Frenchman Valley Appraisal Study
Problems, Objectives, Constraints, Opportunities

Problems

1. **Water demands exceed available water supplies** – Current water demands in the study area exceed the amount of water available. All water needs cannot be fully met.

2. **Declining Streamflows Above and Below Enders Reservoir**
The surface water supply is depleted. Ground water development and conservation measures above Enders Reservoir have resulted in the subsequent depletion of the surface flows of the Frenchman River, which has reduced the amount of the Districts' natural flow water supply diverted to the irrigators in the Frenchman Unit. Both Irrigation Districts are dependent on Enders Reservoir to provide supplemental irrigation water.

   Irrigation Districts - Irrigation Districts may not be able to continue without supplemental storage water from Enders

   Federal Investment - If the irrigation districts cannot continue, repayment to the federal government and O&M of project facilities by the Districts will be jeopardized.

   Groundwater Recharge - Under existing project operations, there is a recharge benefit to the project area. Stopping district operations may harm groundwater users in the project area and possibly those outside the area.

   Recreation - Declining inflows lead to lower reservoir levels, which result in decreased recreation, fish and wildlife benefits at Enders Reservoir. If recreation benefits continue to diminish, the Nebraska Game and Parks Commission has difficulty in justifying investments in recreation facilities.

3. **Compact Compliance** – Nebraska's consumptive use is limited to Nebraska's allocation as specified by the Republican River Compact.

4. **Declining groundwater levels** – withdrawals from the groundwater aquifer exceed groundwater recharge.

5. **Water quality** – One of the identified benefits of the Frenchman Cambridge Division with a full water supply included maintaining water quality. Reduced streamflows and reduced water supplies of the Frenchman Unit have resulted in negative effects on water quality in the area.

Objectives

The water and related land resource problems and opportunities identified in this study will be stated as specific planning objectives and will provide focus for the formulation of alternatives. These planning objectives reflect the problems and opportunities and represent desired positive changes in the study area conditions. The following preliminary planning objectives will be updated during the study:

Maximize the economic and environmental benefits of the water resources in the study area

Maximize economic benefits to the study area of irrigation, including surface and groundwater irrigation

Maximize economic benefits to the study area of recreation, fish and wildlife as well as environmental benefits/values including water quality

Maintain economic benefit of flood control provided by Enders Dam

Minimize environmental impacts

Constraints

Study alternatives will be developed within the operating constraints with the possible exception of specific changes that would perhaps require additional legislation or other actions in order to change the constraints.

Planning constraints, for which alternatives will be developed to address the problems include:

Amount of water physically available – location, timing

Final Settlement Stipulation and Proposed Consent Judgment

Republican River Compact, including meeting sub-basin allocations

State and NRD regulations

Integrated Management Plans for the Upper and Middle Republican Natural Resource Districts

Republican River Water Conservation District regulations in Colorado

Frenchman Unit authorization - The Frenchman Unit of the Frenchman-Cambridge Division was authorized by the Flood Control Act of December 22, 1944 as amended. The project is operated in accordance with the Reclamation Act of 1902, as amended.

Future costs and outstanding obligations of the Frenchman Unit and related facilities must be paid.

Opportunities

Opportunities will be reviewed in order to attempt to balance competing water demands with available water supplies. All reasonable solutions will be considered. Study partners will have opportunities to provide input on all alternatives.

Modeling efforts will be needed for various scenarios. Existing groundwater models will be enhanced/modified in order to determine future water supplies. The groundwater modeling results will/may need to be incorporated into a surface water model or reservoir operations model.

Modeling outputs for various scenarios will be presented to stakeholders to further evaluate and develop alternatives.

There may be opportunities to:

1. Continue existing operations as is with Enders storage and natural flows being utilized for direct surface water diversions for irrigation benefits for the Frenchman Unit.
2. Utilize Enders storage and/or the natural flows to provide groundwater recharge benefits for groundwater irrigators in the area below Enders and/or areas served by the Culbertson and Culbertson Extension canals.
3. Utilize Enders Reservoir for recreation, fish and wildlife benefits.
4. Utilize Enders storage and/or natural flows (including possibly removal of Enders Dam) for the State of Nebraska's compliance with the Republican River Compact.
5. Increase restrictions on groundwater irrigation and provide additional incentive programs in order to reduce consumptive use.
6. Utilize Enders Reservoir to provide flood control benefits.
7. Implement any combination of the above opportunities.