

PROJECT STUDY PLAN - FY2000-02
(Updated as of 5/26/2000)

Project No.: *(leave blank—Research Office will assign number)*

Project Title: Truckee River Basin Model Development

Co-Principal Investigators: Tom Scott, Steffen Meyer, Terry Fulp, Don Frevert

Abstract: (please also include a sentence indicating partners involved in the project)
A flexible water resources modeling framework will be developed and applied to the Truckee River basin in Nevada. This type of modeling tool has been needed to deal with the rapidly changing water problems of the Truckee River basin for a number of years. The RiverWare modeling framework offers the best opportunity for a satisfactory tool for Truckee River managers and technical experts to use, but additional capabilities are required which are not presently available.

The improved version of RiverWare will be used by Reclamation managers and technical staff to formulate daily, monthly and long term operational strategies which satisfy the rapidly changing legal requirements and multiple purpose water demands of this basin. The Truckee River Water Master's Office will also use results of the program to make administrative decisions. Once developed, these technical capabilities will be useful to other Reclamation offices as well.

In addition to technical staff from the Lahonton Area Office, the Technical Service Center and the Lower Colorado Region, partners will include the US Geological Survey, the Bureau of Indian Affairs, the Truckee River Operating Agreement planning coordinator, the Fish and Wildlife Service and the Pyramid Lake Tribe.

Problem and Study Summary: Reclamation managers, partners and stakeholders in the Truckee River Basin are in need of flexible short term and long term modeling tools to address rapidly evolving water resources issues. Current tools have served the managers well in the past, but modification and updating of these tools to meet rapidly evolving priorities is no longer practical. This effort will build on general purpose modeling capabilities which have been successfully developed to meet the needs of managers on other Reclamation river systems and provide a flexible modeling framework which will meet the needs of Reclamation's Truckee River managers for the present and future.

Goals and Objectives: Additional water accounting capabilities will be developed to allow the RiverWare modeling framework to better simulate water rights, and to facilitate short term operational decisions on exchanges, storage and releases for water managers. In addition, capabilities to facilitate the establishment of long term

operating criteria for municipal, industrial, fish and wildlife, recreational and water quality needs must be developed. Corresponding capabilities to store data in the hydrologic data base will be developed concurrently.

Past Work: The Watershed and River Systems Management Program has developed basic capabilities to assist Reclamation managers in decision making on the water resources of Colorado, San Juan, Yakima and Rio Grande basins over the past three years. These capabilities have been developed on a need driven basis for use by managers in two regional and three area offices in Reclamation. Results and applications continue to be very successful. This new start will continue to enhance those capabilities.

Study Design and Methods: Short term operational capabilities will be developed to allow managers and stakeholders to make decisions for storage, release and exchange of water. Meetings will be held with managers and stakeholders to demonstrate capabilities, show impacts of changing instream flow and reservoir content targets and get comments from them. Capabilities to update forecasts more easily will be developed. Improved accounting capabilities being developed by the Truckee River Operating Agreement planning coordinator will be incorporated. Short term operational runs will be made using a daily time step.

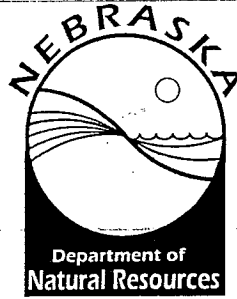
Long term modeling will need to develop the capability to use seasonal inflow forecasts to balance instream flows and reservoir levels. Capabilities to interact with other models including water quality, water quantity below the diversion to Lahonton Reservoir and the Cui-Ui fishery model will be developed in the future. A stochastic data set will be developed in the future for use in long term analyses. The long term model will have the capability to be run monthly or, if desired, daily.

Additional capabilities will be added to the hydrologic data base as necessary to accommodate water quality and meteorological data from USGS and the Truckee Meadows accretion - depletion data base.

Reports/Publications (Deliverables): Two technical papers will be developed for presentation at professional conferences. As appropriate, new capabilities will be presented at the Reclamation River Systems Management Workshop. Quarterly and annual reports will be provided to the Research Director's Office on a regular basis.

E-mail address:

tscott@mp.usbr.gov
spmeyer@do.usbr.gov
dfrevert@do.usbr.gov
tfulp@cadswes.colorado.edu



FAX TRANSMISSION

STATE OF NEBRASKA
Department of Natural Resources
P.O. Box 94676
Lincoln, Nebraska 68509-4676
Phone: (402) 471-2363
Fax: (402) 471-2900

Date: March 13, 2006

Pages:

From: STEVE GAUL

TO: Darrol Eichner

Fax: 302 284-8802

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Darrol-

Attached are some of the contract materials
from the project. Jack Wergin at the Bureau was
not in. Let me know if you have any further
questions.

STEVE