MEETING NOTES
UPPER RIO GRANDE WATER OPERATIONS MODEL
EXECUTIVE COMMITTEE MEETING

NM INTERSTATE STREAM COMMISSION
5550 SAN ANTONIO DR NE
ALBUQUERQUE, NM

September 16, 2014

An attendance list and meeting agenda are attached.

The attendants discussed Water Quality Modeling, Five-Year Plan, Monthly RiverWare Model, Colorado Model, Middle Valley Calibration and Lower Rio Grande Model.

Water Quality Modeling

Amy Louise reviewed the slides presented at the last URGWOM Advisory Committee Meeting, September 9, 2014. They illustrated a test of the conceptual design of RiverWare that uses two layers to model water quality (salinity) in groundwater objects. The purpose of this test was to determine the effect of large differences in upper layer thickness in adjacent groundwater objects on salt and water fluxes and salt concentrations. For this test, the river ground water object upper layer thickness was changed from 19.69 feet (base case) to 8 feet (thin case), while the east and west groundwater objects upper layer thicknesses were held consistently at 19.69 feet and input salt concentration set to 400 mg/L. Changes in salt flux and salt concentration due to the upper layer thickness change was analyzed by comparing base case and thin case results in the test reach (Bernardo to San Acacia) for the entire model run (January 1, 1990 to December 31, 2000). It was determined that the upper layer salt concentration variability is higher in the thin case than the base case, and the lower layer salt concentration variability is minimal in both thin and base cases. There will be further testing of two-layer groundwater objects to define extent/sensitivity of thicknesses of adjacent groundwater layers using real data from 1990-1992. RiverWare currently has temperature algorithms for reservoirs and two layer groundwater objects and CADSWES is making water quality more accessible.

Five-Year Plan

Amy presented the April 23, 2014 Five-Year Plan briefly reviewing Regular Activities, Enhancement and Development and Planning section. She also reviewed with the Committee some additional tasks that could be included in the plan. The tasks include development of

physically-based loss rates for the Embudo to Otowi, Otowi to Cochiti, below Abiquiu to Chamita and the near Jemez to Jemez Canyon Dam reaches; implementation of root zone modeling to determine crop diversion demands for the Lower Rio Grande and Middle Rio Grande; computation of crop CIR based on actual historic dates of growing season for Middle Rio Grande; and a study of impacts of channel dredging in Elephant Butte Reservoir delta on gain/loss relationship and a review of San Marcial gage records. Suggestions were made that includes development of physically-based loss rates for the entire Chama Reach, include a total amount for all three sections of the Five-Year Plan and renaming Climate change impact studies under Planning Support to Planning Studies which will include climate change.

Monthly RiverWare Model

Marc presented on the status of the URGWOM Monthly RiverWare Model. Based on previous work completed by CADWES, a monthly model in rule based mode without middle valley ESA target flows was able to run. The initialization ruleset needs to be adjusted to account for change in time step from daily to monthly. The daily timestep and monthly timestep initialization rules will be merged or there will be separate rulesets; however, one initialization ruleset looks promising. New groundwater (shallow alluvial aquifer) parameters will also have to be developed.

Colorado Model

Marc reviewed the slides presented at the last URGWOM Advisory Committee Meeting, September 9, 2014. The Colorado model is being updated based on Craig Borough's and CADWES' previous recommendations. The accounting model layout has been updated and related changes to rules have also been made. The model's Rio Grande Compact calculations and the model's simulation of the operation of Platoro Reservoir are currently being reviewed. The final task will be to combine the Colorado model with URGWOM.

The aggregate water user object setup has been replaced with individual water user objects to improve future flexibility. All of the individual water user objects are now clustered and their naming convention has been changed. DSS file records were updated.

The accounting model has been changed by implementing a single sub basin for the water right solver and a single allocable flow water type. Separate Compact deliveries are made for Conejos and Rio Grande stream systems.

The operation of Rio Grande Reservoir, Continental Reservoir and Santa Maria Reservoir will not be simulated in the model since there are ungaged flows below these reservoirs.

Middle Valley Calibration

Nabil Shafike described layout changes to the middle valley portion of the model that has been incorporated into the calibration. The calibration discussion included reviewing the slides presented at the last URGWOM Advisory Committee Meeting, September 9, 2014. The first

draft of the calibration documentation will be completed by September 30, 2014. There is an existing calibration document so it will be modified to incorporate the most recent calibration. It will incorporate technical ET documents written by Brian Westfall and William J. Miller. It will also include work completed on the San Marcial to Elephant Butte mass balance.

The Albuquerque Basin MODFLOW groundwater model was run so that the deep aquifer heads could be updated. The change in deep aquifer head was 2.5 – 2.7 acre-feet per acre. Future work will include improving the Central to San Acacia Reach.

Lower Rio Grande Model

Nabil presented on the development of the daily timestep RiverWare model for the Lower Rio Grande below Elephant Butte Dam. The discussion included reviewing the slides presented at the last URGWOM Advisory Committee Meeting, September 9, 2014. The historical record will cover 1975 through 2005.

The integer day travel times were reviewed by the Advisory Committee and then revised. These revisions will require the addition of lag times on some canals.

Additional groundwater objects were added to Hudspeth County area and lower valley in Mexico to better simulate groundwater flux in this area using constant head boundaries. The USGS MODFLOW model of the area could be used to set head elevations in the objects.

A 7-day moving average CIR has been adopted in order to synchronize crop demand with historical diversions. General improvements to the rule set were also made including the date of first release based on project allocation amounts.

The new D3 operating rules for the Rio Grande Project are now included in model. The next steps for Lower Rio Grande model are calibration and merging the Lower and Middle valley portions.

The meeting notes and slides for each of the presentations will be posted on the website, http://www.spa.usace.army.mil/Missions/CivilWorks/URGWOM/CommitteeNotes/ExecutiveCommitteeNotes.aspx

The next Executive Committee meeting will be held April 21, 2015 at 10:00 am. The next meeting topics will include water quality modeling, 2015 April AOPs using NWS HMS model, URGWOM merged with Lower Rio Grande and Colorado portions and other topics.

The meeting adjourned at 3:00 pm.

URGWOM Executive Committee Meeting
September 16, 2014

Attendance List

NAME	ORGANIZATION
Carolyn Donnelly	U.S. Bureau of Reclamation
Dennis Garcia	U.S. Army Corps of Engineers, Albuquerque District
Amy Louise	U.S. Army Corps of Engineers, Albuquerque District
Rolf Schmidt-Petersen	NM Interstate Stream Commission
Nabil Shafike	NM Interstate Stream Commission
Marc Sidlow	U.S. Army Corps of Engineers, Albuquerque District

Executive Committee Meeting
September 16, 2014 – 1:00 pm
Conference Room – New Mexico Interstate Stream Commission,
5550 San Antonio Drive NE, Albuquerque, NM 87109

Agenda

1. Water Quality Modeling
2. Five-Year Plan
3. Monthly RiverWare Model
4. Colorado Model
5. Middle Valley Calibration
6. Lower Rio Grande Model
7. Other Business
8. Next Meeting Date