



Next Mtg
i Dell.?

Frenchman Valley Appraisal Study
Modeling Needs Conference Call
October 18, 2006 – 1:30 CST

Call in number: 877-229-1563

Passcode: 101806564

1.))) Introductions
- (((2. Brief Review of Study Goals
3.))) Initial Modeling needs
- (((4. Future modeling needs
5.))) Existing Models Available
- (((6. Modify existing models/create new model
7.))) Who will do the modeling?
- (((8. Estimated timeframe for setting up the model

Frenchman Valley Appraisal Study

Problems, Objectives, Constraints, Opportunities

Problems

1. **Water demands exceed available water supplies** – Current water demands in the study area exceed water availability. 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, reducing both the natural flow and storage water supplies available to the irrigators in the Frenchman Unit.. The Frenchman Valley and H&RW Irrigation Districts are dependent on Enders Reservoir to provide supplemental irrigation water. Declining streamflows affect the following:

what about the recent drop

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

Federal Investment - If the irrigation districts cannot continue, future payments 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 resulting in decreased recreation, fish and wildlife benefits at Enders Reservoir. If recreation benefits continue to diminish, the Nebraska Game and Parks Commission may have difficulty in justifying future 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 to 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.



Purpose

Provide alternative water management scenarios to partners/stakeholders for future planning.

Comment: Note that the purpose section of the appraisal study is in another section of the document. The following statement of purpose would be incorporated into this section.

Formatted: Indent: Left: 0 pt, First line: 0 pt

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:

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

- Optimize economic benefits to the study area of irrigation, including surface and groundwater irrigation
- Optimize economic benefits of Enders Reservoir for recreation, fish and wildlife
- Evaluate environmental benefits/values to the study area of recreation, fish and wildlife, and water quality.
- Evaluate economic benefit of flood control provided by Enders Dam
- Minimize adverse environmental impacts.

Deleted: to the study area of

Deleted: Optimize

Deleted: Enders Reservoir

Inserted: Enders Reservoir

Deleted: the study area

Deleted: Provide alternative water management scenarios to

Deleted: aide

Deleted: partners/stakeholders for

Inserted: for

Deleted: in

Deleted: future planning

Existing Constraints

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

The following existing constraints will be considered in developing alternatives to address the problems:

- Amount of water physically available – location, timing
- Final Settlement Stipulation and Proposed Consent Judgment
- Republican River Compact, including meeting sub-basin allocations (including the right of Colorado to use all the Virgin water supply in the basin in Colorado)
- State water laws and regulations
- Federal Reclamation laws
- * Integrated Management Plans for the Upper and Middle Republican Natural Resource Districts

Deleted: include

Deleted: (including the right of Colorado to use all the Virgin water supply in the basin in Colorado)

Inserted: (including the right of Colorado to use all the Virgin water supply in the basin in Colorado)

Comment: I moved this statement from the Settlement line to the Compact line because I believe Colorado's right is from the Compact, not from the settlement.

Deleted: ¶

Sfc Model - spreadsheet or Bureau's Sfc Model (Mark Phillips)

Baseline Run
Baseflow separation - trends of runoff in recent times

are they thinking the Frenchman Creek @ state line will be dry?

406-247-7743
Mark Phillips

Scope of Work by Jesse + Doug for Modeling Work

YAYAYAY

* Frenchman Unit authorization - The Frenchman Unit of the Frenchman-Cambridge Division was authorized by the Flood Control Act of December 22, 1944 as amended.

Deleted: Republican River Water Conservation District regulations in Colorado

* Frenchman Valley and H&RW Irrigation District water contracts with the United States.

Deleted: The Frenchman Unit Project is operated in accordance with

Deleted: Federal Reclamation laws and regulations. ¶

* Constraints that have more flexibility or latitude regarding potential changes than other listed constraints.

Deleted: service

Deleted: For items indicated by *, may be more likely that changes could be successfully obtained than for items with no *.

Inserted: For items indicated by *, may be more likely that changes could be successfully obtained than for items with no *.

Opportunities

Opportunities will be reviewed in an 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, including the No Action alternative. 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 for the State of Nebraska's compliance with the Republican River Compact.
5. Increase restrictions on groundwater irrigation and/or provide additional incentive programs in order to improve streamflows and/or inflows to Enders Reservoir for irrigation and/or recreation.
6. Increase restrictions on groundwater irrigation and/or provide additional incentive programs in order to reduce consumptive use for Compact compliance.
7. Implement any combination of the above opportunities.

Deleted: inflows to Enders Reservoir

Frenchman Valley Appraisal Study

Problems, Objectives, Constraints, Opportunities

Problems

1. **Water demands exceed available water supplies** – Current water demands in the study area exceed water availability. 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, reducing both the natural flow and storage water supplies available to the irrigators in the Frenchman Unit. The Frenchman Valley and H&RW Irrigation Districts are dependent on Enders Reservoir to provide supplemental irrigation water. Declining streamflows affect the following:

 - Irrigation Districts - Irrigation Districts may not be able to continue without supplemental storage water from Enders
 - Federal Investment - If the irrigation districts cannot continue, future payments 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 resulting in decreased recreation, fish and wildlife benefits at Enders Reservoir. If recreation benefits continue to diminish, the Nebraska Game and Parks Commission may have difficulty in justifying future 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 to 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:

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

- Optimize economic benefits to the study area of irrigation, including surface and groundwater irrigation
- Optimize economic benefits to the study area of recreation, fish and wildlife
- Optimize environmental benefits/values to the study area of recreation, fish and wildlife, and water quality
- Evaluate economic benefit of flood control provided by Enders Dam
- Provide alternative water management scenarios to aide partners/stakeholders in future planning
- Minimize environmental impacts

Existing Constraints

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

The following existing constraints will be considered in developing alternatives 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 water laws 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 Frenchman Unit Project is operated in accordance with Federal Reclamation laws and regulations.
- Frenchman Valley and H&RW Irrigation District water service contracts.

Opportunities

Opportunities will be reviewed in an 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, including the No Action alternative. 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 for the State of Nebraska's compliance with the Republican River Compact.
5. Increase restrictions on groundwater irrigation and/or provide additional incentive programs in order to improve inflows to Enders Reservoir.
6. Increase restrictions on groundwater irrigation and/or provide additional incentive programs in order to reduce consumptive use for Compact compliance.
7. Implement any combination of the above opportunities.