PROJECT: 22-1149 PLAN, LOWER MILLER FLOODPLAIN RESTORATION DESIGN

Sponsor: King County of Program: Salmon State Projects Status: Board Funded

Parties to the Agreement

PRIMARY SPONSOR

King County

Address 201 S Jackson St Ste 503

City Seattle **State** WA **Zip** 98104

Org Type County

Vendor # SWV0000320-12

UBI

Date Org created

Org Notes

link to Organization profile

link to PRISM Organization page

☐ Org data updated

SECONDARY SPONSORS

No records to display

MANAGING AGENCY

Recreation and Conservation Office

LEAD ENTITY

Snohomish Basin LE

QUESTIONS

#1: List project partners and their role and contribution to the project.

Todd Hurley, Project Manager
Denise Di Santo, Project Sponsor
King County Rivers and Floodplain Management Section staff
TBD
King County Roads Staff TBD

External Systems

SPONSOR ASSIGNED INFO

Sponsor-Assigned Project Number

Sponsor-Assigned Regions South Fork Skykomish watershed

EXTERNAL SYSTEM REFERENCE

Source	Project Number	Submitter
HWS	22-1149	AlexaR

Project Application Report - 22-1149

Project Contacts

Contact Name Primary Org	Project Role	Work Phone	Work Email
Denise Di Santo King Co Water & Land Res	Project Contact	(206) 263-0259	ddisanto@kingcounty.gov
Gretchen Glaub Snohomish Basin LE	Lead Entity Contact	(425) 388-6403	Gretchen.Glaub@co.snohomish.wa.us
Andrew Israel King Co Water & Land Res	Billing	(206) 477-2852	Anisrael@kingcounty.gov
Amee Bahr Rec. and Conserv. Office	Project Manager	(360) 867-8585	Amee.Bahr@rco.wa.gov
Doran Lower Rec. and Conserv. Office	MAgy Fiscal Contact	(360) 902-3007	doran.lower@rco.wa.gov

Worksites & Properties

#	Worksite Name
#1	Lower Miller R confluence with S F Skykomish R

Planning	Property Name

Worksite Map & Description

Worksite #1: Lower Miller R confluence with S F Skykomish R

WORKSITE ADDRESS

Street Address Cascade Highway and Miller River Road
City, State, Zip Skykomish WA 98288

Worksite Details

Worksite #1: Lower Miller R confluence with S F Skykomish R

SITE ACCESS DIRECTIONS

From Town of Skykomish, drive 2.8 miles west on NE Old Cascade Highway and turn left to continue for one mile.

TARGETED ESU SPECIES

Species by ESU	Egg Present	Juvenile Present	Adult Present	Population Trend
Chinook-Puget Sound, Skykomish River, Threatened	✓	✓	✓	Unknown
Coho-Puget Sound/Strait of Georgia, Species of Concern	✓	✓	✓	Unknown
Chum-Puget Sound/Strait of Georgia, Not Warranted	✓	✓	✓	Unknown
Pink-Odd Year, Not Warranted	✓	✓	✓	Stable
Steelhead-Puget Sound, Threatened	✓	✓	✓	Declining

Reference or source used

WDFW SalmonScape

TARGETED NON-ESU SPECIES

Species by Non-ESU		Notes
Bull Trout	Egg, Juvenile, Adult Presence	
Searun Cutthroat		
Rainbow	Egg, Juvenile, Adult Presence	

Questions

#1: Give street address or road name and mile post for this worksite if available.

West of 70625 West Old Cascade Highway at bridge and avulsion site

Project Location

RELATED PROJECTS

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Projects in PRISM

PRISM Number	Project Name	Program Name	Current Status	Relationship Type	Notes
No related project selected					

Projects not in PRISM

Project Number	Project Name	Current Status	Relationship Type	Project Funder
	Restoration Opportunity Report: South F		Related	This Report was funded by USFS through Natural Resource Damage Assessment funding, with support of multiple partners.

Related Project Notes

Questions

#1: Project location. Describe the geographic location, water bodies, and the location of the project in the watershed, i.e. nearshore, tributary, main-stem, off-channel, etc.

The project site is located within the lower mile of the Miller River above the confluence with the South Fork Skykomish River. It is approximately 1.5 miles west northwest of the town of Skykomish, in unincorporated King County. This is main stem headwater, floodplain, off-channel and tributary habitat.

#2: How does this project fit within your regional recovery plan and/or local lead entity's strategy to restore or protect salmonid habitat? Cite section and page number.

The 2005 Snohomish River Basin Salmon Conservation Plan (Salmon Plan) and local lead entity's recovery strategy indicate this project is a high priority. Specifically :
• the project will help to restore and preserve habitat and processes that support local and downstream fish populations (Salmon Plan, pg. 11-78), by removing bank armoring, reconnecting floodplain habitat, and restoring riparian areas;
• the 2015 Snohomish Basin Protection Plan, an addendum to the Salmon Plan, specifically calls for partners to 'improve and relocate bridges, roads, and railways to improve hydrologic conditions' in the South Fork Skykomish watershed (Table 3, Appendix A, pg. A-17);
• the 2017 Climate Change Impacts to Salmon Issue Paper calls for the reconnection of floodplains to help address climate impacts to hydrology and water temperature, specifically in headwaters as they are critical for providing cool, plentiful water (Table 2, pg. 22);
• this project is a priority project on the Snoqualmie Watershed Forum's 10-Year Project List;
• a significant portion of the project is located in the 100-year floodplain of the Skykomish River, which is considered to be the highest priority for recovery (Mainstem Primary Restoration); and
• a significant portion of the Skykomish salmon population pass above Sunset Falls, a natural anadromous barrier on the South Fork Skykomish River that historically prevented spawning above it. A trap-and-haul facility, operated since 1958, allows fish to use the large amount of high-quality spawning and rearing habitat above the falls. This passage program is critical to the Skykomish River population; in low escapement years, most of the returning Chinook salmon in the Skykomish system spawn above the falls. The Salmon Plan is a multi-species plan.

Key partners and studies have also called attention to the importance of this project, including:
• the 2013 Restoration Opportunity Report for the SF Skykomish River Basin (prepared by Herrera Consultants for King County) details that the Miller River Alluvial Fan has significant ecological lift potential. The land needed to construct the restoration project is largely in public hands, with investment by county acquisitions, simplifying implementation; and
• the US Forest Service identified the lower reach of Miller River as an area of concern due to impairment of channel processes, with designated floodplain restoration as a high priority within the Skykomish River watershed (USFS 2009).

#3: Is this project part of a larger overall project?

Yes

#3a: How does this project fit into the sequencing of the larger project?

A project feasibility study has been completed that identified this project as viable and beneficial to salmon recovery in this basin (See Report under Related Projects section). This project phase will conduct an alternatives analysis and produce preliminary design. Depending on the scale of the selected alternative, final design and project construction may be completed in one subsequent action or be phased as property and funding become available.

#4: Is the project on State Owned Aquatic Lands? Please contact the Washington State Department of Natural Resources to make a determination. **Aquatic Districts and Managers**

Yes

Project Application Report - 22-1149

Property Details

Properties for this program and project type are optional.

Project Proposal

Project Description

The Lower Miller River Floodplain Restoration Design Project (LMRFRD) will identify a preferred restoration strategy and develop an implementable preliminary plan for restoring the lowermost mile of the Miller River, its floodplain and its confluence with the Skykomish River. The design will seek to maximize habitat value for ESA listed fish: Chinook, coho, pink and steelhead, throughout the roughly 165 acre floodplain and alluvial fan within the project area by removing artificial constraints on fluvial processes. Primary project actions will include removal of approximately 900 feet of Old Cascade Highway west of the Miller River, the Miller River Bridge and a smaller culvert over Spree Creek in the Miller River floodplain. These nonfunctioning structures limit floodplain connection, impair channel migration and impact habitat throughout this important confluence environment.

The restoration plan will also include removal of approximately 1000 feet of existing flood control facilities from the left bank floodplain; removal or reconfiguration of up to 400 feet of right bank flood control facilities, invasive plant species removal and plantings, and in channel wood placement. Some actions may be implemented in the future depending on property owner negotiations and/or acquisition success.

Funding would support alternatives analysis and preliminary design for salmon conservation in this high priority location in unincorporated King County, WRIA 7.

Project Questions

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#1: Problem statement. What are the problems your project seeks to address? Include the source and scale of each problem. Describe the site, reach, and watershed conditions. Describe how those conditions impact salmon populations. Include current and historic factors important to understand the problems.

The Miller River is a tributary to the South Fork with a confluence west of the Town of Skykomish. The alluvial fan is particularly dynamic due to the sharp break in along channel slope at the confluence, which causes increased sediment deposition and channel instability. These natural hydraulic and geomorphic conditions have the potential to generate high quality salmon habitat throughout the project area. However, a large number of human modifications, including a County road, BNSF railway, several levees and revetments, along with watershed scale impacts of logging and mining, have limited natural processes at this site and impacted salmonid habitat. The areas affected most by these geomorphic modifications are side channels and off-channel habitats in the project site.

Overall, the lower Miller River is very productive fish habitat within the South Fork Skykomish River Basin. Large runs of salmonids have historically been observed at the mouth (see Appendix E of the Restoration Opportunity Report for the SF Skykomish). Habitat diversity and side channels provide rearing and potential spawning habitat for all salmonids in the project area. Miller River provides an influx of cold water, nutrients, sediment, and potential food sources that attract fish and improve overall basin productivity.

The problem for salmon populations is that existing infrastructure degrades and poses risks to this vital habitat. There is also an immediate opportunity to permanently protect and enhance this habitat by restoring key elements. Existing infrastructure in the river's floodplain – such as the 1,400 feet of revetment, the Old Cascade Highway Bridge, Spree Creek culvert, overhead utilities, railroad bridge and trestle, and roads – cumulatively degrade hydrologic function, sediment transport processes, and instream habitat structure. Many of these structures also pose risks to salmonids, fish habitat, and public safety during flood events. Bank armoring confines rivers and disconnects them from off-channel habitat, reducing edge habitat complexity, habitat-forming processes, and increasing peak flows downstream. These physical constraints have impacted the quantity and quality of salmon spawning habitat in the lower river, including areas suitable for redd construction and holding habitat (e.g., pools), and rearing and foraging habitat for adult and sub-adult bull trout. Invasive species also dominate some riparian areas in the project's footprint, reducing the potential for shade creation and large wood debris recruitment that would likely occur in a forested landscape.

Appendix E of Lower Miller Feasibility Report: https://www.govlink.org/watersheds/7/pdf/skykomish_pdfs/Restoration_ Opportunity_Report_SF_Skykomish_April_2013_Appx_E.pdf

#2: Describe the limiting factors, and/or ecological concerns, and limiting life stages (by fish species) that your project expects to address.

Reduction in quantity and quality of rearing habitat has been identified as a primary factor limiting salmon production in the Snohomish basin, which includes the South Fork and the Miller River (Haring 2002). The Miller River fan is located in a “primary restoration” subbasin as designated by the Snohomish River Basin Salmon Conservation Plan, which means it is one of the highest priority subbasins for restoration action (Salmon Plan, 2005). These primary restoration subbasins currently have high priority habitat restoration targets for the King County portion of WRIA 7, including 80 acres of restored off-channel habitat and 5.5 miles of restored edge habitat (King County 2011). In addition, the Forest Service has identified the lower reach of Miller River as an area of concern due to impairment of channel processes and has designated floodplain restoration here as a high priority within the Skykomish River Watershed (USFS 2009).

At the time of writing the Salmon Plan, the Skykomish average Chinook escapement – or number of fish returning to spawn – for the basin’s natural origin fish was estimated to be about 3.4% of historic abundance. As of 2018, abundance estimates remain historically low, and most of the Snohomish River escapement increases over recent years can be attributed to gains by the Skykomish River population (Snohomish River Basin Salmon Conservation Plan: Status and Trends, 2019). As such, preserving intact, upstream habitats on the Skykomish River continues to a central component of the overall recovery strategy for the basin.

Referenced documents for Project Questions section:
• 2005 Snohomish River Basin Salmon Conservation Plan: https://www.govlink.org/ watersheds/7/pdf/WRIA%207_Plan/Final_Compiled_Plan.pdf
• 2013 Restoration Opportunity Report: South Fork Skykomish River Basin Restoration Feasibility Project: https://www.govlink.org/watersheds/7/pdf/skykomish_pdfs/Restoration_Opportunity _Report_SF_Skykomish_April_2013_Report_Body_Only.pdf
• 2015 Snohomish Basin Protection Plan: https://www.govlink.org/ watersheds/7/plans-studies/SBPP.aspx
• 2017 WRIA 7 Climate Change Impacts to Salmon Issue Paper: https://www.govlink.org/watersheds/7/pdf/ SnohomishClimatePaper/ClimatePaper2017.pdf
• 2019 Snohomish River Basin Salmon Conservation Plan: Status and Trends Report: https://www.govlink.org/watersheds/watersheds/7/pdf/ Snohomish%20Status%20and%20Trends%20Report/SnohomishBasin 10YearReport_2019-12-30_reduced.pdf

#3: What are the project goals? The goal of the project should be to solve identified problems by addressing the root causes. Then clearly state the desired future condition. Include which species and life stages will benefit from the outcome, and the time of year the benefits will be realized. **Example Goals and Objectives**

The overarching problem is that existing infrastructure (bridges, culvert, revetments, roads) poses risks for historically productive Chinook salmon habitat and is degrading habitat and ecological processes for local and downstream fish populations. The desired future condition of the project area is one where intact habitat is protected, the lower Miller River is reconnected with its floodplain, and flood risks are reduced.

As noted, the areas affected most by these geomorphic modifications are side channels and off-channel habitats in the lower portion of the alluvial fan, including overflow channels and wetland habitats. These habitat types are shown to be critical for various life stages and species of salmonids: juvenile fish rely on off-channel wetlands and shallow backwater areas for rearing habitat (foraging, high water refugia, and protection from predators); steelhead and coho frequently spawn in side channels and lower reaches of small tributaries; and juvenile salmonids rely on high quality edge habitat (dense vegetation and in-channel wood) for cover and protection from predators and high water velocities (King County 2011; Beamer 2010; Lestelle et al. 2005). Intact, native riparian vegetation is a critical component of high quality habitat for all species of salmonids, providing essential cover, habitat for invertebrate prey, water temperature moderation, large woody debris recruitment potential, and input of nutrients (Gregory et al. 1991).

#4: What are the project objectives? Objectives support and refine biological goals, breaking them down into smaller steps. Objectives are specific, quantifiable actions the project will complete to achieve the stated goal. Each objective should be SMART (Specific, Measurable, Achievable, Relevant, and Time-bound). **Example Goals and Objectives**

Alternatives analysis and preliminary design project objectives include:
1) Develop a preferred project alternative that:
a. Maximizes habitat lift for salmonids in the short term without impacting longer term goals, including
i. Removing artificial constraints on geomorphic processes (future development, levees, revetments, roadways, limited large wood supply due to logging and riparian conditions etc.)
ii. Restoring natural levels of hydrologic connection and off-channel habitat by restoring natural channel form and roughness, and
iii. Restoring native vegetation throughout the project area.
b. Removes the Old Cascade roadway segment, bridge and culvert from the right bank floodplain and relocates or protects utilities,
c. Incorporates stakeholder (WRIA, Tribes, WDFW, City of Skykomish, King County Historic Preservation) input,
d. Includes a feasibility funding and implementation plan, and
e. Avoids any un-mitigated, significant, increase in flood-related risks to off-site property and infrastructure.
2) Develop a preliminary engineering plan, design report and cost estimate for the preferred alternative, a permitting plan and a phasing plan if the preferred alternative cannot be implemented in one phase.

#5: Scope of work and deliverables. Provide a detailed description of each project task/element. With each task/element, identify who will be responsible for each, what the deliverables will be, and the schedule for completion.

King County project manager will assemble and lead a team of King County staff and consulting ecologists, biologists, hydrologists, geomorphologists, and engineers along with specialists in archaeology, land survey, geotechnical engineering, and land acquisitions that will develop and analyze project alternatives for the site.
The alternatives analysis process will begin with assessment of potential hydraulic and geomorphic and ecological responses to full removal of all flood protection facilities and infrastructure in the project reach. That assessment will be based on an updated 2-dimensional hydraulic model that will be developed by a consulting team. We will use velocity, water surface elevation and shear stress outputs to identify restoration opportunities, likely geomorphic responses, and changes in flood hazards. Using the full infrastructure removal scenario model results and geomorphic and ecological response analyses, we will develop 3-4 alternatives that reflect different strategies for habitat recovery. This process will likely include a design charrette convening technical experts from King County, partner tribes and agencies, and participating consulting firms. The resulting alternatives will vary in both scale and approach. They will then be evaluated based on short- and long-term ecological performance, stakeholder support, alignment with recovery plans, costs in proportion to benefit and in relation to available funding, and risks and uncertainties. Risks and uncertainties will include: the potential for additional, project related impacts to adjacent private property and infrastructure (using existing risk as a baseline), along with risks related to funding, permitting, construction, and uncertainty of achieving long-term ecological objectives.
When that process is complete, the team will document the alternatives analysis and a preferred alternative for approval by the project sponsor and King County WLRD management. The project manager will be responsible for development of a preliminary engineering design based on the preferred alternative. A responsible, professional engineer, licensed by the State of Washington will oversee and stamp all engineering products, and the project manager will be responsible for delivery of project scope, schedule, and budget. Preliminary design will include additional hydraulic modeling and geomorphic analysis.
Engineering plan development will focus on key project elements including the location type and extent of any required setback protection, major floodplain or in-channel grading or large wood structures, infrastructure removal and relocation, cultural resources accommodation and planning, and coordination with neighboring property owners and more detailed cost estimating. In this case, a significant part of the outreach effort is going to be working with BNSF when conceptual plan is complete.
-Completion of alternatives analysis Q2 2023
-Completion of preliminary design Q2 2024

#6: What are the assumptions and physical constraints that could impact whether you achieve your objectives? Assumptions and constrains are external conditions that are not under the direct control of the project, but directly impact the outcome of the project. These may include ecological and geomorphic factors, land use constraints, public acceptance of the project, delays, or other factors. How will you address these issues if they arise?

This project is constrained by the railroad crossing near the downstream project boundary, by undeveloped private parcels near the upstream project boundary and by the Miller River Road to the West and by a private quarry to the east. Ultimately, the scale and cost/benefit of restoration depends on the degree of cooperation between all those landowners. We will continue to pursue cooperation and manage risk throughout the project. In the alternatives analysis phase, the team will develop a table of dependencies for each alternative that will guide our outreach and real property acquisition efforts. Preliminary feedback from landowners will be used to score our alternative analysis and inform our implementation plan. Uncertainties will be documented in a risk register and updated as the project progresses from preferred alternative to preliminary and final design. A significant mitigating factor is that we have acquired approximately 30 acres of the potential project footprint at the downstream end of the project area. This enables removal of the Old Cascade highway segment and the Miller River Bridge and culvert, and will mitigate increased risk to the BNSF railway and lock in significant habitat gains, even if landowner negotiations are stalled or stopped.

We anticipate that the legal and geomorphic analysis that will be the basis for our railway protection proposal will be scrutinized by BNSF. We will bring in significant resources in the form of consultant support and legal advice so we can clearly, credibly, and efficiently articulate our position to minimize misunderstandings and debate. This will increase the chances of collaborative solutions.

Off-channel habitat and floodplain reconnection projects have some technical risks. They can be sensitive to sediment & large wood supply, hydrology, and natural/artificial controls on channel geometry. Assessments will address risk. A monitoring & adaptive management plan will be developed to address shortcomings.

#7: How have lessons learned from completed projects or monitoring studies informed this project?

The Ecological Restoration and Engineering Services Unit (ERES) has been designing, permitting, implementing and monitoring habitat restoration projects on King County rivers, creeks and shorelines for almost 30 years.
We have also had the benefit of seeing other projects completed throughout the northwest by the broad community of restoration professionals. Probably the first thing we have learned is humility! We have tried to connect floodplains in confluence environments at the Lower Tolt floodplain restoration site and invested heavily in engineered wood structures only to see them sit largely unengaged for 10 years. We have seen significant habitat gains at that site, but rather than seeing a dramatic avulsion, we have seen the channel widen substantially and the bed rise, causing a significant increase in the elevation of the water surface at low flow, increased ground water storage and improving off-channel habitat hydrology and connection. As a result, we have learned that restoring a more natural channel form can be crucial for reconnecting and sustaining off-channel habitat. Data from the Lower Tolt project and all of our levee setback projects will inform (and likely reduce) the depth we dig to build and connect off-channel habitat and the extent we “build” habitat versus letting it form naturally. It will also improve our projections of the type and extent of habitat gains from this and future projects.

#8: Describe the alternatives considered and why the preferred was chosen.

The 2013 Report identified this site as having high restoration potential for salmon habitat. It considered restoration potential in the lower 2 miles of the Miller River and focused on the alluvial fan reach, or the lower 1 mile of the River. The report provided alternatives for treatment of the left bank of the alluvial fan including the removal of a portion of the Miller R Rd revetment that extends across a side channel, removal and relocation of the Miller Curve levee and removal of roadway and related infrastructure on Old Cascade Highway. Optional setback facilities were considered to accommodate existing private properties if they could not be acquired. King County has acquired one key parcel and may acquire additional parcels as they become available. As a result, the proposed alternative analysis will consider all the potential restoration actions described in the feasibility report, and additional right bank fill, levee revetment and road removal.

The alternatives analysis for this project will meet these objectives:
1) Develop a preferred project alternative that:
a. Maximizes habitat lift for salmonids in the short term without impacting longer term goals, including
i. Removing artificial constraints on geomorphic processes (future development, levees, revetments, roadways, limited large wood supply due to logging and riparian conditions, etc.)
ii. Restoring natural levels of hydrologic connection and off-channel habitat by restoring natural channel form and roughness, and
iii. Restoring native vegetation throughout the project area.
b. Removes the Old Cascade roadway segment, bridge and culvert from the right bank floodplain and relocates or protects utilities,
c. Incorporates stakeholder (WRIA 7 LE, Tribes, WDFW, Skykomish, etc.) input,
d. Includes funding and implementation plan, and
e. Avoids unmitigated, significant increase in flood risk to offsite property.

The selected alternative will provide a good ratio of habitat benefit to cost.

#9: How were stakeholders consulted in the development of this project? Identify the stakeholders, their concerns or feedback, and how those concerns were addressed.

Internal stakeholders of this project include King County Rivers and Floodplain Management Section (RFMS) of Water and Land Resources Division, and KC Roads (Roads) within Department of Local Services. RFMS has been involved early in the discussion of the potential and feasibility to remove flood control facilities in the vicinity and within the project footprint. Roads has provided status of their roads removal and upgrades projects in the area, cultural resources survey information, and their correspondence with BNSF. As the project progresses, we will have a dialogue to collect feedback and concerns presented and address them. The project team has also engaged with external parties. We have presented the project to the WRIA 7 Snohomish Basin Salmon Recovery Technical Committee, which has representation from key stakeholders, and Tribes as treaty rights holders. In addition, we have reached out and received comments from Mayor of Skykomish. Early communications have begun.

The 2013 Restoration Opportunity Report (project feasibility study) was developed by a partnership between USFS, King County Department of Natural Resources and Parks (DNRP), the Snoqualmie Watershed Forum, and the King County Flood Control District. As the project proceeds, we will continue to engage with internal and external stakeholders, including the Town of Skykomish and area residents, utility companies operating in the area, and BNSF.

#10: Does your project address or accommodate the anticipated effects of climate change?

Yes

#10a: How will your project be climate resilient given future conditions?

Reducing constrictions within the floodplain at the confluence of the Miller and South Fork Skykomish Rivers will create conditions more conducive to responding to changing flow regimes under hydroclimatic change.

This project will remove infrastructure and will seek to remove future development from the floodplain of the Miller River. It will also remove or reconfigure utilities that are currently at risk due to channel migration. Finally, analysis and potential mitigation of flood risks to the BNSF railway will also reduce risk to some degree. Setback protection structures will be designed to address future climatic conditions based on best available science at the time of design. Taken in combination, these changes will significantly reduce the impacts of climate change to the environment and local community in the project area.

#10b: How will your project increase habitat and species adaptability?

The Salmon Plan identified recovery actions that address viable salmonid population (VSP) criteria. However, climate impacts will directly affect these VSP criteria. For instance, water temperatures across the basin will likely increase, making some areas inhospitable to salmon, and causing dire conditions for unique life history types such as yearling Chinook. Climate impacts could potentially decrease suitable summer habitat, impacting the spatial diversity in the system, or increased winter scouring could affect population abundance and ultimately productivity.

The Lower Miller Floodplain Restoration project will help mitigate these impacts by protecting and enhancing a critical source of cool and plentiful water. Investing in headwaters now to protect and restore processes that will increase water storage and reduce water temperatures will be critical in our efforts to help salmon populations and local ecosystems adapt to climate change impacts.

#11: Describe the sponsor's experience managing this type of project. Describe other projects where the sponsor has successfully used a similar approach.

King County Water and Land Resources Division (WLRD) has performed numerous levee setback, large scale floodplain reconnection and infrastructure protection projects of similar scale and complexity to the Lower Miller Floodplain Restoration Project. These projects are sponsored and managed by senior staff with extensive experience and a deep team of professionals and managers who specialize in habitat restoration and can share their experience and guidance when needed. King County has also developed formal policies and procedures in manual form to standardize project management and delivery. These tools are based on lessons learned over years of habitat restoration project implementation, resulting in reliable dependable project delivery.

#12: Will veterans (including the veterans conservation corps) be involved in the project? If yes, please describe.

No

Planning Supplemental

#1: Is the project an assessment / inventory?
No

#2: Is your project a Barrier / Screening Diversion Inventory Project?
No

#3: Is this a fish passage design / screening design project?
No

#4: Will the project develop a design?
Yes

#4a: Will a licensed professional engineer design of the project?
Yes

#4b: Will you apply for permits as part of the project scope?

Permits will not be sought during this project phase.

Planning Metrics

Worksite: Lower Miller R confluence with S F Skykomish R (#1)

Area Encompassed (acres) (B.0.b.1)	165.0
Miles of Stream and/or Shoreline Affected (B.0.b.2)	1.70 **Note:** Area – 30-165 acres. 30 acres is currently in King County ownership and subject to substantial habitat lift if restored. ~86 total acres (left bank floodplain and main channel) subject to substantial lift if restored. ~78 acres on the right bank floodplain subject to lift if restored- may require instream large wood structures to improve right bank connectivity

DESIGN FOR SALMON RESTORATION

Preliminary design (B.1.b.11.a RCO)

Total cost for Preliminary design	$249,000
Project Identified in a Plan or Watershed Assessment. (1220) (B.1.b.11.a)	Snohomish Basin Protection Plan, 2015 Snohomish Basin Salmon Conversation Plan; 2005 Snohomish Forum 10 year project list **Note:** WRIA 7 Snohomish Basin Salmon Conservation Plan, 2005 Snohomish Basin Protection Plan, 2015
Priority in Recovery Plan (1222) (B.1.b.11.b)	Priority Area: Headwaters Restoration and Protection

Overall Project Metrics

COMPLETION DATE

Projected date of completion	06/30/2025 **Note:** Estimated completion of Alternatives Analysis Q2 2023 Estimated completion of Preliminary Design Q2 2024 Estimated Close Out 2025

Estimated Close Out 2025

Planning Cost Estimates

Worksite #1: Lower Miller R confluence with S F Skykomish R

Category	Work Type	Estimated Cost	Note
Design for Salmon restoration	Preliminary design (B.1.b.11.a RCO)	$249,000	
	Subtotal:	$249,000	
	Total Estimate For Worksite:	$249,000	

Summary

Total Estimated Costs:	$249,000
Total Estimated Planning Costs:	$249,000

Cost Summary

	Estimated Cost	Project %	Admin/AA&E %
Planning Costs			
Planning	$249,000		
SUBTOTAL	$249,000	100.00 %	
Total Cost Estimate	$249,000	100.00 %	

Funding Request and Match

FUNDING PROGRAM

Salmon State Projects	$150,000	60.240964 '

SPONSOR MATCH

OTHER MONETARY FUNDING	APPROPRIATION - LOCAL	
Amount		$99,000.00 **Note:** $99,000
Funding Organization		King County Surface Water Management
	Match Total:	$99,00039.759036 '
	Total Funding Request (Funding + Match):	$249,000100.000000

Questions

#1: Explain how you determined the cost estimates

> The cost estimates are based on past projects for this project phase. We are also expecting additional funding from local sources through the next biennium (2023-24) to supplement this budget for this project phase.

Cultural Resources

Cultural Resource Areas

Worksite #1: Lower Miller R confluence with S F Skykomish R

Area: PROJECT SITE APE

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#1: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

Ground disturbing activities during alternatives analysis and preliminary design are expected to include:
1) Preliminary geotechnical investigation (test pits and borings)
2) Archaeological Investigation (shovel probes)
3) Wetland delineation (soil pits)

#2: Describe the existing project area conditions. The description should include existing conditions, current and historic land uses and previous excavation/fill (if depths and extent is known, please describe).

Existing site conditions vary throughout the project area. The site is generally forested with alluvial soils consisting of sand, grave cobble and boulders. Areas have been filled. Most notably the road prism for Old Cascade Highway and Miller River Road as well as the railroad subgrade west of the Miller River Railroad Bridge. Other fill may exist on the former Buddhist temple site (structure acquired and removed by King County). Other known artificial features include levees, revetments the bridge, culvert and overhead utilities on Old Cascade Highway, the railroad trestle (east of the Miller River bridge) the railroad bridge and one small wooden structure on a private lot. A pond on the former Buddhist Temple site also appears to be at least partially constructed.

#3: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#4: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#5: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

Yes

#5a: Summarize the previous cultural resource review; including lead agency and date of review, reference name and numbers, etc. If RCO, include the prior phase grant number. NOTE: Do not provide any site-specific information considered confidential. Attach previous surveys or other reference documents.

King County Roads did conduct a cultural resource review in this area. A portion of the project area was likely included in the Section 106 review that was conducted for FEMA. The APE letter for the project and detail map #2 are included as attachments along with DAHP concurrence for that review. The project is numbered 121411-08-FEMA by DAHP. A qualified CR specialist can access all of the project documents on WISAARD using that number.

#6: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

Yes

#6a: List the structure(s) and the properties that they are located within the project area. Identify which structures will be removed or altered as part of this proposal. Attach at least one photo of each structure. The photo must be labeled so that the structure may be geographically located within your project area.

The Old Cascade Highway bridge and roadway, the railroad track, bridge, trestle and fill prism and likely the levees and revetments are all greater than 45 years old and potentially significant cultural resources.

Project Permits

Permits and Reviews	Issuing Organization	Applied Date	Received Date	Expiration Date	Permit #
None - No permits Required					

Attachments

Required Attachments	6 out of 6 done
Applicant Resolution/Authorizations	✓
Cost Estimate	✓
Landowner acknowledgement form	✓
Map: Planning Area	✓
Photo	✓
RCO Fiscal Data Collection Sheet	✓

PHOTOS (JPG, GIF)

Photos (JPG, GIF)


502189


502190


502191


502192


502193

PROJECT DOCUMENTS AND PHOTOS

Project Documents and Photos

File Type	Attach Date	Attachment Type	Title	Person	File Name, Number Associations	Shared
	06/14/2023	Project Review Comments	Proj Review Comments Final, 22-1149P(compl 06/14/23 15:51)	MarkJ	Project Review Comments Report - 22-1149 (compl 06-14-2023_15-51-13).pdf, 565802	✓
	06/14/2023	Project Review Comments	Proj Review Comments LE, 22-1149P(compl 06/14/23 15:51)	MarkJ	Project Review Comments Report - 22-1149 (compl 06-14-2023_15-51-10).pdf, 565801	✓
	06/14/2023	Project Review Comments	Proj Review Comments Initial, 22-1149P(compl 06/14/23 15:51)	MarkJ	Project Review Comments Report - 22-1149 (compl 06-14-2023_15-51-07).pdf, 565800	✓
	04/26/2023	Map: Area of Potential Effect (APE)	Project APE Report (04/26/23 16:32:23)	KevinL	Project APE Report - 22-1149 (04-26-2023_16-32-23).pdf, 560021	✓
	04/26/2023	Cultural Resource Screening Report	Project Cultural Resource Screening Report (04/26/23 16:32:2	KevinL	Project Cultural Resource Screening Report - 22-1149 (04-26-2023_16-32-22).pdf, 560020	✓
	10/04/2022	Map: Area of Potential Effect (APE)	Project APE Report (10/04/22 08:32:19)	BrentH	Project APE Report - 22-1149 (10-04-2022_08-32-19).pdf, 532627	✓
	10/04/2022	Cultural Resource Screening Report	Project Cultural Resource Screening Report (10/04/22 08:27:2	BrentH	Project Cultural Resource Screening Report - 22-1149 (10-04-2022_08-27-20).pdf, 532436	✓
	07/21/2022	Application Review Report	Grant Manager Comments, 22-1149P(compl 07/21/22 14:02)	SandyD	Grant Manager Comments Report - 22-1149 (compl 07-21-2022_14-02-33).pdf, 525606	✓
	06/27/2022	Project Application Report	Project Application Report, 22-1149P (sub 06/27/22 09:41:18)	DeniseD	Project Application Report - 22-1149 (submitted 06-27-2022_09-41-18).pdf, 521217	✓
	06/27/2022	Cost Estimate	Copy of Copy of updated SAL-CostEstimate_Lower Miller River	DeniseD	Copy of Copy of updated SAL-CostEstimate_Lower Miller River Floodplain Restoration.x (2).xlsx, 521187	✓
	06/22/2022	Landowner acknowledgement form	RCO-Landowner Acknowledgement Form Lwr Miller R FP Restorati	DeniseD	RCO-Landowner Acknowledgement Form Lwr Miller R FP Restoration.pdf, 520427	
	04/01/2022	Application Review Report	Grant Manager Comments, 22-1149P(rtnd 04/01/22 12:01)	SandyD	Grant Manager Comments Report - 22-1149 (rtnd 04-01-2022_12-01-02).pdf, 506432	✓

Project Application Report - 22-1149

File Type	Attach Date	Attachment Type	Title	Person	File Name, Number Associations	Shared
	04/01/2022	Application Review Report	Grant Manager Comments, 22-1149P(rtnd 04/01/22 11:59)	SandyD	Grant Manager Comments Report - 22-1149 (rtnd 04-01-2022_11-59-11).pdf, 506430	✓
	03/15/2022	Application Document	Restoration_Opportunity_Report_SF_Skyk	DeniseD	Restoration_Opportunity_Report_SF_… 504446	✓
	03/14/2022	Visuals	Lower Miller River Floodplain Restoration Project - RCO site	DeniseD	Lower Miller River Floodplain Restoration Project - RCO site 031522FINAL.pdf, 504364	✓
	03/08/2022	Project Application Report	Project Application Report, 22-1149P (sub 03/08/22 15:16:27)	DeniseD	Project Application Report - 22-1149 (submitted 03-08-2022_15-16-27).pdf, 503583	✓
	03/01/2022	Application Review Report	Grant Manager Comments, 22-1149P(rtnd 03/01/22 16:00)	SandyD	Grant Manager Comments Report - 22-1149 (rtnd 03-01-2022_16-00-31).pdf, 502609	✓
	02/28/2022	Project Application Report	Project Application Report, 22-1149P (sub 02/28/22 15:47:45)	DeniseD	Project Application Report - 22-1149 (submitted 02-28-2022_15-47-45).pdf, 502276	✓
	02/28/2022	Map: Multi-site and geographic envelope	Miller River 2-D Model Results existing conditions.JPG	DeniseD	Miller River 2-D Model Results existing conditions.jpg, 502257	✓
	02/28/2022	Map: Planning Area	Lower Miller River Floodplain Restoration Project Worksite M	DeniseD	Lower Miller River Floodplain Restoration Project Worksite Map.jpg, 502256	✓
	02/28/2022	Photo	BNSF Railroad Bridge.jpg	DeniseD	BNSF Railroad Bridge.jpg, 502255	✓
	02/28/2022	Photo	View of Left Bank Elevated BNSF Railway .jpg	DeniseD	View of Left Bank Elevated BNSF Railway .jpg, 502198	✓
	02/28/2022	Photo	View of Old Cascade HWY Bridge east approach trestle.JPG	DeniseD	View of Old Cascade HWY Bridge east approach trestle.jpg, 502196	✓
	02/28/2022	Photo	View of Right Bank BNSF Trestle.jpg	DeniseD	View of Right Bank BNSF Trestle.jpg, 502195	✓
	02/28/2022	Photo	VIew of Spree Creek from Old Cascade Hwy Culvert.jpg	DeniseD	VIew of Spree Creek from Old Cascade Hwy Culvert.jpg, 502194	✓
	02/28/2022	Photo	Old Cascade Hwy Bridge.jpg	DeniseD	Old Cascade Hwy Bridge.jpg, 502193	✓
	02/28/2022	Photo	View of Miller River Road Levee extending north into forest.	DeniseD	View of Miller River Road Levee extending north into forest.jpg, 502192	✓
	02/28/2022	Photo	Right Bank Revetment.jpg	DeniseD	Right Bank Revetment.jpg, 502191	✓
	02/28/2022	Photo	VIew looking west at avulsion site- shows Old Left bank floo	DeniseD	VIew looking west at avulsion site- shows Old Left bank floodplain and Old Cascade Highway prism .jpg, 502190	✓
	02/28/2022	Photo	View looking east at avulsion site- shows Old Cascade Highwa	DeniseD	View looking east at avulsion site- shows Old Cascade Highway prism and significant road fill.jpg, 502189	✓
	02/24/2022	Cultural Resources: Correspondence	Old Cascade Hwy Section 106 DAHP No Effect.pdf	DeniseD	Old Cascade Hwy Section 106 DAHP No Effect.pdf, 501697	
	02/24/2022	Cultural Resources: Correspondence	Old Cascade Hwy FEMA APE submittal.pdf	DeniseD	Old Cascade Hwy FEMA APE submittal.pdf, 501696	
	02/23/2022	Application Document	Grant Alert - Lower Miller River Floodplain Restoration (Sky	DeniseD	Grant Alert - Lower Miller River Floodplain Restoration (Skykomish).pdf, 501602	✓
	02/23/2022	Applicant Resolution/Authorizations	RCO_SRFB_Grant_Application_Authorizat	DeniseD	RCO_SRFB_Grant_Application_Autho… 501560	✓
	02/23/2022	RCO Fiscal Data Collection Sheet	FiscalDataCollectionSheet 2.22.22.pdf	DeniseD	FiscalDataCollectionSheet 2.22.22.pdf, 501559	
	02/23/2022	Application Document	Grant RCO-SRFB-PSAR_Grant_application_Alert_Lower Miller Riv	DeniseD	Grant RCO-SRFB-PSAR_Grant_application_Alert_Lower Miller River.pdf, 501557	✓

Application Status

Application Due Date: null

Project Application Report - 22-1149

Status Name	Status Date	Submitted By	Submission Notes
Application Complete	07/21/2022	Sandy Dotts	
Application Resubmitted	06/27/2022	Denise Di Santo	
Application Returned	04/01/2022	Sandy Dotts	
Application Returned	04/01/2022	Sandy Dotts	
Application Resubmitted	03/08/2022	Denise Di Santo	addressed RCO grant manager comments re billing contact and ESU species pop trends
Application Returned	03/01/2022	Sandy Dotts	
Application Submitted	02/28/2022	Denise Di Santo	
Preapplication	01/28/2022		

I certify that to the best of my knowledge, the information in this application is true and correct. Further, all application requirements due on the application due date have been fully completed to the best of my ability. I understand that if this application is found to be incomplete, it will be rejected by RCO. I understand that I may be required to submit additional documents before evaluation or approval of this project and I agree to provide them. (Denise Di Santo, 06/27/2022)

Date of last change: 06/14/2023