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## PART I - ADMINISTRATIVE

### Section 1. General administrative information

Title of project

Reconnect The Westport Slough To The Clatskanie River

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BPA project number: 20107

Contract renewal date (mm/yyyy):

Multiple actions?

Business name of agency, institution or organization requesting funding

Lower Columbia River Watershed Council

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Business acronym (if appropriate)

LCRWC

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Proposal contact person or principal investigator:

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NPPC Program Measure Number(s) which this project addresses

7.6,7.7

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FWS/NMFS Biological Opinion Number(s) which this project addresses

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Other planning document references

Washington Coastal Protection Fund Steering Committee Funding Plan, 1998

U.S. Army Corps of Engineers Ecosystem Restoration Plan, October 1998

Lower Columbia River Watershed Council Draft Action Plan, 1998

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Short description

Improve and enhance anadromous and resident fish habitat by reconnecting the Westport Slough to the Clatskanie River. A 12 foot culvert placed in the dam blocking the head of the Westport Slough will reestablish a crucial link for fish migration.

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Target species

Coho, chinook, steelhead, chum, resident fish.

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### Section 2. Sorting and evaluation

Subbasin

Lower Columbia

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**Evaluation Process Sort**

CBFWA caucus	Special evaluation process	ISRP project type
Mark one or more caucus	If your project fits either of these processes, mark one or both	Mark one or more categories
<input checked="" type="checkbox"/> Anadromous fish <input checked="" type="checkbox"/> Resident fish <input type="checkbox"/> Wildlife	<input type="checkbox"/> Multi-year (milestone-based evaluation) <input checked="" type="checkbox"/> Watershed project evaluation	<input type="checkbox"/> Watershed councils/model watersheds <input type="checkbox"/> Information dissemination <input type="checkbox"/> Operation & maintenance <input checked="" type="checkbox"/> New construction <input checked="" type="checkbox"/> Research & monitoring <input type="checkbox"/> Implementation & management <input type="checkbox"/> Wildlife habitat acquisitions

**Section 3. Relationships to other Bonneville projects**

*Umbrella / sub-proposal relationships.* List umbrella project first.

Project #	Project title/description

**Other dependent or critically-related projects**

Project #	Project title/description	Nature of relationship

**Section 4. Objectives, tasks and schedules**

**Past accomplishments**

Year	Accomplishment	Met biological objectives?

**Objectives and tasks**

Obj 1,2,3	Objective	Task a,b,c	Task
1	Reconnect Westport Slough and Clatskanie River	a	Remove dam at head of Westport Slough
		b	Place 12' culvert
2	Improve, restore and sustain 9 miles of degraded salmonid and resident fish habitat	a	Remove dam at head of Westport Slough

		b	Place 12' culvert
3	Restore fish access to 8 streams	a	Remove dam at head of Westport Slough
		b	Place 12' culvert
4	Monitor habitat and water quality	a	5 year survey for fish return
		b	5 year water quality monitoring program
5	Improve public access to Lewis and Clark Water Trail	a	Remove dam at head of Westport Slough
		b	Place 12' culvert

**Objective schedules and costs**

Obj #	Start date mm/yyyy	End date mm/yyyy	Measureable biological objective(s)	Milestone	FY2000 Cost %
1	7/1999	9/1999	Restore historic water flow	x	43.00%
2	9/1999	9/2004	Fish presence	x	23.00%
2	9/1999	9/2004	Water quality	x	34.00%
				<b>Total</b>	100.00%

**Schedule constraints**

None expected.

**Completion date**

Construction: September 1999. 5 year monitoring program: 2004

**Section 5. Budget**

FY99 project budget (BPA obligated): \$29,850

**FY2000 budget by line item**

Item	Note	% of total	FY2000
Personnel		%0	
Fringe benefits		%0	
Supplies, materials, non- expendable property		%0	
Operations & maintenance		%0	
Capital acquisitions or improvements (e.g. land, buildings, major equip.)		%0	
NEPA costs		%0	
Construction-related support		%43	12,850
PIT tags	# of tags:	%0	
Travel		%0	
Indirect costs		%0	
Subcontractor		%0	
Other	Monitoring fish and water quality	%57	17,000
<b>TOTAL BPA FY2000 BUDGET REQUEST</b>			<b>\$29,850</b>

### **Cost sharing**

<b>Organization</b>	<b>Item or service provided</b>	<b>% total project cost (incl. BPA)</b>	<b>Amount (\$)</b>
U.S. Army Corps of Engineers	Plans and specs/EA	%28	91,000
U.S. Army Corps of Engineers	Construction Management	%5	15,000
U.S. Army Corps of Engineers	Construction	%26	83,150
Washington Coastal Protection Steering Fund	Permits, construction, maintenance and monitoring	%14	45,000
Lower Columbia River Estuary Program	Revegetation and monitoring	%3	10,000
Columbia County Parks Department	Construction	%5	17,000
BPA	Construction and Monitoring	%9	29,850
<b>Total project cost (including BPA portion)</b>			<b>\$320,850</b>

### **Outyear costs**

	<b>FY2001</b>	<b>FY02</b>	<b>FY03</b>	<b>FY04</b>
<b>Total budget</b>	\$5,500	\$5,500	\$5,500	\$5,500

## **Section 6. References**

<b>Watershed?</b>	<b>Reference</b>
<input type="checkbox"/>	Washington Coastal Protection Fund Steering Committee, 1998 Budget
<input type="checkbox"/>	U.S. Army Corps of Engineers Preliminary Restoration Plan, October 1998, Portland, OR
<input type="checkbox"/>	Lower Columbia River Watershed Council Draft Action Plan, 1998, Clatskanie, OR
<input type="checkbox"/>	NOAA Strategic Plan, 1997
<input type="checkbox"/>	The Oregon Plan for Salmon and Watershed, 1997, Salem, OR

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## **PART II - NARRATIVE**

### **Section 7. Abstract**

Reconnection of the Westport Slough and the Clatskanie River will restore the historic water flow from the Clatskanie River to the Columbia River via the Westport Slough. This will be accomplished by placing a 12' culvert in the existing plug at the head of the Westport Slough.

A 1938 Works Progress Administration (WPA) project closed the Westport Slough to allow for access to diked land along the Columbia River. This resulted in the slough becoming a dead waterway. This closure has encouraged sediment buildup and accumulation of toxins and contaminants in the waterway. The fish habitat has been severely degraded, decreasing the population of anadromous fish. Resulting temperature and bacteria conditions, due to sediment buildup and restricted flow, have been a cause of the Clatskanie River becoming DEQ 303d listed.

The placement of a culvert will restore water interchange, create increased flows and circulation. This will improve and restore degraded salmonid and resident fish habitat in 9 miles of the Westport Slough. Fish access to eight streams in the Lower Columbia River Watershed will be reopened to migrants of the Clatskanie River, approximately 24 miles of stream. Off channel flood refuge for migrating fish will be renewed and a crucial link for fish migration to spawning and rearing areas will be reestablished. It will aid in restoring natural floodplain functions.

Improved water movement will aid in flushing sediment from the system. This will prevent accumulation of contaminants and improve water temperature.

Completion of this project will allow for better recreational boating access for canoes and kayaks on the Lewis and Clark Water Trail.

The Washington Coastal Protection Steering Committee has made this a priority project and committed \$45,000.00 in funding. Columbia County Parks Department is providing \$17,000.00. The Lower Columbia River Estuary Program has committed \$10,000.00. Columbia Soil and Water Conservation District is providing fiscal administration of the project without charge.

The project will be implemented by the Army Corps of Engineers following an Environmental Assessment and development of plans and specifications. A Preliminary Restoration Plan has been published, October 1998. The construction phase will begin in July 1999 and be completed by September 1999. The monitoring phase, to assess the return of fish and to measure water quality, will continue for a five year period after completion of the construction phase of the project.

## **Section 8. Project description**

### **a. Technical and/or scientific background**

This project has been identified as a high priority project by the LCRWC because of the large impact area. The LCRWC is in the process of implementing a Watershed Assessment following the GWEB Watershed Assessment Manual. A large volume of historical data has been collected and reviewed. This research has indicated that the numbers of anadromous fish in the project area have steadily declined since the placement of the slough plug in 1938 to the present.

The project is located near the mouth of the Clatskanie River, a Columbia River tributary, at the entrance to the Westport Slough, also a tributary of the lower Columbia River. The site is 2 miles west of the town of Clatskanie, and about 70 road miles northwest of Portland, Oregon.

The Westport Slough is an historic channel of the Clatskanie River. A slough plug is located at the head of the slough adjacent to an outer bend of the Clatskanie River. The plug was built by the Works Progress Administration (WPA) in 1938 to provide road access to farmland on the Midland Drainage District. The plug blocks all flow from the Clatskanie River to the Westport Slough. It prohibits fish passage between the two waterways. The slough has silted in along much of its upper length, as has the bend in the Clatskanie River. The Westport Slough has become a dead waterway throughout much of its length.

Westport Slough has historically supported anadromous species including steelhead, chinook, coho, sockeye and cutthroat trout. There has been a significant decline in use by anadromous species due to habitat degradation, flow modification and lack of fish passage at the plug. Juvenile salmonid rearing areas and adult holding areas have been lost. The sediment buildup has caused muddy water and increased shallowness. This has resulted in higher temperatures, low levels of oxygen and accumulation of pollutants.

Reducing temperature would aid in decreasing the predator population which thrives in warmer water. Decreased levels of sedimentation will increase juvenile productivity.

The Clatskanie River is an historic anadromous fish stream. It has been cited on the DEQ 303d list for temperature and bacteria. It would be a secondary impact area. Opening this channel would allow for improved flow in and out of the Clatskanie River from tidal activity from the Westport Slough. This would aid in flushing the sediment buildup that affects the lower Clatskanie River and contributes to its high temperatures and bacteria presence.

**b. Rationale and significance to Regional Programs**

The Westport Slough reconnection would improve conditions for several at-risk anadromous species. The project supports the salmon habitat improvement objectives of the Oregon Plan for Salmon and Watersheds. The project lies within Evolutionarily Significant Units (ESU) for several anadromous species including chinook, chum, coho, and steelhead. NMFS listing status of these species in the Lower Columbia is: Coho, a candidate for listing; Steelhead, listed as threatened; Chinook, proposed threatened; Chum, proposed threatened.

By reestablishing flow into Westport Slough from the Clatskanie River, approximately nine miles of migration and rearing habitat will be immediately returned for use by Clatskanie River anadromous fish.

Several fish-bearing tributaries to the Westport Slough support small numbers of anadromous and resident fish. The restored flows to Westport Slough will enhance access to migration, spawning and rearing habitats for the tributary fisheries. Estimates provided by the Oregon Department of Fish and Wildlife (ODFW) suggest that access would be improved to 24 miles of fish habitat.

Implementation of this project restores a significant amount of migration, spawning, rearing and flood refuge habitat for endangered and threatened anadromous species in the Lower Columbia. The data from the Monitoring Phase of this project would provide a foundation for the development of similar waterway openings in the Lower Columbia floodplain.

**c. Relationships to other projects**

The City of Clatskanie and the Port of Astoria dredged the lower 1.5 miles of the Clatskanie River for flood control purposes in September of 1998. This project will affect flow into the head of Westport Slough.

Restoring the flow from the Clatskanie River to the Westport Slough should aid in restricting the buildup of sediment in the newly dredged section of the Clatskanie River.

The Westport Slough Reconnection Project is part of the LCRWC Draft Action Plan developed as part of the Oregon Plan for Salmon and Watershed Restoration. There are other sites in the LCRWC Watershed which have been blocked in a similar way. The successful completion of this project will create a model to address these additional sites.

Data from the monitoring component will become part of the LCRWC Watershed Assessment. Water Quality data will be made available to DEQ. Fish Survey information will be made available to ODFW. Monitoring data will be provided to the Lower Columbia River Estuary Program for use in developing their Action Plan. Data will be available to Columbia County for planning assessments including the Columbia County Hazard Mitigation Plan.

**d. Project history (for ongoing projects)**

(Replace this text with your response in paragraph form)

**e. Proposal objectives**

1. The primary objective is to reconnect the Westport Slough and the Clatskanie River by placing a 12' culvert in the plug at the head of the Westport Slough. This will restore the historic channel which was plugged in 1938.
2. Restoring the flow between the Westport Slough and the Clatskanie River will improve, restore and sustain 9 miles of degraded salmonid habitat. This will be accomplished through increased water circulation which will flush sediment and contaminants from the Westport Slough and the Clatskanie River. Removal of the plug would renew the biological integrity of the stream and will provide a source of aquatic macrophyte for the Columbia river salmon food chain. It will provide needed rearing habitat and flood refuge for juvenile salmon and downstream migrants in the Columbia River. The water quality improvements will be measured through the LCRWC WQMP.
3. Reestablishing this historic means of fish passage will improve access to 8 streams which are tributaries of the Westport Slough. Approximately twenty-four miles of tributary fishery will be renewed.
4. Monitoring habitat and water quality for five years will provide evidence of the degree of success of the project. A fish presence survey and a Water Quality Management Plan (WQMP) will be put in place. The WQMP will be part of the existing WQMP of the LCRWC. Both of these components will become part of the LCRWC Watershed Assessment.
5. The Clatskanie River and Westport Slough are part of the historic Lewis and Clark Water Trail. Opening this channel will allow the public uninterrupted water access to this trail. It will offer a safe route off of the main channel of the Columbia River.

**f. Methods**

1. An Environmental Assessment and Plans and Specifications will be prepared by the Army Corps of Engineers. A Preliminary Restoration Plan has been published in October of 1998.

The removal of the plug and placement of the culvert will require excavation of approximately 2700 cubic yards of material to form the channel to the pipe and to allow installation of the culvert. Material could be left at both ends of the excavation to serve as a cofferdam. This would allow all work to be performed in the dry. Backfilling of the road would require replacement of about 400 cubic yards of material, which would be obtained from the required excavation. Approximately 240 cubic yards of rip rap and 80 cubic yards of rip rap bedding would be required on both the upstream and downstream channel slopes.

Some project maintenance may be required, in the form of sediment and debris removal, in the project site area. The extent of this maintenance should be limited and is addressed in the project budget.

Tasks required to construct the project are:

- Mobilization and demobilization
- Demolition of roadway, clearing and grubbing

- Excavation for culvert and upstream and downstream approaches
- Construction of culvert
- Backfilling of culvert
- Placement of rip rap and bedding
- Removal of cofferdams
- Reconstruction of roadway
- Seeding and planting slopes and construction area
- Maintenance

The expected results will be improved water circulation and flow to aid in natural removal of sediment from the streams and a natural restoration of aquatic habitat.

- 2, 3. Objectives 2, and 3 will be met by removal of the dam and placement of the culvert as described in Objective 1. The expected results will be improved salmonid and resident fish habitat in a presently degraded area. Temperature and bacteria conditions are expected to improve to a level which will favorably support anadromous fish life cycles.
4. A monitoring program will be implemented to monitor fish presence in Westport Slough and the 8 tributaries. Fish presence will be monitored by the LCRWC during periods of anadromous fish migration. We will partner with ODFW to implement an effective program to meet this goal.

The LCRWC presently conducts a WQMP under the guidance and using the protocols of Oregon Department of Environmental Quality (DEQ). The LCRWC has a WQMP with a Quality Assurance/Quality Control (QA/QC) component developed in cooperation with DEQ. To evaluate the effects of the Reconnection Project several sites along the Westport Slough and Clatskanie River will be identified for testing. The parameters used will be temperature, dissolved oxygen, conductivity, turbidity, pH and bacteria. These will be sampled on a monthly basis. Macroinvertebrate sampling will be done on a semi-annual basis. This Monitoring Project will have a duration of 5 years.

5. Objective 5 will be met by removal of the dam and replacement of the culvert as described in Objective 1. Evaluating increased public use will be difficult. The Lewis and Clark Water Trail Committee has offered design input to assure that the project is adequate to meet the needs of the boating public. The Lewis and Clark Water Trail Committee will attempt to monitor and record this component and provide pertinent data to the LCRWC regarding use of this waterway.

**g. Facilities and equipment**

Project construction will be carried out by the U.S. Army Corps of Engineers. All equipment for construction will be their responsibility.

Future possible maintenance, in the form of sediment and debris removal, will be contracted.

Monitoring equipment for the LCRWC WQMP has been provided by DEQ. It includes:

- Vemco Minilog
- NIST Thermometer
- Hach Digital Titration Kit
- YSI Conductivity Meter
- Hach 2100P Turbidimeter
- Orion 210 pH Meter

- Macroinvertebrate sampling equipment

Bacteria testing will be done by the City of Clatskanie.

#### **h. Budget**

This project has received wide support throughout the Region, as is evidenced by the degree of cost-sharing already committed to the project. The BPA cost-share of \$29,850.00 would be less than 10% of the entire budget. This would be an investment that would allow this project to be implemented and would have effects far beyond the actual construction site. The \$12,850.00 of BPA funds would allow the project to meet the Construction Phase costs. The physical reconnection of the Westport Slough and the Clatskanie River will initiate a process of natural restoration that will impact the salmonid life cycle throughout the reaches of the Clatskanie River, the Westport Slough, 8 slough tributaries with over 24 miles of stream, and the mainstem Lower Columbia.

The Monitoring Phase of the project will provide significant water quality data and fish presence data. The BPA cost over a 5 year period would be \$17,000.00, 6% of the cost of the entire project and 68% of the Monitoring Phase. This investment will provide important water quality data for development of future action plans by the LCRWC, DEQ, LCREP, ODFW and other agencies that depend upon water quality data in their decision making process. The fish data will be useful in providing sound scientific information to sustain the theory of improving habitat by increasing circulation, flushing sediment, decreasing temperature and bacteria and increasing oxygen and aquatic macrophyte by reconnecting previously closed waterways. The Monitoring Phase is an integral part of the project. It will be used to provide the defensible basis to enact similar reconnection projects in the Lower Columbia River Watershed.

The increased public use of the Lewis and Clark Water Trail by the boating public will amplify the significance of this project by raising public awareness of the watershed restoration process. This will serve to magnify the monetary investment by providing a public education site on an historic water trail.

## **Section 9. Key personnel**

**U.S. Army Corps of Engineers:** Responsible for Environmental Assessment, Plans, Specifications and Construction Phases of the project.

Other components of the project are coordinated by the LCRWC Coordinator with the advisement of the LCRWC membership and Technical Committee.

**Margaret C. Magruder, LCRWC Coordinator:** Part-time position, 100 hours per month. Masters Degree, Syracuse University, Syracuse, New York, 1973. Bachelors Degree, Willamette University, Salem, Oregon 1970. Owner/operator sheep ranch, 1978- present. Secretary/Treasurer Marshland Drainage District 1974-present. Member Oregon Board of Agriculture 1994-present. Member of the North Coast Basin Advisory Committee for Agricultural Water Quality Management Plans, 1998. Columbia County Budget Committee 1998. Active in a variety of agricultural and civic organizations. Life long resident of the Lower Columbia Region. As a Drainage District Board Member active in coordination of U.S. Army Corps of Engineers projects and annual inspections. Has served as LCRWC Coordinator since the Council was formed in December 1997. Sole employee of LCRWC. Responsible for all Council activities, action plan and project development, funding and implementation. Has developed a Water Quality Monitoring Plan for LCRWC. Performs in-field WQ testing procedures. Presently coordinating implementation of Watershed Assessment.

**Columbia Soil and Water Conservation District (ColSWCD):** Sponsor of the LCRWC, provides technical and physical assistance through a Watershed Technical Specialist and Natural Resources and Conservation Service (NRCS) staff.

## **Section 10. Information/technology transfer**

Throughout the project timeline, updates will be published in local newspaper in the LCRWC monthly column. The public will be informed of all actions during the regular meetings of the LCRWC. A Final Report at the completion of the construction phase of the project will be provided for all participants. This will be made available to the Governor's Watershed Enhancement Board (GWEB) and other pertinent agencies. Reports on the Monitoring Phase of the project will be made available on an annual basis. Data from the project will be provided to DEQ as part of the LCRWC WQMP. Data from the project will become part of the LCRWC Watershed Assessment document.

**Congratulations!**