate change may have on the water environment. Due to the short public comment period, NACWA has not been able to thoroughly review the documents for technical accuracy. However, based on an initial review by several of its members in the affected regions, NACWA has several concerns outlined below and believes that both reports need revisions to better characterize the speculative nature of the analyses.

NACWA represents the interests of nearly 300 public wastewater treatment agencies. NACWA's members are responsible for ensuring the wastewater from their respective communities is appropriately treated before being discharged to the Nation's waters. As stewards of the water environment, NACWA's members are already actively participating in the dialogue on possible climate change impacts and the potential need to adapt to those impacts. NACWA is acting as a leader on the nexus between climate change and water resource management. The Association recently renamed its Air Quality Committee to specifically reference climate change issues and is leading the way on exploring new and innovative ways of reducing the impacts of any possible precipitation pattern changes through the use of green infrastructure approaches.

NACWA understands that potential changes in long-term precipitation patterns may need to be considered when planning combined sewer overflow (CSO) projects, treatment plant improvements, or any number of water resource issues. However, suggesting that communities need to provide margins of safety in their CSO projects or make other operational changes now to account for possible future climate change, is premature given the acknowledged uncertainty in these analyses and the underlying climate models used to conduct them.

NACWA's comments on each of the two reports are outlined below.

*A Screening Assessment of the Potential Impacts of Climate Change on Combined Sewer Overflow (CSO) Mitigation in the Great Lakes and New England Regions*

Portions of this analysis provide contradictory results. Depending on the global circulation model used, the report indicates that in the New England region there would either be more CSOs than projected using current precipitation patterns or, alternatively, fewer CSOs. These ambiguous results underscore the uncertainty associated with making predictions regarding global climate change at this time. While later sections of the report include a discussion of the limitations of the study, very little of this information is included in the *Executive Summary*, which leads to a false sense of greater certainty in the potential impact of global warming.

In fact, the *Executive Summary* states "the results suggest that CSS [combined sewer system] planners are faced with an important decision on whether to invest additional money now to build in an additional margin of safety" to address climate change, implying that there is enough information now to determine that such a choice is necessary, but makes no mention of the numerous limitations listed later in the report. NACWA recommends that the *Executive Summary* be revised to accurately characterize the limitations of the study and the research gaps also identified that need to be addressed. Language from Section 3.3 regarding the variability of the climate change projections used and how that variability "has important implications for how results should be interpreted" should also be included in the *Executive Summary*.

CSO communities who choose to use the historical period of record to design components of their long-term control plans based their efforts on historical fact, typically with a certain measure of design contingency to accept volume increases predicted by current models. These systems were built to comply with a standard that did not contemplate major shifts in future precipitation patterns and that was crafted around an ultimate goal of meeting water quality standards, not some finite number of overflows. If future climate patterns result in changes to the frequency of CSOs and in adverse water quality impacts, broader policy decisions will need to be made beyond hitting a targeted number of CSOs based on outdated information.

NACWA's specific comments:

- Page iv, lines 40-43. Assuming that there is a linear relationship between storage and the purported increase in intensity seems to be an over-simplification. However, without a better understanding of how the monthly climate model calculations were extrapolated to events it is difficult to provide a specific comment.

- Page iv, paragraph starting with line 39. This document does not address the fact that phased long-term control plans (LTCPs) are entirely appropriate under the CSO Policy and that EPA guidance indicates that controls should be expandable based on results of post-construction monitoring. The document should acknowledge this. The report incorrectly implies that if a community develops and builds controls based on historic rainfall patterns that the community will not be able to add additional control without excessive cost.
- Page 11, line 6. The report should acknowledge that storage is but one of several technologies considered by CSO communities.
- Page 22, lines 31-35. The report notes that a major weakness of the analysis is that it was conducted in full-day increments and does not distinguish between a two-inch, 24-hour storm and a two-inch, 2-hour storm. The type of precipitation event is extremely important in developing CSO controls. Given the assumptions inherent in the scaling-down process using the WGEN weather simulation model, which appear to be based on existing rainfall distributions, it is unclear whether the global circulation models are at all capable of predicting a future increase in the type of short-term, high-intensity rainfall that has significant impacts on the design of CSO controls.

*A Screening Assessment of the Potential Impacts of Climate Change on the Costs of Implementing Water Quality-Based Effluent Limits at Publicly-Owned Treatment Works in the Great Lakes Region*

NACWA understands that potential changes in precipitation patterns due to climate change might have implications for the development of water quality-based effluent limits and appreciates EPA's attempt to better quantify the potential financial impact of more stringent limits due to a loss of assimilative capacity in receiving streams should climate changes affect base flows. Again, however, NACWA questions the value of these analyses given the speculative nature of some of the underlying information, in particular the circulation models.

The report's broad scope requires a great deal of oversimplification of a very complex issue and requires a number of assumptions. A critical, overarching assumption is that the dissolved oxygen (DO) impairments evaluated in the report result from wastewater treatment plant discharges. The response of DO to wastewater treatment plant loads is decidedly non-linear for most receiving water bodies. The report's authors concede that DO impairment may be due to a number of other factors including excessive nutrient loading, potentially from nonpoint sources, but the focus of the report remains on additional treatment at wastewater plants.

Again, should predicted climate change impacts become a reality, we may end up with completely different aquatic biota that require a wholesale change in what we think appropriate criteria should be. Current DO criteria, or even criteria developed in the next 10 to 20 years may need significant revision before any potential wastewater plant reductions could be determined.

NACWA believes this report's conclusions would benefit from the discussion of two additional factors. The impact of additional energy expenditures to meet the anticipated more stringent WQBELs should be at least mentioned in terms of cost, air quality impacts and possible exacerbation of further climate change. Also, some mention should be made regarding the positive role water conservation might play in alleviating some of the stress to the system.

NACWA understands the value of studies like these conducted by the National Center for Environmental Assessment. However, it is important to properly characterize the limitations of the studies and ensure that reports summarizing the results of the research or impact assessments do not cross the line and become policy statements. NACWA is concerned that, as written, these assessment reports imply that clean water agencies should take specific actions to account for impacts that can not yet be accurately predicted.

Clearly, the Nation's clean water agencies should consider these and other possible future impacts in their long-range planning discussions and many of NACWA's members are already actively doing so at the community and regional level. Still, as both of these reports accurately describe, the Nation's clean water agencies are already facing what often seem to be insurmountable challenges in meeting the current regulatory and financial demands of managing wastewater today. The predicted impacts detailed in these reports are not insignificant and are potentially only a fraction of the possible water quality impacts that might be realized in the future. It is inappropriate to suggest that clean water agencies need to take action now on any one of these potential impacts. These and other possible demands on clean water agencies must be taken together and examined in a more holistic fashion before reasonable and responsible action can be taken.

Please contact me at 202/833-9106 if you would like to discuss our comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Chris Hornback", written in a cursive style.

Chris Hornback

Senior Director, Regulatory Affairs