Memorandum

To: URGWOM Technical Team Members
Date: June 11, 2020
Subject: Notes of June 9, 2020 URGWOM Technical Team Meeting

These notes summarize the important matters discussed during the June 9, 2020 Upper Rio Grande Water Operations Model (URGWOM) Technical Team meeting. The meeting began at 9:00 am. and was conducted as an on-line collaboration using the Microsoft Team software hosted by the USGS. All those participating introduced themselves and their names and affiliation are included on the last page of these meeting notes.

The principal meeting agenda topics include reports on the basin snowpack and precipitation to date, a presentation on reservoir real time data and forecast science projects by Trabus Technologies, Rio Grande Basin Study updates and general updates from Reclamation, update of the Lower Rio Grande database development and ongoing URGWOM related activities from the Corps of Engineers, the Interstate Steam Commission and the US Geological Survey.

Dave M. presented current snowpack conditions and precipitation to date in the upper Rio Grande basin based on SNOTEL site readings. Dave pointed out the unusually early melt-out dates and the lack of precipitation since mid-March. The following table summarizes the data that Dave presented:

	Precipitation to date (in.)		Snow melt-out date	
SNOTEL Site	2020	Average	2020	Average SWE on 2020 melt-out date
Beartown	20.2	28.2	May 20	12.7
Wolf Creek	27.1	38.7	May 14	32.3
Santa Fe	21.3	23.2	May 13	14.7
Quemazon	9.4	15.8	March 31	7.0

Dave M. introduced David Sathiaraj of Trabus Technologies who appeared before the Team to present a summary of his firm's work on reservoir data collection and analysis and runoff forecasts for small reservoirs (<20,000 acre-feet). He reported that he was working with the USGS and the Corps of Engineers in the development of artificial intelligence and data science focusing on extreme climatological events. Trabus is expanding their effort into New Mexico and this discussion is an outreach effort to network with local stakeholders. The Trabus effort will focus on the lack of data on small reservoirs and the lack of correlative analysis / research on the reservoir watershed, by adding the capability to collect and utilize "real-time" data for developing predictive capabilities to anticipate and respond to drought conditions.

The Team thanked David S. for his presentation. Andrew G. suggested that the work of Trabus might benefit from information from the climate toolbox created by the University of Idaho as a repository for drought related datasets and tool boxes, recognizing that this toolbox may not have adequate local data and if so, may be of limited use. Andrew G. also reported that a drought contingency plan prepared by MRGCD with assistance from a Reclamation WaterSMART grant will be available to the public soon, which may be of use to Trabus. In response to a question from Dave M., David S. reported that the Trabus program is focused principally on snow-melt runoff basins and not direct rainfall runoff dominated basins.

Mike B. reported to the Team on the Tetra Tech work to update the Lower Rio Grande (LRG) URGWOM HEC-DSS database. He referenced his May 15, 2020 Technical memo summarizing the work and which has been posted on the URGWOM USGS confluence web page, along with supporting documentation, models and database. He found a total of 167 HEC-DSS database elements relevant to the LRG; 62 elements were updated and 97 elements were not updated because it was unnecessary or the elements relate to on-going model calibration; 9 database elements remain outstanding. He also prepared a meta-data file on the LRG data which includes database fields, periods of record, sources of data and contact information that will facilitate efficient future database updates. Additional updates to the DSS database were made to deep aquifer head data and to physical parameters of some reservoirs in the Middle Rio Grande. Certain database elements were not updated because the source of the data has not yet been identified. Nick reported that Hydros may have access to some of the missing data. Mike also recommended that certain data should be removed from the database and stored in the model as scalar or periodic slots.

Phillip reported that the Albuquerque District is working on making adjustments to the model based on a review following implementation of groundwater aquifer objects. The Corps is also working on preparation and execution of new contracts for URGWOM Technical assistance.

Lucas updated the Team about on-going Reclamation activities, including:

- Additional climate model runs will be made as part of the Rio Grande Basin study efforts;
- The Elephant Butte Reservoir hydropower optimization model enhancement is complete, the documentation prepared, and it is ready to be implemented into the official model.
- Reclamation (Technical Service Center) is preparing paleo climate data for use in model runs to be included in a report to Congress on the impact of climate change on water supply. Hydrologic data are based on tree-ring data study from the past 300-600 years and results in volume forecasts for flow at Del Norte, Mogote and Otowi. Lucas utilized the paleo hydrology in side-by-side model runs using the extended AOP model and the Planning Model for a 66-year model run. He identified two problems that were uncovered in the extended AOP model runs:

    - The model crashes when to the demands of the Rio Chama Acequias exceed the amount of Rio Grande flow released from Abiquiu Reservoir (a temporary work-around has been applied to address this problem); and
    - Minimum Abiquiu Reservoir storage levels remain at 30,000 – 50,000 acre-foot during the entire model run (which could be due to the manner in which the model is simulating the demands of the Albuquerque Bernalillo County Water Utility).
- Reclamations CADSWES lists of work items to be included in next year's CADSWES Task Order, which were discussed during last month's Tech Team meeting, has been finalized.

The Interstate Stream Commission had no report or activities update to present to the Team.

Dave M. reported that the PRMS watershed model has been cleared for release by the USGS and is now available to the public for download and use.

The next regular meeting of the Tech Team is scheduled for July 14, 2020, at 9:00 am, which will also be an on-line collaboration.

The meeting adjourned at about 10:15 am.

ATTENDANCE LIST
URGWOM TECHNICAL TEAM MEETING
June 9, 2020

NAME	REPRESENTING
Dave Moeser	USGS
Andrew Robertson	USGS
Marc Sidlow	USACE
Phillip Carrillo	USACE
Garrett Ross	USACE
Guillermo Martinez	INTERA / USACE Contractor
William Miller	WJM Engineers/USACE Contractor
Mike Brown	Tetra Tech/USACE Contractor
Andrew Gelderloos	USBR
Lucas Barrett	USBR
Carolyn Donnelly	USBR
Jerry Melendez	USBR
Shalamu Abudu	NMISC
Viola Sanchez	BIA
Zhuping Sheng	Texas A&M – Paso del Note Watershed Council
David Neumann	CADSWES
Nick Mander	Hydros Consulting
Ashenafi Madebo	Colorado Division of Water Resources
Dr. David Sathiaraj	Trabus Technologies
Art Salindong	Trabus Technologies
Joe Celano	Trabus Technologies