# Planning and Combination (Planning and Acquisition) Project Proposal

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| --- | --- |
| **Project Number** | 15-1048 |
| **Project Name** | Camano Is State Park Tidal Marsh Feasibility |
| **Sponsor** | Skagit River System Cooperative |

List all related projects previously funded or reviewed by RCO:

|  |  |  |
| --- | --- | --- |
| Project # or Name | Status | Status of Prior Phase Deliverables and Relationship to Current Proposal? |
| 111-1300; 14-1152 | Choose a status | Identical proposal; ranked highly but insufficient funds |
| Camano Island State Park Lagoon Reconnection (2012) | Choose a status  | Similar Proposal; withdrawn in favor of extended public process |
|  | Choose a status  |  |

If previous project was not funded, describe how the current proposal differs from the original.

The current proposal is identical to 14-1152. The project ranked highly, but the available funds were not sufficient to cover project costs.

1. **Project Location.**

The Camano Island State Park project site is a nearshore pocket estuary within Camano Island State Park at Lowell Point, situated at the lower end of a small watershed along the southwest shoreline of Camano Island. The former lagoon and salt marsh proposed for study here is separated from Saratoga Passage by a beach berm, and is bordered on the upland side by steep forested bluffs. An eroding feeder bluff to the south serves he beaches along the project site via processes of alongshore drift.

1. **Brief Project Summary.**

This project intends to evaluate potential actions and design alternatives for restoring natural hydrological processes to the unique shoreline land form located at Camano Island State Park. This projects proximate goal is to determine the feasibility of restoring natural processes to the site given modern land use constraints. If an action is deemed feasible a preliminary design will be developed in a manner consistent with natural habitat processes and the recreational and educational uses of the park envisioned by Washington State Parks staff and citizen user groups.

1. **Problems Statement.**
	1. **Describe the problem including the source and scale.**

In the Whidbey Basin of Puget Sound, it is estimated that roughly 80% of the pocket estuary habitat historically used by juvenile Chinook and other salmonids is no longer accessible to these fish (SRSC and WDFW 2005). These small, non-natal coastal lagoons and salt marshes, which are supplied with freshwater via small steams or other sources, exhibit lower salinities and have been shown to confer growth and survivorship advantages to juvenile salmonids relative to adjacent nearshore habitats (Beamer et al. 2005). Within both the Skagit River Delta and the Whidbey Basin nearshore, habitat availability is thought to be one of the greatest factors limiting Chinook production (SRSC and WDFW 2005, Island County 2005, SIRC 2005).

The dramatic reduction of pocket estuary habitat in the Whidbey Basin, coupled with its high habitat value underscores the importance of implementing actions to restore and enhance this habitat type. Such actions feature prominently in the Skagit Chinook Recovery Plan (SRSC and WDFW 2005), the WRIA 6 Multi-Species Salmon Recovery Plan (Island County 2005), and the Stillaguamish Watershed Chinook Recovery Plan (SIRC 2005). Genetic analysis of juvenile Chinook salmon caught on Saratoga Passage beaches indicates that a high proportion of these salmon (51.3%) are from Skagit River origins, with significant use by Stillaguamish and Skykomish populations (McBride and Beamer 2010).

At Camano Island State Park, located along Saratoga Passage on the southwest shoreline of Camano Island, a unique shoreline land form exists at Lowell Point. Considerable evidence suggests the land form was once accessible by juvenile salmonids but is now cut off from tidal hydrology by a parking lot and other development, resulting in a loss of 1.77 ha (4.37 acres) of rearing habitat (McBride and Beamer 2010). The site is currently highly altered from its pre-development condition. An access road, two parking lots, and a restroom building are built almost entirely on fill within the project area . A freshwater wetland occupies the space between the road/parking lot and the bluff. A boat ramp crosses a spit near the north end of the Park, near what is thought to be the historic lagoon outlet.

While it is readily apparent that a unique shoreline landform is present at Lowell Point, the historical record is unclear whether the historic lagoon became closed off because to human activities or whether it became closed off naturally over time. Regardless of the reason for the loss of this habitat, it is quite clear that the tremendous decline in the availability of this habitat type in the Whidbey Basin from historic times underlines the importance of maximizing available opportunities to restore critical habitat for imperiled Chinook salmon and other species. Restoration opportunities at such sites are few and far between, and the combination of site with a wiling landowner that has the potential to reintroduce fish access and tidal processes should not be overlooked. The preliminary assessment (McBride and Beamer 2010) indicates that a pocket estuary at the site will likely be sustainable over time, regardless of the reason for its loss.

* 1. **List the fish resources present at the site and targeted by your** **project.**

|  |  |  |  |
| --- | --- | --- | --- |
| Species | Life History Present (egg, juvenile, adult) | Current Population Trend (decline, stable, rising) | Endangered Species Act Coverage (Y/N) |
| Chinook Salmon | Juvenile; no access to historic marsh | Depressed but Stable (ESRP 2007, NOAA 2008) | Y |
| Coho Salmon | Juvenile; no access to historic marsh | Decline (ESRP 2007) | N |
| Pink Salmon | Juvenile; no access to historic marsh | Decline (ESRP 2007) | N |
| Chum Salmon | Juvenile; no access to historic marsh | Stable (ESRP 2007) | N |
| Sockeye Salmon | Juvenile; no access to historic marsh | Decline to Stable (ESRP 2007) | N |
| Steelhead | Adult; no access to historic marsh | Decline (PSP 2010) | Y |
| Bull Trout  | Adult/Juvenile; no access to historic marsh | Likely Decline (PSP 2010) | Y |
| Surf Smelt | Adult, Juvenile | Unknown (Likely Decline) (ESRP 2007) | N |

* 1. **Describe the limiting factors, and limiting life stages (by fish species) that your project expects to address.**

The two main limiting factors at this site for all species are the processes of tidal exchange and fish access. Currently, both of these processes are absent from the site, though historically they were present. This project is mainly intended to benefit juvenile Chinook and other salmon, though other species and life stages will also benefit from the project.

1. **Project Goals and Objectives.**
	1. **What are your project’s goals**?

The primary goals for the Camano Island State Park project are:

1. To sustainably reintroduce natural processes, conditions, functions, and biological responses to the historic tidal marsh at Lowell Point.
2. To provide access to critical estuarine rearing and refuge habitat for ESA-listed juvenile Chinook salmon during the early phases of their oceanward migration.
3. To provide estuarine habitat for other estuarine fish (including other juvenile salmonids) and wildlife (particularly shorebirds).
4. To implement habitat actions in a manner consistent with the long-term planning strategy for the park.
	1. **What are your project’s objectives**?
5. To develop and evaluate alternative design concepts for reintroducing tidal inundation and access for juvenile salmonids to the Lowell Point tidal marsh . If restoration activities are found to be feasible given site processes, uses, and constraints, this processes will result in a preliminary project design from which a final project design and permits can be prepared.
6. To continue to engage the public and Washington State Parks staff throughout the feasibility process and incorporate input wherever possible.
7. To conduct topographic and hydrologic surveys to support the development and assessment of alternatives.
8. **What are the assumptions and constraints that could impact whether you achieve your objectives?**

A key uncertainty is the long-term sustainability of the outlet channel. Issues of sedimentation, erosion, and scour were analyzed during a preliminary site assessment (McBride and Beamer 2010), but the final configuration of the channel will have some bearing, thereby a more detailed investigation is warranted. Low maintenance costs and high long term sustainability must be maximized while protecting infrastructure associated with the boat launch. A key constraint that must be accounted for during the design process is uninterrupted access to the boat launch and associated parking during construction. Limited interruption to other park facilities is acceptable to Parks staff. An additional constraint may be the impact of the project on current human uses of the site, and public perception and acceptance of the project. Stakeholder input will be an important part of the preliminary design process in this respect.

If the project is constructed, overall project success will be quantified through monitoring using the following measures, which stem directly from the project goals and objectives listed in Part 1 of this document. Success can be quantified in terms of:

1. The proportion of the restored sites that are restored to daily tidal inundation.
2. The proportion of the restored sites that is seasonally accessible by juvenile Chinook and other native fish species.
3. The proportions of the restored sites that are occupied by native tidal marsh vegetation.
4. The degree to which invasive exotic vegetation is excluded from the restored sites.
5. Persistence and self-sustainability of blind tidal channel habitat for juvenile salmon.
6. Seasonal occupation of the restored marshes by marsh bird species.
7. Time series trends that show persistence and self-sustainability in measures 1 though 5.

Adaptive management is based on project monitoring, without which it is impossible to manage adaptively (Thom 2000). Data collected via the monitoring program will be used to inform objective decision making about unforeseen occurrences.

1. **Project Details.**
	1. **Provide a narrative description of your proposed project.**

This project is intended to assess feasibility and produce preliminary designs to reintroduce tidal inundation and fish access to the former tidal marsh at Lowell Point. Our feasibility assessment will consider the following:

1. Potential to re-establish access and beneficial habitat conditions for juvenile Chinook and other salmonids to the formertidal marsh .
2. An engineering assessment of the long-term self-sustainability of an outlet channel near the location of the existing boat launch, including evaluation of maintenance requirements and the potential to reduce the need for current ongoing maintenance of the boat launch through project design. Conceptual designs for access across and/or around the outlet channel will be developed for all alternatives. Reconfiguration of the boat launch to allow greater sediment transport will be considered in this assessment.
3. Impacts of the project to current recreational uses of the Lowell Point portion of the park and an exploration of ways to enhance and improve park facilities for these purposes.
4. Impacts to onsite cultural resources and existing site infrastructure (buildings, roads, utilities, etc). Continued access to structures such as restroom facilities, the boat launch and docks, parking areas, picnic shelters, and other valued infrastructure will be primary design consideration for all alternatives.
5. Public outreach at regular intervals to solicit input on project planning considerations and preliminary design alternatives.

Throughout the process, we will coordinate closely with Washington State Parks staff and will support the feasibility and preliminary design work with wetland, topographic, habitat, and hydrologic surveys, along with cultural resources and infrastructure inventories. The process will result in the development of preliminary alternatives for channel configuration and outlet location, taking into account fish access, channel sustainability and stability, continued boat launch and parking access, recreational and educational opportunities, and other factors such as infrastructure and construction costs and efficiencies. All alternatives will take into account and coordinate with other in-process and planned projects being undertaken by Washington State Parks in order to ensure that our proposed designs can be executed smoothly and that potential efficiencies can be incorporated.

Public outreach will be critical to the success of this project, so SRSC contract with a qualified consultant who will work with SRSC and Washington State Parks staff throughout the project to develop and implement an outreach plan to inform and educate the public about restoration goals and plans at the site. Stakeholder meetings will be held to allow incorporation of input and feedback from user groups and individuals into project design. These meetings will be facilitated by the outreach consultant.

* 1. **Provide a scope of work.**

Deliverables for the project will include a report with analysis of key feasibility criteria, presentation and discussion of preliminary design alternatives, and, should the project be deemed feasible, selection of a preferred alternative, cost estimates, and a suggested roadmap for next steps, including final design, permitting, construction, and monitoring.

The initial stages of the project (steps a and b below) are necessary to kick off the project and to collect data that will be valuable for assessing channel sustainability and compatibility with existing park uses and infrastructure. We propose that the engineering analysis, through which preliminary designs will be developed, proceed in a stepwise fashion with logical decision points built in to allow project managers to determine whether to proceed to the next step in the analysis (step c below). Throughout the project, public and stakeholder input (steps e,g, and h) will also help to shape the decision making process.

* 1. **March 2016**- Stakeholder/public kickoff meeting to present goals and objectives, solicit concerns, and outline timeline of tasks. This meeting will be facilitated by a consultant experienced in public outreach.
	2. **March-July 2016-** Survey of site topography, sediment cores, wetlands, cultural resources, utilities, and infrastructure.

This task will include a total station survey of site topography, a utility locate, GPS mapping of utilities, buildings, and site infrastructure, and a cultural resources investigation. All survey work other than cultural resources and the utility locate will be conducted by SRSC staff. The cultural resources investigation will be conducted by Washington State Parks staff. Sediment coring will be conducted once cultural survey is complete.

* 1. **June-Sept 2016-** Engineering analysis for outlet channel, etc. Development of preliminary design alternatives.
1. Project success hinges upon sustainability of the outlet channel, so the engineering assessment will focus first on an analysis of sediment, tide, and wave conditions during normal and storm conditions for two potential outlet locations (previous feasibility work considered sediment grain size and tidal depths and velocities, but not wave transport of sediment or site infrastructure). This information will allow greater understanding of the baseline conditions under which the outlet channel will be expected to function. This will enable a first-cut look at outlet channel sustainability given the site constraints imposed by the boat ramp. Initial outlet width will be selected based on widths for similar-sized pocket estuaries along Saratoga Passage. **If this stage of the assessment indicates that neither of the candidate channel locations are likely to be sustainable given site constraints and existing hydrodynamic/sediment conditions, this is the first point at which work could be stopped.**
2. If a sustainable channel appears very likely or marginally possible given site constraints created by the boat ramp, a more detailed preliminary design will follow, focusing on optimizing channel width and alignment for maximum sustainability. The potential for changes in channel size and alignment over time given tidal prism, flow velocities, and wave action on sediments would be considered at this stage. **In the case where a marginally sustainable channel appears likely, and if it does not appear possible to improve on this through channel configuration, this would be another decision point at which project managers (SRSC and State Parks) could choose to continue no further.**
3. The final stage of the engineering analysis would include preliminary design of the pocket estuary itself, with similar consideration of impacts to park uses. **This represents a third potential stopping point within the engineering analysis.**
4. **July-August 2016**- Preliminary consultation with Washington Department of Ecology and Army Corps of Engineers regarding permitting requirements.
5. **Oct 2016-** Present alternatives to Parks staff and stakeholders. This meeting will be facilitated by a consultant experienced in public outreach.
6. **Oct- December 2016-** Design revision and selection of preferred alternative.
7. **January 2017-** Public presentation of preferred preliminary design and next steps. This meeting will be facilitated by a consultant experienced in public outreach.
8. **March 2017-** Approval of preferred alternative by Parks Commission.
9. **March 2017-** Final report preparation and distribution.
	1. **Explain how you determined your cost estimates**.

Cost estimates were prepared based on experience managing similar projects in the nearshore environment and in public settings, including SRFB-funded projects at Crescent Harbor Salt Marsh, Turners Bay, and the Wiley Slough/Deepwater Slough/Milltown Island Delta Restoration Projects. Costs were developed based on similar work previously performed by SRSC and its subcontractors for these projects.

* 1. **How have lessons learned from completed projects or monitoring studies informed your project?**

A lesson learned through previous submissions of the project is the great importance of an organized and efficient public outreach process that engages the public early and often throughout the design process. Following the example set by State Parks via their CAMP planning process, we intend for public outreach to be a major component of the design process, and this will be facilitated by a consultant experienced in delivering information and fostering discussing and input amongst public stakeholders. Additional lessons learned from other previous project include the importance of gathering monitoring data early in the process so that decisions about project design and adaptive management can be driven by data.

1. **If your project includes an assessment or inventory**
	1. **Describe any previous or ongoing assessment or inventory work in your project’s geographic area and how this project will build upon, rather than duplicate, the completed work.**

This project was identified as part of an assessment of restoration potential for pocket estuary sites along the Saratoga passage. Potential fish use, historic conditions, site constraints, and self-sustainability of the restored sites were considered, and the Camano Island State Park site was selected as having the highest restoration potential (see McBride and Beamer 2010, uploaded to PRISM). Based on average Chinook salmon densities observed at other Whidbey Basin, the project could be expected to increase carrying capacity by as many as 2,000 fish (approximation derived from Beamer et al. 2006. Does not incorporate connectivity and some other factors that may influence usage by juvenile Chinook salmon).

Modeling completed by Battelle for SRSC in 2010 indicated that the historic lagoon footprint would be inundated through much of the tide cycle, but would drain completely during low tides (McBride and Beamer 2010). Analysis of outlet channel stability indicated that flow velocities would be sufficient to clear 90% of the sediment grain sizes found along the shoreline at the project site. Channel configuration will have some bearing on the ability of the channel to clear the largest 10% of the sediment classes; typically, such sediments are deposited infrequently, during storm events. The modeled channel dimensions were based upon comparison to inlet width vs lagoon area for nearby pocket estuary sites (ibid.).

1. **If your project includes developing a design:**
	1. **Will your project be designed by a licensed professional engineer?
	Choose an answer**

A licensed coastal engineer will be contracted to provide engineering analysis for the area of the potential outlet channel, and will evaluate self-sustainability and impact to boat launch and other site uses. The engineer may also consult on potential design alternatives for crossing structures associated with the outlet channel, for the lagoon itself, and for other locations within the project site. Design considerations will include alongshore sediment transport and its interactions with boat ramp operations, channel and lagoon design to maximize fish access throughout the tidal range, the effects of channel dimensions on capacity for channel self maintenance, and the effects of channel and lagoon design on visitor uses of the site. Reconfiguration of the boat launch to allow greater sediment passage will be considered as part of this process.

1. **Will you apply for permits as part of this project’s scope?
Choose an answer**
	1. No. This project is intended to produce a preliminary design. Permits will be applied for once a final design has been developed.
2. **If your project includes a fish passage or screening design**:
	1. **Has your project received a Priority Index (PI) or Screening Priority Index (SPI) number? If so, provide the PI or SPI number and describe how it was generated.**

N/A

* 1. **For fish passage design projects:**
		1. **If you are proposing a culvert or ach, will you use stream simulation, no slop, hydrologic, or other design method?**

No culvert or arch is proposed

* + 1. **Describe the amount and quality of habitat made accessible if the barrier is corrected.**

Up to 4.4 acres of high quality pocket estuary habitat will be made available for juvenile Chinook and other salmon should the project be constructed.

* + 1. **List additional upstream or downstream fish passage barriers, if any.**

None.

1. **Context within the Local Recovery Plan**.
	1. **Discuss how this project fits within your regional recovery plan and/or local lead entity’s strategy to restore or protect salmonid habitat**

Camano Island State Park falls within Geographic Area 2 of the WRIA 6 Multi-Species Salmon Recovery Plan (SRP, Island County 2005). This area is the second highest priority for salmon habitat restoration and protection within Island County. The pocket estuary habitat type historically found at the site, and which will be restored by the completed project, is rated a high priority habitat by in SRP, and Chinook salmon are the primary target species. Additionally, pocket estuaries, because they have been shown to confer growth and survivorship advantages for juvenile salmon over adjacent nearshore habitat, are also high priority habitats in the Skagit River Chinook Recovery Plan (SRSC and WDFW 2005) and the Stillaguamish Watershed Chinook Recovery Plan (SIRC 2005). Genetic analysis of juvenile Chinook salmon caught on Saratoga Passage beaches indicates that a high proportion of these salmon (51.3%) are from Skagit River origins, with significant use by Stillaguamish and Skykomish populations (McBride and Beamer 2010).

This project addresses explicit goals and objectives of the WRIA 6 SRP. Completed restoration at the site fulfills Goal 1, Objective 3 of the plan: to restore critical habitats (Island County 2005). Additionally, because the project is located within a high-use public park, unique opportunities exist to provide educational experiences to Park visitors. The restoration design will capitalize on these opportunities with educational signage and coordination with Parks education programs. This not only helps to further the mission of Washington State Parks, but also addresses the Community Education goals and objectives of the SRP (Goal 3, Objectives 1 and 2), by helping to connect visitors to the relationship between nearshore habitat and Puget Sound salmon recovery (Island County 2005).

* 1. **Explain why it is important to do this project now instead of later.**

This project was previously submitted in slightly different form by SRSC, and was recommended by the WRIA 6 Salmon TAG and Island County WRAC for funding. However, intense public interest and concern over the project and its perceived impact to recreation led State Parks and SRSC to withdraw the application from consideration in favor of a detailed, State Parks-led, long-term planning process (Washington State Parks 2013). This process involved planning for the future of Camano Island State Park as a whole, but the potential for a salmon habitat enhancement project was explicitly considered. Citizen input was solicited via public meetings and written comments at multiple points in the process.

The results of the yearlong planning process is a final recommendations report (Washington State Parks 2013) in which support for a feasibility assessment of developing estuary features at Lowell Point to support salmon habitat restoration. These recommendations were approved by the Washington State Parks Commission at its November 2013 meeting (Washington State Parks 2013a). As such, we wish to capitalize on this momentum and maintain both public and institutional understanding of the project and its goals and objectives. Washington State Parks Commissioners, the agency leadership, and Camano Island State Park staff are supportive of moving forward with a detailed feasibility assessment (see attached letter from Washington State Parks). Completing restoration in a highly visible public space such as Camano Island State Park will not only benefit salmon directly, but will also help shape public perception of salmon habitat restoration within the nearshore of Island, Skagit, and Snohomish Counties. Continued input from an engaged and informed public will be critical to the success of this project as well as future salmon habitat projects in Puget Sound.

* 1. **If your project is a part of a larger overall project or strategy, describe the goal of the overall strategy, explain individual sequencing steps, and which of these steps is included in this application for funding.**

This project is not part of a larger overall project or strategy, save for that outlined in the regional recovery plan discussed above.

1. **Project Proponents and Partners.**
	1. **Describe your experience managing this type of project**.

SRSC staff involved includes SRSC Director of Restoration Steve Hinton and Restoration Ecologists Eric Mickelson and Nora Kammer. Hinton, Mickelson, and Kammer are biologists and experts in restoration project management, implementation, logistics, and contracting. They have extensive experience in dike removal/setback, culvert replacement, bridge installation, and excavation for habitat restoration, and each have 5-20 years of experience in restoration ecology in the Pacific Northwest. Subcontractors have not yet been identified. Engineering and public outreach will be sub-contracted on a competitive bid process open to qualified firms.

Similar SRFB-funded projects implemented by SRSC include:

* Crescent Harbor Salt Marsh Restoration (Partner: US Navy)
* Wiley Slough/Deepwater Slough/Milltown Island Delta Restoration (Partner: WDFW)
* Turners Bay Salt Marsh Restoration (Partner: Skagit County)
	1. **List all landowner names**.

Washington State Parks and Recreation Commission

1111 Israel Road S.W.

Olympia, WA 98504-2650

A signed Landowner Acknowledgement Form is included with our application.

* 1. **List project partners and their roles and contributions to the project**.

*Washington State Parks*: In-kind match. Planning and design consultation, stakeholder outreach, cultural resources investigation.

* 1. **Stakeholder Outreach**. *Discuss whether this project has any opposition or barriers to completion besides funding. Describe your public outreach and feedback you have received. Are there any public safety concerns with the project? How will you address those concerns?*

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