

YAKIMA PHASE II SCREENS - CONSTRUCTION

9107500

SHORT DESCRIPTION:

Install new fish screens at all significant diversions in the Yakima River Basin to keep juvenile salmon and steelhead from being diverted and lost in the canals during outmigration. Improve adult upstream passage at selected sites.

SPONSOR/CONTRACTOR: USBOR

US Bureau of Reclamation

R. Dennis Hudson, Activity Manager

1150 N. Curtis Rd., Boise, ID 83706-1234

208/378-5250

rhudson@pn.usbr.gov

SUB-CONTRACTORS:

Washington Department of Fish and Wildlife will receive funding under project # 9105700. Construction contracts will be awarded by competitive bid process to various contractors.

GOALS

GENERAL:

Supports a healthy Columbia basin, Increases run sizes or populations

ANADROMOUS FISH:

Habitat or tributary passage

NPPC PROGRAM MEASURE:

7.11B.1

RELATION TO MEASURE:

The project is directly implementing the measure by planning and building fish passage facilities at all Yakima River diversions.

TARGET STOCK

All Yakima River stocks

LIFE STAGE

Juvenile

MGMT CODE (see below)

W

AFFECTED STOCK

Resident fish stocks

BENEFIT OR DETRIMENT

Beneficial

BACKGROUND

Stream name:

Yakima River; Naches River

Subbasin:

Yakima

HISTORY:

Planning Report completed in FY1990. Preliminary & final design initiated in FY1990-91. First construction initiated in FY1992. As of FY1997, construction of screens, consolidation of ditches, elimination of diversions or other corrective measures are complete on about 1/2 (30+) of the Phase II diversions. About 1/4 of the sites have been eliminated due to non-use or have been screened by the Washington Department of Fish and Wildlife using small prefabricated modular screen units. Data collection, preliminary & final design is underway on the remaining 15 sites. Uncertainties in the consolidation process continue to delay construction of some new screens until final consolidation plans are made and funding is secured. Water rights adjudication will delay construction at some sites because of uncertainties in selecting appropriate design flows. Difficulties in securing rights-of-way at some sites (particularly sites on the YIN reservation) has delayed and may continue to delay construction at some sites.

BIOLOGICAL RESULTS ACHIEVED:

Testing of completed screens using live fish indicates excellent performance that results in no significant losses or injury to juveniles. Delays in downstream migration are significantly reduced as juveniles are bypassed quickly through the screening facilities back to the river.

PROJECT REPORTS AND PAPERS:

Conceptual plans are documented with Predesign Memoranda that serve as the basis for final design. Technical Work Group meet

ing discussions and decisions are documented in the minutes of the meetings. Biological evaluation and testing of completed screens has been documented at all Phase I sites and will continue at selected Phase II sites.

ADAPTIVE MANAGEMENT IMPLICATIONS:

Knowledge gained from observation, operation, and testing of completed facilities is used to refine and change design criteria and design details of new facilities.

PURPOSE AND METHODS

SPECIFIC MEASUREABLE OBJECTIVES:

All Phase II diversion sites will be screened to meet current agency design criteria for effective fish protection and fish passage by the year 2001. The target objectives of adequate juvenile fish passage are designed to meet three criteria which will: (1) reduce delay to a degree approaching zero; (2) reduce the possibility of injury to a degree approaching zero; and (3) allow fish to pass with little additional expenditure of energy.

CRITICAL UNCERTAINTIES:

NA

BIOLOGICAL NEED:

Old screens do not meet current agency criteria for effective fish passage. As a result, many salmon and steelhead fry and smolts are injured at these facilities or are entrained into the irrigation canals and lost. These losses have been documented in studies of selected Naches and Yakima River screens and have been observed at various sites in the basin.

HYPOTHESIS TO BE TESTED:

NA

ALTERNATIVE APPROACHES:

NA

JUSTIFICATION FOR PLANNING:

NA

PLANNED ACTIVITIES

SCHEDULE:

Planning Phase **Start** 1990 **End** 2000 **Subcontractor** No

Task Major tasks in FY1997 include initiation and continuation of predesign work at about 15 screen sites and preparation of final designs and specifications at about 5 screen sites. Major tasks in FY1998 include completion of predesign work at about 8 screen sites and preparation of final designs and specifications at about 5 screen sites. Major tasks in FY1999 include completion of predesign work at about 5 screen sites and preparation of final designs and specifications at about 5 screen sites. Major tasks in FY2000 include completion of predesign work at about 5 screen sites and preparation of final designs and specifications at about 5 screen sites.

Implementation Phase **Start** 1992 **End** 2001 **Subcontractor** No

Task Major tasks in FY1997 include completion of construction at 8 sites and initiation of construction at 5 additional sites. Major tasks in FY1998 include completion of construction at 5 sites and initiation of construction at 5 additional sites. Major tasks in FY1999 include completion of construction at 5 sites and initiation of modifications at 5 additional sites. Major tasks in FY2000 include completion of construction at 5 sites and initiation of modifications at selected sites.

O&M Phase **Start** 1992 **End** Ongoing **Subcontractor** No

Task Operate and maintain fish screens

PROJECT COMPLETION DATE:

2001

CONSTRAINTS OR FACTORS THAT MAY CAUSE SCHEDULE OR BUDGET CHANGES:

Uncertainties in the consolidation process continue to delay construction of some new screens until final consolidation plans are made and funding is secured . Water rights adjudication will delay construction at some sights because of uncertainties in selecting appropriate design flows. Difficulties in securing rights-of-way at some sites (particularly sites on the YIN reservation) has delayed and may continue to delay construction at some sites.

OUTCOMES, MONITORING AND EVALUATION

SUMMARY OF EXPECTED OUTCOMES

Expected performance of target population or quality change in land area affected:

Precise numerical estimates of fishery improvements attributable to the screening program are difficult to assess because of the lack of historical data and the many variables involved. The potential increases in returning adults with adequate fish passage and protective facilities installed at Phase I and II sites and with adequate instream flows, improved habitat conditions, and a hatchery is estimated at about 85,000 fish, of which half may escape and return to spawn.

Physical products:

About 60 Phase II diversions will be equipped with state of the art fish screens that meet current agency criteria.

Information products:

Predesign Memoranda summarize existing site conditions and outline proposed improvements and alternatives.

MONITORING APPROACH

Provisions to monitor population status or habitat quality:

Juvenile evaluation facilities are operational at Roza and Prosser diversion dams. All Phase I and Phase II fish screens can be retrofitted to monitor juveniles as needed. Adults can be collected and evaluated at Roza, Prosser , and Horn Rapids diversion dams and can be monitored at Naches-Cowiche diversion dam.

EVALUATION

Increasing public awareness of F&W activities:

Some of the Phase II fish screens are highly visible and are located in areas that are used heavily by the public. For example, Congdon screen is located inside the popular Yakima County Eschbach Park. At this particular site, we provided an interpretive sign and viewing area at the new screen site. The old screens were removed and set up at a historical museum in Union Gap.

RELATIONSHIPS

RELATED BPA PROJECT

RELATIONSHIP

9105700 NPPC#7.11B.1 Yakima Phase II screen fabrication

Provides fabrication and installation of screens and other mechanical and metalwork items at Phase II screen sites

9200900 NPPC# 7.11B.1 O&M on completed Phase II screens

Provides on-going operation and maintenance activites at completed screens

9503300 NPPC# 7.4K.1 O&M on completed Phase II screens

Provides on-going operation and maintenance activites at completed screens

RELATED NON-BPA PROJECT

Yakima-Tieton Fishscreen / USBOR

RELATIONSHIP

This Phase II screen is a BOR facility

OPPORTUNITIES FOR COOPERATION:

Consolidation proposals at several diversions offer opportunities for significant fish screen cost savings.

COSTS AND FTE

1997 Planned: \$1,500,000

FUTURE FUNDING NEEDS:

<u>FY</u>	<u>\$ NEED</u>	<u>% PLAN</u>	<u>% IMPLEMENT</u>	<u>% O AND M</u>
1998	\$1,500,000	25%	75%	
1999	\$1,500,000	25%	75%	
2000	\$1,000,000	25%	75%	
2001	\$1,000,000	25%	75%	

PAST OBLIGATIONS (incl. 1997 if done):

<u>FY</u>	<u>OBLIGATED</u>
1991	\$1,000,000
1992	\$1,349,000
1993	\$1,546,200
1994	\$2,026,000
1995	\$1,655,000
1996	\$1,547,000
1997	\$1,500,000

TOTAL: \$10,623,200

Note: Data are past obligations, or amounts committed by year, not amounts billed. Does not include data for related projects.

OTHER NON-FINANCIAL SUPPORTERS:

NMFS, USFWS, WDFW, CBFWA, CRITFC, Yakama Indian Nation, Yakima River Basin Association of Irrigation Districts

LONGER TERM COSTS:

Ongoing annual operation and maintenance costs are split between project # 9503300 and project # 9200900.

1997 OVERHEAD PERCENT: Overhead markup (applied to direct labor + benefits) is 37%.

HOW DOES PERCENTAGE APPLY TO DIRECT COSTS:

Overhead percentage applies only to about 1/3 of project direct costs.

CONTRACTOR FTE: 9 FTEs
