

# Draft Memorandum

To: URGWOM Technical Team Members  
Date: February 17, 2022  
Subject: Notes of the February 15, 2022 URGWOM Technical Team Meeting

---

These notes summarize the items discussed during the February 15, 2022 meeting of the Upper Rio Grande Water Operations Model (URGWOM) Technical Team. The meeting began at 9:00 am and was conducted as an on-line collaboration hosted by the Bureau of Reclamation using Microsoft Teams software. All those participating in the meeting introduced themselves and their names and affiliation are listed on the last page of these meeting notes.

This month's meeting agenda includes a report on the addition of aquifer objects in the Lower Rio Grande and calibration of the middle and lower Rio Grande, a report on the February, 2022 Annual Operating Plan model run results and general updates on ongoing URGWOM related activities from the Corps of Engineers, the Bureau of Reclamation, the U. S. Geological Survey and the Interstate Stream Commission.

Marc reported that the Corps has been working on the Abiquiu Reservoir storage deviation request that will accommodate storage in Abiquiu Reservoir that might have otherwise been stored in El Vado Reservoir but for the rehabilitation work at El Vado Dam. Other Corps Technical Team members are in a RiverWare training class this week and are unable to participate in today's meeting. Nabil reported to the Team that he has been advised that the Corps will not be able to access the SharePoint site unless the Corps URGWOM Team members use their personal email accounts. Lucas stated that the SharePoint site is Reclamation's only available option for establishing and accessing the URGWOM Technical Team depository. Lucas will send out SharePoint invitations to the Corps Team members to provide them access to the SharePoint site.

Nick presented a PowerPoint presentation of the work that Hydros has completed under a Corps of Engineers Task Order for adding the new deep aquifer objects, adding objects in the Hudspeth and Juarez Valley areas and re-calibrating the middle Rio Grande and Lower Rio Grande model parameters. He reported that the addition of the deep aquifer objects and the model calibration has been reviewed by CADSWES, the Corps and Intera. His presentation included a view of the current RiverWare work space showing the location of the deep groundwater objects, which Hydros has offset from the river and shallow aquifer objects for clarity. In response to an inquiry from Marc regarding other means of displaying the deep groundwater objects without adding to the workspace object clutter, David N. suggested the use of cluster objects that would allow for objects within the cluster object to be collapsed to reduce clutter when it is not necessary to view those objects in the cluster object.

Nick reported that when all of the deep aquifer object data were added to the DSS database file, the file size increased from 130 MB to 320 MB. New calibration plots were also included in the data base. The Team discussed methods for reducing the size of the database including separating the calibration model database from the database required to run AOP or planning models because the calibration (historic) model is not run very frequently. Nick summarized the data that were removed from the previous version of the database, which did not result in a significant reduction in file size. The Team decided to leave the current database unchanged as a single file.

The Team discussed the use of the newly calibrated model in the 2022 AOP model runs. This updated model will not be ready until the deep groundwater object heads are extended from 2011 to 2021. This will be done by running the URGWOM model beginning in the year 2011 and simulating pumping and return flow, etc., in order to arrive at the beginning of the year 2022 aquifer heads. Nick said that Hydros will complete this task.

Nick continued his presentation by summarizing the modification of existing objects including relocating the Atrisco and Albuquerque Riverside drain objects and the Albuquerque WaterUserObjects previously discussed by the Technical Team. Nick also summarized the updated rules and functions, the updated initialization rules and expression slots, the updated DMIs and the edited scripts. Nick also presented hydrographs of flow at major river gages that compare the updated model (with deep groundwater objects) with the previous version of the model. Most of the calibration differences are the result of changes to the MRGCD drain stage tables; the addition of the deep groundwater objects had a negligible effect on the results.

The next steps to be performed by Hydros include:

- Update the new model with the latest accounting data and other changes;
- Update the spreadsheet tracking of model changes;
- Update rulesets descriptions;
- Update model documentation;
- Incorporate model changes into the monthly and real-time model functions;
- Update the deep aquifer groundwater heads for the last ten years;
- Reorganize workspace to include cluster objects.

Lucas reported that Reclamation had nothing to report to the Team at this meeting other than his presentation on the development of the 2022 AOP model. Lucas is developing a new presentation format that should be less confusing to stakeholders reviewing the model results. These changes included eliminating the lines for individual frequency intervals (10%, 25% 50%, etc.) and instead utilizing a shadow that displays the range defined by the 10% and the 90% exceedance frequencies, along with a single line representing the median value (50% or most probable). The updated AOP presentation will also include:

- Hydrographs of snow water equivalent and precipitation for locations around the basin;
- U. S. Drought Monitor status report;
- The El Niño-Southern Oscillation (ENSO) forecast;
- NWS season temperature and precipitation forecasts for the February –April and the July-September periods;
- NRCS runoff forecasts, which are now reporting median values instead of average values and the historic period of record upon which the forecast frequencies are based was changed from the 1981-2010 period to the 1991-2020 period.
- Lucas summarized the assumptions used in the model setup including a reduced demand and later start of the irrigation season for the MRGCD; storage restrictions and El Vado due to work on the dam and storage of Prior and Paramount water (15,000 acre-feet) in Abiquiu and Heron; the Caballo release schedule, and the utilization of blended historical hydrographs in the forecasts.

The Team briefly discussed the manner in which the use of the blended hydrographs can result in the reduction of hydrograph peak flows from what might be experience utilizing hydrographs of single years. Where the use of the blended hydrographs is thought to reduce runoff peaks, such as the El Vado inflow and flow below Abiquiu gages, individual year hydrographs could be applied in lieu of the blended hydrographs.

Lucas presented hydrographs of storage and flow at reservoirs and stream gages that display the results of the AOP model runs.

Cindy reported that the NMISC is working on implementing MRGCD operating procedures into the URGWOM model.

Under other business, Miller discussed potential sites for URGWOM Technical Team field trips during 2022. He suggested that the Team could consider a single day trip to inspect MRGCD facilities from Cochiti to Bernalillo, or an overnight trip to inspect facilities of the San Juan-Chama Project. Andrew suggested that the Team include in the field trip a short introductory meeting to review the RiverWare model of the facilities to be visited during the inspection trip.

The next meeting of the Technical Team is scheduled for March 8, 2022, beginning at 9:00 am.

There being no additional matters to be brought before the Team, the meeting was adjourned at about 10:30 am.

ATTENDANCE LIST  
URGWOM TECHNICAL TEAM MEETING  
February 15, 2022

<u>NAME</u>	<u>REPRESENTING</u>
Marc Sidlow	USACE, Albuquerque District
Nabil Shafike	USACE, Albuquerque District
William Miller	Southwest Water Design/USACE Contractor
Mike Brown	Tetra Tech/USACE Contractor
Carolyn Donnelly	Bureau of Reclamation
Lucas Barrett	Bureau of Reclamation
Andrew Gelderloos	Bureau of Reclamation
Jerry Melendez	Bureau of Reclamation
Michelle Estrada-Lopez	Bureau of Reclamation
David Neumann	CADSWES
Nick Mander	Hydros Consulting
John Craven	Hydros Consulting
Cindy Stokes	NM Interstate Stream Commission
Dave Moeser	NM Water Science Center
Diane Agnew	Albuquerque Bernalillo County Water Utility Authority
Steve Schultz	City of Santa Fe
Zhuping Sheng	Paso del Norte Watershed Council
Guillermo Martinez	Intera
Brian Westfall	Keller-Bliesner Engineering/BIA Contractor