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**EXHIBIT L**  
**COST ESTIMATE SUMMARY**  
**(REVISED)**

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**COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT (CRCIP)  
CURRENT WORKING ESTIMATE NARRATIVE  
COLUMBIA RIVER, OR/WA**

**Project Description**

The Columbia River Channel Improvement Project (CRCIP) would consist of deepening the existing navigation channel from RM 3.0 to RM 106.5 on the Columbia River, and RM 0.0 to RM 11.6 on the Willamette River. The channel would generally be deepened from the current authorized depth of 40 feet to a new depth of 43 feet. The typical width of the navigation channel would be 600 feet, the same as the existing channel. The Willamette River dredging has been deferred until the Portland Harbor Superfund Remediation Plan is complete. At that time, the Willamette River cost estimate will be revised as appropriate and so is not included in this current working estimate. About 19.5 mcy of sand and 0.5 mcy of rock or rock-like materials would be dredged from the Columbia River, including new work and 40-foot maintenance material. Hopper, pipeline and clamshell excavation methods would be employed. Hopper dredge disposal would be at a temporary sump location adjacent to the navigation channel near CRM 18 to 20, and other flow lane sites in the Columbia River. Disposal for pipeline and clamshell dredging would be at existing and new upland disposal areas, and at three shoreline disposal sites. Three mitigation areas and eight environmental restoration projects would be constructed. The current working estimate covers only new deepening work. No operations and maintenance dredging costs are included in the current working estimate.

Estimates have been prepared for two different plans, the sponsors' plan (the proposed plan) and the least cost plan (Corps' Plan). These plans differ primarily in disposal locations. The sponsors' plan proposes the use of several upland disposal areas that would be more expensive than those included in the least cost plan, because the sponsors' plan sites are a greater distance from the river reaches to be dredged. The sponsors have proposed these more distant sites because they utilize properties already owned by the ports, avoid some environmental impacts (wetlands), and allow some beneficial reuse of dredged materials. The estimate for the proposed plan has been authorized for implementation. The sponsors have agreed to pay the difference between the proposed plan and the Corps' plan. The difference between the two plans is discussed below.

The Corps' plan uses almost all of the same disposal sites as the proposed plan. The amount of material going to any given disposal site may differ between the two plans. The proposed plan differs from the Corps' plan by placing dredged sand material from CRM 99 to 104 at Gateway site (W-101), from Oregon Slough RM 0.0 to 1.5 will be disposed at Gateway site (W-101) and CRM 89 to 94 will be disposed at Lonestar site (2.6 miles from the river). These disposal sites

are a greater distance from the Columbia River than similar disposal sites in the Corps' plan for subject river miles.

For the Corps' plan the dredged sand material from CRM 101 to 104 would have been disposed at Hayden Island site (O-105), CRM 99 to 100 would have been disposed at Fazio Sand and Gravel (W-97.1), Oregon Slough RM 0.0 to 1.5 would have been disposed at Hayden Island (O-105) and CRM 89 to 94 would have been disposed at Scappoose Dairy site (0.75 mi from the river).

**Basis of Design**

The basis for the design of the improvement project is given in the 1999 Final Integrated Feasibility Report and Environmental Impact Statement (1999 Final IFR/EIS). Major changes in the cost estimates include: deferral of the Willamette River portion of the project; beneficial use of dredge materials previously slated for ocean disposal to create ecosystem restoration features at Lois Island embayment and Miller-Pillar; addition of five more ecosystem restoration projects; reduction in the quantity of material to be dredged; increased production rate for pipeline dredging having bank heights of less than 4 feet; and reduction in the amount of water control structures at the Shillapoo Lake ecosystem restoration project

**Estimate References**

ER 1110-2-1302 (Civil Works Cost Engineering), APPENDIX G (Preparation of Dredge Cost Estimates)

EP 1110-1-8 (Construction Equipment Ownership and Operating Expense Schedule)

**Construction Schedule**

The proposed construction schedule is given below. Dredging is assumed to begin on June 1 each year. This schedule indicates that the proposed work can be accomplished within the 2-year construction time frame.

DREDGING REACH	VOLUME	DREDGING TYPE	PLANT
		<u>YEAR 1</u>	
U/S of CRM 78	700,000	O&M	Hopper
CRM 42-78	6,000,000	Construction + O&M	2 - 30" pipelines
CRM 29-78	2,700,000	Construction + O&M	Hopper
CRM 3-29	6,000,000	Construction + O&M	2 - Hopper
CRM 63-67	240,000	Construction (Rock)	Clamshell

Columbia	51,000	Construction (Basalt)	Drill & Blast
CRM 101-106	203,000	Construction (Rock)	Clamshell
<u>YEAR 2</u>			
U/S of CRM 78	4,300,000	Construction + O&M	2 - 30" pipelines
D/S of CRM 78	3,000,000	O&M	30" pipeline
D/S of CRM 78	4,000,000	O&M	Hopper
CRM 101-107	125,000	Construction	Clamshell

Although the construction of the Willamette River has been deferred, the costs for the Willamette River have been escalated and are shown in the total project summary sheets.

a. Overtime. Overtime would be necessary for the hopper, pipeline, and clamshell dredging. The dredges would be operating 24 hours a day 7 days a week. There would be three shifts a day for each dredge. The operation for drilling and shooting of rock would be 10 hours a day, 6 days a week.

b. Construction Windows. State and federal resource agency concerns about fishery resources have resulted in designated in-water work periods in the Columbia River for certain activities. The clamshell, pipeline and hopper dredging windows are year-round. The in-water work period for blasting in the Columbia River would run from November through February. These blasting windows would allow drilling and blasting operations to be conducted intermittently until completed. The Willamette River dredging has been delayed until the Portland Harbor Remediation Plan is complete. At that time the Willamette River cost estimate will be revised as appropriate.

c. Acquisition Plan. It is anticipated that construction would require two years to complete. Three major dredging contracts were planned, one for removal of common materials (primarily sand) by hopper, another for removal of common material by pipeline, and one for rock excavation on the Columbia River. Upland disposal site improvements would be accomplished during the dredging contracts. Separate contracts would be used to construct the mitigation and ecosystem restoration areas. The sponsors are responsible for dredging the berths at the ports. Utility owners would be responsible for accomplishing the relocations of their underwater utilities if required, however, no utility relocations are required for the Columbia River deepening.

### **Subcontracting Plan**

No subcontracting is anticipated in any of the contracts.

### **General Estimating Information**

a. Determination of Types of Dredging. The types of dredging equipment assumed to be used, by river mile, were determined by Corps design personnel for the least cost plan, and by sponsors' personnel for the sponsors plan. Factors considered included economics (D2M2 program), river conditions, distance to disposal areas, past practice, judgment and environmental considerations.

b. Estimating by River Mile. The cost of the dredging was estimated river mile to adjacent river mile, in order to accurately capture costs of varying quantities, depths of cut, distances to disposal sites, and types of dredging equipment.

c. Sources of Dredging Information. Sources of dredging expertise consulted in the preparation of the estimates include: John Chew of New York District, Kim Callan of Walla Walla District, Bob Parry of Seattle District, Manson, Great Lakes, Dutra, Corps personnel from San Francisco and Los Angeles Districts, and Ogden Beeman & Associates, Inc., and representatives of the sponsor ports. There have been no large dredging contracts on the Columbia River in recent years except for hopper dredging. However, the historical dredging information was modified to account for the conditions anticipated on the Columbia River including river flows, traffic, current and congestion in the work area. In addition, a technical panel has reviewed the cost estimate and has determined that the assumptions and methodology used for these estimates appear to be reasonable.

d. Sources of Historical Data. Previous projects used as sources of historical data include: Coos Bay Channel Deepening, Oakland Harbor Channel Deepening, Los Angeles Harbor Deepening, and the Kill Van Kull Channel Deepening in New York Harbor. Historical information obtained for these projects included types of equipment used, labor crew makeups, production rates and difficulties encountered that might be similar to those anticipated for CRCDD. Additional information was obtained from modifications to these projects, which included audited monthly equipment costs. Unit costs developed in the estimates were compared to actual costs from these projects to assess reasonableness of the estimate.

e. Hazardous, Toxic and Radioactive Waste (HTRW) Remediation Costs. No specific costs for HTRW remediation were included in the estimates. A waiver was received from higher authority, which stated that HTRW aspects did not need to be considered in the Feasibility phase, but that they must be considered in the Planning, Engineering and Design (PED) phase of the project. Costs for the HTRW explorations and analysis work, to be accomplished during PED, are considered to be included in the estimates as part of the contingencies. HTRW remediation work is expected to be minor in nature, primarily at the upland disposal sites. Therefore associated remediation costs would be relatively small.

f. Site Access. Access to the dredging areas should not be difficult, since these areas have been dredged in the past. Access to the disposal areas should not be difficult, since most of these areas have been used in the past. Access to three of the disposal areas (new upland disposal sites) and mitigation areas must be developed, but would generally not be difficult.

g. Rock Borrow Areas. Rock for the outfalls at the disposal areas would be acquired from commercial quarries. Several quarries up and down the river would be used. A representative quote for the rock materials was obtained from Goble Quarry.

h. Production Rates for New Work Dredging. The new work dredging of sand materials would likely be at a rate comparable to maintenance dredging for the existing channel.

i. Equipment/Labor Availability. Hopper, pipeline and clamshell dredge(s) of the appropriate sizes would most likely be available on the West Coast at Seattle, San Francisco or Los Angeles. Drill boats may be mobilized from the east coast (Florida) or assembled from scratch at a fabrication facility on the west coast. Appropriate crewmembers would likely come with the dredge plant.

j. Environmental Concerns. See 1999 Final IFR/EIS and Final SEIS.

k. Contingencies by Feature or Sub-Feature.

1) Construction Contingency. A contingency of 15% was used for the 09 account (hopper, pipeline and rock excavation) to cover uncertainties in all the dredging quantities, and in the unit prices for rock excavation and pipeline dredging in particular. The unit prices for hopper and clamshell dredging are more certain. The range of acceptable crew composition, operating costs, production rates, equipment availability, uncertain weather conditions, ship traffic and material variations are also covered by the construction contingency. A contingency of 25% has been used for the 09 (mitigation) and 06 (ecosystem restoration) since there are more uncertainty in the quantities and unit prices.

2) Contingencies for Functional Accounts. The contingency included in the 01 account cost is 5% for the disposal and mitigation sites and 6% for the ecosystem restoration. Contingencies of 10% were included in the 30 and 31 accounts to cover uncertainties in engineering, design and construction management related to 09 accounts discussed above.

l. Effective Dates for Labor, Equipment, Material Pricing. The effective date for all pricing is October 2001.

## **Quantities**

a. Computation of Common Dredging Quantities. The quantities of common excavation were computed based on channel sounding data obtained primarily in the December 2001/January 2002, and on the maximum dredging pay depth (48 ft). Standard dredge quantity software was used to generate the quantities. The quantities of rock excavation were deducted from the appropriate river reaches.

- b. Computation of Rock Excavation Quantities. Quantities of potential rock excavation on the Columbia River were computed initially on historical rock locations and the summation of condition surveys conducted between 1982 and 1997. The deepest depth record was assumed to be top of rock. In October 1999 geophysical exploration was conducted on potential rock areas including side scan sonar and sub-bottom profiling. Then in the summer of 2000 jet probing was conducted to better define rock areas. This was followed with core drilling from a barge and clamshell excavation to better define rock materials and quantities. Rock would be excavated several feet below the proposed new authorized depth of 43 feet in order to minimize damage to dredges during future O&M dredging operations.

Quantities of the conglomerate rock to be excavated at Slaughter's Bar, Lower Vancouver Bar and Vancouver Turning Basin, all of which are on the Columbia River, were based on a depth of 48 feet. For basalt to be blasted and removed in the Columbia River, quantities were computed to a depth of 50 feet. Only volumes inside the contour for the required excavation depth were included in the rock quantities. Quantities outside the excavation contour (50 feet depending on location) were not included.

c. Combination of O&M and New Work Quantities. Both new work and O&M quantities would be dredged under these contracts, but only the new work costs were included in the estimates. Combining these materials would lead to greater efficiency than would be accomplished by dredging the O&M materials and then the new work materials. Dredging unit costs were estimated in Cost Engineering Dredge Estimating Program (CEDEP) using the combined new work and O&M quantities, and then the new work quantities were input into Micro-computer Aided Cost Engineering System (MCACES), along with the unit prices generated in CEDEP.

d. Quantities for Dredging of Sand. Sand quantities were based on excavation to 48 feet. For purposes of this estimate, all of this quantity will probably be dredged, since a contractor might choose to maximize his pay amount by dredging all paid yardage. For hopper dredging, non-pay yardage was determined based on historical data from sand wave dredging accomplished by the dredge Newport in recent years. See paragraph above for planned overdepth in rock.

e. Quantities Along Channel Slopes (in Sand). For each river mile the total quantity of sand to be dredged included sand material above 1V to 3H side slopes. It was assumed much of this sand material would slough down the slope during deepening of the channel and be removed by the dredges.

### **Cost Estimating Dredge Estimating Program (CEDEP)**

a. General. CEDEP was used to prepare the dredging estimates for all hopper, pipeline and clamshell dredging, including mobilization and demobilization of the dredges and associated



equipment. The rock drilling and blasting, upland disposal site development, and mitigation area estimates were prepared using MCACES. All overhead, profit and bond were computed in MCACES, not in CEDEP. The Excel version of CEDEP was used for the hopper, pipeline and clamshell dredging estimates.

b. Dredging Areas. Areas to be dredged were provided by Cartography, by river mile. The areas to be dredged were used in CEDEP with the excavation quantities to determine the depth of cut, which has a very important effect on dredging costs.

### **Inputs to CEDEP**

a. Density of Sand. All non-rock was assumed to be loosely deposited sand weighing about 1,900 grams per liter. A material factor of 1.0 was used for this loose sand material.

b. Crew Makeups. Crew makeups were modified in CEDEP, where necessary, using recent experience on large pipeline, clamshell and hopper dredging projects along the West and East Coasts.

c. Equipment Rates. CEDEP equipment rates were used in some cases, while audited equipment rates from modifications on recent dredging contracts were used in other cases.

d. Labor Rates. Labor rates were updated using recent Davis-Bacon information. A workman's compensation rate of 30% was used in CEDEP and MCACES dredging labor. This reflects longshoreman's insurance rates per review of modification estimates and discussions with SAIF personnel. Overtime percentages were computed in CEDEP and MCACES as appropriate.

e. Hydrosurveys. Hydrosurvey costs were included in CEDEP, including a survey boat and crew. Costs for pre-dredge surveys, surveys during construction and post-dredge surveys were covered.

f. Permits. No permits need to be obtained by the government because all environmental clearances would be covered by the EIS. Thus no costs associated with permits would be incurred.

g. Fuel Price. A fuel price of \$0.90 per gallon for diesel fuel was used in the CEDEP program. This is the estimated price for diesel fuel in the Portland area when provided in bulk to a marine customer for the anticipated construction period.

h. Interest Rate, Economic Index. A cost-of-money rate of 5.5% per year was used. This was the rate in June 2001. An economic index of 6012, which reflects 2001 costs, was used.

i. Bank Factor. The quantity for a given reach of river in combination with area to be dredged yields a bank height, which is converted to a bank factor in CEDEP. This factor varies for the different dredge types. The greater the bank factor, the more efficient the dredging operation is, up to a maximum point where no further improvement in efficiency results.

j. Effective Working Time (EWT). Dredges would typically work 7 days a week, 24 hours a day, due to the high capital expense associated with the purchase of these machines. However, maintenance activities would reduce the actual working time somewhat, based on the type of dredge, types of material being excavated, and the condition of the equipment. An EWT percentage of 80% was used for hopper and 65% for pipeline dredging based on historical performance. For basalt rock excavation the EWT was set at 50%, due to high maintenance requirements resulting for the hardness of the rock material. The nonuniform nature of the rock material also affects the EWT. The EWT for excavating the conglomerate material using a clamshell dredge is about 52%.

### **Mobilization (Mob), Demobilization (Demob) and Preparatory Work**

This would vary for the different contracts, depending on how the work is broken out. CEDEP has been used to compute mob and demob for each dredge contract.

a. Initial Mob and Demob.

1) Sand Dredging Contracts. This would consist of transporting three 30' pipeline dredges, one D-8 dozer, 966 loader, 70-ton crane, ramp barge and all associated equipment, and two medium sized hopper dredges. It is anticipated that this equipment would be available from various locations on the West Coast.

2) Rock Excavation Contract. This would consist of transporting 2 drill boats, one 21 CY (13 CY in rock) clamshell dredge, three 2,000 CY flat-topped barges, one 1,500 HP tug and associated equipment.

a) Mobilization and Demobilization - Drill Boats. This has been calculated in detail for the drill boats in the backup. It is anticipated that 2 drill boats would be mobilized. Mobilization was assumed to occur from Florida. Demobilization would be back to Florida. The drill boats might be assembled from scratch at some facility on the West Coast. The cost of assembling drill boats on the West Coast would be roughly the same as mobilizing-demobilizing existing drill boats from the east coast.

A full crew, and 100% ownership and operational costs, were assumed for preparation and set-up of the drill boats. For transfer of the equipment, 25% of crew and operational costs were used, along with tug costs.

A tank barge with 60,000 lb capacity would be mobed to supply pourvex. Pourvex is the liquid explosive that would be used to blast basalt.

Initial mobilization was assumed to be to the Warrior Rock reach on the Columbia River. Interim mobilizations were assumed to the remaining rock excavation sites. Demobilization was assumed from Warrior Rock reach on the Columbia River.

b) Mobilization and Demobilization - Off-Loading Equipment. Off-loading equipment mob/demob has also been computed in the backup. Equipment included in this activity is: 966 loader, 100-ton crane, and 16 CY rock skiff, three dump trucks and D6 cat. Equipment requirements would vary between water based off-loading and land based off-loading. Initial and interim mobs between sites were computed.

b. Interim Mobs and Demobs. These were the mobs/demobs from one reach of the river to another. There were four mob/demobs anticipated for the clamshell dredge (for rock excavation) and one for the hopper dredges. See the MCACES estimate for a listing of these mob/demobs, along with mileages from one reach to the next.

### **Hopper Dredging**

The West Coast Team estimated hopper dredging. Hopper dredging is assumed for use in the lower 30 miles of the Columbia River, where rough ocean conditions predominate, and at several other locations along the Columbia Rivers where it is the more cost effective method. Disposal for hopper dredging would be accomplished at one Lois Island site and at eleven flowlane sites in the Columbia Rivers. See the drawings in the main report, section 4 for locations of disposal areas. Two medium-sized hopper dredges were assumed. The Padre Island, owned by NATCO, was used as the reference dredge. It has a capacity of 3,800 CY. Cycle times and production rates were computed based on recent projects on which the Padre Island was utilized. Hopper dredging would be performed primarily in sand waves on the channel bottom.

### **Pipeline Dredging**

a. Determination of Pipeline Dredge Sizes. Pipeline dredge sizes were chosen as follows:

- 1) Various pipeline diameters (18", 24" and 30") were checked to obtain the least cost by river mile, but in the final analysis three 30-inch dredges were chosen in order to accomplish the work within the two-year construction contract period.
- 2) River miles were grouped together by disposal area.

- 3) Assured the dredging times were consistent with the project schedule, which calls for initial construction to be completed in 2 years.

It was decided to assume that all the new work pipeline dredging would be accomplished by three 30-inch pipeline dredges, working over two years. The first year, these three dredges would remove 7.7 mcy from downstream of RM 78. The second year, the three 30-inch dredges would remove 6.7 mcy from upstream from RM 78.

b. Determination of Pipeline Lengths. Pipeline lengths were determined using maps generated by Cartography. Floating pipeline was assumed at a maximum of 2,500 LF, since it is the most expensive type of pipe, and this is the maximum amount of this type of pipe that is normally mobilized on a job. All other pipe traversing water was submerged. Shore pipeline lengths were scaled off the maps. Average pipeline lengths were computed based on half the RM to be dredged, half the disposal area length, and the additional distance between the RM to be dredged and disposal area at their closest approach. A length of “Equivalent Additional Pipeline” was added to all pipeline estimates, in the amount of 1,000 feet. This covers any vertical height of pumping that might be required, as well as any abnormal pipeline losses.

c. Production Rates. Production rates for pipeline dredging were computed in CEDEP based on material type, bank height, pipeline lengths (distance to disposal areas), pumping horsepower, type of cutterhead, operator experience, effective working time, and cleanup time required. Standard production charts account for the above-listed data, and were used in CEDEP to compute production rates. Computed production rates are then compared to historical rates, as practicable, to assure reasonableness and are modified where appropriate. For the river miles (approximately 67% of the pipeline dredging) where the average bank height was less than 4 feet, the production rate (cy/hr) for the pipeline was based on the advancement rate of 50 ft/hr (30-in pipeline). An Excel spreadsheet was developed to calculate the production rate by reach based on the area to be dredged, length of the dredge area, width of the cutter head swing (300 ft), and the advancement rate of 50 ft/hr. The spreadsheet for each plan is located in the backup material.

d. Boosters. Use of boosters is sometimes necessary where pumping distances are high. The use of a booster leads to about a 15% loss in pumping efficiency per booster for the pipeline dredge, and can also be a disadvantage due to the maintenance they require. Occasionally their use is cost-effective for long pumping distances or higher heads. CEDEP runs were performed with and without boosters to determine if booster use would yield lower unit costs. Boosters were determined to be cost effective at several river miles on the sponsor plan.

e. Pipeline Dredge Labor Crews. A pipeline dredging crew comprised of 21 personnel, 22 when a booster was required, was used in CEDEP. This covers all personnel required for three 8-hour shifts per day on the dredge.

f. Pipeline Dredge Shore Crew. The shore crew is composed of personnel required at the disposal site while the pipeline is dredging. This crew is comprised of: outside equipment operator foreman, two outside equipment operators, D-8L dozer with blade and winch, 966 front end loader, hydraulic crane (4wd & 45 ton), barge with ramp, small light plant, and three deckhands.

g. Pump Horsepower. Prime and secondary horsepower associated with the pumps on a 30-inch dredge were 9,000 and 3,310 respectively. Dredge pump horsepower relates to production rates and fuel usage.

h. Modified Dredge Areas. At a few RMs, computed bank height was too low for CEDEP to accomplish an estimate using a 30-inch dredge. At these RMs, the bank height was increased slightly to obtain output from CEDEP.

i. Variable Parameters in CEDEP. Key parameters that changed from RM to RM were: quantities, areas to be dredged, bank height and pipeline lengths. All other parameters in the pipeline CEDEP runs remained constant from RM to RM.

## **Rock Excavation**

a. General. More details on the development of the rock excavation estimate are available in the backup material. .

b. Mechanical Dredging. Removal of conglomerate rock in the Columbia River at RMs 63 to 67 and 101 to 106 would be accomplished using a clamshell dredge.

c. Blasting. Basalt in the Columbia River at RM 87 would be broken up using blasting, with removal by a clamshell.

d. Dredge Type and Size. Discussions with industry personnel indicate that a 13 CY (rock) clamshell bucket would be appropriate for digging shot basalt in the Columbia River.

e. EWT for Clamshell Dredge. Based on historical record for previous rock excavation projects, an EWT of 50% was adopted for the removal of blasted basalt. An EWT of 52% was adopted for dredging of the conglomerate materials at several other locations. The previous projects examined included: Coos Bay Channel Deepening; John Day Drawdown; Cargill Grain Loading Facility, Rock Dredging - 1/28 to 3/6/97; and SD & Lumber Rock Dredging - 2/25 to 3/2/95; and Kill Van Kull in New York.

f. Swell Factors. The swell factors used for rock are:

- 1) Basalt: 1.50
- 2) Slaughters Bar, Vancouver Turning Basin and Lower Vancouver Turning Basin Conglomerate: 1.30

Swell of the blasted basalt was computed based on the sum of the drill plus sub-drill depths. Sub-drilling (and hence the blasting) would occur to depths deeper than the design excavation depths. Thus, swelling would occur in both the rock above the design excavation depth, but also to a depth of rock (the sub-drill depth) below the design excavation depth. This additional swelling, and requisite additional excavation, is computed in the backup and accounted for in the basalt excavation estimate.

g. Disposal of Rock Materials. Disposal of rock materials would be accomplished at the following areas:

- 1) Slaughters Bar material would go to O-64.8.
- 2) Materials from areas above and including Warrior Rock would go to Austin Point (W86.5).
- 3) The materials from Vancouver Bar and Turning Basin would go to Hayden Island (O-105).

Materials would be hauled on flat deck steel barges towed by 1500 hp tugs. Materials would be off-loaded at the disposal sites. A Cat 966 front-end loader situated on the barge, and a 100-ton crane with a 16 CY skip based on land were assumed for off-loading the rock. Rock would be unloaded from the skip into dump trucks, which would haul materials to the actual disposal site. A D-6 dozer would spread the materials at the disposal site. The number of barges needed to allow for continuous excavation varies from site to site, as computed in the backup. CEDEP was used to assist in the computations. Fill factors, cycle times, production rates, and hauling times for each disposal site were computed in the backup and entered into CEDEP.

h. Blasting. Blasting would be used to loosen basalt materials. Drilling would be accomplished using drill boats similar to those owned by Great Lakes Dredge and Dock, or equivalent. These rigs were used recently on a project (Kill Van Kull) in New York that involved in-water blasting. The drill boats were about 150' by 120' and each has 3 drills on board. A crew of about 16 people would man each drill boat. Drilling and shooting would only occur during daylight hours, because of safety concerns expressed by the Coast Guard and OSHA. Water velocities, 4 to 7 fps in the Columbia, were similar to those experienced on the New York project, so they should be tolerable. Drilling would be accomplished on a 10' x 10' pattern, using 4.5-inch diameter holes, which are 8' to 10' in depth. Steve O'Hara of Great Lakes has indicated that the daily direct cost of one drill boat, including equipment and labor, is \$17,200/day at 1997 price level. This was also confirmed by audit information from the New York harbor deepening project.

1) Blasting Materials and Supplies. The backup has calculations of the quantities and costs of the explosives, datacord, blasting caps, starters, and boosters anticipated to be used at the various rock excavation sites.

2) Drilling Production. Based on production levels achieved at New York Harbor, it is anticipated that each drill boat would drill 35 holes per day. These holes would be drilled during one 10-hour shift per day. Drilling must be accomplished during daylight hours in the winter, therefore no more than a 10-hour shift would be used.

## **Upland Disposal Areas**

a. General. Designs for the upland disposal areas were received from Parsons Brinkerhoff contracted through the sponsors. Designs for the disposal areas include several elements, such as dikes, spillway weirs, outfall pipes, pumping systems, utility relocations, clearing and grubbing, and access work. The containment dikes would be constructed of previously dredged sands. Ditches would be provided within the disposal areas as required to facilitate adequate drainage. Clearing and grubbing would be light.

b. Containment Dikes. Assume dike construction crew would work 8 hours per day, 5 days per week. A D-8 dozer would be used for constructing dikes. The dike crew production rate is 360 LCY/hr.

c. Weirs. Quotes for weirs (spillways) were procured from Oregon Culvert of Tualatin, OR, (503) 692-0410. Weirs would cost \$7,410 each, FOB jobsite, including a riser and 2' stub for each weir. Discharge pipe would cost \$53.58 per linear foot, FOB jobsite for 48-inch diameter 12-gage pipe. Bands, gaskets and bolts for the discharge pipe would cost \$5.13 per linear foot of pipe, FOB jobsite. About 6 hours would be required to install each weir. Rock (12-inch minus) would be placed at the end of the outfall pipes to dissipate energy from drainage water. The cost of the rock (crushed & riprap) would be \$22.80/cy, FOB jobsite, as quoted by Goble Quarry, (503) 556-9049. This is considered a typical outfall rock price for various locations along the river.

d. Return Water Pumpout Systems. Pumpout systems would be required at up to three disposal sites, and would generally be comprised of 40,000 gpm pumps at 20 feet of total head, with discharge lines. Pumping costs cover rental and operation/maintenance. Costs for a settling pond, manifold and discharge pipe were also included.

## **Mitigation Areas**

Three mitigation areas are proposed. These measures are intended to improve wildlife habitat in several areas, as mitigation for construction of the upland disposal areas. Measures proposed include excavation of wetlands, dike construction, dike breaching, blockage of ditches, site tillage, irrigation, placement of snags and root wads, planting of riparian vegetation, clearing of

blackberry thickets, removal of fencing, construction of water control structures, pumping, and construction of carp excluders.

### **Ecosystem Restoration**

This consists of establishing wetlands in the Shillipoo Lake area; replacing several tide gates on the lower Columbia River at select locations; excavating channels through spits at the upper end of Walker-Lord and Hump-Fisher Islands; Tenasillahe Island Phase 1 interim restoration (replacing two tide box structures, installing two culverts with tide gates and fish friendly inlets, installing two additional inlet culverts, and two additional outlet culverts); Tenasillahe Island Phase 2 interim restoration (relocating whitetail deer); Tenasillahe Island Phase 3 long-term restoration breaching the levee at 7 locations; treatment of Purple Loosestrife in lower Columbia River estuary; construction of timber pile groins at Miller-Pillar; and dredging of Bachelor Slough.

Developing the wetlands at Shillapoo Lake consists of constructing dikes and channels for areas or cells and installation of water control structures to regulate flow between the individual cells. The new aluminum tide gates vary in diameter from 24 to 72 inches and have a manually operated fish slide gate attached for juvenile fish passage as needed. One or more new tide gates are to be installed at Deep River (RM 20), Grizzly Slough (RM 28), Warren Creek (RM 28), Tide Creek (RM 77), and Burris Creek (RM 81). Construction of the channels at the upper end of Walker-Lord and Hump-Fisher Islands would allow Columbia River flow into the embayments adjacent to the islands thus improving circulation and lowering water temperature.

### **Utilities Replacement**

Utility owners would be responsible for relocation of utilities affected by dredging and disposal operations. The costs of utility relocations are considered in the economic analysis, but are not included in the estimates because the utility owner must bear these costs, not the Federal Government or Sponsor.

Columbia River. Existing utilities crossing the Columbia River (RM 3.0 to RM 106.5) were investigated and verified to determine impacts from lowering the channel to a depth of 43 feet (48-foot depth for maintenance). The verification process included correspondence with the utility company/U.S. Coast Guard that would have utility lines that are potentially impacted by lowering the channel; review of drawings; and site visits. Based on this process, there are no utilities between RM 3.0 and RM 106.5 that require removal or relocation on the Columbia River.

### **Berth Dredging**



Several of the container, wheat, corn and barley exporting facilities must be deepened. These costs were developed by the sponsor and are not part of the federal cost-sharing equation but are included in the total project costs for economic analysis.

### **Use of MCACES**

a. General. CEDEP results (quantities and unit prices for hopper, pipeline and clamshell dredging) were entered into MCACES in a summary manner. Portions of the BCE update were directly estimated in MCACES, including rock excavation, upland disposal site construction, mitigation areas, ecosystem restoration, utilities relocations, field office overhead, home office overhead, profit and bond. No land-based positioning equipment was included in the MCACES, because a ship-based global positioning system would be used for this purpose.

b. Overhead, Profit and Bond. Field office overhead (FOOH) costs include: insurance costs, project superintendent (and/or manager), project engineer, clerical staff, project trailer, sanitary, project sign, telephone, pickups, quality control, environmental protection, and other miscellaneous items. Home office overhead (HOOH) was input as a “rule of thumb” percentage for this type and size of project. A HOOH percentage of 4% was used since all contracts would likely be over \$500,000 in value. Profit was computed using the weighted guidelines sheet in MCACES. This project is not considered very risky, so the profit percentage is relatively low. Bond costs were computed using the built-in table in MCACES.

### **Functional Costs**

The Task and/or Project Managers provided Functional costs associated with this work as follows:

a. 01 Account - Lands and Damages:

1) Right-of-Way Acreage: This is the land required for access to the disposal sites.

2) Disposal Site Acreage: This is the land required for the disposal sites.

b. 30 Account - Planning, Engineering and Design:

1) Plans and Specifications: This item covers preparing plans and specifications, District review, technical review, contract advertisement and award activities.

2) Engineering During Construction: This item consists of Planning and Engineering Branch support to Construction Branch during construction and participation in the prefinal and final inspections of the contracts.


c. 31 Account - Construction Management: This account covers construction management for the all contracts.

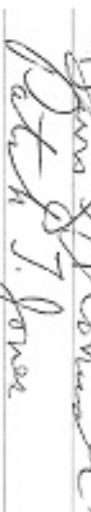
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\*\*\*\*\*COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT TOTAL COST SUMMARY\*\*\*\*\*

PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - CME UPDATE CORPS PLAN		DISTRICT: PORTLAND		P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION		1-04-02										
LOCATION: COLUMBIA RIVER, ORWA																
CURRENT MCACES ESTIMATE PREPARED IN: 02-02		AUTHORIZ./BUDGET YEAR: 2000		EFFECT. PRICING LEVEL: 02/02		FULLY FUNDED ESTIMATE										
EFFECTIVE PRICING LEVEL: 02-02																
ACCOUNT NUMBER	FEATURE DESCRIPTION	COST (\$K)	QNTG	CNTG (%)	TOTAL (\$K)	OMB (%)	COST (\$K)	QNTG	CNTG (%)	TOTAL (\$K)	FEATURE MID PT	OMB (%)	COST (\$K)	QNTG	CNTG (%)	FULL (\$K)
08----	COLUMBIA R. CHANNELS AND CANALS	56,756	8,557	15%	65,313	0.0%	56,756	8,557	15%	65,313			63,385	9,555	15%	72,941
08----	WILLAMETTE R. CHANNELS AND CANALS	17,986	2,880	16%	20,876	0.0%	17,986	2,880	16%	20,876			25,989	4,158	19%	30,147
08----	ENVIRONMENTAL RESTORATION	18,030	4,507	25%	22,537	0.0%	18,030	4,507	25%	22,537			20,137	5,034	22%	25,172
	TOTAL CONSTRUCTION COSTS <----->	92,784	15,944	17%	108,728	0.0%	92,784	15,944	17%	108,728			109,511	18,748	17%	128,259
01----	LANDS & DAMAGES (Disposal & Mitigation)	16,574	862	5%	17,436	0.0%	16,574	862	5%	17,436			17,627	918	5%	18,542
01----	LANDS & DAMAGES (Envt. Restoration)	2,500	160	6%	2,660	0.0%	2,500	160	6%	2,660			2,742	179	7%	2,921
30----	CR ENGINEERING & DESIGN	2,097	210	10%	2,307	0.0%	2,097	210	10%	2,307			2,287	229	10%	2,518
30----	CR ENGINEERING DURING CONSTRUCTION	319	32	10%	351	0.0%	319	32	10%	351			383	38	11%	399
30----	CR MONITORING & EVALUATION (GNF)	9,259	926	10%	10,185	0.0%	9,259	926	10%	10,185	Jan-06	13.4%	10,500	1,050	10%	11,550
30----	CR MONITORING & EVALUATION (Envt. Restoration)	700	70	10%	770	0.0%	700	70	10%	770	Jan-06	13.4%	794	79	10%	873
30----	WR ENGINEERING AND DESIGN	392	39	10%	431	0.0%	392	39	10%	431			557	56	13%	612
30----	WR ENGINEERING DURING CONSTRUCTION	1,080	108	10%	1,188	0.0%	1,080	108	10%	1,188			1,556	156	13%	1,711
31----	CR CONSTRUCTION MANAGEMENT	7,479	748	10%	8,226	0.0%	7,479	748	10%	8,226			8,352	834	10%	9,186
31----	WR CONSTRUCTION MANAGEMENT	506	51	10%	557	0.0%	506	51	10%	557			729	73	13%	802
	TOTAL COST <----->	133,639	19,149	14%	152,838	0.0%	133,639	19,149	14%	152,838			155,017	22,355	15%	177,371
	UTILITY OWNER COST FOR UTILITY RELOCATIONS	11,948	1,195	10%	13,143		11,948	1,195	10%	13,143	Nov-12	42.0%	16,906	1,697	13%	18,603
	NON-FEDERAL DREDGE COST TO BERTHS	1,365	0	0%	1,365		1,365	0	0%	1,365			1,697	0	0%	1,697
	TOTAL COST <----->	147,003	20,344	14%	167,347	0.0%	147,003	20,344	14%	167,347			173,690	24,051	14%	197,731

APPROVED

 CHIEF, ENGINEERING AND CONSTRUCTION DIVISION

 CHIEF, PLANNING, PROGRAMS AND PROJECT MANAGEMENT DIVISION

CHIEF, COST ENGINEERING SECTION

Original Approval Date: JAN 14 2003 / Errata approval date: FEB 11 2003

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****COLUMBIA RIVER COST SUMMARY****										PAGE 1 OF 1				
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - CWE UPDATE CORPS PLAN					DISTRICT: PORTLAND					1-Oct-02				
LOCATION: COLUMBIA RIVER, OR/WA					P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION									
CURRENT MCACES ESTIMATE PREPARED IN: Oct-02					AUTHORIZ./BUDGET YEAR: 2000					FULLY FUNDED ESTIMATE				
EFFECTIVE PRICING LEVEL: Oct-02					EFFECT. PRICING LEVEL: Oct 02									
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)
09- - -	COLUMBIA R. CHANNELS AND CANALS	56,756	8,557	15%	65,313	0.0%	56,756	8,557	65,313			63,385	9,555	72,941
06- - -	ENVIRONMENTAL RESTORATION	18,030	4,507	25%	22,537	0.0%	18,030	4,507	22,537			20,137	5,034	25,172
	TOTAL CONSTRUCTION COSTS =====>	74,786	13,065	17%	87,850	0.0%	74,786	13,065	87,850			83,522	14,590	98,112
01 - - -	LANDS & DAMAGES (Disposal & Mitigation)	16,574	862	5%	17,436	0.0%	16,574	862	17,436			17,627	916	18,542
01 - - -	LANDS & DAMAGES (Envir. Restoration)	2,500	160	6%	2,660	0.0%	2,500	160	2,660			2,770	206	2,975
30 - - -	CR ENGINEERING & DESIGN	2,097	210	10%	2,307	0.0%	2,097	210	2,307			2,287	229	2,516
30 - - -	CR ENGINEERING DURING CONSTRUCTION	319	32	10%	351	0.0%	319	32	351			363	36	399
30 - - -	CR MONITORING & EVALUATION (GNF)	9,259	926	10%	10,185	0.0%	9,259	926	10,185	Jan-06	13.4%	10,500	1,050	11,550
30 - - -	CR MONITORING & EVALUATION (Envir. Restoration)	700	70	10%	770	0.0%	700	70	770	Jan-06	13.4%	794	79	873
31 - - -	CR CONSTRUCTION MANAGEMENT	7,479	748	10%	8,226	0.0%	7,479	748	8,226			8,352	834	9,187
TOTAL COST =====>		113,713	16,072	14%	129,785	0.0%	113,713	16,072	129,785		11.1%	126,215	17,939	144,155
UTILITY OWNER COST FOR UTILITY RELOCATIONS		0	0	0%	0		0	0	0			0	0	0
NON-FEDERAL DREDGE COST TO BERTHS		843		0%	843		843	0	843	Jun-05	11.7%	942	0	942
TOTAL COST =====>		114,556	16,072	14%	130,628	0.0%	114,556	16,072	130,628		11.1%	127,156	17,939	145,097

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****COLUMBIA RIVER COST SUMMARY OF CONTRACTS INCLUDED IN BCR****											PAGE 1 OF 1			
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - CWE UPDATE CORPS PLAN					DISTRICT: PORTLAND					1-Oct-02				
LOCATION: COLUMBIA RIVER, OR/WA					P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION									
CURRENT MCACES ESTIMATE PREPARED IN: Oct-02					AUTHORIZ./BUDGET YEAR: 2000				FULLY FUNDED ESTIMATE					
EFFECTIVE PRICING LEVEL: Oct-02					EFFECT. PRICING LEVEL: Oct 02									
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)
09- - -	COLUMBIA R. CHANNELS AND CANALS	56,756	8,557	15%	65,313	0.0%	56,756	8,557	65,313			63,385	9,555	72,941
06- - -	ENVIRONMENTAL RESTORATION	10,468	2,617	25%	13,085	0.0%	10,468	2,617	13,085			11,724	2,931	14,655
	TOTAL CONSTRUCTION COSTS =====>	67,224	11,174	17%	78,398	0.0%	67,224	11,174	78,398			75,109	12,486	87,596
01- - -	LANDS & DAMAGES (Disposal & Mitigation)	16,574	862	5%	17,436	0.0%	16,574	862	17,436			17,627	916	18,542
01- - -	LANDS & DAMAGES (Envir. Restoration)	0	0	0%	0	0.0%	0	0	0			0	0	0
30- - -	CR ENGINEERING & DESIGN	1,345	135	10%	1,480	0.0%	1,345	135	1,480			1,436	144	1,579
30- - -	CR ENGINEERING DURING CONSTRUCTION	146	15	10%	161	0.0%	146	15	161			163	16	179
30- - -	CR MONITORING & EVALUATION (GNF)	9,259	926	10%	10,185	0.0%	9,259	926	10,185	Jan-06	13.4%	10,500	1,050	11,550
31- - -	CR CONSTRUCTION MANAGEMENT	6,722	672	10%	7,395	0.0%	6,722	672	7,395			7,511	751	8,262
TOTAL COST =====>		101,270	13,783	14%	115,054	0.0%	101,270	13,783	115,054		11.0%	112,345	15,363	127,708
UTILITY OWNER COST FOR UTILITY RELOCATIONS		0	0	0%	0		0	0	0			0	0	0
NON-FEDERAL DREDGE COST TO BERTHS		843		0%	843		843	0	843	Jun-05	11.7%	942	0	942
TOTAL COST =====>		102,113	13,783	13%	115,897	0.0%	102,113	13,783	115,897		11.0%	113,287	15,363	128,650

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****COLUMBIA RIVER COST SUMMARY OF CONTRACTS NOT INCLUDED IN BCR****											PAGE 1 OF 1				
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - CWE UPDATE CORPS PLAN						DISTRICT: PORTLAND				1-Oct-02					
LOCATION: COLUMBIA RIVER, OR/WA						P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION									
CURRENT MCACES ESTIMATE PREPARED IN: Oct-02						AUTHORIZ./BUDGET YEAR: 2000				FULLY FUNDED ESTIMATE					
EFFECTIVE PRICING LEVEL: Oct-02						EFFECT. PRICING LEVEL: Oct 02									
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)	
6 - - -	ENVIRONMENTAL RESTORATION	7,562	1,890	25%	9,452	0.0%	7,562	1,890	9,452			8,413	2,103	10,517	
	TOTAL CONSTRUCTION COSTS =====>	7,562	1,890	25%	9,452	0.0%	7,562	1,890	9,452			8,413	2,103	10,517	
01 - - -	LANDS AND DAMAGES	2,500	160	6%	2,660	0.0%	2,500	160	2,660			2,770	206	2,975	
30 - - -	ENGINEERING AND DESIGN	752	75	10%	827	0.0%	752	75	827			851	85	937	
30 ---	ENGINEERING DURING CONSTRUCTION	173	17	10%	190	0.0%	173	17	190			200	20	220	
30 - - -	CR MONITORING & EVALUATION (Envir. Restoration)	700	70	10%	770	0.0%	700	70	770	Jan-06	13.4%	794	79	873	
31 - - -	CONSTRUCTION MANAGEMENT	756	76	10%	832	0.0%	756	76	832			841	84	925	
	TOTAL COST =====>	12,443	2,289	18%	14,731	0.0%	12,443	2,289	14,731		11.7%	13,870	2,578	16,448	

**October 2003 Price Level  
Fully Funded Estimate Table S8-1  
Least Cost Disposal Plan (\$1,000)**

	Total
<b>General Navigation Features (GNF)-Cost Shared</b>	
Channel and Turning Basins	\$55,438
Rock	\$19,195
Mitigation Construction	\$477
Contingency	\$12,486
Engineering and Design	\$1,758
Supervision and Administration	\$8,262
Monitoring	\$11,550
<b>Total GNF</b>	<b>\$109,166</b>

**Non-Federal**

Berths	\$942
LERRDs	\$18,542
Utilities (to be paid by the permit applicant)	\$0
	<b>\$19,484</b>

10% GNF = \$10,917 < LERRDs \$18,542 **No Extra 10%**

**GNF**

Federal = 75% GNF =	$\$109,166 \times 0.75$	=	\$81,874.25
Non-Federal = 25%	$\$27,291 + \$19,484$	=	\$46,775.25

**Ecosystem Restoration**

\$16,448

Federal =	65%	=	$\$16,448 \times 0.65$	\$10,690.94
Non-Federal =	35%	=	$\$16,448 \times 0.35$	\$5,756.66

Per Section 210 of WRDA 1996, the Non-Federal cost for ecosystem restoration projects is 35 percent of all construction costs, including LERRDs, and 100 percent of OMRR&R.

<b>Total Federal</b>	<b>\$81,874 + \$10,691</b>	<b>=</b>	<b>\$92,565</b>	
<b>Total Non-Federal</b>	<b>\$46,775 + \$5,757</b>	<b>=</b>	<b>\$52,532</b>	
			<b>\$145,097</b>	\$0.00

**Locally Preferred Disposal Plan (LPP) (\$1,000)**

LLP Cost =	\$147,414	
Federal	\$92,565	NED Cap on Federal Interest
Non-Federal	\$54,849	

Non-Federal	\$54,849
Berths	\$942
Real Estate Already Owned	9649
Cash	\$44,259
State of Washington	\$22,129
State of Oregon	\$22,129

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****WILLAMETTE RIVER COST SUMMARY****										PAGE 1 OF 1				
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - CWE UPDATE CORPS PLAN					DISTRICT: PORTLAND					1-Oct-02				
LOCATION: COLUMBIA RIVER, OR/WA					P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION									
CURRENT MCACES ESTIMATE PREPARED IN: Oct-02					AUTHORIZ./BUDGET YEAR: 2000					FULLY FUNDED ESTIMATE				
EFFECTIVE PRICING LEVEL: Oct-02					EFFECT. PRICING LEVEL: Oct 02									
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)
09- - -	CHANNELS AND CANALS	17,998	2,880	16%	20,878	0.0%	17,998	2,880	20,878	Jun-13	44.4%	25,989	4,158	30,147
	TOTAL CONSTRUCTION COSTS =====>	17,998	2,880	16%	20,878	0.0%	17,998	2,880	20,878		44.4%	25,989	4,158	30,147
01- - -	LANDS AND DAMAGES	0	0	0%	0	0.0%	0	0	0		0.0%	0	0	0
30- - -	ENGINEERING AND DESIGN	392	39	10%	431	0.0%	392	39	431	Dec-12	42.0%	557	56	612
30- - -	ENGINEERING DURING CONSTRUCTION	1,080	108	10%	1,188	0.0%	1,080	108	1,188	Jun-13	44.0%	1,555	156	1,711
31- - -	CONSTRUCTION MANAGEMENT	506	51	10%	557	0.0%	506	51	557	Jun-13	44.0%	729	73	802
	TOTAL COST =====>	19,976	3,077	15%	23,053	0.0%	19,976	3,077	23,053		44.3%	28,830	4,442	33,272
	UTILITY OWNER COST FOR UTILITY RELOCATIONS	11,948	1,195	10%	13,143	0.0%	11,948	1,195	13,143	Nov-12	42.0%	16,966	1,697	18,663
	NONFEDERAL DREDGE COST TO BERTHS	523	0	0%	523	0.0%	523	0	523	Jun-13	44.4%	755	0	755
	TOTAL COSTS	32,447	4,272		36,719		32,447	4,272	36,719			46,551	6,139	52,690



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****COLUMBIA RIVER HOPPER COST SUMMARY****										PAGE 1 OF 1				
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - CWE UPDATE CORPS PLAN					DISTRICT: PORTLAND					1-Oct-02				
LOCATION: COLUMBIA RIVER, OR/WA					P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION									
CURRENT MCACES ESTIMATE PREPARED IN: Oct-02					AUTHORIZ./BUDGET YEAR: 2000					FULLY FUNDED ESTIMATE				
EFFECTIVE PRICING LEVEL: Oct-02					EFFECT. PRICING LEVEL: Oct 02									
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)
09- - -	CHANNELS AND CANALS	9,123	1,368	15%	10,491	0.0%	9,123	1,368	10,491	Jun-05	11.7%	10,190	1,529	11,719
	TOTAL CONSTRUCTION COSTS =====>	9,123	1,368	15%	10,491	0.0%	9,123	1,368	10,491		11.7%	10,190	1,529	11,719
01 - - -	LANDS AND DAMAGES	0	0	0%	0	0.0%	0	0	0		0.0%	0	0	0
30 - - -	ENGINEERING AND DESIGN	200	20	10%	220	0.0%	200	20	220	Dec-03	6.5%	213	21	234
30 - - -	ENGINEERING DURING CONSTRUCTION	36	4	10%	40	0.0%	36	4	40	Jun-05	11.7%	40	4	44
31 - - -	CONSTRUCTION MANAGEMENT	912	91	10%	1,004	0.0%	912	91	1,004	Jun-05	11.7%	1,019	102	1,121
	TOTAL COST =====>	10,271	1,483	14%	11,755	0.0%	10,271	1,483	11,755		11.6%	11,463	1,656	13,118

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****PIPELINE DREDGING COST SUMMARY****										PAGE 1 OF 1				
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - CWE UPDATE CORPS PLAN					DISTRICT: PORTLAND					1-Oct-02				
LOCATION: COLUMBIA RIVER, OR/WA					P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION									
CURRENT MCACES ESTIMATE PREPARED IN: Oct-02					AUTHORIZ./BUDGET YEAR: 2000					FULLY FUNDED ESTIMATE				
EFFECTIVE PRICING LEVEL: Oct-02					EFFECT. PRICING LEVEL: Oct 02									
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)
09- - -	CHANNELS AND CANALS	30,012	4,502	15%	34,514	0.0%	30,012	4,502	34,514	Jun-05	11.7%	33,523	5,029	38,552
	TOTAL CONSTRUCTION COSTS =====>	30,012	4,502	15%	34,514	0.0%	30,012	4,502	34,514		11.7%	33,523	5,029	38,552
01 - - -	LANDS AND DAMAGES	13,497	547	4%	14,044	0.0%	13,497	547	14,044	Dec-03	6.5%	14,374	583	14,957
30 - - -	ENGINEERING AND DESIGN	300	30	10%	330	0.0%	300	30	330	Dec-03	6.5%	320	32	351
30 - - -	ENGINEERING DURING CONSTRUCTION	36	4	10%	40	0.0%	36	4	40	Jun-05	11.7%	40	4	44
31 - - -	CONSTRUCTION MANAGEMENT	3,001	300	10%	3,301	0.0%	3,001	300	3,301	Jun-05	11.7%	3,352	335	3,688
	TOTAL COST =====>	46,846	5,383	11%	52,229	0.0%	46,846	5,383	52,229		10.3%	51,610	5,982	57,592

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****COLUMBIA RIVER ROCK EXCAVATION COST SUMMARY****										PAGE 1 OF 1				
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - CWE UPDATE CORPS PLAN					DISTRICT: PORTLAND					1-Oct-02				
LOCATION: COLUMBIA RIVER, OR/WA					P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION									
CURRENT MCACES ESTIMATE PREPARED IN: Oct-02					AUTHORIZ./BUDGET YEAR: 2000					FULLY FUNDED ESTIMATE				
EFFECTIVE PRICING LEVEL: Oct-02					EFFECT. PRICING LEVEL: Oct 02									
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)
09- - -	CHANNELS AND CANALS	17,184	2,578	15%	19,762	0.0%	17,184	2,578	19,762	Jun-05	11.7%	19,195	2,879	22,074
	TOTAL CONSTRUCTION COSTS =====>	17,184	2,578	15%	19,762	0.0%	17,184	2,578	19,762		11.7%	19,195	2,879	22,074
01 - - -	LANDS AND DAMAGES	0	0	0%	0	0.0%	0	0	0		0.0%	0	0	0
30 - - -	ENGINEERING AND DESIGN	225	23	10%	248	0.0%	225	23	248	Dec-03	6.5%	240	24	264
30 - - -	ENGINEERING DURING CONSTRUCTION	36	4	10%	40	0.0%	36	4	40	Jun-05	11.7%	40	4	44
31 - - -	CONSTRUCTION MANAGEMENT	1,718	172	10%	1,890	0.0%	1,718	172	1,890	Jun-05	11.7%	1,919	192	2,111
	TOTAL COST =====>	19,163	2,776	14%	21,939	0.0%	19,163	2,776	21,939		11.6%	21,394	3,099	24,493

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****COLUMBIA RIVER MITIGATION COST SUMMARY****										PAGE 1 OF 1				
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - CWE UPDATE CORPS PLAN					DISTRICT: PORTLAND					1-Oct-02				
LOCATION: COLUMBIA RIVER, OR/WA					P.O.C.: PAT JONES, CHIEF, COST ENGINEERING BRANCH									
CURRENT MCACES ESTIMATE PREPARED IN: Oct-02					AUTHORIZ./BUDGET YEAR: 2000					FULLY FUNDED ESTIMATE				
EFFECTIVE PRICING LEVEL: Oct-02					EFFECT. PRICING LEVEL: Oct 02									
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)
09- - -	CHANNELS AND CANALS	437	109	25%	546	0.0%	437	109	546	Jul-04	9.1%	477	119	596
	TOTAL CONSTRUCTION COSTS =====>	437	109	25%	546	0.0%	437	109	546		9.1%	477	119	596
01 - - -	LANDS AND DAMAGES	3,077	315	10%	3,392	0.0%	3,077	315	3,392	Jul-03	5.7%	3,252	333	3,585
30 - - -	ENGINEERING AND DESIGN	150	15	10%	165	0.0%	150	15	165	Jul-03	5.7%	159	16	174
30 - - -	ENGINEERING DURING CONSTRUCTION	18	2	10%	20	0.0%	18	2	20	Jul-04	9.1%	20	2	22
31 - - -	CONSTRUCTION MANAGEMENT	44	4	10%	48	0.0%	44	4	48	Jul-04	9.1%	48	5	52
	TOTAL COST =====>	3,726	445	12%	4,171	0.0%	3,726	445	4,171		6.2%	3,955	475	4,430

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****COLUMBIA RIVER LOIS ISLAND DISPOSAL COST SUMMARY****										PAGE 1 OF 1				
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - CWE UPDATE CORPS PLAN					DISTRICT: PORTLAND					1-Oct-02				
LOCATION: COLUMBIA RIVER, OR/WA					P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION									
CURRENT MCACES ESTIMATE PREPARED IN: Oct-02					AUTHORIZ./BUDGET YEAR: 2000					FULLY FUNDED ESTIMATE				
EFFECTIVE PRICING LEVEL: Oct-02					EFFECT. PRICING LEVEL: Oct 02									
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- - -	ENVIRONMENTAL RESTORATION	8,630	2,158	25%	10,788	0.0%	8,630	2,158	10,788	Jun-05	11.7%	9,640	2,410	12,050
	TOTAL CONSTRUCTION COSTS =====>	8,630	2,158	25%	10,788	0.0%	8,630	2,158	10,788		11.7%	9,640	2,410	12,050
01- - -	LANDS AND DAMAGES	0	0	0%	0	0.0%	0	0	0			0	0	0
30- - -	ENGINEERING AND DESIGN	200	20	10%	220	0.0%	200	20	220	Dec-03	6.5%	213	21	234
30- - -	ENGINEERING DURING CONSTRUCTION	10	1	10%	11	0.0%	10	1	11	Jun-05	11.7%	11	1	12
31- - -	CONSTRUCTION MANAGEMENT	863	86	10%	949	0.0%	863	86	949	Jun-05	11.7%	964	96	1,060
	TOTAL COST =====>	9,703	2,265	23%	11,968	0.0%	9,703	2,265	11,968		11.6%	10,828	2,529	13,357

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****COLUMBIA RIVER MILLAR-PILLAR COST SUMMARY****										PAGE 1 OF 1				
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - CWE UPDATE CORPS PLAN					DISTRICT: PORTLAND					1-Oct-02				
LOCATION: COLUMBIA RIVER, OR/WA					P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION									
CURRENT MCACES ESTIMATE PREPARED IN: Oct-02					AUTHORIZ./BUDGET YEAR: 2000					FULLY FUNDED ESTIMATE				
EFFECTIVE PRICING LEVEL: Oct-02					EFFECT. PRICING LEVEL: Oct 02									
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- - -	ENVIRONMENTAL RESTORATION	1,838	460	25%	2,298	0.0%	1,838	460	2,298	Jan-06	13.4%	2,084	521	2,605
	TOTAL CONSTRUCTION COSTS =====>	1,838	460	25%	2,298	0.0%	1,838	460	2,298		13.4%	2,084	521	2,605
01 - - -	LANDS AND DAMAGES	0	0	0%	0	0.0%	0	0	0		0.0%	0	0	0
30 - - -	ENGINEERING AND DESIGN	270	27	10%	297	0.0%	270	27	297	Jul-04	8.2%	292	29	321
30 - - -	ENGINEERING DURING CONSTRUCTION	10	1	10%	11	0.0%	10	1	11	Jan-06	13.4%	11	1	12
31 - - -	CONSTRUCTION MANAGEMENT	184	18	10%	202	0.0%	184	18	202	Jan-06	13.4%	208	21	229
	TOTAL COST =====>	2,302	506	22%	2,808	0.0%	2,302	506	2,808		12.8%	2,596	572	3,168

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****COLUMBIA RIVER SHILLAPOO LAKE COST SUMMARY****										PAGE 1 OF 1				
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - CWE UPDATE CORPS PLAN					DISTRICT: PORTLAND					1-Oct-02				
LOCATION: COLUMBIA RIVER, OR/WA					P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION									
CURRENT MCACES ESTIMATE PREPARED IN: Oct-02					AUTHORIZ./BUDGET YEAR: 2000					FULLY FUNDED ESTIMATE				
EFFECTIVE PRICING LEVEL: Oct-02					EFFECT. PRICING LEVEL: Oct 02									
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- - -	ENVIRONMENTAL RESTORATION	3,788	947	25%	4,735	0.0%	3,788	947	4,735	Jul-04	9.1%	4,133	1,033	5,166
	TOTAL CONSTRUCTION COSTS =====>	3,788	947	25%	4,735	0.0%	3,788	947	4,735		9.1%	4,133	1,033	5,166
01 - - -	LANDS AND DAMAGES	0	0	0%	0	0.0%	0	0	0		0.0%	0	0	0
30 - - -	ENGINEERING AND DESIGN	185	19	10%	204	0.0%	185	19	204	Jul-03	5.7%	196	20	215
30 - - -	ENGINEERING DURING CONSTRUCTION	33	3	10%	36	0.0%	33	3	36	Jul-04	9.1%	36	4	40
31 - - -	CONSTRUCTION MANAGEMENT	379	38	10%	417	0.0%	379	38	417	Jul-04	9.1%	413	41	455
	TOTAL COST =====>	4,385	1,007	23%	5,391	0.0%	4,385	1,007	5,391		9.0%	4,778	1,098	5,875

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****COLUMBIA RIVER LORD/WALKER HUMP/FISHER COST SUMMARY****										PAGE 1 OF 1				
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - CWE UPDATE CORPS PLAN					DISTRICT: PORTLAND					1-Oct-02				
LOCATION: COLUMBIA RIVER, OR/WA					P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION									
CURRENT MCACES ESTIMATE PREPARED IN: Oct-02					AUTHORIZ./BUDGET YEAR: 2000					FULLY FUNDED ESTIMATE				
EFFECTIVE PRICING LEVEL: Oct-02					EFFECT. PRICING LEVEL: Oct 02									
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)
6 - - -	ENVIRONMENTAL RESTORATION	44	11	25%	55	0.0%	44	11	55	Aug-04	9.1%	48	12	60
	TOTAL CONSTRUCTION COSTS =====>	44	11	25%	55	0.0%	44	11	55		9.1%	48	12	60
01 - - -	LANDS AND DAMAGES	25	1	5%	26	0.0%	25	1	26	Aug-04	9.1%	27	1	29
30 - - -	ENGINEERING AND DESIGN	25	3	10%	28	0.0%	25	3	28	Aug-03	5.7%	26	3	29
30 ---	ENGINEERING DURING CONSTRUCTION	5	1	10%	6	0.0%	5	1	6	Aug-04	9.1%	5	1	6
31 - - -	CONSTRUCTION MANAGEMENT	4	0	10%	5	0.0%	4	0	5	Aug-04	9.1%	5	0	5
	TOTAL COST =====>	103	16	15%	119	0.0%	103	16	119		8.3%	112	17	129



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****COLUMBIA RIVER TENASILLAHE INTERIM COST SUMMARY****										PAGE 1 OF 1				
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - CWE UPDATE CORPS PLAN					DISTRICT: PORTLAND					1-Oct-02				
LOCATION: COLUMBIA RIVER, OR/WA					P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION									
CURRENT MCACES ESTIMATE PREPARED IN: Oct-02					AUTHORIZ./BUDGET YEAR: 2000					FULLY FUNDED ESTIMATE				
EFFECTIVE PRICING LEVEL: Oct-02					EFFECT. PRICING LEVEL: Oct 02									
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- - -	ENVIRONMENTAL RESTORATION	933	233	25%	1,166	0.0%	933	233	1,166	Aug-04	9.1%	1,018	254	1,272
	TOTAL CONSTRUCTION COSTS =====>	933	233	25%	1,166	0.0%	933	233	1,166	Aug-04	9.1%	1,018	254	1,272
01 - - -	LANDS AND DAMAGES	0	0	0%	0	0.0%	0	0	0		0.0%	0	0	0
30 - - -	ENGINEERING AND DESIGN	368	37	10%	405	0.0%	368	37	405	Aug-03	5.7%	389	39	428
30 - - -	ENGINEERING DURING CONSTRUCTION	10	1	10%	11	0.0%	10	1	11	Aug-04	9.1%	11	1	12
31 - - -	CONSTRUCTION MANAGEMENT	93	9	10%	103	0.0%	93	9	103	Aug-04	9.1%	102	10	112
	TOTAL COST =====>	1,404	280	20%	1,685	0.0%	1,404	280	1,685		8.3%	1,520	305	1,824

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****COLUMBIA RIVER TENASILLAHE LONG-TERM COST SUMMARY****										PAGE 1 OF 1				
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - CWE UPDATE CORPS PLAN					DISTRICT: PORTLAND					1-Oct-02				
LOCATION COLUMBIA RIVER, OR/WA					P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION									
CURRENT MCACES ESTIMATE PREPARED IN:			Oct-02		AUTHORIZ./BUDGET YEAR: 2000				FULLY FUNDED ESTIMATE					
EFFECTIVE PRICING LEVEL:			Oct-02		EFFECT. PRICING LEVEL: Oct 02									
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- - -	ENVIRONMENTAL RESTORATION	202	51	25%	253	0.0%	202	51	253	Aug-14	50.0%	303	76	379
	TOTAL CONSTRUCTION COSTS =====>	202	51	25%	253	0.0%	202	51	253		50.0%	303	76	379
01 - - -	LANDS AND DAMAGES	0	0	0%	0	0.0%	0	0	0			0	0	0
30 - - -	ENGINEERING AND DESIGN	144	14	10%	158	0.0%	144	14	158	Aug-13	45.0%	209	21	230
30 - - -	ENGINEERING DURING CNSTRUCTION	10	1	10%	11	0.0%	10	1	11	Aug-14	50.0%	15	2	17
31 - - -	CONSTRUCTION MANAGEMENT	20	2	10%	22	0.0%	20	2	22	Aug-14	50.0%	30	3	33
	TOTAL COST =====>	376	68	18%	444	0.0%	376	68	444		48.2%	557	101	658

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****COLUMBIA WHITE-TAILED DEER COST SUMMARY****										PAGE 1 OF 1				
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - CWE UPDATE CORPS PLAN					DISTRICT: PORTLAND					1-Oct-02				
LOCATION: COLUMBIA RIVER, OR/WA					P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION									
CURRENT MCACES ESTIMATE PREPARED IN: Oct-02					AUTHORIZ./BUDGET YEAR: 2000					FULLY FUNDED ESTIMATE				
EFFECTIVE PRICING LEVEL: Oct-02					EFFECT. PRICING LEVEL: Oct 02									
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- - -	ENVIRONMENTAL RESTORATION	122	30	25%	152	0.0%	122	30	152	Jan-06	14.3%	139	35	174
	TOTAL CONSTRUCTION COSTS =====>	122	30	25%	152	0.0%	122	30	152		14.3%	139	35	174
01- - -	LANDS AND DAMAGES	2,475	160	6%	2,635	0.0%	2,475	160	2,635	Jan-05	10.8%	2,742	177	2,920
30- - -	ENGINEERING AND DESIGN	0	0	10%	0	0.0%	0	0	0		0.0%	0	0	0
30- - -	ENGINEERING DURING CONSTRUCTION	5	1	10%	6	0.0%	5	1	6	Jan-06	14.3%	6	1	6
31- - -	CONSTRUCTION MANAGEMENT	12	1	10%	13	0.0%	12	1	13	Jan-06	14.3%	14	1	15
	TOTAL COST =====>	2,614	192	7%	2,806	0.0%	2,614	192	2,806		11.0%	2,901	214	3,115



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****COLUMBIA RIVER PURPLE LOOSESTRIFE COST SUMMARY****										PAGE 1 OF 1				
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - CWE UPDATE CORPS PLAN					DISTRICT: PORTLAND					1-Oct-02				
LOCATION: COLUMBIA RIVER, OR/WA					P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION									
CURRENT MCACES ESTIMATE PREPARED IN: Oct-02					AUTHORIZ./BUDGET YEAR: 2000					FULLY FUNDED ESTIMATE				
EFFECTIVE PRICING LEVEL: Oct-02					EFFECT. PRICING LEVEL: Oct 02									
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- - -	ENVIRONMENTAL RESTORATION	1,036	259	25%	1,295	0.0%	1,036	259	1,295	Jul-06	16.3%	1,205	301	1,506
	TOTAL CONSTRUCTION COSTS =====>	1,036	259	25%	1,295	0.0%	1,036	259	1,295	Jul-06	16.3%	1,205	301	1,506
01- - -	LANDS AND DAMAGES	0	0	0%	0	0.0%	0	0	0		0.0%	0	0	0
30- - -	ENGINEERING AND DESIGN	10	1	10%	11	0.0%	10	1	11	Jul-03	5.7%	11	1	12
30- - -	ENGINEERING DURING CONSTRUCTION	100	10	10%	110	0.0%	100	10	110	Jul-06	16.3%	116	12	128
31- - -	CONSTRUCTION MANAGEMENT	104	10	10%	114	0.0%	104	10	114	Jul-06	16.3%	120	12	133
	TOTAL COST =====>	1,250	280	22%	1,530	0.0%	1,250	280	1,530		16.2%	1,452	326	1,778

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\*\*\*\*COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT TOTAL COST SUMMARY\*\*\*\*

PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - SPONSOR PLAN										DISTRICT: PORTLAND									
LOCATION: COLUMBIA RIVER, ORWA										P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION									
CURRENT MACAGES ESTIMATE PREPARED IN: Oct-02										AUTHORIZ./BUDGET YEAR: 2000									
EFFECTIVE PRICING LEVEL: Oct-02										EFFECT. PRICING LEVEL: Oct-02									
										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)					
09---	COLUMBIA R. CHANNELS AND CANALS	58,520	8,822	15%	67,342	0.0%	58,520	8,822	67,342			65,355	9,852	75,207					
09---	WILLAMETTE R. CHANNELS AND CANALS	17,998	2,880	16%	20,878	0.0%	17,998	2,880	20,878			25,989	4,158	30,147					
06---	ENVIRONMENTAL RESTORATION	18,029	4,507	25%	22,536	0.0%	18,029	4,507	22,536			20,136	5,034	25,170					
	TOTAL CONSTRUCTION COSTS =====>	94,547	16,209	17%	110,756	0.0%	94,547	16,209	110,756			111,481	19,044	130,525					
01---	LANDS & DAMAGES (Disposal & Mitigation)	17,309	906	5%	18,215	0.0%	17,309	906	18,215			18,412	962	19,374					
01---	LANDS & DAMAGES (Envir. Restoration)	2,500	160	6%	2,660	0.0%	2,500	160	2,660			2,742	177	2,920					
30---	CR ENGINEERING & DESIGN	2,097	210	10%	2,307	0.0%	2,097	210	2,307			2,287	229	2,517					
30---	CR ENGINEERING DURING CONSTRUCTION	319	32	10%	351	0.0%	319	32	351			363	36	399					
30---	CR MONITORING & EVALUATION (GNF)	9,259	926	10%	10,185	0.0%	9,259	926	10,185	Jan-06	13.4%	10,500	1,050	11,550					
30---	CR MONITORING & EVALUATION (Envir. Resto)	700	70	10%	770	0.0%	700	70	770	Jan-06	13.4%	794	79	873					
30---	WR ENGINEERING AND DESIGN	392	39	10%	431	0.0%	392	39	431			557	56	612					
30---	WR ENGINEERING DURING CONSTRUCTION	1,080	108	10%	1,188	0.0%	1,080	108	1,188			1,555	156	1,711					
31---	CR CONSTRUCTION MANAGEMENT	7,655	765	10%	8,420	0.0%	7,655	765	8,420			8,549	855	9,404					
31---	WR CONSTRUCTION MANAGEMENT	506	51	10%	557	0.0%	506	51	557			729	73	802					
	TOTAL COST =====>	136,363	19,476	14%	155,840	0.0%	136,363	19,476	155,840		15.9%	157,989	22,718	180,686					
	UTILITY OWNER COST FOR UTILITY RELOCATIONS	11,948	1,195	10%	13,143		11,948	1,195	13,143	Nov-12	42.0%	16,966	1,697	18,663					
	NON-FEDERAL DREDGE COST TO BERTHS	1,366	0	0%	1,366		1,366	0	1,366			1,697	0	1,697					
	TOTAL COST =====>	149,677	20,671	14%	170,348	0.0%	149,677	20,671	170,348		18.0%	176,632	24,414	201,046					

APPROVED:  CHIEF, ENGINEERING AND CONSTRUCTION DIVISION  
 APPROVED:  FOR CHIEF, COST ENGINEERING SECTION  
 APPROVAL DATE: **JAN 14 2003**

*Columbia River Channel Improvement Project  
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****COLUMBIA RIVER BACHELOR SLOUGH COST SUMMARY****										PAGE 1 OF 1				
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - CWE UPDATE CORPS PLAN					DISTRICT: PORTLAND					1-Oct-02				
LOCATION: COLUMBIA RIVER, OR/WA					P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION									
CURRENT MCACES ESTIMATE PREPARED IN JUN 02:					AUTHORIZ./BUDGET YEAR: 2000					FULLY FUNDED ESTIMATE				
EFFECTIVE PRICING LEVEL: Oct-02					EFFECT. PRICING LEVEL: Oct 02									
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- - -	ENVIRONMENTAL RESTORATION	1,437	359	25%	1,796	0.0%	1,437	359	1,796	Jul-04	9.1%	1,568	392	1,960
	TOTAL CONSTRUCTION COSTS =====>	1,437	359	25%	1,796	0.0%	1,437	359	1,796		9.1%	1,568	392	1,960
01 - - -	LANDS AND DAMAGES	0	0	0%	0	0.0%	0	0	0			0	0	0
30 - - -	ENGINEERING AND DESIGN	20	2	10%	22	0.0%	20	2	22	Jul-03	5.7%	21	2	23
30 - - -	ENGINEERING DURING CONSTRUCTION	10	1	10%	11	0.0%	10	1	11	Jul-04	9.1%	11	1	12
31 - - -	CONSTRUCTION MANAGEMENT	144	14	10%	158	0.0%	144	14	158	Jul-04	9.1%	157	16	172
	TOTAL COST =====>	1,611	377	23%	1,987	0.0%	1,611	377	1,987		9.1%	1,757	411	2,167

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****COLUMBIA RIVER COST SUMMARY****											PAGE 1 OF 1			
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - SPONSOR PLAN						DISTRICT: PORTLAND				1-Oct-02				
LOCATION: COLUMBIA RIVER, OR/WA						P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION								
CURRENT MCACES ESTIMATE PREPARED IN: Oct-02						AUTHORIZ./BUDGET YEAR: 2000				FULLY FUNDED ESTIMATE				
EFFECTIVE PRICING LEVEL: Oct-02						EFFECT. PRICING LEVEL: Oct 02								
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)
09- - -	COLUMBIA R. CHANNELS AND CANALS	58,520	8,822	15%	67,342	0.0%	58,520	8,822	67,342			65,355	9,852	75,207
06- - -	ENVIRONMENTAL RESTORATION	18,029	4,507	25%	22,536	0.0%	18,029	4,507	22,536			20,136	5,034	25,170
	TOTAL CONSTRUCTION COSTS =====>	76,549	13,330	17%	89,878	0.0%	76,549	13,330	89,878			85,492	14,886	100,377
01 - - -	LANDS & DAMAGES (Disposal & Mitigation)	17,309	906	5%	18,215	0.0%	17,309	906	18,215			18,412	962	19,374
01 - - -	LANDS & DAMAGES (Envir. Restoration)	2,500	160	6%	2,660	0.0%	2,500	160	2,660			2,742	177	2,920
30 - - -	CR ENGINEERING & DESIGN	2,097	210	10%	2,307	0.0%	2,097	210	2,307			2,287	229	2,517
30 - - -	CR ENGINEERING DURING CONSTRUCTION	319	32	10%	351	0.0%	319	32	351			363	36	399
30 - - -	CR MONITORING & EVALUATION (GNF)	9,259	926	10%	10,185	0.0%	9,259	926	10,185	Jan-06	13.4%	10,500	1,050	11,550
30 - - -	CR MONITORING & EVALUATION (Envir. Restc)	700	70	10%	770	0.0%	700	70	770	Jan-06	13.4%	794	79	873
31 - - -	CR CONSTRUCTION MANAGEMENT	7,655	765	10%	8,420	0.0%	7,655	765	8,420			8,549	855	9,404
TOTAL COST =====>		116,387	16,399	14%	132,786	0.0%	116,387	16,399	132,786		11.0%	129,139	18,275	147,414
UTILITY OWNER COST FOR UTILITY RELOCATIONS		0	0	0%	0		0	0	0			0	0	0
NON-FEDERAL DREDGE COST TO BERTHS		843		0%	843		843	0	843	Jun-05	11.7%	942	0	942
TOTAL COST =====>		117,230	16,399	14%	133,629	0.0%	117,230	16,399	133,629		11.0%	130,081	18,275	148,356

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****WILLAMETTE RIVER COST SUMMARY****										PAGE 1 OF 1				
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - SPONSOR PLAN					DISTRICT: PORTLAND					1-Oct-02				
LOCATION: COLUMBIA RIVER, OR/WA					P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION									
CURRENT MCACES ESTIMATE PREPARED IN: Oct-02					AUTHORIZ./BUDGET YEAR: 2000					FULLY FUNDED ESTIMATE				
EFFECTIVE PRICING LEVEL: Oct-02					EFFECT. PRICING LEVEL: Oct 02									
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)
09- - -	CHANNELS AND CANALS	17,998	2,880	16%	20,878	0.0%	17,998	2,880	20,878	Jun-13	44.4%	25,989	4,158	30,147
	TOTAL CONSTRUCTION COSTS =====>	17,998	2,880	16%	20,878	0.0%	17,998	2,880	20,878		44.4%	25,989	4,158	30,147
01- - -	LANDS AND DAMAGES	0	0	0%	0	0.0%	0	0	0		0.0%	0	0	0
30- - -	ENGINEERING AND DESIGN	392	39	10%	431	0.0%	392	39	431	Dec-12	42.0%	557	56	612
30- - -	ENGINEERING DURING CONSTRUCTION	1,080	108	10%	1,188	0.0%	1,080	108	1,188	Jun-13	44.0%	1,555	156	1,711
31- - -	CONSTRUCTION MANAGEMENT	506	51	10%	557	0.0%	506	51	557	Jun-13	44.0%	729	73	802
	TOTAL COST =====>	19,976	3,077	15%	23,053	0.0%	19,976	3,077	23,053		44.3%	28,830	4,442	33,272
	UTILITY OWNER COST FOR UTILITY RELOCATIONS	11,948	1,195	10%	13,143	0.0%	11,948	1,195	13,143	Nov-12	42.0%	16,966	1,697	18,663
	NONFEDERAL DREDGE COST TO BERTHS	523	0	0%	523	0.0%	523	0	523	Jun-13	44.4%	755	0	755
	TOTAL COSTS	32,447	4,272		36,719		32,447	4,272	36,719			46,551	6,139	52,690



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****COLUMBIA RIVER HOPPER COST SUMMARY****										PAGE 1 OF 1				
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - SPONSOR PLAN					DISTRICT: PORTLAND					1-Oct-02				
LOCATION: COLUMBIA RIVER, OR/WA					P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION									
CURRENT MCACES ESTIMATE PREPARED IN: Oct-02					AUTHORIZ./BUDGET YEAR: 2000					FULLY FUNDED ESTIMATE				
EFFECTIVE PRICING LEVEL: Oct-02					EFFECT. PRICING LEVEL: Oct 02									
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)
09- - -	CHANNELS AND CANALS	9,123	1,368	15%	10,491	0.0%	9,123	1,368	10,491	Jun-05	11.7%	10,190	1,529	11,719
	TOTAL CONSTRUCTION COSTS	9,123	1,368	15%	10,491	0.0%	9,123	1,368	10,491		11.7%	10,190	1,529	11,719
01 - - -	LANDS AND DAMAGES	0	0	0%	0	0.0%	0	0	0		0.0%	0	0	0
30 - - -	ENGINEERING AND DESIGN	200	20	10%	220	0.0%	200	20	220	Dec-03	6.5%	213	21	234
30 - - -	ENGINEERING DURING CONSTRUCTION	36	4	10%	40	0.0%	36	4	40	Jun-05	11.7%	40	4	44
31 - - -	CONSTRUCTION MANAGEMENT	912	91	10%	1,004	0.0%	912	91	1,004	Jun-05	11.7%	1,019	102	1,121
	TOTAL COST =====>	10,271	1,483	14%	11,755	0.0%	10,271	1,483	11,755		11.6%	11,463	1,656	13,118

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****COLUMBIA RIVER ROCK EXCAVATION COST SUMMARY****										PAGE 1 OF 1				
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - SPONSOR PLAN					DISTRICT: PORTLAND					1-Oct-02				
LOCATION: COLUMBIA RIVER, OR/WA					P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION									
CURRENT MCACES ESTIMATE PREPARED IN: Oct-02					AUTHORIZ./BUDGET YEAR: 2000					FULLY FUNDED ESTIMATE				
EFFECTIVE PRICING LEVEL: Oct-02					EFFECT. PRICING LEVEL: Oct 02									
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)
09- - -	CHANNELS AND CANALS	17,184	2,578	15%	19,762	0.0%	17,184	2,578	19,762	Jun-05	11.7%	19,195	2,879	22,074
	TOTAL CONSTRUCTION COSTS =====>	17,184	2,578	15%	19,762	0.0%	17,184	2,578	19,762		11.7%	19,195	2,879	22,074
01 - - -	LANDS AND DAMAGES	0	0	0%	0	0.0%	0	0	0		0.0%	0	0	0
30 - - -	ENGINEERING AND DESIGN	225	23	10%	248	0.0%	225	23	248	Dec-03	6.5%	240	24	264
30 - - -	ENGINEERING DURING CONSTRUCTION	36	4	10%	40	0.0%	36	4	40	Jun-05	11.7%	40	4	44
31 - - -	CONSTRUCTION MANAGEMENT	1,718	172	10%	1,890	0.0%	1,718	172	1,890	Jun-05	11.7%	1,919	192	2,111
	TOTAL COST =====>	19,163	2,776	14%	21,939	0.0%	19,163	2,776	21,939		11.6%	21,394	3,099	24,493

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****PIPELINE DREDGING COST SUMMARY****										PAGE 1 OF 1				
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - SPONSOR PLAN					DISTRICT: PORTLAND					1-Oct-02				
LOCATION: COLUMBIA RIVER, OR/WA					P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION									
CURRENT MCACES ESTIMATE PREPARED IN: Oct-02					AUTHORIZ./BUDGET YEAR: 2000					FULLY FUNDED ESTIMATE				
EFFECTIVE PRICING LEVEL: Oct-02					EFFECT. PRICING LEVEL: Oct 02									
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)
09- - -	CHANNELS AND CANALS	31,776	4,766	15%	36,542	0.0%	31,776	4,766	36,542	Jun-05	11.7%	35,494	5,324	40,818
	TOTAL CONSTRUCTION COSTS =====>	31,776	4,766	15%	36,542	0.0%	31,776	4,766	36,542		11.7%	35,494	5,324	40,818
01 - - -	LANDS AND DAMAGES	14,558	591	4%	14,558	0.0%	14,558	591	15,149	Dec-03	6.5%	15,504	629	16,134
30 - - -	ENGINEERING AND DESIGN	300	30	10%	330	0.0%	300	30	330	Dec-03	6.5%	320	32	351
30 - - -	ENGINEERING DURING CONSTRUCTION	36	4	10%	40	0.0%	36	4	40	Jun-05	11.7%	40	4	44
31 - - -	CONSTRUCTION MANAGEMENT	3,178	318	10%	3,495	0.0%	3,178	318	3,495	Jun-05	11.7%	3,549	355	3,904
	TOTAL COST =====>	49,848	5,709	11%	54,965	1.1%	49,848	5,709	55,556		10.3%	54,907	6,344	61,252

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****COLUMBIA RIVER MITIGATION COST SUMMARY****										PAGE 1 OF 1				
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - SPONSOR PLAN					DISTRICT: PORTLAND					1-Oct-02				
LOCATION: COLUMBIA RIVER, OR/WA					P.O.C.: PAT JONES, CHIEF, COST ENGINEERING BRANCH									
CURRENT MCACES ESTIMATE PREPARED IN: Oct-02					AUTHORIZ./BUDGET YEAR: 2000					FULLY FUNDED ESTIMATE				
EFFECTIVE PRICING LEVEL: Oct-02					EFFECT. PRICING LEVEL: Oct 02									
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)
09- - -	CHANNELS AND CANALS	437	110	25%	547	0.0%	437	110	547	Jul-04	9.1%	477	120	597
	TOTAL CONSTRUCTION COSTS =====>	437	110	25%	547	0.0%	437	110	547		9.1%	477	120	597
01 - - -	LANDS AND DAMAGES	2,751	315	11%	3,066	0.0%	2,751	315	3,066	Jul-03	5.7%	2,908	333	3,241
30 - - -	ENGINEERING AND DESIGN	150	15	10%	165	0.0%	150	15	165	Jul-03	5.7%	159	16	174
30 - - -	ENGINEERING DURING CONSTRUCTION	18	2	10%	20	0.0%	18	2	20	Jul-04	9.1%	20	2	22
31 - - -	CONSTRUCTION MANAGEMENT	44	4	10%	48	0.0%	44	4	48	Jul-04	9.1%	48	5	52
	TOTAL COST =====>	3,400	446	13%	3,846	0.0%	3,400	446	3,846		6.2%	3,610	476	4,086

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****COLUMBIA RIVER LOIS ISLAND DISPOSAL COST SUMMARY****										PAGE 1 OF 1				
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - SPONSOR PLAN					DISTRICT: PORTLAND					1-Oct-02				
LOCATION: COLUMBIA RIVER, OR/WA					P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION									
CURRENT MCACES ESTIMATE PREPARED IN: Oct-02					AUTHORIZ./BUDGET YEAR: 2000					FULLY FUNDED ESTIMATE				
EFFECTIVE PRICING LEVEL: Oct-02					EFFECT. PRICING LEVEL: Oct 02									
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- - -	ENVIRONMENTAL RESTORATION	8,630	2,158	25%	10,788	0.0%	8,630	2,158	10,788	Jun-05	11.7%	9,640	2,410	12,050
	TOTAL CONSTRUCTION COSTS =====>	8,630	2,158	25%	10,788	0.0%	8,630	2,158	10,788		11.7%	9,640	2,410	12,050
01 - - -	LANDS AND DAMAGES	0	0	0%	0	0.0%	0	0	0			0	0	0
30 - - -	ENGINEERING AND DESIGN	200	20	10%	220	0.0%	200	20	220	Dec-03	6.5%	213	21	234
30 - - -	ENGINEERING AND DESIGN	10	1	10%	11	0.0%	10	1	11	Jun-05	11.7%	11	1	12
31 - - -	CONSTRUCTION MANAGEMENT	863	86	10%	949	0.0%	863	86	949	Jun-05	11.7%	964	96	1,060
	TOTAL COST =====>	9,703	2,265	23%	11,968	0.0%	9,703	2,265	11,968		11.6%	10,828	2,529	13,357

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****COLUMBIA RIVER MILLAR-PILLAR COST SUMMARY****										PAGE 1 OF 1				
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - SPONSOR PLAN					DISTRICT: PORTLAND					1-Oct-02				
LOCATION: COLUMBIA RIVER, OR/WA					P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION									
CURRENT MCACES ESTIMATE PREPARED IN: Oct-02					AUTHORIZ./BUDGET YEAR: 2000					FULLY FUNDED ESTIMATE				
EFFECTIVE PRICING LEVEL: Oct-02					EFFECT. PRICING LEVEL: Oct 02									
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- - -	ENVIRONMENTAL RESTORATION	1,837	459	25%	2,296	0.0%	1,837	459	2,296	Jan-06	13.4%	2,083	521	2,604
	TOTAL CONSTRUCTION COSTS =====>	1,837	459	25%	2,296	0.0%	1,837	459	2,296		13.4%	2,083	521	2,604
01 - - -	LANDS AND DAMAGES	0	0	0%	0	0.0%	0	0	0		0.0%	0	0	0
30 - - -	ENGINEERING AND DESIGN	270	27	10%	297	0.0%	270	27	297	Jul-04	8.2%	292	29	321
30 - - -	ENGINEERING DURING CONSTRUCTION	10	1	10%	11	0.0%	10	1	11	Jan-06	13.4%	11	1	12
31 - - -	CONSTRUCTION MANAGEMENT	184	18	10%	202	0.0%	184	18	202	Jan-06	13.4%	208	21	229
	TOTAL COST =====>	2,301	506	22%	2,806	0.0%	2,301	506	2,806		12.8%	2,595	572	3,167

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****COLUMBIA RIVER SHILLAPOO LAKE COST SUMMARY****										PAGE 1 OF 1				
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - SPONSOR PLAN					DISTRICT: PORTLAND					1-Oct-02				
LOCATION: COLUMBIA RIVER, OR/WA					P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION									
CURRENT MCACES ESTIMATE PREPARED IN: Oct-02					AUTHORIZ./BUDGET YEAR: 2000					FULLY FUNDED ESTIMATE				
EFFECTIVE PRICING LEVEL: Oct-02					EFFECT. PRICING LEVEL: Oct 02									
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- - -	ENVIRONMENTAL RESTORATION	3,788	947	25%	4,735	0.0%	3,788	947	4,735	Jul-04	9.1%	4,133	1,033	5,166
	TOTAL CONSTRUCTION COSTS =====>	3,788	947	25%	4,735	0.0%	3,788	947	4,735		9.1%	4,133	1,033	5,166
01 - - -	LANDS AND DAMAGES	0	0	0%	0	0.0%	0	0	0		0.0%	0	0	0
30 - - -	ENGINEERING AND DESIGN	185	19	10%	204	0.0%	185	19	204	Jul-03	5.7%	196	20	215
30 - - -	ENGINEERING DURING CONSTRUCTION	33	3	10%	36	0.0%	33	3	36	Jul-04	9.1%	36	4	40
31 - - -	CONSTRUCTION MANAGEMENT	379	38	10%	417	0.0%	379	38	417	Jul-04	9.1%	413	41	455
	TOTAL COST =====>	4,385	1,007	23%	5,391	0.0%	4,385	1,007	5,391		9.0%	4,778	1,098	5,875

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****COLUMBIA RIVER LORD/WALKER HUMP/FISHER COST SUMMARY****										PAGE 1 OF 1				
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - SPONSOR PLAN					DISTRICT: PORTLAND					1-Oct-02				
LOCATION: COLUMBIA RIVER, OR/WA					P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION									
CURRENT MCACES ESTIMATE PREPARED IN: Oct-02					AUTHORIZ./BUDGET YEAR: 2000					FULLY FUNDED ESTIMATE				
EFFECTIVE PRICING LEVEL: Oct-02					EFFECT. PRICING LEVEL: Oct 02									
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)
6 - - -	ENVIRONMENTAL RESTORATION	44	11	25%	55	0.0%	44	11	55	Aug-04	9.1%	48	12	60
	TOTAL CONSTRUCTION COSTS =====>	44	11	25%	55	0.0%	44	11	55		9.1%	48	12	60
01 - - -	LANDS AND DAMAGES	25	1	5%	26	0.0%	25	1	26		0.0%	25	1	26
30 - - -	ENGINEERING AND DESIGN	25	3	10%	28	0.0%	25	3	28	Aug-03	5.7%	26	3	29
30 ---	ENGINEERING DURING CONSTRUCTION	5	1	10%	6	0.0%	5	1	6	Aug-04	9.1%	5	1	6
31 - - -	CONSTRUCTION MANAGEMENT	4	0	10%	5	0.0%	4	0	5	Aug-04	9.1%	5	0	5
	TOTAL COST =====>	103	16	15%	119	0.0%	103	16	119		6.3%	110	17	127



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****COLUMBIA RIVER TENASILLAHE INTERIM COST SUMMARY****										PAGE 1 OF 1				
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - SPONSOR PLAN					DISTRICT: PORTLAND					1-Oct-02				
LOCATION: COLUMBIA RIVER, OR/WA					P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION									
CURRENT MCACES ESTIMATE PREPARED IN: Oct-02					AUTHORIZ./BUDGET YEAR: 2000					FULLY FUNDED ESTIMATE				
EFFECTIVE PRICING LEVEL: Oct-02					EFFECT. PRICING LEVEL: Oct 02									
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- - -	ENVIRONMENTAL RESTORATION	933	233	25%	1,166	0.0%	933	233	1,166	Aug-04	9.1%	1,018	254	1,272
	TOTAL CONSTRUCTION COSTS =====>	933	233	25%	1,166	0.0%	933	233	1,166	Aug-04	9.1%	1,018	254	1,272
01 - - -	LANDS AND DAMAGES	0	0	0%	0	0.0%	0	0	0		0.0%	0	0	0
30 - - -	ENGINEERING AND DESIGN	368	37	10%	405	0.0%	368	37	405	Aug-03	5.7%	389	39	428
30 - - -	ENGINEERING DURING CONSTRUCTION	10	1	10%	11	0.0%	10	1	11	Aug-04	9.1%	11	1	12
31 - - -	CONSTRUCTION MANAGEMENT	93	9	10%	103	0.0%	93	9	103	Aug-04	9.1%	102	10	112
	TOTAL COST =====>	1,404	280	20%	1,685	0.0%	1,404	280	1,685		8.3%	1,520	305	1,824

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****COLUMBIA RIVER TENASILLAHE LONG-TERM COST SUMMARY****										PAGE 1 OF 1				
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - SPONSOR PLAN					DISTRICT: PORTLAND					1-Oct-02				
LOCATION: COLUMBIA RIVER, OR/WA					P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION									
CURRENT MCACES ESTIMATE PREPARED IN: Oct-02					AUTHORIZ./BUDGET YEAR: 2000					FULLY FUNDED ESTIMATE				
EFFECTIVE PRICING LEVEL: Oct-02					EFFECT. PRICING LEVEL: Oct 02									
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- - -	ENVIRONMENTAL RESTORATION	202	51	25%	253	0.0%	202	51	253	Aug-14	50.0%	303	76	379
	TOTAL CONSTRUCTION COSTS =====>	202	51	25%	253	0.0%	202	51	253		50.0%	303	76	379
01 - - -	LANDS AND DAMAGES	0	0	0%	0	0.0%	0	0	0			0	0	0
30 - - -	ENGINEERING AND DESIGN	144	14	10%	158	0.0%	144	14	158	Aug-13	45.0%	209	21	230
30 - - -	ENGINEERING DURING CNSTRUCTION	10	1	10%	11	0.0%	10	1	11	Aug-14	50.0%	15	2	17
31 - - -	CONSTRUCTION MANAGEMENT	20	2	10%	22	0.0%	20	2	22	Aug-14	50.0%	30	3	33
	TOTAL COST =====>	376	68	18%	444	0.0%	376	68	444		48.2%	557	101	658

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****COLUMBIA WHITE-TAILED DEER COST SUMMARY****										PAGE 1 OF 1				
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - SPONSOR PLAN					DISTRICT: PORTLAND					1-Oct-02				
LOCATION: COLUMBIA RIVER, OR/WA					P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION									
CURRENT MCACES ESTIMATE PREPARED IN: Oct-02					AUTHORIZ./BUDGET YEAR: 2000					FULLY FUNDED ESTIMATE				
EFFECTIVE PRICING LEVEL: Oct-02					EFFECT. PRICING LEVEL: Oct 02									
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- - -	ENVIRONMENTAL RESTORATION	122	30	25%	152	0.0%	122	30	152	Jan-06	14.3%	139	35	174
	TOTAL CONSTRUCTION COSTS =====>	122	30	25%	152	0.0%	122	30	152		14.3%	139	35	174
01 - - -	LANDS AND DAMAGES	2,475	160	6%	2,635	0.0%	2,475	160	2,635	Jan-05	10.8%	2,742	177	2,920
30 - - -	ENGINEERING AND DESIGN	0	0	10%	0	0.0%	0	0	0		0.0%	0	0	0
30 - - -	ENGINEERING DURING CONSTRUCTION	5	1	10%	6	0.0%	5	1	6	Jan-06	14.3%	6	1	6
31 - - -	CONSTRUCTION MANAGEMENT	12	1	10%	13	0.0%	12	1	13	Jan-06	14.3%	14	1	15
	TOTAL COST =====>	2,614	192	7%	2,806	0.0%	2,614	192	2,806		11.0%	2,901	214	3,115

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****COLUMBIA RIVER PURPLE LOOSESTRIFE COST SUMMARY****										PAGE 1 OF 1				
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - SPONSOR PLAN					DISTRICT: PORTLAND					1-Oct-02				
LOCATION: COLUMBIA RIVER, OR/WA					P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION									
CURRENT MCACES ESTIMATE PREPARED IN: Oct-02					AUTHORIZ./BUDGET YEAR: 2000					FULLY FUNDED ESTIMATE				
EFFECTIVE PRICING LEVEL: Oct-02					EFFECT. PRICING LEVEL: Oct 02									
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- - -	ENVIRONMENTAL RESTORATION	1,036	259	25%	1,295	0.0%	1,036	259	1,295	Jul-06	16.3%	1,205	301	1,506
	TOTAL CONSTRUCTION COSTS =====>	1,036	259	25%	1,295	0.0%	1,036	259	1,295	Jul-06	16.3%	1,205	301	1,506
01 - - -	LANDS AND DAMAGES	0	0	0%	0	0.0%	0	0	0		0.0%	0	0	0
30 - - -	ENGINEERING AND DESIGN	10	1	10%	11	0.0%	10	1	11	Jul-03	5.7%	11	1	12
30 - - -	ENGINEERING DURING CONSTRUCTION	100	10	10%	110	0.0%	100	10	110	Jul-06	16.3%	116	12	128
31 - - -	CONSTRUCTION MANAGEMENT	104	10	10%	114	0.0%	104	10	114	Jul-06	16.3%	120	12	133
	TOTAL COST =====>	1,250	280	22%	1,530	0.0%	1,250	280	1,530		16.2%	1,452	326	1,778

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****COLUMBIA RIVER BACHELOR SLOUGH COST SUMMARY****										PAGE 1 OF 1				
PROJECT: COLUMBIA RIVER CHANNEL IMPROVEMENT PROJECT - SPONSOR PLAN					DISTRICT: PORTLAND					1-Oct-02				
LOCATION: COLUMBIA RIVER, OR/WA					P.O.C.: PAT JONES, CHIEF, COST ENGINEERING SECTION									
CURRENT MCACES ESTIMATE PREPARED IN JUN 02:					AUTHORIZ./BUDGET YEAR: 2000					FULLY FUNDED ESTIMATE				
EFFECTIVE PRICING LEVEL: Oct-02					EFFECT. PRICING LEVEL: Oct 02									
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- - -	ENVIRONMENTAL RESTORATION	1,437	359	25%	1,796	0.0%	1,437	359	1,796	Jul-04	9.1%	1,568	392	1,960
	TOTAL CONSTRUCTION COSTS =====>	1,437	359	25%	1,796	0.0%	1,437	359	1,796		9.1%	1,568	392	1,960
01 - - -	LANDS AND DAMAGES	0	0	0%	0	0.0%	0	0	0			0	0	0
30 - - -	ENGINEERING AND DESIGN	20	2	10%	22	0.0%	20	2	22	Jul-03	5.7%	21	2	23
30 - - -	ENGINEERING DURING CONSTRUCTION	10	1	10%	11	0.0%	10	1	11	Jul-04	9.1%	11	1	12
31 - - -	CONSTRUCTION MANAGEMENT	144	14	10%	158	0.0%	144	14	158	Jul-04	9.1%	157	16	172
	TOTAL COST =====>	1,611	377	23%	1,987	0.0%	1,611	377	1,987		9.1%	1,757	411	2,167