

Memorandum

To: URGWOM Technical Team Members
Date: November 18, 2019
Subject: Notes of November 12, 2019 URGWOM Technical Team Meeting

These notes summarize the salient matters discussed during the November 12, 2019 Upper Rio Grande Water Operations Model (URGWOM) Technical (Tech) Team meeting. The meeting began at 9:00 am in the New Mexico Interstate Stream Commission Office in Albuquerque, NM. An attendance list is included on the last page of these meeting notes.

The principal meeting agenda topics include reports on the basin snowpack to date, updates and reports on URGWOM related activities from the Corps of Engineers, the Bureau of Reclamation, the NM Interstate Stream Commission and the U.S.G.S. and a CADSWES report on development of “Empty Storage Flag”.

Dave reported on current SNOTEL station data; the Quemazon station was at 0% (no snow), Beartown was at 42% of normal, Wolf Creek Pass was 44% of normal and Santa Fe was at 17% of normal. Normal represents the 1980-2010 period median.

Nabil led a discussion about the implementation of the deep aquifer objects. His presentation started with a discussion of the general hydrology of the shallow and deeper groundwater aquifers and how the regional aquifer is simulated in the MODFLOW model of the Middle Valley and the Mesilla Valley to determine the deep aquifer head for use in URGWOM. He pointed out that the MODFLOW and the URGWOM models are not consistent in the way in which the groundwater systems are simulated, including the lack of mountain front recharge to the aquifer in URGWOM. Mountain front recharge is a relatively small amount of water. Nabil proposed that the shallow and deep aquifers be simulated with five objects across at each groundwater reach. Initially the physical properties of the aquifer based on the MODFLOW model will be included in URGWOM model, including groundwater pumping and mountain front recharge and are subject to revision during calibration.

Nick stated that at this time CADSWES was implementing only three shallow and deep aquifer objects across the valley, unless it was located at a wide valley cross section. The pumping features were recently added to the deep aquifer objects and work on developing the Mesilla Valley deep groundwater objects is now underway. Simulation of the Hueco Bolson groundwater system will be based on features from the public MODFLOW model of this area. The 2002 version of the MODFLOW model will be used for the Middle Valley. The calibration of the Middle Valley model will be based on the groundwater pumping impacts on the flow of the river. The MODFLOW model cells will be matched with the corresponding URGWOM groundwater objects.

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Nabil also led a discussion about the (unmeasured) local inflow values computed by HYDROS for the NMISC as discussed during the last Tech Team meeting. This method is based on a mass balance approach similar to the method used in the model for reaches above Otowi. He believes that the estimate of 197,000 acre-feet per year average value of local inflow is too high, considering that the measured inflow to the Middle Valley is about 120,000 to 125,000 acre-feet per year. The San Marcial to Elephant Butte reach is the only location where local inflows are currently used in the model. The USGS PRMS model could be used to verify the Middle Valley local inflow value. Cindy reported that Hydros is performing this work for NMISC and there are no plans for using these data in URGWOM or to add them to the URGWOM database.

Lucas updated the Tech Team on the regression (2006-2018) Reclamation has developed for estimating lower Rio Grande demand based on end of year storage in Caballo and Elephant Butte Reservoirs plus inflow (San Marcial) into Elephant Butte to-date. This information is for use in Reclamation's Basin study and is necessary because not all of the data required to compute demand are available for reaches below Caballo. This method has resulted in a satisfactory correlation coefficient and will be used by Reclamation in the Basin model.

Lucas reported on other ongoing Reclamation activities including:

- Status of implementation of National Weather Service's West Gulf river forecasts for AOP runs: the NWS will add forecast points at North Clear Creek below Continental Reservoir and at Willow Creek; Reclamation has successfully completed AOP test runs using the new NWS traces. More improvements will be made before model testing is completed and documentation prepared.
- Investigation into the operation of the Elephant Butte power plant to optimization power output: Reclamation is reviewing the use of a new Tool developed by the Technical Service Center that may help with the project.
- Research at NCAR on seasonal NRCS forecasts and monsoon season forecast enhancements are ongoing.
- DMIs will be developed and implemented to utilize the AOP runs, NWS forecast runs and the Basin study in URGWOM.

David reported on improvements to the model by CADSWES that would add the ability to allow water emptied from one account to any account, not just those in a downstream direction. This feature will be included in the pre-release of RiverWare 8.0, which should be released within the week.

Nick reported that Hydros continues working on calibrating the model and noticed that the deep aquifer head in the database that Jesse developed last year is based on the steady state condition, not the transient condition. Nick is seeking guidance on which data set to use. Walt

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and Mike will check with Jesse on this matter. This distinction is relevant because the AOP model run results are sensitive to the change in deep aquifer heads in the Middle Valley.

Dave reported that the USGS PRMS model is under internal review and will be ready for public release soon.

Mike reported that he is reviewing the database and requested help with locating data sources for the most current data for the database update. The City of El Paso and EBID would be the best source for data in the Mesilla – El Paso area.

The next meeting of the Tech Team is scheduled for January 14, 2020, at 9:00 am at the NMISC office in Albuquerque.

The meeting adjourned at about 10:40 am.

ATTENDANCE LIST
URGWOM TECHNICAL TEAM MEETING
November 12, 2019

<u>NAME</u>	<u>REPRESENTING</u>
Dave Moeser	USGS
Marc Sidlow	USACE
Nabil Shafike	USACE
Phillip Carrillo	USACE
William Miller	WJM Engineers/USACE Contractor
Walt Kuhn	Tetra Tech/USACE Contractor
Mike Brown	Tetra Tech/USACE Contractor
Carolyn Donnelly	USBR
Lucas Barrett	USBR
Cindy Stokes	NMISC
Shalamu Abudu	NMISC

Those participating via telephone conference included:

David Neumann	CADSWES
Nick Mander	Hydros Consulting