

PROJECT MANAGEMENT PLAN

**CHEHALIS RIVER BASIN ECOSYSTEM
RESTORATION PROJECT**



Table of Contents

List of Figures	3
List of Tables	3
List of Appendices	3
CHEHALIS PROJECT ACRONYMS	4
1.0 SCOPE.	5
1.1 Introduction.....	5
1.2. Study Purpose.....	6
1.3 Reconnaissance Phase Study.....	6
1.4 Study Sponsorship and Cooperative Agencies	8
2.0 FEASIBILITY PHASE STUDY REQUIREMENTS.....	9
2.1 Basic Requirements.	9
2.2 Specific Requirements.	9
2.3 Feasibility Study Staging: Programmatic and Project Specific.	10
2.3.1 <u>Stage 1 – Project Formulation.....</u>	10
2.3.2 <u>Stage 2 - Project Specific (Detailed) Study.</u>	12
2.3.3 <u>Washington Level Review.....</u>	13
2.3.4 <u>Early Action Projects.</u>	13
2.4 Breakdown Structure.	13
3.0 FISCAL YEAR FUNDING BREAKDOWN.....	17
4.0 STUDY TASK AND SUBTASK DESCRIPTIONS AND WBS CODES.	17
5.0 STUDY MANAGEMENT AND COORDINATION.....	28
5.1 Coordination Mechanism.....	28
5.2 Review and Acceptance of Work.....	29
6.0 QUALITY CONTROL PLAN.....	29
6.1 Purpose.....	29
6.2 Methodology.....	29
6.3 Quality Control Responsibilities.....	32
6.4 Quality Control Process.	33
6.5 Technical Review Documentation.	34
6.6 Schedule.	34

Table of Contents, cont.

List of Figures

Figure 1. Levels and Phases of Project Development	14
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List of Tables

Table 1. Feasibility Cost Estimate Summary	15
Table 2. Feasibility Phase Project Delivery Team	30
Table 3. Proposed Independent Technical Review (ITR) Team	30
Table 4. Executive Committee.....	31
Table 5. Feasibility Phase Schedule and Milestones.....	34
Table 6. Selection Matrix.....	38

Appendices

A: Gantt Chart.....	35
B: Cost Estimate Table	36
C: Sponsor's Letter of Intent.....	37
D: Selection Matrix.....	38
E: Maps	39

CHEHALIS PROJECT ACRONYMS

AFB	Alternative Formulation Briefing (see ER1105-2-100)
ASA (CW)	Assistant Secretary of the Army for Civil Work
BCO	Biddability / Constructability / Operability
CAP	Continuing Authority Program
CEFMS	Corps of Engineers Financial Management System
CR	Cultural Resources
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FCSA	Feasibility Cost Sharing Agreement
GI	General Investigation Program - A Federal funding appropriation for planning and design
HQUSACE	Headquarters United States Army Corps of Engineers
ITR	Independent Technical Review
MCACES	Micro-Computer Aided Cost Engineering System
NEPA	National Environmental Policy Act 1969
NMFS	National Marine Fisheries Service
NWD	Northwest Division USACE
OMRR&R	Operation, Maintenance, Repair, Replacement & Rehabilitation
PDT	Project Delivery Team
PED	Pre-Construction Engineering and Design
PL	Public Law
PMP	Project Management Plan
QC	Quality Control
SEPA	State Environmental Policy Act
SHPO	State Historic Preservation Office
TRC	Technical Review Conference
USACOE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
VE	Value Engineering
WBS	Work Breakdown Schedule
WRDA	Water Resources Development Act

1.0 SCOPE.

1.1 Introduction.

This Project Management Plan (PMP) is by reference hereby incorporated into the feasibility cost sharing agreement entitled “Agreement between the Department of the Army and Grays Harbor County for the Chehalis River Basin Ecosystem Restoration Study”. This PMP defines the Scope of Work, and documents the process for conducting the feasibility phase study and is a means for those involved in the study (i.e., Seattle District, Grays Harbor County, Northwestern Division (NWD), and Corps of Engineers Headquarters (HQUSACE)) to formally agree to the conduct of the study before it is initiated. The PMP does not attempt to repeat project-related details provided in the final reconnaissance report for this study, the reconnaissance studies, or related investigations conducted prior to initiating the feasibility phase of project development.

The feasibility report will be a complete decision document in sufficient detail to form the basis for the sponsor, Corps of Engineers, and ultimately the U.S. Congress, to consider approving authorization and construction of the recommended plan. The feasibility report will provide a complete presentation of the study analyses and results, including those developed in the reconnaissance report. The feasibility report will also document compliance of the design with all applicable guidance, statutes, Executive Orders, and policies, and provide a sound basis for decision makers to judge the recommended plan.

The PMP has been developed to plan, define, and control the development and delivery of the products to be completed during the feasibility phase. With clearly defined work tasks, the PMP will provide management with a basis for cost and schedule control of the feasibility study as well as minimize communication and review comments/problems. The PMP will be updated and/or revised as needed throughout the planning process using traditional methods. Scoping for Stage 2 of the study will be performed during Stage one of the process after further knowledge of the Chehalis River Basin is determined (see page 9). The PMP addresses the following:

- Study tasks and responsibility for their accomplishment.
- The estimated cost of individual study tasks and total study cost, including the negotiated cost of work items to be accomplished by sponsor as in-kind services.
- Corps of Engineers and other professional criteria to assess the adequacy of the completed work effort, including references to regulations and other guidance that will be followed in performing and evaluating tasks.
- The schedule of performance and milestones (i.e., key decision points, in-progress reviews, issue resolution conference, etc.).
- The specific coordination mechanism between parties to this agreement.
- Procedures for reviewing and accepting the work of the parties to this agreement.

The PMP is a working document and expected to be revised and modified as needed throughout the reconnaissance phase. All changes in the PMP will be coordinated with the Project Delivery Team, the local sponsor and the Executive Committee. Any schedule or cost changes require written agreement and approval from both the local sponsor and the NWD.

The work shall generally be performed in accordance with established criteria and guidance including the following:

- a. ER 1105-2-100, "Planning Guidance Notebook", U.S. Army Corps of Engineers, April 22, 2000.
- b. ER 1110-2-1150, "Engineering and Design for Civil Works Projects," U.S. Army Corps of Engineers, August 31, 1999.
- c. ER 5-1-11 (FR), "Program and Project Management," U.S. Army Corps of Engineers, February 27, 1998.
- d. "Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies," U.S. Water Resources Council, March 10, 1983.
- e. ER 200-2-2, "Procedures for Implementing NEPA," U.S. Army Corps of Engineers, March 4, 1988.
- f. ER 405-1-12, "Real Estate Handbook," U.S. Army Corps of Engineers.
- g. ER 1165-2-501, "Civil Works Ecosystem Restoration Policy," Corps of Engineers, 30 September 1999.
- h. ER 1165-2-502, "Ecosystem Restoration – Supporting Policy Information," Corps of Engineers, 30 September 1999.

1.2 Study Purpose

The purpose of the feasibility study is to evaluate significant ecosystem degradation and flooding problems in the Chehalis River Basin; to formulate, evaluate, and screen potential solutions to these problems; and to recommend a series of actions and projects that have a federal interest and are supported by a local entity willing to provide the necessary items of local cooperation. The recommended plan must significantly contribute to the identified restoration objectives of restoring fish and wildlife habitat and natural processes (i.e., flood attenuation) of the basin; additionally the plan must be both technically viable and economically sound. This PMP defines the scope of and documents the process, schedule and cost for performing the feasibility study necessary to meet the purpose.

1.3 Reconnaissance Phase Study.

The Chehalis River Basin 905(b) Reconnaissance Report, dated 20 November 2000, and approved by Corps Headquarters on 5 December 2000 finds that there is a federal interest in pursuing a feasibility phase study to plan for the restoration and flood damage reduction of the Chehalis River Basin. During the reconnaissance study, it was found that major flooding occurs during the winter season, from November through February. Flooding may be localized within sub-basins or widespread throughout the basin. Both the frequency and the peak flows of floods have increased over the last 10 years. Coupled with the serious flooding problems within the basin, the natural aquatic ecosystem has been degraded and populations of many fish and wildlife species are in decline. Habitat conditions were significantly altered

during the 1920's, 1930's, and 1940's when logging activities were the most active. Stream alterations, lands use, and construction of infrastructure have also degraded aquatic and riparian ecosystems within the basin. In addition, one salmonid species has been listed as threatened under the Endangered Species Act (ESA) (bull trout). The feasibility phase study will develop an overall plan for the restoration of the ecosystem within the Chehalis River Basin.

The problems identified in the 905(b) report include:

- (1) **Flood control on both the basin-wide and sub-watershed level**
 - Chronic flooding
 - Sporadic means of notifying the public of impending floods
 - Bank erosion
 - Degradation of existing infrastructure
 - Damage to agricultural properties
 - Degraded water quality

- (2) **Degraded ecosystem functions and processes necessary to support flood control, water quality, and fish and wildlife habitat throughout the basin.**
 - Heavy logging
 - Manipulation of watercourses
 - Road and railroad building
 - Persistent flooding
 - Land use practices have contributed to a degraded ecosystem in this basin.

The types of restoration and flood damage reduction actions listed in the 905(b) report include:

- Basin-wide flood warning notification system
- Construction of bypass channels
- Upstream storage
- Protection of existing municipal infrastructure
- Dredging of waterways
- Fish and wildlife habitat restoration
- Streambank stabilization
- Land use modifications (i.e., buyouts, easements, fencing stream corridors)
- Assessment of instream structures (i.e., culverts, bridges)
- Water quality improvements
- Floodway modifications
- Structural modifications
- Replacement or placement of structures to alleviate flooding.

The reconnaissance report will be used as a base from which to continue the required planning studies. The purpose of this reconnaissance study was to identify flood problem areas and ecosystem restoration opportunities in the Chehalis River Basin, develop conceptual measures to address the identified problems and opportunities, and work with

local governments to determine which measures and/or projects warranted further study. This effort was complementary with the “Centralia Washington Pre-Construction Engineering and Design, General Re-evaluation Report, and Environmental Impact Statement” which addressed flooding in the Centralia and Chehalis area. While the reconnaissance phase considered the Chehalis Basin proper, the Feasibility Study will include basins on the north and south sides of Grays Harbor (i.e., Humptulips River and Hoquiam River) in addition to Grays Harbor.

The study of the Chehalis River Basin was initiated as a Corps of Engineers – Civil, Title I general investigation study under Public Law 106-60, dated September 29, 1999. This authority states: “The following appropriations shall be expended under the direction of the Secretary of Army and the supervision of the Chief of Engineers for authorized civil functions of the Department of Army pertaining to rivers and harbors, flood control, beach erosion, and related purposes.”

Information from the reconnaissance report will be expanded and updated as required to reflect current problems and opportunities and the desires of the public to establish final planning objectives and criteria to be used to identify and formulate plans for all viable alternatives.

1.4 Study Sponsorship and Cooperative Agencies

Grays Harbor County is the non-federal study sponsor. The following agencies may also be partners in the project and contribute financially to the feasibility study.

- Thurston County, including incorporated and un-incorporated areas
- Lewis County, including incorporated and un-incorporated areas
- Mason County, including incorporated and un-incorporated areas
- Pacific County, including incorporated and un-incorporated areas
- The Confederated Tribes of the Chehalis Reservation
- The Quinault Indian Tribe

Other Project Stakeholders may include:

- Washington State Department of Ecology (WDOE)
- Washington State Department of Natural Resources (WDNR)
- Washington State Department of Transportation (WSDOT)
- Washington State Department of Fish and Wildlife (WDFW)
- National Marine Fisheries Service (NMFS)
- U.S. Fish and Wildlife Service (USFWS)
- U.S. Environmental Protection Agency (EPA)
- U.S. Geological Survey (USGS)
- Chehalis Basin Fisheries Task Force
- The Oyster Growers Association
- Southwest Farm Bureau

- Columbia Pacific RC & D
- Potential Others

2.0 FEASIBILITY PHASE STUDY REQUIREMENTS.

2.1 Basic Requirements.

The feasibility study will consist of the development of alternative plans to address ecosystem restoration and the selection of a recommended plan. Due to the complex nature of the ecosystem process affected and the significant geographic boundaries of the project, a significant proportion of the feasibility study will be devoted to compiling information on past and ongoing studies and identifying and filling data gaps.

Other basic requirements of the feasibility study include: 1) developing plans and designs; 2) preparing construction as well as operation and maintenance cost estimates for each viable alternative; 3) computing average annual benefits and costs; 4) evaluating technical and economic feasibility of the plan; 5) assessing environmental impacts, including impacts on biological resources, cultural resources, and recreation; 6) addressing the views of the public through workshops and a public meeting; 7) formulating plan mitigation measures; and 8) preparing the draft and final feasibility report and environmental impact statement (EIS) with required documentation to present the investigations and evaluations which support the recommended plan.

The end products will be a feasibility report and a National Environmental Policy Act (NEPA) and State Environmental Policy Act (SEPA) Environmental Impact Statement (EIS). These documents will describe the identified problems and opportunities, plans formulated, engineering and economic feasibility and public acceptability of each alternative, the social and environmental constraints and impacts for each alternative, and the plan recommended for implementation.

2.2 Specific Requirements.

The specific requirement of the feasibility phase is to identify a plan that is:

- Technically feasible from an engineering standpoint (i.e., sound engineering design).
- Economically justified. Ecosystem restoration benefits (monetary and non-monetary) exceed their project related costs over the 50-year economic life of the project, and contribute significantly to restoring key functions, processes and habitat.
- Environmentally and socially acceptable (able to meet permitting and regulatory requirements).
- Supported by the project sponsor.

The PMP defines and limits the work to that necessary to meet the above requirements for a complete feasibility report. There will be close coordination between the Corps of Engineers and the project sponsor throughout the study.

2.3 Feasibility Study Staging: Programmatic and Project Specific.

The feasibility study will be conducted in two stages: programmatic and site-specific, as summarized below. Stage 1, programmatic stage, will involve the formulation, identification and screening of potential restoration projects to select project alternatives which will be carried into Stage 2. Stage 2, the project specific stage, will involve detailed study of the selected project alternatives leading to a feasibility report and Environmental Impact Statement (EIS) containing a recommendation for Federal involvement in project implementation. This approach is designed to increase the likelihood of public acceptance of a plan, which recommends development of ecosystem restoration project alternatives throughout the basin. For the purposes of this PMP, an estimate of 30 ecosystem project alternatives was used to develop the scope and cost of investigations and design necessary. This estimate of 30 project alternatives is not intended to limit this effort, only to aid in identifying a management plan and cost estimate, and is subject to change if study conclusions warrant. The strategy calls for a staged environmental review, with a programmatic NEPA/SEPA EIS, followed by project specific EIS supplements developed and refined as the project alternatives are implemented over a 10 to 15 year period.

2.3.1 Stage 1 – Project Formulation.

The project selection stage will result in a ‘short list’ of project alternatives to be carried forward to Stage 2 (nominally 30). The following existing documents and studies will be used to aid in the selection process:

- Section 905(b) Analysis – General Investigation Reconnaissance Study, Chehalis Basin.
- Washington Soil Conservation Service Limiting Factors Analysis
- Grays Harbor County Comprehensive Flood Hazard Management Plan and available flood hazard management plans for municipalities in the Chehalis Basin
- Habitat Restoration Strategy, Chehalis Basin
- Level I Assessment
- FEMA Maps
- Repetitive Loss Maps for the Chehalis Basin
- All other existing documents within the basin

The basis of actions to be taken under this study will be the improvement of conditions in the basin that would be expected to prevail without a project in place (“without project” condition). Emphasis will be placed in the priority sub basins identified in the Habitat Restoration Strategy, Chehalis Basin. The without project definition will use information contained in the documents listed above. A list of possible restoration and flood control project alternatives in the Chehalis Basin will be developed which will address the priority needs of the basin. A selection methodology will be employed to reduce the list of all

possible ‘best’ project features in the basin to evaluate and recommend for Federal involvement (Appendix D).

The process of identifying the ‘best’ project alternatives for consideration will involve a collaborative effort between the USACOE, Grays Harbor County, other potential sponsors, affected Tribes and resource agencies. First, a ‘long list’ list of potential ecosystem restoration project alternatives identified from a literature review will be organized under one of the following project alternative types:

- Habitat Restoration/Creation
- Shoreline Restoration
- Floodplain Reconnection
- Barrier Removal

For the purpose of this PMP, it is assumed that this ‘long list’ of identified potential project alternatives will include about 100 potential alternatives throughout the Chehalis Basin including Grays Harbor estuary. This estimate of 100 potential project alternatives is not intended to limit the consideration of projects, but to aid in identifying the resources needed to prepare and evaluate the list.

Second, an ‘ecosystem restoration measurement’ unit will be selected for each project alternative type that best represents that project type’s contribution to the protection and restoration of the environment. For example, Shoreline Restoration alternatives might be measured by feet of shoreline protected or restored using bioengineering methods. Similarly, Floodplain Reconnection might be measured by the number of acres of wetlands, spawning areas, or aquatic habitat created or restored by the reconnection project alternative. The selection of ‘ecosystem restoration measurement’ units will reflect the needs assessment based on the ‘without project condition’ and information contained in the Habitat Restoration Strategy, Chehalis Basin. A ‘potential project alternative fact sheet’ will be developed for each of the potential project alternatives including a sketch of the project plan, description of the location, number of ‘ecosystem restoration measurement’ units produced, and the estimated construction cost of the project alternative. An incremental cost effectiveness analysis will be performed on each of the potential project alternative listed under a project type using the ‘ecosystem restoration measurement’ unit selected for that project alternative type. The results of the incremental cost effectiveness analysis will be used to rank each project alternative listed under each of the four project types. The ranking, least costly to most costly, will be displayed under each the four project alternative types.

Third, the ranked list of project alternatives will then form the vertical axis and ‘selection factors’ form the horizontal axis of a ‘decision matrix’ for each of the four project alternative types. The following are ‘selection factors’ to be used to evaluate each project alternative:

- Provides most cost effective environmental restoration
- Reduces flood damage
- Improves water quality
- Preserves cultural resources

- Is acceptable to local sponsor, tribes, resource agencies & public
- Meets the corps' criteria for Federal participation
- Meets the local sponsor's funding objectives

Finally, the decision matrix will be completed using a collaborative approach involving Grays Harbor County, the Corps, other potential sponsors, affected Tribes, resource agencies and other interested groups. Potential project alternative will be rated as:

1. Most Benefit – Implementing this project alternative will produce a high degree of benefit for a particular selection factor.
2. Moderate Benefit – Implementing this project alternative will produce a moderate degree of benefit for a particular selection factor.
3. Least Benefit – Implementing this project alternative will produce a lowest degree of benefit for a particular selection factor.

A sample of the “Selection Matrix” for each of the four project alternative types is shown in Appendix D with sample input. These Matrices may be revised as appropriate during the Feasibility Study.

The Project Delivery Team (Table 2) will use these decision matrices to select the ‘short list’ (nominally, the top 30 project alternatives) for detail study in Stage 2 of this Feasibility Study. An equal number of project alternatives may be selected from each of the four project alternative types to equal about 30 project alternatives, or the final list may include most project alternatives from only one or two project alternative types, if more appropriate. This project alternative selection activity will be documented in a Plan Formulation Letter Report, considered in a in-progress review, provided in final form to the Exec Committee for information and become the Plan Formulation Section of the feasibility report/EIS. The Feasibility report and Programmatic EIS will be written and modified throughout the planning process.

2.3.2 Stage 2 - Project Specific (Detailed) Study.

The short list selected in the first stage will be developed to a concept level of detail (35% design) including identification of restoration and flood damage reduction outputs and benefits, cost estimates in micro computer aided cost engineering system (MCACES) and NEPA/SEPA documentation appropriate to support a recommendation for federal project authority in a feasibility report. The preparation of the feasibility report will consist of writing the main body and appendices, as well as a NEPA/SEPA EIS or supplement. The documentation will be on going and take place throughout the feasibility phase. During the feasibility phase, a technical review conference (TRC) and alternative formulation briefing (AFB) will be conducted with senior personnel from HQUSACE, NWD, Seattle District, and sponsor. The draft feasibility report will then be released for public review and a public meeting will be held. The draft report will be revised and a final feasibility report/EIS will be submitted to the Division Engineer at NWD for further processing.

2.3.3 Washington Level Review.

After the Division Engineer issues a Public Notice on the feasibility report, the report will then begin the Washington level review process. This process consists of filing the final EIS in the Federal Register following State and Federal agency review, submittal of the Chief of Engineer's report to the Assistance Secretary of the Army for Civil Works [ASA(CW)], and submittal of the ASA(CW) letter to the Office of Management and Budget (OMB) for review for consistency with the policies and programs of the President.

2.3.4 Early Action Projects.

Projects formulated to address ecosystem restoration objectives may be eligible for consideration in the Corps' Continuing Authorities Program (CAP) at a significant savings in project implementation time. Three Continuing Authorities: 1) Section 1135 of Water Resources Development Act (WRDA) of 1986, Project Modifications for Improvement of the Environment, 2) Section 206 of WRDA of 1996, Aquatic Ecosystem Restoration, provide for ecosystem restoration to restore degraded ecosystem structure, function, and dynamic processes to a less degraded, more natural condition, and 3) Section 205 of the 1948 Flood Control Act, Construction of Small Flood Control Projects for structural and non-structural solutions for flooding in urban areas, towns and villages.

Section 205 provides authority to the Corps of Engineers for studies of small flood control projects for structural and non-structural solutions in urban areas, towns and villages. Structural solutions can be levees, floodwalls, channel enlargement, realignment, obstruction removal and bank stabilization. Non-structural can be flood-warning systems. This authority has a Federal project limit of \$7,000,000 and requires the non-Federal sponsor to be responsible for 35 to 50% of the total implementation costs.

Section 1135 is used to restore a degraded ecosystem that resulted from Corps' project impacts and Section 206 can be used to restore degraded aquatic ecosystem in the public interest. Each of these authorities has a Federal project limit of \$5,000,000 and requires a non-Federal sponsor to share 25% of the Sec 1135 project costs or 35% of the Section 206 project costs.

The development of these projects requires the preparation of a Preliminary Restoration Plan (PRP), at full Federal expense, and a Feasibility Study Report, Plans & Specs and Construction cost shared with a non-Federal sponsor. These authorities require just under two years from inception to the start of construction, a significant savings over the comparable 4 to 8 years required when specific project Congressional authorization is required. Projects that are selected for further consideration in the project selection process of Stage 1 of this feasibility study will be reviewed to determine if they can be implemented in the CAP. If accepted into the CAP, these projects will be deleted from the short list and monitored throughout the General Investigation (GI) project to determine success.

2.4 Breakdown Structure.

The relationship between the feasibility study phase and related phases of project development is illustrated in Figure 1. Level 1 is the project itself, with successive levels representing discrete phases or aspects of project/study development. Level 5 represents the tasks and subtasks necessary to produce the feasibility report, associated appendices, and

EIS. The work breakdown structure (WBS) identifies the work to be performed and when the work will be performed. It provides a logical sequence of activities and identifies products or deliverables through the various stages of the feasibility phase. The study tasks are organized in Table 1 (Feasibility Cost Estimate Summary) according to their associated WBS.

Figure 1. Levels and Phases of Project Development.

Washington, Level 1 (Project):

- Chehalis River Basin Ecosystem Restoration Project

Level 2 (Major phases of project development):

- Reconnaissance phase
- Feasibility phase
- Pre-construction engineering and design (PED) phase
- Construction phase
- Operation and maintenance phase

Level 3 (Product of the feasibility phase):

- Decision Document

Level 4 (Features of the decision document):

- Feasibility Report
- Engineering Appendix
- Economics Appendix
- Real Estate Appendix
- NEPA/SEPA Environmental Impact Statement

Level 5 (Specific tasks and subtasks to achieve Level 4 features):

Refer to Section 4 below for feasibility study task descriptions and associated work breakdown structure (WBS)

TABLE 1. Cost Estimate Summary Sub-Account - Study Work Item	Stage I		Stage II		TOTAL
	FY 2002	FY 2003	FY 2004	FY 2005	
J000 - FEASIBILITY REPORT					
Government Effort	\$-	\$-	\$65,000	\$40,000	\$105,000
Sponsor In-kind Services	\$-	\$-	\$60,000	\$15,000	\$75,000
JAE00 - ENGINEERING AND DESIGN					
Government Effort	\$-	\$-	\$236,000	\$110,000	\$346,000
Sponsor In-kind Services	\$-	\$-	\$113,000	\$110,000	\$223,000
JB000 – SOCIO-ECONOMIC STUDIES					
Government Effort	\$21,000	\$75,000	\$100,000	\$2,000	\$198,000
Sponsor In-kind Services	\$15,000	\$75,000	\$55,000	\$2,000	\$147,000
JC000 - REAL ESTATE STUDIES					
Government Effort	\$-	\$-	\$60,000	\$20,000	\$80,000
Sponsor In-kind Services	\$-	\$-	\$60,000	\$10,000	\$70,000
JD000 - ENVIRONMENTAL STUDIES					
Government Effort	\$-	\$-	\$62,000	\$62,000	\$124,000
Sponsor In-kind Services	\$125,000	\$125,000	\$100,000	\$100,000	\$450,000
JH000 - COST ESTIMATING					
Government Effort	\$-	\$-	\$50,000	\$20,000	\$70,000
Sponsor In-kind Services	\$-	\$-	\$-	\$-	\$-
JJ000 - PLAN FORMULATION					
Government Effort	\$100,000	\$132,000	\$250,000	\$50,000	\$532,000
Sponsor In-kind Services	\$100,000	\$131,000	\$250,000	\$50,000	\$531,000
JN000 - ALL OTHERS					
Government Effort	\$-	\$5,000	\$5,000	\$5,000	\$15,000
Sponsor In-kind Services	\$-	\$-	\$-	\$-	\$-
Z000 - PROGRAM AND PROJECT MANAGEMENT					
Government Effort	\$51,250	\$51,250	\$67,000	\$40,000	\$209,500
Sponsor In-kind Services	\$51,250	\$51,250	\$67,000	\$40,000	\$209,500

TABLE 1. Cost Estimate Summary	Stage I		Stage II		TOTAL
Sub-Account - Study Work Item	FY 2002	FY 2003	FY 2004	FY 2005	
SUBTOTAL	\$463,500	\$645,500	\$1,600,000	\$676,000	\$3,385,000
CONTINGENCY (approx. 15%) applied in last yr.	\$-	\$-	\$-	\$507,750	\$507,750
TOTAL ESTIMATE (IN 2001 DOLLARS)	\$463,500	\$645,500	\$1,600,000	\$1,183,750	\$3,892,750
Cost Inflation (assumed approx. 3% per yr.)	\$14,000	\$39,000	\$144,000	\$142,000	\$339,000
FULLY FUNDED ESTIMATE	\$477,500	\$684,500	\$1,744,000	\$1,325,750	\$4,231,750
GOVERNMENT COST SHARE	\$177,418	\$279,050	\$1,002,400	\$673,000	\$2,131,868
SPONSOR'S CONTRIBUTION					
Cash	\$-	\$-	\$-	\$-	\$-
In-kind Services	\$300,082	\$405,450	\$741,600	\$652,750	\$2,099,882
<u>SPONSOR'S (CREDIT)/DEBIT</u>			\$-	\$-	\$-
<u>TOTAL</u>	\$477,500	\$684,500	\$1,744,000	\$1,325,750	\$4,231,750

3.0 FISCAL YEAR FUNDING BREAKDOWN.

The funding breakdown is based on a schedule which requires the submittal of the final feasibility report to the Northwestern Division Commander 40 months after signing the Feasibility Cost Sharing Agreement (FCSA) and initiating the study. NOTE that the “study period”, as defined in the Feasibility Cost Sharing Agreement (Article 1 D), commences with the release to the U.S. Army Corps of Engineers, Seattle District, of initial federal feasibility funds following execution of the Agreement. The study period, and thus the feasibility phase itself, ends when the Division Engineer signs the Public Notice.

The feasibility study cost estimate shown in Table 1 is summarized by fiscal year (1 Oct - 30 Sept). Table 1 shows the estimated cost of each study work item in 2001 dollars, followed by the estimate of government and sponsor’s cost share. The fully funded total study cost estimate for the government and sponsor’s cost share is shown at the end of Table 1 with approximately 15% contingency. The fully funded estimate is determined by multiplying the base year 2001 estimated study costs by an approximate 3% inflation factor for work to be performed in FY 2002 through 2007. Detailed study cost estimates for individual study tasks have been assembled in Appendix B. The detailed estimates will be used by the project manager in issuing work requests during the course of the feasibility phase.

4.0 STUDY TASK AND SUBTASK DESCRIPTIONS AND WORK BREAKDOWN STRUCTURE (WBS) CODES.

Below is a brief description of the individual feasibility phase tasks, organized in accordance with the prescribed Work Breakdown Structure (WBS). The WBS for each task and subtask corresponds to the work category element in the Corps of Engineers Financial Management System (CEFMS). Use of the WBS will enable the estimated funding and actual cost of individual tasks and subtasks, and consequently the estimated and actual costs of the feasibility phase, to be allocated and accounted for, respectively. The study cost estimate is summarized in Table 1. Detailed cost estimates for individual study tasks shown in Table 1 are assembled as an attachment to the PMP. The study schedule is shown in Appendix A.

J000 - FEASIBILITY REPORT.

The government and sponsor will perform the work at a total cost estimate of \$180,000.

J001 - Draft Report Preparation. This task includes all activities specifically pertaining to writing the draft feasibility report and NEPA/SEPA EIS for public review. Activities include writing the draft feasibility report / EIS, editing and revision following independent technical review, and distributing the draft feasibility report / EIS for public review.

Reference: ER 1105-2-100.

J002 - Draft Feasibility Report / EIS Independent Technical Review. This work includes costs for technical review of the draft feasibility report / EIS by the Independent Technical Review (ITR) Team. Qualified staff members who are independent of the technical production of the feasibility report will conduct technical review of the draft report. The FCSA Appendix A – Project Management Plan

review will verify that the recommended plan (1) satisfies engineering and functional criteria; (2) meets the customers needs consistent with law and existing public policy, (3) has correct design assumptions and calculations; and (4) has a sufficient level of engineering to substantiate both the screening level comparative cost estimates and the baseline cost estimate with contingencies, as well as benefits, to support selection of the recommended plan. Members of the ITR team will include Seattle District and sponsor's personnel. The study will also have extensive in-progress review during the plan formulation process, and the draft feasibility report /EIS will undergo a rigorous public review following the independent technical review.

Reference: EC 1165-2-203, Technical and Policy Compliance Review.

J003 - Final Report Preparation. This effort includes all activities specifically pertaining to producing the final feasibility report /EIS. Specific activities include writing, assembling, editing, reviewing, revising, responding to review comments, preparing the final documents, and transmitting them for processing by the Northwestern Division Engineer.

Reference: ER 1105-2-100.

J004 - Washington Level Review and Approval Support. This task includes those activities typically necessary for the Seattle District and the project Sponsor to support the Washington Level Review process of the feasibility report. This process starts with the signing of the final report by the Seattle District Engineer, and ends when the Assistant Secretary of the Army (Civil Works) submits the feasibility report to the Office of Management and Budget for review for consistency with the policies and programs of the President. These items could include answering comments, attending Washington level meetings and other necessary travel, and making minor report revisions as a result of Washington Level Review. This work item is required to be estimated at 5% percent of the total study cost or \$50,000 whichever is less, and will be shared equally.

Reference: ER 1105-2-100, EC 1105-2-208.

JAE00 – ENGINEERING AND DESIGN. This account includes engineering and design studies of alternative restoration and flood damage reduction sites and preparation of an engineering appendix to the feasibility report. Engineering and design studies will be performed at the minimum level needed to establish conceptual designs for project features/elements and for development of construction cost estimates, and estimates of operation, maintenance, repair, replacement and rehabilitation (OMRR&R) and monitoring. At the same time these studies will establish an appropriate basis for further pre-construction engineering and design (PED) design efforts, and project construction schedules. The tasks will also include restoration planning consisting of identifying habitat improvement measures in coordination with team members, quantifying the outputs/benefits of each measure, assist in the selection of the recommended plan, and preparation of narrative covering the above items. The design appendix will consist of all design data analyses, a written description of the design features of the recommended plan, plates, and cost estimates.

Reference: ER 1110-2-1150, ER 1105-2-100.

The government and sponsor will perform the work at a total cost estimate of \$569,000.

JAE01 - Hydrology Studies. This subaccount includes hydrologic studies to support hydraulic and design studies. Where hydraulic modeling is required hydrologic flow duration data will be required for the modeling efforts. Hydrologic input to the feasibility report will be prepared along with a Hydrology Appendix.

JAE02 - Hydraulic Studies. This subaccount includes hydraulic design studies for approximately 30 sites throughout the priority sub-basins in the Chehalis Basin. Some of the proposed projects, side channels and stream rehab will require hydraulic modeling. Also if extensive bio-engineering bank stabilization projects are proposed for any of the sub-basins, a computer model will be required to determine the effect on water surface elevations from placing structures in the water course. Hydraulic tidal input will also be required for the estuary sites that have tidal effects. Computer modeling will also be required to determine the reduction in water surface elevations caused by flood damage reduction features. This effort will also include hydraulic input for the OMRR&R estimate. This work will include the preparation of a hydraulic section in the Engineering and Design Appendix.

JAE03 - Geotechnical Studies. This subaccount includes the investigation, exploration, and analysis of foundation and material conditions related to the selection and design of the selected restoration and flood damage reduction alternatives. The Stage 1 activities leading to selection of the short list will utilize existing geotechnical data for the screening of alternatives. Geotechnical investigations and analyses will be performed only on the sites selected for detailed study to establish conceptual designs for project features. The major geotechnical analysis will be done in the Pre-construction Engineering and Design (PED) effort. A geotechnical section will be included in the Engineering and Design Appendix.

JAE04 - Hazardous, Toxic, and Radiological Waste (HTRW) Studies. The objective of HTRW studies is to determine the presence and character of contamination identified in an initial screening of the 30 sites selected for detailed study. A Phase I screening will be done on each of the sites in detailed study. If this screening shows significant contaminants exist at the site, consideration will be given first to selecting another site or developing an estimate of the HTRW studies that would need to be conducted in the PED phase.

JAE05 - Survey and Mapping. This subaccount includes all surveying, aerial photography, mapping, and related tasks necessary to support engineering and design studies for the basin wide study. This also includes the preparation of topographic maps.

JAE06 - Design Analysis. This design analysis outlines any necessary civil design analysis work necessary to identify and define conceptual features of ecosystem restoration and flood damage reduction elements of plans considered and recommended in the feasibility report. This work will consist of, but not be limited to:

- visiting sites
- providing engineering data for the fact sheets on each site considered in stage 1 screening

- collecting and evaluating background data such as topographic and bathymetric survey data, hydrologic and hydraulic data
- entering data to digital terrain model (used to calculate quantities and make cross sections, etc.)
- developing topographic files to be used for design
- preparing concept designs and defining features for 30 sites
- preparing quantity estimates for use in cost estimating
- establishing major work items and construction sequence
- performing in-house and interagency coordination.

JAE07 - Write Appendix. Prepare narrative of analyses performed, methodologies used, and results obtained for Engineering and Design Appendix. The information developed above will be used as a basis for developing and screening alternative plans. Project features will be developed to form an adequate basis for establishing a project construction schedule and a baseline cost estimate. Engineering and design studies will be performed at the minimum level needed to establish conceptual designs for project features and elements and for development of construction cost estimates, while at the same time forming an appropriate basis for subsequent Pre-construction Engineering and Design (PED). The engineering appendix will document the engineering and design effort during project formulation, and will include the design data analyses, a detailed description of the design features of the recommended plan, summary of alternative measures and plans evaluated, drawings, and construction cost estimates.

Reference: ER 1110-2-1150, ER 1105-2-1407.

JB000 - SOCIO-ECONOMIC STUDIES. An economic analysis related to ecosystem restoration and flood damage reduction will be performed. This includes helping identify all potential restoration and flood damage reduction alternatives and then performing an incremental cost and cost effectiveness analysis for each of the separate restoration components and a maximization of economic benefits for the flood damage reduction portions. The results of these two analyses will be used to:

- assist in the selection of the preferred projects and to compute an apportionment of costs to be assigned to each project purpose
- determine the construction costs to be paid by the federal government and local sponsor
- assist the local sponsor in preparing a financing plan and statement of financial capability
- prepare an assessment of sponsor's financing plan
- prepare economic appendix to include the results of the economic analyses, benefit-cost ratios, maximization analysis, federal versus non-federal cost sharing computation, and determining the National Ecosystem Restoration (NER) and the National Economic Development (NED) plans

The results of these studies will be documented in an Economic Appendix containing narrative describing the analysis performed, methodologies used and results obtained.

Reference: ER 1105-2-100, Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies.

The government and sponsor will perform the work at a total cost estimate of \$345,000.

JC000 - REAL ESTATE STUDIES. This task includes all required real estate studies and analyses to support plan formulation and plan selection, including obtaining Rights-of-Entry (ROE) where needed to support field investigations and a gross appraisal of land costs required for economic evaluation to be developed in stage 2, site specific study. A Real Estate Appendix for the feasibility report will be prepared containing a real estate write-up describing the lands, easements, and rights-of-way required for the recommended plans, the gross appraisal of land values, and an estimate of the sponsor's administrative and acquisition costs.

This work will be performed by the government and/or the sponsor at a total cost estimate of \$150,000.

JD000 - ENVIRONMENTAL STUDIES. This task includes inventory and assessment required to determine the effects of restoration of ecosystems and non-monetary benefits of all alternative plans. For identified projects or alternatives whose primary benefits are flood damage reduction, appropriate consideration of any potential adverse environmental effect will be considered. A number of discrete tasks have been identified, as described below. Work will lead to preparation of a programmatic Environmental Impact Statement (EIS), plus appropriate written narrative for the feasibility report. These studies will provide valuable and vital information for Endangered Species Act (ESA) Section 7 biological evaluations, where determinations on how construction activities and habitat changes would affect endangered and threatened species are made. This work will be coordinated in consultation with NMFS and USFWS.

Reference: ER 1105-2-100, ER 200-2-2

The work will be performed by both the government and the sponsor at a total cost estimate of \$574,000.

JD001 – Cultural Resource Studies.

Previous cultural resource studies have identified numerous historic properties within the greater project area. The term historic property refers to prehistoric and historic archaeological sites, standing historic structures, and traditional cultural properties of importance to the affected tribes. It is likely that additional as yet undocumented historic properties of all types exist within areas that will potentially be affected if elements of the Chehalis River Basin study are implemented. Cultural resources work will entail a background overview of previous cultural resource studies in the area based on archival

research and informant interviews. This will allow the completion of the Affected Environment narrative of the NEPA document and preliminary assessment of the types of effects to cultural resources that may be anticipated for each project alternative or evaluation area. In addition, coordination with Washington State Historic Preservation Officer (SHPO) and the affected tribes will support the development of a Programmatic Agreement (PA) regarding the management of historic properties within the project area. This subaccount provides for the additional cultural resource work necessary for the narrative of the Feasibility Report and programmatic EIS and development of the PA.

References: National Historic Preservation Act, National Environmental Policy Act, Executive Order 11593 (Protection and Enhancement of the Cultural Environment), ER 1105-2-100, American Indian Religious Freedom Act, and the Native American Graves Protection and Repatriation Act.

JD002 - Information Management. Geographical Information System (GIS) technology will be used to manage the large volume of diverse geospatial data and information to be used to screen the basin and identify sites of interest. Tasks include identifying and computing environmental data, and preparing digitized data layers for use in GIS site screening and selection, data quality verification, and GIS system operation and management.

JD003 - Literature Review. Conduct an in-depth literature review of available references on environmental limiting factors, particularly as they pertain to salmon and ecosystem restoration proposals within the Chehalis Basin including Grays Harbor. This literature review will: 1) gather the documented ecological limiting factors within Chehalis Basin and Grays Harbor estuary, 2) collect information on ecosystem restoration projects that have been proposed to meet the needs of the basin, and 3) prepare a synthesis of all literature reviewed to support a follow on assessment of needs and alternatives to meet the needs of the project purpose.

JD004 - Field Investigations. Conduct field investigations necessary to determine if all potential ecosystem restoration alternatives have been formulated in the priority Chehalis sub-basins and Grays Harbor estuary. Use the results of the literature search to determine the alternatives, which have been proposed. From the limiting factors literature determine through field inspection the environmental output of each and or the types of field studies necessary to develop the data to assess site specific environmental outputs of each site considered in the priority basins. USACOE and/or USFWS may be the chief investigator for specialized sub tasks that relate to fish and wildlife investigations. Document this task with a memorandum containing field observations, data collected, and recommendations for further study for each of the priority basins. Field investigations may include the following separate efforts:

Riparian Survey. The Government will review existing information on riparian habitat, vegetation type, and structure and floodplains. A field survey will be completed to evaluate the quality and extent of riparian areas in project areas. The Government will evaluate potential actions needed to implement restoration projects that protect or restore riparian areas for each alternative.

Wetland Survey. The Government will review existing information on wetlands in the project areas. The Government will contract field surveys to determine the extent of wetlands within the project areas. The Government will evaluate potential actions needed to implement restoration projects that protect or restore wetlands for each alternative. If necessary, the Sponsor will assist the Government in this task, providing personnel for field surveys, and other tasks.

Fisheries Survey. The Government will review existing information on fish distribution and use of the Chehalis River and tributaries. Additional field investigations of instream habitats and fish distribution may be conducted, depending on the results of the initial literature review. The Government will evaluate potential actions needed to implement restoration projects that protect or restore fisheries for each alternative. The Government will contract field surveys and will conduct an Instream Flow Incremental Methodology (IFIM) study, if necessary

Terrestrial and Aquatic Habitat Survey. Separate from the fisheries field surveys, the Sponsor will also conduct an aquatic and terrestrial habitat analysis. The analysis will include the evaluation of habitats in project areas and fully document the results of all field visits. Documentation will include preparation of lists for all observed and potentially occurring bird, amphibian, reptile, mammal, invertebrate, and plant species. Habitat conditions will be identified and described for all special status species and for species of special interest. The Government will consult with State and Federal fish and wildlife agencies in the determination of which aquatic and terrestrial habitat analyses are appropriate and how they will be carried out. The Government will quantify habitat values changes by projects so that these values can be compared to overall project costs.

The local sponsor will participate and provide assistance to these field investigations.

JD005 - Prepare Programmatic NEPA/SEPA EIS. The principal outputs of this effort will include: evaluation of programmatic alternatives; determination of geographic areas of interest, and restoration /flood damage reduction site feasibility; and definition of siting criteria. The work includes preparing a draft programmatic EIS, conducting the EIS review process and related environmental coordination, contract management, and production of the final NEPA/SEPA programmatic EIS. Documents will be reviewed in-house and by Agencies and the public as necessary before preparing final NEPA/SEPA EIS.

Reference: 33 CFR Parts 230 and 325, and ER 1105-2-100.

JD006 - Prepare Supplemental NEPA/SEPA EIS. For each of the specific site plans recommend for further federal consideration, a supplement to the programmatic NEPA/SEPA EIS will be prepared containing project/site specific information and assessments.

Reference: 33 CFR Parts 230 and 325, and ER 1105-2-100.

JD007 - Fish and Wildlife Coordination Act Report. This subaccount includes coordination with, and studies conducted by the USFWS, as required by the Fish and Wildlife Coordination Act (FWCA). This task will be performed by the USFWS and managed by the Government. The Government will write a scope of work and transfer funds to the USFWS for interagency and tribal coordination, planning, and evaluation of the impacts of alternative measures and plans on fish and wildlife resources, preparation of a minimum of two Planning Aid Letters (PAL), and a draft and final Fish and Wildlife Coordination Act Report (FWCA) Report for inclusion in the Feasibility Report. The Government effort also includes monitoring USFWS work and providing USFWS with required information such as description of alternatives, map of affected area, etc. The USFWS effort will include environmental data collection and evaluation of the environmental resources of the study area. The USFWS will review alternative plans and assess the effect of alternatives on the environmental values of the study area. The USFWS will offer recommendations concerning formulation of alternative plans. The USFWS will prepare a FWCA Report documenting its findings. The FWCA Report will be included as an attachment to the FR/EIS. For the purposes of this report, the cost estimates are for anticipated coordination in Stage 1 only. Additional funding will be required for coordination efforts in Stage 2.

Reference: Fish and Wildlife Coordination Act of 1958 (PL 85-624, as amended).

JD008 - Environmental Coordination. Coordination consists of attending agency and sponsor meetings, coordinating with Native American Tribes, and attending team and public meetings and workshops.

Clean Water Act Section 404(b)(1) Evaluation. The Government will complete a Section 404(b) 1) evaluation for the recommended projects. A 404(b)(1) analysis will be completed for both the Programmatic EIS and the Supplemental EIS.

Endangered Species Act Coordination. Endangered Species Act (ESA) coordination letters will be sent to both the USFWS and the NMFS. Based on their response, the ESA coordination will be completed with the preparation of a biological assessment(s), as appropriate, to identify possible effects to special status species found in the project area.

Coastal Zone Management Act. A Coastal Zone Management Act (CZM) consistency determination will be completed with the project.

JH000 - COST ESTIMATING. This task includes development of cost estimates necessary to evaluate alternative plans, and preparation of a detailed baseline cost estimate for the recommended plan to be used for project authorization, development and completion. All cost estimates will include all federal and non-federal costs for lands and damages, all construction features, relocation of facilities and utilities, mitigation (if required) planning, engineering and design, supervision and administration, contingencies and cost escalation

associated with each of these activities through mid-point of construction. The government will prepare cost estimates, with input from the sponsor.

Reference: ER 1105-2-100.

The government will perform the work at a total cost estimate of \$70,000.

JJ000 - PLAN FORMULATION AND EVALUATION. This task involves identifying all potential alternatives to solve the identified problem, evaluating each alternative and selecting the recommended plans. Alternatives will be formulated based on four criteria: completeness, effectiveness, efficiency, and acceptability. As formulation progresses, remaining alternatives will be evaluated in greater detail, eliminating alternatives until detailed evaluation is complete and a recommended alternative is selected for implementation. The formulation process will analyze all available information and data assembled from many different components of the study. The government and sponsor will jointly conduct plan formulation.

Reference: ER 1105-2-100.

The government and local sponsor will perform the work at a total cost estimate of \$1,063,000.

JJ001 - Without Project Condition Report. This task involves defining the conditions that will prevail in the basin into the future without the project including, a literature review, data gathering, coordination, and reporting. The following is a partial list of anticipated studies that will be conducted to assist in preparation of the Without Project Conditions Report:

Aerial Photography Analysis. This study will assess physical and biological changes and trends in the basin using and comparing existing up-to-date aerial photographs and available aerial photographs from flights as long ago as 1938. Existing and past conditions and or trends in riparian resources, geomorphology, vegetation resources, and land use will be assessed. The Government or its contractor will perform this study with assistance from the local sponsor.

River Basin Characterization. The River Basin Characterization analysis will use a landscape based process approach to develop an overarching recovery framework to: 1) target restoration and protection actions in the Chehalis River watershed, 2) focus technical studies that validate technical assumptions and assess process alterations at finer scales and, 3) provide flexibility needed to adjust restoration trajectories through adaptive management. The characterization model will produce data to prepare the report and describe the relative changes to basin processes (movement of water, sediment, nutrients, large wood, toxicants, and heat) caused by human land use. Results will be synthesized to produce a set of recommendations for approaching basin-wide restoration efforts. The Local Sponsor or one of the project stakeholders will perform this study with assistance from the Government.

Watershed Assessment. Using information collected during the Level 1 Assessment conducted by the Local Sponsor, a Chehalis River Watershed Assessment will be conducted to determine what actions may be required to effectively, efficiently, and equitably manage water resources in the Chehalis Basin to sustain and restore healthy populations of native fish while sustaining water needs for human use. The Local Sponsor or one of the project stakeholders will perform this study with assistance from the Government.

JJ002 - Needs Assessment. This task uses the without project condition and predicts the needs of the environment to support salmonid species and to reduce flood damages in the basin.

JJ003 - Formulation of Alternatives. For the priority basins a selection of the project alternative types that best meet the needs will be made in collaboration with Grays Harbor County, other local sponsors, the Tribes, resource agencies and the public. A list of project alternatives that fit the selected project types will then be formulated.

JJ004 - Selection of Alternatives for Detailed Study. The list of projects will then be evaluated to determine the 30 project alternatives that are most affective in meeting the objectives. An incremental cost and cost effectiveness analysis, a test of acceptability, and the sponsor's willingness will be used to determine the 30 project alternatives to be recommended for detailed study.

Reference: ER 1105-2-100.

JN000 - ALL OTHER. This work involves an assessment by Operations Division regarding the operation and possible modification of Wynoochee Dam. While the planning for these activities is very speculative, an estimate of \$15,000 was used to cover these tasks until a better definition of the scope can be made. The government will perform this work.

Z000 - PROGRAM AND PROJECT MANAGEMENT. This task will include all activities related to the overall management of the feasibility phase.

The government and sponsor will perform the work at a total cost estimate of \$419,000.

Z001 - Program Management. Program management consists of feasibility phase budget development, justification, management, defense, and execution, as well as fund allocation and monitoring of both federal and non-federal expenditures. It includes preparation of budgetary documents and upward reporting, programming of funding, managing and tracking study obligations and expenditures, and accounting for sponsor cash contributions and in-kind services.

Z002 - Project Management. Project management includes a wide variety of tasks and activities. These include overall coordination and local, state, tribal and federal governmental agencies, interest groups, and the general public; oversight management of Corps of Engineer, sponsor, and contracted study tasks and related activities; coordination

between the Corps and the sponsor; attending and conducting meetings and briefings throughout the study; responding to congressional and other inquiries; and oversight management of review of the draft and final feasibility activities. This task does not include plan formulation, report preparation, or Washington level review support that are separately accounted for.

Reference: ER 5-1-11, ER 1105-2-100.

Z003 - Public Involvement

This subaccount will consist of activities related to developing public information on the study and obtaining public comments during the study process. Education and increased awareness and exchange of viewpoints are vital to the development of acceptable and successful recommendations for improvements to the existing situation. The public involvement/outreach strategy will consist of 1) a series of workshops and public meetings, 2) workshop and meeting notices, news releases, and public information brochures; and 3) speaking engagements at community service clubs and local organizations by Corps and Grays Harbor County personnel and possibly other experts, if available. The study will have extensive review throughout the process by agencies at the federal, state, local and Tribal governmental level, and by, special interest groups, and the general public. Those entities most directly involved in review will include project partners, project stakeholders such as WDF&W, WDOT, WDOE, USFWS, NMFS, the Chehalis and Quinault Tribes, local governments, the Chehalis River Council and, private citizen groups and interest groups. The Sponsor will provide meeting facilities and develop public notices, news releases, and brochures for workshops and public hearings. The Government will maintain a mailing list and distribute workshop and public hearing notices. The Government and Sponsor will jointly conduct workshops and public meetings and participate in the community outreach engagements.

Reference: ER 1105-2-100.

Recognizing that the active involvement of all interested publics in the planning and design process is critical, as well as obtaining valuable input from interested stakeholders in the community, the county will solicit the active involvement of local land use planners, environmental groups, local governmental agencies, Native American tribes, businesses, resource agencies, interested groups, and private citizens. Participation of people with scientific and technical expertise will also be encouraged to increase the amount of relevant information available to the project study team. Coordination with several groups will be maintained to facilitate dialogue among basin residents and interest groups. These groups include the following:

Chehalis River Basin Partnership (CRBP). The CRBP was established in 1998 by local governments in the Chehalis River basin to implement state mandated watershed planning. It's goals are to coordinate cooperative efforts on: 1) Improvement of water quality, 2) Management of water supplies for farms, fish, industry, and people, 3) Reduction of effects of flooding, 4) Increase in recreational opportunities, and 5) Increase in public awareness through education. Their primary

focus is on preparing a watershed management plan that will address water quality, water quantity, and fish habitat. Coordination will be maintained with the CRBP to identify any information that they collect or develop that would be beneficial in the study. As restoration measures and alternatives are developed, these will be discussed with the CRBP to obtain their comments on the possible projects, their potential impacts, and questions and concerns that should be addressed as part of the report preparation.

Z004 - Executive Committee. This task includes costs incurred by the study Executive Committee made up of members from the Corps and Grays Harbor executives who generally oversee study progress in accordance with the PMP, as prescribed in Article IV of the FCSA. The Executive Committee will meet periodically throughout the feasibility phase.

Z005 - Pre-construction Engineering and Design (PED) Cost Sharing Agreement. A pre-construction engineering and design (PED) cost sharing agreement is prepared during the feasibility phase, following completion and submittal of the final feasibility report. Therefore, some scoping for PED is required during feasibility for inclusion into the Feasibility Report. The PED phase of project development encompasses all planning and engineering necessary for project construction. It also outlines the division of engineering and design responsibilities between the government and the sponsor.

Z006 - Negotiate Draft Project Cooperation Agreement (PCA). This task includes coordinating with the local sponsor during the feasibility phase. It also includes reviewing the model project cooperation agreement (PCA) with the sponsor and agreeing on a final draft PCA to be included in the final feasibility report. The PCA describes all of the requirements and responsibilities relating to construction of the project, including items of local cooperation required from the local sponsor.

Reference: Section 221 of Flood Control Act of 1970 (Public Law (PL) 91-611), as amended by Sections 101(e) and 103(j) of the 1986 Water Resource Development Act (PL 99-662), as amended.

5.0 STUDY MANAGEMENT AND COORDINATION.

5.1 Coordination Mechanism.

Study management and coordination is generally described in Section 4 of this Agreement. The specific coordination mechanism between the Seattle District and the local sponsors described below.

a. The Corps project manager will be responsible for the day-to-day management of the study. He/she will maintain close coordination with the entire Project Delivery Team (PDT), to ensure timely prosecution of the study and compliance with this Agreement. The Corps project manager will meet and confer with the sponsor's designated representative on a regular basis throughout the study to discuss study progress. The Corps project manager will maintain a written record of such meetings, with a copy provided to the sponsor's representative and members of the Project Delivery Team (PDT).

b. The Corps project manager will prepare quarterly study progress reports, with appropriate input from the sponsor’s representative and the Project Delivery Team (PDT). Quarterly progress reports on the study will be submitted to the Executive Committee and PDT. The reports will identify progress of all study tasks during the period, as well as document unresolved conflicts or policy issues requiring action by the Executive Committee. In addition, modifications to the PMP requiring amendment of the Agreement will be reported to the Executive Committee as necessary.

c. The sponsor project manager also will be responsible for day to day management of the study. He/she will coordinate with the Corps project manager to ensure necessary work is completed on time and reported accurately to the Corps. The sponsor project manager is responsible for reporting in-kind contributions to the Corps on a quarterly basis, assisting the Corps in the analysis of real estate, environmental studies and documentation, plan formulation, public outreach and coordination, and project management throughout the project.

5.2 Review and Acceptance of Work.

The Project Delivery Team (PDT), under the direction of the Corps project manager, will monitor and review all work. Review and acceptance of work products will be documented in the quarterly study progress reports submitted to the Executive Committee and PDT. The project manager will bring any disagreements about the acceptability of completed work to the PDT for resolution. Any unresolved issues will be brought to the attention of the Executive Committee.

6.0 QUALITY CONTROL PLAN.

6.1 Purpose.

This Quality Control (QC) Plan presents the process that assures quality products. This QC plan defines the responsibilities and roles of each member on the Project Delivery Team (PDT) and Independent Technical Review (ITR) Team. The products to be reviewed by the ITR Team are the draft feasibility report, NEPA/SEPA EIS and associated technical appendices, and any interim reports..

6.2 Methodology.

a. **The Project Delivery Team** (PDT) consists of qualified staff principally from within the Seattle District and the sponsor. Team members are identified in Table 2.

Table 2. Feasibility Phase Project Delivery Team.

<u>Discipline</u>	<u>Name</u>	<u>Office/Agency</u>
Project Manager	Lori Morris	Corps of Engineers
Program Analyst	Patricia Bauccio	Corps of Engineers
Environmental Coordinator	Chris Runner	Corps of Engineers

Environmental Resources	Jim Jacobson	Corps of Engineers
Cultural Resources	Dave Grant	Corps of Engineers
Fish & Wildlife	Chris Runner/Jim Jacobson	Corps of Engineers
Economic Evaluation	Jim Smith	Corps of Engineers
Cost Engineering	Alray Neumiller	Corps of Engineers
Real Estate	Kevin Kane	Corps of Engineers
Operations	Paul Komoroske	Corps of Engineers
Hydraulic Engineering	Ted Perkins	Corps of Engineers
Construction	Shaleigh Daniel	Corps of Engineers
Engineering	Norm Skjelbreia	Corps of Engineers
Sponsor	Lee Napier	Grays Harbor County

Table 3. Proposed Independent Technical Review (ITR) Team.

Discipline	Reviewer	Office/Agency
Review Team Leader	Les Soule	Corps of Engineers
Plan Formulation and Policy	Bruce Sexauer	Corps of Engineers
Environmental Restoration	To be determined	Corps of Engineers
Engineering & Design	To be determined	Corps of Engineers
Economics	Jeff Mendenhall	Corps of Engineers
Cost Engineering	To be determined	Corps of Engineers
Real Estate	Wanda Gentry	Corps of Engineers
Cultural Resources	David Rice	Corps of Engineers
Sponsor	Kevin Varness	Grays Harbor County

Table 4. Executive Committee.

Name	Position	Office/Agency
COLONEL RALPH GRAVES	DISTRICT COMMANDER, SEATTLE	CORPS OF ENGINEERS
Commissioner Bob Beerbower	County Commission Chairman	Grays Harbor County
Dr. C. S. Sodhi	Director – Natural Resources	Confederated Tribes of the Chehalis Reservation
Mona King	Planning Branch Chief	Corps of Engineers
Bruce Sexauer	GI Coordinator	Corps of Engineers
Rose Elway	Budget Director of Management	Grays Harbor County

b. The Independent Technical Review (ITR) Team will be selected on the basis of having the proper knowledge, skills, and experience necessary to perform the task and their lack of affiliation with the development of the feasibility report/EIS and associated appendices. The review team is primarily drawn from Seattle District personnel, to ensure that the technical work and products from economics, engineering, environmental, cost estimating, real estate, and other disciplines produce a quality product. Review team members, where known, are shown in table 3. Review of the EIS will also be accomplished through the formal NEPA/SEPA review process.

Technical review will use appropriate analytical methods for each technical area. Technical review will rely on periodic technical review team meetings to discuss critical checkpoints to include definition of the ‘without project conditions’ selection of projects for detailed study and completion of the concept design and cost estimates, and on the review of the written feasibility report documentation and files. Independent technical review will ensure that:

- the feasibility report is consistent with current criteria, procedures and policy
- clearly justified and valid assumptions that are in accordance with established guidance and policy have been utilized, with any deviations clearly identified and properly approved
- concepts, features analytical methods, analyses, and details are appropriate, fully coordinated, and correct
- problems/issues are properly defined and scoped
- conclusions and recommendations are reasonable

c. **Executive Committee** made up of top management from the Seattle District, Corps of Engineers, Chehalis Tribe, and the local sponsor, Grays Harbor County, are identified on Table 4. This committee will meet periodically throughout the feasibility study to provide oversight and ensure that the study is conducted consistent with the provisions in this PMP. The Committee may also make recommendations that it deems warranted to avoid potential sources of dispute. Requests for changes in scheduling and study costs will also be presented to the Committee for their review and approval.

6.3 **Quality Control Responsibilities.**

a. **General.** Technical review team continuity will be maintained through the life of the project, to the maximum extent possible. The size and composition of the review team shall be based on the complexity of the project; this composition may change as the project progresses and specific project features are better defined. The review team leader will normally be a Corps of Engineers project manager.

b. **Project Manager.** The feasibility study project manager shall be responsible for coordinating the review effort with the review team leader and shall:

- ensure that the schedule contains sufficient time to perform reviews of completed products
- ensure that the ITR team leader is notified of significant PDT meetings and review conferences so that he/she can assemble the review team for in progress reviews
- manage responses to review memorandums and resolve technical issues with the ITR review team leader, consult with Northwest Division as appropriate, and forward all unresolved technical issues to the appropriate Functional Chief for resolution

c. **Resource Managers.** Each Corps of Engineers Resource Manager is responsible for ensuring that all work prepared by or for his/her Section or Branch has received any necessary internal quality control checks prior to the feasibility report being furnished to the review team for review.

d. Independent Technical Review (ITR) Team Leader. The ITR review team leader is responsible for coordinating all activities associated with the independent technical review of the draft feasibility report and EIS, and will:

- attend all major plan formulation meetings
- coordinate the technical review and assemble all technical review comments and other review related correspondence for the use by the ITR team and Project Delivery Team

e. Technical Review Team Members. Each review team member is responsible for performing an independent technical review of the draft feasibility report and EIS or portion thereof.

6.4 Quality Control Process.

a. Technical Coordination. Generally, product development shall be performed in accordance with established criteria, guidance, and policy. Meetings with the appropriate ITR review team members during the planning process will be held at key decision points. The PDT meetings will also be held to discuss and resolve technical and/or policy issues that may arise during the course of product development. Technical issues and concerns raised during the technical review process will be documented, as will the resolution of these issues and concerns.

b. Product Quality Control. Product quality control is the responsibility of the project manager working with the ITR team leader to complete the independent technical review of a completed product. The Corps project manager will provide completed documents to the ITR review team leader who will distribute them to the ITR review team members for review. During the review, review team meetings will be scheduled as required to ensure that all components have been coordinated, there is consistency throughout the document and there is a consensus on proposed revisions. Any issues on which a review team position cannot be reached will be referred through the project manager to the District Functional Chief for resolution. The review team leader will record the significant team comments in a written review memorandum that will be provided to the project manager for appropriate action. Comments that cannot be resolved between reviewers and study team will be taken by the review team leader and project manager to the appropriate Functional Chief for final disposition; the assistance of Northwestern Division and HQUSACE will be requested as needed.

c. Consultant Products. Consultants are an extension of the Corps or sponsor staff. Accordingly, any designs, reports, etc, prepared by consultants will have an independent review by the ITR review team just as if they had been prepared by the Project Delivery Team.

d. Policy Review. Questions or problems regarding policy concerns will be elevated through NWD directly to HQUSACE (CECW-A) for resolution, as the issues develop. Legal

and real estate policy issues will be elevated to the Chief Counsel and Director of Real Estate, respectively.

6.5 Technical Review Documentation.

a. All significant review comments will be provided to the Project Delivery Team in written format. The project manager will assure that all significant comments are resolved and their final disposition is identified in writing.

b. The feasibility report submitted to higher authority shall be accompanied by technical review documentation. This document shall be a separate item not to be included as part of the feasibility report. A page indicating the names of the Project Delivery Team members and technical review team members shall be included.

6.6 Schedule.

Feasibility phase milestones are scheduled as indicated on Table 5 of the PMP.

Table 5. Feasibility Phase Schedule and Milestones.

<u>Milestone Reference Number</u>	<u>Description</u>	<u>Scheduled Dates</u>
060	Execute FCSA	September 30, 2001
100	Initiate Feasibility Study	October 1, 2001
105	PMP In-Progress Review	October 1, 2002
111	Existing W/O Project Conditions Complete	December 1, 2002
112	Preliminary Screening Complete	June 30, 2003
	Plan formulation Complete (Stage I)	August 31, 2003
113	Plans Selection	August 31, 2003
105	IPR	September 30, 2003
114	Feasibility Design Complete	October 1, 2004
120	Technical Review Complete	June 1, 2005
124	AFB	June 2, 2005
145	Public Review Complete (Dft. Feas. Report & Dft. EIS)	August 31, 2004
165	Feasibility Report With NEPA/SEPA Submitted to NWD	December 31, 2005
170	Northwestern Division Commander's Public Notice	February 1, 2006
290	PED Agreement Signed with Grays Harbor County	Spring 2006
330	Chief Report to ASA(CW)	Summer 2006
350	President Signs Authorization	Fall 2006
960	Construction Initiated	October 1, 2008
990	Construction Complete	October 1, 2018

APPENDIX A

Gantt Chart Project Schedule

APPENDIX B

Cost Estimate

APPENDIX C

Sponsor's Letter of Intent

APPENDIX D

Selection Matrix

APPENDIX E
Project Maps