

Enhancing Stakeholder Feedback on the 2011 Long-Term Forecast of Water Supply and Demand for the Columbia River Basin

Georgine Yorgey^a, Chad Kruger^a, Sylvia Kantor^a, Tara Zimmerman^a, Jennifer Adam^b, Michael Barber^b, Michael Brady^c, Kirti Rajagopalan^b, and Elizabeth Allen^d
^a Center for Sustaining Agriculture and Natural Resources, WSU; ^b Civil and Env. Engineering, WSU; ^c School of Economic Sciences, WSU; ^d International Development, Communications, and Environment, Clark University

Abstract & Background

- Every five years, the Department of Ecology's Office of Columbia River (OCR) is required to submit a long-term water supply and demand forecast to the Legislature.
- A significant portion of the 2011 Forecast was carried out in partnership by an interdisciplinary WSU team (see poster #617, "Assessing the impact of climate change on Columbia River Basin agriculture through integrated crop systems, hydrologic, and water management modeling," for a more detailed description of the Forecast).
- To gather feedback, the WSU team organized a series of educational workshops and an online survey coinciding with the release of the draft Forecast results.
- The computer modeling that was central to the 2011 Forecast was assumed to be challenging material for a public outreach process. Research suggests that public knowledge about the nature and purpose of scientific models is low (Schwarz and White 2005). Based on this, workshops provided a non-technical overview of the methodologies used, followed by guided discussion to elicit participant questions and stakeholder responses.
- In similar contexts, the Department of Ecology normally solicits and responds to written and oral comments submitted by individuals or organizations. To supplement this feedback, we surveyed workshop participants using a wireless response system. The survey was also open during the public comment period through a web portal.



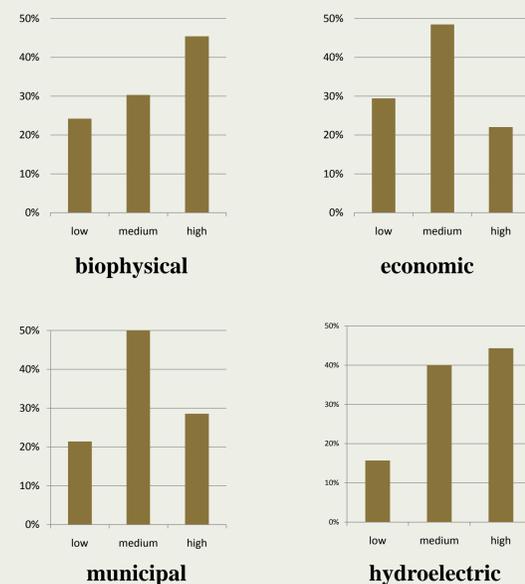
Participants review draft Forecast results in Richland, WA.

- Results from the workshops provide insight into the perceived usefulness of various portions of the Forecast, and will help prioritize work on the 2016 Forecast.

Results and Discussion

In general, respondents ranked individual components of the forecast positively. When asked to rank the different portions of the forecast in terms of the degree of usefulness for decision-making, more than two thirds of respondents ranked the usefulness as "medium" or "high" in all cases (Figure 211 through Figure 214). Results in these graphs have grouped five possible answers (very low, low, medium, high, and very high) into three groups (low, medium, and high) to highlight patterns of responses.

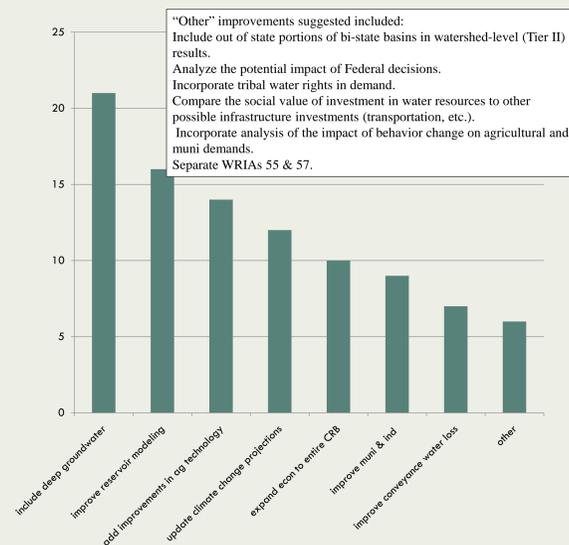
Participants were asked to rank the **degree of usefulness** of four portions of the forecast for decision-making:



Discussions at the workshops provide qualitative information that helps to interpret these results. For example, the relatively high proportion of positive scores for the biophysical portion of the forecast may be a reflection of the fact that few others provide this type of information at a watershed level for eastern Washington. Lower scores for the economic portion of the forecast may have resulted from the fact that the draft report did not estimate associated

"downstream" economic impacts when it estimated the economic impacts of additional water capacity. These estimates were added to the final report. Some comments indicated that this may also be a reflection of the fact that individuals were less confident of economic forecasting in general.

While the open comments resulted in many suggestions for improvements that could be made for the next (2016) Forecast, the survey format allowed us to ask people to prioritize the top two improvements they would like to see.

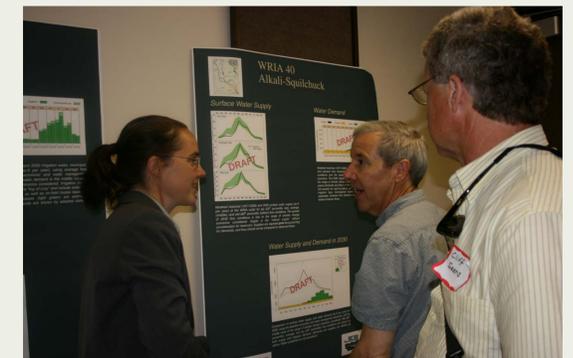


This information highlights a few areas that may be stakeholder priorities for improvement in the 2016 Forecast. And importantly (given budget and time limitations), it also indicates at least one area that may be less important. While quite a number of qualitative comments were received on the municipal forecasting methods used, participants did not overall rank the municipal forecast as a high priority for improvement, perhaps indicating that the methods were "good enough" given the high cost of improvements, and the relatively small amount of the total water budget represented by municipal water use.

Methods

Quantitative feedback covering the WSU modeling portion of the Forecast was solicited during three regional workshops held in September 2011 in Richland, Wenatchee, and Spokane

At the workshops, draft Forecast results were presented. Participants were then surveyed using an electronic audience response system. Workshop leaders also gave participants the opportunity to ask researchers questions, led a discussion on the results, and gathered qualitative oral and written comments.



Workshop participants (right) discuss draft Forecast results with Dr. Jennifer Adam, Department of Civil and Environmental Engineering, Washington State University, in Spokane, WA.

After the workshops, the results were released online in a draft report, and a public comment period was held during October 2011 (30 days). Those who submitted comments on the draft report online were encouraged to take an online survey with the same questions asked during the workshops.

Results from these two assessments were combined prior to analysis, though the bulk of responses represent responses from workshop participants.

More Information

Final results for this project will be available in 2012 at the Office of Columbia River website:
www.ecy.wa.gov/programs/wr/cwp/crwmp.html.

Literature Cited

Schwarz, C. V., and B. Y. White, 2005: Metamodeling knowledge: Developing students' understanding of scientific modeling. *Cognition and Instruction*, **23**, 165–205.

Acknowledgements

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