

**Notes from URGWOM Steering Committee Meeting;
June 13, 2002; 10:00 AM; Corps of Engineers Conference Room,
Albuquerque**

In Attendance:

Cyndie Abeyta, USFWS	Nabil Shafike, NMISC
Steven Bowser, USBR	Marc Sidlow, Corps
Ellen Dietrich, SAIC/Corps	Gail Stockton, Corps
Don Gallegos, Corps	Carole Thomas, USGS
Conrad Keyes, Jr., Consultant to Corps	Tim J. Ward, UNM
Art Martinez, BIA	Dave Wilkins, USGS
Bill Miller, WJM Engineering, Inc./Corps	Mark Yuska, USBR
Faith Reyes, Rio Chama Acequia Association	

- ❖ Gail Stockton opened the meeting and turned it over to Mark Yuska for the first agenda item. Mark introduced Carole Thomas, who is retiring on July 3 and will be greatly missed by the rest of the Technical Team.
- ❖ Carole gave a presentation on the calibration and validation of the URGWOM physical model in the middle valley. She distributed a handout of her slides. Questions and comments from the Steering Committee are summarized below. The responses from the Technical Team are listed under each question or comment.
 - How were the stream reaches selected?
 - The reach end points correspond to stream gage locations in most reaches.
 - In the San Marcial to Elephant Butte reach, is the reservoir part of the reach?
 - There is no stream gage in this reach so the Technical Team must calibrate the model according to calculated inflows to Elephant Butte, which is less accurate than gage data.
 - Is Rio Bravo not included in the physical model?
 - The gage downstream from the confluence with the Rio Grande includes the side channel flows from Rio Bravo, so it is taken into account at that point.
 - How is the Santa Fe River incorporated without a gage?
 - It flows into Cochiti Reservoir, so it is included in the outflow from the dam.
 - Where the model under-predicts flow, is this systematic or random? What component is most likely to be the cause of the underestimation?
 - The underestimation seems to be systematic, but more research is needed to determine the reason.
 - Gages seem to create much of the error, but other causes could include the changes in the rating system due to channel sedimentation or return flows that are not incorporated in the flows of the period of record used in the model.

- Where there are over-predicted flows, what is the cause?
 - Many of the MRGCD return flows are not now included.
 - The model simplifies return flows by aggregating them. Reasons for the differences would depend on the location and the date of the over-predicted flows. On any given day or reach, there is variation in return flows.
 - The biggest loss is due to river leakage, so the Technical Team developed a calibration factor to account for this.
- What conductivity was used when calculating leakage?
 - Approximately 100-200 feet per day.
- Can the model predict negative flow?
 - No, it is designed so that it does not.
- It would be helpful to explain the use of residuals (used to evaluate model bias) to others for the Technical Team to show plots of flows that compare historic vs. modeled flows and the percentage of error.
 - The Technical Team responded that this may show too much variability, but they need to determine the best way to demonstrate how they handle the residuals.
 - Lag times used in the model may be too low for periods of irrigation during low flows.
 - To determine if the errors in the residuals are random or systematic, the team could plot the flow at the downstream gage vs. flow at the upstream gage.
- The Technical Team and the Steering Committee need to decide when the accuracy in the model is “good enough”.
- ❖ Technical Team activities and URGWOM status were reviewed by Mark Yuska, following a handout that is appended to the end of these notes. Comments and questions are summarized below.
 - What is “naturalized flow,” used to describe the flows at Otowi gage that were calculated to determine Indian water delivery?
 - The Technical Team developed a computation to quantify flow through Otowi gage without any storage. This is used to simplify flows of Rio Grande water in the Rio Chama by eliminating San Juan-Chama water and storage at El Vado and Abiquiu, while including depletions from acequia diversions and local inflow.
 - These computations have been inserted into the URGWOM Accounting Model so the user can select an item to see the predicted natural flow. It may be included in the Operations Model later.
 - Art Martinez commented that this function is providing a useful picture of Indian irrigation water.
 - The Technical Team has been gathering data to respond to the FOIA request made by Principia Mathematica on behalf of the Rio Chama Acequia Association. Most of the data requested is the responsibility of USBR, and should be ready in a few weeks.
 - Mark will discuss the need for a water quality component in URGWOM when he gives a presentation at the RiverWare Users’ Group Meeting.

- ❖ HDB update—Steve Bowser
 - Steve briefly discussed the proposal from CADSWES to bring water accounting functionality to HDB to enable its use with URGWOM. USBR has raised enough funds to begin doing the work.
 - HDB may be able to accommodate water quality data.
- ❖ QA/QC Plan update—Bill Miller
 - The subcommittee met on May 28 in the Corps' conference room to fill in the outline of the plan that had been distributed previously. The group reorganized the outline and discussed the detail that should be included.
 - Bill e-mailed the revised plan to the subcommittee. **The next meeting to finalize the plan was set for June 26 at 2:00 p.m. at the Corps.**
- ❖ **The next Steering Committee meeting will be held on July 11 at 10:00 a.m. at the Corps.**

STATUS OF URGWOM TECH TEAM ACTIVITIES—JUNE 13, 2002

Activities:

- Making Rio Grande Conservation accounting work in WaterOps model.
- Finalizing Version 2.0 of WaterOps and Account models (and associated dmi control files for new method slots). (This implements new physical modeling.) Making sure methods and rules are working properly.
- Revised and distributed draft report on middle valley calibration and validation.
- Entered 2001 USGS streamflow data into DSS.
- Irrigated crop acreage data from 1999 have been duplicated for 2001 and entered into dss. We have, but have not entered 2001 MRGCD data (which will complete 2001 data).
- Split Central to Bernardo into Central to Isleta Dam and Isleta Dam to Bernardo, allowing a new model node at Isleta Dam.
- Created the calculation of “naturalized” Otowi flow to be added to the Models for Indian delivery computations.
- Evaluated MODFLOW model to find a way to get flux between river and riverside drains:
 - Cannot use general head boundary to represent canals and Cochiti.
 - River and riverside drains in the same cell in many instances.
 - Will need multiple runs with varied surface water features in the model.
 - May need to use ZONEBUDGET to get the river to riverside drain flux.
- Newest RiverWare snapshot is almost twice as fast as previous versions. 1-year run takes 30 minutes now.
- Reviewing a draft of the Physical Accounting Documentation.
- Vacation Season!

Meetings:

- Today doing a presentation on latest middle valley physical modeling calibration and validation.
- Mark Met with USBR Reprs. Viola Sanchez, Garry Rowe, and BIA Repr. Albert Gonzales 6/7/02 to model and discuss Prior & Paramount (Indian Storage & Deliveries).
- June 27th and 28th, Mark Yuska will present progress and needs in RiverWare User's Group Meeting, at CADSWES.

Issues:

- Gathering models and information to provide Principia Mathematica per their FOIA request.
- We need from URGWOPS, operators, and biologists, the logic for storing and releasing RG Conservation water, on the long-term planning horizon, to build rules and constraints from in the models.
- Bill Miller sent a proposal to the Engineer Advisors on RG Compact rules in our Planning Model. We have not yet heard back.
- Thru WaRSMP, did a contract mod for Water Quality functionality in RiverWare.
- As always, please keep us in your budget wishes (prayers?)!
- Carole retires July 3rd! We have greatly appreciated her, and will miss her tremendously!!!