PROJECT: 22-1089 PLAN, RACE LAGOON PASSAGE - CULVERTS #1893 & 1894

Sponsor: Skagit Fish Enhancement Group Program: Salmon State Projects Status: Board Funded

Parties to the Agreement

PRIMARY SPONSOR

Skagit Fisheries Enhancement Group
Address PO Box 2497
City Mount Vernon **State** WA **Zip** 98273
Org Type Non-Gov-Reg Fisheries Enhance Group
Vendor # SWV0015097-00
UBI 601296455
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

Island County LE

QUESTIONS

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

SFEG has been partnering with Island County Public Works and tribes to complete phase two of an Island County fish passage barrier inventory project since 2019. In 2021, SFEG used capacity funds from Island County Salmon Recovery funds to hire a Conservation District engineer to complete fish barrier correction alternatives and alternatives were discussed with Island County Public Works. SFEG will partner with Island Co to design and construct fish passable structures at these two sites.

External Systems

SPONSOR ASSIGNED INFO

Sponsor-Assigned Project Number

Sponsor-Assigned Regions

EXTERNAL SYSTEM REFERENCE

Source	Project Number	Submitter
HWS	22-1089	APlumb

Project Application Report - 22-1089

Project Contacts

Contact Name Primary Org	Project Role	Work Phone	Work Email
Kristin Murray Skagit Fish Enhancement Group	Project Contact	(360) 853-5893	kmurray@skagitfisheries.org
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Bridget Kaminski Rec. and Conserv. Office	Project Manager	13608678195	bridget.kaminski@rco.wa.gov
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Worksites & Properties

#	Worksite Name
#1	Race Lagoon #1893

Planning	Property Name
✓	Race Road Culvert #1893

#	Worksite Name
#2	Race Lagoon #1894 and RFEG053

Planning	Property Name
✓	Race Road Culvert #1894
✓	507 Race Road

Worksite Map & Description

Worksite #1: Race Lagoon #1893

WORKSITE ADDRESS

Street Address 503 Race Rd
City, State, Zip Coupeville WA 98239

Worksite #2: Race Lagoon #1894 and RFEG053

WORKSITE ADDRESS

Street Address 507 Race Rd
City, State, Zip Coupeville WA 98239

Worksite Details

Worksite #1: Race Lagoon #1893

SITE ACCESS DIRECTIONS

Site is located on Whidbey Island near Coupeville, WA. From Highway 20, travelling either north or south, turn east on West Welcher Road, travel 1.3 miles down W Welcher Road and take a sharp right onto Race Road. The first culvert crossing, 1893, is approximately 0.43 miles south.

TARGETED ESU SPECIES

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

Reference or source used

WDFW salmonscape cites Coho, Pink, and Chum ESUs in the project area. Fish sampling conducted by tribes confirmed the presence of juvenile Chinook (Age 0 and 1), chum (Age 0), pink salmon (Age 0) in Race Lagoon. A Chinook salmon smolt was found by SFEG in the stream above culvert #1893 while doing a habitat assessment above the culvert.

TARGETED NON-ESU SPECIES

Species by Non-ESU	Notes
Searun Cutthroat	Stream is accessible to searun cutthroat trout and cutthroat trout were found in by tribes in Race Lagoon

Questions

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

Culvert #1893 flows under Island County-owned Race Rd near 503 Race Road, Coupeville, WA 98239.

Worksite #2: Race Lagoon #1894 and RFEG053

SITE ACCESS DIRECTIONS

Site is located on Whidbey Island near Coupeville, WA. From Highway 20, travelling either north or south, turn east on West Welcher Road, travel 1.3 miles down W Welcher Road and take a sharp right onto Race Road. The first culvert crossing, 1893, is approximately 0.43 miles south and the second culvert crossing, 1894, is approximately 400 feet south. The private crossing at 507 Race Rd is less than 20 feet downstream of the County culvert #1894.

TARGETED ESU SPECIES

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

Reference or source used

WDFW salmonscape cites Coho, Pink, and Chum ESUs in the project area. Fish sampling conducted by tribes confirmed the presence of juvenile Chinook (Age 0 and 1), chum (Age 0), pink salmon (Age 0) in Race Lagoon.

TARGETED NON-ESU SPECIES

Species by Non-ESU	Notes
Searun Cutthroat	Stream is accessible to searun cutthroat trout and cutthroat trout were found in by tribes in Race Lagoon

Questions

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

Culvert #1894 flows under Island County-owned Race RdRace Road near 507 Race Road, Coupeville, WA 98239. Another privately owned culvert barrier less than 20 feet downstream will be upgraded to a small bridge crossing and the stream re-meandered ~40 feet to eliminate a stream drop.

Project Location

RELATED PROJECTS

Projects in PRISM

PRISM Number	Project Name	Current Status	Relationship Type	Notes
19-1343 P	Island County Culvert Prioritization - Area 2	Active	Earlier Phase	Current culvert prioritization identified the two Race Lagoon culverts as a restoration priority.

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 proposed barrier removal projects are located on central Whidbey Island just east of Coupeville, WA. on two unnamed tributary streams that flow directly into nearby estuary habitat, Race Lagoon. Both culvert barriers are located on Race Road in approximately 400 feet apart and limit fish access to rearing habitat in coastal tributary streams that flow into Race Lagoon. Culverts are also located less than 200 feet from the lagoon.

#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.

Island County nearshore has been determined to be critical rearing habitat for out-migrating juvenile salmon from the Skagit River and other Puget Sound Rivers (Beamer et al, 2000; Beamer et al, 2005). The amount of rearing habitat for juvenile salmonids is limited in WRIA 6 and removal of fish passage barriers in the nearshore is critical for population recovery of Puget Sound salmon populations. The central location of WRIA 6 in the Salish Sea, at the junction of Puget Sound, the Strait of Juan de Fuca and Georgia Strait, means that most Puget Sound juvenile and adult salmon and trout populations utilize WRIA 6 marine and nearshore waters to some extent (WRIA 6 Technical Advisory Group, 2005).

One of the goals of the WRIA 6 Multi-species Salmon Recovery Plan is to "Over the long term, achieve a net increase in salmon habitat through protection, enhancement, and restoration of naturally-functioning ecosystems that support self-sustaining salmon populations and the species that depend on salmon." One of the objectives included in this goal is to "restore/enhance critical rearing habitats for forage fish and juvenile salmon." Estuaries are one of those habitat types. This project falls within Geographic priority area 2, priority area 1 is the most use by juvenile salmonids but juvenile rearing usage has been documented all over priority area 2, especially in pocket estuaries. The WRIA 6 recovery plan explicitly identifies connectivity modifications, streamflow modifications, and undersized culverts as pressures/limiting factors which need to be addressed by restoration entities. "Removing fish passage barriers to benefit anadromous fish," and "reconnecting creek mouths, backshore areas, and estuaries" are both explicitly listed as tier 1 recovery strategy priorities in the 2019 recover plan. In this same plan, "providing adequate streamflow" is listed as a tier 2 recovery strategy priority. This project meets these goals and objectives and is in line with the most up to date research and recovery plans. Lack of rearing habitat is a limiting factor in Chinook recovery. Lack of rearing habitat is a limiting factor in Chinook recovery. Research by Skagit River System Cooperative (SRSC) and others indicates that small, non-natal estuaries (pocket estuaries) within Whidbey Basin are preferred 20 to 1 by endangered Chinook salmon for nearshore rearing during the early stages of their out-migration.

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

No

#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**

No

Property Details

Property: Race Road Culvert #1893 (Worksite #1: Race Lagoon #1893)

Property: Race Road Culvert #1894 (Worksite #2: Race Lagoon #1894 and RFEG053)

Property: 507 Race Road (Worksite #2: Race Lagoon #1894 and RFEG053)

Project Proposal

Project Description

Skagit Fisheries Enhancement Group and Island County Public Works are working to replace two fish barrier culverts, culvert 1893 and 1894, under Race Road near Coupeville, WA and a private crossing immediately downstream of Culvert #1894. Removal of these fish passage barriers will open up critical rearing habitat for juvenile salmonids including ESA-listed Threatened Chinook as well as pink, Coho, and chum salmon. These two coastal streams drain to Race Lagoon which has been identified as important pocket estuary habitat for outmigrating salmon from the Skagit, Stillaguamish, and Snohomish Rivers. Pocket estuaries and small coastal streams such as these provide important feeding, resting, and and refuge habitat as juvenile salmon transition from freshwater to saltwater habitat. These culverts were identified during the Culvert Prioritization Inventory conducted by SFEG and Island County during which time a Chinook smolt was found in the stream above culvert #1893. In addition, SFEG has been working with local landowners who are open to additional wetland and riparian restoration upstream of these culverts as a future project. This grant would fund the design of two fish passable structures at culverts 1893 and 1894, and the design of a small bridge crossing and channel meander immediately downstream of culvert 1894 to enhance fish passage. Fish passage barrier removal is one of the most rapid and cost-effective ways of increasing the amount of accessible habitat for salmon.

Project Questions

Project Application Report - 22-1089

#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.

Pacific salmon rely on estuaries to rear. A lack of estuary habitat for rearing is known to be one of the limiting factors in threatened Puget Sound Chinook salmon recovery. Estuary habitat restoration is a vital component of salmon recovery. Multiple studies, including one research project completed by tribal biologists in 2013, demonstrated 1) Skagit, Samish, and Stillaguamish juvenile salmon use pocket estuaries and coastal streams on Whidbey Island to rear in, even when those streams do not host spawning adults and, 2) shoreline culverts on these streams and pocket estuaries are detrimental to rearing juvenile salmon. Undersized culverts limit access to usable habitat in streams, interfere with natural tidal exchange, and cause fatal stranding during the normal tidal cycle. This research has shown that culverts at the mouth of streams are associated with lower numbers of juvenile Chinook, suggesting that these culverts impair the ability of fish to access rearing habitat, particularly at sites that do not backwater during the tidal cycle. The study concluded, "…juvenile Chinook salmon are not just present in these small streams, but are actively rearing and growing. They appear to be using the streams as a nursery, much like natal and pocket estuaries are used by juvenile Chinook salmon, and "…A small streams restoration strategy should include removing culverts or retrofitting streams with culverts at their mouth to a design that allows upstream juvenile salmon passage." (Beamer et al 2013). The amount of rearing habitat for juvenile salmonids is limited in WRIA 6 and removal of fish passage barriers particularly in the nearshore including these two barriers along Race Lagoon is critical for population recovery of Puget Sound salmon populations. Race Lagoon is identified in the Skagit Watershed Council (2022) Strategic Approach as a Tier 2 potential pocket estuary in the Whidbey Basin.

SFEG has been partnering with Island County public works and several tribes to complete phase two of an island county fish passage barrier inventory project since 2019. This inventory focused on identifying barriers within 200 meters of the shoreline. SFEG used current (2019) WDFW inventory methods for tidally influenced culverts to identify fish passage barriers. Culverts were further prioritized for habitat assessments that met the following additional criteria: Chinook use in stream or nearshore, watershed area greater than 45 hectares, stream slope <10%, known as fish-bearing, and associated with a pocket estuary. SFEG met with Island County Public Works, Island County Salmon Recovery Lead Entity staff, and Tribal biologists to identify the best projects out of the list of known barriers which also met the criteria for habitat assessment. These two on Race Road along Race Lagoon were identified as priority culverts as they are both within 200 meters of important pocket estuary habitat in Race Lagoon. Culvert 1893 is currently only 33% passible according to a WDFW Level A Assessment (to adult fish, there are no criteria to access juvenile however juveniles are poorer swimmers than adults) and 1894 is a 100% barrier even for adult fish according to a WDFW Level B assessment due to excessive water velocities. The private culvert crossing, RFEG053, below culvert 1894 is identified as slope barrier.

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

Limiting factors for Puget Sound salmon recovery include a lack of rearing habitat including loss of pocket estuary and coastal stream habitat. Research by Skagit River System Cooperative (SRSC) and others indicates that small, non-natal estuaries (pocket estuaries) within Whidbey Basin are preferred 20 to 1 by endangered Chinook salmon for nearshore rearing during the early stages of their out-migration. Pocket estuaries also provide a faster growing environment and are safer for fry sized chinook than adjacent nearshore or offshore areas (Beamer et al 2006). The nearshore environment has been heavily altered and access for salmonids is very limited compared to historic conditions. A total of 96 historic pocket estuaries within the Whidbey Basin region have been identified. All but 26 of these have either been completely destroyed or are too small to be sustainably maintained for fish habitat (McBride 2006).

Impassable culverts on coastal streams that outlet into pocket estuaries such as these prevent access to important nearshore resources including food and shelter for out-migrating juvenile salmon. SFEG found a Chinook salmon smolt in peril above culvert #1893 as the tide receded and left the salmon stranded and in too shallow water. This project aims to provide coastal stream juvenile Chinook rearing habitat accessible from the Race Lagoon pocket estuary. The project will also substantially benefit Coho, chum and pink juvenile salmon, and sea-run cutthroat trout.

#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 goal of this project is to improve access to limited quality rearing habitat for Chinook salmon within these two coastal streams associated with the Race Lagoon pocket estuary. This will be accomplished by removing two fish passage barriers and replacing them with larger fish passable culverts. This will also improve tidal connectivity, natural flow, and sediment transport processes in these streams improving pocket estuary function.

#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**

This design project will result in preliminary designs for the removal of three fish passage barriers on two streams that drain to Race Lagoon to provide juvenile Chinook salmon access to the first 200 meters of small stream habitat for rearing and refuge as well as improve pocket estuary functions such as flow and tidal connectivity. Upstream habitat will be improved by working with private landowners to plant a riparian buffer. Preliminary design drawings for three culvert barriers, 1893, 1894, and RFEG053 to be upgraded for full fish passage and a channel re-meander downstream of RFEG053 will be produced. In addition, a preliminary planting plan for these two streams will be developed.

#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.

For the preliminary design Skagit Fisheries Enhancement Group will be responsible for project and grant management and overseeing the completion of the preliminary designs within the Design-Only 18-month window. Specifically:
*Preliminary design report and drawings (January 2023- Feb 2024)-SFEG will hire a consulting engineer
*Supporting studies-Geotechnical evaluation & topographic survey (Jan 2023-May 2023), cultural resources compliance (Sept-Dec 2022)-SFEG will hire consultants
*Supporting studies-seining (May 2023-Spet 2023), installing level loggers to inform the design (Sept 2023-Sept 2024)-SFEG staff
*Draft permit applications, preliminary planting plans (Sept 2023-Feb 2024) -SFEG staff
*Island County Public Works will be reviewing and commenting on the preliminary design and filling out the Landownership certification form (Sept 2023-Feb 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?

SFEG has obtained support from Island County to develop the preliminary design for the culverts as well as the landowner who owns the barrier RFEG053. SFEG has received verbal/email support from the upstream landowners to develop a preliminary planting plans along both streams; however, SFEG will need to work with and get full approval once a plan is developed and presented to the landowners. None of the landowners have opposed the project.

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

SFEGs experience on other projects has been that the best approach to restoration projects is to first engage and get to know landowners. For this project we have the support of the current property owner, Island County, the landowner of culvert RFEG053, as well as the support of private landowners along these two streams to do planting restoration. To date, SFEG has successfully completed over 67 salmon passage barrier removal projects.

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

A correction analysis form was completed for both culverts, #1893 and #1894. The preferred alternatives were chosen based on input from Island County. At culvert 1893, a 66'x13'x7' 3-sided concrete box culvert is the preferred alternative based on meeting fish passage and longevity (concrete) in the tidal environment. Similarly, at #1894, a 66'x7'x4.5' concrete box culvert is preferred alternative based on meeting fish passage criteria and longevity in the tidal environment.

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

Stakeholders for this project include Island County, adjacent landowners, and neighbors. SFEG only works with interested landowners and has signed landowner acknowledgment forms from Island County and the owner of RFEG053 as well as a letter of support from Island County. SFEG has done outreach and worked with landowners along these streams to conduct habitat assessments. Adjacent landowners have expressed interest in riparian and wetland restoration along these streams and have given verbal/email approval. Neighbors are aware of this proposed project and have raised no concerns.

#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?

Climate change models predict increased temperature and increased rainfall. In WRIA 06, climate changes impacts include coastal flooding (sea level rise and exaggerated storm surge events) and potentially altered hydrology (higher temperatures and flashier stream flows). Culverts that are somewhat passible today can become complete barriers due to these expected climate change effects. The designs for 1893 and 1894 will consider future conditions, including the expected sea level rise and tidal storm surges and will incorporate WDFW's climate change guidance per their water crossing design manual.

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

This project will provide critical coastal stream rearing habitat for out-migrating juvenile salmon known to utilize Race Lagoon including ESA listed Chinook salmon. This project will provide additional habitat areas for feeding, resting, and sheltering from predators that is lacking and critical for the recovery of declining salmon populations in the Puget Sound.

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

SFEG is one of 14 Regional Fisheries Enhancement Groups in Washington. We have been managing & implementing restoration projects in the Skagit basin since 1990. SFEG has a long history of fish passage restoration projects in the Skagit basin; we have completed over 67 fish passage barrier removal projects since 1991. SFEG has completed fish passage improvement projects funded by the SRFB, USFWS, FFFPP, and other grant programs over the past 10 years. SFEG has 7 fish passage projects planned for construction in 2022.

#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?

Yes

#3a: List additional upstream and/or downstream fish passage barriers, if any. Identify current or future plans for correction.

Downstream of culvert #1894, a private culvert RFEG053 hat is a barrier, will be removed as part of this project as well as re-meandering the stream to eliminate a stream drop. Upstream of #1894, the next culvert barrier is 613 meters (0.38 miles) upstream. A tributary to #1894 that starts at 7 meters upstream of #1894 has a series of 4 culvert barriers between 302-357 meters(0.18-0.22 miles) upstream.

Upstream of #1893, the nearest culvert barrier is 213 meters (0.13 miles) under a private driveway and is 33% passible, followed by three additional private crossings that are 67%, 0%, and 33% passible, respectively. The next nearest barrier is at Denneboom Road, 540 meters (0.34 miles) upstream.

#3b: Describe the amount and quality of habitat made accessible if the barrier is corrected. Include the Priority Index (PI), or Screening Priority Index (SPI), if applicable.

This project is focused on providing suitable stream habitat within 200 meters of the pocket estuary (Race Lagoon) for non-natal Chinook rearing and refuge. It is likely that the fresh water in the stream serves an important function – osmoregulation – and that these independent small coastal streams could be considered a physiological refuge for juvenile Chinook salmon (as suggested by Redmond et al. 2005). Stream habitat above both culverts meets the criteria outlined in Beamer et al 2013 for watershed area (45 hectares), slope (less than 6.5%), and outlet to a pocket estuary. Habitat surveys conducted by SFEG staff indicate suitable rearing habitat with sufficient flow and low gradient within 200 meters of the proposed barrier replacements.

#3c: If you will be designing a culvert or arch to resolve the fish passage problem, what crossing design option will you use?

Stream simulation	TBD

#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?

Skagit Fisheries Enhancement Group will hire a consulting archeologist for a cultural resource assessment before doing any geotechnical exploration. SFEG will draft permits as part of this project.

Planning Metrics

Worksite: Race Lagoon #1893 (#1)

Area Encompassed (acres) (B.0.b.1)	13.0 **Note:** This includes working with the upstream landowners to develop a preliminary planting plan along 1500 feet of stream with a 200 foot buffer average on each side of the creek.
Miles of Stream and/or Shoreline Affected (B.0.b.2)	0.13 **Note:** This includes working with the upstream landowners along 1500 feet of the stream to develop a preliminary riparian planting plan.

DESIGN FOR SALMON RESTORATION

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

Total cost for Preliminary design	$69,734
Project Identified in a Plan or Watershed Assessment. (1220) (B.1.b.11.a)	The WRIA 06 Multispecies Salmon Recovery Plan Update identifies Race Lagoon as important outmigration rearing habitat for juvenile salmon including Chinook, chum, pink, salmon and cutthroat trout. Access to the coastal stream habitat at the mouth of pocket estuaries is critical for resting, feeding, and refuge for migrating salmon (WRIA 06 MSSRP 2019;pages 16-17) Race Lagoon is identified in the Skagit Watershed Council Strategic Approach as a Tier 2 potential pocket estuary in the Whidbey Basin (page 16).
Priority in Recovery Plan (1222) (B.1.b.11.b)	Removing barriers to benefit anadromous fish use is designated a Tier 1 strategy(WRIA 06 MSSRP, page 21). The Skagit Recovery Plan (2005) also prioritizes a landscape scale restoration strategy for pocket estuaries including “restoration of lost or degraded freshwater inputs (quantity and quality) to pocket estuaries,” and “removing impediments to fluvial and coastal sediment transport processes.”(Appendix D, page 39) Recent research by Beamer et al (2013) supports restoration of fish access to small nearshore streams for juvenile Chinook salmon rearing and growing.

CULTURAL RESOURCES

Cultural resources

Total cost for Cultural resources	$5,000
Acres surveyed for cultural resources	0.50 **Note:** Cultural resource investigations for the preliminary design phase would be limited to the area associated with the culvert replacement where geotechnical investigations would occur.

Worksite: Race Lagoon #1894 and RFEG053 (#2)

Area Encompassed (acres) (B.0.b.1)	16.0
Miles of Stream and/or Shoreline Affected (B.0.b.2)	0.38

DESIGN FOR SALMON RESTORATION

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

Total cost for Preliminary design	$69,734
Project Identified in a Plan or Watershed Assessment. (1220) (B.1.b.11.a)	The WRIA 06 Multispecies Salmon Recovery Plan Update identifies Race Lagoon as important outmigration rearing habitat for juvenile salmon including Chinook, chum, pink, salmon and cutthroat trout. Access to the coastal stream habitat at the mouth of pocket estuaries is critical for resting, feeding, and refuge for migrating salmon (WRIA 06 MSSRP

	2019;pages 16-17) Race Lagoon is identified in the Skagit Watershed Council Strategic Approach as a Tier 2 potential pocket estuary in the Whidbey Basin (page 16).
Priority in Recovery Plan (1222) (B.1.b.11.b)	Removing barriers to benefit anadromous fish use is designated a Tier 1 strategy(WRIA 06 MSSRP, page 21). The Skagit Recovery Plan (2005) also prioritizes a landscape scale restoration strategy for pocket estuaries including "restoration of lost or degraded freshwater inputs (quantity and quality) to pocket estuaries," and "removing impediments to fluvial and coastal sediment transport processes."(Appendix D, page 39) Recent research by Beamer et al (2013) supports restoration of fish access to small nearshore streams for juvenile Chinook salmon rearing and growing.

CULTURAL RESOURCES

Cultural resources

Total cost for Cultural resources	$5,000
Acres surveyed for cultural resources	0.60

Note: Cultural resource investigations for the preliminary design phase would be limited to the area associated with the culvert replacements where geotechnical investigations would occur.

Overall Project Metrics

COMPLETION DATE	
Projected date of completion	2/29/2024

Planning Cost Estimates

Worksite #1: Race Lagoon #1893

Category	Work Type	Estimated Cost	Note
Cultural Resources	Cultural resources	$5,000	
Design for Salmon restoration	Preliminary design (B.1.b.11.a RCO)	$69,734	
	Subtotal:	$74,734	
	Total Estimate For Worksite:	$74,734	

Worksite #2: Race Lagoon #1894 and RFEG053

Category	Work Type	Estimated Cost	Note
Cultural Resources	Cultural resources	$5,000	
Design for Salmon restoration	Preliminary design (B.1.b.11.a RCO)	$69,734	
	Subtotal:	$74,734	
	Total Estimate For Worksite:	$74,734	

Summary

Total Estimated Costs:	$149,468
Total Estimated Planning Costs:	$149,468

Cost Summary

	Estimated Cost	Project %	Admin/AA&E %
Planning Costs			
Planning	$149,468		
SUBTOTAL	$149,468	100.00 %	
Total Cost Estimate	$149,468	100.00 %	

Funding Request and Match

FUNDING PROGRAM

Salmon State Projects	$149,468	100.000000

SPONSOR MATCH

Questions

#1: Explain how you determined the cost estimates

> Cost estimates for the proposed culvert replacements and supporting geotechnical evaluation and topographic survey for culverts 1893, 1894, and RFEG053 were obtained from a local engineering firm, Chinook Engineering, who visited the site and has designed several fish barrier removal projects for SFEG. Estimates for Island County design review came from Island County staff. Costs for other subconsultants including cultural resource assessment were derived from recent SFEG projects.

Cultural Resources

Worksite #1: Race Lagoon #1893

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

Geo-technical investigation will be needed during the design phase of the project.

#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).

Culvert 1893 located under a two-lane paved road. The road prism is approximately 42 wide. Depth of fill is estimated to be 10 feet. Excavation below the native soil for culvert placement is expected.

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

No

Design-only at this point

#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?

Unknown

#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.

Unknown

Worksite #2: Race Lagoon #1894 and RFEG053

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

Geotechnical exploration will occur during the design phase of the project.

#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).

Culvert 1894 is located under a two-lane paved road. The road prism is approximately 42 wide. Depth of fill is estimated to be 10 feet. Excavation below the native soil for culvert placement is expected. Culvert REFG053 is located less than 20 feet downstream of culvert 1894 and is also expected to be removed as well as some minor channel re-meandering downstream to the lagoon.

#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?

Unknown

#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.

Unknown

Project Permits

Permits and Reviews	Issuing Organization	Applied Date	Received Date	Expiration Date	Permit #
Archeological & Cultural Resoures (EO 05-05)	DAHP				

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)


500186


500187


500188


500189


518366

PROJECT DOCUMENTS AND PHOTOS

Project Documents and Photos

Project Application Report - 22-1089

File Type	Attach Date	Attachment Type	Title	Person	File Name, Number Associations	Shared
	10/07/2022	Project Review Comments	Proj Review Comments Final, 22-1089P(compl 10/07/22 10:25)	MarkJ	Project Review Comments Report - 22-1089 (compl 10-07-2022_10-25-40).pdf, 533388	✓
	10/07/2022	Project Review Comments	Proj Review Comments LE, 22-1089P(compl 10/07/22 10:25)	MarkJ	Project Review Comments Report - 22-1089 (compl 10-07-2022_10-25-33).pdf, 533387	✓
	10/07/2022	Project Review Comments	Proj Review Comments Initial, 22-1089P(compl 10/07/22 10:25)	MarkJ	Project Review Comments Report - 22-1089 (compl 10-07-2022_10-25-27).pdf, 533386	✓
	10/04/2022	Land Ownership Certification Form	LandownershipCertificationForm_IslandCc	KristinM	LandownershipCertificationForm_Isla… 532882	
	10/04/2022	Land Ownership Certification Form	LandownershipCertificationForm_Blubaugl	KristinM	LandownershipCertificationForm_Blub… 532880	
	10/04/2022	Map: Area of Potential Effect (APE)	Project APE Report (10/04/22 08:31:35)	BrentH	Project APE Report - 22-1089 (10-04-2022_08-31-35).pdf, 532599	✓
	10/04/2022	Cultural Resource Screening Report	Project Cultural Resource Screening Report (10/04/22 08:26:3	BrentH	Project Cultural Resource Screening Report - 22-1089 (10-04-2022_08-26-33).pdf, 532408	✓
	07/18/2022	Application Review Report	Grant Manager Comments, 22-1089P(compl 07/18/22 09:48)	BridgetK	Grant Manager Comments Report - 22-1089 (compl 07-18-2022_09-48-40).pdf, 524489	✓
	06/23/2022	Letters of Support	SRTCC LOS SFEG.pdf	AlexandraP	SRTCC LOS SFEG.pdf, 520650	✓
	06/07/2022	Project Application Report	Project Application Report, 22-1089P (sub 06/07/22 08:32:27)	KristinM	Project Application Report - 22-1089 (submitted 06-07-2022_08-32-27).pdf, 518531	✓
	06/06/2022	Photo	Juvenile Chinook Race Lagoon upstream of 1893.jpeg	ErinM	Juvenile Chinook Race Lagoon.jpeg, 518366	✓
	06/06/2022	Note to file	Race road landowners support map and emails.pdf	KristinM	Race road landowners support map and emails.pdf, 518363	
	06/06/2022	Cost Estimate	SRFB_format_RaceLagoon_Designonlybu	KristinM	SRFB_format_RaceLagoon_Designon… 518361	✓
	06/06/2022	Landowner acknowledgement form	SRFBLandownerAcknowledgementForm_	KristinM	SRFBLandownerAcknowledgementFo… 518357	
	06/01/2022	Applicant Resolution/Authorizations	2022.05 ResolutionIslandCoSRFB.pdf	KristinM	2022.05 ResolutionIslandCoSRFB.pdf, 517788	✓
	04/01/2022	Application Review Report	Grant Manager Comments, 22-1089P(rtnd 04/01/22 15:39)	BridgetK	Grant Manager Comments Report - 22-1089 (rtnd 04-01-2022_15-39-25).pdf, 506506	✓
	04/01/2022	Project Application Report	Project Application Report, 22-1089P (sub 04/01/22 15:25:11)	AlexandraP	Project Application Report - 22-1089 (submitted 04-01-2022_15-25-11).pdf, 506503	✓
	04/01/2022	Map: Planning Area	RaceRoad Culverts.pdf.PDF	AlexandraP	RaceRoad Culverts.pdf.pdf, 506498	✓
	03/31/2022	Project Review Comments	Project Review Comments Report, 22-1089P (03/31/22 14:50:25)	KristinM	Project Review Comments Report - 22-1089 (03-31-2022_14-50-25).pdf, 506322	✓

Project Application Report - 22-1089

File Type	Attach Date	Attachment Type	Title	Person	File Name, Number Associations	Shared
	03/31/2022	Project Application Report	Project Application Report, 22-1089P (03/31/22 14:50:25)	KristinM	Project Application Report - 22-1089 (03-31-2022_14-50-25).pdf, 506321	✓
	02/22/2022	Map: Area of Potential Effect (APE)	RaceRoad Culverts APE.pdf	KristinM	RaceRoad Culverts APE.pdf, 501385	✓
	02/14/2022	Project Application Report	Project Application Report, 22-1089R (sub 02/14/22 17:27:26)	KristinM	Project Application Report - 22-1089 (submitted 02-14-2022_17-27-26).pdf, 500589	✓
	02/14/2022	Design document	Culvert 1894 conceptual plans 20210924.pdf	KristinM	Culvert 1894 conceptual plans 20210924.pdf, 500582	✓
	02/14/2022	Design document	Culvert 1893 conceptual plans 20210924.pdf	KristinM	Culvert 1893 conceptual plans 20210924.pdf, 500581	✓
	02/14/2022	Correction Analysis Form	Culvert 1894 Correction Analysis Form.docx	KristinM	Culvert 1894 Correction Analysis Form.docx, 500564	✓
	02/14/2022	Correction Analysis Form	Culvert 1893 Correction Analysis Form.docx	KristinM	Culvert 1893 Correction Analysis Form.docx, 500563	✓
	02/14/2022	Correction Analysis Form	19-1343 Culvert 1894 CAF Box Culvert Cost Estimate.xlsx	KristinM	19-1343 Culvert 1894 CAF Box Culvert Cost Estimate.xlsx, 500561	✓
	02/14/2022	Correction Analysis Form	19-1343 Culvert 1893 CAF Box Culvert Cost Estimate.xlsx	KristinM	19-1343 Culvert 1893 CAF Box Culvert Cost Estimate.xlsx, 500560	✓
	02/14/2022	Map: Restoration Worksite	RaceRoad Culverts.pdf	KristinM	RaceRoad Culverts.pdf, 500555	✓
	02/14/2022	Application Document	applicant resolution/authorization placeholder	KristinM	ApplicantAuthorizationResolution.pdf, 500544	✓
	02/14/2022	RCO Fiscal Data Collection Sheet	FiscalDataCollectionSheet_SFEG_02.202	AlisonS	FiscalDataCollectionSheet_SFEG_02.… 500495	
	02/11/2022	Letters of Support	Letter of support Race Rd.pdf	KristinM	Letter of support Race Rd.pdf, 500258	✓
	02/10/2022	WDFW barrier & screening forms	1894 Survey.pdf	KristinM	1894 Survey.pdf, 500191	✓
	02/10/2022	WDFW barrier & screening forms	1893 Survey.pdf	KristinM	1893 Survey.pdf, 500190	✓
	02/10/2022	Photo	1894 US Inlet (2).jpg	KristinM	1894 US Inlet (2).jpg, 500189	✓
	02/10/2022	Photo	1893 Race Lagoon Estuary (2).jpg	KristinM	1893 Race Lagoon Estuary (2).jpg, 500188	✓
	02/10/2022	Photo	1893 DS Outlet (2).jpg	KristinM	1893 DS Outlet (2).jpg, 500187	✓
	02/10/2022	Photo	1893 US Inlet.jpg	KristinM	1893 US Inlet.jpg, 500186	✓
	02/10/2022	Landowner acknowledgement form	Scenic Heights Acknowledgement form.pdf	KristinM	Scenic Heights Acknowledgement form.pdf, 500184	
	02/10/2022	Landowner acknowledgement form	Race Rd Landowner Form.pdf	KristinM	Race Rd Landowner Form.pdf, 500183	
	02/07/2022	Project Review Comments	Project Review Comments Report, 22-1089R (02/07/22 11:18:39)	BridgetK	Project Review Comments Report - 22-1089 (02-07-2022_11-18-39).pdf, 499614	✓
	02/07/2022	Project Application Report	Project Application Report, 22-1089R (02/07/22 11:18:38)	BridgetK	Project Application Report - 22-1089 (02-07-2022_11-18-38).pdf, 499613	✓

Application Status

Application Due Date: null

Status Name	Status Date	Submitted By	Submission Notes
Application Complete	07/18/2022	Bridget Kaminski	
Application Resubmitted	06/07/2022	Kristin Murray	
Application Returned	04/01/2022	Bridget Kaminski	Thank you for submitting this application. Refer to Manual 18 page 1 and 2 for RCO timeline and next steps. Bridget
Application Submitted	04/01/2022	Alexandra Plumb	
Preapplication	01/21/2022		

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. (Kristin Murray, 06/07/2022)

Date of last change: 10/07/2022