AQUATIC SPECIES RESTORATION PLAN

APPLICATION B: GENERAL PROJECT PROPOSAL APPLICATION

Project Title

Lower Satsop Restoration & Protection Program – Phase II, Habitat Connectivity and Reach-Scale Aquatic, Riparian and Floodplain Restoration Project

Sponsor Contact Information

Project Contact Information	Complete all Sections				
Name	Rob Wilson, PE, County Engineer				
Phone Number	360-249-4222				
Email	RWilson@co.grays-harbor.wa.us				
Sponsoring organization	Grays Harbor County				
Mailing address	Department of Public Works 100 West Broadway, Suite 31 Montesano, WA 98563				

Proj	ect Activities
	Design Only
\checkmark	Restoration
	- Construction
	- Innovative Restoration
	Acquisition
	Combined (Design/Construction/Acquisition)

Project Information:

• Project location.

The Lower Satsop Phase II, Reach-Scale Aquatic, Riparian and Floodplain Restoration Project (Phase II Project) is located in Grays Harbor County, WA. The project is on the Lower Satsop River mainstem. The project latitude is 46.982143 and longitude -123.482279.

• Project extent.

The Phase II Project extends from the confluence of the Lower Satsop and Chehalis Rivers upstream to the Monte Elma bridge encompassing approximately 2.3 miles of river.

• Geographic Spatial Unit (GSU).

The Phase II Project is located in the Olympic Mountains Ecological Region, GSU 31, Lower Satsop River.

• Brief project summary.

The Phase II Project would supplement Phase I actions which will be constructed in 2020. Phase II design work will build upon and refine (i.e., make more precise for 2021 construction) a conceptual design developed for the larger, multi-phased Lower Satsop Restoration & Protection Program in 2019. That conceptual design was developed in close coordination with landowners, regulatory agencies and stakeholders. An adaptive management approach will be applied to the design process revising the original reach scale concepts based on the outcomes of Phase I construction. Conceptual design elements for Phase II include placing engineered wood structures in the channel and an invasive plant control and riparian planting program. These actions will: (1) improve floodplain connectivity, restore main channel, side-channel and off-channel habitats for anadromous and resident fish and wildlife; and (2) protect public and private infrastructure and agricultural lands from Lower Satsop bank erosion.

Problems statement.

A. Describe the problem (critical need and/or threat), your project aims to address.

The critical need issues the Phase II Project aims to directly address, as identified in Section 5.8.3 and Section 5.8.4 of the ASRP (page 161 and 165 respectively), are: High water temperatures; Low habitat diversity; Reduced quantity and quality of instream habitats; and Impaired water quality and floodplain connectivity. Additionally, reducing the rates of channel migration, rehabilitating the riparian vegetation, and developing an invasive species treatment program will reestablish successional riparian growth. Currently the Lower Satsop River system has very high rates of channel migration that disrupt the successional growth of riparian vegetation, increase colonization of invasive species and introduce fine sediment into the river. High rates of channel migration are degrading valuable floodplain habitat, reducing channel length, and concentrating stream power. The proposed engineered wood structures placed in the channel will bring the damaging high rates of erosion and channel migration back to historic rates by sorting sediment, stabilizing gravels, building floodplains, increasing channel length, and reducing stream power. In stream wood structures will improve habitat by scouring pools, providing cover from predation, increasing food production and locally reducing velocities to sort sediment and maintain stable gravels for spawning.

B. List the species present at the site and addressed by your project. Describe how your project protects or restores habitat for these species.

Species present at the Phase II Project site, as listed in Section 5.8.3 of the ASRP (page 161) and identified through the Statewide Washington Integrated Fish Distribution Dataset, include: Winter-run Steelhead; Coho Salmon; Fall-run Chinook salmon; and Chum salmon. The Phase II Project will restore ecosystem functions that support habitat critical to these species. These habitat features are stable gravels for spawning, cool refugia, and shallow-water margins. The project reach is a migratory route to high quality habitat upstream in the East Fork Satsop River and so the velocity refuge, food production, and cover for species migrating upstream are additionally important habitat functions for these species. The project will improve these habitat features using engineered log jams (ELJs) installed at a scale that affects the geomorphology of the reach. A table summarizing how ELJs address limiting factors by restoring ecosystem processes is included in item D below.

C. Describe how your project will address limiting factors and benefit limiting life stages (by species) (Chapter 3 ASRP).

Indicator species, listed in Table 3-1 of the ASRP (pages 24-25), present in the project reach include Winter-run Steelhead, Coho salmon, Fall-run Chinook salmon, Chum salmon, Northern red-legged frog, Olympic mudminnow, Great blue heron, and North American beaver. In addition to the ASRP indicator species, there are also Summer-run Chinook salmon, resident Coastal Cutthroat, and resident char, (Statewide Washington Integrated Fish Distribution Dataset accessed January 2020). Coho salmon, Chum salmon, and Fall Chinook use the reach for spawning, juvenile Coho rear in the reach, and Winter Steelhead spawn and rear in the reach.

Because limiting factors change with life stages it's imperative that salmonids are able to access the habitats critical to their stage of development. Thus, **connectivity of different habitat types is a limiting factor across all of the potential salmonid indicator species limiting life stages**. The project's proposed ELJs will improve connectivity by providing refugia habitats from velocities and high temperatures, increase food productivity, scour holding pools, and increase channel length and edge habitat complexity. The project reach begins at the confluence of the Lower Satsop and Chehalis Rivers which is at the upper limit of the Lower Chehalis tidal surge plain. The project has very high restoration potential with a valuable combination of estuarine holding habitat, high quality spawning gravels, and off channel wetland habitats over a relatively short distance.

The limiting life stages for **Winter-run Steelhead** are spawning and juvenile rearing. Limiting factors for juvenile Winter Steelhead are complex habitats that support food production, provide cover from predation, and provide temperature refugia. Limiting factors for spawning Winter Steelhead are high quality spawning gravel. The project's proposed ELJs will provide complex habitats that support rearing and spawning by increasing food productivity, providing cover, increase channel length and edge habitat complexity and sorting sediment into areas with stable gravels.

The limiting life stage for **Coho salmon** is juvenile rearing. Limiting factors for juvenile Coho are complex habitats that support food production, provide cover from predation, and provide temperature refugia. Juvenile Coho are vulnerable to warm summer temperatures as they out-migrate as yearlings. The project's proposed ELJs will provide complex habitats that increase food productivity, scour holding pools, provide cover, and increase channel length and edge habitat complexity.

The limiting life stage for **Fall-run Chinook salmon and Chum salmon** are spawning. Limiting factors for spawning Fall Chinook and Chum are cold water, stable gravels and estuarine holding habitat. The

project reach begins at the confluence of the Lower Satsop and Chehalis Rivers which is at the upper limit of the Lower Chehalis tidal surge plain. The project reach provides a unique combination of estuarine holding habitat and access to potentially high-quality spawning habitat over a relatively short distance. The installation of the proposed project ELJs will further improve the habitat quality and complexity by providing stable gravels and scouring cold holding pools.

The limiting life stage for Northern red-legged frog are egg-laying productivity. Loss of egg-laying habitat and hydrologic modifications are the primary impacts to egg-laying productivity. Increasing backwater habitat, revising the wetland hydroperiod through improved floodplain connectivity and maintaining wetland habitats with emergent plants and adjacent riparian forest by implementing the riparian planting program are ways the proposed project will benefit habitat critical to these species.

The limiting life stage for **Olympic mudminnow** is rearing. Mudminnows are threatened by habitat degradation and exotic species and are completely dependent on healthy wetlands for survival. Increasing backwater habitat, revising the wetland hydroperiod through improved floodplain connectivity and maintaining wetland habitats with emergent plants and adjacent riparian forest by implementing the riparian planting program are ways that the proposed project will benefit habitat critical to these species.

The limiting life stage for **Great blue heron** is nesting and is negatively impacted by human disturbance, predation, and habitat decline. Nesting habitats are made in mature riparian vegetation with alders being a preferred species. The riparian planting and invasive treatment program will improve nesting habitat for this species by restoring successional riparian plant ecology.

The limiting life stage for **North American beaver** are young to dispersal age and are closely related to vegetation and stream variables. Availability of food resources is commonly limiting as beavers often deplete resource over time within a usable forging distance of impoundments. Distribution of habitats on the landscape with riparian plant species for foraging and side channels and backwaters for developing impoundments are critical habitat for these species. The project's proposed ELJs will improve floodplain connectivity and side channel development while the riparian planting and invasive treatment program will improve availability of food sources across the reach.

In addition to addressing the limiting life stages mentioned above and identified in Section 5.8.4 of the ASRP (page 165) the Phase II Project's **invasive species management and riparian planting program** will rehabilitate plant communities that contribute to the geomorphic stability of the reach and support healthy ecosystem function by restoring the floodplain large-wood cycle (2011 Collins et. al.).

D. Describe how your project protects or restores ecosystem processes.

Table 1 lists limiting factors for the project reach, design elements, how proposed actions restore impaired ecosystem processes, and the species and life stage that will benefit from these actions.

Limiting Factor	Design Element	Physical Processes by which Design Elements will Restore Ecosystem Process and Function	Life Stage and Species to Benefit
Water	 In channel 	ELJs scour deep pools, provide cover, and increase surface	 Fall Chinook
Temperature	ELJs	to groundwater interactions which push surface water	spawning
		into the stream bed reducing temperature in the water	 Chum spawning

Table 1 – Limiting factors, design elements, restored ecosystem processes, & species life stage to benefit.

	 Riparian planting program 	column. Riparian plantings will provide shade which can maintain cool water temperatures. They also support the floodplain large wood cycle where mature species eventually fall into streams providing cover, habitat and the other myriad of benefits associated with wood.	 Winter Steelhead rearing Coho rearing
Low habitat diversity (lack of side channels, large wood, and floodplain connectivity)	• In channel ELJs	ELJs provide cover, scour holding pools, and locally increase water surface elevations. As the river planform evolves in response to the sediment they sort and collect channel length increases and stream gradient decreases; which along with increased water surface elevations improves floodplain connectivity. When side channels develop naturally it is in locations where hydraulic conditions will maintain them.	 Winter Steelhead rearing Coho rearing Northern red- legged frog Olympic mudminnow
Reduced quantity and quality of instream habitat	 In channel ELJs Riparian planting program 	ELJs increase benthic macroinvertebrate productivity, provide cover and reduce water temperature by increasing surface water interactions with groundwater. They also sort sediment and maintain stable gravels for spawning by locally reducing the velocity of the water around them. Finally, ELJs improve floodplain connectivity by raising water surface elevations increasing frequency of side channel utilization. The riparian planting program will improve edge habitat by providing cover along shallow margins in floodplain wetlands and backwater habitats.	 Winter Steelhead rearing Coho rearing North American beaver young Great blue heron nesting
Channel length and width	• In channel ELJs	ELJs increase channel length by splitting flow and locally raising water surface elevation increasing floodplain inundation and side channel utilization. Their primary hydraulic influence is local, creating velocity and shear stress gradients which result in pool habitat and adjacent sediment sorting. However, once enough structures are installed to change sediment dynamics in a reach, they can have a reach-scale geomorphic effect. This geomorphic effect is a result of natural processes at work in the system which over time settle into a self-regulating low maintenance equilibrium.	 Winter Steelhead rearing Coho rearing Northern red- legged frog Olympic mudminnow North American beaver young
Fine sediment loading	 In channel ELJs Riparian planting program 	ELJs will reduce fine sediment loading by reducing the rate of erosion of agricultural lands. Structures will be placed to aggrade alluvium in areas where erosion is a problem creating a buffer of aggraded alluvium and gravel between the highly erodible soils and the river. The banks will be planted with native riparian species which will provide soil cohesion and trap solids present in runoff before they enter the river.	 Fall Chinook spawning Chum spawning
Predation	 In channel ELJs Riparian planting program 	ELJs provide cover, increase food production of benthic macroinvertebrates, and scour holding pools. The project will also increase complex edge habitat by increasing channel length, improving floodplain connectivity and connecting floodplain wetland and backwater habitats to the main channel with greater frequency. The riparian planting program will reduce predation by providing cover along shallow margins in floodplain	 Winter Steelhead rearing Coho rearing North American beaver young Great blue heron nesting Northern red- legged frog

		wetlands, backwater habitats, and along the main channel.	Olympic mudminnow
Channel Instability (bed scour and sediment transport)	 In channel ELJs Riparian planting program 	The project proposes a design with a reach-scale effect on the sediment dynamics of the system. The ELJs will stabilize eroding banks, sort sediment into areas with stable gravels and reduce the high rate of channel migration to historic the historic rate. Riparian plantings will control erosion at the river's edge and help filter and keep water clean.	 Fall Chinook spawning Chum spawning
Low flows	• In channel ELJs	ELJs provide pools, and increase surface groundwater interactions which help reduce the temperature of the water column. Additionally, they locally raise water surface elevations increasing floodplain inundation and side channel utilization which support healthy riparian vegetation.	 Winter Steelhead rearing Coho rearing North American beaver young Great blue heron nesting

Project goals and objectives.

E. What are your project's goals?

The project goals are to create a reach-scale Phase II design from the Monte Elma bridge to the confluence of the Chehalis River that builds upon Phase I actions scheduled for construction in 2020. The Phase II design will (1) improve floodplain connectivity to spread flood flows throughout the floodplain and restore main channel, side-channel and off-channel habitats for anadromous and resident fish, and wildlife; and (2) protect public and private infrastructure and agricultural lands from bank erosion.

F. What are your project's objectives?

- 1. Develop reach-scale Phase II designs and engineering that incorporate floodplain connectivity, invasive species management, riparian plantings, and address flood and erosion hazard/risk to landowners in the project area.
- 2. Ensuring habitat connectivity between ASRP reaches in the Satsop River watershed.
- 3. Develop designs and engineering that utilize bioengineering techniques and process-based restoration tools.
- 4. Conduct outreach to reach landowners and recreational community during the design process to ensure their goals are met.
- 5. Develop designs and engineering that provide for expedited permitting (e.g., Nationwide Permits, Programmatic Permits, etc.) to support construction beginning summer2021.

G. What are the assumptions and constraints that could impact whether you achieve your objectives?

The Phase I project has requested \$900,000 in supplemental state capital budget funding through the 2020 legislative session. If these funds are not granted, the Phase I project would be short on funds

needed for construction in 2020. The Phase I project could be scaled back so that some portion of the project is able to be constructed in 2020 using the available \$1.2 MM the county has already raised. This would affect the Phase II Project by decreasing the total number of ELJs the project would be able to install by the end of 2021, reducing the reach-scale effect of the design. If this were to happen further phasing splits would be proposed to ensure the overall Lower Satsop Restoration & Protection Program was able to achieve the objectives over a greater time frame.

H. What are the anticipated benefits of this project?

The Phase II Project will restore critical salmon habitat, restore historic channel migration rates which will support successional riparian growth, restore valuable terrestrial habitats for avian and terrestrial species and prevent further loss of agricultural lands and threats to public and private infrastructure.

Project details.

Provide a narrative description of your proposed project.

The Phase II Project is a restoration project that would supplement Phase I actions which will be constructed in 2020. The design work would build upon a conceptual design which was developed for the reach in 2019. An adaptive management approach would be applied to the design process revising the original reach-scale concepts based on the outcomes of Phase I construction. Conceptual Phase II Project design elements include placing engineered wood structures in the channel to split flow and locally raise water surface elevations and near banks to aggrade sediment and build up floodplains in areas where migration rates are greater than the historic rate of erosion. The invasive plant control and riparian planting program will be proposed in areas where enhancement of existing resources is needed. Rehabilitation of historic riparian zones would be negotiated with participating landowners and used to reduce bank erosion in conjunction with in-stream ELJ elements. These actions will improve floodplain connectivity, restore main channel, side-channel and off-channel habitats for anadromous and resident fish, and wildlife as well as protect public and private infrastructure and agricultural lands from bank erosion.

I. Provide a scope of work, schedule, and permit plan.

Task	Responsible Party	Duration	Deliverables
Conceptual Design Report and	Engineering	July 2020 – September	 Design drawings, cost
Drawings	Consultant	2020	Estimate, BOD Report
Preliminary Design Report	Engineering	October 2020 –	 Design drawings, cost
and Drawings	Consultant	December 2020	Estimate, BOD Report
Permit Applications and	Engineering	September 2020 –	• JARPA
Authorization	Consultant	December 2020	 Cultural Resources
			Report
			 Wetland/Critical Areas
			Report
			 Biological Assessment
Final Design	Engineering	January 2021-May 2021	 Final Plans, Cost
	Consultant		Estimate, and
			Specifications
Construction	Contractor TBD	July 2021-October 2021	 Implementation

Table 2 – Project scope task list, deliverables, responsible party and schedule.

Clean Water Act Section 404 permit from the Corps for work below OHWM or in wetlands										
Section 7	Magnuson-Stevens Fishery	Section 106	Clean Water Act Section 401							
Consultation	Conservation and Management	consultation under	water quality certification							
under the	Act consultation for Pacific	the National	and Coastal Zone							
Endangered	Coast Salmon Essential Fish	Historical	Management Program							
Species Act	Habitat	Habitat Preservation Act								
State Environmental Policy Act (SEPA) determination by Gray Harbor County										
Washington Shoreline Substantial Development Permit Issued by Hydraulic Project A										
Department of	Grays Harbor County for permitted use in Rural (HPA) from WDFW									
Natural Resources	Development Use Zone									
(WDNR) Aquatic										
Use Authorization										
	Local Certifications and Permit	s (issued by Grays Har	bor County)							
Flood Hazard	"No-Rise/No-Impact"	Clearing and Grading	Permit							
Certification	Certification to be submitted by	Critical Areas review								
issued by Grays	County to FEMA									
Harbor County										
Construction Permits (not comprehensive)										
National Pollution	Discharge Elimination System (NPDE	S) Construction Storm	water General Permit issued by							
Ecology (required prior to construction If >1acre earthwork/clearing)										

Table 3 – Permit Plan and Typical Permits Triggered by Work below OHWM or within wetlands.

J. Explain how you determined your cost estimates.

The cost estimate was developed using costs for nearby projects of similar scope and scale (e.g., Upper Quinault, East Fork Satsop EAR). This project is cost effective because site access and topography will allow for lower cost to mobilize equipment and lower cost for site isolation as several structures could be constructed from the bank of the river. Synergies with the WDFW 2020 Floodplain and Habitat Restoration Project (funded through the Washington Coast Restoration and Resiliency Initiative in 2019) may make the project further cost effective by using installed erosion and sediment control measures, site access, and combining material procurement. Matching funds have been leveraged from the following fund sources; Rural County Economic Development .09 Funds; Grays Harbor County Road Fund; and Local Community Contributions.

K. Describe the design or acquisition alternatives that you considered to achieve your project's objectives.

Several design alternatives have been considered over the last five years. These alternatives have been evaluated using cost, constructability, ecologic benefits, and stakeholder and permitting agency support. Alternatives have included no-action, removal of bank hardening, bar-scalping, grading side channels, relocating floodplain infrastructure, land acquisition, restoration actions including the use of ELJs and riparian planting, and improving floodplain and wetland connectivity. The process of evaluating the alternatives has brought stakeholders and regulatory agencies together on a shared path that prioritizes the use of ecologically sensitive methods at a reach-scale. This approach will leverage natural processes to stabilize the system and provide ecologic benefits for aquatic and terrestrial species habitat.

L. Describe your long-term stewardship and maintenance plans for the project or acquired land.

Plans for long term stewardship of the project reach include implementing the invasive species management plan and monitoring riparian planting efforts to ensure design survival rates are achieved. The Lower Satsop Advisory Group will continue to meet to evaluate if project outcomes and implementation have achieved stated goals and objectives for the project. An adaptive management approach will be used to respond appropriately as needed.

M. Landowner and Community support.

The project is supported by landowners, stakeholders, resource agencies, and permitting agencies. A successful advisory group was formed in 2017 and includes the Department of Ecology, the Quinault Indian Nation, USACE, DNR, WDFW, Grays Harbor County, Chehalis River Basin Flood Authority, Grays Harbor County, the Port of Grays Harbor, Grays Harbor Conservation District, and WSDOT. The advisory group typically meets quarterly to discuss stakeholder needs, reach issues, and design progress. Advisory group meetings have established the framework for the Lower Satsop Restoration & Protection Program

https://www.ezview.wa.gov/site/alias 1492/37609/lower satsop restoration and protection progra m.aspx) as well have served as an opportunity to strategically evaluate community and agency priorities and turn them into actionable plans and next steps. Key documents include the Lower Satsop River Investment Plan, The Lower Satsop Planning, Visioning, and Priority Setting Scope of Work, and the Satsop River Floodplain Restoration Report and Addendum.

N. Budget Templates: Aquatic Species Restoration Plan Cost Estimate Template

		OVERALL PROJECT	GRANT REQUEST	MATCH
		Cost	Amount	Amount
Sheet #3 Restoration				
Construction Costs		\$1,416,829	\$1,416,829	\$ 0
AA&E		\$372,553	\$372,553	\$ 0
	STotal	\$ 1,789,382	\$ 1,789,382	\$ 0
	GTOTAL	\$ 1,789,382	\$ 1,789,382	\$0

Table 4 - Budget information from Excel, tab "Total All Sheets"

Project proponents and partners.

O. Describe your team's experience managing this type of project.

Grays Harbor County has participated in several projects funded by RCO and others that improved aquatic habitat for fish species by removing barriers, installing in channel structures and overseeing project management and implementation. Natural Systems Design is an engineering consultant with a diverse team of scientists and engineers that has overseen the design, planning, permitting, and construction oversight of several reach-scale restoration projects on rivers in the Olympic peninsula that have used project elements described in this application.

P. List all landowner names.

Project landowners are Greg and Terry Willis, Stephen Willis, Ed Comfort, Barbara Chapman, Daryl Blumberg, Debbie and Richard Scott, the Port of Grays Harbor, Washington Department of Fish and Wildlife, and Grays Harbor County.

Q. List project partners and their role and contribution to the project.

Project partners include WDFW, Grays Harbor Conservation District, the Port of Grays Harbor, the Chehalis River Basin Flood Authority, Natural Systems Design, and private landowners in the reach. WDFW has collaborated with the county by using remaining funds from a restoration project on property within the reach to remove a section of rock revetment that has been identified by landowners as exacerbating erosion of agricultural lands. The county worked to help develop figures for permit revision so that construction crews on site in 2019 could complete the rock toe removal. Grays Harbor County Conservation District has engaged landowners and helped bring stakeholders together for outreach as well as coordinating access for topographic surveys, bathymetric surveys, and site tours. The Port of Grays Harbor has participated in Advisory Group meetings, hosted stakeholder meetings at their Satsop Business Park offices, and granted access to their property for surveys and data collection pertinent to design efforts. The Chehalis River Basin Flood Authority has coordinated meetings with state legislators, resource agencies and stakeholders to unify a disparate group and facilitate the vision and framework development for the program. Natural Systems Design is the county's engineering consultant for the project and has supported the design process and outreach to stakeholders, resource agencies, and state legislation. The Scott's and Willis's have granted access to their properties for data collection and topographic survey to help develop the Phase I design and reach-scale conceptual design.

R. Barriers and concerns.

The project has support from landowners in the reach, permitting agencies (WDFW, USACE, ECY, DNR) and the Quinault Indian Nation. Matching funds have been secured and permitting agencies have been engaged and consulted in Advisory Group meetings as the design has evolved. Permits have not been issued for Phase I project construction yet. The permitting timeline is a concern but it is still likely that the project will be issued permits in time for Phase I 2020 construction to be completed.

S. Synergy:

The Phase II project has synergies with the WDFW Lower Satsop Floodplain Restoration project which had its first phase of construction completed in 2019 and will finish construction in 2020. The WDFW Lower Satsop Floodplain restoration project focus has been the removal of a large spoils pile and constructed dikes that were restricting floodplain connectivity as well as shallowing of ponds that were excavated when the site was used as a gravel mine. The Phase II project will build on the floodplain restoration project by adding in-channel structures which will further increase floodplain connectivity and help establish secondary channels across the floodplain. These synergies will have positive outcomes for the aquatic and wetland habitats that have been rehabilitated as part of the WDFW project. As part of the counties Phase I design work hydraulic modeling and a risk assessment of removal of sections of rock revetment on WDFW property have been completed so that this material can be removed as part of 2020 construction activities. Removal of the rock revetment is contingent on the county being able to construct their Phase I in 2020 which includes protection of Keys Road.

RESTORATION

See SRFB Manual 5 for additional information regarding allowable costs.

		(OVERALL PROJECT	GR	ANT REQUEST	МАТСН				
				Bu acc co	udget must count for all costs to mplete the project	E. ai g	inter only the mount of the grant request	The project Requi project cost and Buc	d equal the total l be 0. No match is	
		Qtv	Rate		Amount		Amount	Matching Funds	Source (Grant, Cash, Materials, Labor, Volunteers, etc)	Match Type (federal, state, local)
Construction									,	
Category (choose one)	Task Description									
Mobilization	contractor mobilization and demobilization	1.00	\$ 102,475.00	\$	102,475	\$	102,475	\$-		
Demolition and site prep	access, staging, erosion, and pollution control measures	1.00	\$ 48,391.00	\$	48,391	\$	48,391	\$ -		
Construction	isolation, dewatering, pile driving, excavation, building ELJs, placing alluvium	1.00	\$ 349,236.00	\$	349,236	\$	349,236	\$ -		
Materials	timber, ballast, chain, cable, racking, slash, and plants plus sales tax (assumes 31 ELJs and 131 acres of planting)	1.00	\$ 712,334.52	\$	712,335	\$	712,335	\$ -		
Construction supervision	construction monitoring, reporting, and supervision	1.00	\$ 30,950.00	\$	30,950	\$	30,950	\$ -		
Construction labor	Invasive species removal - 10 day effort twice a year with 5 laborers (assumes 10 acres treated)	1.00	\$ 38,500.00	\$	38,500	\$	38,500	\$ -		
Construction labor	supervision of and plant delivery, staging, installation, and irrigation	1.00	\$ 134,942.00	\$	134,942	\$	134,942	\$-		
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Other	Cultural Resources survey (assumes level of effort similar to EF Satsop ASRP cultural resources survey)	1.00	\$ 81,000.00	\$ 81,000.00	\$	81,000	\$	-	
Invasive plant management plan	Reach assessment of invasie speies and treatment plan development	1.00	\$ 20,235.00	\$ 20,235.00	\$	20,235	\$	-	
Riparian planting program	Reach assessment of riparian plant ecologies and planting plan development	1.00	\$ 15,176.25	\$ 15,176.25	\$	15,176	\$	-	
Final design	Final design production and bid package development (plans, specificaitons, cost estimate, and design report)	1.00	\$ 25,445.00	\$ 25,445.00	\$	25,445	\$	-	
Administrative	Meetings, project management, travel, and administration	1.00	\$ 41,962.00	\$ 41,962.00	\$	41,962	\$	-	
RCO administrative cost	Portion of funding absorbed by RCO to administer funds	1.00	3%	\$ 52,117.91	\$	52,118			
Sales Tax	Sales tax not charged on A,A&E services	-		\$ -	\$	-	\$	-	
_			Stotal	\$ 372,553.16	\$	372,553.16	\$	-	
			GTOTAL	\$ 1,789,382	\$	1,789,382	\$	-	
					PR To	ISM Project tal	\$	1,789,382	
					RC	O Percentage	Ма	tch Percentage	
						100%		0	

CUMULATIVE TOTALS

This sheet contains automatic calculations

Project Name Lower Satsop Restoration & Protection Program – Phase II,

Sponsor Grays Harbor County

		OVER	ALL PROJECT	GR	ANT REQUEST	МАТСН		MATCH NOT IN PRISM		Budget
		Cost		Amount			Amount		Amount	Check
Sheet #1 Acquisition										
Property Costs		\$	-	\$	-	\$	-	\$	-	0
Incidental Costs		\$	-	\$	-	\$	-	\$	-	0
Administrative Costs		\$	-	\$	-	\$	-	\$	-	0
	STotal	\$	-	\$	-	\$	-	\$	-	0
Sheet #2 Design										
Design Cost	STotal	\$	-	\$	-	\$	-	\$	-	0
Sheet #3 Restoration										
Construction Costs		\$	1,416,829	\$	1,416,829	\$	-	\$	-	0
AA&E		\$	372,553	\$	372,553	\$	-	\$	-	0
	STotal	\$	1,789,382	\$	1,789,382	\$	-	\$	-	0
	GTOTAL	\$	1,789,382	\$	1,789,382	\$	-	\$	-	0

Total PRISM Project Budget \$ 1,789,382

Attachment A



Lower Satsop Advisory Group

Project Area Map

Lambert conformal conic projection, NAD 1983 State Plane Coordinate System (WA South Zone). Aerial Imagery Source: 2019 drone flight by Natural Systems Design and 2017 USDA NAIP



Legend



Vicinity Map



February 5, 2020



Lower Satsop River Reach Assessment and Design **Concept Design: Sheet 1**

4/19/2019 DRAFT

Aerial imagery 2017 NAIP River Miles are from the National Hydrography Dataset Parcels from Grays Harbor County GIS

Lambert conformal conic projection, NAD 1983 State Plane Coordinate System (WA South Zone)

Proposed Action Time Frame

- 1 Priority Actions, 2019-2020
- 1 Short Term, 2020-2023
- 1 Long Term, 2030-later
- **Potential Avulsion Path**
- **Eroding Banks**
- Revetments (WSE, 2017)

Concept Design Element:

- 1. Install wood structures at toe of bank in conjunction with laying back the bank and planting riparian vegetation.
- 2. Install wood structures to encourage river to re-engage with abandoned meander.
- 3. Install in channel structures to increase pool quantity, provide cover, and sort gravel.
- Salvage existing wood accumulations for use as racking in new structures. 4.
- 5. Remove bank hardening and selectively breach rock revetment.
- 6. Install left bank structures to reconnect relict side channels and floodplain.
- 7. Riparian forest enhancement with conifer interplanting.
- 8. Install timber complex or setback revetment to protect infrastructure as appropriate.
- 9. Install floodplain roughness or floodplain fencing to re-establish productive riparian function.
- 10. Remove and/or relocate infrastructure on floodplain (Keys Road and Satsop Business Park Well).





Lower Satsop River Reach Assessment and Design **Concept Design: Sheet 2**

4/19/2019 DRAFT

Aerial imagery 2017 NAIP River Miles are from the National Hydrography Dataset Parcels from Grays Harbor County GIS

Lambert conformal conic projection, NAD 1983 State Plane Coordinate System (WA South Zone) **Proposed Action Time Frame**

- 1 Priority Actions, 2019-2020
- 1 Short Term, 2020-2023
- 1 Long Term, 2030-later
- **Potential Avulsion Path**
- Eroding Banks
- Revetments (WSE,2017)

Concept Design Element:

- 1. Install wood structures at toe of bank in conjunction with laying back the bank and planting riparian vegetation.
- 2. Install wood structures to encourage river to re-engage with abandoned meander.
- 3. Install in channel structures to increase pool quantity, provide cover, and sort gravel.
- Salvage existing wood accumulations for use as racking in new structures. 4.
- 5. Remove bank hardening and selectively breach rock revetment.
- 6. Install left bank structures to reconnect relict side channels and floodplain.
- 7. Riparian forest enhancement with conifer interplanting.
- 8. Install timber complex or setback revetment to protect infrastructure as appropriate.
- 9. Install floodplain roughness or floodplain fencing to re-establish productive riparian function.
- 10. Remove and/or relocate infrastructure on floodplain (Keys Road and Satsop Business Park Well).





Landowner Information

Name of Landowner: Daryl and Rebecca Blumberg

Landowner Contact Information:

Mr. Ms. Title: Landowner

First Name: Daryl Last Name: Blumberg

Contact Mailing Address: 44 Dwinel Road, Montesano WA 98563

Contact E-Mail Address: d-blummy@hotmail.com

Property Address or Location: Parcel # 170701110010 located at the end of Dwinel Road (44 Dwinel Road, Montesano WA 98563).

- 1. Daryl Blumberg (Landowner or Organization) is the legal owner of property described in this grant application.
- 2. I am aware that the project is being proposed on my property.
- 3. If the grant is successfully awarded, I will be contacted and asked to engage in negotiations.
- 4. My signature does not represent authorization of project implementation.

Landowner Signature Date

Project Sponsor Information

Project Name: "Lower Satsop Restoration & Protection Program – Phase II, Reach-Scale Aquatic, Riparian and Floodplain Restoration"

Project Applicant Contact Information: 360/249-4222

Mr. 🗌 Ms. Title: County Engineer

First Name: Rob Last Name: Wilson

Mailing Address: Grays Harbor County; 100 West Broadway, Suite 31; Montesano, WA; 98563

Landowner Information

Name of Landowner: Richard Scott

Landowner Contact Information:

Mr. Ms. Title: Owner

First Name: Rick Last Name: Scott

Contact Mailing Address: 1602 W Anderson, Elma WA 98541

Contact E-Mail Address: rkndi@comcast.net

Property Address or Location: 28 Keys Road, Satsop WA 98583 (Parcels #170606240010 and #180631340040)

- 1. Rick Scott is the legal owner of property described in this grant application.
- 2. I am aware that the project is being proposed on my property.
- 3. If the grant is successfully awarded, I will be contacted and asked to engage in negotiations.
- 4. My signature does not represent authorization of project implementation.

Landowner Signature

Project Sponsor Information

Project Name: "Lower Satsop Restoration & Protection Program – Phase II, Reach-Scale Aquatic, Riparian and Floodplain Restoration"

Project Applicant Contact Information: 360/249-4222

Mr. 🗌 Ms. 🛛 Title: County Engineer

First Name: Rob Last Name: Wilson

Mailing Address: Grays Harbor County; 100 West Broadway, Suite 31; Montesano, WA; 98563

15/2020

Landowner Information

Name of Landowner: Barbara Chapman

Landowner Contact Information:

Mr. Ms. Title: Owner

First Name: Barbara Last Name: Chapman

Contact Mailing Address: 239 Brady Loop Rd., Montesano WA 98563

Contact E-Mail Address:

Property Address or Location: 239 Brady Loop Rd., Montesano WA 98563.

- 1. Barbara Chapman is the legal owner of property described in this grant application.
- 2. I am aware that the project is being proposed on my property.
- 3. If the grant is successfully awarded, I will be contacted and asked to engage in negotiations.
- 4. My signature does not represent authorization of project implementation.

Sarkara Chapman

Landowner Signature

2-3-20 Date

Project Sponsor Information

Project Name: "Lower Satsop Restoration & Protection Program – Phase II, Reach-Scale Aquatic, Riparian and Floodplain Restoration"

Project Applicant Contact Information: 360/249-4222

Mr. Ms. Title: County Engineer

First Name: Rob

Last Name: Wilson

Mailing Address: Grays Harbor County; 100 West Broadway, Suite 31; Montesano, WA; 98563

Landowner Information

Name of Landowner: Greg and Terry Willis

Landowner Contact Information:

Mr. Ms. Title: Owner

First Name: Terry Last Name: Willis

Contact Mailing Address: 83 Willis Rd., Montesano WA 98563

Contact E-Mail Address: olyviewdairy@centurytel.net

Property Address or Location: Parcel #'s 180736430010, 170701140010, 170701410010, 170606220020, 170712110020, 170712120010, 170712110010, 170712140010, located at 704 Monte Elma Road, 57 Hiram Hall Road, 275 E Brady Loop Road, 77 Willis Road, 64 Willis Road, and 83 Willis Road, Montesano, WA 98563.

- 1. Terry Willis/Olympic View Dairy is the legal owner of property described in this grant application.
- 2. I am aware that the project is being proposed on my property.
- 3. If the grant is successfully awarded, I will be contacted and asked to engage in negotiations.
- 4. My signature does not represent authorization of project implementation.

Landowner Signature

Project Sponsor Information

Project Name: "Lower Satsop Restoration & Protection Program – Phase II, Reach-Scale Aquatic, Riparian and Floodplain Restoration"

Project Applicant Contact Information: 360/249-4222

Mr. Ms. Title: County Engineer

First Name: Rob Last Name: Wilson

Mailing Address: Grays Harbor County; 100 West Broadway, Suite 31; Montesano, WA; 98563

2-3-2020

Landowner Information

Name of Landowner: Stephen Willis

Landowner Contact Information:

Mr. Ms. Title: Owner

First Name: Stephen Last Name: Willis

Contact Mailing Address: 16 Willis Rd., Montesano WA 98563

Contact E-Mail Address: steve_willis@comcast.net

Property Address or Location: 16 Willis Road, Montesano, WA 98563.

- 1. Stephen Willis is the legal owner of property described in this grant application.
- 2. I am aware that the project is being proposed on my property.
- 3. If the grant is successfully awarded, I will be contacted and asked to engage in negotiations.
- 4. My signature does not represent authorization of project implementation.

1, Olis

Landowner Signature

2020 Date

Project Sponsor Information

Project Name: "Lower Satsop Restoration & Protection Program – Phase II, Reach-Scale Aquatic, Riparian and Floodplain Restoration"

Project Applicant Contact Information: 360/249-4222

Mr. Ms. Title: County Engineer

First Name: Rob

Last Name: Wilson

Mailing Address: Grays Harbor County; 100 West Broadway, Suite 31; Montesano, WA; 98563

Landowner Information

Name of Landowner: Grays Harbor County

Landowner Contact Information:

Mr. Ms. Title: County Engineer

First Name: Rob Last Name: Wilson

Contact Mailing Address:100 West Broadway, Suite 31, Montesano, WA 98563

Contact E-Mail Address: rwilson@co.grays-harbor.wa.us

Property Address or Location: Parcel #'s: 170606320010, 180736440020 and 170701110030 (located at the end of county roads Hiram Hall and Dwinell. County also has easements in place for Keys Road which runs the length of the project down the east side of the Satsop River.

- 1. Grays Harbor County (Landowner or Organization) is the legal owner of property described in this grant application.
- 2. I am aware that the project is being proposed on my property.
- 3. If the grant is successfully awarded, I will be contacted and asked to engage in negotiations.
- 4. My signature does not represent authorization of project implementation.

Landowner Signature

Project Sponsor Information

Project Name: "Lower Satsop Restoration & Protection Program – Phase II, Reach-Scale Aquatic, Riparian and Floodplain Restoration"

Project Applicant Contact Information: 360/249-4222

Mr. Ms. Title: County Engineer

First Name: Rob Last Name: Wilson

Mailing Address: Grays Harbor County; 100 West Broadway, Suite 31; Montesano, WA; 98563 E-Mail Address: <u>RWilson@co.grays-harbor.wa.us</u>

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Landowner Information

Name of Landowner: The Port of Grays Harbor

Landowner Contact Information:

Mr. Ms. Title: Executive Director

First Name: Gary Last Name: Nelson

Contact Mailing Address: PO Box 660, Aberdeen, WA, 98520

Contact E-Mail Address: gnelson@portgraysharbor.org

Property Address or Location: Parcel #'s 170606340010, 170606430020, 170607210010.

- 1. The Port of Grays Harbor (Landowner or Organization) is the legal owner of property described in this grant application.
- 2. I am aware that the project is being proposed on my property.
- 3. If the grant is successfully awarded, I will be contacted and asked to engage in negotiations.
- 4. My signature does not represent authorization of project implementation.

Landowner Signature

<u>2/03/2020</u> Date

Project Sponsor Information

Project Name: "Lower Satsop Restoration & Protection Program – Phase II, Reach-Scale Aquatic, Riparian and Floodplain Restoration"

Project Applicant Contact Information: 360/249-4222

Mr. 🗌 Ms. Title: County Engineer

First Name: Rob Last Name: Wilson

Mailing Address: Grays Harbor County; 100 West Broadway, Suite 31; Montesano, WA; 98563

Landowner Information

Name of Landowner: The State of Washington, Department of Fish and Wildlife

Landowner Contact Information:

 \boxtimes Mr. \square Ms. Title: Regional Director

First Name: Larry Last Name: Phillips

Contact Mailing Address: 48 Devonshire Rd., Montesano, WA 98563

Contact E-Mail Address: Larry.Phillips@dfw.wa.gov

Property Address or Location: Parcel #'s 170606410040, 170607120030, 170607210060, 180736440010, 170606240030, 170606240040, 170606310010, 170606420030, 170606310020, 180631330010, and 170606330010 located at 110 and 211 Keys Road, Montesano, WA 98563

- 1. State of Washington, Department of Fish & Wildlife (Landowner or Organization) is the legal owner of property described in this grant application.
- I am aware that the project is being proposed on my property.
- 3. If the grant is successfully awarded, I will be contacted and asked to engage in negotiations.
- 4. My signature does not represent authorization of project implementation.

for Larry Philips 1/29/2020

Landowner Signature

Date

Project Sponsor Information

Project Name: "Lower Satsop Restoration & Protection Program - Phase II, Reach-Scale Aquatic, Riparian and Floodplain Restoration"

Project Applicant Contact Information: 360/249-4222

Mr. Title: County Engineer Ms.

First Name: Rob Last Name: Wilson

Mailing Address: Grays Harbor County; 100 West Broadway, Suite 31; Montesano, WA; 98563

Webcam -> Click here.	<u>2019 WDFW Construction Pictures</u> \rightarrow Click here.
<u>Library</u> → Click <u>here</u> .	<u>12/04/2018 Drone Footage</u> \rightarrow Click here.
	1/06-09/2020 Flood (Webcam Video) -> Click here

From:	<u>Marshburn, Julia (RCO)</u>
To:	Rob Wilson
Cc:	Scott Boettcher; Miranda Smith; Vickie Raines
Subject:	RE: Grays Harbor County ASRP Grant Application
Date:	Wednesday, February 5, 2020 4:07:38 PM
Attachments:	image001.png

Hi Rob,

I received and opened your submission. Thank you!

Good luck, Julia Marshburn *she/her* Agency Records and Contract Specialist <u>Recreation and Conservation Office</u> PO Box 40917 Olympia WA 98504-0917 (360) 902-3085 julia.marshburn@rco.wa.gov

From: Rob Wilson <RWilson@co.grays-harbor.wa.us>
Sent: Wednesday, February 5, 2020 3:53 PM
To: Marshburn, Julia (RCO) <julia.marshburn@rco.wa.gov>
Cc: Boettcher, Scott <scottb@sbgh-partners.com>; Miranda Smith <miranda@naturaldes.com>; Vickie Raines <vraines@co.grays-harbor.wa.us>
Subject: Grays Harbor County ASRP Grant Application

Julia,

I have attached Grays Harbor County's ASRP Application for our Lower Satsop Restoration & Protection Program – Phase II, Habitat Connectivity and Reach-Scale Aquatic, Riparian and Floodplain Restoration Project.

Confirmation that you have received our application would be greatly appreciated.

Thank you,

Rob Wilson, PE County Engineer Grays Harbor County Public Works 360-249-4222