

# Memorandum – DRAFT

To: URGWOM Technical Team Members  
Date: October 9, 2017  
Subject: Notes of October 3, 2017 URGWOM Technical Team Meeting

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These notes summarize the salient matters discussed during the October 3, 2017 Upper Rio Grande Water Operations Model (URGWOM) Technical Team meeting. The meeting began at 9:00 am in the NM Interstate Stream Commission Office in Albuquerque, NM. An attendance list is included on page three.

The meeting Agenda topics include ET Toolbox reference ET computations, ET Toolbox and SSEBop ET comparison, URGWOM database update, status report on update of physical model documentation and proposed tasks to include in the URGWOM Five-Year plan.

Kenneth Richard reported that Al Brower will review and utilize the crop curves currently being used in URGWOM ET computations. Al is using National Digital Forecast Database (NDFD) for calculating reference ET in the ET Toolbox. The ET Toolbox will be transition to using new MRGCD weather data and using NDFD as a backup weather data source by early 2018. Kenneth will work with Al and the tech team so that ET-Toolbox can be used as a data source for URGWOM. Kenneth also reported that he had compared the reference ET data used in URGWOM with the Hargreaves and Samani reference ET values provided by Al Brower and found that when the same weather stations were used in reference ET calculations only small differences were observed most likely caused by rounding. Kenneth will present a more detailed report to the team on Toolbox ET computations at the next team meeting.

The Team recognized that the ET Toolbox currently assumes that 100% of the recorded precipitation is effective. Brian agreed to make a recommendation on the best method to employ in the Toolbox for forecasting effective precipitation.

Kyle presented the results of a preliminary comparison of ET computed using the ET Toolbox and SSEBop. SSEBop (Simplified Surface Energy Balance) model computes ET fractions from thermal imagery obtained from Landsat every eight days. The product of the ET fraction and the potential ET yields an estimate of actual ET ( $ET_a$ ). Kyle presented preliminary results of  $ET_a$  for each URGWOM Middle Valley reach, for the eastside and westside of the valley and the river area. The valley areas include areas that are not irrigated. Comparison of SSEBop ET and Toolbox values of ET show that the ET Toolbox values are greater. The use of the MRGCD acreage coverage in the SSEBop application could minimize the difference in results between the two methods. Kyle reported that the current effort utilizes 2015 Landsat data, and work is underway to utilize data back to 1984.

Ken Peterson reported on the status of his work on the local inflow computations and database update. He found that the 2016 Colorado data are not yet available and the database is complete through 2015. The model was run to determine local inflows, and negative inflows were eliminated using the spreadsheet smoothing method. The local inflow file has been revised as far back in the database as necessary to eliminate inconsistencies in the data. Ken also presented hydrographs of flow showing discrepancies between values in the URGWOM data base and USGS published data. The discrepancies were observed at gages below dams and in the San Juan-Chama Project inflow gages. The database will be updated to represent published data. Updated deep aquifer head data also need updating as soon as results of MODFLOW simulations could be obtained.

Bill Miller reported that the URGWOM physical model documentation is being updated to reflect changes in model methods and to compile all of the disparate basin documentation into a single volume. Miller will update the Upper Rio Grande and Rio Chama areas, Tetra Tech will update the Colorado portion and Nabil and Marc will work on the Middle Valley, with assistance from Tetra Tech. Hydros will contribute documentation on the Lower Rio Grande basin. The first draft document of each area is due January 1, 2018, after which time the documents will be compiled and submitted for review. Nabil suggested that a conference call be scheduled among the document drafters at the end of the month to discuss the status of the work.

Miller presented a list of potential URGWOM development activities discussed during the July Tech Team meeting which could be included in the URGWOM Five-Year plan. These activities include:

1. Obtain MRGCD shapefiles of irrigated parcels and compare to URGWOM acreage data; supplement with acreage inventory of Pueblo lands, if necessary. Survey and map riparian vegetation acreage between Cochiti Dam and Elephant Butte Reservoir (check with Paul Tashjian at USFWS about the availability of existing data).
2. Review Middle Rio Grande forage crop coefficient (will use crop curve developed by Keller-Bliesner). Develop URGWOM crop and riparian vegetation depletion estimates for lands along the Rio Chama and Rio Grande Velarde area using reference ET, crop coefficients and effective precipitation. (Note: ET Toolbox estimates ET values using NDFD forecast data). Develop inventory of irrigated area and crop type for these areas.
3. Begin utilization of the Toolbox crop consumptive use in URGWOM in lieu of external spreadsheet computations. Develop method of computing effective precipitation in real-time or forecast applications. Extend ET functionality to Lower Rio Grande areas
4. Extend Lower Rio Grande model to include the Tornillo to Ft. Hancock reach and develop groundwater and surface water use and return flow methods for aquifers in Mexico (USGS may have reports on previous investigations into the groundwater hydrology of these areas).

Under other business, Marc reported that the CADSWES Sponsor's group meeting has been scheduled for January 31, 2018 followed by the Users' group meeting on February 1-2, 2018.

Marc also reported that an URGWOM training session for users in the Lower Rio Grande area will be held February 7-8, 2017 at the IBWC offices.

The next meeting of the Team has been scheduled for November 14, 2017.

The meeting adjourned at about 11:05am.

ATTENDANCE LIST  
URGWOM TECHNICAL TEAM MEETING  
October 3, 2017

<u>NAME</u>	<u>REPRESENTING</u>
Marc Sidlow	USACE
Jesse Roach	Tetra Tech / USACE Contractor
Grady Ball	USGS
Kyle Douglas-Mankin	USGS
William Miller	WJM Engineers/USACE Contractor
Ken Peterson	Tetra Tech / USACE Contractor
Lucas Barrett	USBR
Ken Richards	USBR
Cindy Stokes	NMISC
Tony Zimmerman	BIA
Nabil Shafike	USACE

Those participating via telephone conference:

Nick Mander	Hydros Consulting
Conrad Keyes Jr.	Paso del Norte WC / USACE Contractor
Jerry Melendez	USBR
David Neumann	CADSWES
Brian Westfall	Keller Bliesner / BIA Contractor
Zhuping Sheng	Texas A & M University