



Memorandum

Date: November 9, 2001

From: Karen Lewis, Debbie Hathaway, SSP&A

To: Mike Velasquez, ACOE
Kevin Flanigan, NMISC

Subject: Progress report, 10/07/01 to 11/03/01, MRGWSS Phase 3

Work on Phase 3 of the Middle Rio Grande Water Supply Study (MRG3) from October 7 to November 3 focused primarily on exploring alternative probability distribution functions for the risk modeling, preparing a technical memo discussing the proposed alternatives, studying ways to use our existing tools and data to assess conditions under which Compact failure is likely, and preparing a summary of preliminary failure analysis work. Work done, by task, during this period was:

Task 1:

1. Alternative probability distribution functions (generally lognormals) were fit to the Otowi index flow, Jemez River, Galisteo Creek, Rio Puerco, Rio Salado, Cochiti evaporation and Elephant Butte evaporation data. Statistical goodness-of-fit was calculated for each term, and figures illustrating the alternative distributions were made.
2. Comparative information for the previously used distributions and the proposed alternative distributions was collected into a technical memo and submitted for internal review.
3. Work on the Task 4 Compact failure analysis highlighted the need for a clearer understanding of the controls and potential variability of riparian evapotranspiration, particularly during extended drought conditions. Review of available riparian evapotranspiration information was begun.

Upcoming work:

- Once reviewed, the technical memo on the comparison of statistical distributions will be distributed to the Executive Steering Committee members for feedback.
- Study of riparian evapotranspiration and possibly of short-term (1-2 year) shallow groundwater storage will be pursued during November.

Task 2:

No work was done on Task 2 during this period.

Task 3:

No work was done on Task 3 during this period.

SSPA has proposed to the Army Corps of Engineers that Task 3 be omitted from the study in favor of increased focus on regional water planning support (Task 5).



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Task 4:

1. Several methods were explored for conducting a Compact failure analysis using the models and data developed during the MRG2 study.
 - Existing inflow, consumption and compact credit/debit data for the 1950-98 period were reviewed to establish patterns under which compact credits or debits occur.
 - The Risk model was run for several different drought scenarios. Most of these were based on probability distribution functions fit to the 1950-1964 data.
 - Original MRG2 Risk model output (10,000 realizations of single-year conditions) and modified drought scenario output was analyzed to look at both single-year and multi-year debit conditions. Ways to incorporate this type of analysis into a broader failure analysis are being considered.
2. Preliminary results of the failure analysis exploration were written-up as a memo and submitted for internal review.

Task 5:

Initial meetings with the MRG and Sierra-Socorro regional water planning groups have been scheduled for the morning and afternoon of December 4, 2001 in Albuquerque and Socorro respectively.

Task 6:

No meetings or presentations were scheduled during this period.