



US Army Corps
of Engineers
Walla Walla District

Interim Report

Supplement to Special Report

**Lower Snake River Fish and Wildlife
Compensation Plan, Lower Snake
River, Washington and Idaho
June 1975**

April 1996

INTERIM REPORT
SUPPLEMENT TO SPECIAL REPORT
LOWER SNAKE RIVER FISH AND WILDLIFE COMPENSATION PLAN
LOWER SNAKE RIVER, WASHINGTON AND IDAHO
JUNE 1975

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1. PURPOSE AND SCOPE.

The purpose of this report is to summarize the commitments, accomplishments, costs, and remaining work to be accomplished in the Lower Snake River Fish and Wildlife Compensation Plan (Compensation Plan) as originally conceived and subsequently amended. This report will also serve as the basis for future program funding needs. This report does not make any recommendations.

2. AUTHORITY.

The Lower Snake River Fish and Wildlife Compensation Plan, Lower Snake River, Washington and Idaho, was originally authorized by the Water Resources Development Act (WRDA) of 1976, Section 102, Public Law (PL) 94-587 (22 October 1976). The following is a quotation of the pertinent language of the Law:

"Fish and Wildlife Compensation Plan for the Lower Snake River, Washington and Idaho, substantially in accordance with a report on file with the Chief of Engineers, at an estimated cost of \$58,400,000."

This project was subsequently amended by WRDA 1986, Section 856, PL 99-662 (17 November 1986). The following is a quotation of the pertinent language of the Law:

"The project for the Lower Snake River Fish and Wildlife Compensation Plan, authorized by the Water Resources Development Act of 1976, is modified in accordance with the recommendations contained in the report of the Chief of Engineers, dated March 6, 1985, at a total cost of \$177,000,000, with a first Federal cost of \$177,000,000."

A Congressional Add was included in a conference report [to accompany House Resolution (H.R.) 4506] that resulted in PL 103-316 (H.R. 4506); 26 August 1994. The conference report language of the Congressional Add was not included in PL 103-316. The following is a quotation of the pertinent language included in the conference report:

"The conferees have provided an additional \$5,000,000 for the lower Snake River Fish and Wildlife Compensation Program for hatchery construction projects. The projects to be initiated include adult trapping and juvenile acclimation facilities for the upper Grande Ronde River and Catherine Creek, a water treatment facility for Lookingglass Hatchery, and

final rearing and/or acclimation facilities for the Clearwater, Snake, and lower Grande Ronde Rivers. The conferees direct the Corps to work with the U.S. Fish and Wildlife Service, the National Marine Fisheries Service and the affected state and tribal hatchery managers in developing these projects. The conferees emphasize that only projects which will protect, maintain, or enhance biological diversity of existing wild salmon stocks should be pursued."

3. DESCRIPTION OF PROJECT AREA.

The Compensation Plan encompasses the lower Snake River Basin from Ice Harbor Dam to the slack water above Lower Granite Dam. Compensation is for impacts resulting from construction of the four lower Snake River Dams: Ice Harbor, Lower Monumental, Little Goose, and Lower Granite. The Compensation Plan includes hatcheries, acclimation ponds, fish trapping facilities, satellite hatchery facilities, and wildlife lands. The wildlife lands are located on both on- and off-project lands as shown on plates 2 and 3.

4. BACKGROUND.

The original authorization of the Compensation Plan was based on a report titled *Special Report, Lower Snake River Fish and Wildlife Compensation Plan, Lower Snake River, Washington and Idaho*, dated June 1975. The purpose of the Compensation Plan is to mitigate for the losses of fish and wildlife resources and fish- and wildlife-oriented recreational opportunities caused by the construction of the four lower Snake River dams. As originally authorized, the plan was divided into two parts: fisheries compensation and wildlife compensation. The fisheries compensation centered around fish propagation facilities and providing fisherman access along tributary streams. The propagation facilities, or hatcheries, were to annually produce 101,800 pounds of fall chinook salmon, 450,000 pounds of spring and summer chinook salmon, 1,377,500 pounds of steelhead, and 93,000 pounds of rainbow trout. Seven thousand pounds of rainbow trout were to be provided by stream habitat improvement. The wildlife compensation involved on-project habitat development, off-project habitat acquisition, and the purchase and release of game farm birds (pheasants). On-project habitat development was to restore the 334,000 game animals that were estimated to have been lost when the riparian habitat was inundated. The game farm bird component called for the purchase and release of 20,000 game farm pheasants each year for 20 years to offset some losses until restored habitat matured. The off-project land acquisition was combined with the fisherman access to form the three-component off-project land acquisition program. Under this program the U.S. Army Corps of Engineers, Walla Walla District (CENPW) was to acquire 8,400 acres of upland game habitat and hunting lands (Element X), 15,000 acres of chukar habitat and hunting lands (Element Y), and 750 acres of fisherman access (Element Z). The lands were to be acquired in fee (400 acres) and perpetual easement on a willing-seller, willing-buyer basis.

In the original report to Congress, Headquarters, U.S. Army Corps of Engineers (HQUSACE), Chief of Engineers made a commitment to report to Congress within 5 years as to how the acquisition was proceeding. As part of that commitment, the CENPW prepared a second report titled *Special Report For Congress, Lower Snake River Fish and Wildlife Compensation Plan*, dated March 1983, reporting on the status of land acquisition. Using the March 1983 report as a basis, the HQUSACE Chief of Engineers prepared and submitted a separate report to Congress reporting on the status of land acquisition. As a result of the HQUSACE Chief of Engineer's report, the Compensation Plan was reauthorized under the WRDA of 1986 (PL 99-662), allowing all lands to be purchased in fee title or perpetual easements.

The scope of the Compensation Plan was again modified by the Congressional Add by adding, through directive language, construction of adult trapping and juvenile acclimation facilities for the upper Grande Ronde River and Catherine Creek for spring chinook salmon, a water treatment facility for Lookingglass Hatchery, and final rearing and/or acclimation facilities for the Clearwater, Snake, and lower Grande Ronde Rivers for fall chinook salmon.

5. PROGRAM ELEMENTS AND DESCRIPTION.

The following subparagraphs include a description and status of the total Compensation Plan. The fish related improvements included as part of the Congressional Add are presented separately in subparagraph 5.c.

a. Fish Hatcheries and Related Facilities (Excluding Congressional Add).

Since authorization of the Compensation Plan in 1976, a series of implementation reports has been completed as part of the development of the fish facilities. The following is a summary and current status of existing fish hatchery related facilities that have been constructed as part of the fisheries portion of the Compensation Plan.

(1) Description.

A total of nine hatcheries with associated satellite facilities are included as part of the Compensation Plan. In addition, a centralized fish health laboratory is located in Eagle, Idaho, which serves as a support facility for the hatcheries located in the state of Idaho. Tables 1 and 2 summarize and give the current status of the hatcheries and satellite facilities respectively. The locations of the facilities are presented on plate 1.

TABLE 1

SUMMARY OF HATCHERY FACILITIES

Hatchery	Status	Species of Fish Raised	Design Capacity (lb)	Design Smolt Size (No/lb)
McCall, Idaho	Complete. Transferred to USFWS.	Summer Chinook Salmon	61,300	15
Magic Valley, Idaho ^{1/ 2/}	Complete. Transferred to USFWS.	Steelhead	291,500	8
Hagerman, Idaho	Complete. Operated by USFWS.	Steelhead	340,000	8
Sawtooth, Idaho	Complete. Transferred to USFWS.	Spring Chinook Salmon	149,000	15
Clearwater, Idaho	To be completed Fiscal Year (FY) 97.	Steelhead Spring Chinook Salmon	350,000 91,300	8 15
Dworshak Hatchery Expansion, Idaho	Complete. Operated by USFWS.	Spring Chinook Salmon	70,000	15
Lyons Ferry, Washington	Transfer pending.	Steelhead Rainbow Trout Spring Chinook Salmon Fall Chinook Salmon	116,400 ^{3/} 45,000 ^{4/} 8,800 101,800	8 5 15 90
Wallowa Expansion & Irrigon, Oregon	To be completed FY 98.	Steelhead	280,000	6
Lookingglass, Oregon	Transfer date to be determined.	Spring Chinook Salmon	69,600	20

Total Fish Production: Rainbow Trout, 93,000 lbs; Fall Chinook Salmon, 101,800 lbs; Spring Chinook Salmon, 388,700 lbs ; Summer Chinook Salmon, 61,300 lbs; Steelhead, 1,377,500 lbs.

^{1/} Formerly Crystal Springs.

^{2/} Clearwater and Magic Valley Hatcheries' major lab functions will be transferred to a centralized laboratory facility at Eagle as discussed in Letter Supplement 12 to Design Memorandum No 1.

^{3/} Includes 360,000 fingerling (500 fish per pound) reared at Irrigon Hatchery and transferred to Lyons Ferry Hatchery.

^{4/} Seven thousand pounds provided by stream habitat improvement.

TABLE 2

SUMMARY OF SATELLITE FACILITIES FOR HATCHERIES

Hatchery Served	Status	Species of Fish	Stream Name Location	Function
McCall, Idaho	Complete. Transferred to USFWS.	Summer Chinook Salmon	S. Fork Salmon River	Catch & Release
Magic Valley, Idaho ^{1/}	Complete. Transferred to USFWS.	Steelhead	E. Fork Salmon River	Catch & Release
Hagerman, Idaho	Complete. Operated by USFWS.	Steelhead	E. Fork Salmon River	Catch & Release
Sawtooth, Idaho	Complete. Transferred to USFWS.	Spring Chinook Salmon	E. Fork Salmon River	Catch & Release
Clearwater, Idaho	Complete. Transferred to USFWS.	Steelhead Spring Chinook Salmon	Red River Crooked River Powell	Catch & Release
Dworshak Hatchery Expansion, Idaho	Complete. Operated by USFWS.	Spring Chinook Salmon	^{2/}	^{2/}
Lyons Ferry, Washington	Complete. Transferred to USFWS.	Steelhead Rainbow Trout Spring Chinook Salmon Fall Chinook Salmon	Cottonwood Creek Dayton Pond Tucannon River Tucannon Hatchery	Release Only - Catch & Release -
Wallowa Expansion & Irrigon, Oregon	Transfer pending.	Steelhead	Big Canyon and Little Sheep Creek	Catch & Release
Lookingglass, Oregon	Complete. Operated by USFWS.	Spring Chinook Salmon	Big Canyon and a site to be determined later	Catch & Release

^{1/} Formerly Crystal Springs.^{2/} None required.

(2) Status.

Five of the nine hatcheries have been completed and transferred to U.S. Fish and Wildlife Service (USFWS). These hatcheries include the McCall, Magic Valley, Haggerman, Sawtooth, and Dworshak Hatchery Expansion. The Clearwater, Lyons Ferry, Irrigon, and Lookingglass Hatcheries are in various stages of completion. The Clearwater Hatchery completion contract is essentially complete, and modifications to the water intake system are programmed for Fiscal Year 1997. The HQUSACE, Real Estate Office is working with the Department of the Interior to complete the transfer of Lyons Ferry Hatchery to the USFWS. The completion contract for the Irrigon Hatchery is scheduled to be finished by 30 June 1996. After well capping of the water supply and an oxygen supplementation test at the Irrigon Hatchery programmed for Fiscal Year 1998, the hatchery will be transferred to the USFWS in Fiscal Year 1998. The Lookingglass Hatchery completion contract is complete and scheduled to be transferred to the USFWS in the latter part of 1996.

All satellite facilities, except for the Wallowa, Big Canyon, and Little Sheep Creek associated with the Irrigon Hatchery, have been completed and transferred to the USFWS. The HQUSACE, Real Estate Office is working with the Department of the Interior to complete the transfer of the remaining satellite facilities to the USFWS.

b. Wildlife Lands.

(1) Evolution of Development and Description.

There have been several changes made to the wildlife features of the original Compensation Plan since 1975. Development of wildlife habitat on project lands (Federal land surrounding the project reservoirs administered by CENPW) received little emphasis in the Compensation Plan. However, subsequent studies identified habitat development potential on project lands and the Compensation Plan was amended to include development of selected areas.

In 1979, 54 management units were classified as wildlife lands. Ten Habitat Management Units (HMU's) were identified to be intensively developed (irrigation systems and plantings on 3,042 acres), 25 units moderately developed (dryland development with guzzlers, fencing, etc.), and the remaining 19 units were to remain undeveloped except for fencing. Subsequently, CENPW entered into an agreement with Washington Department of Fish and Wildlife (WDFW) to develop and maintain the identified wildlife management lands. The CENPW later reassumed operation and maintenance responsibilities for these lands.

To compensate for lost upland game production and hunting opportunities, the originally authorized Compensation Plan recommended off-project acquisition of 400 acres of riparian habitat in fee and 8,000 acres of hunting area

surrounding the riparian habitat in perpetual hunting easements (Element X). It also required acquisition of perpetual easements on 15,000 acres of chukar habitat adjacent to lower Snake River project lands (Element Y). With regard to the loss of streambank fishing access, this plan provided for the acquisition of 750 acres of land along the Snake River and tributaries of streams adjacent to the lower or middle Snake River in easement or fee (Element Z). Fifty acres of this Element Z land was scheduled for acquisition in Idaho. Additionally, the 1976 Compensation Plan authorized CENPW to provide a lump-sum payment to the State of Washington for the development and maintenance of a game bird farm intended to rear 20,000 birds per year for a 20-year period.

A progress report was submitted to HQUSACE in 1983 by CENPW which identified problems encountered by WDFW and CENPW in trying to implement the Compensation Plan provisions of 1978. Subsequently, the HQUSACE Chief of Engineers issued a report on the Compensation Plan in March 1985. Difficulties identified in the report centered around the unwillingness of landowners to sell a strip of their property in fee and to give a perpetual easement on portions of their cultivated lands. Also, the state's policy regarding raising game birds to stock hunting lands had changed to favor natural production through habitat development and preservation.

The WRDA of 1986 modified the Compensation Plan in accordance with the recommendations made in the HQUSACE Chief of Engineers' 1985 report. Those recommendations included language which made two important modifications to the Compensation Plan. The WRDA of 1986 authorized all off-project land acquisitions to be acquired in fee title or perpetual easement. This program was conducted jointly with the WDFW who has operation and maintenance responsibilities for all lands purchased in Washington that are non-contiguous to Corps lands. Also, the game bird farm portion of the Compensation Plan was changed to emphasize natural game bird production in lieu of artificial rearing.

The DM No. 20, *Game Bird Farm Alternative, Habitat Development*, was prepared by CENPW and approved by the U.S. Army Corps of Engineers, North Pacific Division, in June 1987. The DM No. 20 recommended a lump-sum payment to WDFW to accomplish the Game Bird Farm Alternative. Payment of \$2,571,512 was negotiated with WDFW in October 1988. This payment and all earned interest must be expended by the program's sunset date in the year 2007. The program was implemented in May 1989 with WDFW entering into lease agreements with southeastern Washington farmers to set aside or develop upland game bird habitat and provide public hunting access for an 18-year period. Three public hunting access arrangements are utilized (Feel Free to Hunt, Hunting Only by Written Permission, and Register to Hunt).

Under the original acquisition authority (1976), 3,896 acres were acquired under Element X (perpetual easement on one parcel), zero acres for Element Y and 86 acres for Element Z. Appropriations under the 1986 authority were available in late 1989. Purchase of lands was concluded on September 30, 1994. In

the State of Washington, acreage goals for all three elements (X, Y, and Z) were completely satisfied. Written concurrence has been obtained from WDFW that mitigation acreage goals were met. In Idaho, 34 of the 50 acres of Element Z lands were acquired.

Letter supplements to authorize development actions and funding levels have been approved for all 29 sites in Washington and 2 of 4 sites in Idaho. The letter supplements for the two remaining sites in Idaho are presently undergoing final review by the Idaho Department of Fish and Game (IDFG). Wildlife habitat developments and improvements are now beginning on these lands.

(2) Status.

Table 3 is a summary of the recently acquired off-project Compensation Plan lands. Of the total 24,150 acres authorized, 24,124 acres have been acquired by fee title or perpetual easements. The lands include 24,090 acres in Washington and 34 acres for public fishing access in Idaho.

Developments include such actions as fencing (to eliminate or restrict grazing); planting of shrubs, trees, food plots, and native grasses; installation of gallinaceous guzzlers; installation or development of natural water or irrigation systems; and parking areas and informational signs. In Washington, the full habitat development potential eventually realized through these management actions will be determined through Habitat Evaluation Procedures (HEP). The Compensation Plan identified no wildlife losses in Idaho; therefore, HEP analyses will not be conducted on Idaho's Element Z lands. Initial wildlife habitat loss assessments using HEP analyses were completed for the lower Snake River projects in 1991. These HEP analyses compared the habitats existing prior to dam construction to the 1987 habitat quantity and quality existing within the project boundaries. Preliminary HEP analyses of the Element X, Y, and Z lands acquired in Washington was completed in December 1994. These results were preliminary since boundary surveys were not completed, title had not been finalized for one property, and the methodology for generation of habitat acreage was not as rigorous as is required for an accurate HEP. The HEP analyses for the Compensation Plan's total project area are presently being initiated and completion is expected in October 1996. Results of this HEP will be furnished to the Northwest Power Planning Council, who will consider incorporating them into the Columbia Basin Fish and Wildlife Program. The CENPW will acquire additional Habitat Units (HU's) of wildlife compensation from the additional habitat succession and developments occurring since 1987 on the on-project and off-project lands first evaluated in the 1991 report. The 2 years in each 10-year cycle HEP monitoring will determine these compensation gains for the on- and off-project lands combined.

TABLE 3 - SUMMARY OF FISH AND WILDLIFE LANDS ^{1/}

Site Mgmt By	Credit Element	Names				Total Area In Acres								
						Washington Sites By Credit Element Class			By Deed			By Survey		
		ST	Site Name/Management	County	Body of Water	X	Y	Z ^{2/}	Fee-Title	Ease-ment	Total	Re-duced	In-creased	Total
WDFW	X	WA	Baillie Ranch	Franklin	Irrigation Outflow	3,897.0				3,897.0				3,897.0
WDFW	X	WA	Revere Ranch	Whitman	Rock Cr	2,264.0		27.0	2,291.0		2,291.0			2,291.0
WDFW	X	WA	Windmill Ranch	Franklin	N/A	1,533.7			1,533.7		1,533.7			1,533.7
Corps	X	WA	Central Ferry HMU	Whitman	Lake Bryan	164.8	123.4		288.2		288.0			288.0
Corps	X	WA	Mill Creek HMU	Walla Walla	N/A	63.0			63.0		63.0			63.0
Corps	X	WA	Walluia HMU (part of)	Walla Walla	Walla Walla R	182.0		14.6	182.0		182.0		8.0	190.0
WDFW	Y	WA	Schumaker U of Joseph Cr	Asotin	Grande Ronde R		2,033.0	8.1	2,033.0		2,033.0		47.8	2,080.8
WDFW	Y	WA	Pentler Cr	Asotin	Pentler Cr		4,261.0		4,261.0		4,261.0		100.0	4,361.0
WDFW	Y	WA	Hartsock U of Wooten	Columbia	Tucannon & Tumalum	133.5	2,214.9	7.0	2,342.0		2,348.4		93.6	2,442.0
WDFW	Y	WA	Fisher Gulch U of Joseph Cr	Asotin	Grande Ronde R		1,647.0		1,647.0		1,647.0		43.1	1,690.1
WDFW	Y	WA	Campbell U of Asotin Cr	Asotin	S Fork - Asotin Cr		529.3	4.6	529.3		529.3		3.5	532.8
WDFW	Y	WA	Hartsock U (695 Addition)	Columbia	N/A		8.0		8.0		8.0	1.3		6.7
Corps	Y	WA	John Henley HMU	Whitman	N/A	162.0	556.0		718.0		718.0		38.0	756.0
Corps	Y	WA	Nisqually John Canyon HMU	Whitman	N/A		3,077.8		3,077.8		3,077.8	18.1		3,059.7
Corps	Y	WA	Kelly Bar HMU	Garfield	N/A		268.0		268.0		268.0	14.4		253.6
WDFW	Z	WA	Eight Mile Touchet R PFA	Walla Walla	Touchet R			2.4		2.4	2.4			2.4
WDFW	Z	WA	Asotin Creek Easements	Asotin	Asotin Cr			12.5		12.5	12.5			12.5
WDFW	Z	WA	Couse Cr PFA	Asotin	Snake River			3.0		3.0	3.0			3.0
WDFW	Z	WA	Swank PFA	Asotin	Grande Ronde R			51.4	51.4	51.4	51.4			51.4
WDFW	Z	WA	Donald Rd PFA	Yakima	Yakima River			75.3	75.3	75.3	75.3			75.3
WDFW	Z	WA	McDonald Br. PFA	Walla Walla	Walla Walla R			22.6	22.6	22.6	22.6	1.6		21.0
WDFW	Z	WA	Ferry Road PFA	Yakima	Yakima R			117.0	117.0	117.0	117.0			117.0
WDFW	Z	WA	Swegle Rd PFA (Phase I)	Walla Walla	Mill Cr & Walla Walla R			72.7	37.4	35.3	72.7		5.3	78.0
WDFW	Z	WA	Swegle Rd PFA (Phase II)	Walla Walla	Walla Walla R			46.8	46.8	46.8	46.8			46.8
WDFW	Z	WA	Sulphur Cr PFA	Yakima	Yakima R			88.0	88.0	88.0	88.0		1.3	89.3
WDFW	Z	WA	Whitstrand PFA	Benton	Yakima R			21.6	21.6	21.6	21.6		1.0	22.6
WDFW	Z	WA	Naches Rd PFA	Yakima	Naches R			7.1	7.1	7.1	7.1		0.4	7.5
WDFW	Z	WA	Benton City PFA	Benton	Yakima R			16.1	16.1	16.1	16.1			16.1
WDFW	Z	WA	Burma Rd PFA	Okanogan	Methow R			4.2	4.2	4.2	4.2			4.2
WDFW	Z	WA	McDonald Br PFA	Walla Walla	Walla Walla R			99.4	99.4	99.4	99.4	2.1		97.3
IDFG	Z	ID	Myrtle Beach PFA	Nez Perce	Clearwater R				11.0		11.0			11.0
IDFG	Z	ID	Magill PFA	Nez Perce	Clearwater R				14.0		14.0			14.0
IDFG	Z	ID	Ahsahka PFA	Nez Perce	Clearwater R				9.0		9.0			9.0
TOTAL						8,400.0	14,718.4	701.4	19,862.9	3,947.2	23,819.3	37.5	342.0	24,123.8
Washington Land Area as Adjusted by Final Survey Results						8,400.0	15,010.6	705.7	24,089.8					
Idaho Public Fishing Areas (50 acres authorized)									34.0					

^{1/} PFA = Public Fishing Area, HMU = Habitat Management Unit (on-project land to be managed by COE all others by state wildlife agencies), X = California Quail and Pheasant Hunting Land, Y = Chukar Hunting Land, Z = Fisherman Access Land, U = Unit, R = River, Cr = Creek, WA = Both State of Washington and wildlife area, HEP = Habitat Evaluation Procedures, HU's = Habitat Units.

^{2/} Some acres are double credited. The property was purchased as an element "X" or "Y" property; however, the land also provided acres that were creditable as fisherman access lands, so element "Z" credit was also assigned.

Baseline cost estimates for the development costs for Elements X, Y, and Z lands have been developed. Some irrigation developments have greatly exceeded the initial baseline cost estimate. Funding for the completion of development actions on all of these properties has a project sunset date of 30 September 1998. A total of \$295,000 will be needed to complete the initial HEP assessments once all habitat development is complete. The total cost of the Wildlife Compensation Lands portion of the Compensation Plan is estimated at \$31 million. To date, WDFW has developed 1,388 acres of wildlife habitat and opened 56,495 acres to public hunting under the Game Farm Alternative Program. The WDFW has expended \$853,147 in Game Farm Alternative Program funds to implement these above accomplishments. Funding of \$140,000 is required for CENPW to administer this program that concludes in 2008.

c. Fish Facilities Under Congressional Add.

(1) Description.

The projects to be initiated under the Congressional Add include adult trapping and juvenile acclimation facilities for spring chinook salmon on the upper Grande Ronde River and Catherine Creek, a water treatment facility for Lookingglass Hatchery, and final rearing and/or acclimation facilities for fall chinook salmon on the Clearwater, Snake, and lower Grande Ronde Rivers. The overall projects are still in the planning stage, although a temporary acclimation facility for fall chinook salmon has been constructed at Pittsburg Landing as addressed in paragraph 5.c.(3)(b) below.

(2) Biological Needs.

Fall chinook salmon.

The biological needs of Snake River fall chinook salmon can be summarized as the following:

- Adequate spawning habitat, both in quality and quantity: Approximately 95 percent of the original Snake River fall chinook salmon spawning habitat has been blocked by dams on the middle Snake River, and additional spawning habitat was inundated by the construction of the lower Snake River dams. However, the remaining spawning habitat appears to be in good condition and underutilized.
- Adequate rearing habitat, both in quality and quantity: This appears to be available in the Snake River.

- Protection of the gene pool of the wild stock: Release age of the hatchery fish should mimic wild stocks that outmigrate as subyearlings. However, yearling releases appear to have higher adult returns, therefore, the hatchery managers intend to release the fish as yearlings.
- Protection of the gene pool of the wild stock: Keep hatchery characteristics out. Hatchery fish are subject to different selection pressures than wild fish which may alter genetic make-up.
- Adequate migration corridor, sustainable harvest, favorable weather and ocean conditions: High directed and incidental harvest has affected adult return rates in historical times, as has the construction of mainstem dams which have caused considerable mortality to outmigrating juveniles. In addition, meteorological and oceanographic conditions for a decade or more have been unfavorable to the stock. The construction of bypass facilities for juvenile chinook salmon has lessened mortality rates for outmigrants and the harvest rate of adults has been reduced.

Creek. Spring chinook salmon in upper Grande Ronde River and Catherine

The biological needs of Snake River spring chinook salmon can be summarized as the following:

- Adequate spawning habitat, both in quality and quantity: Adequate spawning habitat is lacking in the upper Grande Ronde River and Catherine Creek as there are few holding pools for returning adult salmon and water temperatures are too high.
- Adequate rearing habitat, both in quality and quantity: Rearing habitat for juveniles is limited as both Catherine Creek and the Grande Ronde River have been degraded by logging, channelization, livestock grazing, irrigation, etc.
- Protection of the gene pool of the wild stock: Keep hatchery characteristics out. Hatchery fish are subject to different selection pressures than wild fish which may alter genetic make-up.
- Adequate migration corridor, sustainable harvest, climatic conditions, and ocean conditions: High directed and incidental harvest has also affected adult return rates in historical times, as has the construction of mainstem dams which have caused considerable mortality to outmigrating juveniles. In addition, meteorological and

oceanographic conditions for a decade or more have been unfavorable to the stock. The construction of bypass facilities for juvenile chinook salmon has lessened mortality rates for outmigrants and the harvest rate of adults has been reduced.

(3) Status.

(a) Coordination.

Coordination has been maintained with participating agencies and tribes. Key participants associated with the ongoing Congressional Add studies include the National Marine Fisheries Service (NMFS), USFWS, Bonneville Power Administration (BPA), Oregon Department of Fish and Wildlife (ODFW), IDFG, WDFW, Columbia River Inter-Tribal Fish Commission (CRITFC), Nez Perce Tribe (NPT), and Confederated Tribes of the Umatilla Indian Reservation (CTUIR). Initial meetings were held in early 1995 in which the scope, schedule, and priority of projects were discussed and developed. The initial meetings resulted in planning, design, and construction of the Pittsburg Landing temporary acclimation and release facility for fall chinook salmon and the initiation of the design of the water treatment facility for Lookingglass Hatchery.

A second series of coordination meetings was initiated in January 1996 to further develop and scope the spring and fall chinook salmon initiatives to build additional trapping, holding, acclimation/release facilities. The NPT, CTUIR, and the CRITFC have consistently indicated strong support of the traditional fish hatchery and satellite approach to fishery compensation. Generally, NMFS and USFWS have not shown strong support of the traditional fish hatchery and satellite approach, except by agency hatchery personnel. The hatchery personnel from the USFWS and the state agencies have indicated strong support for the traditional hatchery concept. Overall, there are opposing viewpoints within the USFWS, NMFS, and affected state and tribal hatchery managers.

Natural habitat restoration improvement was also identified as a viable alternative for fishery compensation as part of the coordination effort for spring chinook salmon, however, none of the fisheries' managers were willing to support this option openly.

For fall chinook salmon, there is a general consensus that acclimation facilities should be of a temporary nature and eventually be phased out when the wild stock have been re-established. For spring chinook salmon, the general consensus is that more permanent facilities are needed since they must be operational for a longer period (until the wild stocks have re-established). For both stocks, for re-establishment to occur, adequate spawning and rearing habitat will have to be provided.

Further discussion of coordination with the tribes and agencies is included under subparagraphs (b) and (c) below.

(b) Summary of Progress to Date.

As mentioned above, initial scoping meetings were held with the participating agencies in early 1995. The initial meetings resulted in the initiation of the design of the water treatment facility for Lookingglass Hatchery and planning, design and construction of the Pittsburg Landing temporary acclimation and release facility for fall chinook salmon.

Lookingglass Hatchery has seen the incidence of waterborne pathogen-caused diseases increase in recent years. These have affected both the production goals of the hatchery and the quality of the hatchery stock. Just upstream of the hatchery intake, adult spring chinook salmon are introduced into natural habitat areas for spawning. From this practice, the potential for the introduction of pathogens into the hatchery water supply has been further increased, as has the incidence of disease at the hatchery. An interagency advisory group consisting of representatives from ODFW, NMFS, USFWS, CTUIR, CRITFC, and BPA concluded that the disease problems at Lookingglass Hatchery could only be controlled by providing a pathogen free source of water. Geologic evaluations concluded that additional ground water development may be limited. Because of the success of disinfection through ozonation at other hatcheries, this treatment method was determined to be the most appropriate for the Lookingglass Hatchery as documented in Letter Supplement No. 2 to DM No. 5, *Lower Snake River Fish and Wildlife Compensation Plan, Lookingglass Fish Hatchery*, which is currently under review. Various treatment configurations consisting of the alternate technologies were evaluated and are presented in Letter Supplement 2 to DM No. 5. The proposed system was selected based on its overall functional viability, reliability, and economics including both initial capital expense and operation and maintenance costs. The main components of the proposed system are generally described in paragraph 6 below.

The newly constructed Pittsburg Landing temporary acclimation and release facility is located within the Hells Canyon National Recreation Area on the east bank of the Snake River at River Mile 215, approximately 17 miles southwest of White Bird, Idaho. The facility includes 16 circular fiberglass tanks, (20 feet in diameter and 4 feet deep), piping systems, and support equipment. Because of the temporary nature, the tanks and pipe sections are hauled in by commercial tractor/trailers and assembled on site when needed. All tanks and piping are above ground which required no excavation. A more detailed description of the facilities and operation are included in Letter Supplement 13 to DM No. 1, *Fish Facilities Site Selection Report*. The facility became operational on 1 March 1996 for a 3 year test program and acclimated approximately 120,000 yearling fall chinook salmon supplied from Lyons Ferry Hatchery in April 1996. Approximately 150,000 yearlings will be acclimated and released in 1997 and 1998.

Planning and coordination efforts are continuing on the remaining fall chinook salmon facilities. Two additional facilities are being planned to supplement the existing Pittsburg Landing facilities discussed above. For the two additional facilities, a total of three sites have been identified for consideration. The first is the Big Canyon Creek site located at about River Mile 35 on the main stem Clearwater River. The other two sites, referred to as the Captain John Rapids and Grain Elevator sites, are located at about River Mile 166 and 160 on the mainstem Snake River, respectively. The Big Canyon Creek site is owned by the NPT, one of the project's proponents. The NPT has expressed its full cooperation to enter into a Memorandum of Agreement for the use of this site for 1997 implementation. Both of the other sites are privately owned and rights-of-entry have been obtained to begin surveys and investigations for engineering/design work and environmental clearances. Both owners have expressed a cooperative attitude toward the project. The approximate location of the alternative sites for the temporary facilities are shown on plate 1, depicted as a single block associated with the Lyons Ferry Hatchery.

Planning for the spring chinook salmon facilities is still in the initial stages. Based on discussions with participating agencies and tribes, spring chinook salmon plans are being given secondary status while fall chinook salmon work was given priority because of being more straight forward, less controversial, and because of limited annual budgets and in-house capability. In addition, fall chinook smolts were available for acclimation beginning in 1996. The *Northeast Oregon Hatchery Project Conceptual Design Report* (prepared by Montgomery Watson for BPA), dated March 1995, included alternative sites for adult salmon capture and holding and juvenile salmon acclimation and direct release sites within the Catherine Creek and upper Grande Ronde River sub-basins.

(c) Environmental Concerns.

The language of the Congressional Add appears to be in conflict. On the one hand, it directs the Corps to initiate hatchery construction projects while on the other hand, instructs the Corps to only implement projects that will increase the biodiversity of the listed stocks. The hatchery projects in and of themselves will not accomplish the latter language in the Congressional Add without incorporation of a habitat restoration component. While the hatchery projects are necessary to help re-establish the listed fish in the various basins, there will always be a reliance on the hatchery facilities to continue to produce fish unless there is sufficient and available spawning and rearing habitat that will eventually support a natural, self-sustaining population. Once that is achieved, the hatchery facilities can be decommissioned.

Fall chinook salmon, Snake River: The free-flowing portion of the Snake River, in and just below Hells Canyon, provides most of the last remaining spawning habitat for Snake River fall chinook salmon listed as a threatened species under the Endangered Species Act (ESA). Hells Canyon Dam now blocks upstream migration to historic fall chinook salmon spawning areas in the middle and upper Snake

River. Fall chinook salmon now spawn mostly in the mainstem of the lower Snake River, with some spawning occurring in the lower reaches of large tributary streams such as the Clearwater, Grande Ronde, and Salmon Rivers. Although there is no data on how much fall chinook salmon spawning habitat remains in the free-flowing Snake River, it appears there is considerably more spawning habitat available than is being used.

Hatchery managers from the NPT, WDFW, ODFW, NMFS, and USFWS believe that acclimating and releasing yearling fall chinook salmon above Lower Granite Dam will increase the number of adult fall chinook salmon returning to suitable habitat for natural spawning compared to the recent practice of releases from Lyons Ferry Hatchery, which mostly results in adult salmon returns to that hatchery for artificial spawning. The draft salmon recovery plan prepared by NMFS states that supplementation above Lower Granite Dam should be considered, with careful evaluation.

However, there are concerns that the Congressional Add may not be beneficial to fall chinook salmon. A review by USFWS of over 300 similar supplementation projects found that only a few were successful at increasing existing natural runs. The USFWS reached several conclusions: successes were primarily for returning adult fish for harvest; supplementation adversely impacts wild stocks; chinook salmon are one of the most difficult species to supplement; and supplementation works better for fish stocks having a shorter run to the ocean (Snake River fall chinook salmon have one of the longest runs). The NMFS, in its Biological Opinion for the 1995 to 1998 Hatchery Operations in the Columbia River Basin, stated that "hatchery operations ... are likely to jeopardize the continued existence of listed ... Snake River fall chinook salmon" and directed changes in hatchery operation. Another concern identified by NMFS technical staff was that the use of yearling juvenile fall chinook salmon instead of sub-yearling juveniles, which is the wild stock behavior, may alter the life history of fall chinook salmon. Adults returning from yearling releases would be expected to differ genetically from adults returning from subyearling releases because of differing selection pressure. Based on the above information, there is a risk that the fall chinook salmon acclimation facilities, as proposed by the NPT and the hatchery managers, would not meet the intent of the Congressional Add that "...only projects which will protect, maintain, or enhance biological diversity of existing wild salmon stocks should be pursued."

Fall chinook salmon, Clearwater River: Although some fall chinook salmon currently spawn in the Clearwater River (far fewer than in the Snake River), many of these adults are strays, and it is unclear that the Clearwater can support higher numbers of spawning salmon under current hydrologic conditions. The main problem with the Clearwater River is that the operation of Dworshak Dam keeps the river too cold for fall chinook salmon production much of the year. This means that juvenile fall chinook salmon, spawned in the fall in the Clearwater River, develop more slowly than they would in the Snake River. Because the outmigration behavior of fall

chinook salmon depends largely upon size, Clearwater River fall chinook salmon juveniles migrate later in the year than Snake River juveniles. This is significant because, the later in the summer subyearling chinook salmon migrate, the lower their survival. This is because flows become lower through the summer, predators are more ravenous, and other migration conditions deteriorate. Therefore a given number of juveniles naturally produced in the Clearwater River would likely produce fewer adult returns than would the same number of juveniles produced in the Snake River.

The operation of an acclimation facility on the Clearwater River would likely result in a supplementation-dependent fall chinook salmon population rather than a self-sustaining population. Juvenile fall chinook salmon from a hatchery would have to be released annually to maintain adult returns. This would not further fall chinook salmon recovery efforts and would not meet the intent of the Congressional Add.

Fall chinook salmon summary:

- Supplementation projects of similar characteristics have been mostly unsuccessful.
- Release of yearling fall chinook salmon instead of subyearling may alter genetic make-up of resulting stock.
- The location of the acclimation facility should be near adequate spawning habitat - Snake River sites are preferable to Clearwater or Grande Ronde River sites.
- The location of the acclimation facility should be near adequate rearing habitat - the Clearwater and Grande Ronde Rivers are unsuitable.
- Additional harvest by tribal, sport, and commercial fishermen may mean successful supplementation would result in little additional wild escapement.

Spring chinook salmon: Hatchery managers from the CTUIR, ODFW, NMFS, and USFWS believe that trapping adult spring chinook salmon in the upper Grande Ronde River and Catherine Creek and acclimating and releasing yearling spring chinook salmon into these same waterways will increase the number of adult spring chinook salmon returning for natural spawning. Snake River spring/summer chinook salmon have been listed as a threatened species under the ESA.

However, this proposal does not address one of the main problems with spring chinook salmon stocks in the upper Grande Ronde River and

Catherine Creeks - lack of adequate habitat. There are few holding pools for the adults to wait in until they are ready to spawn and water temperatures are higher than optimal for salmon survival. Rearing habitat for juveniles is limited as both Catherine Creek and the Grande Ronde River have been degraded by logging, channelization, livestock grazing, irrigation, etc. Without adequate quality habitat in which the salmon can complete their natural life cycle, supplementation, as proposed, would be only partially successful and the trapping and acclimation facilities would likely have to be operated indefinitely to maintain adult returns. This does not appear to meet the requirements of the Congressional Add language without an associated habitat restoration component.

Another concern is the effect of the trapping and acclimating on the genetic make-up of the spring chinook salmon. Trapping the wild adult salmon reduces the number available to spawn in the wild. Raising the progeny of these wild adult salmon in a hatchery subjects the juveniles to different selection pressures than they would experience in the wild and may change the genetic make-up of the stock. The hatchery-reared spring chinook salmon may compete with and interbreed with the wild fish, causing a degradation in the wild stocks.

Spring chinook salmon summary:

- Supplementation projects of similar characteristics have been mostly unsuccessful.
- Trapping wild adults for supplementation may further depress wild runs.
- Release of hatchery-raised spring chinook salmon may alter genetic make-up of resulting stock.
- The location of the acclimation facilities should be near adequate spawning habitat - upper Grande Ronde River and Catherine Creek have few adequate adult holding pools.
- The location of the acclimation facilities should be near adequate rearing habitat - Catherine Creek and the Grande Ronde River are degraded.
- Additional harvest by tribal, sports, and commercial fishermen may mean successful supplementation would result in little additional wild escapement.

(d) Other Concerns.

The Lookingglass Hatchery water treatment facility utilizes technologies currently being employed at other northwest hatcheries that have proven

to be effective and reliable. Provisions have been made in the proposed design to mitigate for severely cold creek water and air temperatures typically experienced in the winter. At this time, no other potential engineering concerns are apparent.

The newly constructed Pittsburg Landing temporary acclimation facilities for fall chinook salmon performed as designed with the exception of several of the modular fiberglass tanks that failed. At this time, the tanks, as supplied, are being analyzed to determine the cause of failure. Once the cause of failure has been determined, modifications for the two new fall chinook salmon acclimation facilities will be decided. For the Big Canyon Creek site, the participating agencies and tribes will determine whether there is adequate mixing of the Clearwater River and Big Canyon Creek. If there is not adequate mixing, the water supply intake will have to be located above the mouth of Big Canyon Creek or farther into the Clearwater River. In either case, additional engineering effort and cost will be incurred. The current concept assumes adequate mixing and places the intake at the downstream end of the site at the boat ramp where an eddy creates a slower current. At this time no potential engineering concerns for the Captain John Rapids site or the Grain Elevator site have been identified.

For the spring chinook salmon facilities, similar adult fish capture and holding facilities as well as acclimation facilities have been designed and constructed by the Corps. At this time no potential engineering concerns have been identified.

Although real estate efforts have been preliminary to date, no apparent real estate type problems have been identified.

(e) National Environmental Policy Act (NEPA) Documentation and Environmental Compliance.

1. The National Environmental Protection Act.

The CENPW prepared a Categorical Exclusion for the Lookingglass Hatchery water treatment facilities. The CENPW prepared an Environmental Assessment (EA) for the construction and operation of the Pittsburg Landing temporary acclimation facilities and is preparing another EA to address construction and operation of the two remaining fall chinook temporary acclimation facilities. The CENPW will initiate a separate EA addressing the spring chinook facilities in summer 1996.

2. The Endangered Species Act.

The CENPW did not need to consult with either USFWS or NMFS for the Lookingglass Hatchery water treatment facility. The CENPW determined there would be no effect on wintering bald eagles or migrating peregrine falcons that

may utilize habitat in the project area. Therefore, consultation with USFWS was not necessary for the project. Snake River spring/summer chinook salmon pass through the area. However, since the water treatment facility would not affect water quality, would not release ozone into Lookingglass Creek, and would not increase the number of hatchery-produced salmon, the CENPW determined the facility would not affect individuals of the listed salmon stocks, and consultation with NMFS was not necessary.

The ESA coordination, to date, has been only for the construction and operation of the Pittsburg Landing temporary fall chinook acclimation facility. The CENPW prepared a biological evaluation for the wildlife and plant species and determined that constructing and operating the fish facilities at Pittsburg Landing was "Not Likely to Adversely Affect" any of the listed species that may be found in the project area. The CENPW provided this evaluation to the USFWS.

The CENPW prepared a Biological Assessment for impacts to listed salmon species associated with the construction of the Pittsburg Landing facility. In the assessment, the Corps determined the construction of the facility was "Not Likely to Adversely Affect" the listed salmon stocks. The CENPW initiated informal consultation with NMFS regarding this project. In their August 10, 1995 letter, the NMFS concurred with the CENPW's determination.

The USFWS was responsible for consulting with NMFS for the operation of the Pittsburg Landing fish facility. The NPT, as operator of the facility, prepared the Biological Assessment for operation of the facility and provided it to USFWS. The USFWS then provided the document to NMFS as a modification to the *1995-1998 Biological Assessment for the Lower Snake River Compensation Plan's Lyons Ferry Fall Chinook Salmon Program*. The USFWS and the NPT determined that operating the facility may affect but would not adversely affect listed spring/summer and fall chinook and sockeye salmon. In their November 6, 1995 letter, the NMFS concurred with this determination.

It is anticipated that the CENPW and the USFWS will continue to share ESA coordination efforts. The CENPW would coordinate with USFWS for impacts to wildlife and plant species. The CENPW would also coordinate with NMFS for impacts to listed anadromous fish species caused by the construction of the fish facilities. The USFWS, in cooperation with the operators of the facilities (NPT, CTUIR, and/or ODFW), would coordinate with NMFS for impacts to listed anadromous fish species caused by the operation of the facilities.

3. Fish and Wildlife Coordination Act.

For the Lookingglass Hatchery water treatment facility, coordination with the USFWS under the Fish and Wildlife Conservation Act (FWCA) did not apply since provisions of the act are not applicable when activities are primarily land management based as described in paragraph 2(h) of the act.

For the Pittsburg Landing Fish Facility, site selection, facility design, and biological concerns were directly coordinated with the USFWS and the state fish and wildlife agencies. A Coordination Act report was not required. However, the USFWS is preparing separate Coordination Act reports for the remaining fall chinook facilities and the spring chinook facilities.

4. Cultural Resources.

For the Lookingglass Hatchery water treatment facility, the CENPW determined all construction activities for the water treatment facility would take place at a completed CENPW project in areas that had been previously disturbed. Staff archaeologists searched contracting records, performed a field evaluation, and determined that no cultural resources would be affected by the project. The Corps sent a coordination letter to the Oregon State Historic Preservation Office reporting this determination.

The CENPW determined that locating the facilities at the Pittsburg Landing site would not impact cultural resources because the equipment was to be placed on the existing graveled staging area which had been surveyed for cultural resources prior to its development. Since there was no soil disturbance, there was no opportunity to disturb any cultural items.

The CENPW will perform cultural resources surveys for the fall chinook and spring chinook facilities as sites are identified and will arrange for any testing as needed. The CENPW has already discovered cultural artifacts at the Big Canyon Creek site and is identifying what measures need to be taken to protect these items during construction and operation of the proposed facility.

d. Other Ongoing Items.

Habitat development on off-project lands (Elements X, Y, and Z) is still ongoing as addressed in paragraph 5.b.(2).

e. Lingering Items.

Lingering items are defined as work-items identified as part of the Compensation Plan that are not in progress but must be completed in order to meet our commitment. Other than items to be included under the Congressional Add, there are no lingering items.

6. BASELINE COST ESTIMATE, CONGRESSIONAL ADD FACILITIES.

a. General.

Cost estimates for the Congressional Add facilities are based on the most current information available at the time of preparation of this report. For facilities that have been essentially completed such as the Pittsburg Landing temporary acclimation and release facility, a higher degree of accuracy is reflected in the cost estimate. For the water treatment facility at Lookingglass Hatchery, the cost estimate is based on a draft letter supplement that is currently being reviewed at CENPW. For other facilities that are still in the planning stages, the cost estimates are based on conceptual design and similar facilities built by CENPW. In all cases, real estate costs were based on purchase of required land in fee title. The following is a summary of the basis of the cost estimates for each major element identified to date as part of the Congressional Add.

b. Water Treatment Facilities at Lookingglass Hatchery.

Background on the need and planning of the water treatment facilities is included in paragraph 5.c.(3)(b) above. The cost estimate for the water treatment facilities is based on information included in Letter Supplement 2 to DM No. 5 which is currently in the final review stage. The proposed system is similar to ozone treatment plants employed at other Pacific Northwest hatcheries. The facilities are designed to treat a peak flow of 42 cubic feet per second (cfs). The facilities include a 13,000 gallon liquid oxygen storage tank with associated vaporizers and regulators. A total of four, 100 pound per day medium frequency ozone generators are included. During peak flow, three ozone generators will produce the 251 pounds per day requirement at 84 percent of rated capacity. The fourth generator will be used for standby purposes as well as for additional capacity when needed. Stainless steel contacting tanks will be used as contacting chambers. Five parallel contacting banks will be constructed, each capable of handling one-fifth of the total peak flow of 42 cfs. Each contacting bank will consist of two, 11-foot-diameter by approximately 25-foot-high tanks with a working side water depth of 22 feet. Flow through the tanks will be downward and countercurrent to the flow of ozone gas. Removal of ozone residual to below 0.010 milligrams per liter will be through the use of air stripping towers. A total of five stainless steel stripping towers will be designed and constructed based on a pilot test at the Dworshak National Fish Hatchery. A residence dwelling is also included. Except for the liquid oxygen storage tanks, all equipment will be housed in a 73-foot by 142-foot support building.

c. Fall Chinook Salmon Initiative.

The cost estimate for the fall chinook salmon facilities is based on a total of three separate facilities similar in size and scope to the newly constructed Pittsburg Landing temporary acclimation and release facility. A description of the Pittsburg

Landing temporary acclimation facility, as well as alternative sites, is described in paragraph 5.c.(3)(b) above. Cost estimates are based on the Big Canyon Creek site located at about River Mile 35 on the main stem Clearwater River and the Captain John Rapids site located at about River Mile 166 on the main stem Snake River. The approximate location of the sites are shown on plate 1.

d. Spring Chinook Salmon Initiative.

As discussed in paragraph 5.c.(3)(b) above, conceptual design is still being developed for the spring chinook salmon facilities. However, for cost estimating purposes, sites identified in the "*Northeast Oregon Hatchery Project Conceptual Design Report*" dated March 1995, as recommended by the participating agencies and tribes, were used. Facilities would be located in the upper Grande Ronde River and Catherine Creek sub-basins as described below. Because of the preliminary nature of the sites, location of the facilities were not included on plate 1.

The upper Grande Ronde River adult salmon capture and holding facility would be located on the Grande Ronde River at Vey Meadows at Splash Dam site. The site is within a private ranch surrounded by National Forest System Lands. Land owner contacts have not been made. Approximately 500 cubic feet of holding volume would be required for temporary holding of adult fish. In addition, two acclimation and release sites would be provided including the Upper Vey Meadows site and the Sheep Creek site both of which are located on U. S. Forest Service (USFS) lands. The Upper Vey Meadows site on the Grande Ronde River would have approximately 10,000 cubic feet of in-ground acclimation pond volume. The Sheep Creek site on Sheep Creek would have approximately 2,500 cubic feet of above-ground acclimation tank volume. Preliminary contacts have been made with the USFS.

The Catherine Creek adult salmon capture and holding facility would be located on the Catherine Creek at Union site. Approximately 500 cubic feet of holding volume would be required for temporary holding of adult fish. An acclimation and release site would be located at the Oregon State University site on Catherine Creek. In-ground ponds would provide approximately 12,500 cubic feet of acclimation volume. The Catherine Creek site is owned by the State of Oregon, Department of Education, Oregon State University.

e. Summary.

The total baseline cost estimate for fish facilities included under the Congressional Add is estimated to be \$38,545,000 at 1 October 1996 price level and \$39,531,000 at 1 October 1997 price level. The fully funded cost estimate, cost projected out to mid-point of construction, is estimated to be \$ 41,290,000. A summary of the fully-funded cost estimate by code of accounts is shown on table 4. The fully-funded cost estimate includes contingency factors for the Lookingglass water treatment plant, fall chinook salmon facilities, and spring chinook salmon facilities of 25 percent,

27 percent, and 35 percent respectively. More detailed information on the baseline cost estimate is included in appendix A.

TABLE 4
CONGRESSIONAL ADD FACILITIES
FULLY-FUNDED
BASELINE COST ESTIMATE

Code of Account	Water Treatment Facilities ^{1/}	Fall Chinook Facilities ^{2/}	Spring Chinook Facilities ^{3/}	Totals
01 Lands and Damages	\$41,000	\$232,000	\$857,000	\$1,130,000
06.2 Fish Facilities	\$11,130,000	\$4,539,000	\$14,014,000	\$29,683,000
18 Cultural Resources	\$0	\$10,000	\$5,000	\$15,000
30 Planning, Engineering, and Design	\$2,783,000	\$961,000	\$3,143,000	\$6,887,000
31 Construction Management	\$1,113,000	\$576,000	\$1,886,000	\$3,575,000
Total Project Costs	\$15,067,000	\$6,318,000	\$19,905,000	\$41,290,000

^{1/} At Lookingglass Hatchery.

^{2/} Temporary acclimation and release facilities.

^{3/} Includes final rearing/acclimation and adult trapping holding facilities.

7. IMPLEMENTATION SCHEDULE, CONGRESSIONAL ADD FACILITIES.

The projected completion dates for the ongoing studies as well as design/construction of the facilities are shown below. The completion dates reflect the perceived direction at this time and assumes availability of adequate funding.

Element	Completion Date
Lookingglass Hatchery Water Treatment Plant	
Implementation Document	June 1996
Design/Construction	September 1999
Fall Chinook Initiative	
First Temp. Acclimation Facility (Pittsburg Landing)	Complete
Second Temp. Acclimation Facility (Big Canyon)	
Implementation Document	June 1996
Design/Construction	March 1997
Third Temp. Acclimation Facility (Captain John Rapids)	
Implementation Document	June 1997
Design/Construction	March 1998
Spring Chinook Initiative ^{1/}	
Adult Capture and Adult Holding Facilities	
Vey Meadows at Splash Dam Site	
Catherine Creek at Union Site	
Implementation Document	January 1997
Design/Construction	August 1998
Acclimation and Release Facilities	
Upper Vey Meadows Site	
Sheep Creek Site	
Oregon State University Site	
Implementation Document	September 1998
Design/Construction	April 1999

^{1/} Priority between Catherine Creek and upper Grande Ronde River has not yet been determined.

8. PROGRAM COST AND COST LIMITS.

a. Historical Project Cost.

A total of \$215,696,000 have been expended through 31 January 1996 on the Compensation Plan. A summary of expenditures by Fiscal Year through 31 January 1996 is included in appendix B. Table 5 shows a breakdown of the expenditures by facility through 31 January 1996.

b. Future Funding Needs.

Table 5 includes projected fund requirements by facility in the out-years to complete the total compensation plan including the Congressional Add.

c. Authorized Cost Limit.

As addressed in paragraph 2 above, the authorized cost limit for the compensation plan at October 1982 price level was \$177,000,000. This authorized cost limit updated to October 1995 price level is \$237,614,000, not including the Congressional Add.

**TABLE 5 - LOWER SNAKE RIVER FISH AND WILDLIFE COMPENSATION PLAN
TOTAL PROGRAM FULLY-FUNDED COST ESTIMATE \$1,000**

Item	Expenditures Through 31 January 1986	Remaining FY 96	Project Future Expenditures			Balance To Complete	Total Project Cost
			FY 97	FY 98	FY 99		
Fish Hatchery, Satellite & Support Facilities ^{1/}							
McCall Hatchery	\$6,787	\$0	\$0	\$0	\$0	\$0	\$6,787
Haggerman Hatchery	13,895	0	0	0	0	0	13,895
Dworshak Expansion Hatchery	2,282	0	0	0	0	0	2,282
Magic Valley Hatchery	20,999	0	0	0	0	0	20,999
Lookingglass Hatchery	10,948	22	0	0	62	0	11,032
Irrigon Hatchery	24,181	174	0	341	22	0	24,718
Lyons Ferry Hatchery	38,378	0	0	0	0	0	38,378
Sawtooth Hatchery	14,255	0	0	0	0	0	14,255
Clearwater Hatchery	50,783	116	\$375	4	170	0	51,448
Subtotal	\$182,508	\$312	\$375	\$345	\$254	\$0	\$183,794
Wildlife Lands							
Element "X" Lands							
State of Washington	7,849	261	128	6	388	0	8,632
Corps	1,434	985	209	1,737	780	0	5,145
Sub-Subtotal	\$9,283	\$1,246	\$337	\$1,743	\$1,168	\$0	\$13,777
Element "Y" Lands							
State of Washington	5,841	340	58	0	406	0	6,645
Corps	609	936	202	506	645	0	2,898
Sub-Subtotal	\$6,450	\$1,276	\$260	\$506	\$1,051	\$0	\$9,543
Element "Z" Lands							
State of Washington	3,572	250	56	1,202	758	0	5,838
State of Idaho	949	31	0	0	443	0	1,423
Sub-Subtotal	\$4,521	\$281	\$56	\$1,202	\$1,201	\$0	\$7,261
Subtotal Wildlife Lands	\$20,254	\$2,803	\$653	\$3,451	\$3,420	\$0	\$30,581
Work Other Than Fish Hatchery ^{2/}	\$12,431	\$49	\$23	\$44	\$76	\$0	\$12,623
Congressional Add Fish Facilities							
Water Treatment, Lookingglass Hatchery	\$136	\$178	\$20	\$6,041	\$8,692	\$0	\$15,067
Fall Chinook Initiative	250	1,427	2,389	2,252	0	\$0	6,318
Spring Chinook Initiative	117	345	140	9,265	10,038	\$0	19,905
Subtotal	\$503	\$1,950	\$2,549	\$17,558	\$18,730	\$0	\$41,290
GRAND TOTALS	\$215,696	\$5,114	\$3,600	\$21,398	\$22,480	\$0	\$268,288

^{1/} Does not include elements included in Congressional Add. Elements of the Congressional Add are included separately on this table.

^{2/} "Work Other Than Fish Hatchery" includes Eagle Laboratory (serves as a centralized fish health laboratory for hatcheries in Idaho developed under the Compensation Plan), pilot program, habitat development, and fish development program.

9. PROGRAM FUND REQUIREMENTS BY FISCAL YEAR.

Fund requirements to complete the compensation plan including the Congressional Add are summarized below in table 6. The total fully-funded cost estimate of the Compensation Plan including the Congressional Add is \$268,288,000.

TABLE 6

SUMMARY OF PROGRAM FUND REQUIREMENTS BY FISCAL YEAR
(\$1,000)

Item	Expenditures Through 31 January 96	Remaining FY 96	FY 97	FY 98	FY 99	Balance To Complete	Total Project Cost
Fish Hatchery and Satellite Facilities ^{1/}	\$182,508	\$312	\$375	\$345	\$254	0	\$183,794
Wildlife Lands	20,254	2,803	653	3,451	3,420	0	30,581
Work Other Than Fish Hatchery	12,431	49	23	44	76	0	12,623
Congressional Add Facilities	503	1,950	2,549	17,558	18,730	0	41,290
Totals	\$215,696	\$5,114	\$3,600	\$21,398	\$22,480	0	\$268,288

^{1/} Excluding Congressional Add facilities.

10. SUMMARY AND CONCLUSIONS.

Fish Facilities: Five of the nine hatcheries have been completed and transferred to USFWS. The remaining four hatcheries are in various stages of completion. They are scheduled to be completed by Fiscal Year 1998. Six of nine satellite facilities have been completed and transferred to USFWS. The remaining satellite facilities are being operated by the USFWS.

Wildlife Lands: The purchase of Element X, Y, and Z lands was concluded on September 30, 1994. Habitat development on these lands is in various stages and is currently scheduled for completion by 1999.

Congressional Add: Language in the Congressional Add directed the Corps to initiate action on several hatchery construction projects. However, the language appears to be in conflict. On one hand, it directs the Corps to initiate hatchery construction projects while, on the other hand, instructs the Corps to only implement projects that will increase the biodiversity of the listed stocks.

A water treatment facility has been designed for Lookingglass Hatchery. The Letter Supplement is currently under review. A temporary acclimation facility was constructed at Pittsburg Landing in Hells Canyon National Recreation Area. The facility became operational on March 1, 1996. This is part of a 3-year test program that will acclimate yearling fall chinook salmon from Lyons Ferry Hatchery. Coordination and planning are continuing on two additional facilities for fall chinook salmon. The acclimation facilities are expected to be at least partially successful in enhancing the wild stocks on a near-term basis.

Plans for spring chinook salmon facilities are still evolving. Adult capture/holding and acclimation/release facilities are being considered at five sites in the Catherine Creek and upper Grande Ronde River sub-basins.

Based on coordination with other agencies and review of research reports, there is concern that the facilities being planned would not meet the conference report requirement that "...only projects which will protect, maintain, or enhance biological diversity of existing wild salmon stocks should be pursued." Supplementation projects similar to the ones proposed under the Congressional Add have been largely unsuccessful. Operation of the fall chinook salmon facilities, as proposed, may alter the genetic make-up of the wild Snake River fall chinook salmon stocks. Operation of a fall chinook salmon facility on the Clearwater River would likely have to be continued indefinitely to maintain adult returns as the habitat is unsuitable for self-sustaining fall chinook salmon populations. Operation of the spring chinook salmon facilities may alter the genetic make-up of Snake River spring/summer chinook salmon returning to the upper Grande Ronde River and Catherine Creek. Trapping wild adult spring chinook salmon in these waterways would reduce the numbers available to spawn in the wild. Although the acclimation facilities directed under the Congressional Add are

expected to bring some near-term benefit to existing wild salmon stocks, additional rearing habitat in the upper Grande Ronde River and Catherine Creek sub-basins would bring long-term benefits to the wild salmon stock.

There are opposing viewpoints within the USFWS, NMFS, and effected state and tribal hatchery managers. It is CENPW's position that these facilities could provide at least short-term biological benefits provided the habitat restoration component is included to achieve a goal of self-sustaining wild populations as opposed to perpetual reliance on hatchery-produced fish. Such a plan would be in concert with NMFS' Proposed Recovery Plan. Precedence has been set within the authority of the Compensation Plan to undertake habitat development/ restoration for both the wildlife and fisheries components. This, coupled with the Corps' Ecosystem/Environmental Restoration authorities and current mission emphasis, places the Corps in a highly qualified position to plan and carry out the intention of the Congressional Add in concert with the other agencies and tribes.

APPENDIX A

BASELINE COST ESTIMATES
CONGRESSIONAL ADD FISH FACILITIES

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<u>Cost Estimates</u>	<u>Page No.</u>
Water Treatment Facility at Lookingglass Hatchery	A-1
Fall Chinook Temporary Acclimation Facilities	A-13
Spring Chinook Facilities	A-27

PROJECT: Water Treatment at Lookingglass Fish Hatchery
 LOCATION: Oregon
 THIS ESTIMATE IS BASED ON THE SCOPE CONTAINED IN THE CONCEPT "RECONNAISSANCE" REPORT, DATED: 18 APRIL 96
 DISTRICT: Walla Walla
 P.O.C.: KIM CALLAN, CHIEF, COST ENGINEERING

ACCOUNT NUMBER	FEATURE DESCRIPTION	CURRENT MCACES ESTIMATE PREPARED: 18 APRIL 96 EFFECTIVE PRICING LEVEL: 1 OCT 96				AUTHORIZ./BUDGET YEAR: 1998 EFFECT. PRICING LEVEL: 1 OCT 97		FULLY FUNDED ESTIMATE.....			
		COST (\$K)	CNTG (\$K)	CNTG (%)	TOTAL (\$K)	COST (\$K)	CNTG (\$K)	TOTAL (\$K)	SPENT THRU FY 95 (\$K)	COST (\$K)	CNTG (\$K)	FULL (\$K)
08.2--	FISH HATCHERY	8,220	2,055	25%	10,275	8,442	2,111	10,553		8,904	2,226	11,130
	TOTAL CONSTRUCTION COSTS ==	8,220	2,055	25%	10,275	8,442	2,111	10,553		8,904	2,226	11,130
01--	LANDS AND DAMAGES	32	6	20%	38	33	7	40		34	7	41
18--	CULTURAL RESOURCES											
30--	PLANNING, ENGINEERING & DESIGN	2,023	505	25%	2,528	2,077	519	2,596		2,226	557	2,783
31--	CONSTRUCTION MANAGEMENT	822	205	25%	1,027	844	211	1,055		890	223	1,113
	TOTAL PROJECT COSTS =====	11,097	2,771	25%	13,868	11,396	2,848	14,244		12,054	3,013	15,067

TOTAL FEDERAL COSTS =====> 15,067

TOTAL NON-FEDERAL COSTS =====>

THE MAXIMUM PROJECT COST IS =====> \$

THIS TPCS REFLECTS A PROJECT COST CHANGE OF \$
 DISTRICT APPROVED: _____

- _____ CHIEF, COST ENGINEERING
- _____ CHIEF, REAL ESTATE
- _____ CHIEF, PLANNING
- _____ CHIEF, ENGINEERING
- _____ CHIEF, OPERATIONS
- _____ CHIEF, CONSTRUCTION
- _____ CHIEF, PROGRAMS MANAGEMENT
- _____ PROJECT MANAGER
- _____ DDE (PM)

- DIVISION APPROVED:
- _____ CHIEF, COST ENGINEERING
 - _____ DIRECTOR, REAL ESTATE
 - _____ CHIEF, PROGRAMS MANAGEMENT
 - _____ DIRECTOR OF PPMD

APPROVED DATE: _____

THIS ESTIMATE IS BASED ON THE SCOPE CONTAINED IN THE CONCEPT "RECONNAISSANCE" REPORT, DATED: 18 APRIL 96

PROJECT: Water Treatment at Lookingglass Fish Hatchery
 LOCATION: Oregon

DISTRICT: Walla Walla
 P.O.C.: KIM CALLAN, CHIEF, COST ENGINEERING

CURRENT MCACES ESTIMATE PREPARED: 18 APRIL 96					AUTHORIZ./BUDGET YEAR: 1998			FULLY FUNDED ESTIMATE.....					
EFFECTIVE PRICING LEVEL: 1 OCT 96					EFFECT. PRICING LEVEL: 1 OCT 97									
ACCOUNT NUMBER	FEATURE DESCRIPTION	COST (\$K)	CNTG (\$K)	CNTG (%)	TOTAL (\$K)	OMB (%)	COST (\$K)	CNTG (\$K)	TOTAL (\$K)	FEATURE MID PT	OMB (%)	COST (\$K)	CNTG (\$K)	FULL (\$K)
06.2--	Ozone Water Treatment Facility & Dwelling Facility at Lookingglass Fish Hatchery Estimate Completed before D.M. #5 Letter Supplement #2	8,220	2,055	25%	10,275	2.7%	8,442	2,111	10,553	2 QTR 99	5.5%	8,904	2,226	11,130
TOTAL CONSTRUCTION COSTS ==		8,220	2,055	25%	10,275		8,442	2,111	10,553			8,904	2,226	11,130
01---	LANDS AND DAMAGES	32	6	20%	38	2.7%	33	7	40	1 QTR 98	2.7%	34	7	41
30---	PLANNING, ENGINEERING & DESIGN	1,201	300	25%	1,501	2.7%	1,233	308	1,541	2 QTR 99	8.3%	1,336	334	1,670
30---	PLANNING, ENGINEERING & DESIGN	822	205	25%	1,027	2.7%	844	211	1,055	1 QTR 99	5.5%	890	223	1,113
31---	PM, Planning, Contracting, EDC CONSTRUCTION MANAGEMENT	822	205	25%	1,027	2.7%	844	211	1,055	2 QTR 99	5.5%	890	223	1,113
TOTAL COSTS =====		11,097	2,771	25%	13,868		11,396	2,848	14,244			12,054	3,013	15,067

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Thu 25 Apr 1996
Eff. Date 10/01/96

U.S. Army Corps of Engineers
PROJECT LGWSDM: LOOKINGGLASS FH, WATER TREATMENT - OZONE WATER TREATMENT FACILITY

TIME 12:23:48
TITLE PAGE 1

LOOKINGGLASS FH, WATER TREATMENT
OZONE WATER TREATMENT FACILITY
CONSTRUCTION BASELINE ESTIMATE
Effective Price Level 1 OCT 96
--- FOR OFFICIAL USE ONLY ---

Designed By: NPW Engineering Division
Estimated By: Gareth Clausen

Prepared By: NPW, Cost Engineering Branch
Kim Callan, P.E., Branch Chief

Preparation Date: 04/15/96
Effective Date of Pricing: 10/01/96
Est Construction Time: 365 Days

Sales Tax: 0.00%

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M C A C E S G O L D E D I T I O N
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Release 5.30A

LABOR ID: EORG96 EQUIP ID: NAT95A

Currency in DOLLARS

CREW ID: NAT94A UPB ID: NAT92A

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**** BASIS OF THIS ESTIMATE**

Lower Snake River Fish and Wildlife Compensation Plan, Design Memorandum No. 5, Lookingglass Fish Hatchery, Letter Supplement No. 2, Hatchery Water Treatment System.

**** PROJECT DESCRIPTION**

This estimate presents the cost to demolish an existing storage building, relocate an existing fueling facility, site preparation, construct a 73'x 142' concrete masonry wall building, furnish and install ozone water treatment equipment, and construct one residence dwelling.

Diversion and care of water is included in the estimate because the hatchery water supply through the existing 42" pipe is used year-round.

Site work includes; grading, asphalt paving, and landscaping.

The building will be insulated for winter operation. Exterior and interior walls will be constructed of concrete masonry block. The roof will be supported by a structural steel truss system. About 500 SF of ventilation louvers will be installed along one wall and about 500 SF in each gable end of the building. An upper floor (about 4,000 SF) and a third level access (about 900 SF) will be constructed of fiberglass grating supported by structural steel columns and beams.

Installed equipment includes 3 emergency generators and 4 ozone generators. Each engine generator will have an 8,000 gallon underground fuel tank and a fifty gallon day tank.

Two 42" butterfly valves and 5 24" gate valves will be installed on the existing 42" water supply pipe. Submersible pumps and a pipe distribution header will supply water to 10 - 11' dia x 25' high ozone contact towers and 5 - 11' dia x 25' high stripping towers. Spare pumps will be supplied for speedy replacement and repair. Air supply and exhaust to the stripping tower includes blowers and heat exchangers. Towers, metal work, duct, piping, equipment, and pumps are primarily stainless steel construction.

The treatment facility will be located near an existing underground medium voltage service primary. The existing primary will feed a padmount oil type transformer which will be installed by the power company. Power distribution at 480/277 volts will feed low bay lighting and major 3 phase loads, and distribution at 120/208 volts will feed receptacles and lighting and other small to medium loads. Telephones, fire alarm system, and annunciator will be installed in the treatment facility and interfaced with existing project systems. Treatment system controls will incorporate distributed control network technology with both local and remote operator interface capability. Where potential building foundation interference is encountered, existing utilities will be relocated.

Work also includes the construction of a 26'x 60' single floor residence dwelling that includes a single vehicle garage and appliances.

**** CONSTRUCTION SCHEDULE**

The contractor shall commence work under this contract within 10 calendar

days of receiving the notice to proceed and prosecute said work diligently, and complete the entire work ready for use, with the time frames and not later than the date listed below.

Bid Opening	May 1998
Contract Award	June 1998
Begin Construction	July 1998
Complete Construction	August 1999

* CONSTRUCTION WINDOWS

Diversion and care of the water supply to the hatchery is critical. Hatchery water requirements are at a minimum during December, January, and February. Minimal (hours) interruptions to the water supply during April are possible. More than several hours interruption will require a temporary pumping facility with a capacity of 1,000 gpm. During the construction window a 42" - 250 foot bypass/diversion pipe would be installed.

* OVERTIME

This estimate contains no overtime to complete the project.

* ACQUISITION PLAN

This work is not to be performed by a Contractor under the Small Business Administration 8a program. The project will be acquired by the Bidding process.

** SUB-CONTRACTING PLAN

The following are anticipated subcontractors on this project:

- Electrical Subcontractor (EL)
- Mechanical Subcontractor (ME)
- Structural Steel Subcontractor (SS)
- Asphalt Paving Subcontractor (SW)

** PROJECT CONSTRUCTION

* SITE ACCESS

The project site is located about 34 miles north of LaGrande, Oregon. The access road is paved and single lane in some locations.

Contractor's staging, storage, and work area is constrained by limited areas, topographic, and operational considerations. Preservation of existing features will be provided for where possible.

* BORROW \ DISPOSAL AREAS

Borrow could be obtained from required excavations or from approved Contractor sources. Soils at the site include; clayey silt to silt material, silty, sandy, gravel material, and rock. Distribution of soil materials is unknown at this time, therefore, the estimate includes shrinkage (in fill) and swelling (loose) factors of 10% and 20% respectively. Disposal areas for excess soil have not been identified at this time but are available near the hatchery or at previously used sites along the access road.

* CONSTRUCTION METHODOLOGY

The construction methodology is standard.

Contact and stripping towers (11' dia x 25' high) would be installed prior

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r to completion of the building components.

* UNUSUAL CONDITIONS

Subsurface investigations encountered bedrock at depths ranging from 6 to 11 feet, classified as basalt ranging from fractured and weathered to hard. Excavation of the test pits was noted as difficult due to the number and size of large boulders. It was also noted that the upper 2 to 3 feet of basalt may be ripable with a dozer or large backhoe/excavator.

* UNIQUE TECHNIQUES OF CONSTRUCTION NONE

* EQUIPMENT/LABOR AVAILABILITY & DISTANCE TRAVELED

Equipment and labor is available within Oregon, Washington, or Idaho. Appropriate zone differential pay is included in the estimate. It is estimated a large, possibly 100 ton capacity, crane will be needed to place the contact and stripping tanks (15,000 - 16,000 LB at a load radius of 60-65 feet).

* ENVIRONMENTAL CONCERNS

This estimate has provisions for Monthly Anticipated Adverse Weather Delays as specified in the contract clauses.

* CONTINGENCIES

A weighted average analysis was done to determine an overall project contingency factor. Contingencies ranging from 20 - 40 percent were assigned to individual cost items based on the level of design details available for that work. The result is 23.9% (increments of 5 = 25%).

A contingency of 25 percent is appropriate to identify the uncertainty associated with the level of design provided for this estimate.

Contingencies are not included in this estimate. Baseline estimate documents include contingency and present escalation to midpoint of construction.

* EFFECTIVE DATES FOR LABOR, EQUIPMENT, MATERIAL PRICING

MCACES database files:
NAT95A 1995 National Unit Price Book Issued 4-26-95
NAT94B 1994 National Crews Database Issued 3-28-94
EORG96 Eastern Oregon Labor Rates #0 Issued 3-15-96
NAT95A Eq Rates EP 1110-1-8, Aug95 Issued 10-3-95

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Thu 25 Apr 1996
 Eff. Date 10/01/96

U.S. Army Corps of Engineers
 PROJECT LGWSDM: LOOKINGGLASS FH, WATER TREATMENT - OZONE WATER TREATMENT FACILITY

TIME 08:58:33

SUMMARY PAGE 1

** PROJECT INDIRECT SUMMARY - CSI ITEM **

		QUANTITY	UOM	TOTAL DIRECT	FOOH	HOOH	PROF	PL & PD	BOND	TOTAL COST	UNIT COST
AA WATER TREATMENT FACILITY											
AA 06 FISH AND WILDLIFE											
AA 06 02 SITE WORK											
AA 06 02 03 SITE WORK											
AA 06 02 03-002A GENERAL CONSTRUCTION SITE WORK											
AA 06 02 03-002A-01AA	General Requirements			12,279	0	0	0	0	0	12,279	
AA 06 02 03-002A-01AB	Relocations			23,277	0	0	0	0	0	23,277	
AA 06 02 03-002A-01AC	Diversion and Care of Water	250.00	LF	90,240	9,926	4,007	7,214	0	1,010	112,397	449.59
AA 06 02 03-002A-02AA	Demolition and Disposal			17,463	0	0	0	0	0	17,463	
AA 06 02 03-002A-02AB	Earthwork, Excavation & Fill			39,849	0	0	0	0	0	39,849	
AA 06 02 03-002A-02AC	Asphalt Paving	11440.00	SF	44,239	4,866	1,964	3,537	0	495	55,102	4.82
AA 06 02 03-002A-02LA	Landscaping			5,523	0	0	0	0	0	5,523	
AA 06 02 03-002A-03AA	Concrete Retaining Wall	61.00	CY	21,251	0	0	0	0	0	21,251	348.37
AA 06 02 03-002A-05AA	Fencing	205.00	LF	3,247	0	0	0	0	0	3,247	15.84
TOTAL GENERAL CONSTRUCTION SITE WORK				257,368	14,793	5,971	10,751	0	1,505	290,387	
AA 06 02 03-101- AREA LIGHTING											
AA 06 02 03-101-- 16B	Area Lighting	21842.00	SF	8,018	882	356	641	0	90	9,987	0.46
AA 06 02 03-101-- 16C	Area Ltg Conduit & Wire	21842.00	SF	4,490	494	199	359	0	50	5,592	0.26
TOTAL AREA LIGHTING				21842.00	1,376	555	1,000	0	140	15,579	0.71
AA 06 02 03-102- POWER DISTRIBUTION TO BUILDING											
AA 06 02 03-102-- 16A	Main Service to the Building	21842.00	SF	14,104	1,551	626	1,127	0	158	17,567	0.80
AA 06 02 03-102-- 16B	Intertie to Hatchery Building	400.00	LF	44,157	4,857	1,961	3,530	0	494	54,999	137.50
TOTAL POWER DISTRIBUTION TO BUILDING				21842.00	6,409	2,587	4,658	0	652	72,566	3.32
AA 06 02 03-103- COMMUNICATION SYSTEM - ON-SITE											
AA 06 02 03-103-- 16A	Comm. System -On-Site Telephones	21842.00	SF	3,404	374	151	272	0	38	4,240	0.19
TOTAL COMMUNICATION SYSTEM - ON-SITE				21842.00	374	151	272	0	38	4,240	0.19
AA 06 02 03-104- EXISTING U/G UTILITIES MOVEMENTS											
AA 06 02 03-104-- 16A	Primary Relocation	21842.00	SF	1,250	138	56	100	0	14	1,557	0.07

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Thu 25 Apr 1996
Eff. Date 10/01/96

U.S. Army Corps of Engineers
PROJECT LGWSDM: LOOKINGGLASS FH, WATER TREATMENT - OZONE WATER TREATMENT FACILITY

TIME 08:58:33
SUMMARY PAGE 2

** PROJECT INDIRECT SUMMARY - CSI ITEM **

		QUANTITY UOM	TOTAL DIRECT	FOOH	HOOH	PROF	PL & PD	BOND	TOTAL COST	UNIT COST
AA 06 02 03-104--	16B Existing Duct Bank Relocation	21842.00 SF	18,433	2,028	818	1,474	0	206	22,959	1.05
TOTAL EXISTING U/G UTILITIES MOVEMENTS		21842.00 SF	19,684	2,165	874	1,574	0	220	24,517	1.12
TOTAL SITE WORK			351,225	25,117	10,138	18,254	0	2,555	407,289	
TOTAL SITE WORK			351,225	25,117	10,138	18,254	0	2,555	407,289	
AA 06 10 WATER TREATMENT BUILDING										
AA 06 10 10 WATER TREATMENT BUILDING										
AA 06 10 10-003A WATER TREATMENT BUILDING										
AA 06 10 10-003A-03AA	Building Concrete	395.00 CY	188,089	0	0	0	0	0	188,089	476.18
AA 06 10 10-003A-05AB	Building Structure	10366.00 SF	308,907	0	0	0	0	0	308,907	29.80
AA 06 10 10-003A-05AD	Grating, Stairs, Handrails		342,132	37,634	15,191	27,351	0	3,829	426,136	
AA 06 10 10-003A-15AA	Building Mechanical		87,037	9,574	3,864	6,958	0	974	108,407	
TOTAL WATER TREATMENT BUILDING		10366.00 SF	926,165	47,209	19,055	34,309	0	4,803	1,031,539	99.51
TOTAL WATER TREATMENT BUILDING			926,165	47,209	19,055	34,309	0	4,803	1,031,539	
AA 06 10 11 ELECTRIC POWER & LIGHTING										
AA 06 10 11- 01 ELECTRICAL POWER & LIGHTING										
AA 06 10 11- 01-16AB	Lighting	16705.00 SF	42,405	4,665	1,883	3,390	0	475	52,817	3.16
AA 06 10 11- 01-16AC	Power and Receptacle Plan	16705.00 SF	24,356	2,679	1,081	1,947	0	273	30,336	1.82
AA 06 10 11- 01-16AD	Infrared Heaters incl electrical	16705.00 SF	31,607	3,477	1,403	2,527	0	354	39,368	2.36
TOTAL ELECTRICAL POWER & LIGHTING		16710.00 SF	98,368	10,820	4,368	7,864	0	1,101	122,521	7.33
TOTAL ELECTRIC POWER & LIGHTING		16710.00 SF	98,368	10,820	4,368	7,864	0	1,101	122,521	7.33
AA 06 10 12 ELECTRICAL SYSTEMS										
AA 06 10 12- 01 ELECTRICAL SYSTEMS										
AA 06 10 12- 01-16AA	Communications	16705.00 SF	1,257	138	56	100	0	14	1,566	0.09
AA 06 10 12- 01-16AB	Fire Alarm System	16705.00 SF	6,327	696	281	506	0	71	7,880	0.47
AA 06 10 12- 01-16AC	Grounding	16705.00 SF	7,004	770	311	560	0	78	8,724	0.52
AA 06 10 12- 01-16AD	Leak Detection Systems	16705.00 SF	4,862	535	216	389	0	54	6,056	0.36
TOTAL ELECTRICAL SYSTEMS			19,450	2,140	864	1,555	0	218	24,226	
TOTAL ELECTRICAL SYSTEMS		16710.00 SF	19,450	2,140	864	1,555	0	218	24,226	1.45

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Thu 25 Apr 1996
 Eff. Date 10/01/96

U.S. Army Corps of Engineers
 PROJECT LGWSDM: LOOKINGGLASS FH, WATER TREATMENT - OZONE WATER TREATMENT FACILITY

TIME 08:58:33

SUMMARY PAGE 3

** PROJECT INDIRECT SUMMARY - CSI ITEM **

	QUANTITY UOM	TOTAL DIRECT	FOOH	HOOH	PROF	PL & PD	BOND	TOTAL COST	UNIT COST

TOTAL WATER TREATMENT BUILDING	16710.00 SF	1,043,983	60,169	24,286	43,727	0	6,121	1,178,286	70.51
AA 06 11 WATER TREATMENT SYSTEM									
AA 06 11 05 WATER SUPPLY SYSTEM									
AA 06 11 05-004A MECHANICAL									
AA 06 11 05-004A-15AB Mechanical Treatment Equipment		4,368,767	480,564	193,973	349,249	0	48,888	5,441,441	
AA 06 11 05-004A-15AC Modify Existing 42" Water Supply		33,206	3,653	1,474	2,655	0	372	41,359	
AA 06 11 05-004A-15BA 42" Drain to Lookingglass Creek		18,666	2,053	829	1,492	0	209	23,249	
TOTAL MECHANICAL		4,420,638	486,270	196,276	353,396	0	49,468	5,506,049	
TOTAL WATER SUPPLY SYSTEM		4,420,638	486,270	196,276	353,396	0	49,468	5,506,049	
AA 06 11 1A POWER FEEDS									
AA 06 11 1A- 16A PUMPING									
AA 06 11 1A- 16A- 16A PUMP FEEDERS	6.00 EA	18,395	2,023	817	1,471	0	206	22,912	3818.59
TOTAL PUMPING	16710.00 SF	18,395	2,023	817	1,471	0	206	22,912	1.37
AA 06 11 1A- 16B OZONE GENERATION									
AA 06 11 1A- 16B- 16A OZONE GENERATOR FEED	4.00 EA	2,019	222	90	161	0	23	2,514	628.59
TOTAL OZONE GENERATION	16710.00 SF	2,019	222	90	161	0	23	2,514	0.15
AA 06 11 1A- 16D OZONE REMOVAL									
AA 06 11 1A- 16D- 16A BLOWERS AND ASSOCIATED ELECT.	16710.00 SF	8,003	880	355	640	0	90	9,968	0.60
AA 06 11 1A- 16D- 16B DUCT HEATERS - ELECTRICAL	16710.00 SF	6,867	755	305	549	0	77	8,553	0.51
AA 06 11 1A- 16D- 16C MOTORIZED DAMPERS - ELECTRICAL	16710.00 SF	6,747	742	300	539	0	75	8,403	0.50
TOTAL OZONE REMOVAL	16710.00 SF	21,616	2,378	960	1,728	0	242	26,923	1.61
AA 06 11 1A- 16E OZONE DESTRUCTION									
AA 06 11 1A- 16E- 16A OZONE DESTRUCTOR FEEDS	16710.00 SF	12,037	1,324	534	962	0	135	14,992	0.90
AA 06 11 1A- 16E- 16B OZONE DESTRUCTOR FEED Panelboard	16710.00 SF	2,254	248	100	180	0	25	2,807	0.17
TOTAL OZONE DESTRUCTION	16710.00 SF	14,290	1,572	634	1,142	0	160	17,799	1.07
TOTAL POWER FEEDS	16710.00 SF	56,320	6,195	2,501	4,502	0	630	70,148	4.20

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Thu 25 Apr 1996
 Eff. Date 10/01/96

U.S. Army Corps of Engineers
 PROJECT LGWSDM: LOOKINGGLASS FH, WATER TREATMENT - OZONE WATER TREATMENT FACILITY
 ** PROJECT INDIRECT SUMMARY - CSI ITEM **

TIME 08:58:33
 SUMMARY PAGE 4

		QUANTITY	UOM	TOTAL DIRECT	FOOH	HOOH	PROF	PL & PD	BOND	TOTAL COST	UNIT COST
AA 06 11 1B ELECTRICAL MONITORING SYSTEMS											
AA 06 11 1B- 16A PUMPING											
AA 06 11 1B- 16A-16AE	Flow Sensing Systems	5.00	EA	25,262	2,779	1,122	2,020	0	283	31,465	6293.02
AA 06 11 1B- 16A-16AF	Annunciation	6.00	EA	158	17	7	13	0	2	196	32.73
TOTAL PUMPING		6.00	EA	25,420	2,796	1,129	2,032	0	284	31,661	5276.92
AA 06 11 1B- 16B OZONE GENERATION											
AA 06 11 1B- 16B-16AF	Annunciation	3.00	EA	38,149	4,196	1,694	3,050	0	427	47,515	15838.50
AA 06 11 1B- 16B-16AG	Air Monitors in Building	1.00	EA	13,570	1,493	603	1,085	0	152	16,902	16902.05
TOTAL OZONE GENERATION		4.00	EA	51,719	5,689	2,296	4,135	0	579	64,418	16104.38
AA 06 11 1B- 16C OZONE INTRODUCTION											
AA 06 11 1B- 16C-16AE	Ozone Flow Sensing Systems	5.00	EA	29,793	3,277	1,323	2,382	0	333	37,108	7421.51
TOTAL OZONE INTRODUCTION		16710.00	SF	29,793	3,277	1,323	2,382	0	333	37,108	2.22
AA 06 11 1B- 16D OZONE REMOVAL											
AA 06 11 1B- 16D-16AF	Annunciation	5.00	EA	54,015	5,942	2,398	4,318	0	604	67,277	13455.50
TOTAL OZONE REMOVAL		16710.00	SF	54,015	5,942	2,398	4,318	0	604	67,277	4.03
AA 06 11 1B- 16E OZONE DESTRUCTION											
AA 06 11 1B- 16E-16AF	Annunciation	10.00	EA	9,637	1,060	428	770	0	108	12,003	1200.27
TOTAL OZONE DESTRUCTION		16710.00	SF	9,637	1,060	428	770	0	108	12,003	0.72
TOTAL ELECTRICAL MONITORING SYSTEMS		16710.00	SF	170,583	18,764	7,574	13,637	0	1,909	212,467	12.71
AA 06 11 1C DISTRIBUTED CONTROL SYSTEM											
AA 06 11 1C- 001 DISTRIBUTED CONTROL SYSTEM											
AA 06 11 1C- 001- 16A	LOCAL OPERATOR INTERFACE	16710.00	SF	4,650	512	206	372	0	52	5,792	0.35
AA 06 11 1C- 001- 16B	REMOTE OPERATOR INTERFACE	16710.00	SF	4,650	512	206	372	0	52	5,792	0.35
AA 06 11 1C- 001- 16C	MAIN CPU and Components	16710.00	SF	21,328	2,346	947	1,705	0	239	26,565	1.59
AA 06 11 1C- 001- 16D	Documentation	16710.00	SF	119	13	5	10	0	1	148	0.01
AA 06 11 1C- 001- 16E	software	16710.00	SF	1,324	146	59	106	0	15	1,649	0.10

A-10

Thu 25 Apr 1996
 Eff. Date 10/01/96

U.S. Army Corps of Engineers
 PROJECT LGWSDM: LOOKINGGLASS FH, WATER TREATMENT - OZONE WATER TREATMENT FACILITY

TIME 08:58:33

SUMMARY PAGE 5

** PROJECT INDIRECT SUMMARY - CSI ITEM **

	QUANTITY	UCM	TOTAL DIRECT	FOOH	HOOH	PROF	PL & PD	BOND	TOTAL COST	UNIT COST
TOTAL DISTRIBUTED CONTROL SYSTEM	16710.00	SF	32,071	3,528	1,424	2,564	0	359	39,946	2.39
TOTAL DISTRIBUTED CONTROL SYSTEM	16710.00	SF	32,071	3,528	1,424	2,564	0	359	39,946	2.39
TOTAL WATER TREATMENT SYSTEM	16710.00	SF	4,679,613	514,757	207,775	374,099	0	52,366	5,828,610	348.81
AA 06 12 MAIN SERVICE SWITCHGEAR										
AA 06 12 01 MAIN SERVICE										
AA 06 12 01- 01 MAIN SERVICE										
AA 06 12 01- 01- 1A	16710.00	SF	28,366	3,120	1,259	2,268	0	317	35,331	2.11
AA 06 12 01- 01- 1B	16710.00	SF	133,495	14,684	5,927	10,672	0	1,494	166,272	9.95
AA 06 12 01- 01- 1C	16710.00	SF	10,124	1,114	449	809	0	113	12,609	0.75
AA 06 12 01- 01- 1D	16710.00	SF	12,880	1,417	572	1,030	0	144	16,042	0.96
AA 06 12 01- 01- 1E	16710.00	SF	5,596	616	248	447	0	63	6,970	0.42
TOTAL MAIN SERVICE	16710.00	SF	190,460	20,951	8,456	15,226	0	2,131	237,224	14.20
TOTAL MAIN SERVICE	16710.00	SF	190,460	20,951	8,456	15,226	0	2,131	237,224	14.20
AA 06 12 1B MOTOR CONTROL CENTERS										
AA 06 12 1B- 16A MOTOR CONTROL CENTER NO. 1										
AA 06 12 1B- 16A-16AG	16705.00	SF	35,171	3,869	1,562	2,812	0	394	43,806	2.62
TOTAL MOTOR CONTROL CENTER NO. 1	16710.00	SF	35,171	3,869	1,562	2,812	0	394	43,806	2.62
AA 06 12 1B- 16B MOTOR CONTROL CENTER NO. 2										
AA 06 12 1B- 16B-16AG	16705.00	SF	31,577	3,473	1,402	2,524	0	353	39,330	2.35
TOTAL MOTOR CONTROL CENTER NO. 2	16710.00	SF	31,577	3,473	1,402	2,524	0	353	39,330	2.35
TOTAL MOTOR CONTROL CENTERS	16710.00	SF	66,747	7,342	2,964	5,336	0	747	83,136	4.98
TOTAL MAIN SERVICE SWITCHGEAR	16710.00	SF	257,207	28,293	11,420	20,562	0	2,878	320,360	19.17
AA 06 13 EMERGENCY POWER SOURCES-ELECT										
AA 06 13 01 ENGINE GENERATORS & ASSOC.										
AA 06 13 01- 01 ENGINE GENERATORS & ASSOC.										

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Thu 25 Apr 1996
 Eff. Date 10/01/96

U.S. Army Corps of Engineers
 PROJECT LGWSDM: LOOKINGGLASS FH, WATER TREATMENT - OZONE WATER TREATMENT FACILITY

TIME 08:58:33

SUMMARY PAGE 6

** PROJECT INDIRECT SUMMARY - CSI ITEM **

	QUANTITY UOM	TOTAL DIRECT	FOOH	HOOH	PROF	PL & PD	BOND	TOTAL COST	UNIT COST
AA 06 13 01- 01- 1A ENGINE GENERATORS & ASSOC.	16710.00 SF	263,826	29,021	11,714	21,091	0	2,952	328,604	19.67
TOTAL ENGINE GENERATORS & ASSOC.	16710.00 SF	263,826	29,021	11,714	21,091	0	2,952	328,604	19.67
TOTAL ENGINE GENERATORS & ASSOC.	16710.00 SF	263,826	29,021	11,714	21,091	0	2,952	328,604	19.67
TOTAL EMERGENCY POWER SOURCES-ELECT	16710.00 SF	263,826	29,021	11,714	21,091	0	2,952	328,604	19.67
AA 06 16 DWELLING FACILITIES									
AA 06 16 01 DWELLING FACILITIES									
AA 06 16 01-001A Dwelling Facilities									
AA 06 16 01-001A-01AA House, Furnishings, and Garage	1560.00 SF	93,668	0	0	0	0	0	93,668	60.04
AA 06 16 01-001A-02AA Site Work, Roadway & Driveway	3540.00 SF	13,493	1,484	599	1,079	0	151	16,806	4.75
AA 06 16 01-001A-15AA Plumbing & Mechanical		9,874	1,086	438	789	0	110	12,299	
AA 06 16 01-001A-16AA Residence Elec-Power Co Service		15,473	1,702	687	1,237	0	173	19,273	
AA 06 16 01-001A-16AB Res Elect-Emerg Source Ext. Work		11,807	1,299	524	944	0	132	14,706	
TOTAL Dwelling Facilities		144,315	5,571	2,249	4,049	0	567	156,751	
TOTAL DWELLING FACILITIES		144,315	5,571	2,249	4,049	0	567	156,751	
TOTAL DWELLING FACILITIES		144,315	5,571	2,249	4,049	0	567	156,751	
TOTAL FISH AND WILDLIFE		6,740,169	662,928	267,582	481,781	0	67,439	8,219,899	
TOTAL WATER TREATMENT FACILITY		6,740,169	662,928	267,582	481,781	0	67,439	8,219,899	
TOTAL LOOKINGGLASS FH, WATER TREATMENT	1.00 EA	6,740,169	662,928	267,582	481,781	0	67,439	8,219,899	8219899

A-12

THIS ESTIMATE IS BASED ON THE SCOPE CONTAINED IN THE CONCEPT "RECONNAISSANCE" REPORT, DATED: 18 APRIL 96

PROJECT: Fall Chinook Temporary Facilities
 LOCATION: Washington & Idaho States

DISTRICT: Walla Walla
 P.O.C.: KIM CALLAN, CHIEF, COST ENGINEERING

CURRENT MCACES ESTIMATE PREPARED: 18 APRIL 96 EFFECTIVE PRICING LEVEL: 1 OCT 96					AUTHORIZ./BUDGET YEAR: 1998 EFFECT. PRICING LEVEL: 1 OCT 97		FULLY FUNDED ESTIMATE.....				
ACCOUNT NUMBER	FEATURE DESCRIPTION	COST (\$K)	CNTG (\$K)	CNTG (%)	TOTAL (\$K)	COST (\$K)	CNTG (\$K)	TOTAL (\$K)	SPENT THRU FY 95 (\$K)	COST (\$K)	CNTG (\$K)	FULL (\$K)
06.2--	FISH HATCHERY	2,953	784	27%	3,737	3,008	798	3,806		3,037	805	3,842
	GOVERNMENT FURNISH SERVICES	519	165	32%	684	527	165	692		531	166	697
	TOTAL CONSTRUCTION COSTS ==	3,472	949	27%	4,421	3,535	963	4,498		3,568	971	4,539
01---	LANDS AND DAMAGES	165	34	21%	199	169	35	204	28	169	35	232
18---	CULTURAL RESOURCES	7	3	40%	10	7	3	10		7	3	10
30---	PLANNING, ENGINEERING & DESIGN	739	195	26%	934	753	199	952		760	201	961
31---	CONSTRUCTION MANAGEMENT	444	117	26%	561	452	119	571		456	120	576
	TOTAL PROJECT COSTS =====	4,827	1,298	27%	6,125	4,916	1,319	6,235	28	4,960	1,330	6,318

TOTAL FEDERAL COSTS =====> 6,318

TOTAL NON-FEDERAL COSTS =====>

THIS TPCS REFLECTS A PROJECT COST CHANGE OF \$
 DISTRICT APPROVED: _____

- _____ CHIEF, COST ENGINEERING
- _____ CHIEF, REAL ESTATE
- _____ CHIEF, PLANNING
- _____ CHIEF, ENGINEERING
- _____ CHIEF, OPERATIONS
- _____ CHIEF, CONSTRUCTION
- _____ CHIEF, PROGRAMS MANAGEMENT
- _____ PROJECT MANAGER
- _____ DDE (PM)

THE MAXIMUM PROJECT COST IS =====> \$ _____

DIVISION APPROVED:

- _____ CHIEF, COST ENGINEERING
- _____ DIRECTOR, REAL ESTATE
- _____ CHIEF, PROGRAMS MANAGEMENT
- _____ DIRECTOR OF PPMD

APPROVED DATE: _____

THIS ESTIMATE IS BASED ON THE SCOPE CONTAINED IN THE CONCEPT "RECONNAISSANCE" REPORT, DATED: 18 APRIL 96

PROJECT: Fall Chinook Temporary Facilities
 LOCATION: Washington & Idaho States

DISTRICT: Walla Walla
 P.O.C.: KIM CALLAN, CHIEF, COST ENGINEERING

CURRENT MCACES ESTIMATE PREPARED: 18 APRIL 96
 EFFECTIVE PRICING LEVEL: 1 OCT 96

AUTHORIZ./BUDGET YEAR: 1998
 EFFECT. PRICING LEVEL: 1 OCT 98

.....FULLY FUNDED ESTIMATE.....

ACCOUNT NUMBER	FEATURE DESCRIPTION	COST (\$K)	CNTG (\$K)	CNTG (%)	TOTAL (\$K)	OMB (%)	COST (\$K)	CNTG (\$K)	TOTAL (\$K)	FEATURE MID PT	OMB (%)	COST (\$K)	CNTG (\$K)	FULL (\$K)
06.2--	Acclimation & Release Facilities - Idaho State Pittsburg Landing	919	276	30%	1,195		919	276	1,195	1 QTR 96		919	276	1,195
	16 Tank Farm w/ 2 Hydrocyclones - Doesn't include the cost for the Indians to Operate the facilities. LETTER SUPPLEMENT #13													
	TOTAL CONSTRUCTION COSTS ==	919	276	30%	1,195		919	276	1,195			919	276	1,195
01--	LANDS AND DAMAGES									1 QTR 96				
30--	PLANNING, ENGINEERING & DESIGN	138	41	30%	179		138	41	179	1 QTR 96		138	41	179
30--	PLANNING, ENGINEERING & DESIGN	92	28	30%	120		92	28	120	1 QTR 96		92	28	120
31--	PM, Planning, Contracting, EDC CONSTRUCTION MANAGEMENT	138	41	30%	179		138	41	179	1 QTR 96		138	41	179
A-14	TOTAL COSTS =====	1,287	386	30%	1,673		1,287	386	1,673			1,287	386	1,673
06.2--	Pittsburg Landing GOVERNMENT FURNISH MATERIALS	152	76	50%	228		152	76	228	1 QTR 96		152	76	228
06.2--	GOVERNMENT FURNISH SERVICES	45	23	50%	68		45	23	68	1 QTR 96		45	23	68
	TOTAL WDFW GFS COSTS =====	197	99		296		197	99	296			197	99	296

THIS ESTIMATE IS BASED ON THE SCOPE CONTAINED IN THE CONCEPT "RECONNAISSANCE" REPORT, DATED: 18 APRIL 96

PROJECT: Fall Chinook Temporary Facilities
 LOCATION: Washington & Idaho States

DISTRICT: Walla Walla
 P.O.C.: KIM CALLAN, CHIEF, COST ENGINEERING

CURRENT MCACES ESTIMATE PREPARED: 18 APRIL 96
 EFFECTIVE PRICING LEVEL: 1 OCT 96

AUTHORIZ./BUDGET YEAR: 1998
 EFFECT. PRICING LEVEL: 1 OCT 97

.....FULLY FUNDED ESTIMATE.....

ACCOUNT NUMBER	FEATURE DESCRIPTION	COST (\$K)	CNTG (\$K)	CNTG (%)	TOTAL (\$K)	OMB (%)	COST (\$K)	CNTG (\$K)	TOTAL (\$K)	FEATURE MID PT	OMB (%)	COST (\$K)	CNTG (\$K)	FULL (\$K)
06.2--	Acclimation & Release Facilities - Idaho State Clearwater River, Big Canyon Site 16 Tank Farm w/ 2 Hydrocyclones - Doesn't include the cost for the Indians to Operate the facilities. Interim Report Supplement, R. M. 35	994	249	25%	1,243	2.7%	1,021	255	1,276	3 QTR 97		1,021	255	1,276
	TOTAL CONSTRUCTION COSTS ==	994	249	25%	1,243		1,021	255	1,276			1,021	255	1,276
01---	LANDS AND DAMAGES	12	4	30%	16	2.7%	12	4	16	3 QTR 96	-2.6%	12	4	16
18---	CULTURAL RESOURCES	7	3	40%	10	2.7%	7	3	10	1 QTR 99	5.5%	7	3	10
30---	PLANNING, ENGINEERING & DESIGN	149	37	25%	186	2.7%	153	38	191	3 QTR 97		153	38	191
30---	PLANNING, ENGINEERING & DESIGN PM, Planning, Contracting, EDC	99	25	25%	124	2.7%	102	26	128	3 QTR 97		102	26	128
31---	CONSTRUCTION MANAGEMENT	149	37	25%	186	2.7%	153	38	191	3 QTR 97		153	38	191
	TOTAL COSTS =====	1,410	354	25%	1,764		1,448	364	1,812			1,448	364	1,812
06.2--	Clearwater River, Big Canyon Site GOVERNMENT FURNISH MATERIALS	124	25	20%	149	2.7%	127	25	152	3 QTR 97		127	25	152
06.2--	GOVERNMENT FURNISH SERVICES	37	8	20%	45	2.7%	38	8	46	3 QTR 97		38	8	46
	TOTAL WDFW GFS COSTS =====	161	33		194		165	33	198			165	33	198

A-15

THIS ESTIMATE IS BASED ON THE SCOPE CONTAINED IN THE CONCEPT "RECONNAISSANCE" REPORT, DATED: 18 APRIL 96

DISTRICT: Walla Walla

P.O.C.: KIM CALLAN, CHIEF, COST ENGINEERING

PROJECT: Fall Chinook Temporary Facilities
 LOCATION: Washington & Idaho States

CURRENT MCACES ESTIMATE PREPARED: 18 APRIL 96
 EFFECTIVE PRICING LEVEL: 1 OCT 96

AUTHORIZ./BUDGET YEAR: 1998
 EFFECT. PRICING LEVEL: 1 OCT 97

.....FULLY FUNDED ESTIMATE.....

ACCOUNT NUMBER	FEATURE DESCRIPTION	COST (\$K)	CNTG (\$K)	CNTG (%)	TOTAL (\$K)	OMB (%)	COST (\$K)	CNTG (\$K)	TOTAL (\$K)	FEATURE MID PT	OMB (%)	COST (\$K)	CNTG (\$K)	FULL (\$K)
06.2--	Acclimation & Release Facilities - Washington State Snake River, Captain John Rapids Site 16 Tank Farm w/ 2 Hydrocyclones - Doesn't include the cost for the Indians to Operate the facilities. Interim Report Supplement , R. M. 166	1,040	260	25%	1,300	2.7%	1,068	267	1,335	3 QTR 98	2.7%	1,097	274	1,371
	TOTAL CONSTRUCTION COSTS ==	1,040	260	25%	1,300		1,068	267	1,335			1,097	274	1,371
01---	LANDS AND DAMAGES	153	31	20%	184	2.7%	157	31	188	2 QTR 97		157	31	188
30---	PLANNING, ENGINEERING & DESIGN	157	39	25%	196	2.7%	161	40	201	3 QTR 98	2.7%	165	41	206
30---	PLANNING, ENGINEERING & DESIGN	104	25	25%	129	2.7%	107	26	133	3 QTR 98	2.7%	110	27	137
31---	PM, Planning, Contracting, EDC CONSTRUCTION MANAGEMENT	157	39	25%	196	2.7%	161	40	201	3 QTR 98	2.7%	165	41	206
A-16	TOTAL COSTS =====	1,611	394	24%	2,005		1,654	404	2,058			1,694	414	2,108
06.2--	Snake River, Captain John Rapids Site GOVERNMENT FURNISH MATERIALS	124	25	20%	149	2.7%	127	25	152	3 QTR 98	2.7%	130	26	156
06.2--	GOVERNMENT FURNISH SERVICES	37	8	20%	45	2.7%	38	8	46	3 QTR 98	2.7%	39	8	47
	TOTAL WDFW GFS COSTS =====	161	33		194		165	33	198			169	34	203

Thu 25 Apr 1996
Eff. Date 12/29/93

U.S. Army Corps of Engineers
PROJECT BIGCAN: BIG CANYON CREEK, IDAHO - TEMPORARY FALL CHINOOK ACCLIMA-
Estimate 4/9/1996

TIME 13:51:04

TITLE PAGE 1

BIG CANYON CREEK, IDAHO
TEMPORARY FALL CHINOOK ACCLIMA-
TION FACILITY-BIG CANYON CREEK,
NEZ PERCE COUNTY, IDAHO
--- FOR OFFICIAL USE ONLY ---

Designed By: Corps Eng/Design Division
Estimated By: JESUS BARRIOS

Prepared By: WALLA WALLA DIST COST ENG
KIM CALLAN, Chief, Cost Eng

Preparation Date: 04/09/96
Effective Date of Pricing: 12/29/93
Est Construction Time: 120 Days

Sales Tax: 5.00%

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contained herein is For Official Use Only.

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Composer GOLD Software Copyright (c) 1985-1994
by Building Systems Design, Inc.
Release 5.30A

LABOR ID: NIDA96 EQUIP ID: NAT93A

Currency in DOLLARS

CREW ID: NAT948 UPB ID: NAT95A

A-17

This estimate consists of projected costs for construction of the Temporary Fall Chinook Acclimation Facility - Big Canyon Creek, Nez Perce County, Idaho. The site is located on the west bank of Big Canyon Creek at River Mile 35. The site is nearby the town of Peck, Idaho. Access is via Hwy 12, then local road to Peck.

a. All construction work will be contained in approximately 35,000. square feet.

b. The site is not level and will require placement of fill material (sand or gravel) and timber cribs to level the tanks and provide support for the pumps, distribution boxes, etc.

c. Support facilities will consist of camping trailers, walk-in storage containers, & emergency lighting. The camping trailers are to be set up adjacent to the tank site in the same general vicinity. The camping trailers are to house 2-4 workers during the time the facility is operating (approximately 2 months). Pumps will be leased. Emergency lighting will be mounted on trailers and used to illuminate the facilities for emergencies.

d. The fish will be placed in the tanks on or about March 1, 1997, held in the tanks until mid-April, then released into the river. When all the fish have been released, the facility components will be disassembled, loaded onto tractor/trailers, hauled to a storage area, and stored until the following year. Operation and Maintenance costs will be the responsibility of the US Fish and Wildlife Service.

The contractor shall commence work under this contract within 10 calendar days of receiving the notice to proceed, prosecute said work diligently, and complete the entire work ready for use not later than 15 February 1998.

This work is not to be performed by a Contractor under the Small Business Administration 8a program.

Equipment rates from EP 1110-1-8, Aug 93.

Labor rates, Davis Bacon, State of Idaho, Revision 01, Date: 3/29/1996

Basis of design: DM #1, Letter Supplement #13, Lower Snake River Fish and Wildlife Compensation Plan, 17 Aug 95.

A-18

Thu 25 Apr 1996
 Eff. Date 12/29/93

U.S. Army Corps of Engineers
 PROJECT BIGCAN: BIG CANYON CREEK, IDAHO - TEMPORARY FALL CHINOOK ACCLIMA-
 Estimate 4/9/1996
 ** PROJECT INDIRECT SUMMARY - CSI ITEM **

TIME 13:51:04

SUMMARY PAGE 1

 QUANTITY UOM TOTAL DIRECT FOOH HOOH PROF OTHR TAX BOND TOTAL COST UNIT COST

AA BIG CANYON CREEK, IDAHO

AA 06 FISH AND WILDLIFE FACILITIES

AA 06 02 FISH HATCHERY (INCL TRAP/REL)

AA 06 02 69 REARING AND HOLDING PONDS

AA 06 02 69-001- FURNISH ALL ITEMS & EQUIPMENT

AA 06 02 69-001--01AA	Mobilization		5,537	830	446	681	0	102	7,596	
AA 06 02 69-001--01AB	Demobilization		1,976	296	159	243	0	36	2,711	
AA 06 02 69-001--02AA	Site Prep - Gravel/Level Surface	650.00 CY	21,778	3,267	1,753	2,680	0	401	29,878	45.97
AA 06 02 69-001--09AA	Netting over Tanks	20000.00 SF	8,474	1,271	682	1,043	0	156	11,626	0.58
AA 06 02 69-001--15AA	6" Dia Intake Pipe Line	1330.00 LF	48,918	7,338	3,938	6,019	0	901	67,114	50.46
AA 06 02 69-001--15BB	Distribution Box W/2 Packed Colm	2.00 EA	49,200	7,380	3,961	6,054	0	906	67,500	33750.05
AA 06 02 69-001--15CC	Hydrocyclone	4.00 EA	51,120	7,668	4,115	6,290	0	941	70,135	17533.70
AA 06 02 69-001--15DD	20' Round Tanks, 5' high	16.00 EA	208,462	31,269	16,781	25,651	0	3,837	286,002	17875.10
AA 06 02 69-001--15EE	8", 6" & 4" Dia. Supply Pipe	850.00 LF	21,539	3,231	1,734	2,650	0	396	29,551	34.77
AA 06 02 69-001--15FF	8" Dia Release Pipe	1835.00 LF	49,859	7,479	4,014	6,135	0	918	68,404	37.28
AA 06 02 69-001--15GG	Rental Pumps, Storage, Light Plt	12.00 WK	13,252	1,988	1,067	1,631	0	244	18,181	1515.08
AA 06 02 69-001--16AA	Electrical	16.00 EA	65,390	9,808	5,264	8,046	0	1,204	89,712	5606.98
TOTAL FURNISH ALL ITEMS & EQUIPMENT			545,505	81,826	43,913	67,124	0	10,042	748,410	

AA 06 02 69-002- FURNISH TECHNICAL REPRESENTATIVE

AA 06 02 69-002--01AA	Furnish Technical Representative	1512.00 HR	78,700	11,805	6,335	9,684	0	1,449	107,973	71.41
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TOTAL FURNISH TECHNICAL REPRESENTATIVE 78,700 11,805 6,335 9,684 0 1,449 107,973

AA 06 02 69-003- POWER FOR FACILITY

35,000 5,250 2,818 4,307 0 644 48,019

AA 06 02 69-004- DISASSEMBLE, TRANSPORT, & STORE

AA 06 02 69-004--01AA	Mobilization		1,976	296	159	243	0	36	2,711	
AA 06 02 69-004--01AB	Demobilization		6,597	990	531	812	0	121	9,051	
AA 06 02 69-004--01BB	Transport/Store at Lyon's Ferry	1.00 EA	19,260	2,889	1,550	2,370	0	355	26,424	26423.85
AA 06 02 69-004--02AA	Site Prep - Gravel/Level Surface	650.00 CY	2,928	439	236	360	0	54	4,017	6.18
AA 06 02 69-004--09AA	Netting over Tanks	20000.00 SF	1,028	154	83	127	0	19	1,411	0.07
AA 06 02 69-004--15AA	6" Dia Intake Pipe Line	1330.00 LF	1,318	198	106	162	0	24	1,808	1.36
AA 06 02 69-004--15BB	Distribution Box W/2 Packed Colm	2.00 EA	809	121	65	100	0	15	1,110	555.23
AA 06 02 69-004--15CC	Hydrocyclone	4.00 EA	1,625	244	131	200	0	30	2,230	557.53
AA 06 02 69-004--15DD	20' Round Tanks, 4' high	16.00 EA	17,108	2,566	1,377	2,105	0	315	23,471	1466.93
AA 06 02 69-004--15EE	8", 6" & 4" Dia. Supply Pipe	850.00 LF	1,388	208	112	171	0	26	1,905	2.24
AA 06 02 69-004--15FF	8" Dia Release Pipe		1,235	185	99	152	0	23	1,694	
AA 06 02 69-004--16AA	Electrical	16.00 EA	9,734	1,460	784	1,198	0	179	13,355	834.68

A-19

Thu 25 Apr 1996
 Eff. Date 12/29/93

U.S. Army Corps of Engineers
 PROJECT BIGCAN: BIG CANYON CREEK, IDAHO - TEMPORARY FALL CHINOOK ACCLIMA-
 Estimate 4/9/1996
 ** PROJECT INDIRECT SUMMARY - CSI ITEM **

TIME 13:51:04
 SUMMARY PAGE 2

	QUANTITY UOM	TOTAL DIRECT	FOOH	HOOH	PROF	OTHR TAX	BOND	TOTAL COST	UNIT COST
TOTAL DISASSEMBLE, TRANSPORT, & STORE		65,007	9,751	5,233	7,999	0	1,197	89,187	
TOTAL REARING AND HOLDING PONDS	16.00 EA	724,212	108,632	58,299	89,114	0	13,331	993,588	62099.26
TOTAL FISH HATCHERY (INCL TRAP/REL)		724,212	108,632	58,299	89,114	0	13,331	993,588	
TOTAL FISH AND WILDLIFE FACILITIES	1.00 EA	724,212	108,632	58,299	89,114	0	13,331	993,588	993588.15
TOTAL BIG CANYON CREEK, IDAHO	1.00 EA	724,212	108,632	58,299	89,114	0	13,331	993,588	993588.15
BB GOVERNMENT FURNISHED MATERIALS									
BB 06 FISH AND WILDLIFE FACILITIES									
BB 06 02 FISH HATCHERY (INCL TRAP/REL)									
BB 06 02 69 REARING AND HOLDING PONDS									
BB 06 02 69-001- Furnish Trailer - Utility									
BB 06 02 69-001--10AA	Furnish Trailer - Utility	1.00 EA	8,000	0	0	0	0	8,000	8000.00
	TOTAL Furnish Trailer - Utility	1.00 EA	8,000	0	0	0	0	8,000	8000.00
BB 06 02 69-002- Furnish Trailers- Living									
BB 06 02 69-002--10AA	Furnish Trailers- Living	2.00 EA	50,000	0	0	0	0	50,000	25000.00
	TOTAL Furnish Trailers- Living	2.00 EA	50,000	0	0	0	0	50,000	25000.00
BB 06 02 69-003- Furnish Pickup Trucks 1/4 ton									
BB 06 02 69-003--10AA	Furnish Pickup Trucks 1/4 ton	2.00 EA	36,000	0	0	0	0	36,000	18000.00
	TOTAL Furnish Pickup Trucks 1/4 ton	2.00 EA	36,000	0	0	0	0	36,000	18000.00
BB 06 02 69-004- Furnish Pickup Truck 3/4 ton									
BB 06 02 69-004--10AA	Furnish Pickup Truck 3/4 ton	1.00 EA	30,000	0	0	0	0	30,000	30000.00
	TOTAL Furnish Pickup Truck 3/4 ton	1.00 EA	30,000	0	0	0	0	30,000	30000.00
	TOTAL REARING AND HOLDING PONDS	16.00 EA	124,000	0	0	0	0	124,000	7750.00
	TOTAL FISH HATCHERY (INCL TRAP/REL)		124,000	0	0	0	0	124,000	

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Thu 25 Apr 1996
Eff. Date 12/29/93

U.S. Army Corps of Engineers
PROJECT BIGCAN: BIG CANYON CREEK, IDAHO - TEMPORARY FALL CHINOOK ACCLIMA-
Estimate 4/9/1996
** PROJECT INDIRECT SUMMARY - CSI ITEM **

TIME 13:51:04
SUMMARY PAGE 3

	QUANTITY	UOM	TOTAL DIRECT	FOOH	HOOH	PROF	OTHR TAX	BOND	TOTAL COST	UNIT COST
TOTAL FISH AND WILDLIFE FACILITIES	1.00	EA	124,000	0	0	0	0	0	124,000	124000.00
TOTAL GOVERNMENT FURNISHED MATERIALS			124,000	0	0	0	0	0	124,000	
TOTAL BIG CANYON CREEK, IDAHO	1.00	MO	848,212	108,632	58,299	89,114	0	13,331	1,117,588	1117588

A-21

Thu 25 Apr 1996
Eff. Date 04/22/96

U.S. Army Corps of Engineers
PROJECT CAPTAIN: CAPTAIN JOHN RAPIDS, WASHINGTON - TEMPORARY FALL CHINOOK ACCLIMA-
Estimate 4/9/1996

TIME 13:52:19

TITLE PAGE 1

CAPTAIN JOHN RAPIDS, WASHINGTON
TEMPORARY FALL CHINOOK ACCLIMA-
TION FACILITY-CAPTAIN JOHN
RAPIDS, ASOTIN COUNTY, WA
--- FOR OFFICIAL USE ONLY ---

Designed By: Corps Eng/Design Division
Estimated By: JESUS BARRIOS

Prepared By: WALLA WALLA DIST COST ENG
KIM CALLAN, Chief, Cost Eng

Preparation Date: 04/22/96
Effective Date of Pricing: 04/22/96
Est Construction Time: 120 Days

Sales Tax: 7.90%

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by Building Systems Design, Inc.
Release 5.30A

Currency in DOLLARS

CREW ID: NAT94B .UPB ID: NAT95A

LABOR ID: EWAS95 EQUIP ID: NAT93A

A-22

Thu 25 Apr 1996
Eff. Date 04/22/96
PROJECT NOTES

U.S. Army Corps of Engineers
PROJECT CAPTAIN: CAPTAIN JOHN RAPIDS, WASHINGTON - TEMPORARY FALL CHINOOK ACCLIMA-
Estimate 4/9/1996

TIME 13:52:19

TITLE PAGE 2

This estimate consists of projected costs for construction of the Temporary Fall Chinook Acclimation Facility - Captain John Rapids, Asotin County, WA.

a. All construction work will be contained in approximately 35,000. square feet.

b. The site is not level and will require placement of fill material (sand or gravel) and timber cribs to level the tanks and provide support for the pumps, distribution boxes, etc.

c. Support facilities will consist of camping trailers, walk-in storage containers, & emergency lighting. The camping trailers are to be set up adjacent to the tank site in the same general vicinity. The camping trailers are to house 2-4 workers during the time the facility is operating (approximately 2 months). Pumps will be leased. Emergency lighting will be mounted on trailers and used to illuminate the facilities for emergencies.

d. The fish will be placed in the tanks on or about March 1, 1998, held in the tanks until mid-April, then released into the river. When all the fish have been released, the facility components will be disassembled, loaded onto tractor/trailers, hauled to a storage area, and stored until the following year. Operation and Maintenance costs will be the responsibility of the US Fish and Wildlife Service.

The contractor shall commence work under this contract within 10 calendar days of receiving the notice to proceed, prosecute said work diligently, and complete the entire work ready for use not later than 15 February 1998.

This estimate has provisions for Monthly Anticipated Adverse Weather Delays as specified in the contract clauses.

This work is not to be performed by a Contractor under the Small Business Administration 8a program.

Equipment rates from EP 1110-1-8, Aug 93.

Labor rates, Davis Bacon, "Eastern Washington", Revision 11, Date: 12/13/1995

Basis of design: DM #1, Letter Supplement #13, Lower Snake River Fish and Wildlife Compensation Plan, 17 Aug 95.

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Thu 25 Apr 1996
 Eff. Date 04/22/96

U.S. Army Corps of Engineers
 PROJECT CAPTAI: CAPTAIN JOHN RAPIDS, WASHINGTON - TEMPORARY FALL CHINOOK ACCLIMA-
 Estimate 4/9/1996
 ** PROJECT INDIRECT SUMMARY - CSI ITEM **

TIME 13:52:19
 SUMMARY PAGE 1

A-24

		QUANTITY	UOM	TOTAL DIRECT	FOOH	HOOH	PROF	OTHR	TAX	BOND	TOTAL COST	UNIT COST
AA CAPTAIN JOHN RAPIDS, WASHINGTON												
AA 06 FISH AND WILDLIFE FACILITIES												
AA 06 02 FISH HATCHERY (INCL TRAP/REL)												
AA 06 02 69 REARING AND HOLDING PONDS												
AA 06 02 69-001- FURNISH ALL ITEMS & EQUIPMENT												
AA 06 02 69-001--01AA	Mobilization			6,044	907	487	744		0	111	8,292	
AA 06 02 69-001--01AB	Demobilization			2,097	315	169	258		0	39	2,877	
AA 06 02 69-001--02AA	Site Prep - Gravel/Level Surface	650.00	CY	23,454	3,518	1,888	2,886		0	432	32,178	49.50
AA 06 02 69-001--09AA	Netting over Tanks	20000.00	SF	8,890	1,333	716	1,094		0	164	12,196	0.61
AA 06 02 69-001--15AA	6" Dia Intake Pipe Line	1330.00	LF	50,621	7,593	4,075	6,229		0	932	69,449	52.22
AA 06 02 69-001--15BB	Distribution Box W/2 Packed Colm	2.00	EA	50,669	7,600	4,079	6,235		0	933	69,516	34758.11
AA 06 02 69-001--15CC	Hydrocyclone	4.00	EA	52,809	7,921	4,251	6,498		0	972	72,452	18112.99
AA 06 02 69-001--15DD	20' Round Tanks, 5' high	16.00	EA	217,150	32,572	17,481	26,720		0	3,997	297,921	18620.03
AA 06 02 69-001--15EE	8", 6" & 4" Dia. Supply Pipe	850.00	LF	22,379	3,357	1,802	2,754		0	412	30,703	36.12
AA 06 02 69-001--15FF	8" Dia Release Pipe	1835.00	LF	51,453	7,718	4,142	6,331		0	947	70,592	38.47
AA 06 02 69-001--15GG	Rental Pumps, Storage, Light Plt	12.00	WK	13,845	2,077	1,114	1,704		0	255	18,994	1582.84
AA 06 02 69-001--16AA	Electrical	16.00	EA	70,149	10,522	5,647	8,632		0	1,291	96,242	6015.13
TOTAL FURNISH ALL ITEMS & EQUIPMENT				569,561	85,434	45,850	70,084		0	10,485	781,413	
AA 06 02 69-002- FURNISH TECHNICAL REPRESENTATIVE												
AA 06 02 69-002--01AA	Furnish Technical Representative	1512.00	HR	78,700	11,805	6,335	9,684		0	1,449	107,973	71.41
TOTAL FURNISH TECHNICAL REPRESENTATIVE				78,700	11,805	6,335	9,684		0	1,449	107,973	
AA 06 02 69-003- POWER FOR FACILITY				35,000	5,250	2,818	4,307		0	644	48,019	
AA 06 02 69-004- DISASSEMBLE, TRANSPORT, & STORE												
AA 06 02 69-004--01AA	Mobilization			2,097	315	169	258		0	39	2,877	
AA 06 02 69-004--01AB	Demobilization			7,201	1,080	580	886		0	133	9,880	
AA 06 02 69-004--01BB	Transport/Store at Lyon's Ferry	1.00	EA	21,204	3,181	1,707	2,609		0	390	29,092	29091.56
AA 06 02 69-004--02AA	Site Prep - Gravel/Level Surface	650.00	CY	3,228	484	260	397		0	59	4,429	6.81
AA 06 02 69-004--09AA	Netting over Tanks	20000.00	SF	1,238	186	100	152		0	23	1,699	0.08
AA 06 02 69-004--15AA	6" Dia Intake Pipe Line	1330.00	LF	1,586	238	128	195		0	29	2,176	1.64
AA 06 02 69-004--15BB	Distribution Box W/2 Packed Colm	2.00	EA	942	141	76	116		0	17	1,293	646.48
AA 06 02 69-004--15CC	Hydrocyclone	4.00	EA	1,947	292	157	240		0	36	2,672	667.94
AA 06 02 69-004--15DD	20' Round Tanks, 4' high	16.00	EA	20,510	3,077	1,651	2,524		0	378	28,139	1758.69
AA 06 02 69-004--15EE	8", 6" & 4" Dia. Supply Pipe	850.00	LF	1,672	251	135	206		0	31	2,294	2.70
AA 06 02 69-004--15FF	8" Dia Release Pipe	1,486	LF	1,486	223	120	183		0	27	2,039	
AA 06 02 69-004--16AA	Electrical	16.00	EA	11,471	1,721	923	1,412		0	211	15,738	983.61

Thu 25 Apr 1996
 Eff. Date: 04/22/96

U.S. Army Corps of Engineers
 PROJECT CAPTAI: CAPTAIN JOHN RAPIDS, WASHINGTON - TEMPORARY FALL CHINOOK ACCLIMA-
 Estimate 4/9/1996
 ** PROJECT INDIRECT SUMMARY - CSI ITEM **

TIME 13:52:19
 SUMMARY PAGE 2

		QUANTITY	UOM	TOTAL DIRECT	FOOH	HOOR	PROF	OTHR TAX	BOND	TOTAL COST	UNIT COST
TOTAL DISASSEMBLE, TRANSPORT, & STORE				74,584	11,188	6,004	9,178	0	1,373	102,326	
TOTAL REARING AND HOLDING PONDS		16.00	EA	757,844	113,677	61,006	93,253	0	13,951	1,039,730	64983.12
TOTAL FISH HATCHERY (INCL TRAP/REL)				757,844	113,677	61,006	93,253	0	13,951	1,039,730	
TOTAL FISH AND WILDLIFE FACILITIES		1.00	EA	757,844	113,677	61,006	93,253	0	13,951	1,039,730	1039730
TOTAL CAPTAIN JOHN RAPIDS, WASHINGTON		1.00	EA	757,844	113,677	61,006	93,253	0	13,951	1,039,730	1039730
BB GOVERNMENT FURNISHED MATERIALS											
BB 06 FISH AND WILDLIFE FACILITIES											
BB 06 02 FISH HATCHERY (INCL TRAP/REL)											
BB 06 02 69 REARING AND HOLDING PONDS											
BB 06 02 69-001- Furnish Trailer - Utility											
BB 06 02 69-001--10AA Furnish Trailer - Utility		1.00	EA	8,000	0	0	0	0	0	8,000	8000.00
TOTAL Furnish Trailer - Utility		1.00	EA	8,000	0	0	0	0	0	8,000	8000.00
BB 06 02 69-002- Furnish Trailers- Living											
BB 06 02 69-002--10AA Furnish Trailers- Living		2.00	EA	50,000	0	0	0	0	0	50,000	25000.00
TOTAL Furnish Trailers- Living		2.00	EA	50,000	0	0	0	0	0	50,000	25000.00
BB 06 02 69-003- Furnish Pickup Trucks 1/4 ton											
BB 06 02 69-003--10AA Furnish Pickup Trucks 1/4 ton		2.00	EA	36,000	0	0	0	0	0	36,000	18000.00
TOTAL Furnish Pickup Trucks 1/4 ton		2.00	EA	36,000	0	0	0	0	0	36,000	18000.00
BB 06 02 69-004- Furnish Pickup Truck 3/4 ton											
BB 06 02 69-004--10AA Furnish Pickup Truck 3/4 ton		1.00	EA	30,000	0	0	0	0	0	30,000	30000.00
TOTAL Furnish Pickup Truck 3/4 ton		1.00	EA	30,000	0	0	0	0	0	30,000	30000.00
TOTAL REARING AND HOLDING PONDS		16.00	EA	124,000	0	0	0	0	0	124,000	7750.00
TOTAL FISH HATCHERY (INCL TRAP/REL)				124,000	0	0	0	0	0	124,000	

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Thu 25 Apr 1996
Eff. Date 04/22/96

U.S. Army Corps of Engineers
PROJECT CAPTAI: CAPTAIN JOHN RAPIDS, WASHINGTON - TEMPORARY FALL CHINOOK ACCLIMA-
Estimate 4/9/1996
** PROJECT INDIRECT SUMMARY - CSI ITEM **

TIME 13:52:19

SUMMARY PAGE 3

	QUANTITY UOM	TOTAL DIRECT	FOOH	HOOH	PROF	OTHR TAX	BOND	TOTAL COST	UNIT COST
TOTAL FISH AND WILDLIFE FACILITIES	1.00 EA	124,000	0	0	0	0	0	124,000	124000.00
TOTAL GOVERNMENT FURNISHED MATERIALS		124,000	0	0	0	0	0	124,000	
TOTAL CAPTAIN JOHN RAPIDS, WASHINGTON	1.00 MO	881,844	113,677	61,006	93,253	0	13,951	1,163,730	1163730

A-26

PROJECT: Spring Chinook Facilities, Upper Grand Ronde River & Catherine Creek Areas
 LOCATION: Oregon

DISTRICT: Walla Walla
 P.O.C.: KIM CALLAN, CHIEF, COST ENGINEERING

THIS ESTIMATE IS BASED ON THE SCOPE CONTAINED IN THE CONCEPT "RECONNAISSANCE" REPORT, DATED: 22 APRIL 96

CURRENT MCACES ESTIMATE PREPARED: 22 APRIL 96
 EFFECTIVE PRICING LEVEL: 1 OCT 96

AUTHORIZ./BUDGET YEAR: 1998
 EFFECT. PRICING LEVEL: 1 OCT 97

.....FULLY FUNDED ESTIMATE.....

ACCOUNT NUMBER	FEATURE DESCRIPTION	COST (\$K)	CNTG (\$K)	CNTG (%)	TOTAL (\$K)	COST (\$K)	CNTG (\$K)	TOTAL (\$K)	SPENT THRU FY 95 (\$K)	COST (\$K)	CNTG (\$K)	FULL (\$K)
06.2--	FISH HATCHERY	8,734	3,013	34%	11,747	8,971	3,094	12,065		9,351	3,224	12,575
	GOVERNMENT FURNISH SERVICES	895	405	45%	1,300	919	414	1,333		991	448	1,439
	TOTAL CONSTRUCTION COSTS ==	9,629	3,417	35%	13,046	9,890	3,508	12,065		10,342	3,672	14,014
01---	LANDS AND DAMAGES	664	140	21%	804	682	143	825		708	149	857
18---	CULTURAL RESOURCES	3	2	50%	5	3	2	5		3	2	5
30---	PLANNING, ENGINEERING & DESIGN	2,183	753	34%	2,936	2,242	773	3,015		2,336	807	3,143
31---	CONSTRUCTION MANAGEMENT	1,309	452	35%	1,761	1,345	464	1,809		1,402	484	1,886
	TOTAL PROJECT COSTS =====	13,788	4,764	35%	18,552	14,162	4,890	19,052		14,791	5,114	19,905

TOTAL FEDERAL COSTS =====> 19,905

TOTAL NON-FEDERAL COSTS =====>

THE MAXIMUM PROJECT COST IS =====> \$

THIS TPCS REFLECTS A PROJECT COST CHANGE OF \$
 DISTRICT APPROVED: _____

- _____ CHIEF, COST ENGINEERING
- _____ CHIEF, REAL ESTATE
- _____ CHIEF, PLANNING
- _____ CHIEF, ENGINEERING
- _____ CHIEF, OPERATIONS
- _____ CHIEF, CONSTRUCTION
- _____ CHIEF, PROGRAMS MANAGEMENT
- _____ PROJECT MANAGER
- _____ DDE (PM)

DIVISION APPROVED:

- _____ CHIEF, COST ENGINEERING
- _____ DIRECTOR, REAL ESTATE
- _____ CHIEF, PROGRAMS MANAGEMENT
- _____ DIRECTOR OF PPMD

APPROVED DATE: _____

A-27

THIS ESTIMATE IS BASED ON THE SCOPE CONTAINED IN THE CONCEPT "RECONNAISSANCE" REPORT, DATED: 22 APRIL 96

PROJECT: Spring Chinook Facilities, Upper Grand Ronde River & Catherine Creek Areas
 LOCATION: Oregon

DISTRICT: Walla Walla
 P.O.C.: KIM CALLAN, CHIEF, COST ENGINEERING

CURRENT MCACES ESTIMATE PREPARED: 22 APRIL 96
 EFFECTIVE PRICING LEVEL: 1 OCT 96

AUTHORIZ./BUDGET YEAR: 1998
 EFFECT. PRICING LEVEL: 1 OCT 97

.....FULLY FUNDED ESTIMATE.....

ACCOUNT NUMBER	FEATURE DESCRIPTION	COST (\$K)	CNTG (\$K)	CNTG (%)	TOTAL (\$K)	OMB (%)	COST (\$K)	CNTG (\$K)	TOTAL (\$K)	FEATURE MID PT	OMB (%)	COST (\$K)	CNTG (\$K)	FULL (\$K)
06.2--	Interim Report Supplement Adult Capture & Adult Holding Facility Upper Grand Ronde River, Vey Meadows at Splash Dam Site Similar to Crooked River Adult Capture & Adult Holding Facilit	1,948	682	35%	2,630	2.7%	2,001	700	2,701	4 QTR 98	2.7%	2,055	719	2,774
	TOTAL CONSTRUCTION COSTS ==	1,948	682	35%	2,630		2,001	700	2,701			2,055	719	2,774
01---	LANDS AND DAMAGES	148	30	20%	178	2.7%	152	30	182	2 QTR 98	2.7%	156	31	187
30---	PLANNING, ENGINEERING & DESIGN	292	102	35%	394	2.7%	300	105	405	2 QTR 98	2.7%	308	108	416
30---	PLANNING, ENGINEERING & DESIGN PM, Planning, Contracting, EDC	195	68	35%	263	2.7%	200	70	270	2 QTR 98	2.7%	205	72	277
31---	CONSTRUCTION MANAGEMENT	292	102	35%	394	2.7%	300	105	405	4 QTR 98	2.7%	308	108	416
A-28	TOTAL COSTS =====	2,875	983	34%	3,858		2,953	1,010	3,963			3,032	1,038	4,070
06.2--	Upper Grand Ronde River, Vey Meadows at Splash Dam Site GOVERNMENT FURNISH MATERIALS	55	28	50%	83	2.7%	56	28	84	2 QTR 99	5.5%	59	30	89
06.2--	GOVERNMENT FURNISH SERVICES	22	11	50%	33	2.7%	23	11	34	2 QTR 99	5.5%	24	12	36
	TOTAL WDFW GFS COSTS =====	77	39		116		79	39	118			83	42	125
	COST FOR ALL SITES													
18---	CULTURAL RESOURCES	3	2	50%	5	2.7%	3	2	5	1 QTR 99	5.5%	3	2	5

THIS ESTIMATE IS BASED ON THE SCOPE CONTAINED IN THE CONCEPT "RECONNAISSANCE" REPORT, DATED: 22 APRIL 96

PROJECT: Spring Chinook Facilities, Upper Grand Ronde River & Catherine Creek Areas
 LOCATION: Oregon

DISTRICT: Walla Walla
 P.O.C.: KIM CALLAN, CHIEF, COST ENGINEERING

CURRENT MCACES ESTIMATE PREPARED: 22 APRIL 96
 EFFECTIVE PRICING LEVEL: 1 OCT 96

AUTHORIZ./BUDGET YEAR: 1998
 EFFECT. PRICING LEVEL: 1 OCT 97

.....FULLY FUNDED ESTIMATE.....

ACCOUNT NUMBER	FEATURE DESCRIPTION	COST (\$K)	CNTG (\$K)	CNTG (%)	TOTAL (\$K)	AUTHORIZ./BUDGET YEAR: 1998			FULLY FUNDED ESTIMATE.....				
						OMB (%)	COST (\$K)	CNTG (\$K)	TOTAL (\$K)	FEATURE MID PT	OMB (%)	COST (\$K)	CNTG (\$K)	FULL (\$K)
06.2--	Interim Report Supplement Adult Capture & Adult Holding Facility Catherine Creek at Union Site Similar to Crooked River Adult Capture & Adult Holding Facilit	1,948	682	35%	2,630	2.7%	2,001	700	2,701	4 QTR 98	2.7%	2,055	719	2,774
	TOTAL CONSTRUCTION COSTS ==	1,948	682	35%	2,630		2,001	700	2,701			2,055	719	2,774
01---	LANDS AND DAMAGES	153	31	20%	184	2.7%	157	31	188	2 QTR 98	2.7%	161	32	193
30---	PLANNING, ENGINEERING & DESIGN	292	102	35%	394	2.7%	300	105	405	2 QTR 98	2.7%	308	108	416
30---	PLANNING, ENGINEERING & DESIGN PM, Planning, Contracting, EDC	195	68	35%	263	2.7%	200	70	270	2 QTR 98	2.7%	205	72	277
31---	CONSTRUCTION MANAGEMENT	292	102	35%	394	2.7%	300	105	405	4 QTR 98	2.7%	308	108	416
A-29	TOTAL COSTS =====	2,880	984	34%	3,864		2,958	1,011	3,969			3,037	1,039	4,076
06.2--	Catherine Creek at Union Site GOVERNMENT FURNISH MATERIALS	55	28	50%	83	2.7%	56	28	84	4 QTR 99	5.5%	59	30	89
06.2--	GOVERNMENT FURNISH SERVICES	22	11	50%	33	2.7%	23	11	34	4 QTR 99	5.5%	24	12	36
	TOTAL WDFW GFS COSTS =====	77	39		116		79	39	118			83	42	125

THIS ESTIMATE IS BASED ON THE SCOPE CONTAINED IN THE CONCEPT "RECONNAISSANCE" REPORT, DATED: 22 APRIL 96

PROJECT: Spring Chinook Facilities, Upper Grand Ronde River & Catherine Creek Areas
 LOCATION: Oregon

DISTRICT: Walla Walla
 P.O.C.: KIM CALLAN, CHIEF, COST ENGINEERING

CURRENT MCACES ESTIMATE PREPARED: 22 APRIL 96

EFFECTIVE PRICING LEVEL: 1 OCT 96

AUTHORIZ./BUDGET YEAR: 1998

EFFECT. PRICING LEVEL: 1 OCT 97

.....FULLY FUNDED ESTIMATE.....

ACCOUNT NUMBER	FEATURE DESCRIPTION	COST (\$K)	CNTG (\$K)	CNTG (%)	TOTAL (\$K)	OMB (%)	COST (\$K)	CNTG (\$K)	TOTAL (\$K)	FEATURE MID PT	OMB (%)	COST (\$K)	CNTG (\$K)	FULL (\$K)
06.2--	Interim Report Supplement Acclimation & Release Facilities Upper Grand Ronde River, Upper Vey Meadows Site Similar to Crooked River Acclimation & Release Facility	1,949	682	35%	2,631	2.7%	2,002	701	2,703	2 QTR 99	5.5%	2,112	739	2,851
TOTAL CONSTRUCTION COSTS ==		1,949	682	35%	2,631		2,002	701	2,703			2,112	739	2,851
01---	LANDS AND DAMAGES	75	23	30%	98	2.7%	77	23	100	1 QTR 98	2.7%	79	24	103
30---	PLANNING, ENGINEERING & DESIGN	293	102	35%	395	2.7%	301	105	406	1 QTR 99	5.5%	317	111	428
30---	PLANNING, ENGINEERING & DESIGN PM, Planning, Contracting, EDC	195	68	35%	263	2.7%	200	70	270	1 QTR 99	5.5%	211	74	285
31--	CONSTRUCTION MANAGEMENT	293	102	35%	395	2.7%	301	105	406	2 QTR 99	5.5%	317	111	428
A-30	TOTAL COSTS =====	2,805	977	35%	3,782		2,881	1,004	3,885			3,036	1,059	4,095
06.2--	Upper Grand Ronde River, Upper Vey Meadows Site GOVERNMENT FURNISH MATERIALS	337	169	50%	506	2.7%	346	173	519	1 QTR 00	8.3%	375	187	562
06.2--	GOVERNMENT FURNISH SERVICES	134	67	50%	201	2.7%	138	69	207	1 QTR 00	8.3%	150	75	225
TOTAL WDFW GFS COSTS =====		471	236		707		484	242	726			525	262	787

THIS ESTIMATE IS BASED ON THE SCOPE CONTAINED IN THE CONCEPT "RECONNAISSANCE" REPORT, DATED: 22 APRIL 96

PROJECT: Spring Chinook Facilities, Upper Grand Ronde River & Catherine Creek Areas
 LOCATION: Oregon

DISTRICT: Walla Walla
 P.O.C.: KIM CALLAN, CHIEF, COST ENGINEERING

CURRENT MCACES ESTIMATE PREPARED: 22 APRIL 96
 EFFECTIVE PRICING LEVEL: 1 OCT 96

AUTHORIZ./BUDGET YEAR: 1998
 EFFECT. PRICING LEVEL: 1 OCT 97

.....FULLY FUNDED ESTIMATE.....

ACCOUNT NUMBER	FEATURE DESCRIPTION	COST (\$K)	CNTG (\$K)	CNTG (%)	TOTAL (\$K)	OMB (%)	COST (\$K)	CNTG (\$K)	TOTAL (\$K)	FEATURE MID PT	OMB (%)	COST (\$K)	CNTG (\$K)	FULL (\$K)
06.2--	Interim Report Supplement Acclimation & Release Facilities Catherine Creek, Oregon State University Site Similar to Crooked River Acclimation & Release Facility	2,445	856	35%	3,301	2.7%	2,511	879	3,390	2 QTR 99	5.5%	2,648	927	3,575
	TOTAL CONSTRUCTION COSTS ==	2,445	856	35%	3,301		2,511	879	3,390			2,648	927	3,575
01---	LANDS AND DAMAGES	213	43	20%	256	2.7%	219	44	263	1 QTR 99	5.5%	231	46	277
30---	PLANNING, ENGINEERING & DESIGN	366	129	35%	495	2.7%	376	132	508	1 QTR 99	5.5%	397	139	536
30---	PLANNING, ENGINEERING & DESIGN PM, Planning, Contracting, EDC	244	86	35%	330	2.7%	251	88	339	1 QTR 99	5.5%	265	93	358
31---	CONSTRUCTION MANAGEMENT	366	129	35%	495	2.7%	376	132	508	2 QTR 99	5.5%	397	139	536
	TOTAL COSTS =====	3,634	1,242	34%	4,876		3,733	1,275	5,008			3,938	1,344	5,282
06.2--	Catherine Creek, Oregon State University Site GOVERNMENT FURNISH MATERIALS	68	34	50%	102	2.7%	70	35	105	1 QTR 00	8.3%	76	38	114
06.2--	GOVERNMENT FURNISH SERVICES	28	14	50%	42	2.7%	29	14	43	1 QTR 00	8.3%	31	15	46
	TOTAL WDFW GFS COSTS =====	96	48		144		99	49	148			107	53	160

A-31

THIS ESTIMATE IS BASED ON THE SCOPE CONTAINED IN THE CONCEPT "RECONNAISSANCE" REPORT, DATED: 22 APRIL 96

PROJECT: Spring Chinook Facilities, Upper Grand Ronde River & Catherine Creek Areas
 LOCATION: Oregon

DISTRICT: Walla Walla
 P.O.C.: KIM CALLAN, CHIEF, COST ENGINEERING

CURRENT MCACES ESTIMATE PREPARED: 22 APRIL 96
 EFFECTIVE PRICING LEVEL: 1 OCT 96

AUTHORIZ./BUDGET YEAR: 1998
 EFFECT. PRICING LEVEL: 1 OCT 97

.....FULLY FUNDED ESTIMATE.....

ACCOUNT NUMBER	FEATURE DESCRIPTION	COST (\$K)	CNTG (\$K)	CNTG (%)	TOTAL (\$K)	OMB (%)	COST (\$K)	CNTG (\$K)	TOTAL (\$K)	FEATURE MID PT	OMB (%)	COST (\$K)	CNTG (\$K)	FULL (\$K)
06.2--	Interim Report Supplement													
	Final Rearing, Acclimation, Direct Relea	444	111	25%	555	2.7%	456	114	570	2 QTR 99	5.5%	481	120	601
	Upper Grand Ronde River, Sheep Creek, Temporary Site													
	4 Tank Farm w/ 1 Hydrocyclones - Doesn't include the cost for the Indians to Operat													
	TOTAL CONSTRUCTION COSTS ==	444	111	25%	555		456	114	570			481	120	601
01---	LANDS AND DAMAGES	75	15	20%	90	2.7%	77	15	92	1 QTR 99	5.5%	81	16	97
30---	PLANNING, ENGINEERING & DESIGN	66	17	25%	83	2.7%	68	17	85	1 QTR 99	5.5%	72	18	90
30---	PLANNING, ENGINEERING & DESIGN	45	11	25%	56	2.7%	46	11	57	1 QTR 99	5.5%	48	12	60
	PM, Planning, Contracting, EDC													
31---	CONSTRUCTION MANAGEMENT	66	17	25%	83	2.7%	68	17	85	2 QTR 99	5.5%	72	18	90
A-32	TOTAL COSTS =====	696	171	25%	867		715	174	889			754	184	938
06.2--	Sheep Creek, Temporary Site													
	GOVERNMENT FURNISH MATERIALS	124	31	25%	155	2.7%	127	32	159	1 QTR 00	8.3%	138	35	173
06.2--	GOVERNMENT FURNISH SERVICES	50	13	25%	63	2.7%	51	13	64	1 QTR 00	8.3%	55	14	69
	TOTAL WDFW GFS COSTS =====	174	44		218		178	45	223			193	49	242

ri 19 Apr 1996
ff. Date 04/18/96

U.S. Army Corps of Engineers
PROJECT UPMEOS: TRAPPING FACILITY - LOWER VEY MEADOWS & UNION DAM/
LOWER MEADOWS & UNION DAM SITES TRAPPING FAC.

TIME 10:19:43
TITLE PAGE 1

TRAPPING FACILITY
LOWER VEY MEADOWS & UNION DAM/
CATHERINE CR. SITES S-CHINOOK
STATE OF OREGON
--- FOR OFFICIAL USE ONLY ---

Designed By: Corp's Eng.Designing Division
Estimated By: KARL PANKASKIE

Prepared By: WALLA WALLA DISTRICT
KIM CALLAN, Chief, Cost Engr.

Preparation Date: 04/18/96
Effective Date of Pricing: 04/18/96
Est Construction Time: 250 Days

Sales Tax: 0.00%

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PROJECT DESCRIPTION

This estimate consists of costs to build an adult trapping and temporary holding facility. There is no information at this time to base costs on other than a previous designed and build facility.

BASES OF DESIGN

This estimate is for Concept Report dated, 4/28/96.
This estimate is a Reconnaissance type estimate.

The costs were taken from the Bid Schedule of Crooked River Satellite Facilities near Elk City, Idaho County, Idaho DACW68-89-B-0021 (2 Amendments), Dated March 14, 1989. See spread sheets for backup of costs. This is the latest facility build of this type on our estimating records.

CONSTRUCTION SCHEDULE

Period of construction is unknown at this time.

CONSTRUCTION WINDOWS

Window of construction is unknown at this time.

OVERTIME

This estimate contains no overtime to complete the project.

PROJECT CONSTRUCTION

SITE ACCESS

The project site is not selected yet.

BORROW AREAS

The borrow sources are unknown.

CONSTRUCTION METHODOLOGY

The construction methodology should be standard.

UNUSUAL CONDITION (Soil, Water, Weather)

Little or none thing is known at this time

UNIQUE TECHNIQUES OF CONSTRUCTION

Little or none thing is known at this time

EQUIPMENT/LABOR AVAILABILITY & DISTANCE TRAVELED

Travel costs and remote conditions should be taken consideration because Crooked River Trapping facility was in a remote location.

This work is not to be performed by a Contractor under the Small Business Administration 8a program.

A-34

Fri 19 Apr 1996
 Eff. Date 04/18/96

U.S. Army Corps of Engineers
 PROJECT UPMEOS: TRAPPING FACILITY - LOWER VEY MEADOWS & UNION DAM/
 LOWER MEADOWS & UNION DAM SITES TRAPPING FAC.
 ** PROJECT INDIRECT SUMMARY - BID ITEM **

TIME 10:19:43
 SUMMARY PAGE 1

A-35

	QUANTITY	UCM	TOTAL DIRECT	FOOH	HOOH	PROF	OTHR TAX	BOND	TOTAL COST	UNIT COST
AA UPPER MEADOWS & OSU SITES										
AA 06 Fish and Wildlife Facilities										
AA 06 02 Fish Hatchery (Include Trap/Rel)										
AA 06 02 01 MOB, DEMOB & PREPARATORY WORK										
AA 06 02 01-001-			66,340	0	0	0	0	0	66,340	
TOTAL MOB, DEMOB & PREPARATORY WORK			66,340	0	0	0	0	0	66,340	
AA 06 02 02 SITE WORK										
AA 06 02 02-001-			118,090	0	0	0	0	0	118,090	
AA 06 02 02-002-			233,860	0	0	0	0	0	233,860	
AA 06 02 02-003-	800.00	CY	64,800	0	0	0	0	0	64,800	81.00
AA 06 02 02-004-	200.00	CY	19,600	0	0	0	0	0	19,600	98.00
AA 06 02 02-005-			18,410	0	0	0	0	0	18,410	
AA 06 02 02-006-			73,970	0	0	0	0	0	73,970	
AA 06 02 02-007-			9,120	0	0	0	0	0	9,120	
TOTAL SITE WORK			537,850	0	0	0	0	0	537,850	
AA 06 02 03 SITE UTILITIES										
AA 06 02 03-001-			40,140	0	0	0	0	0	40,140	
AA 06 02 03-002-			391,260	0	0	0	0	0	391,260	
AA 06 02 03-003-			195,050	0	0	0	0	0	195,050	
AA 06 02 03-004-			154,750	0	0	0	0	0	154,750	
TOTAL SITE UTILITIES			781,200	0	0	0	0	0	781,200	
AA 06 02 04 BUILDINGS										
AA 06 02 04-001-	675.00	SF	105,300	0	0	0	0	0	105,300	156.00
TOTAL BUILDINGS			656.00 SF	105,300	0	0	0	0	105,300	160.52
AA 06 02 05 SPECIAL FEATURES										
AA 06 02 05-001-			76,300	0	0	0	0	0	76,300	
AA 06 02 05-002-			380,530	0	0	0	0	0	380,530	
TOTAL SPECIAL FEATURES			500.00 CF	456,830	0	0	0	0	456,830	913.66

Tri 19 Apr 1996
 Eff. Date 04/18/96

U.S. Army Corps of Engineers
 PROJECT UPMEOS: TRAPPING FACILITY - LOWER VEY MEADOWS & UNION DAM/
 LOWER MEADOWS & UNION DAM SITES TRAPPING FAC.
 ** PROJECT INDIRECT SUMMARY - BID ITEM **

TIME 10:19:43
 SUMMARY PAGE 2

	QUANTITY UOM	TOTAL DIRECT	FOOH	HOOH	PROF	OTHR TAX	BOND	TOTAL COST	UNIT COST
TOTAL Fish Hatchery (Include Trap/Rel)	500.00 CF	1,947,520	0	0	0	0	0	1,947,520	3895.04
TOTAL Fish and Wildlife Facilities	1.00 EA	1,947,520	0	0	0	0	0	1,947,520	1947520
TOTAL UPPER MEADOWS & OSU SITES		1,947,520	0	0	0	0	0	1,947,520	

CC GOVERNMENT FURNISHED MATERIALS

CC 06 Fish and Wildlife Facilities

CC 06 02 Fish Hatchery (Include Trap/Rel)

CC 06 02 69 REARING AND HOLDING PONDS

CC 06 02 69-001- BASED ON CROOKED RIVER FACILITY		32,453	0	0	0	0	0	32,453	
CC 06 02 69-002- ELECTRICAL SUPPLY TO SITE	1.00 MI	23,010	0	0	0	0	0	23,010	23010.00
TOTAL REARING AND HOLDING PONDS		55,463	0	0	0	0	0	55,463	
TOTAL Fish Hatchery (Include Trap/Rel)		55,463	0	0	0	0	0	55,463	
TOTAL Fish and Wildlife Facilities	1.00 EA	55,463	0	0	0	0	0	55,463	55463.00
TOTAL GOVERNMENT FURNISHED MATERIALS		55,463	0	0	0	0	0	55,463	
TOTAL TRAPPING FACILITY	1.00 MO	2,002,983	0	0	0	0	0	2,002,983	2002983

A-36

ri 19 Apr 1996
ff. Date 04/18/06

U.S. Army Corps of Engineers
PROJECT UPPERV: ACCLIMATION & RELEASE PONDS - UPPER VEY MEADOWS
UPPER VEY MEADOWS SITE FACILITY

TIME 10:22:37

TITLE PAGE 1

ACCLIMATION & RELEASE PONDS
UPPER VEY MEADOWS
SPRING CHINOOK
STATE OF OREGON
--- FOR OFFICIAL USE ONLY ---

Designed By: Corp's Eng.Designing Division
Estimated By: KARL PANKASKIE

Prepared By: WALLA WALLA DISTRICT
KIM CALLAN, Chief, Cost Engr.

Preparation Date: 04/18/96
Effective Date of Pricing: 04/18/06
Est Construction Time: 250 Days

Sales Tax: 0.00%

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A-37

PROJECT DESCRIPTION

This estimate consists of costs to build an juvenile holding and release facility. There is no information at this time to base costs on other than a previous designed and build facility.

BASES OF DESIGN

This estimate is for Concept Report dated, 4/28/96.
This estimate is a Reconnaissance type estimate.

The costs were taken from the Bid Schedule of Crooked River Satellite Facilities near Elk City, Idaho County, Idaho DACW68-89-B-0021 (2 Amendments), Dated March 14, 1989. See spread sheets for backup of costs. This is the latest facility build of this type on our estimating records.

CONSTRUCTION SCHEDULE

Period of construction is unknown at this time.

CONSTRUCTION WINDOWS

Window of construction is unknown at this time.

OVERTIME

This estimate contains no overtime to complete the project.

PROJECT CONSTRUCTION

SITE ACCESS

The project site is not selected yet.

BORROW AREAS

The borrow sources are unknown.

CONSTRUCTION METHODOLOGY

The construction methodology should be standard.

UNUSUAL CONDITION (Soil, Water, Weather)

Little or none thing is known at this time

UNIQUE TECHNIQUES OF CONSTRUCTION

Little or none thing is known at this time

EQUIPMENT/LABOR AVAILABILITY & DISTANCE TRAVELED

Travel costs and remote conditions should be taken consideration because Crooked River Traping facility was in a remote location.

This work is not to be performed by a Contractor under the Small Business Administration 8a program.

A-38

ri 19 Apr 1996
ff. Date 04/18/06

U.S. Army Corps of Engineers
PROJECT UPPERV: ACCLIMATION & RELEASE PONDS - UPPER VEY MEADOWS
UPPER VEY MEADOWS SITE FACILITY
** PROJECT INDIRECT SUMMARY - BID ITEM **

TIME 10:22:37
SUMMARY PAGE 1

		QUANTITY	UOM	TOTAL DIRECT	FOOH	HOOH	PROF	OTHR TAX	BOND	TOTAL COST	UNIT COST
AA UPPER VEY ACCLIMATION & RELEASE											
AA 06 Fish and Wildlife Facilities											
AA 06 02 Fish Hatchery (Include Trap/Rel)											
AA 06 02 01 MOB, DEMOB & PREPARATORY WORK											
AA 06 02 01-001-	Mob, Demob & Preparatory Work			66,340	0	0	0	0	0	66,340	
TOTAL MOB, DEMOB & PREPARATORY WORK				66,340	0	0	0	0	0	66,340	
AA 06 02 02 SITE WORK											
AA 06 02 02-001-	DIVERSION AND CARE OF WATER			118,090	0	0	0	0	0	118,090	
AA 06 02 02-002-	SITE WORK			233,860	0	0	0	0	0	233,860	
AA 06 02 02-003-	RIPRAP SLOPE PROTECTION	800.00	CY	64,800	0	0	0	0	0	64,800	81.00
AA 06 02 02-004-	COBBLE SLOPE PROTECTION	200.00	CY	19,600	0	0	0	0	0	19,600	98.00
AA 06 02 02-005-	CULVERTS			18,410	0	0	0	0	0	18,410	
AA 06 02 02-006-	GRAVEL SURFACING			73,970	0	0	0	0	0	73,970	
AA 06 02 02-007-	DRYLAND GRASS ESTABLISHMENT			9,120	0	0	0	0	0	9,120	
TOTAL SITE WORK				537,850	0	0	0	0	0	537,850	
AA 06 02 03 SITE UTILITIES											
AA 06 02 03-001-	SEWAGE SYSTEM			40,140	0	0	0	0	0	40,140	
AA 06 02 03-002-	WATER SUPPLY PIPING			391,260	0	0	0	0	0	391,260	
AA 06 02 03-003-	DRAIN PIPING			195,050	0	0	0	0	0	195,050	
AA 06 02 03-004-	ELECTRICAL WORK			154,750	0	0	0	0	0	154,750	
TOTAL SITE UTILITIES				781,200	0	0	0	0	0	781,200	
AA 06 02 04 BUILDINGS											
AA 06 02 04-001-	SUPPORT BUILDING	676.00	SF	104,780	0	0	0	0	0	104,780	155.00
AA 06 02 04-002-	FREEZER AND DRY STORAGE BUILDING	432.00	SF	88,560	0	0	0	0	0	88,560	205.00
TOTAL BUILDINGS				193,340	0	0	0	0	0	193,340	174.49
AA 06 02 05 SPECIAL FEATURES											
AA 06 02 05-001-	RIVER INTAKE STRUCTURE-JUVENILE			119,750	0	0	0	0	0	119,750	
AA 06 02 05-002-	REARING RACEWAYS	1200.00	SF	84,000	0	0	0	0	0	84,000	70.00
AA 06 02 05-003-	SEDIMENTATION POND	1010.00	SF	166,650	0	0	0	0	0	166,650	165.00

A-39

Fri 19 Apr 1996
 Eff. Date 04/18/06

U.S. Army Corps of Engineers
 PROJECT UPPERV: ACCLIMATION & RELEASE PONDS - UPPER VEY MEADOWS
 UPPER VEY MEADOWS SITE FACILITY
 ** PROJECT INDIRECT SUMMARY - BID ITEM **

TIME 10:22:37
 SUMMARY PAGE 2

	QUANTITY UOM	TOTAL DIRECT	FOOH	MOOH	PROF	OTHR TAX	BOND	TOTAL COST	UNIT COST
TOTAL SPECIAL FEATURES	10000.00 CF	370,400	0	0	0	0	0	370,400	37.04
TOTAL Fish Hatchery (Include Trap/Rel)	10000.00 CF	1,949,130	0	0	0	0	0	1,949,130	194.91
TOTAL Fish and Wildlife Facilities	1.00 EA	1,949,130	0	0	0	0	0	1,949,130	1949130
TOTAL UPPER VEY ACCLIMATION & RELEASE		1,949,130	0	0	0	0	0	1,949,130	

CC GOVERNMENT FURNISHED MATERIALS

CC 06 Fish and Wildlife Facilities

CC 06 02 Fish Hatchery (Include Trap/Rel)

CC 06 02 69 REARING AND HOLDING PONDS

CC 06 02 69-001- GOVERNMENT FURNISH SERVICES		44,780	0	0	0	0	0	44,780	
CC 06 02 69-002- ELECTRICAL SUPPLY TO SITE	14.00 MI	292,500	0	0	0	0	0	292,500	20892.86
TOTAL REARING AND HOLDING PONDS		337,280	0	0	0	0	0	337,280	
TOTAL Fish Hatchery (Include Trap/Rel)		337,280	0	0	0	0	0	337,280	
TOTAL Fish and Wildlife Facilities	1.00 EA	337,280	0	0	0	0	0	337,280	337280.00
TOTAL GOVERNMENT FURNISHED MATERIALS		337,280	0	0	0	0	0	337,280	
TOTAL ACCLIMATION & RELEASE PONDS	1.00 MO	2,286,410	0	0	0	0	0	2,286,410	2286410

A-40

Fri 19 Apr 1996
Eff. Date 04/18/06

U.S. Army Corps of Engineers
PROJECT CA_OSU: ACCLIMATION & RELEASE PONDS - OSU / CATHERINE CREEK SITE
OSU / CATHERINE CREEK SITE FACILITY

TIME 10:18:40
TITLE PAGE 1

ACCLIMATION & RELEASE PONDS
OSU / CATHERINE CREEK SITE
SPRING CHINOOK
STATE OF OREGON
--- FOR OFFICIAL USE ONLY ---

Designed By: Corp's Eng.Designing Division
Estimated By: KARL PANKASKIE

Prepared By: WALLA WALLA DISTRICT
KIM CALLAN, Chief, Cost Engr.

Preparation Date: 04/18/96
Effective Date of Pricing: 04/18/06
Est Construction Time: 250 Days

Sales Tax: 0.00%

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LABOR ID: EORG95 EQUIP ID: NAT95A

Currency in DOLLARS

CREW ID: NAT96C UPB ID: NAT92A

A-41

PROJECT DESCRIPTION

This estimate consists of costs to build an juvenile holding and release facility. There is no information at this time to base costs on other than a previous designed and build facility.

BASES OF DESIGN

This estimate is for Concept Report dated, 4/28/96.
This estimate is a Reconnaissance type estimate.

The costs were taken from the Bid Schedule of Crooked River Satellite Facilities near Elk City, Idaho County, Idaho DACW68-89-B-0021 (2 Amendments), Dated March 14, 1989. See spread sheets for backup of costs. This is the latest facility build of this type on our estimating records.

CONSTRUCTION SCHEDULE

Period of construction is unknown at this time.

CONSTRUCTION WINDOWS

Window of construction is unknown at this time.

OVERTIME

This estimate contains no overtime to complete the project.

PROJECT CONSTRUCTION

SITE ACCESS

The project site is not selected yet.

BORROW AREAS

The borrow sources are unknown.

CONSTRUCTION METHODOLOGY

The construction methodology should be standard.

UNUSUAL CONDITION (Soil, Water, Weather)

Little or none thing is known at this time

UNIQUE TECHNIQUES OF CONSTRUCTION

Little or none thing is known at this time

EQUIPMENT/LABOR AVAILABILITY & DISTANCE TRAVELED

Travel costs and remote conditions should be taken consideration because Crooked River Trapping facility was in a remote location.

This work is not to be performed by a Contractor under the Small Business Administration 8a program.

A-42

Fri 19 Apr 1996
 Eff. Date 04/18/06

U.S. Army Corps of Engineers
 PROJECT CA_OSU: ACCLIMATION & RELEASE PONDS - OSU / CATHERINE CREEK SITE
 OSU / CATHERINE CREEK SITE FACILITY
 ** PROJECT INDIRECT SUMMARY - BID ITEM **

TIME 10:18:40

SUMMARY PAGE 1

		QUANTITY UOM	TOTAL DIRECT	FOOH	HOOH	PROF	OTHR TAX	BOND	TOTAL COST	UNIT COST
AA OSU/CAT.CR ACCLIMATION & RELEASE										
AA 06 Fish and Wildlife Facilities										
AA 06 02 Fish Hatchery (Include Trap/Rel)										
AA 06 02 01 MOB, DEMOB & PREPARATORY WORK										
AA 06 02 01-001-	Mob, Demob & Preparatory Work		66,340	0	0	0	0	0	66,340	
TOTAL MOB, DEMOB & PREPARATORY WORK			66,340	0	0	0	0	0	66,340	
AA 06 02 02 SITE WORK										
AA 06 02 02-001-	DIVERSION AND CARE OF WATER		118,090	0	0	0	0	0	118,090	
AA 06 02 02-002-	SITE WORK		233,860	0	0	0	0	0	233,860	
AA 06 02 02-003-	RIPRAP SLOPE PROTECTION	800.00 CY	64,800	0	0	0	0	0	64,800	81.00
AA 06 02 02-004-	COBBLE SLOPE PROTECTION	200.00 CY	19,600	0	0	0	0	0	19,600	98.00
AA 06 02 02-005-	CULVERTS		18,410	0	0	0	0	0	18,410	
AA 06 02 02-006-	GRAVEL SURFACING		73,970	0	0	0	0	0	73,970	
AA 06 02 02-007-	DRYLAND GRASS ESTABLISHMENT		9,120	0	0	0	0	0	9,120	
TOTAL SITE WORK			537,850	0	0	0	0	0	537,850	
AA 06 02 03 SITE UTILITIES										
AA 06 02 03-001-	SEWAGE SYSTEM		40,140	0	0	0	0	0	40,140	
AA 06 02 03-002-	WATER SUPPLY PIPING		391,260	0	0	0	0	0	391,260	
AA 06 02 03-003-	DRAIN PIPING		195,050	0	0	0	0	0	195,050	
AA 06 02 03-004-	ELECTRICAL WORK		154,750	0	0	0	0	0	154,750	
TOTAL SITE UTILITIES			781,200	0	0	0	0	0	781,200	
AA 06 02 04 BUILDINGS										
AA 06 02 04-001-	SUPPORT BUILDING	676.00 SF	104,780	0	0	0	0	0	104,780	155.00
AA 06 02 04-002-	FREEZER AND DRY STORAGE BUILDING	432.00 SF	88,560	0	0	0	0	0	88,560	205.00
TOTAL BUILDINGS		1108.00 SF	193,340	0	0	0	0	0	193,340	174.45
AA 06 02 05 SPECIAL FEATURES										
AA 06 02 05-001-	RIVER INTAKE STRUCTURE-JUVENILE		119,750	0	0	0	0	0	119,750	
AA 06 02 05-002-	REARING RACEWAYS	7100.00 SF	497,000	0	0	0	0	0	497,000	70.00
AA 06 02 05-003-	SEDIMENTATION POND	1510.00 SF	249,150	0	0	0	0	0	249,150	165.00

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Fri 19 Apr 1996
 Eff. Date 04/18/06

U.S. Army Corps of Engineers
 PROJECT CA_OSU: ACCLIMATION & RELEASE PONDS - OSU / CATHERINE CREEK SITE
 OSU / CATHERINE CREEK SITE FACILITY
 ** PROJECT INDIRECT SUMMARY - BID ITEM **

TIME 10:18:40
 SUMMARY PAGE 1

	QUANTITY UOM	TOTAL DIRECT	FOOH	HOOH	PROF	OTHR TAX	BOND	TOTAL COST	UNIT COS'
TOTAL SPECIAL FEATURES	12500.00 CF	865,900	0	0	0	0	0	865,900	69.2
TOTAL Fish Hatchery (Include Trap/Rel)	12500.00 CF	2,444,630	0	0	0	0	0	2,444,630	195.5
TOTAL Fish and Wildlife Facilities	1.00 EA	2,444,630	0	0	0	0	0	2,444,630	2444630
TOTAL OSU/CAT.CR ACCLIMATION & RELEASE		2,444,630	0	0	0	0	0	2,444,630	
CC GOVERNMENT FURNISHED MATERIALS									
CC 06 Fish and Wildlife Facilities									
CC 06 02 Fish Hatchery (Include Trap/Rel)									
CC 06 02 69 REARING AND HOLDING PONDS									
CC 06 02 69-001- GOVERNMENT FURNISH SERVICES		44,780	0	0	0	0	0	44,780	
CC 06 02 69-002- ELECTRICAL SUPPLY TO SITE	1.00 MI	23,010	0	0	0	0	0	23,010	23010.00
TOTAL REARING AND HOLDING PONDS		67,790	0	0	0	0	0	67,790	
TOTAL Fish Hatchery (Include Trap/Rel)		67,790	0	0	0	0	0	67,790	
TOTAL Fish and Wildlife Facilities	1.00 EA	67,790	0	0	0	0	0	67,790	67790.00
TOTAL GOVERNMENT FURNISHED MATERIALS		67,790	0	0	0	0	0	67,790	
TOTAL ACCLIMATION & RELEASE PONDS	1.00 MO	2,512,420	0	0	0	0	0	2,512,420	2512420

A-44

Thu 25 Apr 1996
Eff. Date 04/09/96

U.S. Army Corps of Engineers
PROJECT SHEEPC: SHEEP CREEK, OREGON - TEMPORARY SPRING CHINOOK
Estimate 4/25/1996

TIME 13:43:55
TITLE PAGE 1

SHEEP CREEK, OREGON
TEMPORARY SPRING CHINOOK
ACCLIMATION
FACILITY-SHEEP CREEK, OREGON
--- FOR OFFICIAL USE ONLY ---

Designed By: Corps Eng/Design Division
Estimated By: JESUS BARRIOS

Prepared By: WALLA WALLA DIST COST ENG
KIM CALLAN, Chief, Cost Eng

Preparation Date: 04/09/96
Effective Date of Pricing: 04/09/96
Est Construction Time: 120 Days

Sales Tax: 0.00%

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Thu 25 Apr 1996
Eff. Date 04/09/96
PROJECT NOTES

U.S. Army Corps of Engineers
PROJECT SHEEPC: SHEEP CREEK, OREGON - TEMPORARY SPRING CHINOOK
Estimate 4/25/1996

TIME 13:43:5
TITLE PAGE

This estimate consists of projected costs for construction of the Temporary Spring Chinook Acclimation Facility - Sheep Creek, State of Oregon.

a. The site is not level and will require placement of fill material (sand or gravel) and timber cribs to level the tanks and provide support for the pumps, distribution boxes, etc.

b. Support facilities will consist of camping trailers, walk-in storage containers, & emergency lighting. The camping trailers are to be set up adjacent to the tank site in the same general vicinity. The camping trailers are to house 2-4 workers during the time the facility is operating (approximately 2 months). Pumps will be leased. Emergency lighting will be mounted on trailers and used to illuminate the facilities for emergencies.

c. The fish will be placed in the tanks on or about March 1, held in the tanks until mid-April, then released into the river. When all the fish have been released, the facility components will be disassembled, loaded onto tractor/trailers, hauled to a storage area, and stored until the following year. Operation and maintenance costs are not included.

The contractor shall commence work under this contract within 10 calendar days of receiving the notice to proceed, prosecute said work diligently, and complete the entire work ready for use not later than 15 February 1998.

This work is not to be performed by a Contractor under the Small Business Administration 8a program.

Equipment rates from EP 1110-1-8, Aug 93.

Labor rates, Davis Bacon, State of Oregon, Revision 10.

Basis of design: DM #1, Letter Supplement #13, Lower Snake River Fish and Wildlife Compensation Plan, 17 Aug 95.

A-46

Thu 25 Apr 1996
 Eff. Date 04/09/96

U.S. Army Corps of Engineers
 PROJECT SHEEPC: SHEEP CREEK, OREGON - TEMPORARY SPRING CHINOOK
 Estimate 4/25/1996
 ** PROJECT INDIRECT SUMMARY - CSI ITEM **

TIME 13:43:55
 SUMMARY PAGE 1

		QUANTITY	UOM	TOTAL DIRECT	FOOH	HOOH	PROF	OTHR	TAX	BOND	TOTAL COST	UNIT COST
AA SHEEP CREEK, OREGON												
AA 06 FISH AND WILDLIFE FACILITIES												
AA 06 02 FISH HATCHERY (INCL TRAP/REL)												
AA 06 02 69 REARING AND HOLDING PONDS												
AA 06 02 69-001- FURNISH ALL ITEMS & EQUIPMENT												
AA 06 02 69-001--01AA	Mobilization			6,208	1,052	726	799		0	176	8,960	
AA 06 02 69-001--01AB	Demobilization			2,136	362	250	275		0	60	3,083	
AA 06 02 69-001--02AA	Site Prep - Gravel/Level Surface	650.00	CY	17,392	2,947	2,034	2,237		0	492	25,102	38.62
AA 06 02 69-001--09AA	Netting over Tanks	20000.00	SF	8,284	1,404	969	1,066		0	234	11,956	0.60
AA 06 02 69-001--15AA	6" Dia Intake Pipe Line	1330.00	LF	11,751	1,991	1,374	1,512		0	333	16,960	12.75
AA 06 02 69-001--15BB	Distribution Box W/2 Packed Colm	1.00	EA	16,894	2,862	1,976	2,173		0	478	24,383	24382.6'
AA 06 02 69-001--15CC	Hydrocyclone	1.00	EA	13,401	2,271	1,567	1,724		0	379	19,342	19341.5'
AA 06 02 69-001--15DD	20' Round Tanks, 4' high	4.00	EA	50,341	8,529	5,887	6,476		0	1,425	72,658	18164.52
AA 06 02 69-001--15EE	8", 6" & 4" Dia. Supply Pipe	215.00	LF	5,305	899	620	682		0	150	7,656	35.6'
AA 06 02 69-001--15FF	8" Dia Release Pipe	460.00	LF	12,140	2,057	1,420	1,562		0	344	17,521	38.05
AA 06 02 69-001--15GG	Rental Pumps, Storage, Light Plt	12.00	WK	9,220	1,562	1,078	1,186		0	261	13,307	1108.92
AA 06 02 69-001--16AA	Electrical for Tanks	4.00	EA	32,024	5,426	3,745	4,120		0	906	46,221	11555.32
TOTAL FURNISH ALL ITEMS & EQUIPMENT				185,095	31,361	21,646	23,810		0	5,238	267,149	
AA 06 02 69-002- FURNISH TECHNICAL REPRESENTATIVE												
AA 06 02 69-002--01AA	Furnish Technical Representative	1512.00	HR	78,700	13,334	9,203	10,124		0	2,227	113,588	75.12
TOTAL FURNISH TECHNICAL REPRESENTATIVE				78,700	13,334	9,203	10,124		0	2,227	113,588	
AA 06 02 69-003- FURNISH FUEL FOR ENGINES												
AA 06 02 69-003--01AA	Furnish Fuel for engines	5000.00	GAL	12,971	2,198	1,517	1,669		0	367	18,722	3.74
TOTAL FURNISH FUEL FOR ENGINES				12,971	2,198	1,517	1,669		0	367	18,722	
AA 06 02 69-004- DISASSEMBLE, TRANSPORT, & STORE												
AA 06 02 69-004--01AA	Mobilization			2,136	362	250	275		0	60	3,083	
AA 06 02 69-004--01AB	Demobilization			7,396	1,253	865	951		0	209	10,675	
AA 06 02 69-004--01BB	Transport/Store	1.00	EA	5,512	934	645	709		0	156	7,956	7955.60
AA 06 02 69-004--02AA	Site Prep - Gravel/Level Surface	650.00	CY	3,442	583	402	443		0	97	4,968	7.64
AA 06 02 69-004--09AA	Netting over Tanks	20000.00	SF	1,193	202	139	153		0	34	1,721	0.08
AA 06 02 69-004--15AA	6" Dia Intake Pipe Line	335.00	LF	386	65	45	50		0	11	557	1.64
AA 06 02 69-004--15BB	Distribution Box W/2 Packed Colm	1.00	EA	708	120	83	91		0	20	1,022	1022.11
AA 06 02 69-004--15CC	Hydrocyclone	4.00	EA	616	104	72	79		0	17	890	222.35

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Thu 25 Apr 1996
 Eff. Date 04/09/96

U.S. Army Corps of Engineers
 PROJECT SHEEPC: SHEEP CREEK, OREGON - TEMPORARY SPRING CHINOOK
 Estimate 4/25/1996
 ** PROJECT INDIRECT SUMMARY - CSI ITEM **

TIME 13:43:5
 SUMMARY PAGE

		QUANTITY UOM	TOTAL DIRECT	FOOH	HOOH	PROF	OTHR TAX	BOND	TOTAL COST	UNIT COS	
AA 06 02 69-004--15DD	20' Round Tanks, 4' high	4.00 EA	4,956	840	580	638	0	140	7,154	1788.4	
AA 06 02 69-004--15EE	8", 6" & 4" Dia. Supply Pipe	215.00 LF	406	69	48	52	0	11	586	2.7	
AA 06 02 69-004--15FF	8" Dia Release Pipe	460.00 LF	364	62	43	47	0	10	525	1.1	
AA 06 02 69-004--16AA	Electrical for Tanks	4.00 EA	3,523	597	412	453	0	100	5,085	1271.1	
TOTAL DISASSEMBLE, TRANSPORT, & STORE			30,638	5,191	3,583	3,941	0	867	44,220		
TOTAL REARING AND HOLDING PONDS			4.00 EA	307,404	52,084	35,949	39,544	0	8,700	443,679	110919.8
TOTAL FISH HATCHERY (INCL TRAP/REL)			1.00 EA	307,404	52,084	35,949	39,544	0	8,700	443,679	443679.4
TOTAL FISH AND WILDLIFE FACILITIES			1.00 EA	307,404	52,084	35,949	39,544	0	8,700	443,679	443679.4
TOTAL SHEEP CREEK, OREGON			1.00 EA	307,404	52,084	35,949	39,544	0	8,700	443,679	443679.4
BB GOVERNMENT FURNISHED MATERIALS											
BB 06 FISH AND WILDLIFE FACILITIES											
BB 06 02 FISH HATCHERY (INCL TRAP/REL)											
BB 06 02 69 REARING AND HOLDING PONDS											
BB 06 02 69-001- Furnish Trailer - Utility											
BB 06 02 69-001--10AA	Furnish Trailer - Utility	1.00 EA	8,000	0	0	0	0	0	8,000	8000.0	
TOTAL Furnish Trailer - Utility			1.00 EA	8,000	0	0	0	0	8,000	8000.0	
BB 06 02 69-002- Furnish Trailers- Living											
BB 06 02 69-002--10AA	Furnish Trailers- Living	2.00 EA	50,000	0	0	0	0	0	50,000	25000.0	
TOTAL Furnish Trailers- Living			2.00 EA	50,000	0	0	0	0	50,000	25000.0	
BB 06 02 69-003- Furnish Pickup Trucks 1/4 ton											
BB 06 02 69-003--10AA	Furnish Pickup Trucks 1/4 ton	2.00 EA	36,000	0	0	0	0	0	36,000	18000.0	
TOTAL Furnish Pickup Trucks 1/4 ton			2.00 EA	36,000	0	0	0	0	36,000	18000.0	
BB 06 02 69-004- Furnish Pickup Truck 3/4 ton											
BB 06 02 69-004--10AA	Furnish Pickup Truck 3/4 ton	1.00 EA	30,000	0	0	0	0	0	30,000	30000.0	
TOTAL Furnish Pickup Truck 3/4 ton			1.00 EA	30,000	0	0	0	0	30,000	30000.0	

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Thu 25 Apr 1996
 Eff. Date 04/09/96

U.S. Army Corps of Engineers
 PROJECT SHEEPC: SHEEP CREEK, OREGON - TEMPORARY SPRING CHINOOK
 Estimate 4/25/1996
 ** PROJECT INDIRECT SUMMARY - CSI ITEM **

TIME 13:43:55
 SUMMARY PAGE 3

	QUANTITY	UOM	TOTAL DIRECT	FOOH	HOOH	PROF	OTHR TAX	BOND	TOTAL COST	UNIT COST
TOTAL REARING AND HOLDING PONDS	16.00	EA	124,000	0	0	0	0	0	124,000	7750.00
TOTAL FISH HATCHERY (INCL TRAP/REL)			124,000	0	0	0	0	0	124,000	
TOTAL FISH AND WILDLIFE FACILITIES	1.00	EA	124,000	0	0	0	0	0	124,000	124000.00
TOTAL GOVERNMENT FURNISHED MATERIALS			124,000	0	0	0	0	0	124,000	
TOTAL SHEEP CREEK, OREGON	1.00	MO	431,404	52,084	35,949	39,544	0	8,700	567,679	567679.41

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APPENDIX B

HISTORY OF EXPENDITURES THROUGH 31 JANUARY 1996

APPENDIX B

LOWER SNAKE RIVER FISH AND WILDLIFE
 COMPENSATION PLAN
 HISTORY OF EXPENDITURES THROUGH
 31 JANUARY 1996 ^{1/}

Fiscal Year	Expenditures (\$1,000)
1977	0
1978	1,558
1979	6,480
1980	3,664
1981	15,031
1982	19,254
1983	19,706
1984	25,024
1985	12,990
1986	15,097
1987	16,304
1988	5,391
1989	8,568
1990	9,877
1991	28,988
1992	7,094
1993	4,985
1994	4,995
1995	8,566
Subtotal, through FY 95	\$213,572
1996 (1 Oct 95 -31 Jan 96)	2,124
Total through 31 Jan 96	\$215,696

^{1/} Post-authorization expenditures.