

ADDENDUM

Summary of Review Comments on Report: Next Steps for Managing Freshwater Resources in a Changing Climate: A Report of the Water Resources Adaptation to Climate Change Workgroup to the Advisory Committee on Water Information

The Advisory Committee on Water Information's (ACWI) Water Resources Adaptation to Climate Change Workgroup (WRACCW) has prepared a report titled *Next Steps for Managing Freshwater Resources in a Changing Climate: A Report of the Water Resources Adaptation to Climate Change Workgroup to the Advisory Committee on Water Information*. The report is the result of several months of work by the WRACCW, which includes 40 representatives of Federal agencies, State and Tribal organizations, stakeholder groups, and the academic community. In response to interest in new options to support the President's Climate Action Plan, the WRACCW formed teams to review key issues related to climate change and water resources and to identify next steps that governments could take to address these issues. Recommendations were developed at a 2-day meeting in February 2014 and address the five key topics identified in the 2011 interagency *National Action Plan: Priorities for Managing Freshwater Resources in a Changing Climate*, including:

- Data and information,
- Assessment of Vulnerability,
- Water Use Efficiency,
- Integrated Water Resources Management, and
- Training and Outreach to Build Response Capability.

The WRACCW reviewed the report at its meeting on March 20 and April 10, and the report was transmitted to the Advisory Committee on Water Information for its consideration on April 22. The WRACCW co-chairs briefed ACWI members about the report during two teleconferences (May 8 and May 13, 2014). ACWI representatives subsequently submitted comments on the report, which are summarized in this addendum.

The posting of this report on the ACWI website does not imply the endorsement by the individual ACWI member organizations; rather, it indicates that the full ACWI gave the WRACCW permission to post the report on the website as a workgroup product.

Next Steps for Managing Freshwater Resources in a Changing Climate: A Report of the Water Resources Adaptation to Climate Change Workgroup to the Advisory Committee on Water Information

Summary of Comments and Questions from ACWI Members

General comment (expressed verbally during conference call)

Question: The report is extremely well done and all the bases are covered. So much data and information is gathered at the State scale, but the report does say not much about how that data gets brought into the process. Is there any plan to deal with that issue? **Answer:** State water resource data is absolutely fundamental to the process, related to water and related to climate. In terms of the Federal effort being well coordinated with the State effort, there are some successes, but also lots of places for improvement. The team was mostly looking at areas where Federal data collection could be improved, and in some cases the Federal agencies are managing data that originated with the States. The Climate Workgroup will probably deal more with State level data collection efforts in the future.

North American Lake Management Society (NALMS)

There is some concern at the NALMS that natural water bodies may not be well represented in this report. There is also some concern about regionalizing outreach in the sense that messages resonate differently in different parts of the country. NALMS has outreach to a lot of natural resource managers who work on natural lakes and could help spread the message.

American Society of Civil Engineers (ASCE)

The ASCE operates nationwide in a variety of sectors and is reviewing the report to determine if it conflicts with any of their policy statements. So far there does not appear to be any conflict, but they will be examining the report more closely over the coming weeks and months. Since ASCE operates nationwide, resulting in a diversity of opinions on climate-related issues, and since topics that raise red flags in one part of the country may not raise flags elsewhere, there probably will not be consensus within ASCE regarding the report, any more than there will be consensus among lake managers or among the 18 western States.

National Association of County Planners

There is a valuable discussion of predictable climate change effects on natural systems, related infrastructure and plans needed for these anticipated changes. Can we also address changing climate effects on sea level rise and its effects upon our built infrastructure, especially civil works structures which rely upon gravity flow of storm water to receiving coastal waters, or wastewater/combined sewer gravity flows to treatment plants in coastal communities?

Climate change and documented sea level rise will have both acute and chronic effects upon the efficiencies of civil and sanitary systems, as receiving water levels rise to block positive outfall and render gravity storm water collection and discharge ineffective, and inflow/infiltration rates in sanitary sewer and (or) combined sewer systems begin to rise dramatically for gravity sewer pipes in elevated shallow groundwater tables pushed upward ahead of rising sea level. Rising sea level will also have the effect of increasing salt water intrusion into shallow freshwater aquifers, rivers and streams relied upon for potable and agricultural uses.

The financial and social costs on the built infrastructure of sealing all lines and/or converting all gravity flow to pressurized flow and the corresponding disruption to overlying streets and highways in urban areas will be massive. Shallow freshwater aquifers, such as the Biscayne Aquifer which support potable uses in south Florida, will be dramatically affected. Communities will struggle with the tasks of removing increasing chloride levels in their drinking water, crop irrigation will be challenged if in reliance upon

affected shallow aquifers. The changing climate effects on built infrastructure may not necessarily be unique to coastal and estuarine communities around the United States but possibly to communities around the Great Lakes as well (if the Lakes themselves eventually see the effects of sea level rise?).

Your response is clearly appropriate under WRACCW direction for examination of the *National Action Plan: Priorities for Managing Freshwater Resources*, but I am hopeful that the ACWI (or one of its subcommittees) might recognize this important part of water resource planning for a changing climate and its effects around the Nation's estuaries, where the line between freshwater and sea water limits becomes blurred. A National Action Plan inclusive of this subject area, or in another related action plan for a changing climate that recognizes these issues for coastal communities, would be very valuable to start a national dialogue to anticipate and plan for these effects.

National Hydrologic Warning Council

Each year, we build about \$1 trillion of new infrastructure in the U.S. That is added to the \$1 trillion built last year, and the \$1 trillion built the year before that, and so on. Collectively, it is all part of our national asset base for constructed infrastructure. Every dollar in our national asset base is affected by hydrologic and hydraulic standards during design, as well as being impacted by hydrometeorological risks during operation. There is a lot at stake. In an urban stormwater capital improvement plan, uncertainty in a single hydrologic design standard could make a \$200 million difference in planned construction costs. That is more than enough to capture the concern of local decision makers.

A robust data monitoring system combined with easy access to collected data is essential to create effective information supporting risk management decision making.

The National Hydrologic Warning Council strongly endorses recommendations to:

1. Continue, expand, and upgrade existing monitoring programs of the nation's hydro-climate,
2. Establish standards and protocols for data interoperability, and
3. Increase support for paleo-climate and paleo-hydrology studies to place current observational trends in historical context. (Climates change. Always have. Always will.) We need to better understand the underlying rhythms of climate in order to better resolve signals of anthropogenically driven change.

Consortium of Universities for the Advancement of Hydrologic Science, Inc. (CUAHSI)

The CUAHSI has could endorse this report in its present form but offered two comments for the group's consideration.

First, the CUAHSI supports the recommendation for bolstering existing monitoring and maintaining long-term data sets; but equally important is to make the recommendation to develop an integrated reporting framework for these data to more clearly demonstrate their value and to assess the adequacy of the existing monitoring networks. To maintain or to increase support for these networks, data must be turned into information, so at least one reporting context is needed. Many contexts are possible, but relating water to economic activity of the country seems to be an obvious one that really hasn't been approached systematically. Strongly support a recommendation for the USGS or the proposed Water Resources Council to develop such a framework.

Second, in the discussion of enhancing groundwater monitoring, it's surprising that remote sensing data was not highlighted. This seems to be an important opportunity to integrate *in situ* and remotely sensed data to give a much better picture of groundwater resources, recognizing the limitations in the spatial and temporal resolution of these data. As more water-relevant satellites are launched, it is important that some agency take the lead in integrating the data gathered by multiple agencies into a more comprehensive view of the Nation's water resources. The report should mention the use of remote sensing data in the discussion of monitoring networks, even if only to make the point that we need *in situ* monitoring to verify and complement the satellite data. A statement of how the data complement each other would be useful.

National Association of Clean Water Agencies

There seems to be concern that we are not collecting enough data or the right kind of data. This question is raised in Recommendations #1 and #3 of the Water Data and Information Subgroup and Recommendation #1 of the Water Use Efficiency Subgroup (WUES). Has the committee defined data and information adequacy (quality and quantity) necessary to address the *National Action Plan* and made those recommendations to the Secretary? This would seem to be the most important, first step.

Recommendation #1 of the WUES mentions metrics, but the word "metrics" is not mentioned in the text of the report. Metrics are important, but it seems the recommendation is simply to increase agricultural water use efficiency. Metrics should be developed, but there must also be a follow-up data collection effort to evaluate performance based on the metrics; the recommendation needs to address this.

Recommendation #1 of the Integrated Water Resources Management Subgroup is to achieve integrated water resources management and climate resiliency. Have these concepts been quantified in such a way that the WRACC and the ACWI will know when achievement has occurred? What does climate resiliency look like, for example, and is there consensus regarding this vision?

Association of State Flood Plain Managers (ASFPM)

The ASFPM is pleased to provide support for much of the Final Draft of *Next Steps for Managing Freshwater Resources in a Changing Climate: A Report of the Water Resources Adaptation to Climate Change Workgroup to the Advisory Committee on Water Information*, but needs to withhold full endorsement at this time. The ASFPM is fully supportive of the recommendations outlined by the Water Data and Information, Water Use Efficiency, Integrated Water Resource Management, and Training and Capacity Building Subgroups. These recommendations are consistent with policies endorsed by the ASFPM.

The ASFPM generally supports the "Additional Recommendations Derived from February Workgroup Meeting," but one recommendation raises concern: Recommendation 2, which promotes "premium sharing" with local governments by the National Flood Insurance Program (NFIP) to strengthen community-wide, preventive actions to reduce flood risks and the economic and human costs of flooding. Although the ASFPM acknowledges this need and has long supported strengthening community actions to reduce flood risks, the ASFPM cannot at this time endorse the use of NFIP premiums to support that effort. This action would exacerbate the current premium and debt issues facing the NFIP, further weakening a needed program that affords protection to homes and businesses across the Nation.

Western States Water Council (WSWC)

These are comments from the WSWC representative, and do not represent the full Western States Water Council (WSWC). There are some good ideas presented in the report; however, many WSWC members, western States, and western governors could support only some of the recommendations of the report. One overarching comment: many western governors are very sensitive regarding climate policies and programs. Another general concern is ACWI moving away from providing technical information and as an advisory group straying into what may be some very controversial policy recommendations. More specifically:

- Recommendations #1 - #3 from the Water Data & Information Subgroup are good and the WSWC is separately working to implement #1.
- With respect to a water data integration tool, EPA's Exchange Network may be a good example. However, we would not want to strictly mandate the use of any tools.
- The Vulnerability Assessment Subgroup recommendations #1 - #2 are acceptable, but mandating the use of any guidance or tools would raise concerns. A strategic plan sounds good, but there will be differences of opinion on "messaging."
- The Water Efficiency Subgroup recommendations are problematic to the extent that they focus solely on agriculture and appear to support universal federally mandated metrics. I would hesitate

to accept these recommendations also based on the lack of any irrigation stakeholders being involved in the workgroup.

- The report misrepresents the scope of agricultural water use, by failing to recognize the reuse of return flows which multiplies basin-wide efficiencies, and seepage that recharges aquifers, supports wetlands, and provides late season base flows for streams. Although individual on-farm irrigation efficiencies may be low, overall basin-wide efficiencies can be very high. The report also does not address the predominant use, diversion, and consumption of water for thermal electric power plants in the East. What is the goal? To reduce diversions or to promote efficient use? They are not the same.
- The WSWC has in the past supported national plumbing efficiency standards. The potential savings, though important, need to be weighed against the costs. Conservation is not cheap! Nor is it advisable as an end in and of itself. It should be a means to specific ends and tailored appropriately. Water development can be less expensive than conservation in any number of instances. Conservation is not a panacea, and is often only a short-term solution in the face of continuing growth in demands.
- A Federal groundwater metering requirement would not go over well in Texas, and it would not be well received in the vast majority, if any, of our member States.
- Recommendation #3 calls for a nationwide program similar to U.S. Bureau of Reclamation (USBR) WaterSMART grants, and Title XVI water reuse cost sharing. The Administration has opposed new reuse funding, given its existing backlog. Western States would be concerned and oppose broadening the USBR programs beyond the West, but might support the concept if it does not detract from USBR spending.
- The IWRM Subgroup recommendations seem to call for reestablishing the Water Resources Council (WRC) and River Basin Commissions (RBCs) as one idea, and this would be opposed by many WSWC members. Our Water Vision is a bottom up, and not top down, approach. None of the western RBCs that were created survived. Neither the WRC nor the RBCs had authority to implement their recommendations; and, again, the WSWC would not support Federal mandates.
- Though there does need to be more Federal coordination, the idea of a Federal Water Coordinator in the White House smacks of the beginning of a Federal Water Policy initiative, as opposed to a truly National Water Policy recognizing the primary role of the States.
- WestFAST is a good model, but it has its strengths and weaknesses. There may not be enough support in other areas of the country to make it work, but that's not to say it shouldn't be tried; it is more likely to be successful than WRC and RBCs.
- IWRM still is not universally defined, and any new incentives suggested would need to be carefully evaluated along with their costs.
- Incentives for ecosystem services are better than mandates, but costs and benefits need to be monetized and evaluated carefully. Much of the green infrastructure mandates, such as State Revolving Fund set asides are not popular with many of our members.
- The Training and Capacity Building recommendations are acceptable.
- The WSWC has strongly supported Water Resources Research Institute research, but States' relationships with the universities vary, as does the perceived relevance of the research.
- A Natural Infrastructure State Revolving Fund would likely not get enthusiastic support, though the concept has some merit, where there are worthwhile "green" projects that are cost effective compared to other alternatives. That is not to say we would only support projects with the highest Net Economic Development. It would be interesting to see how the new Federal principles and standards would be applied to such projects.
- Flood insurance premium sharing sounds good, but the proposal appears to hold costs level, thus taking Federal funds for non-Federal programs. That idea may not be received well. Neither will premium increases.
- A non-profit IWRM organization to provide voluntary training and certification may be the best idea. Requiring any sort of Federal certification would be problematic. Who would do it?