Piloting Utility Modeling Applications (PUMA)

Workshop Agenda

December 1-3, 2010
Intercontinental Hotel
5th Floor, Sutter Room
San Francisco

PUMA is a collaborative venture bringing together
Water Utility Climate Alliance (WUCA) members,
Regional Integrated Sciences and Assessments (RISA) leaders, and
selected representatives of the climate science and applications communities, to:

- *Identify state-of-the-art climate modeling tools and techniques for use by a select group of Water Utility Climate Alliance members committed to conducting and technically prepared to conduct climate impacts assessments for their systems.*

- *Frame the value proposition of these climate modeling tools by articulating the uncertainties embedded in modeling results, as well as how to best use downscaled and other climate modeling data in planning.*

- *Acquire climate projection data utilizing the identified modeling tools in a form and scale that can be used by utility hydrologic models to generate watershed and/or urban runoff information to be utilized in impacts assessment, water planning processes, and decision making.*

- *Build a national RISA collaboration and enhance regional RISA connections by engaging RISA experts from the NW, Cal-Neva, SE, and NE RISA programs in the project, corresponding to the regions for the subject utilities.*

- *Inform developing conversations between climate science users and providers regarding how existing research meets or does not meet the needs of the adaptation community, how future investment in research might better serve society, and the nature of climate services needed on the ground in communities facing adaptation challenges.*

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December 1

7:15 Registration and Continental Breakfast

8:00 Welcome
San Francisco Public Utilities Commission General Manager Ed Harrington

8:10 Overview of Piloting Utility Modeling Applications (PUMA)
David Behar, San Francisco Public Utilities Commission and Water Utility Climate Alliance
Phil Mote, Pacific Northwest Climate Decision Support Consortium and Oregon Climate Change Research Institute

8:30 Introductions

8:45 Utility Presentations (25 minutes presentation, 10 minutes Q&A each)
This session will inform RISA leaders and members of the Modeling Advisory Committee of the types of hydrologic and decision making tools/techniques used by the participating WUCA utilities, the types of decisions these utilities make and the audiences for this work, and the nature of the utilities' questions regarding how to use climate data and climate projections in water supply/resource decisions. We will also describe the policymaking challenges and environment faced by major water utilities.
Seattle Public Utilities: Paul Fleming and Joan Kersnar
Tampa Bay Water: Alison Adams, Jeff Geurink and Tiresew Asefa
Moderator: David Behar

10:00 Break

10:15 Utility Presentations (continued)
San Francisco Public Utilities Commission: David Behar and Alexis Dufour
New York City Department of Environmental Protection: Don Pierson
Portland Water Bureau: Lorna Stickel and Dave Evonuk
Moderator: Alison Adams

12:00 Update on CMIP5 process
Phil Duffy, Climate Central

12:15 Lunch (Intercontinental Hotel)

1:30 Utility Needs Discussion: Synthesizing and Advancing the Morning Presentations

Moderator: Paul Fleming

The purpose of this session is to synthesize the morning presentations from the utilities and identify common and unique data, modeling or tool needs in order to put the subsequent discussion about the toolbox in the context of those needs.

2:15 What's in the Toolbox?

A core element of the PUMA project is reaching a common understanding of the availability and nature of state-of-the-art climate modeling tools. This session will provide an overview of climate modeling tools and approaches available for impacts assessment, how they've been used in the past, the nature of their output, including spatial and temporal scales and ensemble datasets, and the advantages and disadvantages of each. The overview will include results of a survey of MAC members conducted prior to the workshop and distributed Nov 23. Resource constraints will not be considered during this discussion.

Phil Mote, CDSC and OCCRI

2:45 Panel: Modeling Advisory Committee (MAC) and Plenary Discussion

Commentary from MAC members on the toolbox and survey in the context of utility needs. Plenary discussion.

Levi Brekke, Bureau of Reclamation
Mike Dettinger, USGS/Scripps Institution of Oceanography
Phil Duffy, Climate Central
Tom Johnson, US EPA Office of Research and Development
Moderator: Alison Adams, Tampa Bay Water

3:45 Break

4:00 Urban Drainage: Results of Pre-Workshop Webinar and Ideas for Path Forward

Paul Fleming, SPU
Mike Dettinger, USGS/Scripps

4:25 Plenary Discussion

5:00 Adjourn

6:30 Workshop Attitude Adjustment Hour and Dinner (Intercontinental Hotel)

December 2

7:15 Continental Breakfast

8:00 Recap of Day One

8:15 Case Studies: Impacts Assessments Using Climate Modeling Tools

Downscaling in Seattle: SPU's Experience Using GCMs to Assess Climate Impacts and Inform Adaptation Strategies

Paul Fleming, Seattle Public Utilities

Joan Kersnar, Seattle Public Utilitiies

Investigating the Sensitivity of U.S. Stream Water Quality to Climate Change: EPA ORD's "20 Watersheds" Project

Tom Johnson, US EPA ORD

Evaluation of dynamically and statistically downscaled climate models for use with Tampa Bay Water's Integrated Hydrologic Modeling Tool

Wendy Graham, Southeast Climate Consortium RISA

Alison Adams, Tampa Bay Water

Moderator: Lorna Stickel

9:45 Discussion of Case Studies

Lessons learned, implications for future work

10:15 Break

10:30 Uncertainties: Presentation and Discussion

Utilities understand and appreciate the fact that assessing the impacts of climate change is inherently an uncertain endeavor. Utilities participating in PUMA, however, don't view uncertainty as synonymous with failure, but rather as an issue requiring clearer communication between the climate science users and providers in the interest of making utilities more informed consumers of climate information. This session will describe the uncertainties associated with climate modeling and downscaling and delineate the different uncertainties inherent in using GCMs, RCMs and other downscaling techniques to project climate-induced hydrologic changes. This will help inform utilities how to incorporate the uncertainties associated with climate modeling and downscaling into other decisions we face.

Claudia Tebaldi, Climate Central

11:00 Panel: Modeling Advisory Committee (MAC) and Plenary Discussion

Commentary from MAC members on implications of uncertainty on planning, and what we've learned about assessments to date. Plenary discussion.

John Abatzaglou, University of Idaho and Climate Decision Support Consortium

Ed Maurer, Santa Clara University

Linda Mearns, National Center for Atmospheric Research

Claudia Tebaldi, Climate Central
Moderator: Paul Fleming, Seattle Public Utilities

12:00 Lunch (Intercontinental Hotel)

1:15 RISA Breakout Kickoff – Goals

1:25 RISA/Utility Breakout Sessions (NE, SE, Cal-Neva, NW)
The previous components of the agenda, including the utility presentations and the toolbox discussion, should inform this breakout session between the utility and RISA representatives. Each breakout group should aim to create a framework (or expand upon an existing framework) for collaboration between the utility and RISA through the PUMA project. Each group may want to discuss the following:

- objectives for what each RISA and utility want to collectively accomplish,
- which climate modeling tools they may use to conduct their impacts assessments,
- how the RISA and utility will work together, including discussions of how the "hand off" of climate data will be made and how the RISA and utility can pursue "co-production of knowledge."

3:00 Break

3:15 RISA/Utility Breakout Reports (15 min each)
Each group will report out on their discussion in order to create a common understanding amongst the PUMA participants of how each RISA/utility group is framing their collaboration and a general approach and timeline for specific products.
Moderator: Phil Mote, CDSC and OCCRI

4:15 Brainstorm: National RISA Collaboration for PUMA and Beyond
In the context of the foregoing discussions, RISA participants in PUMA will have the opportunity to begin outlining a research agenda for the project, and discuss how it fits into their other activities. Which parts would best be done by a national climate service, which by a particular RISA on behalf of the whole project, and which parts would best be done by one RISA teamed with its partner WUCA member(s)? What synergies can we find? What can be achieved by working together? How does this serve the goals of the National Climate Assessment?
Moderator: Phil Mote

5:00 Adjourn

Dinner on your own in San Francisco

December 3

7:15 Continental Breakfast

8:00 Wrap up and Next Steps

Based on the conversation of the previous two days, this may be highly structured or mostly improvisational. Given the nature of this project, this workshop is intended to be a milestone along a longer path rather than a momentary conversation. Therefore action items, to do lists, schedules for follow up, supplemental research, and additional outreach to important parties not in attendance might all be in the mix. A determination of the best approaches, and leadership, needed to memorialize this process could develop. A goal as to when to reconvene as a group to share utility findings using selected tools may be set. We will also describe plans to memorialize the PUMA process and outcomes for multiple audiences – utilities, adaptors, and climate science providers. Those who don't stay will get the toughest assignments.

Moderators: David Behar, SFPUC/WUCA, and Phil Mote, OCCRI/CDSC

12:00 Workshop Adjourns