Appendix C. Additional Project Benefits – Cost Savings Allocation (Example)

There are potential cost savings when jointly implementing a Safety of Dams (SOD) project in conjunction with projects providing additional benefits (i.e., "Additional Benefits" project). In these cases, the cost savings needs to be allocated equitably among the SOD project and the Additional Benefits project. The basic premise of allocating the savings of a joint project (i.e., the two independent projects completed together) is to allocate the savings proportionate to the cost of each individual project. This appendix provides a conceptual overview and example of the cost savings allocation process for joint projects.

An estimate of the cost savings must be developed first to allocate the cost savings for joint projects. Cost savings is defined as the difference between the cost of the two independent projects completed separately and the joint project. This requires the cost estimates for the SOD project, Additional Benefits project, and the Joint project will be prepared in advance and in accordance with FAC 09-02, *Construction Cost Estimates and Project Cost Estimates*.

Once the cost savings is calculated, it is allocated among the two independent projects (i.e., SOD only and Additional Benefits only). The basis for allocating the cost savings between the two projects is the relative cost of each respective project. Said differently, the cost savings of the joint project will be shared in the same proportion of the separate investment costs for the two independent projects.

Once costs savings are allocated across the two projects, the cost savings for each project needs to be allocated. Cost savings *within* each of the two activities is allocated consistent with the cost allocation for each separate project, respectively.

Example

The following example, including table (presented below), is used to illustrate the cost savings allocation process for joint projects.

Step 1: Estimate Cost Savings

In this example, the following cost estimates are used:

- SOD Project only: $1.0M
- Additional Benefits Project only: $0.5 M
- Joint Project: $1.4 M

The cost savings is simply the sum of the two independent projects costs less the Joint Project cost. Based on the cost estimates above, the cost savings of the Joint Project is $100,000 ($1.0M + $0.5M - $1.4M = $100,000).

Step 2: Allocate Cost Savings Across Projects

The allocation of cost savings is proportionate to the cost of each standalone project. In this example, the SOD project is allocated 66.7% of the cost savings ($1.0M / $1.5M = 66.7%), and the Additional Benefits project is allocated 33.3% of the cost savings ($0.5M / $1.5M = 33.3%). In monetary terms, the SOD project is allocated $66,667 of the total cost savings ($100,000 x 66.7% = $66,667) and the Additional Benefits project is allocated $33,333 ($100,000 x 33.3% = $33,333). As a result, the total costs of the SOD project and Additional Benefits projects with cost savings are $933,333 ($1,000,000 - $66,667) and $466,667 ($500,000 - $33,333).

Step 3: Allocate Cost Savings Within Each Project

The allocation of cost savings within each project is a function of the cost allocation for each standalone project. For the SOD project, the cost allocation is based on the provisions outlined in the SOD Act, namely 85% of SOD modification costs are non-reimbursable with the remaining 15% treated as reimbursable costs allocated across reimbursable functions of the project on the basis of net economic benefits (PEC 05-05, *Safety of Dams Repayment and Cost Allocation*). In this example, the total costs savings allocated to the SOD project ($66,667) are allocated 85% to the non-reimbursable component of the project resulting in a cost savings to the Federal government of $56,667 ($66,667 x 85% = $56,667). Similarly, the costs savings to the reimbursable purposes is $10,000 ($66,667 x 15% = $10,000), which are further allocated to reimbursable purposes based on net economic benefits; in this example, those allocation percentages are:

- 75% (Irrigation)
- 15% (Municipal and Industrial (M&I))
- 10% (Commercial Power).

For the Additional Benefits project, the cost savings ($33,333) is allocated entirely to the beneficiaries of the Additional Benefits project.

Step 4: Calculate Net Project Costs with Cost Savings

Based on the cost savings allocation across projects (Step 2) and within projects (Step 3), the net cost assignments for both the SOD and Additional Benefits projects are calculated accordingly as shown in the Tables below.

Tables: Joint Project Cost Allocation (Example)

Step 1: Estimate Cost Savings

Activity	Cost ($)
SOD	$1,000,000
Additional Benefits Project	$500,000
Total (Standalone Projects)	$1,500,000 ($1,000,000 + $500,000)
Joint Project	$1,400,000
Cost Savings	$100,000 ($1,500,000 - $1,400,000)

Step 2: Allocate Cost Savings Across Projects

Activity	Allocation (%)	Allocation ($)
SOD	66.7% ($1,000,000 / $1,500,000)	$66,667 ($100,000 x 66.7%)
Additional Benefits Project	33.3% ($500,000 / $1,500,000)	$33,333 ($100,000 x 33.3%)

Step 3: Allocate Cost Savings Within Projects

	Allocation %	Allocated Cost Savings
SOD		
Non-reimbursable	85%	$56,667 ($66,667 x 85%)
Reimbursable	15%	$10,000 ($66,667 x 15%)
Irrigation	75%	$7,500 ($10,000 x 75%)
M&I	15%	$1,500 ($10,000 x 15%)
Power	10%	$1,000 ($10,000 x 10%)
Additional Benefits Project		
Project Beneficiaries	100%	$33,333 ($33,333 x 100%)

Step 4: Calculate Net Project Costs

Activity	Cost Estimate (Independent Projects)	Cost Estimate with Savings (Joint Project)
SOD		
Total	$1,000,000	$933,333 ($1,000,000 - $66,667)
Non-reimbursable	$850,000 ($1,000,000 x 85%)	$793,333 ($850,000 - $56,667)
Irrigation	$112,500 ($1,000,000 x 15% x 75%)	$105,000 ($112,500 - $7,500)
M&I	$22,500 ($1,000,000 x 15% x 15%)	$21,000 ($22,500 - $1,500)
Power	$15,000 ($1,000,000 x 15% x 10%)	$14,000 ($15,000 - $1,000)
Additional Benefits Project		
Total	$500,000	$466,667 ($500,000 - $33,333)
Project Beneficiaries	$500,000 ($500,000 x 100%)	$466,667 ($500,000 - $33,333)