

11.0 Financial Analysis

11.1 Introduction

The purpose of this analysis is to describe the potential funding options for the projects being evaluated in the *Lower Snake River Juvenile Salmon Migration Feasibility Study*. This analysis is designed to provide information for policy makers regarding the availability of funding for the proposed alternatives within the rubric established by the *Principles and Guidelines for Water and Related Land Resources Implementation Studies* (WRC, 1983). The following discussion is divided into 3 sections that address the following issues: funding requirements, potential sources of funding, and financial impacts.

11.2 Funding Requirements

The potential funding request could include three items:

- Repayment of outstanding debt,
- Implementation costs to construct fish-related improvements, and,
- Mitigation and compensation costs.

11.2.1 Repayment of Outstanding Debt

The Bonneville Power Administration (BPA) is obligated by law to repay to the Federal Treasury all costs allocated to hydropower from the federal dams. The capitalized costs of the project (e.g., initial construction costs, replacement costs, etc.) are repaid by BPA over a 50 year period at designated interest rates. The current debt associated with the Lower Snake River lock and dams is estimated as follows:

- Amounts already included in existing rate structure:
 - approximately \$479 million for construction of the dams (e.g., as of the end of 1998)
 - additional outstanding debt for the Lower Snake River fish hatcheries and fish mitigation funds of approximately \$271 million as of the end of 1998
- Amounts that will be included in the rate structure, upon completion:
 - construction work in progress account that will transfer to BPA as new additional debt (e.g., approximately one-half of the \$271 million in construction work in progress is occurring in the Lower Snake River projects).

As indicated, these costs are (or will be) built into the existing BPA power rates. If the Snake River lock and dams are breached, it is possible that Congress, through authorizing legislation, will reduce some or all of this long-term debt or BPA ratepayers may be required to continue repayment.

11.2.2 Implementation Costs

Table 11-1 presents a summary of the costs associated with fish-related facility improvements. These implementation costs would also require payment or, alternatively, could be covered by congressional appropriation.

Table 11-1. Construction & Acquisition Costs by Study Alternative (\$1,000)

| Alternative | Detailed Description | Starting Year | Construction & Acquisition Costs |
|--|---|---------------|----------------------------------|
| 1 - Existing Conditions | Adaptive Management Strategy | 2005 | \$97,990 |
| 2 - Maximum Transport of Juvenile Salmon | Maximum Transport | 2005 | \$74,693 |
| 3 - Major System Improvements | SBC with Maximum Transport (low cost) | 2006 | \$167,972 |
| 4 - Dam Breaching | Channel Bypass or Natural River Alternative | 2007 | \$809,530 |

1/ These costs have been adjusted to base year 2005 using the 6.875 percent discount rate.

SBC – Surface Bypass Collectors

Source: U.S. Army Corps of Engineers, Walla Walla District

The capital cost to retain the dams ranges from \$74.7 million (alternative 2) to \$168.0 million to undertake major improvements (alternative 3). The dam breaching alternative 4 is expected to cost approximately \$809.5 million for deconstruction of the dams, construction of a channeled river and related capital costs.

11.2.3 Mitigation and Compensation Costs

The dam breaching alternative (A-3) would also engender other costs to replace services currently provided under existing conditions, including:

- additional annual power costs of \$241.8 million per year to develop alternative sources of power (e.g., includes the cost of constructing and operating combined cycle gas turbines less the cost of operating the existing system),
- additional transportation costs of \$24.0 million per year to move commodities by rail and/or to truck to more distant barge terminals in the John Day pool,
- additional costs to supply water to irrigators and municipal/industrial users of \$15.4 million per year, and,
- additional (but non-quantified) costs to retrain workers, and mitigate or compensate public and private entities for such losses as idle barges and terminals, additional road damage, and other impacts.

There is no requirement for the federal government to provide compensation for these costs but a political solution may be developed to provide mitigation and/or compensation.

11.3 Potential Sources of Funding

Under the dam retention strategies, implementation costs would be covered by the existing cost allocation rules. However, if dam breaching were the selected alternative, there are three potential sources for funding:

- Continue with the existing cost allocation rules (under Corps fish mitigation principles),
- Seek a local sponsor who would share the costs with the federal government for dam breaching, (under Corps fish recovery principles), and/or,
- Congress authorizes the Treasury to pay all (or a part) of the cost to breach.

These issues are addressed in the following section.

11.3.1 Existing Cost Allocation Basis (Fish Mitigation)

As documented in the cost allocation analysis (Section 9.0), the repayment cost of existing projects is mainly allocated to power. Under existing cost allocation rules, power is currently required to pay for approximately 91% of the costs associated with the projects (e.g., averaged across all four Lower Snake River projects). BPA repays the Treasury for these costs. Navigation is responsible for the remaining 9% of costs, which is considered a federal cost. Table 11-2 shows the joint-use percentages for construction costs by project purposes.

Table 11-2. Joint-Use Percentages for Construction Costs by Project Purposes

| Projects | % Allocated to Power | % Allocated to Navigation |
|---|----------------------|---------------------------|
| Lower Monumental | 94.1 | 5.9 |
| Ice Harbor | 78.6 | 21.4 |
| Little Goose | 93.3 | 6.7 |
| Lower Granite | 98.4 | 1.6 |
| Simple average across all four projects | 91.1 | 8.9 |

Source: Cost Allocation Report

Existing cost allocation rules would require that approximately 91% of the implementation costs are covered in BPA rates, with the remaining 9% covered by the federal government.

11.3.2 Cost Sharing with a Local Sponsor (Fish Recovery)

The typical process of developing a finance plan for a major Corps construction program is to develop a cost sharing agreement between a local sponsor and the federal government.

In accordance with the Water Resources Development Act of 1986 (PL 99-662), costs for studies and projects are shared between the Federal Government and the local sponsor. A sponsor is defined as:

“A sponsor can be a state or any other political subpart of a stem or group of states; an Indian tribe; or a port authority; which has the legal and financial

authority and capability to provide the cash and real estate requirements needed for a project. A sponsor can also be an interstate agency, established under two or more states with the consent of Congress under Section 15 of Article 1 of the Constitution. Section 221 of the 1970 Flood Control Act defines a local sponsor for a Corps water resources project as a non-Federal interest that is "a legally constituted public body with full authority and capability to perform the terms of its agreements and to pay damages if necessary, in the event of failure to perform."

In this study, there is no local sponsor. This feasibility report is furnished in response to the NMFS Biological Opinion for the *Reinitiation of Consultation on 1994-1998 Operation of the Federal Columbia River Power System and Juvenile Transportation Program in 1995 and Future Years*. Therefore, the source of funds to implement a drawdown is uncertain.

11.3.3 Congressional Appropriation

Implementation of the dam breaching alternative could be funded entirely (or partially) by direct congressional appropriation. As described in the Technical Report on Hydropower Costs and Benefits (DREW HIT, 1999; Section 7.1., Page 104):

"Congress will ultimately answer the repayment question in the legislation that would authorize the implementation of the selected alternative. The Congressional authorization could contain directive language concerning the allocation of project construction costs. For example, Congress could direct that removal of the Snake River Dams is of national interest and the taxpayers' responsibility, and BPA would not have to repay any of the construction costs."

It is unknown at the present time whether congressional authorization would be forthcoming for all or part of the outstanding debt, implementation costs and/or mitigation/compensation costs.

11.4 Financial Impacts

The following section addresses BPA's authorization and ability to pay for the dam breaching costs as well as the potential impact of rate increases on BPA ratepayers.

11.4.1 BPA Funding

BPA is authorized to pay for fish and wildlife mitigation projects under the following legislation:

Under provisions of the Northwest Power Planning and Conservation Act [PL 96-501, Section 4(h)(2)(A)], BPA is required "*to use its funding authorities to protect, mitigate, and enhance fish and wildlife to the extent such resources are affected by the hydroelectric projects of the Columbia River and its tributaries*".

In addition, "...*BPA expenditures shall be in addition to, not in lieu of, other expenditures authorized to be made by other entities under other agreements or provisions of the law. Other fisheries efforts outside this Act, for example, are expected to continue and to be funded separately.*"

Under provisions of the Northwest Power Planning and Conservation Act (PL 96-501), "*the Bonneville Power Administration is self-financed. Pursuant to the Federal Columbia River Transmission Act, BPA must meet all its costs, including*

the cost of the Federal investment in the Columbia River system, from its power sale revenues. General tax revenues are not used to support BPA programs."

However, there are limitations on how much of the additional fish and wildlife mitigation costs BPA can accommodate. Five Federal agencies involved in salmon and other fish and wildlife restoration activities in the Columbia River Basin established a Memorandum of Agreement (MOA) concerning BPA fish and wildlife costs for Fiscal Years 1996 through 2001. The MOA followed an agreement made between NMFS, members of the Pacific Northwest congressional delegation, and the Clinton Administration, to establish an upper limit on BPA costs for Columbia Basin fish and wildlife, at an average of \$435 million per year through the 6-year period. This MOA was undertaken due to concern over BPA's financial position and its ability to fund future fish and wildlife programs in a deregulated power market.

The Technical Report on Hydropower Costs and Benefits further describes the limits of BPA's abilities to raise rates in the presence of increasing costs:

"In a restructured, competitive, wholesale power market, BPA can no longer automatically recover higher costs by raising its rates. This is because the utilities that buy power from BPA have alternative supplies of electricity available at prices set by the wholesale electricity market. If BPA's prices are below the market price, it may be able to recover increased costs until its prices reach the market price. However, consumers of BPA power are no longer required to bear the financial impacts of increased hydroelectric costs if less expensive electricity is available in the market. In this case, the financial impacts will be more difficult to determine. Initially, the cost would appear as BPA losses, but those losses would have to be covered by someone such as taxpayers or users of the still-regulated transmission system." (DREW HIT, 1999; Section 7.1, page 104)

The Northwest Power Planning Council recently evaluated BPA's potential financial conditions under a wide range of future electricity market conditions and possible fish and wildlife mitigation scenarios, including all of the alternatives being considered in this study. The analysis concluded:

"Under a wide range of conditions, Bonneville demonstrates significant value to customers even if called upon to bear relatively large additional fish and wildlife mitigation costs. Only under combinations of persistent low market conditions and increased fish and wildlife costs and/or operational impacts does Bonneville experience significant negative net revenues for extended periods. Those results are extremely sensitive to small changes in Bonneville's costs or market prices. This underscores the importance of Bonneville's cost management efforts. Financial risk management mechanisms like reserves can mitigate the negative net revenues in some conditions. In other conditions, however, the mitigating effect of the assumed reserves and/or further cost reductions is insufficient. In these cases, Bonneville would need larger reserves; some sort of contingent cost recovery mechanism or may have to look to other [sources] of funding. It is also possible that the schedules for implementation of the various fish and wildlife mitigation scenarios used in this analysis will not be met. The biological and economic effects of changes in the schedule for implementation of fish and wildlife measures should be evaluated." (Source: Analysis of the Bonneville Power Administration's Potential Future Costs and Revenues, June 5, 1998, Executive Summary, Page 9)

11.4.2 Potential Impact on Rate Payers

The Technical Report on Hydropower Costs and Benefits prepared an estimate of the impact of dam breaching on BPA ratepayers. It should be emphasized that these estimates are intended for illustrative purposes only and are based on several qualifying assumptions. The estimates of potential rate increases from the additional costs allocated to hydropower (e.g., this excludes the portion of implementation costs allocated to navigation as well as any mitigation/compensation costs) are summarized below:

- “the average PNW household monthly electricity bill could increase between \$1.20 and \$6.50 depending on which set of cost distribution and economic forecast assumptions is applied,
- the monthly bill impact for the average PNW commercial establishment could increase between \$6.70 and \$36.30, and,
- the major impact would be to the industrial sector if the assumed cost distributions occur. For example, the average industrial customer (excluding the aluminum companies and other Direct Service Industries) could see monthly electricity bills increase between \$302 and \$1,645. The aluminum companies in the PNW are extremely large consumers of electricity, and this is reflected in the average monthly consumption of 160,600,000 kWh. Clearly, any increase in the electricity rate will have a significant impact on the monthly power bills. Depending on the selection of cost distribution and economic condition impacts, the average monthly power bill for aluminum companies could increase between \$172,600 and \$940,400.” (Source: DREW HIT, 1999; Section 7.4, pages 107-113).