

URGWOM News

A newsletter devoted to informing the public of the status of the Upper Rio Grande Water Operations Model (URGWOM)

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In This Issue

URGWOM, short for the Upper Rio Grande Water Operations Model, is a computer model capable of simulating water storage and delivery operations throughout the Rio Grande from Colorado to Texas. The primary purpose is to facilitate more efficient and effective water management in the basin.

In the February 2000 newsletter, we discussed the first draft of URGWOM being tested by water managers and announced a Technical Review Committee meeting to review model calibration and the first draft of its documentation. This newsletter provides an update on model development, documentation, and uses.

Model Documentation Available

New documentation for URGWOM is available for downloading from the URGWOM Web site, <http://www.spa.usace.army.mil/urgwom/>, or by request in hard copy from Gail Stockton or Leann Towne, co-team leaders whose contact information is listed in the box to the right.

It explains the current assumptions, methods, and data used in RiverWare, the computer modeling software, to simulate Rio Grande hydrology, water accounting, and river and reservoir operations. The documents are considered "working" documents because they will be updated as the model changes and additional information becomes available.

The second draft of the URGWOM Physical Model Documentation describes and analyzes river routing techniques, development of travel time lags, and the methods and assumptions used to estimate river channel losses. Since the second draft was printed, changes have been made to the physical model during calibration and validation. Technical memoranda describing these changes will be included in an appendix. Also part of the documentation is a summary of the responses from the URGWOM Technical Team to comments that were made by the Technical Review Committee on the first draft.

The Accounting Model documentation describes the model that is used to account for all water movement and storage once a release from a reservoir has been made. Operations for each reservoir are described, and losses, such as evaporation, and sediment effects are explained. There are descriptions of how evaporative and storage losses are apportioned between the San Juan-Chama Project water and native Rio Grande water. The Accounting Model is intended to replace the FORTRAN water accounting programs presently being used by the Bureau of Reclamation to track the delivery, use, and storage of San Juan-Chama Project water in the basin.

The Runoff Forecast Model documentation describes the model that is designed to develop snowmelt runoff hydrographs for portions of the basin. These hydrographs are based on March to July volumetric forecasts developed by the Natural Resources Conservation Service and the National Weather Service for certain forecast points in the basin. The snowmelt hydrographs are used with the Physical Model and the Accounting Model to assist in planning future operations and the release of water.

The following Steering Committee members manage the model development process:

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Model Is Used for Planning

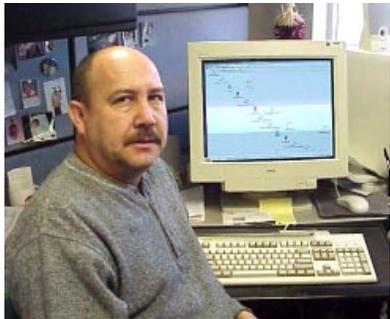
The Technical Team has been working hard to get a functioning model that can be used by federal water managers to assist in their decision-making. Major efforts during the past year have gone into developing gain/loss procedures in the middle valley and rules for water accounting. The models to be used by daily water operators have been calibrated and validated.

URGWOM has been used to develop the Annual Operating Plan for 2001. The Bureau of Reclamation has been using the Accounting Model with promising results. Final approval for use of the Accounting Model to officially track San Juan-Chama Project water must be given by the Engineer Advisors of the Rio Grande Compact Commission. Members of the URGWOM Technical Team presented a comparison of the results from the Accounting Model and current methods to the Engineer Advisors at their meeting on March 1. The Engineer Advisors were encouraged by the results presented and requested a written final summary before they make a decision on adopting the Accounting Model.

Using URGWOM—from An Operator's Perspective

Note: One of the initial goals of URGWOM is to be useful to those who manage the daily operations of facilities in the basin. Don Gallegos is a water manager for the Corps of Engineers who has been testing URGWOM, and has used it to develop the Annual Operating Plan with the Bureau of Reclamation. He wrote the article below, which shows that URGWOM is meeting its goal.

The new tool, URGWOM, has eliminated the majority of tedious data entry, so the time required to input data has been greatly reduced. The fact that the modeling team pulled together all the historical data and placed it in a database that is easily accessible is a great accomplishment. This database provides me with the necessary data at my fingertips.



Other models I have used for producing snowmelt runoff projections did not model the whole system, but with URGWOM, everything is tied together. This helps me to look at the whole system, so I can see what the impacts are when I operate in a certain way. The model also allows me to run “what if” operation scenarios in a timely manner. Tracking of San Juan-Chama Project water releases as they move through the system will now be easier.

The model has provided water operators with a tool that will improve the availability, sharing of data, and timeliness to analyze and evaluate river and reservoir management options. There is always a learning curve when you start to use something new. With time and practice, operators will gain experience and understand how the model works. It has made my work more efficient and timely, but it also has created more work for me because I’ve come to learn that, with any new and useful tool, the more it can do, the more I want it to do. Sometimes possible operation scenarios seem to be endless.

Technical Review Committee to Meet

The Technical Review Committee will meet on April 26, 2001 to hear updates on URGWOM development and to review the second draft of the Physical Model documentation. They will meet at the Albuquerque District Office of the Corps of Engineers from 9:30 a.m. to noon. The committee members will hear presentations on validation results, local inflows, computed losses, and major changes made since they reviewed the documentation last year. Other topics for discussion include the Forecast Model, the Accounting Model, and future enhancements such as calculating riparian losses with the ET Toolbox and development of a new watershed runoff forecast model, MMS.

The Technical Review Committee is composed of people with a strong technical background or an avid interest in the Rio Grande system. Committee members and interested observers assist the URGWOM Technical Team by reviewing its work and by making recommendations to aid the modeling effort.

Contact Us to Exchange Information

It is our intent to provide effective information exchange on the progress and development of URGWOM to the people in the upper basin. If you have ideas on how to do a better job of sharing information, please contact one of the co-team leaders listed on the first page.

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