

Notes from Upper Rio Grande Basin Water Operations Review Interdisciplinary NEPA Team Meeting; August 14, 2003; 1:00 PM; Corps of Engineers Conference Room, Albuquerque

In Attendance:

Neal Ackerly, Dos Rios Consultants/Corps	Bill Leibfried, SWCA/ISC
Roberta Ball, Corps	Colleen Logan, Weston/Corps
Charles Braden, BIA	Charles Lujan, San Juan Pueblo
John Branstetter, USFWS	Clay Mathers, Corps
Christopher Brown, NMSU/Paso del Norte Watershed Council	Bob Mussetter, MEI/NMISC
Robert Browning, II, Corps	Claudia Oakes, SWCA/NMISC
Mike Buntjer, USFWS	Brian Ortiz, USFWS
Deb Callahan, USBR	Page Pegram, NMISC
Tim Darden, NMDA	Nancy Purdy, USBR
Ellen Dietrich, SAIC/Corps	Garret Ross, USBR
Darrell Eidson, Corps	Lorenzo Santana, Corps
Don Gallegos, Corps	Nabil Shafike, NMISC
Susan Goodan, SAIC/Corps	Gail Stockton, Corps
Mark Horner, Corps	Jack Veenhuis, USGS
Ernie Jahnke, Corps	Dave Wilkins, USGS/URGWOM Technical Team
Conrad Keyes, Jr., Consultant to Corps	Doug Wolf, Tetra Tech/Corps

- ❖ Gail Stockton opened the meeting with self-introductions. Team members were asked to review the notes from the last meeting and submit any changes to Ellen Dietrich.
- ❖ A slide presentation on the status of the NMISC's linked surface water/groundwater model in the Rio Grande, between San Acacia to south of San Marcial, was presented by Page Pegram and Nabil Shafike. A brief summary of the project and questions, answers, and discussion are included below.
 - The purpose of the study is to determine the interaction between the river, shallow groundwater, the Low Flow Conveyance Channel (LFCC), and agricultural diversions.
 - For the project, a new network of gages and other equipment, mostly on the west side of the river, were installed. Equipment includes 140 piezometers in wells ranging from 10 to 2,100 feet deep and 25 staff gages.
 - Data collected to date:
 - Prior to the start of the installation of the new equipment, they collected monthly groundwater levels from old USBR wells for 1½ years (since November 2001). No completion data on these wells are available.
 - With the new equipment, hourly groundwater level readings have been collected (since May 2003).

- Before installation of the new equipment, surface water levels were collected monthly from the LFCC, river, and drains (since November 2001).
- Currently, hourly surface water levels in the LFCC, river, and drains have been collected (since May 2003).
- Some groundwater and surface water chemistry has been collected since February 2002.
- Other data collected include key data on soils, geology, and agriculture in the area.
- New Mexico Tech maintains a web site that will make the data available in the future. If anyone needs the data now, they can contact Page at (505) 764-3890.
- Nabil explained that the model uses a regional grid with a cell size of 1000 feet square.
 - The groundwater is characterized in 5 layers, down to 5,000 feet.
 - Currently, only the LFCC and the river are included in the model. When the surveys of the canals are completed, they will be added to the model.
 - Model runs show that the river loses water and the LFCC gains water as it flows downstream.
 - The model output includes groundwater and surface flow/volumes.
 - **Question:** How do you foresee the interaction between this model and FLO-2D?
 - **Answer:** The two models complement each other. FLO-2D only addresses the flows in the river, not in the LFCC. It has the capability of calculating losses, mainly through evaporation or infiltration, which could be supplemented by output from the ISC model. FLO-2D addresses infiltration in the overbank area during flooding, where the ISC model does not address overbank flows.
 - **Question:** Can you route flows in the LFCC and the Rio Grande through the ISC model?
 - **Answer:** Yes, the model provides hydrographs every 1,000 feet. It also provides groundwater data (depth to groundwater) for the entire valley.
 - **Question:** What is the confidence level of the model output?
 - **Answer:** The R^2 is 0.8.
 - **Question:** Are you evaluating the level of water use from riparian vegetation?
 - **Answer:** We need to find a way to estimate riparian vegetation evapotranspiration.
 - **Question:** Are you using a vegetation layer?
 - **Answer:** Vegetation is provided through IKONOS data, not detailed vegetation data.
- The Riparian and Wetlands, Aquatic Systems, and possibly the Water Quality Technical Teams may benefit from this model output for use in analyzing impacts. If there is a way to correlate flows to cropping patterns, it may be useful for the technical team evaluating impacts to agriculture.
- ❖ Planning Model progress
 - Roberta Ball reported on the data types and groupings that have been requested from the URGWOM Planning Model by the technical teams. She displayed some of the datasets and formats.
 - All technical teams have submitted their data requests, but in some cases, Roberta asked for clarification.

- Data below Cochiti are available in weekly, monthly, yearly, and annual average increments over the 40-year sequence. Some daily data are available for shorter periods. To demonstrate the differences in these datasets, Roberta displayed hydrographs of each and pointed out the amount of change in the peak values resulting from different groupings of the same data.
- Current data formats are comma-separated values in a text file. **Roberta asked for input from the technical teams on what type of information should be included at the beginning of each file to describe the data included.**



- Dave Wilkins reported that the Planning Model base runs are underway and should be completed today (August 14). The URGWOM Technical Team, through Roberta, should be able to send out data next week via e-mail to those who submitted requests.
- ❖ Gail introduced the next presentation by relating the work of each technical team and team member developing this EIS to the performance of a jazz ensemble. In the ensemble, there are soloists, but to sound good as a group, each musician must listen to and support the others until the piece is a blending that is fuller than the individual performances. She stressed that using the NEPA process to develop the water operations review, utilizing so many different technical experts, requires data sharing and collaboration to achieve the synthesis necessary for creating a coherent EIS. In the interest of data sharing, the Riparian and Wetlands Technical Team presented information on why they are doing the vegetation mapping and how they plan to use it. Once other teams learn what data are available from each technical team, they will be better able to determine what data may help supplement their own.
 - Claudia Oakes was the main presenter, with help from Deb Callahan.
 - The Riparian and Wetlands Technical Team decided to use acre-foot days of inundation of each vegetation type as a way to compare the impacts under each alternative.
 - The available data that met their needs for impact assessment were derived from a vegetation mapping study in the middle Rio Grande by Hink and Ohmart in 1981. This was a study of the structural categories of vegetation as they relate to wildlife habitat. The team decided to update the earlier vegetation mapping using a similar methodology.
 - The new color infrared aerial photography base maps were funded by the ESA Collaborative Work Group (for southwest willow flycatcher surveys), USFWS (to update the National Wetlands Inventory mapping), and the USBR and Corps. As a result, new IR photography is available for the river corridor from Taos to Elephant Butte and along the Rio Chama below Abiquiu.
 - The mapping methodology included the following.
 - The mapping extent is the woody riparian vegetation. Notes were collected on noxious weeds, canopy, dominant understory vegetation, and structural stage using visual estimates.
 - Teams of people navigated to predetermined locations using GPS equipment and delineated vegetation categories of 2 acres or more on aerial photography.
 - The field mapping is being digitized to create GIS coverages of the mapping polygons, identified by vegetation category.
 - Once the digitizing is completed, the technical team will group the map units into larger categories that correspond to the Hink and Ohmart categories in the middle valley and USFWS resource categories in other areas.

- Total inundated acres under each alternative will be determined for each of the larger categories, not the individual map units.
- The technical team must determine the reliability of their data used for analysis. For example, in the San Marcial reach, they have the most confidence in the vegetation mapping they have completed but less confidence in the FLO-2D model output of areas of inundation due to known problems with the gage data in that reach.
- ❖ Mark Horner presented a draft form for technical teams to consider using to document data quality. The form evolved from discussions between the GIS and Riparian and Wetlands Technical Teams and some specific recommendations from Claudia Oakes.



- **Mark requested that technical team leaders attend the next GIS Technical Team meeting at the Corps on August 19 at 9:00 a.m. to further discuss the form fields and the use of this form to document data quality. All technical team members should provide comments on the form to Mark.**
- All technical teams should complete this form for all data collected for each resource that they are evaluating. They should strive to disclose as much information as possible on the form, as concisely as possible.
- The purpose of the form is to help technical teams document their data quality for their technical reports, for the administrative record, and to fully disclose to the public how the analysis was done for the EIS. The information may be consolidated to graphically represent data quality in an appendix to the EIS.
- Some technical teams are using general data to evaluate specific issues or locations. Others are using site-specific data to characterize large areas. It is important to know what types of data will be used to reach conclusions presented.
- The reliability of the data used for analysis is important information to provide to the decision-makers at the end of the process.

- ❖ A brief discussion of the types of interactions among technical teams over the past month was held. It is clear that interaction between technical teams is increasing as they prepare for data analysis.



- ❖ **The next meeting of the URGWOPS ID NEPA Team will be held on September 11 at 1:00 p.m. in the Corps of Engineers conference room.**