January 27, 2004

EXECUTIVE SUMMARY-DRAFT

GENERAL

The study area for this appraisal report is the Lower Republican River Basin from below Harlan County Dam in south central Nebraska to Clay Center, Kansas just above the upper reaches of Milford Reservoir in north central Kansas. Included in this area is the Bostwick Division located in Nebraska and Kansas, a Reclamation project which includes Lovewell Dam and Reservoir. The Republican River Compact (Compact) provides for allocation and use of the waters in the basin above the Nebraska/Kansas stateline near Hardy, Nebraska to Colorado, Nebraska, and Kansas. The entire water supply originating downstream from Hardy is allocated to Kansas. Projects that divert water above Hardy must comply with provisions of the Republican River Compact. In 1984 Kansas established Minimum Desirable Streamflow (MDS) requirements at two locations in the study area on the Republican River at Concordia and Clay Center. Periodically, streamflows have been below established MDS target levels requiring administration of water rights in these areas. The purpose of this appraisal study is to review existing data and information, qualitatively identify some system improvement needs of the area, identify possible constraints and opportunities to make more efficient use of the water that is available, and identify potential solutions to determine the advisability of proceeding to a feasibility study.

KS V. NE & CO LAWSUIT AND SETTLEMENT NEGOTIATIONS

In May, 1998, the State of Kansas filed a motion with the U.S. Supreme Court (Court) alleging the States of Nebraska and Colorado were violating the Republican River Compact. The case was given to a Special Master and Colorado, Kansas, and Nebraska (States) entered into negotiations for settlement. Representatives of the United States were involved in the negotiations. On May 19, 2003 the Court approved the Final Settlement Stipulation (FSS) entered into by the States. The Supreme Court accepted the Special Master's Final Report on October 20, 2003.

The FSS addressed the need for system improvements in the Republican River Basin. In Section IV.E of the FSS it states: "The States agree to pursue in good faith, and in collaboration with the United States, system improvements in the Basin, including measures to improve the ability to utilize the water supply below Hardy, Nebraska on the main stem." Also in Section V.A its states: "Kansas and Nebraska, in collaboration with the United States agree to take actions to minimize the bypass flows at Superior-Courtland Diversion Dam."

During the negotiations for settlement, a Value Study Report was completed and the Republican River Compact Commissioners recommended the following proposals be studied and analyzed:

1. Courtland Canal Automation, Reshape Canal Prism, and provide for Winter Operation.
2. Increase Lovewell Capacity – 16,000 acre-feet (ac-ft).
3. Increase Lovewell Capacity – 35,000 ac-ft.
4. Off-stream Storage, Kansas Tributaries, Beaver Creek

DEVELOPMENT OF ALTERNATIVES

The Lower Republican River Basin is subject to periodic flooding, periods of excess precipitation, and occasional droughts. The Bostwick Division includes two irrigation districts, the Bostwick Irrigation District in Nebraska with service available for 22,935 acres and Kansas Bostwick Irrigation District No. 2 with service available for 42,500 acres. Due to altered hydrologic conditions within the entire Republican Basin, these districts frequently experience water delivery shortages. The existing project facilities for the Bostwick Division in Nebraska and Kansas are approximately 50 years old. The problems associated with these aging facilities and the changed hydrologic conditions require better utilization of the available water supplies. There are opportunities to improve the efficient use and overall management of the Lower Republican River Basin's water resources in such a manner as to increase the water supplies for Bostwick Division lands and provide additional flexibility for the States to comply with the Compact settlement provisions or supply waters for supplementing flows to meet established MDS flows.

Nine alternatives were formulated using the recommended proposals provided by the Compact Commissioners. An operation study simulating reservoir conditions and streamflow at different locations in the basin was completed for the baseline condition and each alternative. Study results indicate additional water can be made available for storage in Lovewell Reservoir. The storage of this additional water could also be considered in other possible downstream facilities such as the Beaver Creek or Jamestown Wildlife Management Area sites. Because of the operations model limitations, the hydrology analyses modeled the operation of the system for each alternative with the intent to maximize irrigation benefits. Additional hydrological analyses to model system operation which emphasized other potential resource needs, such as MDS, were not performed at this time. As a result, only irrigation benefits have been quantitatively estimated. Allocation of water to provide MDS benefits would reduce the water available to provide irrigation benefits.

RESULTS FROM STUDY

The irrigation benefits accruing from the changes in operations associated with each alternative were estimated and the benefits were then compared to project costs. At this time, the alternatives which involve Lovewell Reservoir enlargements along with automating and winterizing the Courtland Canal appear to be the most viable. The enlargement alternatives could also, potentially, increase the recreational use at Lovewell Reservoir. There are environmental impacts associated with each alternative. If further studies are conducted, the NEPA documents will identify the full scope of the environmental impacts associated with each alternative.

The total estimated implementation cost for each alternative ranged from $1,650,000 to $25,000,000. Benefits do not exceed costs for all of the alternatives. Four of the alternatives have benefits which exceed costs. The benefit-cost ratios for the alternatives ranged from 0.13 to 4.2.

FINDINGS

Reclamation has been involved in the Lower Republican Basin for over 60 years. Federal contracts to provide water service to the two irrigation districts have recently been renewed. The irrigation districts have experienced significant water delivery shortages due to decreasing water supplies and it is anticipated that these shortages will continue to occur. In addition, streamflows will periodically be less than the MDS established flows in Kansas. Presently some water supplies in the Lower Republican River Basin are not being fully utilized. With improvements in the existing systems and possibly with additional storage capability, the system could be managed to alleviate some of the water shortage problems. Based upon the States' continued support for further study and the potential viability of some alternatives, there is justification for further Federal participation in a feasibility study.