1. INTRODUCTION

1.1 SCOPE

The purpose of this Cost Allocation Chapter is to examine a range of possible cost allocation approaches that could be used to distribute costs of the proposed alternatives. The primary purpose of allocating project costs is to identify repayment responsibility with respect to cost recovery, cost sharing, or both (as may be required). This chapter does not recommend a preferred approach at this time. However the cost implications of the approaches are shown using the preliminary construction costs and the unrecovered Federal investment.

1.2 PURPOSE

From a Federal perspective, cost allocations are made to derive an equitable distribution of project costs among authorized project purposes, or those proposed for authorization. Laws and regulations requiring reimbursement or cost-sharing generally specify recovery of costs incurred for the service or function. Cost allocation is, therefore, required for most Federal multipurpose projects having reimbursable purposes.

The cost allocation is an essential part of the multipurpose planning process where cost-sharing will be required. It provides information needed to determine the magnitude and share of estimated project costs that are reimbursable. This information is essential to the tests of financial feasibility and plan acceptability. During subsequent planning and construction, it provides the information required for allocating actual expenditures and insures that cost accounts are maintained consistent with the plan formulation and allocation principles.

The authorizing document for the Lower Snake River projects, PL 79-14, designated the Federal Power Commission (now FERC) as the agency responsible for defining the allocation of costs to the authorized purposes of navigation and hydropower. The Final Cost Allocations were completed by FERC in 1965 for Ice Harbor, and 1984 for Lower Monumental, Little Goose, and Lower Granite. FERC completed the allocation studies based on data and preliminary allocations done by the Corps of Engineers. Any new cost allocations for these projects will be coordinated with FERC.

It has been Corps policy not to request reallocation of storage and/or project costs unless a major reformulation of a project is required. Such a reformulation might include the addition of a new purpose, deletion of a purpose, a major change in apportionment of storage among purposes already authorized, or a major change in project scope. Any of these actions would require Congressional authorization. Since some of the actions that may be recommended in this Feasibility Report (FR) would meet this criteria, authorization by Congress will be required. The Congressional authorization could contain directive language concerning the allocation of costs. In the absence of such directive language, the Corps of Engineers' administratively developed procedures will be utilized to allocate the project costs.

2. ALLOCATING COSTS

2.1 ASSUMPTIONS

Both Draw Down and Flow Augmentation alternatives could possibly affect the existing cost allocations. Draw Down because of the possible deletion of an authorized purpose (navigation and hydropower), and Flow Augmentation because of the possible major change in apportionment of storage. Implementation of the Draw Down alternative would likely result in new cost allocations being considered for all the projects being proposed for breaching (Lower Granite, Little Goose, Lower Monumental, and Ice Harbor). A change in the existing allocations would not only affect how implementation costs are allocated, but also the existing debt on the projects. Because the economic benefits at these multi-purpose projects would be significantly

altered between purposes, they can be considered for new cost allocations. The following table displays which alternatives are likely to require new cost allocations.

Table 1. Alternatives Requiring New Cost Allocations

Alternatives	New Cost Allocations Necessary
A-1 Existing Condition – Base Case	No
A-2a Maximum Transportation	No
A-2b w/ Maximized Transport (High Cost)	No
A-2c w/ Maximized Transport (Low Cost)	No
A-2d Adaptive Migration	No
A-3 Dam Breaching	Yes
A-6a W/ In-River Migration & Additional MAF	Yes
A-6b W/ In-River Migration & Zero Augmentation	No
A-6d W/ In River Migration & 427 AF	No

Approaches to cost allocation will be quite different depending on the alternative recommended. As long as the measures do not significantly effect the current authorized purposes, the costs would be allocated to mitigation according to the existing joint-use percentages. Historically, costs for fish transportation and bypass measures have been defined as mitigation. It is assumed similar alternatives like transportation and fish bypass improvements would also be assigned to mitigation and cost shared according to the original joint-use percentages. Therefore, it is expected that new cost allocations would only be necessary for Draw Down and Flow Augmentation. The following table shows the construction joint-use percentages for the lower Snake River projects as established by the initial allocations.

Table 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

2.2 METHODOLOGY

Alternatives being considered for this Feasibility report could be described as either mitigation or restoration of endangered salmon runs. Enhancement was also considered as a possible description of some of the alternatives. However because enhancement implies an improvement of salmon runs beyond pre-project historical levels, and current Corps policy does not support priority funding for enhancement projects, enhancement was dropped as a possible description.

How the alternatives are characterized would change the way the costs are allocated. Mitigation measures are joint-use costs allocated based on the original firm cost allocations. Joint-use costs are assigned to those facilities that serve more than one purpose. Currently, barging of juvenile fish and bypass measures at the projects are considered mitigation actions. Restoration measures by comparison would be allocated solely to ecosystem restoration.

The unrecovered Federal debt is comprised of investment costs allocated to power for the four lower Snake Projects (Lower Granite, Little Goose, Lower Monumental, and Ice Harbor). Total remaining debt as of the end of 1998 was approximately $479 million for construction of the dams and $271 for the Lower Snake River fish hatcheries and fish mitigation. The Bonneville Power Administration re-pays this debt to the Federal government from power revenues. The four lower Snake projects began producing power between 1962 and 1975.

For illustrative purposes, the unrecovered Federal debt is considered part of the implementation costs and is allocated according to the requirements for mitigation or restoration for the Draw Down Alternative. At this point however, it is not clear what obligation, if any, BPA would have to repay this out-standing debt in the event the dams are breached. BPA's obligation would likely be determined based on legal opinion, congressional direction, and negotiation.

2.3 FLOW AUGMENTATION

The Flow Augmentation alternative is also likely to impact the current operations of a number of projects. Because these changes in operation are likely to be significant, a number of Federal projects would also be considered for new cost allocations. No detailed studies have been completed to estimate how the costs for these projects would be re-allocated. However if the original cost allocations were reanalyzed, fewer costs would be allocated to irrigation and power and more to ecosystem restoration. All of the projects that would be considered for cost re-allocations as a result of Flow Augmentation are Bureau of Reclamation projects, and are listed in the following table.

Table 3. Projects That May require Cost Re-Allocations as a Result of the Flow Augmentation Alternative

USBR Projects
Jackson Lake
Palisades
Ririe
American Falls
Minidoka
Anderson Ranch
Arrowrock
Lucky Peak
Cascade
Deadwood
Owyhee

3. APPROACHES TO ALLOCATING COSTS FOR DRAW DOWN

It should be recognized that when Congress provides the authorizing legislation for any of the alternatives being investigated in this feasibility report, they can designate what cost allocation or cost sharing approach they so wish. As such, the possible alternative approaches to allocating costs are infinite. This section, however, presents two possible approaches for allocating Draw Down costs that follow the current administrative guidelines.

3.1 COST SHARE AS MITIGATION

Under this option the cost of the Draw Down would be treated as a mitigation cost. The concept of this option is that the construction and operation of these projects for the hydropower and navigation purposes has resulted in declining wild salmon and steelhead stocks that represent an unmitigated loss that has accrued to the projects. If the Draw Down alternative is recommended for implementation as a mitigation project, it would be on the basis that it is the most effective mitigation, or only effective mitigation for this loss. Therefore, the cost of achieving this mitigation is properly assigned back to the project purposes that necessitated the mitigation. This has been the approach for recent fish and wildlife measures at Columbia and Snake River dams. An issue is whether costs should be allocated to project purposes that have been eliminated.

The costs would be allocated based on existing joint use percentages. Nearly 90% of the cost would be allocated to hydropower and repaid to the U.S. Treasury by BPA through collections from power customers. The navigation purpose would be allocated 10% of the cost and these costs would be Federal and not recoverable. The remaining unrecovered hydropower debt on the Lower Snake River dams would continue to be paid to the U.S. Treasury through collections from power customers. Any operation and maintenance costs associated with the Draw Down alternative (for example maintenance of the locks and remaining dam in caretaker status) would be allocated to the hydropower and navigation purposes and shared as the operation and maintenance costs of these purposes are shared.

If one assumes that breaching of the dams is an additional or new feature for mitigation purposes, costs should be allocated as joint-use construction costs. The joint-use cost percentages would be the basis for this allocation. The tables below estimate how the unrecovered debt and implementation and O&M costs would be allocated for the Draw Down alternative (A-3).

Table 4. Mitigation – Allocated Investment Costs and Unrecovered Debt

Option A-3 Preliminary Costs – Allocated by Purpose (000's)		
Purpose	**Investment Cost**	**Unrecovered Debt**
Hydropower	875,334	750,000
Navigation	86,572	0
Non-reimbursable Costs	6,826	0
TOTAL	968,732	750,000

Source: Section 3.10 Implementation and Avoided Costs (Table 1)

Table 5. Mitigation – Allocated O&M Costs

Option A-3 Preliminary O&M Costs – Allocated by Purpose (000's of 1998 Dollars)	
Purpose	**Operation & Maintenance Cost**
Hydropower	4,375
Navigation	481
TOTAL	$4,856

Source: Section 3.10 Implementation and Avoided Costs (Table 7)

3.2 COST SHARE AS RESTORATION

Under this option, the cost of the Draw Down alternative would be shared as an ecosystem restoration cost and would require a non-Federal cost sharing sponsor. Remaining unrecovered hydropower debt on the Lower Snake River dams would also be included as a restoration cost. Any operation and maintenance costs associated with the Draw Down alternative (for example maintenance of the locks and remaining dam in caretaker status) would be financed 100% by a non-Federal sponsor. Section 210 of the Water Resources Development Act of 1996 established the non-Federal cost share for environmental protection and restoration as 35% non-Federal with operation and maintenance of the ecosystem restoration project being 100% non-Federal.

However, there may be precedent for 50% non-Federal cost sharing for ecosystem restoration activities which result in adverse impacts to purposes of an existing Federal project as in the case of the Kissimmee River Restoration and Everglades and South Florida Ecosystem. The operation and maintenance costs of the restoration remain non-Federal.

If one assumes that breaching of the dams is a restoration measure, costs could be allocated solely to this purpose. Because Draw Down results in a single project purpose (ecosystem restoration), all costs should be allocated to this new project purpose. The tables below estimate how the unrecovered debt and implementation and O&M costs would be allocated for the Draw Down alternative (A-3) assuming restoration is the sole purpose.

Table 6. Restoration – Allocated Investment Costs and Unrecovered Debt

Option A-3 Preliminary Costs – Allocated to Ecosystem Restoration (000's)		
Purpose	**Investment Cost**	**Unrecovered Debt**
Ecosystem Restoration	968,732	750,000
TOTAL	968,732	750,000

Source: Section 3.10 Implementation and Avoided Costs (Table 1)

Table 7. Restoration – Allocated O&M Costs

Option A-3 Preliminary O&M Costs – Allocated to Ecosystem Restoration (000's of 1998 Dollars)	
Purpose	**Operation & Maintenance Cost**
Ecosystem Restoration	$4,856
TOTAL	$4,856

Source: Section 3.10 Implementation and Avoided Costs (Table 7)

3.3 FINANCIAL ANALYSIS

If all costs were allocated to ecosystem restoration, there would also be an issue of cost sharing for this purpose. A non-Federal sponsor would need to be identified for cost sharing. A non-Federal interest is a legally constituted 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. The non-Federal share of the implementation costs and unrecovered debt would be 35%. The non-Federal sponsor would also be responsible for 100% of operation, maintenance, and replacement costs for a restoration project. The following table displays the cost sharing portions for the Federal and non-Federal sponsor if the action is determined to be restoration.

Table 8. Restoration – Unrecovered Debt and Investment Cost - Cost Sharing for the Federal and Non-Federal Sponsor

Option A-3 Preliminary Costs – Allocated to Ecosystem Restoration (000's)		
Sponsor	**Investment Cost**	**Unrecovered Debt**
Federal (65%)	629,676	487,500
Non-Federal (35%)	339,056	262,500
TOTAL	968,732	750,000

Source: Section 3.10 Implementation and Avoided Costs (Table 1)

Table 9. Restoration – O&M Costs – Cost Sharing for the Federal and Non-Federal Sponsor

Option A-3 Preliminary O&M Costs – Allocated to Ecosystem Restoration (000's of 1998 Dollars)	
Sponsor	**Operation & Maintenance Cost**
Non-Federal (100%)	$4,856
TOTAL	$4,856

Source: Section 3.10 Implementation and Avoided Costs (Table 7)