12. Cost Estimates

Chief Joseph Dam Hatchery Program
MASTER PLAN

12

Cost Estimates

12.1 OVERVIEW OF COST ESTIMATES

Consistent with the Council's requirements for Master Plans, the following chapter presents the CJDHP cost estimates for 10 fiscal years including: planning and design (conceptual, preliminary and final), construction, operations and maintenance, and monitoring and evaluation.

The tables in this chapter provide summaries of very detailed cost information presented in Appendix B (the print version of Appendix B contains a set of spreadsheets which document the basis of these cost estimates, the electronic version provided on CD also contains complete budget workbooks). These Step 1 cost estimates are based on significant tangible detail. Reviewers are encouraged to look at the information provided in Appendix B to gain a deeper appreciation of the assumptions and systematic cost analysis structure imbedded in the CJDHP cost estimates. While these estimates are preliminary, they should provide an accurate baseline from which to refine costs, evaluate alternatives, and protect against budget inflation as project planning progresses.

12.1.1 PROGRAM AREAS AND MAJOR MILESTONES

The Council's three-step review process may take as much as five or six years to complete. In the mean time, extensive planning, development and analysis of alternatives will occur. Figure 42 provides a generalized list of program areas and a tentative time line linking costs to planning, initial critical research, construction, operations and maintenance, and monitoring and evaluation.

Relationship of Estimated Program Costs to CJDHP Guiding Principles

Accountability
- Clear break down of the work required in each area of the CJDHP is provided
- Significant detail about source of cost estimates
- Detailed budgets illustrate assumptions and associated costs

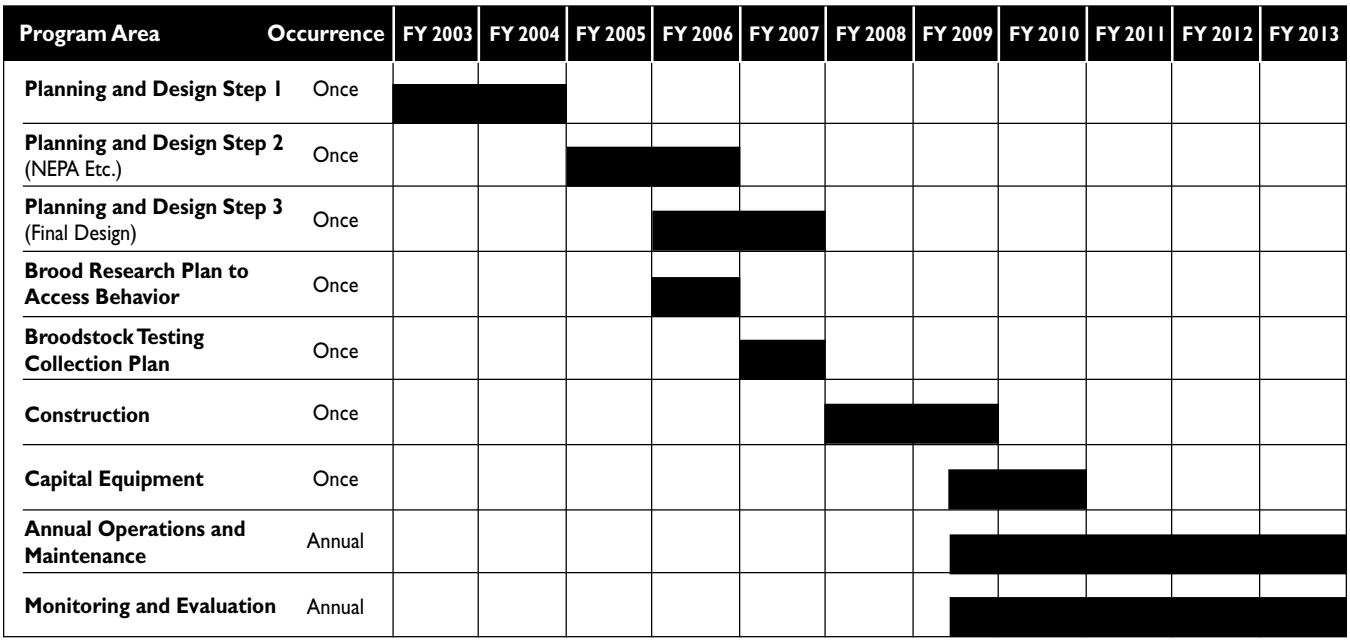
Best Available Science
- Business (project management) principals applied in development of cost estimates

Cost-Effectiveness
- Interdisciplinary team review provided in cost estimates
- Inclusion of value analysis (value engineering) in early planning stages supports identification of potential cost-savings and assures compliance with project requirements
- Detailed cost estimates developed in planning stage serve as a control point during later planning stages

Flexibility
- Detailed understanding of costs allows for early analysis of the feasibility of alternatives

Innovation
- More thorough cost spreadsheets and complete level of detail than generally presented at the Step 1 Master Plan stage

Figure 42: CJDHP Tentative Timeline for Key Milestones and Expenditures



Notes and Assumptions; *Assumes Step 2 and Step 3 funding is available in FY 2005 and FY 2006*
Assumes BPA will provide services for NEPA work in FY 2005

The roll ups of costs that follow in this chapter are presented by program area including: planning and facility design, critical research, construction, capital equipment, operations and maintenance, and monitoring and evaluation. Table 22 provides a summary of the key program areas, frequency of cost occurrence, and level of certainty reflected in these estimates.

12.1.2 DEVELOPMENT OF COST ESTIMATES FOR CJDHP

The Colville Tribes utilized professional program/ project management approaches during all stages of the Step 1 planning and design. The principles and practices used in formal program/project management

Table 22: Cost Summary for CJDHP Summer/ Fall Chinook Programs by Program Area

PROGRAM AREA	TOTAL COST	OCCURRENCE	LEVEL OF CERTAINTY
Planning and Design Step 1	$ 426,179	One Time	100% (Includes Step 1 and summer/ fall Chinook HGMP Development)
Planning and Design Step 2	$ 425,000	One Time	Placeholder (less than concept)
Planning and Design Step 3	$ 2,400,000	One Time	Placeholder (less than concept)
Brood Research Plan to Access Behavior	$ 397,300	One Time	Concept (+/- 30%)
Broodstock Testing Collection Plan	$ 495,000	One Time	Concept (+/- 40%)
Construction	$ 17,370,000	One Time	30% built into figure
Capital Equipment	$ 584,000	One Time	Concept (+/- 30%)
Annual Operations and Maintenance	$ 857,780	Annual	Concept (+/- 30%)
Monitoring and Evaluation	$ 345,000	Annual	Concept (+/- 30%)

Notes and assumptions: Figures are based on FY 2004 dollars. Placeholder assumes no backup budget work completed.

have been successfully applied in government and private organizations since the early 1980s in order to ensure that goals and objectives are reached on schedule and within budget.

Cost management begins in the planning stages. To facilitate planning and implementation, work must be broken into easily understandable and defined components. These principles were applied to the development of cost estimates for the CJDHP. A major consideration in any planning and decision process is relative cost. Estimates must be developed and refined at each milestone. However, the level of cost estimate accuracy is of necessity tied to the level of completion of project planning. Development of realistic, well-documented cost estimates at the outset provides an important control point for use during all future stages of planning and implementation. Additionally, while control of capital costs is critical, long-term operating and maintenance, and monitoring and evaluation costs must also be considered from the outset.

12.2 COST ESTIMATES FOR FACILITY PLANNING AND DESIGN

As major projects, such as the CJDHP, evolve from a conceptual to a finished product, increasingly detailed plans to meet operational, facility or programmatic requirements are developed. In order to reduce potential late-stage design or programmatic changes, the Colville Tribes assembled a Steering and Design Committee to provide review and input during the very early Step 1 conceptual planning. The objective is to validate program parts and cost estimates to the maximum extent possible through early review.

Gathering comprehensive input in the early planning stages is important to meeting the project proponent's requirements, ensuring the facility can be constructed to meet expectations and remain consistent with cost projections. Such detailed cooperative planning also yields an improved understanding of desired future operations and associated maintenance, as well as monitoring and evaluation. The Colville Tribes plan to continue to solicit input and review from a broad team of knowledgeable individuals throughout the Step 2 and 3 processes.

12.2.1 STEP 1 CONCEPTUAL PLANNING AND DESIGN

The total budget for the CJDHP conceptual planning and design work is $426,179. This figure includes $386,799 for Step 1 planning (BPA Project 2003-023-00) and $39,380 for development of the summer/fall HGMP (BPA Project 2003-005-00). Conceptual planning and design work was initiated in June of 2003. All deliverables will be met or exceeded within the current budget and identified time lines. Additional specific detail for this budget is included in Appendix B.

12.2.2 STEP 2 PRELIMINARY PLANNING AND DESIGN

The preliminary planning and design stage is intended to meet the Council's Step 2 requirements. This phase is designed to identify any major difficulties or concerns with the program or facility design. Step 2 design work should provide sufficient detail and specifics to assure the intent and scope of Step 1 conceptual design work can be met, and to further refine the anticipate cost estimates. Step 2 includes completed NEPA and ESA review.

As previously noted, the detailed budget workbooks provided in Appendix B will provide a basis for future refinement and development of cost estimates in Step 2.

A placeholder of $425,000 has been identified for Step 2 preliminary planning and design. Initiation of this work is proposed for FY 2005. Details of the Step 2 budget have not been developed, even to a conceptual stage. More specific refinement of this budget is pending the Council's decision on this Step 1 proposal.

A Steering and Design Committee with membership similar to that developed during the Step 1 process will be assembled in Step 2 to provide comprehensive review, design input, and critique throughout the planning and design process. In addition, the Colville Tribes will recommend that implementation of a value

Table 23: Summary Capital Construction Costs For Summer/Fall Chinook Programs

DESCRIPTION OF AREA	ESTIMATED COST
Total costs summer/fall Chinook programs at CJDH with COE supplied rearing water	$ 16,220,361
Total costs summer/fall Chinook acclimation ponds	$ 1,150,019
Total: for Summer/Fall Chinook Program	**$ 17,370,380**

Notes and assumptions: Costs are at conceptual stage and incorporate a 30% contingency. Costs are based on FY 2004 dollars.

analysis (also known as value engineering) be considered at as part of the Step 2 preliminary planning and design work for the CJDHP[5]. Value analysis methods are currently applied across many disciplines and project types during design and development stages. Early application of a value analysis study may result in identification of cost effective alternatives that still meet the goals and objectives of the project. The Colville Tribes will recommend that the value analysis not only address the concept design, but also take into account all aspects of the program, including review or identification of alternatives for – facilities, operations, and monitoring and evaluation.

12.2.3 STEP 3 FINAL PLANNING AND DESIGN

To ensure comprehensive input, the Colville Tribes will continue to rely on a team approach at the final planning and design stage. The team composition would be similar to the Steering and Design Committee assembled for Step 1 and Step 2 and would include: planners, hatchery managers, fish biologists, scientists from other disciplines, and individuals with engineering and construction expertise. The purpose of this committee will be to contribute review and knowledge that will help to reduce levels of uncertainty, identify opportunities for cost reductions, identify new research or state of the art equipment that should be considered, and to carefully review all aspects of the final design and related cost estimates. This approach will support a well-developed project plan and will reduce risks related to future project cost control. A refined level of detail and associated relative certainty will be particularly valuable during the bid solicitation and bid break down processes.

A placeholder of $2,400,000 has been identified for the Step 3 final planning and design stage. Initiation of this work is proposed for FY 2006. Details of the Step 3 budget have not been developed, even to a conceptual stage. More specific refinement of this budget is not appropriate at this juncture.

12.3 CONSTRUCTION COST ESTIMATES

The current estimate for capital construction, including both the Chief Joseph Dam Hatchery facility, and development and modification of acclimation ponds, is $17.3 million. These costs are preliminary estimates, based on a conceptual design. Due to the level of certainty, a 30% contingency is applied to the overall costs. However, contingency is largely dependent on the quantity of uncertainties associated with the project and the amount of pre-investigation work completed. It is expected that the estimated construction costs represent a maximum range and that cost reductions would be identified in future planning stages through analysis of alternatives and elimination of many uncertainties.

[5] For large civil, commercial and military engineering projects such as buildings, highways, and factory construction that tend to represent large one-time capital expenditures, value analysis is often applied early in the design cycle. Incorporating value analysis at the earliest stages of design and planning affords opportunities to make necessary changes in direction or design without incurring the large costs that can be associated with late-stage redesign work or construction changes. Typically for large construction projects specific value analysis studies are conducted during the schematic stage, and then again at the design development stage (i.e. up to 45% of completion). Additional value analysis studies are also sometimes conducted during the construction or build phase (Save International: http://www.value-eng.org/).

Table 24: Capital Construction Costs for Summer/Fall Chinook Program

DESCRIPTION OF AREA	ESTIMATED COST
Water Supply from Headbox	
Piping based upon COE termination at 10 feet from headbox	$ 60,350
Headbox with drum filter on reservoir supply	$ 678,578
Piping from headbox to summer/fall Chinook raceways	$ 335,400
500 cfs pumped fish ladder attraction water	$ 870,900
Raceways	
Early summer/fall Chinook raceways (bank of 20 units)	$ 534,525
Late summer/fall Chinook raceways (bank of 24 units)	$ 639,174
Brood Holding and Eggtakes	
Spawn house	$ 86,440
Fish ladder and holding/sorting tanks	$ 316,550
Rearing Building	
Start tank building for summer/fall Chinook raceways	$ 956,525
Support Building	
Support building (includes start tank store room, bio lab, incubation rooms, crew restrooms, crew room, water treatment room, larger food storage area, start tank feed storage room, garage and shop spaces - total foot print area of 18,500 sq.ft.)	$ 2,003,300
Water Treatment Influent and Effluent	
Aeration/settling structure	$ 101,100
Detention pond	$ 211,600
Office and Other	
Hatchery office and small visitor display building	$ 200,000
Site Work and Utilities	
Site work and utilities	$ 1,807,725
Housing	
Chief Joseph Dam Hatchery housing complex - 3 residences and 3 trailer shelters w/utilities	$ 434,100
Markups and Other Direct Costs	
Subtotal Raw Costs Hatchery Site with 15% O & 15% P	
Mobilization/demobilization	$ 270,000
Sales Tax @ 9%	$ 831,264
Contingency @ 30%	$ 2,770,880
TOTAL ESTIMATED COST FOR SUMMER/FALL CHINOOK PROGRAMS AT CJDH SITE WITHOUT COE SUPPLIED REARING WATER	**$ 13,108,411**

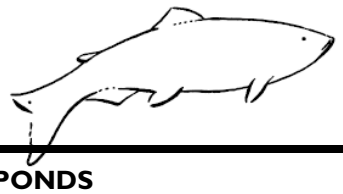
Table 24 (cont.)

DESCRIPTION OF AREA	ESTIMATED COST
COE Water Supply	
Well and reservoir water will be supplied to the hatchery site per COE. Cost shown is for relief tunnel revisions, intake diversion revisions, pipeline(s) from dam to hatchery and includes contractor mark-ups for mobilization and demobilization, site and home office bonds	$ 3,111,950
TOTAL ESTIMATED COST FOR SUMMER/FALL CHINOOK PROGRAMS AT CJDH SITE WITH COE SUPPLIED REARING WATER	**$ 16,220,361**

Notes and assumptions: Figures are based on FY 2004 dollars. Costs are at a concept stage and incorporate a 30% contingency.

Table 25: Costs of Acclimation Ponds for Summer/Fall Chinook Program

ACCLIMATION PONDS	COST
Riverside Pond - new 53,000 cubic feet acclimation pond	$ 365,400
Omak Pond - new 53,000 cubic feet acclimation pond	$ 349,125
Bonaparte Pond - modify an existing 65,300 cubic feet acclimation pond	$ 57,300
Markups and Other Direct Costs	
Subtotal acclimation ponds with 15% O & 15% P	$ 771,825
Mobilization/demobilization	$ 77,183
Sales Tax @ 9%	$ 69,464
Contingency @ 30%	$ 231,548
TOTAL SUMMER/FALL CHINOOK ACCLIMATION PONDS	**$ 1,150,019**



Notes and assumptions: Figures are based on FY 2004 dollars. Costs are at a concept stage and incorporate a 30% contingency.

Table 23 provides a summary of capital construction costs for Chief Joseph Dam Hatchery Facility and associated acclimation ponds for the CJDHP summer/fall Chinook programs. Additional detail supporting these figures is provided in Appendix B. Expenditures for this portion of the program would be likely to occur in FY 2008 and FY 2009.

12.3.1 CHIEF JOSEPH DAM HATCHERY COMPONENTS

Table 24 provides the breakdown of capital construction costs by area for each component of the proposed Chief Joseph Dam Hatchery facility.

12.3.2 ACCLIMATION POND COMPONENTS

Table 25 provides the breakdown of capital construction costs and costs for modifications, for each of the proposed summer/fall Chinook acclimation Ponds. Further breakdown and details of these costs are provided as Appendix B.

12.3.3 CAPITAL EQUIPMENT COSTS

A budget for capital equipment was identified for each functional area of the proposed program. Equipment needs for operations and maintenance, and the CJDHP monitoring and evaluation program were considered.

Table 26: Conceptual Capital Equipment Budget by Facility/Hatchery Functional Area

DESCRIPTION	TOTAL COST
Office equipment	$ 1,600
Computers and printers	$ 7,000
Office furniture and cabinets	$ 2,450
Communications equipment	$ 15,728
Housing equipment and furniture / permanent / temporary staff housing	$ 63,900
Shop equipment	$ 5,100
Buildings / facilities needs	$ 8,000
Transportation	$ 0
Water system operation	$ 0
Brood collection / hatchery and remote	$ 3,200
Eggtake	$ 11,000
Incubation	$ 15,200
Fish transport	$ 170,500
Summer/fall Chinook rearing at hatchery	$ 10,700
Summer/fall Chinook rearing at acclimation ponds	$ 11,200
Coded wire tagging / other tagging	$ 91,400
Monitoring and evaluation equipment	$ 133,200
Technical / lab equipment	$ 6,100
Disinfection equipment (disease and pathology needs)	$ 2,500
Other	$ 25,200
TOTAL	**$ 583,978**

Notes and assumptions: Costs should be considered as conceptual. Items are not duplicated in the capital construction budget. No contingency is necessary.

These items are not included in the capital construction estimates. Some items may not meet the specific criteria for capitalization but are identified as a need in this equipment budget. Cost estimates should be considered as conceptual, however no contingency is added since the total budget should provide an accurate estimate of the upper end cost range for necessary equipment (based on current assumptions). Table 26 provides a summary of the proposed capital equipment by area. An additional break out of these costs under each area listed is provided in Appendix B. These costs likely would likely occur in FY 2009 and FY 2010.

12.3.4 ONE-TIME COSTS ASSOCIATED WITH CRITICAL RESEARCH NEEDS

It has been noted previously that research to determine the effectiveness and best deployment locations for selective, life-harvest fishing gear for broodstock collection, as well as complementary radio-telemetry studies are critical to the next stages of planning for the CJDHP and to the overall success of the summer/fall Chinook programs. This research budget item is a one-time expense; however it represents a critical need to the CJDHP.

Table 27: Budget Summary for Broodstock Collection Testing

AREA	TOTAL
Equipment	$ 182,000
Field Labor	$ 265,800
Travel/Per Diem	$ 34,250
Report Writing/Data Analysis	$ 13,900
TOTAL	**$ 495,950**

Table 27 provides an estimate for one-time costs associated with broodstock collection testing and radio-telemetry research. Supporting detail for the cost estimates in Table 27 is provided in Appendix E. These costs should be considered as conceptual. However, no contingency is applied since these costs are assumed to represent the upper range of cost estimates. Expenditures for this portion of the program would likely occur in FY 2007.

A number of assumptions are incorporated into these research cost estimates. It is assumed that researchers will purchase and test all gears described in the study plan over a single migration season. The accuracy of this assumption will not be known until the results of the proposed adult radio-tagging study is completed 1-year prior to the first broodstock collection effort. Field staff will be seasonal employees recruited to conduct the study. Thus, costs for hotels and food need to be accounted for in the budget. These costs can be reduced significantly, or possibly eliminated, if researchers are able to hire locally based field technicians. The trucks needed to haul captured adults to holding facilities, and the holding facilities themselves, will be provided by state, tribal or federal agencies. Therefore, no monies have been allocated to these items. Fuel costs and labor to operate transport trucks are included in the cost estimate. Colville Tribal biologists or anglers would be available to assist in the broodstock collection effort. Colville staff and equipment (boats, trucks, etc) will be required to help in the placement of traps and fish wheels, assist in adult capture activities, and to identify key fishing areas. Hourly rates are based on typical consulting firm rates for the level of professional staff proposed. Plans to rent rather than purchase some equipment is also anticipated to result in some cost savings.

Table 28: Budget Summary for Chief Joseph Dam Adult Summer/Fall Chinook Telemetry Study 2005

AREA	TOTAL
Personnel	$ 165,206
Expenses, travel, equipment rental, charters	$ 48,296
Equipment purchases	$ 143,698
Miscellaneous	$ 34,200
Project sub-total	*$ 391,399*
Washington State B&O Tax	$ 5,871
TOTAL	**$ 397,270**

Notes and assumptions: Personnel are at contractor rates. Expenses include travel, rental air charters. Potential budget reductions in equipment purchase costs may be achieve by renting equipment. Miscellaneous category includes subcontract for $30,000.

Table 28 provides a cost for the broodstock behavior and testing study, a detailed budget is provided in Appendix E. These costs should be considered as conceptual, however this is deemed a maximum estimate, thus no contingency is applied. Expenditures for this portion of the program would likely occur in FY 2006.

12.4 TEN-YEAR COST ESTIMATES FOR OPERATIONS AND MAINTENANCE

12.4.1 CHIEF JOSEPH DAM HATCHERY COMPONENTS

Costs were investigated in detail for each operational area of the proposed CJDHP. These costs should be considered conceptual. However, no contingency is needed at this stage of planning since these costs should represent an upper limit. Annual costs, based

Table 29: Annual Operating Expenses Summer/Fall Chinook Program

OPERATIONAL AREA	QUARTER				YEAR
	Q1	Q2	Q3	Q4	
Payroll (taxes, benefits, mark-ups)	$154,600	$89,232	$95,138	$128,873	$467,843
Vehicles (fuel, oil, maintenance, mileage, insurance)	$5,750	$9,350	$5,750	$6,974	$27,824
Repairs and maintenance (site, buildings, equipment)	$1,870	$3,010	$3,100	$2,050	$10,030
Rent and lease (equipment, vehicles)	$4,800	$4,800	$4,800	$4,800	$19,200
Program supplies (shop, office)	$3,500	$3,500	$3,500	$3,500	$13,999
Program supplies (lab, water system, eggtake, incubation)	$3,208	$3,125	$3,375	$3,875	$13,583
Program supplies (rearing and release)	$18,500	$18,500	$18,500	$18,500	$74,000
Program supplies (tagging, tag recovery)	$0	$0	$25,000	$75,000	$100,000
Utilities (electrical, telephone)	$23,616	$23,616	$23,616	$23,616	$94,462
Travel costs (mileage, lodging, per diem)	$1,235	$1,235	$1,235	$1,235	$4,939
Education and training	$375	$375	$375	$375	$1,500
Subcontracts (professional fees, testing, sampling)	$3,875	$4,875	$6,875	$4,875	$20,500
Facility insurance	$2,475	$2,475	$2,475	$2,475	$9,900
TOTALS	**$223,803**	**$164,092**	**$193,738**	**$276,147**	**$857,780**

Notes and assumptions: Expenses are based on 2004 dollars. Budget includes costs for operating acclimation ponds.

on 2004 dollars are shown as Table 29. Detailed backup documentation for these cost estimates are provided in Appendix G. The total budgeted amount is likely to be incurred on an annual basis starting in 2009. However, the Colville Tribes recommend that key managers be involved during construction, on a part time basis going to full time, during project start-up and training.

An important budget note with potential programmatic or policy implications is the proportional cost of coded wire tagging. In these preliminary cost estimates, fish tagging (including tags, personnel costs and estimated portions of the facility costs, associated with tagging operations), accounts for roughly 30% of the total operating budget. While the importance of marking protocols in artificial production programs is incontrovertible, the costs associated with these programs can be substantial. At the very least, there is a clear need to develop more cost-effective mechanisms or to establish adequate representative samples. Additional less obvious, but also substantial, costs are also associated with the resultant need to process, record and analyze information collected through these programs.

A ten-year projection based on FY 2004 dollars and an assumed 3.4 % annual increase in all operational areas is shown as Table 30.

Table 30: Operating Expenses Summer/Fall Chinook Program 10-Year Projection

OPERATIONAL AREA	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Payroll (taxes, benefits, markups)	$467,843	$483,750	$500,197	$517,204	$534,789	$552,971	$571,772	$591,213	$611,314	$632,099
Vehicles (fuel, oil, maintenance, mileage, insurance)	$27,824	$28,770	$29,748	$30,759	$31,805	$32,887	$34,005	$35,161	$36,356	$37,592
Repairs and maintenance (site, buildings, equipment)	$10,030	$10,371	$10,723	$11,088	$11,465	$11,855	$12,258	$12,675	$13,105	$13,551
Rent and lease (equipment, vehicles)	$19,200	$19,853	$20,528	$21,226	$21,947	$22,694	$23,465	$24,263	$25,088	$25,941
Program supplies (shop, office)	$13,999	$14,475	$14,968	$15,476	$16,003	$16,547	$17,109	$17,691	$18,293	$18,915
Program Supplies (lab, water system, eggtake, incubation)	$13,583	$14,045	$14,522	$15,016	$15,527	$16,055	$16,600	$17,165	$17,748	$18,352
Program supplies (rearing and release)	$74,000	$76,516	$79,117	$81,807	$84,589	$87,465	$90,438	$93,513	$96,693	$99,980
Program supplies (tagging, tag recovery)	$100,000	$103,400	$106,916	$110,551	$114,309	$118,196	$122,215	$126,370	$130,667	$135,109
Utilities (electrical, telephone)	$94,462	$97,674	$100,995	$104,429	$107,979	$111,651	$115,447	$119,372	$123,430	$127,627
Travel costs (mileage, lodging, per diem)	$4,939	$5,107	$5,281	$5,460	$5,646	$5,838	$6,036	$6,242	$6,454	$6,673
Education and training	$1,500	$1,551	$1,604	$1,658	$1,715	$1,773	$1,833	$1,896	$1,960	$2,027
Subcontracts (professional fees, testing, sampling)	$20,500	$21,197	$21,918	$22,663	$23,433	$24,230	$25,054	$25,906	$26,787	$27,697
Facility insurance	$9,900	$10,237	$10,585	$10,944	$11,317	$11,701	$12,099	$12,511	$12,936	$13,376
TOTALS	**$857,780**	**$886,944**	**$917,100**	**$948,282**	**$980,524**	**$1,013,861**	**$1,048,333**	**$1,083,976**	**$1,120,831**	**$1,158,939**

Notes and assumptions: Projection is based on annual increase of 3.4% in all operational areas. Acclimation pond operational costs are included.

12.4.2 ACCLIMATION POND COMPONENTS

Table 31 provides a very rough estimate of annual operational costs for the Riverside, Omak and Bonaparte acclimation ponds. These costs are already included in the overall budget (Table 30) but are broken out here for ease of review. Costs would be incurred on an annual basis as part of the full program operations budget.

12.5 COST ESTIMATES FOR CONCEPTUAL MONITORING AND EVALUATION PROGRAM

12.5.1 ANNUAL MONITORING AND EVALUATION PROGRAM EXPENSES

Annual monitoring and evaluation expenses based on 2004 dollars are shown in Table 32. Program design details related to these costs are provided in Appendix H. Tagging costs at the Chief Joseph Dam Hatchery facility are included in the operations budgets, not in the annual monitoring and evaluation costs. While these monitoring and evaluation expenses are conceptual, no contingency is planned at this stage since the estimates are assumed to be at the upper range of potential costs. The budgeted amount would begin to be incurred on an annual basis starting in FY 2010. However, some expenditure of allocated budgets to

Table 31: Estimated Costs for Operation of Summer/Fall Chinook Acclimation Ponds

POND NAME	PUMPING	FEED	PERSONNEL	VEHICLES	TRANSPORT	TOTAL
Riverside	$14,750	$36,875	$28,500	$2,000	$800	$82,925
Omak	$16,900	$42,250	$33,000	$1,000	$500	$93,650
Bonaparte	$14,750	$36,875	$28,500	$2,000	$800	$82,925
TOTALS	**$46,400**	**$116,000**	**$90,000**	**$5,000**	**$2,100**	**$259,500**

Notes and assumptions: Costs are all approximate estimations based on pounds of production. Costs are included in operating estimates for summer/fall Chinook.

Table 32: Monitoring and Evaluation Expenses Summer/Fall Chinook Program

OPERATIONAL AREA	QUARTER				FY 2004 TOTAL
	Q1	Q2	Q3	Q4	
Payroll (taxes, benefits, markups)	$45,479	$80,275	$100,895	$41,791	$268,440
Vehicles (fuel, oil, maintenance, mileage, insurance)	$3,651	$3,651	$3,651	$5,188	$16,142
Repairs and maintenance (site, buildings, equipment)	$154	$5,266	$4,190	$384	$9,994
Rent and lease (equipment, vehicles)	$2,306	$8,764	$3,536	$1,537	$16,143
Program supplies (shop, office, lab)	$2,883	$3,651	$3,651	$2,883	$13,067
Program supplies (tagging & tag recovery)	$0	$0	$384	$1153	$1,537
Utilities (electrical, telephone)	$1,345	$1,345	$1,345	$1,345	$5,381
Travel costs (mileage, lodging, per diem)	$2,023	$2,585	$2,585	$2,023	$9,217
Education and training	$576	$576	$576	$576	$2,306
Subcontracts (professional fees, testing, sampling)	$0	$307	$922	$307	$1,537
Postage, dues and subscriptions	$384	$384	$384	$384	$1,538
TOTALS	**$58,802**	**$106,806**	**$122,122**	**$57,573**	**$345,303**

Table 33: Operating Expenses Associated with Summer/Fall Chinook Coded Wire Tagging

AREA	QUARTER				YEAR
	Q1	Q2	Q3	Q4	
Payroll (taxes, benefits, markups)	$82,178	$4,999	$4,999	$56,452	$148,628
Vehicles (fuel, oil, maintenance, mileage, insurance)	$75	$75	$75	$151	$376
Repairs and maintenance (site, buildings, equipment)	$175	$175	$175	$175	$700
Rent and lease (equipment, vehicles)	$900	$900	$900	$900	$3,600
Program supplies (shop, office)	$200	$200	$200	$200	$800
Program supplies (lab, water system, eggtake, incubation)	$100	$100	$100	$100	$400
Program supplies (rearing and release)	$50	$50	$50	$50	$200
Program supplies (tagging, tag recovery)	$0	$0	$25,000	$75,000	$100,000
Utilities (electrical, telephone)	$262	$262	$262	$262	$1,050
Travel costs (mileage, lodging, per diem)	$36	$36	$36	$36	$146
Education and training	$0	$0	$0	$0	$0
Subcontracts (professional fees, testing, sampling)	$50	$50	$50	$50	$200
Facility insurance	$21	$21	$21	$21	$82
TOTALS	**$84,047**	**$6,868**	**$31,868**	**$133,397**	**$256,181**

Notes and assumptions: Identifies all direct costs for tagging about 47% of the production. Figures are based on estimated portions of the operations budget associated with tagging.

address critical uncertainties may be necessary as early as FY 2008 and FY 2009.

Assumptions associated with Table 32 include: coded wire tagging costs are included in the facility operations and maintenance costs; hatchery fish will be tagged at the Chief Joseph Dam Hatchery; equipment costs for both facility tagging operations and monitoring and evaluation are addressed in Table 24. Wild fish will be tagged at trapping facilities in Okanogan River with all costs covered by the monitoring and evaluation program; a portable PIT tag station and trailer is included in monitoring and evaluation capital expenses; the Colville Tribes will use the trailer and equipment at both the Chief Joseph Dam Hatchery facility (PIT tag hatchery fish) and in the field (wild tagging). The Okanogan/Similkameen Baseline Monitoring and Evaluation Program will fund the first year of wild fish tagging (to establish a baseline) and the CJDHP monitoring and evaluation program will cover costs after that.

12.5.2 OPERATING EXPENSES ASSOCIATED WITH SUMMER/FALL CHINOOK TAGGING

As noted previously, a major portion of the overall CJDHP operating costs are associated with on-site tagging. Table 33 provides an estimate of the annual operational cost associated with on-site tagging for the main Chief Joseph Dam Hatchery facility.

Table 34: Monitoring and Evaluation Expenses Summer/Fall Chinook Program 10-Year Projection

OPERATIONAL AREA	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Payroll (taxes, benefits, mark-ups)	$268,440	$277,567	$287,004	$296,762	$306,852	$317,285	$328,073	$339,227	$350,761	$362,687
Vehicles (fuel, oil, maintenance, mileage, insurance)	$16,142	$16,691	$17,259	$17,846	$18,452	$19,080	$19,728	$20,399	$21,093	$21,810
Repairs and maintenance (site, buildings, equipment)	$9,994	$10,334	$10,685	$11,048	$11,424	$11,813	$12,214	$12,629	$13,059	$13,503
Rent and lease (equipment, vehicles)	$16,143	$16,692	$17,259	$17,846	$18,453	$19,080	$19,729	$20,400	$21,093	$21,811
Program supplies (shop, office)	$13,067	$13,512	$13,971	$14,446	$14,937	$15,445	$15,970	$16,513	$17,075	$17,655
Program Supplies (tagging, tag recovery)	$1,537	$1,589	$1,643	$1,699	$1,757	$1,817	$1,878	$1,942	$2,008	$2,077
Utilities (electrical, telephone)	$5,381	$5,564	$5,753	$5,949	$6,151	$6,360	$6,576	$6,800	$7,031	$7,270
Travel costs (mileage, lodging, per diem)	$9,217	$9,530	$9,854	$10,189	$10,536	$10,894	$11,264	$11,647	$12,043	$12,453
Education and training	$2,306	$2,384	$2,465	$2,549	$2,636	$2,726	$2,818	$2,914	$3,013	$3,116
Subcontracts (professional fees, testing, sampling)	$1,537	$1,589	$1,643	$1,699	$1,757	$1,817	$1,878	$1,942	$2,008	$2,077
Postage, Dues, Subscriptoins	$1,538	$1,590	$1,644	$1,700	$1,758	$1,818	$1,880	$1,943	$2,010	$2,078
TOTALS	**$345,303**	**$357,043**	**$369,182**	**$381,735**	**$394,713**	**$408,134**	**$422,010**	**$436,359**	**$451,195**	**$466,535**

Notes and assumptions: Out years projected at 3.4%. Coded wire tagging costs are included in the facility O& M costs.

12.5.3 TEN-YEAR MONITORING AND EVALUATION PROGRAM COSTS

A projection of monitoring and evaluation costs for ten years based on FY 2004 dollars with an projected annual increase of 3.4 % in all operational areas is shown as Table 34.

Table 35 provides a summary by area of CJDHP budget totals and budget portions associated with monitoring and evaluation.

12.6 COSTS SUMMARY

Costs estimates at the Step 1 planning stage are very preliminary. However, as noted previously, in developing these cost estimates the Colville Tribes and the CJDHP project manager developed a very thorough cost structure on which to base these estimates. The Colville Tribes' look forward to further refining these cost estimates in Step 2 and through the use of value analysis at Step 2 and Step 3.

Table 35: Summer/Fall Chinook Program Tagging and Monitoring and Evaluation Costs

AREA	BUDGET TOTAL	PORTION OF BUDGET FOR TAGGING AND OTHER M&E
Annual Operational Costs	$857,780	$256,181
Annual M &E Costs	$345,000	$345,000
Capital Equipment Budget	$613,978	$244,600

Notes and assumptions: All Figures in FY 2004 Dollars