



Climate Ready Water Utilities Working Group

Synthesis of Meeting 1 Discussions

The following is a synthesis of the primary discussions at the Climate Ready Water Utilities Working Group meeting December 3 & 4, 2009 in Washington, D.C. The facilitation team drafted a preliminary version of this document between Day 1 and Day 2 of the meeting to help guide the discussion on the second day. The version below was updated to include Day 2 discussion content. The intent of the document is to capture the range of perspectives that emerged at the meeting, as well as to provide a first cut at organizing the discussion points in a flexible manner that allows for further molding by the Task Teams, as well as easier integration into a report format.

Key Considerations

Guiding Principles

- Climate ready is a process, not an outcome.
- Recognize that climate change concerns hold the potential to provide leverage for addressing long standing water resource management deficiencies.
- Leadership by example is critical to the credibility of the sector, including:
 - Active engagement in GHG mitigation efforts;
 - Use of green infrastructure; and
 - Use of renewable energy.
- Recognize different local conditions will require different local responses – program recommendations must accommodate this need for local flexibility.
- Enhanced collaboration with other institutional actors such as land use planners, wetlands managers, and economic development planners is needed to address the more complex challenges posed by climate change impacts – these other institutional actors may not be that familiar to utility managers.
- In certain, and possibly many, instances, climate change adaptation approaches will have a strong regional component and may exhibit economies of scale. This will drive the need for utility managers to explore regional, collaborative efforts and exhibit openness to creating interdependencies where once such relationships were viewed as problematic.

Challenges

- Many systems remain behind the curve on current obligations; any “climate ready expectations” should be tempered in light of this reality. There is a need to ensure that more long-term concerns do not crowd out the basic delivery of safe water and effective sanitation services.
- One driver for the lack of proactive planning and investment is the assumption that catastrophic failure will be bailed out.

- Public perception relating to climate change remains mixed and highly variable; this creates challenges for local decision makers to engender focused and sustained support for climate mitigation and adaptation measures.
- Climate change responsiveness lacks a regulatory driver – a key traditional institutional motivator.
- State-to-state water resource management relationships have been and remain complex and at times highly contentious, while many local communities will depend upon effective state and regional level collaboration and shared risk strategies establishing the context for effective local adaptation actions.

Climate Ready “Pivot Point” Concept

Utilities will reach a climate ready “pivot point” when evidence mounts that historical, local climate conditions are increasingly less likely to be a good predictor of future experience and the utility anticipates increasing amounts and extremes of variability from climate related impacts such as extreme weather events, sea level rise, shifting precipitation and runoff patterns, temperature changes, and resulting changes in water quality and availability. When reached, the pivot point signals a need for long-range planning enhancements, a strategic reorientation, and tactical adjustments. In this context, to be “climate ready” implies initial, proactive, relatively low intensity, foundational engagement followed by enhanced engagement if and when the climate ready pivot point emerges.

Foundational Engagement

Foundational engagement actions are designed to ensure a utility proactively understands relevant climate change implications before they substantially threaten the reliability of operations. Foundational engagement further assures a utility takes advantage of available energy management improvements and positions itself to be a contributor to GHG reductions.

Situational Awareness

- Understands local background environmental conditions.
- Deploys passive monitoring for localized climate-related impacts.
- Engages with local scientific community to understand potential local climate impacts.
- Maintains understanding of actions taken by other utilities both nationally and internationally.

Proactive Energy Management

- Maintains awareness and takes advantage of a full range of energy options.
- Implements an energy management program; components could include:
 - Monitoring and assessing energy use;
 - Implementing SCADA with an energy component;
 - Undertaking efficiency testing, e.g., for large pumping units;
 - Updating project evaluation criteria to include energy and GHG intensity;
 - Partnering with energy utilities on conservation and rebate programs;
 - Establishing energy performance indicators; and
 - Understanding GHG implications of energy performance improvement.

- Maintaining leadership in developing and utilizing renewable energy sources, including onsite renewable (e.g., solar and hydro).
- Considering energy footprint of treatment technologies and assessing alternatives.

Enhanced Engagement

Having reached the climate ready pivot point, a utility recognizes and can make the business case for investments specifically directed at improving operational resiliency in a climate change impact context. For this utility, climate change impacts have an immediacy that can compete for internal resources with other existing priorities. This utility operates under a “new normal” where greater uncertainty and more extremes of climate variability exist and require long-range planning enhancements, a fundamental strategic reorientation, and specific tactical adjustments. This utility may also become more proactive regarding its GHG emissions to establish a clear GHG mitigation leadership position.

Strategic Reorientation

- Thinks and acts in a more regional context.
 - Has an ecosystem management orientation.
 - Explores and leverages interdependencies:
 - Connects to local land use and economic development plans;
 - Examines full water cycle (supply, demand, quality, quantity);
 - Establishes partnerships with other water utility service providers to better manage capacity and the underlying resource;
 - Establishes partnerships with the energy sector;
 - Focus on energy-water nexus issues.
 - Establishes partnerships with public health sector; and
 - Links to state and regional climate initiatives.
 - Expands the concept of infrastructure to include all aspects of the water resource management system, including natural systems.
 - Integrates thinking across water supply, flood protection, and treatment.
- Adopts risk-based, adaptive management.
 - Monitors pre-identified condition indicators.
 - Establishes “trigger points” for condition indicators in terms of investment decisions.
 - Deploys contingent optional supply and operational alternatives approach.
 - Undertakes no regrets investments – targets flexible, low cost, operational solutions.

Planning Enhancement

- Establishes and monitors for indicators of climate change impacts.
- Expands planning time horizon – out to 50 years or more.
- Conducts focused climate impacts vulnerability assessment, including outside-the-fence line considerations (e.g., a broad look at potential for changing conditions, including watershed vegetative cover, general surface water quality).
- Conducts “downscaling” of generalized climate models to refine understanding of potential local impacts.

- Uses downscaled impact parameters in systems models to understand potential range of system implications.
- Includes “what if” scenarios analysis to examine the fence lines of potential impacts in light of climate change uncertainty.
- Uses revised project alternatives analysis scope and decision criteria including:
 - Triple bottom line analysis;
 - Potential for degraded water quality - source and receiving water; and
 - Potential for degraded infrastructure.

Tactical Adjustments

- Engages wider expertise, including:
 - Meteorologists; and
 - Land use planners.
- Ensures utility fundamentals in place, including:
 - Baseline asset condition assessment;
 - Effective data archiving and analysis; and
 - In-system loss improvement.
- Enhances capabilities, such as:
 - Weather forecasting; and
 - Active indicator monitoring.
- Undertakes structural adjustments.
- Enhances conservation actions, such as:
 - Reuse;
 - Incentives through zoning/building codes for energy/water efficiency; and
 - Using green infrastructure and gray water.
- Enhances source control and management.
- Updates emergency response plans to include extreme climate conditions analysis and preparation.

GHG Mitigation Actions

- Conducts a GHG emissions inventory.
- Maintains an understanding of Federal GHG emission policy directions and as a result is aware of both opportunities (e.g., offsets, as well as potential expectations).
- Establishes GHG emissions indicators.
- Considers opportunities to partner on offset projects.

Enabling Environment

Education (culture change)

- Develop an awareness of joint ownership of problems.
- Support multi-jurisdictional thinking.
- Engage in customer education and outreach.
- Conduct training for existing staff and utility managers for the 21st century.
- Train the next generation of utility managers and technicians.

- Educate for making the case for mitigation related to impacts.
- Educate and interact with economic development planners to incorporate water demand implications into economic development plans.
- Foster customer buy-in and recognition of individual responsibility.
- Engage key local decision makers (e.g., commissioners, city council members).

Agenda Development

- Water sector engages with the scientific community to create an understanding of key research needs, including:
 - Critical need for meaningful translation of modeled outputs for localized use; and
 - Need for further work on determining productivity and economics of technology options – both mitigation and adaptation.
- Sector proactively engages in state, regional, and national policy development, including:
 - Changing the dynamics of water resource management;
 - Considering biosolids as renewable energy source;
 - State, regional, federal support to ecosystem management thinking; and
 - Options for financially constrained utilities.

Regulatory Framework and Process

- Ensure flexibility for innovation and creativity.
- Focus on an integrated approach in which EPA, states, and local players are all working together.
- Incorporate considerations related to the energy intensity of treatment requirements into regulatory development.
- Ensure the flexibility to make investments in source water protection and other non-conventional treatment alternatives.
- Provide Federal support to comprehensive state water resource planning and link support to adoption of “cornerstone” principles that foster more effective inter-state and inter-basin strategy development.

Capacity Building

- Higher capability systems assist lower capability systems (consider “twinning” outside immediate area for better success).