

**Costing of the
Hood Canal Coordinating Council's
Summer Chum Salmon
Recovery Plan**

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DRAFT

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Introduction

The Hood Canal Coordinating Council (HCCC) has developed an extensive list of projects needed for summer chum salmon recovery in the Hood Canal evolutionarily significant unit (ESU). These projects are intended to address the recovery of ESA-listed summer chum salmon. This project list was developed using the most up-to-date assessment of summer chum habitat needs, without consideration of cost or potential funding. HCCC contracted with Evergreen Funding Consultants (EFC) to provide an initial cost estimate for this Hood Canal summer chum salmon recovery plan.

EFC has developed a model to estimate the capital costs for salmon recovery plans in Puget Sound (*A Primer on Habitat Project Costs*, Evergreen Funding Consultants, 2003). This model estimates costs for broad categories of projects (estuarine restoration, floodplain restoration, land acquisition, etc.). Costs within each category are estimated based on the factors that contribute the most towards the final price of a project.

EFC customized this model for the Hood Canal summer chum salmon recovery plan, developing new categories and checking cost accuracy within the categories. The methods used to calculate the cost of the HCCC's summer chum salmon recovery plan are described in Appendix A.

EFC has also developed a model to estimate non-capital costs for salmon recovery plans, which was used to determine those costs for the Hood Canal summer chum salmon recovery plan.

This report describes EFC's findings regarding both capital and non-capital costs. The methods used are described in Appendix A; tables with details on the costs are in Appendices B through E.

EFC also researched options for funding salmon recovery in Hood Canal. The grant opportunities are listed in Appendix F and analysis methods used are described in Appendix A.

Findings

Capital Costs

HCCC staff provided EFC with a list of 107 projects in six conservation units within Hood Canal. EFC assigned these projects to a number of categories as described in Appendix A: Methods. Projects within each category were costed using assumptions for an average project developed by EFC staff and agreed upon by HCCC staff. The capital cost estimates for the summer chum salmon recovery plan are summarized in Table 1.

Of the 107 projects listed, 29 were not costed for the reasons given in Appendix A.

The total estimated cost of the remaining 78 projects is \$100,770,695.

Group	Group Description	Number Projects	Cost
Estuarine/Nearshore			
Group E2	Undeveloped estuary site - moderate excavation/moderate transportation distance	11	\$364,000
Group E3	Undeveloped estuary site - substantial excavation/moderate transportation distance	10	\$1,006,360
Group E4	Somewhat developed estuary site - minimal excavation/moderate transportation distance	2	\$20,000
Group E5	Somewhat developed estuary site - moderate excavation/moderate transportation distance	2	\$120,000
Group E6	Somewhat developed site - substantial excavation/moderate transportation distance	7	\$3,135,000
Group E9	Highly developed estuary site	4	\$21,455,500
Group E0	Complex estuary projects that must be costed individually	17	\$65,265,263
Group N5	Minor reconstruction, moderate excavation	1	\$574,350
subtotal		54	\$91,940,473
Floodplain			
Group F5	Complex floodplain reconnection	6	\$1,109,000
subtotal		6	\$1,109,000
Riverine			
Group R4	Simple riparian enhancement	2	\$1,441,250
Group W5	Wood placement on medium waterways	1	\$48,000
Group R0	Riverine projects to be costed individually	2	\$6,250
subtotal		5	\$1,495,500
Acquisition			
Group A2	Low Development Potential Acquisition	2	\$836,592
Group A4	Medium Development Potential with Stream Front	2	\$39,000
Group A5	Medium Development Potential with River Front	2	\$570,450
Group A6	Medium Development Potential Acquisition with Canal Front	6	\$3,978,000
Group A8	Conservation Easements - Medium Development Potential	1	\$801,680
subtotal		13	\$6,225,722
TOTAL		78	\$100,770,695

Table 1: Summary of capital cost estimates for Hood Canal summer chum salmon recovery plan.

The capital cost estimate should be used as a preliminary and partial cost estimate. This number is based on the estimated cost of the project list that was made available by the HCCC in the summer of 2004. This list will likely change as design plans evolve and projects are added or subtracted from the list. Several projects that have not been costed are in very preliminary stages and may add significant costs to the overall estimate.

The Hood Canal summer chum salmon ESU represents a significant portion of the Puget Sound. The costs of salmon recovery in this region will be high, but when implemented, the plan will address recovery concerns over a large geographic area. This cost estimate will give the HCCC, as well as local planners and agencies, a ballpark number to work with as the planning process for salmon recovery continues.

The cost estimate for the summer chum salmon recovery plan was developed using the *Primer on Habitat Project Costs* (EFC, 2003) adapted for Hood Canal. Assumptions about average project conditions were made so as to cost projects in groups, rather than individually, as shown in Table 1. The reliability of the group subtotals depends to a large extent on the validity of the assumptions used to assign projects to groups. It is possible that non-average characteristics do exist for these projects but were not noted in project descriptions, or will not be identified until further into the design process.

The *Primer* recognizes that costs for estuarine restoration projects are highly variable and are difficult to model. EFC researched estuarine projects throughout the west coast to check the model cost estimates and found that costs, while variable, fell within the adapted model's cost ranges.

Costs for road removal projects are a sizeable portion of the overall costs (\$57,987,030 or 57%). EFC has not modeled such costs, both because there are not enough examples from which to derive a reliable model and because such projects are highly variable in cost and would be difficult to model. The Highway 101 feasibility study and the ongoing restoration at Jimmycomelately Creek were used to develop cost estimates for these road projects. It should be noted, however, that these cost estimates are less reliable than the other estimates presented.

Non-Capital Costs

A total of sixteen non-capital items were costed covering a ten-year period. Ten items addressed the substantive plan and six addressed Watershed Partnerships and basic capacity. These costs are summarized in Table 2 and detailed in Appendix E: Non-capital costs. Some costs are only projected for 2-5 years while others are sustained over the full 10-year period.

Total Annual Cost- Peak Cost	\$368,625	Unmet Peak Cost	\$175,313
Total Average Annual Cost (over 10 years)	\$314,175	Unmet Average Annual Cost (over 10 years)	\$146,423
Total Ten Year Cost	\$3,141,750	Unmet Ten Year Cost	\$1,464,225

Table 2: Summary of non-capital costs for Hood Canal salmon recovery plan.

In addressing non-capital costs, EFC considered both the work currently being done in the Hood Canal summer chum salmon ESU and the extra work that is likely to be required to fully implement the salmon recovery plan. This extra work is described as an “unmet cost” (in both staff and cash) in Table 2 (and Appendix E). Essentially, this is the amount that EFC estimates cannot be covered by existing resources of both staff and cash. This extra cost, over and above current expenses, will need to be funded with new sources.

As with the capital cost estimate, the non-capital cost estimate is designed for use in preliminary planning exercises and should not be used in place of actual budgets. EFC, in consultation with HCCC staff, made assumptions about staffing levels and costs, program complexity, and existing funding levels to derive the cost estimate. With full access to budgets and plans for the multiple agencies involved in the recovery plan, a more precise estimate would be achievable. All assumptions are explained in Appendix E and can be adjusted as necessary.

Funding Sources

EFC researched a broad range of government grants that are potential sources of funding for salmon recovery work in the Hood Canal summer chum salmon ESU. These are listed in Appendix F: Funding Sources.

HCCC has raised money for several important habitat restoration projects in their recovery plan, from grant sources such as the Salmon Recovery Funding Board (SRFB), the Interagency Committee (IAC) and the Washington State Clean Water Fund. Other sources of money for land protection and restoration, such as the Conservation Reserve Program for riparian restoration and various programs for forest land protection, are also well used.

It is unlikely that current sources of funds will be sufficient to pay for the full extent of salmon recovery plans in the Hood Canal summer chum salmon ESU. As other lead entities across the region and state complete their plans and funding strategies, the competition for scarce resources will only increase. It is also unlikely that new local sources of funding for salmon recovery will be made available in the immediate future.

While continuing to tap into existing grant sources, HCCC should look at other sources, especially for public infrastructure, such as the Public Works Board Trust Fund loan program. In addition, HCCC should consider forming a coalition with other lead entities in the Puget Sound region to leverage large amounts of funding from federal sources.

Recommendations/Next Steps

The capital and non-capital cost estimates presented here should be regularly updated as HCCC continues to build and refine its project list. The tables in the appendices to this report are designed to allow for additions and adjustments over time.

This capital cost estimate only addresses summer chum salmon recovery.

Additional work is needed to increase the reliability of the estimates for the SR 101 projects. This would require discussions with staff at the Washington Department of Transportation and research on similar projects around the country to calibrate the model. Further calibration is also advisable for other high cost items, such as the removal of substantial developments to restore estuarine lands.

As budgets are developed for individual projects, these real costs should be substituted for the estimates in the table.