

RECLAMATION

Managing Water in the West

Plan of Study Supplemental Feed Route for Potholes Reservoir

Columbia Basin Project



**U.S. Department of the Interior
Bureau of Reclamation**

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Introduction

The Bureau of Reclamation, in cooperation with the State of Washington (State) and the Columbia Basin Project Irrigation Districts (Districts), proposes to undertake a study of potential supplemental feed routes to supply water to Potholes Reservoir, a feature of the Columbia Basin Project (Project), in central Washington State.

This Plan of Study (POS) describes the process Reclamation will use to determine the preferred feed route and the impacts of the various routes. The POS should be considered a work in progress which will be adjusted, as necessary, throughout the duration of the study to respond to new information and issues that arise.

Background

The Project was authorized for the irrigation of 1,029,000 acres. Currently, about 671,000 acres (557,530 acres of platted farm units, 73,227 acres of water service contracts, 40,323 acres of Quincy sub-groundwater license) are served by the Project; most development occurred in the 1950s and 1960s with acreage added sporadically through the mid 1980's.

In the late 1970's Reclamation determined that a feed route to Potholes Reservoir was necessary to ensure a reliable supply of water for the South Columbia Basin Irrigation District (Reclamation 1980). The Project was designed so that return flows from irrigation on the northern half of the Project would be captured in Potholes Reservoir and used to supply land in the south half of the Project. As outlined in House Document 172, the Project is estimated to take 71 years to complete and be developed in phases. Irrigation development in the north half is not yet capable of providing the return flows needed to provide a full supply of water for the south end of the Project.

To correct this problem, a feed route was developed to move water from Banks Lake to Potholes Reservoir. The feed route transports water through the Main Canal to the Bifurcation, then south through the East Low Canal to Rocky Coulee Wasteway where the feed is discharged into Upper Crab Creek near the north end of Moses Lake. From this point, the water moves through Moses Lake and into Potholes Reservoir at the Moses Lake Outlet Structure. Feeding can be done early and late in the irrigation season when demand for irrigation water is low and the East Low Canal is operating at less than full capacity. At these times, the "unused" capacity is used to carry feed water to Potholes Reservoir. This route solved the immediate problem in 1980 and is still the primary route however; its ability to meet the need has diminished over time.

Improvements in irrigation efficiency in the northern half of the Project have led to lower returns and a commensurate increased need for feed. In addition, demand has changed. Block 26 was added to the Potholes system in 1984 and ECBID Supplement No. 1 to the Master Water Service Contract allowed for additional use out of the East Low Canal. As a result, the demand on Potholes is greater and the amount of “unused” capacity in the East Low Canal has declined. These factors have led to the need for a supplemental feed route.

Purpose and Scope

Reclamation has a responsibility to deliver water to the South Columbia Basin Irrigation District under Article 13(a) of the “Amendatory, Supplemental and Replacement Repayment Contract Between the United States of America and the South Columbia Basin Irrigation District” which states, “The water supply available for irrigation of the lands entitled to receive water from each of the canals systems shall be delivered by the United States at the Bifurcation Works of the Main Canal in the case of the West and East Low Canals, and at the outlet works of O’Sullivan Dam in the case of the Potholes Canal.” The purpose of this study is to identify a supplemental feed route to increase the reliability of transporting water from Banks Lake to Potholes Reservoir. Emphasis will be placed on options that utilize existing infrastructure and/or natural topography to convey the feed with the understanding that some additional facilities may need to be constructed. The scope of the study will be limited to the physical area of the Project from Billy Clapp Reservoir to Moses Lake.

Project and Study Authorities

This study is conducted under the authority of the Columbia Basin Project Act of 1943 and the Reclamation Act of 1939. House Document 172 (H. Doc. No. 172, 79th Cong., 1st Sess., *Joint Report on Allocation & Repayment of the Costs of the Columbia Basin Project*, Reclamation Report of Oct. 30, 1944, approved by the Secretary on Jan. 31, 1945) submitted by the Secretary to the President and Congress in 1945, describes phased project development over a 71-year period.

Columbia River Partnership

A Memorandum of Understanding Concerning the State of Washington’s Columbia River Initiative was entered into between the State of Washington (State); the Pacific Northwest Region of the U.S. Bureau of Reclamation; and the South Columbia Basin Irrigation District, the East Columbia Basin Irrigation District, and the Quincy-Columbia Basin Irrigation District on December 17, 2004. The parties agreed to cooperate in numerous studies, one of which was the Potholes Assessment, a part of which is the alternative feed route study.

Listed Endangered or Threatened Species

It is anticipated that the feed route will not have adverse impacts to listed species.

Study Team

Management Team

The management team will be responsible for coordinating all activities, setting up agency/partner contacts, coordinating technical and support teams' activities, and serving as the communications point-of-contact for the Study.

Technical Teams

The technical teams will develop alternatives, cost estimates, prepare appraisal reports; determine whether an alternative is economically justified and financially feasible; develop a communications process, and prepare reports. The teams will consist of:

Hydrological Team

This team will develop water related data to determine quantity of water needed to be transported through each route and what the design needs are of each route. Members will include an Agricultural/Hydrological Engineer and an Irrigation System Operator.

Engineering Team

The engineering team will develop conceptual designs for facilities needed by each alternative and will prepare estimates of the costs for the facilities identified.

Environmental Team

The environmental team will identify and quantify the impacts of the alternatives for the feed route and prepare an Environmental Assessment on the proposals as well as participating in the public involvement process. The Environmental team will include a Biologist from the USFWS.

Land Resources Team

This team will identify land rights needed to effectuate each proposal along with detailed estimates of the costs of acquiring those rights and identify the impacts of each alternative on terrestrial and aquatic resources along the various routes.

Economics Team

The economics team will evaluate cost vs. benefits of each alternative.

Public Communications Team

The Public Communications Team will be responsible for developing and implementing a public communications process that provides opportunities for interest groups to participate in the Study in a collaborative manner. The communications plan will require participation by State and will be coordinated with the communication plan for the Odessa Sub-area Special Study to ensure that the public understands the differences between the studies.

Report Production and GIS

These functions will support other teams in developing and completing technical and environmental reports.

Study Plan

Management of the Study is the lead responsibility of the Ephrata Field Office of the Upper Columbia Area Office (UCAO), in the Pacific Northwest Region of Reclamation. The ultimate study goal is to identify a preferred plan that is economically justified and financially feasible and ensure that environmental and regulatory compliance requirements are met.

The study will identify the benefits/impacts of several different routes to feed water into Potholes. The NEPA process will be used to examine impacts of the study alternatives and to ensure public input.

Feed Routes

The feed routes, as currently identified, consist of:

- **Upper Crab Creek from Pinto Dam to Moses Lake**
- **The West Canal using the W20 Lateral to Moses Lake**
- **The West Canal to Potholes using the Frenchman Hills Wasteway.**

Specifically the study will look at:

- Hydrology of the two West Canal routes
- Identifying the operational parameters of the routes
- Engineering of facilities needed for each route including rehabilitation of the Pinto Dam 4X4 gate, the needs for a channel from Pinto Dam to Crab Creek, updating earlier data on the W20 Lateral route, possible changes to existing structures on the Frenchman Hills Wasteway and associated cost
- Land needs for the routes and their costs

- Identification of the benefits/impacts to the three routes and associated costs
- Identification of enhancements available for resources along each route and the associated costs

Timeframe

The study team will be assembled in March 2006 to outline the study and begin gathering data. It is anticipated that the study will be completed by October 2007.

Estimated Costs

The cost estimate for this study is:

| Job Category | Total Cost |
|--------------------|------------|
| Study Management | 30000 |
| Hydrology | 35000 |
| Engineering Study | 500000 |
| GIS and Land | 100000 |
| EA | 300000 |
| Tech Writer | 30000 |
| Economics | 17500 |
| Public Involvement | 50000 |
| Fish and Wildlife | 177000 |
| Totals | 1239500 |

Estimates are preliminary and will be refined during the study as issues and options become more defined. No costs are shown for land acquisition, construction or contracting design expenses.

Tables of Potential Interested Parties and Applicable Laws

Congressional Delegation

- Congressman Doc Hastings
- Congresswoman Cathy McMorris
- Senator Maria Cantwell
- Senator Patty Murray

Federal Agencies

- U.S. Fish and Wildlife Service
- National Marine Fisheries Service
- Bureau of Land Management

State Agencies

- Washington Department of Ecology
- Washington Department of Fish and Wildlife
- Washington Department of Agriculture
- Washington Governor's Staff

Local Government/Agencies

- State Legislators
- County Commissioners

Indian Tribes

- Colville Confederated Tribes
- Yakama Nation

Irrigation Districts

- East Columbia Basin Irrigation District
- Quincy-Columbia Basin Irrigation District
- South Columbia Basin Irrigation District

Non-governmental Organizations

- Columbia Basin Development League
- Environmental Organizations (Washington Environmental Council, local chapters of Trout Unlimited, Audubon Society)
- Sportsman Organizations

Regulatory Compliance That May be Required

Environmental

- National Environmental Policy Act
- Endangered Species Act

- Bald Eagle and Golden Eagle Protection Act
- Fish and Wildlife Coordination Act
- Migratory Bird Treaty Act
- Federal Noxious Weed Control Act

Cultural Resources

- Archaeological Resource Protection Act of 1979
- Archaeological and Historical Preservation Act of 1974
- National Historic Preservation Act of 1966 (Sec. 106)
- Antiquities Act of 1906
- Executive Order 11593 - Protection and Enhancement of the Cultural Environment
- American Indian Religious Freedom Act
- Executive Order 13007 - Indian Sacred Sites

Water and Related Land Resources

- Clean Water Act
- Executive Order 11988 - Floodplain Management
- Land and Water Conservation Fund Act of 1965
- Rivers and Harbors Act
- Executive Order 11990 - Protection of Wetlands, 1977

Air Quality

- Clean Air Act