

**2015 Annual Report  
of the  
Water Resources Adaptation to Climate Change Workgroup  
to the  
Advisory Committee on Water Information  
Adopted March 3, 2016**

The Water Resources Adaptation to Climate Change Workgroup (WRACCW) provides this *2015 Annual Report* to the Chair and Members of the Advisory Committee on Water Information (ACWI).

The WRACCW was established as a subgroup of ACWI on July 10, 2012. The Workgroup's purpose is to promote, support, and provide information for effective management and protection of water resources in the United States as the climate changes and to advise Federal agencies on water policy as it relates to climate change adaptation. The Workgroup also serves as a public forum for Federal, State, Tribal, and local government organizations and public interest and professional organizations to exchange information, views, and ideas, and to connect efforts concerning adapting water resources to a changing climate. WRACCW operates under Terms of Reference approved by ACWI and available on the Internet at [http://acwi.gov/climate\\_wkg/index.html](http://acwi.gov/climate_wkg/index.html).

The WRACCW adopted a *2015 Workplan* to guide its activities for the year (available at: [http://acwi.gov/climate\\_wkg/2015\\_workplan\\_2\\_26\\_15\\_final.pdf](http://acwi.gov/climate_wkg/2015_workplan_2_26_15_final.pdf)). The *Workplan* notes that the 2015 priorities for the Workgroup were to continue work to inform Workgroup members and to coordinate Federal and non-Federal climate and water policies but give increased attention to commenting on draft plans and policies and recommending needed policy changes.

Specifically, in 2015 the Workgroup focused primarily on:

- sharing information on new plans and projects related to water resources adaptation to climate change among Workgroup members;

- providing input to Federal agencies as they respond to the President’s Executive Order 13653 addressing preparedness for climate change, including draft guidance related to the National Environmental Policy Act (NEPA) and climate change;
- advising and commenting on actions by Federal agencies to implement the 2011 *National Action Plan: Priorities for Managing Freshwater Resources in a Changing Climate*, including providing comments on the draft 2015 workplan for this Federal interagency effort and the plans to “refresh” the *National Action Plan*; and
- responding to specific requests for input and comment from Federal agencies on issues or products related to climate change and water resources.

In general, the Co-chairs and members believe that the Workgroup substantially accomplished these objectives and contributed to national discussions concerning adaptation of water resources to a changing climate.

Given the constraints around scheduling in-person meetings, the Workgroup’s focus on building a common base of understanding sets a strong foundation for collaboration on issues and development of constructive recommendations that take into consideration a comprehensive breadth of knowledge by all members. It not only facilitates dissemination of knowledge but also will improve the effectiveness and efficiency of the Workgroup activities.

Some highlights of activities to implement this *Workplan* are described briefly below.

- 1) **Hold Meetings of the Workgroup:** The Workgroup held 7 meetings in 2015 to both share information and conduct Workgroup organizational business.

A key purpose of the Workgroup is to disseminate information and thereby facilitate coordination of key players in the field of water resources adaptation to climate change and ensure that all players are aware of important information and ongoing programs. Workgroup meetings included 14 presentations and 95 brief “round robin” links to projects or initiatives of interest to the Workgroup members.

The Workgroup met on the following dates in 2015, by conference call unless otherwise noted:

- January 22, including review of the 2015 workplan for the Workgroup and review of the 2015 workplan and 2014 highlights of the Federal interagency workgroup implementing the *National Action Plan: Priorities for Managing Freshwater Resources in a Changing Climate*;
- February 26, including presentations on drought in the Southwest and on climate impacts in irrigation and reservoir management in the West and review of draft guidance on considering climate change in NEPA reviews and workgroup comments on the draft guidance;

- March 26, including a presentation on the draft Federal Flood Risk Management Standard;
- May 7, including presentations on human health impacts of climate change by EPA and climate smart agriculture and forestry by USDA;
- June 25, including presentations on corporate response to climate risks by LimnoTech and the Climate Registry for the Assessment for Vulnerability (CRAVe); August 6; including presentations on climate change certification and training by the Association of Climate Change Officers and on new reports by the Water Utility Climate Alliance (WUCA).
- October 8; including presentations on climate resilience planning in Maine, by the Department of Homeland Security and on conservation organization recommendations related to drought by The Nature Conservancy and a review of draft recommendations for the “refresh” of the *National Action Plan: Priorities for Managing Freshwater Resources in a Changing Climate*;

Most meetings included Workgroup business and administrative topics as well as round robin reports of climate change adaptation actions of Workgroup members. Agendas and supporting materials for these meetings are available on the Internet at: [http://acwi.gov/climate\\_wkg/minutes/index.html](http://acwi.gov/climate_wkg/minutes/index.html).

- 2) **Continue to Develop Background Information Database on Climate Change and Water:** The Workgroup continued the development of an electronic database of reports and studies on topic of water resources and climate change. This database was organized by a Subcommittee of members chaired by Carol Collier. The database includes a diverse range of carefully selected documents and has been made available to Workgroup members. This work is posted on the WRACCW website at: [http://acwi.gov/climate\\_wkg/index.html](http://acwi.gov/climate_wkg/index.html).
- 3) **Maintain Workgroup Membership:** The 2015 membership of the WRACCW includes a total of 40 representatives of Federal agencies, State, Tribal, and local government organizations, and non-profit organizations representing diverse interests (see attached and [http://acwi.gov/climate\\_wkg/wraccw\\_members\\_03\\_20\\_2015.pdf](http://acwi.gov/climate_wkg/wraccw_members_03_20_2015.pdf)).

New members joining the Workgroup in 2015 included:

- Rachel Grandpre, for the Army Corps of Engineers;
- Jonathan Kaledin, for the U.S. Water Alliance;
- Casey Brown, for the Association of Civil Engineers; and
- Hannah Safford, for the Office of Science and Technology Policy (OSTP) in the Executive Office of the President.

In 2015, the Workgroup was co-chaired by Paul Freedman, representing the Water Environment Federation and Jeff Peterson, representing the Environmental Protection Agency.

#### 4) Key Workgroup Products: 2015

The Workgroup generated several products in 2015 including:

- *2014 Annual Report* of the Workgroup to the full ACWI;
- *2015 Workplan* for the Workgroup;
- Memorandum providing comments on draft guidance on NEPA and climate change;
- Memorandum providing comments on the draft *2015 Workplan* of the Federal interagency workgroup implement the *National Action Plan: Priorities for Managing Freshwater Resources in a Changing Climate*;
- 2015 presentation describing the work of the Workgroup to the ACWI at its October 27/28 in-person meeting; and
- Memorandum providing comments on proposed plans by Federal agencies to “refresh” the *National Action Plan: Priorities for Managing Freshwater Resources in a Changing Climate*.

Each of these products is summarized briefly below.

##### **2014 Annual Report of the Workgroup to the full ACWI:**

This report to the full Advisory Committee on Water Information, submitted on January 23, 2015, summarized the work of the Water Resources Adaptation to Climate Change Workgroup in 2014 (see [http://acwi.gov/climate\\_wkg/index.html](http://acwi.gov/climate_wkg/index.html)).

The report outlined the topics addressed at the nine meetings of the Workgroup and described the two-day in-person meeting of the Workgroup in February of 2014. The key recommendations provided in the report from the meeting (i.e.; the *Next Steps* report; see [http://acwi.gov/climate\\_wkg/index.html](http://acwi.gov/climate_wkg/index.html)) were also briefly described.

##### **2015 Workplan for the Workgroup:**

This Workplan, adopted on February 26, 2015, outlined the key activities and actions that the Workgroup planned to undertake in 2015, including continued coordination among Federal agencies and stakeholders and the development of recommendations on key climate change and water resources policy topics (see: [http://acwi.gov/climate\\_wkg/index.html](http://acwi.gov/climate_wkg/index.html)).

##### **Comments on Draft NEPA Guidance on Climate Change:**

The Workgroup submitted to the Council on Environmental Quality, on March 26, 2015, a memorandum providing comments on the draft NEPA Guidance on Climate Change (see [http://acwi.gov/climate\\_wkg/index.html](http://acwi.gov/climate_wkg/index.html)). Key comments in the memorandum included:

- Recognize that water use efficiency should be accounted for in a manner similar to energy efficiency;
- Identify the greenhouse gas reductions benefits that can be accomplished as a result of water resources management (e.g.; wetland management); and
- Recognize that water resource facilities can have a long-term commitment to a site that exceeds the life of a given facility and that assessment of climate impacts needs to apply to a time period that fits the expected use of the site rather than the design life of the facility.

### **Comments on the Workplan of the Federal Interagency Workgroup:**

The Workgroup provided a memorandum, dated March 26, 2015, offering comments on the draft workplan developed by Federal agencies to implement the *National Action Plan: Priorities for Managing Freshwater Resources in a Changing Climate* in 2015 (see: [http://acwi.gov/climate\\_wkg/index.html](http://acwi.gov/climate_wkg/index.html)). Key suggestions offered in the memo were:

- strengthen coordination among Federal agency climate adaptation plans and crosscutting strategies, such as the National Action Plan, Fish, Wildlife and Plants Climate Change Adaptation Strategy, and National Ocean Policy;
- engage regional offices of Federal agencies working on climate adaptation, including the Department of Agriculture, Department of the Interior, Department of Commerce, and the Environmental Protection Agency, in implementation of water resources climate adaptation;
- continue efforts to pilot test and develop integrated water resources management approaches; and
- give greater attention to implementation of newly established Federal Flood Risk Management Standards.

### **2015 Presentation Describing the Work of the Workgroup to the ACWI:**

Workgroup co-chair Paul Freedman presented a summary of the 2015 activities of the Workgroup to a meeting of the full Advisory Committee on Water Information at its October 27/28 meeting. The presentation summarized meetings held and the key products developed by the Workgroup in 2015.

The discussion among ACWI identified a number of important ideas and suggestions for future work. Some key ideas discussed included:

- Uncertainty:
  - o How to deal with this in planning and design
  - o How to deal with the wide range of downloaded climate change predictions and explain to the public
  - o Area of research and guidance
- Coordination
  - o Better info exchange and linkages between various subcommittees and work groups and agencies is needed to share, avoid duplication, leverage, etc.
  - o Suggestion of a meeting of the committee chairs periodically
- How to use new flow statistics for:
  - o Regulation, planning, design
  - o Low flow (eg. 7Q10 and flood)
  - o Opportunity for new generation of regulation
- Flood risk
  - o How to use new flood risk approaches for design and planning, especially to meet new Federal requirements
- Inventory research and technology needs for utilities
- Terminology
  - o Vulnerability assessment does not play well in many regions, also who wants to be labeled the most vulnerable
  - o Resiliency is a better term
- State water plans
  - o Need guidance on how to do these, good examples, main elements but not prescriptive as to what must be done or how to do this (not Federal role)
- Need forum for state water planners

**Comments on “Refresh” of *National Action Plan*:**

Federal agencies announced plans to revise and “refresh” the 2011 *National Action Plan: Priorities for Managing Freshwater Resources in a Changing Climate* with a goal of finalizing a refreshed document in the Spring of 2016. An initial listening session was conducted on this topic in early September of 2015. The Workgroup provided a memorandum, on October 27, 2015, offering suggestions for the “refresh” process (see [http://acwi.gov/climate\\_wkg/index.html](http://acwi.gov/climate_wkg/index.html)). Key suggestions included:

- the “refresh” of the *National Action Plan* is needed and the process outlined is appropriate;

- the recommendations provided in the *Next Steps* report are still relevant and should be considered in the refresh effort;
- as the “refresh” work proceeds, the Federal workgroup should maintain its implementation efforts;
- the team developing new directions related to data should consider:
  - adding climate change considerations to hydrologic data systems such as the Bulletin 17B and Atlas 14;
  - strengthen streamflow data; and
  - establish the flood flow frequency workgroup called for in the Federal Flood Risk Management Standard.
- The team developing new directions related to policy and decision support should consider:
  - maintaining support for the ACWI climate workgroup;
  - expanding staff support for the Federal interagency workgroup;
  - engaging activities to implement the Federal Flood Risk Management Standard;
  - consider options to add climate change resilience to the Community Rating System within the Flood Insurance Program; and
  - identify innovative approaches to watershed scale management of water resources.
- The team developing new directions related to outreach and training should consider:
  - identify categories of Federal employees for which climate and water adaptation training is a top priority; and
  - engage non-profit organizations in the development and delivery of climate change and water resources training to decision-makers outside the Federal government.

This 2015 Annual Report is submitted to the Advisory Committee on Water Information on behalf of the members of the Water Resources Climate Change Adaptation Workgroup by the Co-chairs:

Paul Freedman  
Non-Federal Co-chair  
Water Environment Federation  
LimnoTech

Jeff Peterson  
Federal Co-chair  
Environmental Protection  
Agency

DATE: March 3 2016



**ATTACHMENT 1: Water Resources and Climate Change Adaptation  
Workgroup Members**

| <b>ACWI WRACC WORKING GROUP - MEMBERSHIP LIST</b>                                |                                   |                            |
|--|-----------------------------------|----------------------------|
| <b>AS OF 01/20/2016</b>  |                                   |                            |
| <b>Federal Agencies</b>  | <b>Representative</b>             | <b>Alternate</b>           |
| <b>Army Corps of Engineers, Institute for Water Resources</b>                    | Paul Wagner                       |                            |
| <b>Centers for Disease Control</b>   | Joan Brunkard                     |                            |
| <b>Council on Environmental Quality</b>  | Charles Kovatch                   |                            |
| <b>Department of Agriculture, Natural Resources Conservation Service</b>         | Noel Gollehon                     | Aliya Haq                  |
| <b>Department of Agriculture, Forest Service</b>                                 | Chris Carlson                     |                            |
| <b>Department of Energy</b>  | Craig Zamuda                      |                            |
| <b>Department of Homeland Security, Federal Emergency Management Agency</b>      | Doug Bellomo                      | Mark Crowell<br>Paul Huang |
| <b>Department of Interior, U.S. Geological Survey</b>                            | Jerad Bales                       |                            |
| <b>Department of Interior, Bureau of Reclamation</b>                             | Levi Brekke                       |                            |
| <b>Department of Interior, U.S. Fish and Wildlife Service</b>                    | Tamara McCandless                 |                            |
| <b>Environmental Protection Agency</b>   | Jeff Peterson<br>Federal Co-Chair | Karen Metchis              |
| <b>National Oceanic and Atmospheric Administration; National Weather Service</b> | Ernie Wells                       | Chris Bunner               |
| <b>National Oceanic and Atmospheric Administration; Climate Program Office</b>   | Nancy Beller-Simms                |                            |
| <b>Office of Science and Technology Policy</b>                                   | Hannah Safford                    | Meredith Drosback          |

| <b>State, Tribal, and Local Government Organizations</b>  | <b>Representative</b> | <b>Alternate</b>         |
|---|-----------------------|--------------------------|
| <b>Association of Clean Water Administrators</b>          | Jeff Manning          |                          |
| <b>Association of Metropolitan Water Agencies</b>         | Erica Brown           |                          |
| <b>Association of State Drinking Water Administrators</b> | Brandon Kernen        | Deirdre Mason            |
| <b>Association of State Floodplain Managers</b>           | Dave Carlton          |                          |
| <b>Association of State Wetland Managers</b>              | Marla Stelk           | Jeanne Christie          |
| <b>Groundwater Protection Council</b>                     | Mike Paque            | Mary Musick              |
| <b>National Association of Clean Water Agencies</b>       | Peter Ruffier         | Cynthia A. Finley, Ph.D. |
| <b>National Association of County Planners</b>            | Judy Francis, AICP    |                          |
| <b>National Congress of American Indians</b>              | Colby Duren           | Brian Howard             |
| <b>National Tribal Water Council</b>                      | Dave Fuller           |                          |
| <b>Water Utility Climate Alliance</b>                     | Vacant                |                          |
| <b>Western States Water Council</b>                       | Jeanine Jones         |                          |

| <b>Public and Academic Organizations</b>               | <b>Representative</b>                     | <b>Alternate</b>   |
|--|---|--------------------|
| <b>American Rivers</b>                                 | Gary Belan                                | Fay Augustyn       |
| <b>American Society of Civil Engineers</b>             | Casey Brown                               |                    |
| <b>American Water Resources Association</b>            | Carol R. Collier                          | Richard A. Engberg |
| <b>American Water Works Association</b>                | Adam Carpenter                            |                    |
| <b>The Nature Conservancy</b>                          | Patrick McCarthy                          |                    |
| <b>American Society of Adaptation Professionals</b>    | Sascha Petersen                           |                    |
| <b>National Council for Air and Stream Improvement</b> | Paul Wiegand                              | Douglas McLaughlin |
| <b>National Ground Water Association</b>               | Michael Block                             |                    |
| <b>Natural Resources Defense Council</b>               | Ben H. Chou                               |                    |
| <b>National Institutes for Water Research</b>          | Dr. Aris Georgakakos                      | Dr. Reagan Waskom  |
| <b>North American Lake Management Society</b>          | Nancy Turyk                               | Dennis McCauley    |
| <b>US Water Alliance</b>                               | Jonathan Kaledin                          |                    |
| <b>Water Environment Federation</b>                    | Paul L. Freedman,<br>Non-Federal Co-Chair |                    |