

EY 2009 Activity Plan : Meeker-Driftwood Appraisal Study

Region: Great Plains
Date: July 20, 2006

Nebraska Investigations Program: Republican River Basin
Appraisal Study: New

FY 2009 Total Estimated Cost: \$50,000
Funds Received Prior to FY2009: \$0

Location: The study area is defined as the entire drainage area of the Meeker-Driftwood Unit of the Frenchman-Cambridge Irrigation District located primarily in Dundy and Hitchcock counties which feeds Swanson Reservoir and the Meeker and Driftwood canal systems below it.

Purpose and General Scope: The purpose of the Meeker-Driftwood Appraisal Study is to evaluate alternative program activities, structural measures, and/or incentives that might assist in optimizing the existing facilities, provide increased lake level benefits, and provide ongoing recharge for Swanson Reservoir and the irrigated acres it serves. The study will use existing data to review the present status of the Unit, identify any potential constraints and opportunities to increase effectiveness of managing the water supplies in the watershed including Swanson Reservoir and associated canal systems, and determine the advisability of proceeding to a feasibility study. This Unit has experienced reduced ground and surface water supplies both as a function of historic groundwater utilization and as a consequence of the ongoing drought situation in the basin. Swanson Reservoir has experienced greatly reduced inflows and has been limited to 20-30% of capacity for the last few years. The study will identify whether there is a Federal interest in intensive management of the interrelated groundwater and surface water supplies to meet Republican River Compact requirements as well as other economic and environmental needs. The study will be coordinated with the State, irrigation districts, and natural resource districts.

Problems and Opportunities: The problems affecting the Meeker-Driftwood Unit are:

1. Water supply to Swanson Reservoir has been depleted...the Frenchman-Cambridge Irrigation District is dependent upon this reservoir for stored irrigation water which is delivered through the Meeker and Driftwood canal systems. Intensive groundwater development and drought above Swanson Reservoir have resulted in decreased surface flows of the Republican River which subsequently has reduced the water supply for the irrigation district.
2. Republican River Compact litigation has been filed by the state of Kansas against Nebraska and Colorado stating that Nebraska has failed to protect surface flows in the Republican River by allowing proliferation of groundwater development in the watershed. A Final Settlement Stipulation was filed with the Special Master on December 15, 2002 where it was agreed to resolve the current pending litigation by means of the Stipulation and the Proposed Consent Judgment.

3. Recreational use and opportunities at Swanson Reservoir have declined due to ongoing reduction of surface flows into the system. Swanson Reservoir at full conservation pool covers approximately 4,974 surface acres of water and is surrounded by 1,157 acres of the State Recreation Area. The reservoir has four ramps to provide boating access and a marina. Low reservoir elevations limit use of the boat ramps to various degrees depending upon location. Ramps at the Concession area and in Macklin Bay would not be usable under low water conditions and those at Spring Canyon primarily limited to early summer under the more severe drawdowns. In the State Recreation Area there are nondesignated campsites and pads, a concession area, picnic areas and shelters and fish cleaning stations. Developed areas in the SRA include an overlook area with picnic facilities located north of the dam, Macklin Bay campground and day-use area and Spring Canyon campground and day-use area. There is no designated swimming beach anywhere at the reservoir. Recreational use of the reservoir is greatly influenced by water levels and drawdowns. Annual visitation tends to increase when reservoir water levels remain high granting access near the more developed recreational areas.

Opportunities that are potentially available to the Meeker-Driftwood Unit are:

1. Continue present operations with releases and natural flows being utilized for irrigation in the Meeker-Driftwood Unit.
2. Utilize the reservoir and natural flows to provide groundwater recharge benefits in the Meeker-Driftwood Unit.
3. Increase the recreational use of Swanson Reservoir and associated State Recreation Area. By maintaining a higher minimum pool, recreational use associated with the water should increase and draw additional use in the SRA lands surrounding the reservoir. Previously as part of Water Contract Renewal process at Swanson, the Nebraska Game and Parks Commission had identified Elevation 2735 msl (providing 45,200 acre-feet storage) as the preferred minimum pool.
4. Increase benefits to the State of Nebraska for compliance in the Republican River Compact by making changes in current reservoir operations and use of natural flows.

Relationship to Other Project Purposes: The Meeker-Driftwood Unit Appraisal Study would directly compliment and follow the current and ongoing Frenchman Valley Appraisal Study being undertaken jointly at Enders Reservoir by the Bureau of Reclamation and its partners in Nebraska. This study plan is designed to duplicate many of the objectives, approaches and outputs from the Frenchman Valley Appraisal Study and should allow the partners to make a synergistic evaluation of water management in a major portion of the Upper Republican River basin.

The Bureau of Reclamation is presently involved in a Cooperative Agreement for the Design, Development & Construction of Fish and Wildlife Enhancement Facilities with the Nebraska Game and Parks Commission. This agreement seeks to mitigate drought related impacts on the four southwest reservoirs in the Republican River Basin which

includes Swanson Reservoir. Presently, the Bureau had dedicated funding to help construct a breakwater jetty at Swanson Reservoir which is designed to protect one of the only boat ramps available for use during extremely low reservoir elevations. The proposed appraisal study will augment information needed to further work such as this breakwater jetty and other low water projects aimed at improving reservoir access and reducing bank erosion rates which are exacerbated by low water conditions.

Justification for Federal Involvement: The Republican River Basin like many parts of Nebraska has been undergoing severe drought conditions for the last several years. Drought coupled with extensive ground water development in the basin over the last few decades has resulted in declining inflows and consistently low reservoir water volumes. These conditions are having major environmental, economic and social impacts on the watershed and those who utilize its resources whether for agriculture or for recreation. The limited availability of water in Swanson Reservoir either for use by irrigators or for outdoor recreation is raising questions on what is the most beneficial use of surface water in this drainage. An evaluation of alternative uses and allocations of the limited surface waters will allow for more effective planning on the parts of both irrigators and natural resource agencies relative to how to expend resources and funds in the basin.

Cost-Sharing: There are no cost-sharing requirements for an Appraisal Study. The cooperating agencies including the Nebraska Game and Parks Commission will be providing in-kind technical support and services as needed. Although there are no cost requirements for such a study, some State of Nebraska funds may be available to assist in the study at Swanson Reservoir.