

WASHINGTON STATE
DEPARTMENT OF
E C O L O G Y

Application for a 2015-2017 Floodplains by Design Project Grant

Submitted applications will be rated to create a ranked list in support of Ecology's FY 2015-2017 Floodplains by Design budget request.

Applications must be submitted electronically via email to Ecology by 5:00 pm, **September 8, 2014**. Send applications to:

Adam Sant at Adam.Sant@ecy.wa.gov

With the Subject line: 2015-2017 Floodplains by Design Project Grant Application

You will receive confirmation that your application has been received by close of business on September 15.

Applicants must use this form as provided. No alterations will be accepted.

Project Title *Pysht River Flood Reduction and Floodplain Restoration Project*

Organization/Jurisdiction Name ***Lower Elwha Klallam Tribe***

Contact Name ***Mike McHenry***

Address ***Natural Resources Dept., 51 Hatchery Road***

City, State, Zip Code ***Port Angeles, WA 98363***

Phone ***360-457-4012 ext. 7492***

Email ***mike.mchenry@elwha.org***

Legislative District(s) ***24th***

County ***Clallam***

WRIA(s) ***19***

Congressional District(s) ***6th***

Specific Project Location

Section ***12,13,18*** Township ***31 N*** Range ***11&12*** River Mile ***7.2-9.0***

Latitude Longitude GPS coordinates, if available

Major Watershed Project is in ***Pysht***

***Full project (or phase proposed herein) should be completed in 3-4 years.
Project Narrative and Budget are limited to 20 pages.
Scope of Work, Schedule, Maps and Photos can be in addition to those 20 pages.***

1. Short Description of Project (500 words or less).

The Pysht River Flood Reduction and Floodplain Restoration Project will restore instream and floodplain habitat conditions to facilitate salmon recovery and water quality improvement, and reduce flood hazards to State Route 112 and several residences located on the Pysht River's floodplain. The project is a collaboration of two tribes (Makah and Lower Elwha Klallam), the Washington State Department of Transportation (WSDOT), a private timber company (Merrill and Ring), the North Olympic Land Trust (NOLT) and citizens who reside along the river. This project proposes to implement engineered log jams (ELJs), floodplain fencing and log revetment structures to improve floodplain habitat conditions and reduce the risk of flooding in a 1.8 mile reach of the Pysht River (river mile 7.2-9.0). In the upstream portion of this reach, the project proposes to reactivate floodplain connectivity and area which will enhance water quality and quantity and improve salmon habitat. In the downstream portion of this reach, the project will reduce flood hazards associated with State Highway 112 and to several nearby residences. It will also improve floodplain habitat conditions.

Two-dimensional hydraulic modeling completed during preliminary engineering shows that the project design will reduce residential and State Highway 112 flooding. Portions of the highway flood on an annual basis and erosion of the stream bank threatens the integrity of the road and adjacent houses in the proposed treatment reach.

The Pysht River is the second largest in WRIA 19 and supports populations of Pacific Salmon important to two recognized tribes as well as citizens of Washington. The Pysht supports populations of Chinook, coho and chum salmon as well as steelhead and cutthroat trout. The population status for these species in the Pysht ranges from chronically depressed (chinook), declining (chum), below potential (coho), and unknown (cutthroat) to healthy (steelhead).

A primary cause of the decline in the status of several of these species is the habitat condition of the Pysht River watershed. The watershed has been intensively logged for a century and most of the mainstem was subjected to wood removal. In addition, State Route 112 was constructed adjacent to the Pysht River and through its floodplain. This had led to inevitable conflicts between maintaining the highway and promoting habitat forming processes. WSDOT has identified sections of State Route 112 as "chronically deficient" primarily due to periodic flooding and erosion of the Pysht River bank adjacent to sections of the highway. WSDOT has traditionally used hard armoring to protect the highway.

Sixteen ELJs will be installed in the project reach at locations designed to improve habitat conditions for salmon and where applicable, direct erosive flows away from infrastructure (roads, houses). These ELJs are designed to be stable up to 100 year flood reoccurrence intervals and will be constructed of native materials. ELJ's are a proven tool for enhancing floodplain functions and as a tool for reducing flood and erosion risks.

Where chronic flooding of residences and State Route 112 occurs, flood fencing (floodplain roughening) will be implemented to reduce the periodicity and magnitude of flooding.

2. Flood hazard / risk reduction (60 points)

Describe your project and how it will reduce the magnitude or frequency of flood damages to people, structures or infrastructure. Projects will be evaluated on the significance of the flood hazard and the ability of the solution to address the hazard. Evidence of flood hazard reduction can be demonstrated via flood storage added (acre-feet), flood stage reduction [reduced BFE (base flood elevation)], conveyance increased (cubic ft/sec), sediment storage added or inputs reduced, number or value of structures and/or development rights removed from hazard area (# or areal extent), critical facilities removed from high hazard area, transportation and infrastructure facilities removed from high hazard areas, and other project-specific goals. Describe both upstream and downstream effects of your project. **Answer question 2 here:**

The lower portion of the proposed project addresses flood hazard reduction along State Route (SR) 112 near milepost 24.6 and several residences in that vicinity and upstream. This section of the highway is identified in a reach analysis report produced by WSDOT (Herrera 2006) as P-1. The Herrera (2006) document identifies four areas of SR 112, inclusive of P-1, in which "the hazards pose high risk to the highway and immediate action is required." Hydraulic modeling of the 100-year flood indicates that flooding occurs on SR 112 at multiple locations, with the river overtopping the road, and those overtopping flows returning to the river at multiple locations through the project reach. The highway is vulnerable to flooding in lesser events as well. Highway closure during floods reduces access for area residents, interferes with commercial activities and prevents the access of emergency vehicles.

In addition to SR 112, approximately 10 parcels with permanent residences on them experience flooding on a regular basis, resulting in property damage, stranding risks, well water contamination concerns, and road closures (most recently in 2005, 2007, 2009, and 2010). Overhead Electrical Power poles and buried communications are also at risk. There are currently no flood control facilities in place to mitigate adverse effects of this flooding.

The proposed project also address riverine erosion hazards. Repeated bank erosion adjacent to SR 112 for a length of approximately 400 feet has caused WSDOT to install rock armoring to protect the roadway from being undermined. This has degraded instream and riparian habitat and has not stopped erosion from recurring, resulting in additional rock armoring and habitat degradation

Erosion currently directly threatens two residences, the Browns' and the Gregory's, and the shoulder of SR 112 (including power poles and buried communication lines) just upstream of the Gregory residence. The Brown residence sits on the outside left bank of an actively eroding meander bend with only 20 feet of separation between the top of bank (2014) and the house foundation. The Gregory residence also is located on the left

bank and lies within the migration path of an active and fast moving meander (the bank in this meander has migrated approximately 200 feet in 20 years). This same meander erosion threatens to damage 200 feet of SR 112.

Within the project reach all of the private residences and major infrastructure are located on the right (north) bank of the river. The left bank floodplain is undeveloped due to the steep slope of the south valley wall and lack of roads and/or bridges to enable access. The proposed ELJs in the upper portion of the project reach will reactivate historic left bank floodplain areas in this vicinity, spreading flow over a wider area and thereby reducing the flood hazards to SR 112 and neighboring properties while greatly increasing habitat complexity. The ELJs will also provide salmon habitat via complex pool formation around them, shading, and overhanging vegetation, and will improve water quality by reducing sedimentation related to chronic bank erosion.

A combination of flood “fencing” and deflector logjams is proposed for this area, which will reactivate an old channel on the inside of the river bend and alleviate residential and highway flooding. This will increase off channel habitat area enhance habitat complexity, and prevent future habitat degradation related to sedimentation.

Hydraulic modeling is currently being completed to optimize the floodplain restoration and flood hazard reduction that can be accomplished (see attached Figures). As the optimal project configuration is refined and the engineering design plans are updated, the Makah and Elwha tribes will continue with landowner outreach and permitting during 2014. The project could conceivably be constructed beginning in the summer of 2015.

3. Floodplain ecosystem protection or restoration element (60 points)

Describe the ecological benefit of the project, its significance, and the ability of the solution to address the overall need in the project area or watershed. Examples include, but are not limited to, reconnecting floodplains, salmon recovery actions, habitat restoration, Channel Migration Zone protections, etc. Evidence of ecosystem benefits include floodplain (including estuary) habitat type (e.g., wetland, side channel, forest) and area restored (# acres), floodplain area protected from bank armoring (# of acres), floodplain area protected from development or other land use change (# acres), hardened bank removal or levee/riprap removal (linear feet), levee setbacks constructed (linear feet, # acres), new side channels or reconnection of old side channels (linear feet or storage volume), salmon species benefitted (# of listed, non-listed species). Secondary evidence includes culvert replaced to restore fish passage or increase conveyance, logjam and or wood structures installed, riparian area planted, and other project-specific goals. **Answer question 3 here:**

Habitat forming processes have been affected by historic anthropogenic activities in the Pysht River and its floodplain. The watershed was homesteaded in the late 19th century by euro-Americans and the bulk of the watershed land area was acquired by Merrill and Ring, which had exhausted its timber supplies in the midwest United States. The area was first developed to support railroad logging and a log port was constructed in the

estuary to supply the west coast with saw timber. Logging has been the primary land use in the watershed for over 100 years and truck logging has replaced railroad logging.

The legacy of these land use have been documented in the Pysht River; the primary limiting factors for salmon are interrelated to those land uses and include channel simplification, channel incision and resultant floodplain disconnection, loss of pools, increases in fine sediment, and simplification of riparian forests (Smith 1999¹; Haggerty 2006²). State Route 112 was constructed adjacent to portions of the Pysht River with major impacts to the river's floodplain. WSDOT lists portions of SR 112 as "chronically deficient," which indicate an area where heightened (and typically underfunded) maintenance attention is needed and chronic environmental degradation is occurring, including sections adjacent to the Pysht River. This designation is directly due to ongoing erosion and flooding impacts to the highway that have traditionally been treated with hard armoring.

The Pysht River supports populations of Chinook, chum, and coho salmon, as well as steelhead and cutthroat trout. The population status of these stocks varies, but overall they have severely declined from historic estimates. However, none of these stocks are listed under the Endangered Species Act as they were grouped with aggregations of coastal stocks which are considered relatively healthy. And yet, the remnant Chinook are chronically depressed at best, coho and chum are declining, steelhead are considered stable, and little information exists for cutthroat. It is important to note that this area is part of the Strait of Juan de Fuca salmon migratory corridor and there is documented use of the estuary by ESA-listed stocks from other areas including Puget Sound, Columbia River and Klamath River.

These populations of salmonids were historically important to the Makah and Lower Elwha Klallam Tribes but have declined to levels that do not allow significant fishing opportunities for either Tribe. Both Tribes have supported decades of conservation in order to rebuild salmonid populations to sustainable fishing levels and consider salmon management in the Pysht River as a treaty rights issue. The Limiting Factors Analysis for the Western Strait of Juan de Fuca identifies that the Pysht River has the most floodplain impacts of any of the rivers in the Western Strait (Smith 1999). Major limiting factors identified in the Pysht River Floodplain Habitat Inventory & Assessment (Haggerty, et al 2006) include floodplain disconnection, increased peak flows, and loss/lack of large woody debris (LWD).

Construction of the proposed ELJs and flood fencing will build upon Makah and Lower Elwha Klallam Tribe (LEKT) efforts to restore floodplain and estuary habitat in the

¹ Smith, C. 1999. Limiting Factors Analysis for Watershed Resource Inventory Area 19. Washington Conservation Commission, Olympia.

² Haggerty, M., M. McHenry, and R. McCoy. 2006. Pysht River Floodplain Habitat Inventory and Assessment. Pacific Salmon Commission, Vancouver, British Columbia, Canada.

watershed. Several Salmon Recovery Funding Board protection and restoration projects have been completed in the Pysht River in the last decade, including land acquisition by the North Olympic Land Trust (project #'s 09-1528, 10-1509, and 13-1062) and previous engineered logjam projects by LEKT in the mainstem Pysht and the South Fork Pysht Rivers (project #'s 02-1583, 06-2287, 07-1848). Since 2009, the Land Trust has acquired several contiguous parcels of land adjacent to the Pysht River for conservation and restoration purposes. Structure and contaminant removal and re-vegetation have occurred on one of the parcels contained within the proposed project limits, on which further instream and floodplain habitat restoration actions are proposed. LEKT previously implemented ELJs between river miles 9.5 and 11.5 and between river mile 0 and 5.5 on the South Fork Pysht River.

This current proposal will complement the proposed Pysht Estuary restoration project which is currently seeking PSAR Large Cap Funding. That project proposes to restore 22 acres of saltmarsh habitat in the Pysht River Estuary through the removal of 105,000 cubic yards of dredge deposits and the establishment of ~10,000 of tidal channels. Cascade Land Conservancy, now known as Forterra, previously negotiated an easement to protect the Pysht Estuary which is a large and important salmon rearing habitat.

While the project proponents have been successful seeking funding through traditional salmon restoration venues like SRFB, the funding environment has changed and projects in WRIA 19 are no longer competitive because of a change in emphasis to watersheds with ESA-listed species of salmon. In the North Olympic region this means that the restoration dollars are generally all going to projects in the Dungeness and Elwha Rivers. LEKT intended to submit this very project in the 15th round of SRFB applications, but despite the significant merits it can achieve in a degraded river system, it could not because it did not rank high enough on the three year priority list!

Floodplain restoration proposed in the project area furthers previous actions on a North Olympic Land Trust (NOLT) conservation parcel where infrastructure was removed and native vegetation planted throughout the riparian and non-riparian areas. NOLT has made this area open to the public for passive recreation opportunities such as fishing, bird watching and hiking.

The floodplain of the Pysht River in the vicinity of this NOLT property is adjacent to an incised portion of the river with a strong plane-bed form (see attached photos). This property, like much of the adjacent lands, was historically logged and modified for agricultural purposes. Further, the lack of floodplain connectivity is largely due to a chronic lack of LWD resulting from historic logging and stream "cleaning" activities. Stream cleaning was widespread on the Olympic Peninsula and was actually promoted by the state Department of Fisheries for decades. The combination of logging without buffers and stream cleaning has resulted in chronically deficient wood levels in the Pysht River. Riparian buffers are now being used extensively in Washington under the Forest and Fish Act. However, the riparian stands along the Pysht River are still too young (<50

years) and dominated by red alder, which does not provide the structural strength to build channel and floodplain habitats. The installation of ELJs in the project area is designed to increase instream complexity for salmonid habitat and restore interaction with the floodplain and hyporheic zone. The restructuring of the mainstem Pysht River with LWD, from both natural recruitment and restoration projects likely offers the best approach for treating channel incision and floodplain disconnection problems (Haggerty 2006).

4. Is your project in a Puget Sound Partnership Priority Floodplain? (5 points)

(Deschutes, Dungeness, Duwamish/Green, Elwha, Hood Canal, Lake Washington, Lower Skagit, Nisqually, Nooksack, Puyallup, Sauk, Skokomish, Skykomish, Snohomish, Snoqualmie, Stillaguamish, Upper Skagit)

Answer question 4 here: Yes

No X

5. Other benefits (40 points)

Describe how your project maintains or improves agricultural viability, water quality, public open space/recreation access, economic development, or other important local benefits or values, and does not conflict with other objectives of this program. Projects receive points based on the importance of the result produced, the ability of the solution to address the overall stakeholder need and the long-term improvement.

- i. Agricultural viability (evidence of agricultural benefits include reductions in flooding (acres), protection from development (acres), improvement of drainage infrastructure (acres), or other capital or non-capital benefits to agricultural productivity).
- ii. Water quality improvement [e.g., through stormwater infrastructure upgrades, treatment of a TMDL or 303(d) issue, reduction in sediment, restoration of wetlands or riparian areas, implementation of related best management practices, etc.].
- iii. Public access and recreation (e.g., through land acquisition, the development of trails or other recreational infrastructure, etc.)
- iv. Other floodplain values or services of local importance.

Answer question 5 here:

There are no current significant agricultural land uses in the Pysht River watershed as the primary land uses are commercial forestry and to much less extent rural residences. Those residences are, however, concentrated along the Pysht River floodplain. In addition, conversion of commercial timberlands to residential or large-scale resort development is a major concern in this area. Efforts to restore and protect this floodplain will provide benefits now and into the future.

Water quality limited sections have been identified in the Pysht River for fine sediment, temperature and Biosassessment (Washington State Department of Ecology Section 303d list approved December 2012). This project would have little to no effect on fine sediment as much of that impact is related to historic logging practices which delivered elevated levels of fine sediment to the channel network in the watershed. That material is still being processed by the channel and is likely in storage at elevated levels throughout the watershed. The project may positively affect temperature conditions at the reach level. Construction of an ELJ typically results in development of a scour pool.

That scour pool may result in an increase in groundwater connection between the hyporheic and surface zones. Hyporheic water is typically cooler than the water in the surface channel. The Lower Elwha Klallam Tribe has measured a local depression of summer water temperatures around ELJs constructed in the Elwha River (McHenry et al. 2007)³. The proposed construction of 16 ELJs in the reach between River Mile 7.2-9.0 could provide a measurable effect on summer water temperatures in the Pysht and provide complex cover and cool water refugia and holding habitat. Longitudinal monitoring of water temperatures in the mainstem Pysht River shows that the river heats dramatically in the downstream direction, and that the greatest increase begins within the proposed project reach (Unpublished Data, LEKT). The addition of large wood to stream channels may also increase macroinvertebrate abundance and diversity. Coe et al. (2011)⁴ observed such a response in the Elwha River where following insertion of ELJs periphyton biomass and invertebrate densities and diversity were significantly higher than on surrounding substrate.

Public access has been improved in this area through fee simple purchases or conservation easements negotiated by North Olympic Land Trust. NOLT is currently negotiating with other landowners along the Pysht River floodplain including parcels within the proposed project limits. If successfully obtained, those easements will allow for additional public access for recreational activities. Recent studies have indicated that tourism and access to our natural resource assets are large economic drivers in our area. The more we can do now to restore and maintain river corridors the more benefits they will provide in the future in terms of ecosystem services.

6. Cost-effectiveness (20 points)

- i. Project will be judged on whether the budget is appropriate to the project scope, and designed for project success.
- ii. Describe how the project will be continued or maintained after the grant has been completed.
- iii. If project cannot be fully funded, explain how the project could be scaled downward.

Answer question 6 here:

This project is designed as a comprehensive reach scale flood reduction and ecosystem restoration project by natural resource scientists from two federal treaty tribes supported by expert geomorphologists and engineers from a licensed engineering firm with extensive experience with this type of project. The cost estimate was developed based upon costs for other similar projects in western Washington. The Tribes to date have contributed \$412,000 toward engineering design and materials purchase. This total does not include staff time expended by the two Tribes' natural resources departments. If funded this project would occur on at least three parcels on which the

³ McHenry, M.L., G. Pess, T. Abbe, H. Coe, J. Goldsmith, M. Liermann, R. McCoy, S. Morley, and R. Peters. 2007. The physical and biological effects of engineered logjams in the Elwha River, Washington. Report to the Salmon Recovery Funding Board, Olympia, WA.

⁴ Coe, H.J., P.M. Kiffney, G.R. Pess, K.K. Kloehn, and M.L. McHenry. 2011. Periphyton and Invertebrate Response to Wood Placement in Large Pacific Coastal Rivers. River Research and Applications 25:1025-1035.

NOLT has either ownership or conservation easements. NOLT is currently evaluating future easement opportunities along the mainstem Pysht River and has a goal of conserving the entire floodplain. Thus, this project represents a “value added” action in terms of promoting floodplain restoration and recovery of natural processes. Once completed, this project will not require any long-term maintenance. The proposed ELJs and flood fencing are designed to withstand flood regimes up to the 100 year event and will have a life span of multiple decades. If the project is not fully funded it would be a simple exercise to scale back the planned activities (number of structures) to fit the available budget. Alternatively, the project proponents could seek matching funds to scale the project back to its original intent.

7. Long-term cost avoidance: (30 points)

- a. Describe how your project minimizes or eliminates future costs for maintenance, operation, or emergency response. **(15 points)**

Answer 7.a. here:

If this project is not funded it is likely that State Route 112 and the adjacent residences will continue to be frequently flooded during winter storm events. These floods result in highway closures and may result in flood damages to several houses in the lower end of the project reach. It is also likely that the Pysht River will erode its current bank to the extent that the highway is eroded into the river. If this occurs WSDOT will be forced to repair/reconstruct the road, without funding in place to do so. This is not a desirable outcome as it could result in an emergency project that causes habitat degradation and does nothing to reduce the risk of flooding. Realignment of the road is highly problematic, and far more expensive than the proposed project, because of the proximity of residences on both sides of highway.

- b. Describe how your project accounts for expected future changes to hydrology, sediment regimes, or water supply resulting from other floodplain management efforts, land use changes, extreme weather events, or other causes. **(15 points)**

Answer 7.b. here:

During the design process we used two-dimensional hydraulic modeling to assess the impacts of 25 different design configurations on water velocity and water depth. These model runs used conservative estimates of flood recurrence intervals up to the 100 year flood. The design team felt that the conservative estimate of the 100 year flood event would be adequate to cover the anticipated impacts from climate change for the next century. For the Pysht River those impacts are anticipated to be an increase in precipitation during the winter months and a decrease in precipitation during the summer. The Pysht is a low elevation watershed with rainfall-dominated hydrology (no appreciable snowpack). We do not expect any drastic changes in land use in the Pysht watershed in the next century. The watershed is primarily owned by private parties (Merrill and Ring), the State (WDNR) and federal (USFS) agencies and managed for commercial forestry purposes. Forest practices are much improved and guided by the Forest and Fish Agreement, Habitat Conservation Plans, or the President’s Forest Plan depending on ownership. The project proponents believe the Pysht River is in a recovery

trajectory in terms of restoring natural processes and that projects like the Pysht River Flood Reduction and Floodplain Restoration Project will accelerate that recovery. If a dramatic increase in sediment supply were to occur as a result of land use or climate exchange, we would expect the channel bed to aggrade and flood impacts to increase in frequency and magnitude, particularly if no action is taken. This project will diversify habitat types and increase the connectivity of the channel to both its floodplain and groundwater. This can only increase the Pysht River's ability to withstand natural and anthropogenic disturbances.

8. Demonstration of need and support (30 points)

- a. Describe how your project is consistent with the intent of existing floodplain management or habitat recovery plans or is specifically identified through existing plans or work programs. (Elements of the project may have been developed through more than one planning process. Please identify the planning process used for each major element if they are not from a common plan.) **(15 points)**

Answer question 8.a. here:

In 2006, LEKT conducted an analysis of the Pysht River's floodplain and identified areas for restoration. These included areas where the river was encroached upon by infrastructure, barrier culverts caused by roads, and degraded channel and riparian conditions (Haggerty et al. 2006). This document represents the watershed analysis to support restoration of floodplain conditions in the Pysht and has been used to support past and present SRFB projects. WSDOT's Reach Analysis (Herrera 2006) is the primary document for identifying infrastructure at risk from flooding and erosion. Both of those studies support the need for the project as proposed. This work is also supported by the draft WRIA 19 Salmon Recovery Plan, the 2011 North Olympic Peninsula Lead Entity for Salmon Strategy and the Puget Sound Partnerships Action Agenda.

- b. Describe which flood control authorities, Tribal Nations, local governments, lead entities, key stakeholders or decision-makers representing floodplain interests located within the river reach or affected by the project have provided letters of support explicitly endorsing the project and its outcomes for their interests. **(15 points)**

Answer question 8.b. here:

This project is supported by both of the two tribes with treaty rights in the Pysht watershed, which is compelling on its own. In addition the project will occur on parcels either owned by (fee simple), or with conservation easements held by, the North Olympic Land Trust. NOLT is a project partner and strongly supports the project. WSDOT has reviewed the project and also supports its implementation citing the project as a solution to a "Chronic Environmental Deficiency" P-1 at SR 112 milepost 24.5. In a reach analysis of the Hoko, Clallam and Pysht Rivers⁵, it was recommended that an immediate corrective action would be to deflect the river away from the highway in this area. WSDOT has not been able to allocate the funding for this high risk problem. The project is also supported by the North Olympic Lead Entity for Salmon as well as Merrill and Ring, the largest landowner in the watershed.

⁵ Herrera Environmental Consultants. 2007. Reach Analysis: Hoko, Clallam and Pysht Rivers Clallam County, Washington. Report to Washington Department of Transportation, Olympia, Washington. 74 pp.

9. Readiness to proceed and complete the proposed phase of the project (25 points)

Describe how your project is ready to proceed with the scope of work, and your capacity to complete the project successfully and maintain it over time, including your project schedule and deliverables. Describe your experience with similar projects. If your project is acquisition only, describe how you will complete floodplain restoration subsequent to the acquisition.

The Lower Elwha Klallam and Makah Tribes have been working together with hydraulic engineers to develop engineered log jam (ELJ) designs for the contiguous 1.8 mile reach of the Pysht River mainstem within the proposed project extents. The ELJs will address chronic flooding issues for residences and SR 112 and salmon habitat deficiencies, including hardened banks and the lack of habitat features as identified in the limiting factors. The Makah and Lower Elwha Klallam Tribes are currently using existing funding to pay for the engineering design phase of the project to advance this work. The Makah have used several years of Puget Sound Partnership/EPA funding towards structure removal, designs, equipment and implementation. The Lower Elwha Klallam Tribe has also allocated Pacific Coast Salmon Recovery Funds towards designs and implementation. Design is now progressing toward the 30% level of completion and the two tribes have contributed several hundred thousand dollars to project development. Obtaining matching funds will not be a problem. The project spans through properties belonging to the North Olympic Land Trust, Merrill & Ring timber lands, and several private land owners, who all support the project. This proposal is to solicit funds for the final phase of this project – implementation.

10. Pilot project and leverage opportunities (25 points)

- a. If applicable, describe how your project could serve as a pilot effort or result in changes or results with broader impacts to the state. **(10 points)**

Answer question 10.a. here:

This project demonstrates that alternatives to traditional flood control/bank erosion problems can be implemented on medium sized rivers with floodplains and with a diverse group of project partners including State agencies, tribes, citizens and timber interests. These alternatives are effective at maintaining and recovering habitat forming processes that support Pacific salmon. The model could be particularly effective in forested, rural watersheds throughout the state. Roads and highways were typically constructed adjacent to rivers and highway relocations are very expensive solutions particularly in the current State budget climate.

- b. If applicable, describe how your project leverages existing investments, such as SRFB, FCZDs, Dike Districts, TMDLs, WWRP, ESRP, NEP, and other funding sources. Evidence of this will be based on the amount and diversity of the leveraged funding sources. **(10 points)**

Answer question 10.b. here:

WRIA 19 contains multiple watersheds that are sparsely occupied and mostly managed for timber production. The Tribes have strongly advocated for the restoration of the

Pysht and other watersheds in WRIA 19. The Tribes has been working with landowners to protect and recover the watershed since 1991. Significant floodplain restoration projects have been conducted on the mainstem and South Fork Pysht Rivers using primarily SRFB funding. The Tribe has assessed floodplain habitat conditions with funding support from the Pacific Salmon Commission. This assessment was used to procure funding from the Pacific Coast Salmon Recovery Fund for four barrier (culvert) correction projects on forest roads across the Pysht River floodplain. Additionally, the Tribes have been planning for an estuary saltmarsh restoration project in the Pysht Estuary. This project has been fully designed and would restore 22 acres of historic saltmarsh and 10,000' of tidal channels impacted by historic dredging in the estuary. That project is currently in application for the 2015 Large Cap PSAR funding.

- c. If applicable, describe how your project addresses inequity or social justice issue by benefitting underserved communities. **(5 points)**

Answer question 10.c. here:

This project is strongly supported by two Native American Tribes working with private landowners, NOLT and the WDOT. The Project would be constructed by the Lower Elwha Klallam Tribe's River Restoration Team which employs Native American workers skilled in the craft of restoration. The Tribe's restoration program has been regionally and nationally recognized for its efforts and has successfully completed 60 projects valued at over 40 million dollars. Construction of the project would advance recovery of Pysht River salmon populations, many of which have not been fished by local tribes for over four decades (in order to conserve low population numbers). This loss of fishing opportunity is a serious inequity to the Tribes and is a violation of treaty trust rights, as the primary factor limiting their recovery is habitat conditions.

It should be noted that much of the emphasis on recovery actions have gone to larger rivers located in areas with higher human populations and the resources to advocate for those watersheds. We would be remiss if we continue to overlook the value of protecting and restoring watersheds such as the Pysht which have a greater chance for recovery than can be found in areas faced with significant development pressures.

11. Budget (add more tasks as needed).

Task	Amount Requested from Ecology*	Other Funding for Project** (20% of Total Cost Minimum)	Total Cost
Task 1--Administration	\$422,000		\$422,000
Task 2-Mobil./Excavation	\$70,000		\$170,000
Task 3-Structure Construction	\$1,146,000		\$1,146,000
Task 4-Erosion Control	\$24,000		\$24,000

Task 5-Contingency & Taxes	\$168,000		\$168,000
Task 6- Design/Materials/Permitting	\$0	\$412,000	
Task 7-Project Management		\$30,000	
Total	\$1,830,000	\$442,000	\$1,830,000

*Amount requested from Ecology under this grant program

**Other sources of funding dedicated to this project. Insert narrative below that details what the source of funding is and whether or not it has been received or applied for but not yet received.

Match must be at least 20% of Total Project cost.

Narrative and/or Table of other funding sources for project, here:

The Makah Tribe has contributed a total of \$252,000 to support the development of this proposal. This includes contributions from the FY11-FY13 Puget Sound Partnership/EPA Funds. The Lower Elwha Klallam Tribe has invested \$80,000 toward engineering design and has set aside an additional \$80,000 for materials purchase. These monies are from the Pacific Coast Salmon Recovery Fund.

If it's not possible to fully fund this proposal, please describe a *phased* approach that would still significantly advance the effort: *This project could be phased into two discrete projects in the downstream and upstream portions of the reach that roughly halve the total estimated project cost. The downstream reach would include the reach from river mile 7.2-7.5 and would focus primarily on redirecting the river away from the eroding section of bank that threatens SR 112 and the private residences affected by flooding. The primary objective in this reach would be to reduce flood impacts and protect highway and property infrastructure. The upstream reach includes the reach of river between river mile 7.5-9.0. In this reach the floodplain is mostly unimpacted except for historic land use practices (logging, etc.), which have degraded habitat conditions. The primary goals in this reach would be restoration of floodplain habitat processes and salmon habitat conditions.*

- 12. SCOPE OF WORK:** Please attach a Scope of Work and schedule. If your proposal is a phase of a larger multi-year project, please place this proposal in the context of the overall project and provide preliminary cost projects to complete the project.

Action	Date
Complete Engineering Design	Winter 2014-15
Conduct Cultural Resources Inventory	Winter 2014-15
Apply for Appropriate Permits (Shorelines, HPA, FPA)	Winter 2014-15
Complete Permitting	Spring 2015
Conduct Pre-Project Monitoring	Spring/Summer 2015
Purchase and Stage Materials	Winter/Spring 2015
Construct Phase 1	Summer 2015
Conduct Erosion Control	Fall 2015
Construct Phase 2	Summer 2016

Conduct Erosion Control	Fall 2016
Final Billing/Close Contract	Winter 2016
Conduct Long Term Monitoring	2015-2018

- 13. Maps:** Please attach at least two (2) maps to your application. The first map should be a vicinity map and the second should be a map of your project. *Additional maps have been provided in the engineering plan set (Pysht Draft 08-22-14.pdf).*

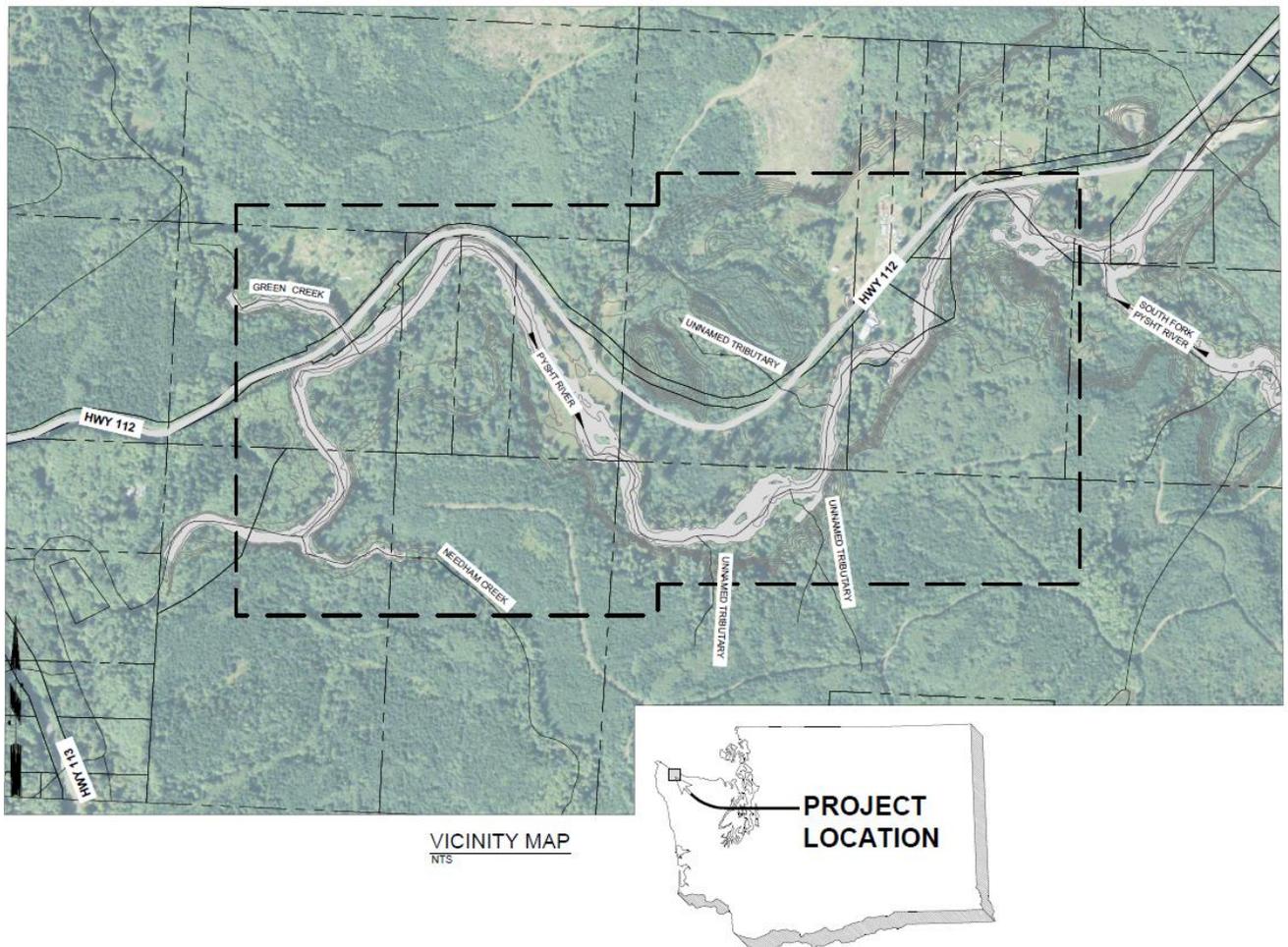


Figure 1. Project location map for Pysht River Flood Reduction and Floodplain Restoration Project.

- 14. Planting Maintenance/Survival:** If your project includes plantings, please provide a description of how you will ensure plant survival and maintenance. *This project does not include extensive planting as this reach of the Pysht River is already forested. However, equipment access will result in limited areas of disturbance in the vicinity of wood placement sites. Following construction, these areas will be treated using best management practices for erosion control and planted with native trees, primarily sitka spruce, douglas fir, western red cedar and western hemlock. We will plant*

disturbed areas, including staging areas, equipment access trails and ELJ construction sites with 2-1 nursery stock at 8-12' spacing. The trees will be monitored for performance over time. Our experience with revegetation projects suggests that these plantings will need annual maintenance, primarily thinning of brush, for 3-5 years following planting. LEKT would agree to do that maintenance until the planted trees are of sufficient height to escape competition.

- 15. Photos:** Photos are not required, but if you think they enhance our understanding of your application, please include them. We are particularly interested in “before” photos that can be matched with “after” photos.



Figure 2. Pysht River through North Olympic Land Trust Property. Note strongly plane-bed morphology and low levels of large wood.



Figure 3. Pysht River at Gregory property. Note eroding bank and house.



Figure 4. Pysht River at Brown property. State Route 112 is just to the left of standing maple tree and the bank has been hard armored.



Figure 5. Pysht River at Brown property. State Route 112 is just beyond fence line and this section is listed on WSDOT's chronic environmental deficiencies program for ongoing flooding and erosion issues.

- 16. Executive order 05-05, Archaeological and Cultural Resources** (online at http://www.governor.wa.gov/office/execorders/eoarchive/eo_05-05.pdf) directs state agencies to review all capital construction projects for potential impacts to cultural resources to make sure that reasonable action is taken to avoid adverse impacts to these resources. If this grant program is funded by the 2015 Legislature, successful grant applicants will be required to submit additional information to Ecology to comply with this Executive Order.

Additional factors in ranking and award: This is a very new funding source. To ensure that projects meet the objectives of the program, these additional factors will be considered in creating the proposed funding list:

- **Balance of project types:** Balance funding ready-to-proceed construction projects with funding pre-construction activities. This balance in project types is vital to ensuring success over time.
- **Geography:** There is strong interest in ensuring that projects in all areas of the state receive funding.
- **Advancing multi-benefit floodplain management:** It is important that the project list advance the principles and practical application of multi-benefit floodplain management.

Certification

I certify to the best of my knowledge that the information provided above is true and correct and that I am legally authorized to sign and submit this information on behalf of the organization applying for this grant.

September 8, 2014,

Signature

Date

Michael McHenry, Fisheries Habitat Manager

Printed name and Title

Lower Elwha Klallam Tribe

Name of Organization Applying for Grant