

Memorandum

Date: February 18, 2003
From: Karen Lewis, Debbie Hathaway
To: Mike Velasquez
Subject: **Summary of Progress on the Middle Rio Grande Water Supply Study, Phase 3**

The Middle Rio Grande Water Supply Study was initiated in June 1999 for the U.S. Army Corps of Engineers (COE), Albuquerque District, and the New Mexico Interstate Stream Commission (ISC), under COE Contract DACW47099-C-0012. This study was conducted as the first step of a broad regional water planning process, addressing the question, "What is the water supply for the region?"

SSP&A began work on the Middle Rio Grande Water Supply Study, Phase 3 in July, 2001. The goals of this third phase include

- Technical refinements to the probabilistic model, including:
 - Update and refining selected hydrologic functions
 - Refining climate-based dependencies for key water budget terms
- Reviewing long-term climate trends, using proxy-based reconstructions (i.e., tree rings), to further characterize potential variability in water budget terms;
- Developing an approach for handling antecedent conditions in functional relationships; and, user specification of climatic sequences.
- Evaluating the regional water planning alternatives proposed by the Socorro-Sierra and Middle Rio Grande planning regions

Completed Work

Note: All work-products described below have been posted on the ISC project website.

- Review of long-term climate has been completed and a technical memo outlining the findings submitted to the ISC and Corps on November 8, 2001.
- The probability distributions used to model surface water terms in the original MRGWSS model were reviewed and a memo summarizing the work was submitted to the ISC and Corps March 19, 2002.
- A drought memo, examining the relative severity of the 1950s drought, was developed and submitted to the ISC and Corps on October 2, 2002.
- A small portion of the regional water planning work has been completed:
 - SSP&A met with Sandia National Labs (SNL) to review the water budget model developed by SNL and currently in use by the MRG Planning Region for screening the impact of proposed planning alternatives. A Joint Statement between SSP&A and SNL regarding SSP&A review of the SNL model was issued on May 29, 2002.
 - A review of the preliminary Socorro-Sierra alternatives has been completed, and a memo outlining the findings submitted to the Socorro-Sierra planning group and the ISC on September 23, 2002.

Date: February 18, 2003
Page: 2

- The MRG planning region hired DBS&A to review 25 of the MRG preliminary planning alternatives. SSP&A was requested to review the DBS&A analyses of six of these alternatives. This work has just been completed and a memo is being finalized for delivery to the MRG Water Assembly, the MRG Council of Governments, the ISC, and the Corps.

Work in Progress

- Work is progressing on refining climate-based dependencies for key water budget terms.
 - SSP&A is developing a method to incorporate multi-year dependencies in Elephant Butte evaporation into the probabilistic model.
 - SSP&A is reviewing the handling of crop and riparian evapotranspiration in the model to both improve representation of these terms in the model, as well as capture variability in these terms resulting from climate fluctuations such as long term drought.
- Regional planning support work is progressing. The schedule for this work is outlined below.

The current schedule for SSPA work with the regional planning groups is:

Middle Rio Grande

- Beginning late March: Modeling of five initial (or draft) scenarios and determination of implications for aquifers and downstream deliveries for each scenario.
- Beginning late June: Modeling of "preferred" scenario and determination of implications.

Socorro-Sierra

Final alternatives have been submitted to SSP&A for review.

- By February 28, 2003: Estimate changes in water consumption resulting from alternatives.
- By March 14, 2003: Evaluate sensitivities and relationships between alternatives and other parameters.
- By April 11, 2003: Modify and run models.
- By April 25, 2003: Provide support for quantification of the water supply for the Socorro-Sierra region.
- By May 9, 2003: Communication of results.

Based on these schedules, SSP&A believe we can finish the regional planning support work by September 2003.

Requested project schedule:

In light of the planning regions schedules, SSP&A is in the process of requesting an extension for the scope of work. The proposed schedule for project completion is to complete a draft report by early February 2004, a final report by April 2004, and to hold a public meeting to present the results in May 2004.