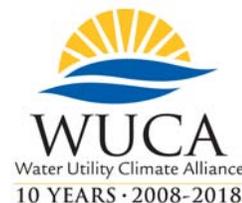


Building Resilience to a Changing Climate:

A Technical Training in Water Sector
Utility Decision Support



Date & Time: Wednesday, August 8, 2018, 8:00am – 5:00pm
Thursday, August 9, 2018, 8:00am – 4:00pm

Location: Metropolitan Water District of Southern California
700 North Alameda Street
Los Angeles, CA 90012

Training Mission

Create a practitioner community active in climate adaptation and consisting of smart users and consumers of climate information.

Training Objectives

- Enhance understanding of the capabilities and limitations of climate science and learn best practices for using it in long-term water, wastewater, and stormwater utility planning;
- Learn about planning methods for addressing uncertainty when incorporating climate science into utility decision-making processes; and
- Learn communication strategies to address intuitional barriers and generate engagement around utility climate adaptation and resilience building.

Agenda – August 8, 2018

Time	Item
8:00 a.m.	Registration & Coffee Available
8:30 a.m.	Welcome and Agenda Review <i>Laurna Kaatz, Climate Program Director, Denver Water (DW) and Chair, Water Utility Climate Alliance (WUCA)</i> <i>Jeff Kightlinger, General Manager, Metropolitan Water District of Southern California (MWD)</i> <i>Brad Spangler, Senior Mediator and Program Manager, Meridian Institute</i> Welcoming remarks from the WUCA Chair and MWD training host, and review of the training agenda.

Time	Item
9:00 a.m.	<p>Group Exercise: Decisions for the Decades: Understanding Deep Uncertainty <i>Robert Lempert, Principal Researcher, RAND Corporation</i></p> <p>Interactive game-based exercise on decision-making under conditions of deep uncertainty followed by facilitated group discussion about how uncertainty affects the types of long-term planning decisions participants are supporting utilities in making.</p>
10:15 a.m.	<p>Break</p>
10:30 a.m.	<p>Decision-Making in the Face of Uncertainty: Colorado River Case Study <i>Alan Butler, U.S. Bureau of Reclamation</i></p> <p>A stage-setting case study presentation exploring the implications and lessons from the continued Colorado River drought and depicting how the U.S. Bureau of Reclamation integrates climate science and associated data into planning and decision-making.</p>
11:00 a.m.	<p>Training Participant Experience and Challenges <i>Brad Spangler, Meridian Institute</i> <i>Laura Kaatz, DW/WUCA</i></p> <p>Participants will break into small groups to discuss and identify top-priority climate science and adaptation questions they would like to address during the training.</p>
12:00 p.m.	<p>Lunch (Sponsored by WUCA)</p>
12:45 p.m.	<p>Practical Considerations for Climate Analysis and Adaptation <i>Laura Kaatz, DW/WUCA</i></p> <p>This session sets the stage for the upcoming training sessions and helps participants establish effective mechanisms to meet their informational needs.</p>
1:00 p.m.	<p>Climate Science and Modeling for Water Sector Professionals <i>Joel Smith, Principal Associate, Environment and Natural Resources, Abt Associates</i></p> <p>Discussion of the capabilities and limitations of climate models and climate projections for applied decision making. The session includes a discussion of what information climate science is currently capable of providing to support decision making at a local and regional scale. Time will be reserved for questions and answers.</p>
1:45 p.m.	<p>A Practical Look at Downscaling and Bias Correcting Climate Projections <i>Alex Hall, University of California, Los Angeles</i></p> <p>This session presents the range of techniques used to downscale and bias correct climate projections and reviews capabilities and limitations of downscaled data, in addition to emerging techniques and potential applications. Time will be reserved for questions and answers.</p>

Time	Item
2:15 p.m.	<p>Meeting Water Utility Needs: Translating Climate Science into Hydrology</p> <p><i>Julie Vano, National Center for Atmospheric Research (NCAR)</i></p> <p><i>Laura Kaatz, Denver Water/WUCA</i></p> <p>This session presents potential applications and limitations of turning projections into hydrologic impacts. This session also highlights a brief case study that demonstrates assessing climate data in practice. Time will be reserved for questions and answers.</p>
2:45 p.m.	<p>Break</p>
3:00 p.m.	<p>Guiding Principles and Case Studies for Adaptation and Resilience Planning</p> <p><i>Joel Smith, Abt Associates</i></p> <p><i>Steve Fries, EPA Creating Resilient Water Utilities</i></p> <p><i>Peggy Nguyen, City of Los Angeles Bureau of Sanitation</i></p> <p><i>Seevani Bista, San Diego County Water Authority/WUCA</i></p> <p>An overview of multiple approaches and decision support tools to support adaptation planning are presented. Local case studies further discuss the value and lessons learned from application of decision support tools and planning approaches. Time will be reserved for questions and answers.</p>
4:30 p.m.	<p>Key Takeaways from Day 1</p> <p><i>Jenny McCarthy, MWD/WUCA</i></p> <p><i>Julie Vano, NCAR</i></p> <p><i>Brad Spangler, Meridian Institute</i></p> <p>Review of key takeaways regarding the state of climate science, sources of uncertainty and what it means for utility decision making, as well as smart practices and considerations in the practical application of climate science. Participants will also be asked to complete an evaluation of the Day 1 sessions.</p>
5:00 p.m.	<p>Adjourn</p>

Agenda – August 9, 2018

Time	Item
8:00 a.m.	Coffee Available
8:30 a.m.	<p>Reflections on Day 1 and Review of Day 2 Agenda <i>Brad Spangler, Meridian Institute</i> Participant reflections on Day 1 of the training and review of the agenda for Day 2.</p>
8:45 a.m.	<p>Group Exercise: Scenario Design (Accelerated Introduction to Scenario Planning) <i>Laurna Kaatz, DW/WUCA</i> Group exercise focused on identifying and prioritizing external factors – of which climate change is one among many – that introduce uncertainty and influence long-term utility planning contexts.</p>
10:30 a.m.	Break
10:45 a.m.	<p>Methods for Decision-Making Under Deep Uncertainty <i>Robert Lempert, RAND Corporation</i> Overview of innovative methods and approaches for addressing climate and other types of uncertainty to build water utility adaptive capacity. This session provides a unique and critical opportunity for participants to examine and understand the challenges of deep uncertainty. A facilitated discussion with participants will follow the presentation.</p>
12:00 a.m.	<p>Adaptation Decision Making at Metropolitan Water District of Southern California <i>Brandon Goshi, MWD/WUCA</i> A keystone real-world example demonstrating the lessons and material presented up to this point in the training. Metropolitan Water District of Southern California will discuss the evolving use of climate science and decision-making methods to address uncertainty in their long-term water resources planning.</p>
12:45 p.m.	Lunch (Sponsored by WUCA)
1:30 p.m.	<p>Using Communications Best Practices to Engage Audiences and Address Institutional Barriers <i>Heidi Roop, University of Washington</i> <i>Keely Brooks, Southern Nevada Water Authority (SNWA) / WUCA</i> Participants will learn about tangible mechanisms and practices to effectively address institutional barriers, including developing messaging and communicating about climate science. The session will also provide examples of barriers and solutions from the Southern Nevada Water Authority and Metropolitan Water District of Southern California experience.</p>
2:30 p.m.	Break

Time	Item
2:45 p.m.	<p>Bringing it All Together: Identifying Institutional Barriers and Mapping Out Strategies and Next Steps</p> <p><i>Heidi Roop, University of Washington</i></p> <p><i>Keely Brooks, SNWA/WUCA</i></p> <p>Building on the prior session, participants will engage in an interactive exercise to explore their individual institutional barriers and communication challenges and develop potential strategies to address these challenges.</p>
3:45 p.m.	<p>Key Takeaways, Reflections and Wrap-Up</p> <p><i>Jennifer McCarthy, WUCA</i></p> <p><i>Brad Spangler, Meridian Institute</i></p> <p>Review of key takeaways from the training, and participant reflections on how they intend to apply what they have learned during the training. Participants will also be asked to complete an evaluation of the Day 2 sessions.</p>
4:00 p.m.	<p>Adjourn</p>