



October



2003



URGWOM Technical Review Committee Meeting

The next meeting of the Technical Review Committee for the Upper Rio Grande Water Operations Model will be held on **November 13, 2003**, from **8:30 a.m. to 12:00 noon** in the conference room at the Corps of Engineers, Albuquerque District Office. The focus will be on the details of the URGWOM Planning Model to be used to analyze the alternatives for the Water Operations Review EIS over the selected 40-year sequence.

The main agenda items are:

- ◆ Welcome and introduction
- ◆ Development of Planning Model from Water Operations Model
- ◆ Planning model start-up conditions, assumptions, and documentation
- ◆ Selected planning model results (base case)
- ◆ Wrap-up

Water Operations Review Steering Committee Meeting

The next meeting of the Steering Committee for the Upper Rio Grande Basin Water Operations Review and EIS will follow the Technical Review Committee meeting on **November 13, 2003**, from **1:00 p.m. to 4:00 p.m.** in the conference room at the Corps of Engineers, Albuquerque District Office. This meeting will focus on the progress in developing the alternatives for analysis impacts to resources in the EIS and a brief overview of the use and development of the Planning Model.

The main agenda items are:

- ◆ Welcome and introduction
- ◆ Overview of the alternatives for analysis of impacts in the EIS
- ◆ Overview of the Planning Model testing and results
- ◆ Next steps
- ◆ Wrap-up

Cooperative Efforts Lead to Analysis of Water Operations, Tools to Manage Operations

Management of the Rio Grande involves many agencies, each with its own mission and set of rules and guidelines. Three of these agencies are leading an effort to develop an integrated plan for water operations at their existing facilities in the upper Rio Grande basin. The joint lead agencies for this effort—the U.S. Bureau of Reclamation, the U.S. Army Corps of Engineers, and the New Mexico Interstate Stream Commission—are examining what they can do under existing authorities to improve how water is stored and delivered. This project is called the Upper Rio Grande Basin Water Operations Review and Environmental Impact Statement (EIS), which has been making progress since the Memorandum of Agreement and Notice of Intent to conduct an EIS in 2000.

The Upper Rio Grande Basin Water Operations Review is taking a system-wide approach, coordinated among the water management agencies to evaluate current water operations and review possible changes to those operations. The joint lead agencies will use the flexibility they have in developing alternatives for analysis and implementing the decisions to the advantage of the human and natural environment.

Goals of the Water Operations Review

- ◆ Improve flexibility and cooperation
- ◆ Improve communication
- ◆ Increase efficiency
- ◆ Improve decision-making processes and public involvement
- ◆ Ensure regulatory compliance
- ◆ Provide historical baseline

Currently, the alternative water operations scenarios have been defined and the flows are being modeled. The technical teams have completed data collection, characterized the affected environment in the basin, and are working with the base run model outputs to test their methodologies for analyzing impacts.

The primary tool for hydrologic analysis of operation changes is the Upper Rio Grande Basin Water Operations Model (URGWOM). It provides the basis for the analysis of impacts of possible changes to water operations activities in the Rio Grande basin above Fort Quitman, Texas, that are within the joint lead agencies' existing authorities.

URGWOM has been under development since 1996 when six federal agencies—the Bureau of Reclamation, U.S. Fish and Wildlife Service, U.S. Geological Survey, Bureau of Indian Affairs, the International Boundary and Water Commission (U.S. Section), and the U.S. Army Corps of Engineers—recognized the need for a unified water operations model for the upper Rio Grande basin and entered into a Memorandum of Understanding (MOU) to develop such a tool to assist water managers. In the MOU, they agreed to develop a numerical computer model capable of simulating water storage and delivery operations in the Rio Grande from its headwaters in Colorado to below Caballo Dam in New Mexico and for flood control modeling from Caballo Dam to Fort Quitman, Texas.

URGWOM is a set of daily time-step, river-reservoir models for the upper Rio Grande basin capable of simulating the river and reservoir hydrology, water accounting and operation logic in the Rio Grande to be used in flood control operations, water accounting, and in the evaluation of short and long-term water-operation alternatives. The daily water operations model and water accounting models were developed first and are being used to develop the Annual Operating Plans.

The Planning Model has recently been completed and modeling the alternatives for the Water Operations Review and EIS is underway. The Water Operations Model has already been used to develop Annual Operating Plans since 2000.

Additional information about the Upper Rio Grande Basin Water Operations Review and EIS is available online at <http://www.spa.usace.army.mil/urgwops/>.

Additional information about URGWOM is available online at <http://www.spa.usace.army.mil/urgwom/>.

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(URGWOM and Water Operations Review)



URGWOM

URGWOM Participants

The URGWOM project is based on a relatively loose-knit MOU, called the *Memorandum of Understanding for the Development of an Upper Rio Grande Water Operations Model for Enhanced System Management*, among the six lead agencies. The MOU was developed after discussions between the federal agencies and interested stakeholders in the basin to discuss the need for a model.

The Steering Committee is responsible for overall project management and is composed of one official representative from each of the six federal agencies. The Technical Review Committee is an independent group composed of representatives of government agencies and other stakeholders who are interested in development of the model, related activities, and model applications. The Technical Review Committee conducts periodic independent technical reviews to provide objective feedback during the process to ensure that program objectives are being met.

Federal Agencies:

- ◆ Corps of Engineers
- ◆ Bureau of Reclamation
- ◆ U.S. Geological Survey
- ◆ U.S. Fish and Wildlife Service
- ◆ Bureau of Indian Affairs
- ◆ International Boundary and Water Commission, U.S. Section

You're invited to the next Technical Review Committee meeting. See back page.

Cooperating Agencies:

- ◆ New Mexico Interstate Stream Commission
- ◆ City of Albuquerque
- ◆ City of Santa Fe
- ◆ Los Alamos National Laboratory
- ◆ Sandia National Laboratories
- ◆ Rio Grande Restoration
- ◆ University of New Mexico
- ◆ New Mexico Water Resources Research Institute
- ◆ Paseo del Norte Watershed Council
- ◆ Desert Research Institute
- ◆ *And Approximately 80 Other Tribes, Individuals, or Other Groups Who Help with Technical Review*

Using the Planning Model for the Water Operations Review and EIS

Many of the independent activities that have been underway for the past several years by a variety of technical experts for the URGWOM and Water Operations Review efforts are starting to come together, as planned when both projects began.

The URGWOM Planning Model is based on the daily Water Operations Model, modified to run a 40-year sequence of years representing a likely climatic sequence that was selected based on an analysis of historic data. All of the work on developing the daily model, such as describing the reservoir operations required for management of water deliveries and flood control, developing the rules for water accounting, characterizing the gains and losses along the river, and calibrating the model, contributed to the successful creation of the Planning Model.

The project managers, technical teams, and other committees have worked hard to this point to get public input, describe the current conditions in the river corridors, and develop tools that will enable them to analyze the impacts of proposed alternative water operations. After public meetings to discuss the scenarios for water operations, seven combinations of water operations were developed to be further evaluated. These alternatives contain operational variations including different waiver dates at Heron Reservoir, varying amounts of storage at Abiquiu and channel flows downstream, varying flows in the channel below Cochiti Dam, and differing diversion amounts into the Low Flow Conveyance Channel. These draft alternatives are currently being screened by running them through the URGWOM Planning Model to eliminate those that would not meet the purpose and need defined in the MOA and those that are not feasible to implement. Selected Planning Model output from the alternatives to be analyzed in detail in the EIS will be used by technical teams directly, as well as in a Geographic Information System and other models, such as FLO-2D and the aquatic habitat model.

Water Operations Review Participants

The Upper Rio Grande Basin Water Operations Review and EIS project is based on a relatively stringent Memorandum of Agreement that clearly defines the scope, purpose, and need for the project and the roles and responsibilities of each of the lead agencies, as well as the organizational structure for participation and oversight. The Cooperating Agencies have signed formal agreements that commit resources to the effort. The lead and cooperating agencies participate in technical teams and an Interdisciplinary NEPA Team, along with technical experts from other participating agencies (listed below). Project oversight and responsibility is the function of the Executive Committee, composed of the local officials of the lead agencies. The Steering Committee facilitates coordination and information exchange with no decision-making role.

Joint Lead Agencies:

- ◆ Corps of Engineers
- ◆ Bureau of Reclamation
- ◆ New Mexico Interstate Stream Commission

Cooperating Agencies:

- ◆ Bureau of Indian Affairs
- ◆ U.S. Fish and Wildlife Service
- ◆ New Mexico Department of Agriculture
- ◆ New Mexico Environment Department
- ◆ Pueblo of San Juan

You're invited to the next Steering Committee meeting. See back page.

Agencies Contributing Staff Time in Support of Technical Teams or Public Involvement:

- ◆ International Boundary & Water Commission, U.S. Section
- ◆ New Mexico Game & Fish Department
- ◆ Middle Rio Grande Conservancy District
- ◆ City of Albuquerque
- ◆ Rio Grande Restoration
- ◆ City of Santa Fe
- ◆ Texas Natural Resources Conservation Commission
- ◆ University of New Mexico
- ◆ New Mexico State University
- ◆ New Mexico Institute of Mining & Technology
- ◆ New Mexico Water Resources Research Institute
- ◆ *And Approximately 20 Other Tribes, Individuals, or Other Groups*

The graphic below illustrates many of the products that have been generated through both the URGWOM and Water Operations Review projects. You can see that the product development started with a few completed items in 2000, with increasing products in 2002 and 2003, where there is a flurry of products, many of which are complete and already in use. Expected product development for 2004 and 2005 is anticipated to slow down as the EIS is completed. The lead and cooperating agencies and organizations will most likely be involved in future data sharing, model enhancements, and collaboration, based on the working relationships established during these complex and exciting projects and product development, far beyond the end of this timeline. The ongoing collaboration, consultation, and coordination are the intangible benefits that extend throughout and beyond the period shown.

