

PROJECT: 15-1056 PLN, MEADOWDALE BEACH PARK & ESTUARY RESTORATION DESIGN Sponsor: Snohomish County Parks Dept Program: Puget Sound Acq. & Restoration Status: Active

Project Start Date: 12/09/2015 Agreement End Date: 02/26/2018

Final Report Status: Accepted 06/18/2018

Description

PROJECT AGREEMENT DESCRIPTION

Snohomish County will use this grant to prepare preliminary design deliverables for habitat improvements at Meadowdale Beach County Park at the northern end of Browns Bay in Puget Sound. Located within a portion of the City of Edmonds and unincorporated Snohomish County, the site is south of Mulkilteo and abuts City of Lynnwood Park preserved property to the east. The project improvements are focused on enhancing rearing habitat for non-natal juvenile Chinook (threatened), Coho, and Chum salmon; Cutthroat Trout and other fish species. The design entails removing approximately 130 linear feet of hard armored railroad embankment and the under-sized culvert (6' wide) for Lund's Gulch Creek, installing a four-span bridge, creating up to nearly one acre of tidal marsh pocket estuary, connecting a small freshwater wetland to the creek, restoring approximately one acre of nearshore and stream riparian buffers along 1050' of shoreline, and restoring sediment delivery that will support approximately one acre of delta formation. The bridge opening will dissipate flood waters and will enable a widened creek meander that will be dynamic over time creating essential habitat.

FINAL PROJECT DESCRIPTION

Snohomish County used this grant to prepare preliminary design deliverables and conducted cultural resources assessment and consultation for habitat improvements at Meadowdale Beach County Park at the northern end of Browns Bay in Puget Sound. Located within a portion of the City of Edmonds and unincorporated Snohomish County, the site is south of Mukilteo and abuts City of Lynnwood Park preserved property to the east. The restoration designs are focused on enhancing rearing habitat for non-natal juvenile Chinook (threatened), Coho, and Chum salmon; Cutthroat Trout and other fish species. Designs for the future restoration include:

1) Removing approximately 130 linear feet (If) of hard armored railroad embankment and the undersized (6 foot-wide) culvert;

 Installing a multi-span bridge with a 90-foot opening to dissipate flood waters, restore natural sediment transport processes, and allow the creek to meander dynamically over time, creating essential habitat;

3) Creating 1.3 acres of tidal estuary habitat;

4) Restoring 1.65 acres of nearshore and stream riparian buffers along shoreline and stream using native trees and shrubs;

5) Restoring in-stream habitat conditions by placing large woody debris in the lower creek and restored estuary.

Narrative

A feasibility study was conducted in 2014/2015 to develop a preferred alternative to the multi-faceted issues at this location, flooding, interruption to sediment delivery processes, impacts to fish passage and pedestrian beach access, and on-going alterations of the beach pocket estuary. Evaluation Criteria were initially developed covering topics ranging from habitat, coastal processes, recreation elements, public safety, to public and landowner (BNSF) support, and funding. The feasibility study, which included a public process was exhaustive in looking at alternatives to address the identified problems. A total of four stakeholder meetings were conducted during the feasibility study, two community and two organization/agency meetings. Tribal outreach and meetings with BNSF and the permitting agencies were also steps included in the Feasibility Study. Several investigative studies, desktop cultural resource, environmental assessment, hydrologic, hydraulic, fisheries and habitat assessment, geotechnical, geologic, and sediment loading were conducted to inform the feasibility of the different alternatives. A final Preferred Alternative was chosen through the public process and County consensus during the initial feasibility study, and the same selected a second time following an addendum that looked at alternatives previously ruled out. The Addendum, and additional investigate was deemed prudent due to the preliminary cost estimate of the Preferred Alternative.

Preliminary design on the Preferred Alternative was informed by more detailed investigative studies and field work including the topographic and boundary survey completed by Duane Hartman and Associates; the geotechnical investigations overseen by Shannon & Wilson; and piezometer monitoring, wetland, stream and marine delineation by Anchor QEA; and railroad bridge design by Hansen Professional Services.

A Cultural Resources Survey report was prepared by ICF documenting results of their pedestrian survey, shovel probe investigation, reconnaissance-level historic resources survey of built environment resources within the APE that were 45 years of age or older, and their monitoring of the vertical and horizontal borings and test pit explorations performed by Shannon & Wilson, Inc. Two new resources were recorded with one ineligible and one eligible for listing in the National Register of Historic Places (NRHP). The report concluded that potential impacts from the undertaking will not adversely affect the identified historic resource eligible for listing in the NHRP. The report recommends that archaeological monitoring be conducted during construction activities that may encounter native Holocene-aged deposits. An Unanticipated Discovery Plan (UDP) was provided in the report to assist with monitoring during construction.

Hansen Professional Services utilized the geotechnical information for design of the multi-span railroad bridge. Vertical borings were advanced sufficiently for pile design and the horizontal boring through the railroad embankment, ground penetrating radar (GPR), electrical resistivity tomography along the top of the railroad embankment, along with historic records research and discussion with a vetted railroad contractor provided sufficient data to address constructability of the railroad bridge. Structural design of the railroad bridge reflects standard railroad engineering design criteria documented in the following:

- American Railway Engineering and Maintenance-of-Way Manual for Railway Engineering
- BNSF Standard Bridge & Component Plans, dated June 1, 2016
- BNSF Standard Specifications
- 2012 BNSF Engineering Instructions for guidance on track design and geometry
- · 2011 BNSF Project Design Drawing Standards for overall appearance of track and civil plans
- BNSF Engineering Structures CAD Standards Manual, dated January 1, 2016
- · 2016 Union Pacific/BNSF Railway Guidelines for Railroad Grade Separation Projects
- · Constructability Input from Railroad Bridge Contractor

BNSF completed preliminary design review of the 30% drawing prepared by Hansen Professional Services. In addition, a meeting was held with BNSF to discuss constructability and sequencing, anticipated construction schedule, additional design elements not reviewed under 30%, including wood placement near the bridge in the estuary, aesthetics of the bridge, and security lighting that would be solely controlled by the on-site Ranger and activated only on occasion, and their limited 30% review comments that will be further addressed in the 60% submittal. The outcome of the meeting was very positive and included BNSF considering using their crews to construct the bridge at County's expense. This represents a cost savings (to be determined) due to BNSF internal coordination of work windows allowing more flexibility and less standby time for a private contractor, use of a track-mounted drill rig for pile driving and reduced footprint for the temporary building pad required.

Test pits, GPR and nine monthly readings from four piezometers in the lawn area informed the design of the estuary. The test pits and GPR confirmed pockets of known buried site debris (i.e. concrete swimming pool, wood debris from the clubhouse) from demolition that occurred in the 70's. The grading plan prepared for the preliminary design for the estuary area resulted in 3 to nearly 8-foot cuts (approximately 17,000 cyds) to increase the estuarine transition area from fresh to saltwater. The Preliminary Design also addressed substrates and plantings within the estuary as shown on the 30% design plans. The wetland delineation performed by Anchor QEA identified eight wetlands within the project site. In compliance with avoidance-and-minimization requirements of local, state, and federal environmental regulations, the proposed habitat restoration avoids impacting these wetlands. In addition a boardwalk was proposed for a section of the path that leads to the new pedestrian bridge. A Fish Habitat Assessment was performed by Confluence Environmental Company to inform the design for the stream and riparian buffer enhancements with a planting plan and placement of woody debris included on the 30% plans. Anchor QEA updated the 1-dimensional hydraulic model developed for the Feasibility Study to reflect new site survey data collected during preliminary design and to provide design criteria to Hansen for bridge design.

Finally, Shannon and Wilson, Inc. performed geotechnical investigation and analysis on the limited access road for stability improvements to accommodate construction traffic. Based on observed soil conditions from vertical borings and site reconnaissance, information gathered from the vetted railroad contractor consultant regarding weights of the crane and bridge, projected haul trips, and the modeled stability analysis results, they concluded that localized road damage and shoulder failures would likely develop and suggested measures including in-situ, driven slope-reinforcement elements. Design of these improvements will be included in the 60% drawings.

Two additional stakeholder meetings were held during preliminary design, one with the community and one with the various organizations/agencies with interests in the project. There has been consistent support of this project by the community, conservation and recreation groups.

While permits were not part of preliminary design, outreach to representatives of Snohomish County, City of Edmonds, USACE, WDFW, Ecology, the Suquamish Tribe, Tulalip Tribe, and Stillaguamish Tribe was conducted during preliminary design either via one to one contact; pre-application meetings, and/or an on-site presentation. Information obtained during this outreach was incorporated into the preliminary design drawings as warranted.

Preliminary Design of the Meadowdale Beach Park and Estuary Restoration were developed in accordance with Appendix D-2 of RCO Manual 18 "Salmon Recovery Grants". Preliminary design drawings sufficient for permitting purposes, specifications and opinion of cost were prepared under this grant. While permit applications and permits were optional design deliverables, this project has commenced the permit application process using these Preliminary Designs.

There were no cost or scope amendments to the project agreement. Two project metrics were updated during preliminary design. First, the area encompassed on the original APE only included the 6.4 acres where there might be potential disturbance. Planning and assessment activities required the area to be enlarged to address critical areas review, specifically steep slopes and wetlands and buffers so revised from 6.4 ac to 10.0 ac. Second, the Miles of Stream and/or Shoreline Affected needed to be increased from .15 to .20 miles. The initial metric did not account for temporary impacts within the shoreline area necessary for construction and staging activities for the railroad bridge. These are the only metrics that were different from the original agreement.

Lessons Learned:

The success of this project to date is a result of an initial clear scope of work, thorough vetting process for consultant selection, adherence to public process, an awareness of potential obstacles, and an understanding of project process (feasibility, prelim design, final design, permitting, and construction)

Another very important step taken during both the feasibility study and design was to consult with a vetted railroad bridge contractor due to site constraint for construction access, the topography (steep slopes), locale (on Puget Sound), and a private infrastructure owner. This conversation informed design of many of the elements including construction sequencing and staging that are key to identifying impacts from construction on permit applications.

Outreach to the railroad owner prior to commencing the feasibility study was also key in providing a proper scope of work. Respect for this private infrastructure owner's operations and project process has also to date been critical to moving this project forward with their support.

Finally, another lesson learned would be to better document the progress, stakeholder meetings, design decisions, etc. throughout design in effort to prepare the design report. The preliminary design report, was very comprehensive in the end, and thoroughly depicts the preliminary design phase but could have been a smoother process.

Worksites

Worksite #1: Meadowdale Beach County Park

Worksite Address (Optional) Street Address 15433 75th Place West City Edmonds State, Zip WA 98026

Worksite Details

Worksite #1: Meadowdale Beach County Park

Meadowdale Beach County Park Worksite Name

WORKSITE DESCRIPTION

Preliminary design investigative work included boundary and topographic survey, geotechnical borings in the access road, adjacent to the railroad embankment, and near location of proposed pedestrian bridge; test pits in the lawn area to support estuary design and restroom enclosure design; marine shoreline delineation and critical areas delineation. archaeology and cultural resource survey. This work was performed within BNSF right of way as well as on county-owned tidelands, shoreline areas and park low-lands. archaeology and cultural resource survey

-122.334763

Geographic Coordinates				
From mapped point:	Latitude	47.859892	Longitude	
For Directions:	Latitude		Longitude	

For Directions: Latitude

SITE ACCESS DIRECTIONS

From Highway 99 in Lynnwood, WA turn west onto 168th Street Southwest, continue for approximately 1.3 miles to 66th Avenue West, turn north (right) and continue approximately .1 mile to North Meadowdale Road, turn west (left) and continue approximately 0.7 miles to 75th Place West, turn north (right), continue 0.5 miles along the ADA access Road to the ADA parking lot. ADA access Code No. is 6600. Notify Logan Daniels, Project Contact at 425-388-6619 in order to make arrangements for parking in ADA lot.

Properties

Worksite #	Worksite Name	Property Name	Sponsor Verified	RCO Verified	RCO Verified Map
1	Meadowdale Beach County Park	BNSF Railroad Right of Way		\checkmark	N/A
1	Meadowdale Beach County Park	Meadowdale Beach Park		\checkmark	N/A

Planning Metrics

	Current Agreement	Final
Worksito: Moadowdalo Roach County Park (#1)		

Worksite: Meadowdale Beach County Park (#1)

Targeted salmonid ESU/DPS (A.23)

The salmon ESU (Evolutionarily Significant Unit) or steelhead DPS (Distinct Population Segment) name that the project is targeting. For species where ESU/DPS name is not known or determined, use the species name with unidentified ESU (e.g., Chinook salmon - unidentified ESU).

No Salmon ESU or Steelhead DPS

- Chinook Salmon-Puget Sound ESU Chinook Salmon
 - unidentified ESU
- Chum Salmon-Puget Sound/Strait of Georgia ESU Chum Salmon-unidentified
- FSU
- Coho Salmon-Puget Sound/Strait of Georgia ESU
 - Coho Salmon-unidentified ESU
 - Pink Salmon-Odd year ESU
 - Pink Salmon-unidentified FSU
 - Steelhead-Puget Sound
- DPS Steelhead/Trout-

None

Unknown

Brook Trout

Brown Trout

Bull Trout

Cutthroat

Kokanee

Rainbow

Searun Cutthroat

unidentified DPS

No Salmon ESU or Steelhead DPS

- J Chinook Salmon-Puget Sound ESU Chinook Salmon-
- unidentified ESU
- ✓ Chum Salmon-Puget Sound/Strait of Georgia ESU Chum Salmon-unidentified
- FSU
- Coho Salmon-Puget J Sound/Strait of Georgia ESU
 - Coho Salmon-unidentified ESU
 - Pink Salmon-Odd year ESU
 - Pink Salmon-unidentified FSU
 - Steelhead-Puget Sound DPS
 - Steelhead/Troutunidentified DPS

10.0

Area Encompassed (acres) (B.0.b.1)

Acres of land area affected by the planning and assessment activities (to the nearest 0.1 acre). For design projects, this is the project footprint. For assessments, this is the area to be assessed

Targeted species (non-ESU species) Select one or more of the fish species that this project will benefit.

Miles of Stream and/or Shoreline Affected (B.0.b.2) The miles of freshwater stream and/or marine shoreline affected (to the nearest 0.01 mile). For design projects, the miles in the project footprint. For assessments, the miles to be assessed.

Design for Salmon restoration

Projects include complete engineering or premliminary design.

Preliminary design

Preliminary engineering/design work for restoration projects.

Total cost for Preliminary design

Enter the cost (to the nearest dollar) of this work type, as close as you can reasonably get it.

Note: Approximately half of this Note: The project area has been acreage is devoted to potential expanded to include more of the construction staging needs for the sloped area up and down from railroad that will need to be shown access road where slope stability on the plans. The remaining area measures are required for Includes the area that will be construction access and a portion disturbed for future restoration of the slope north of the creek. including the 1 acre of tidal marsh Critical area delineations pocket estuary and 1 acre of occurred in these areas and stream riparian enhancement, connection of freshwater wetland, and improvements within BNSF R/W.

64

landslide hazard evaluation included these areas. None Unknown **Brook Trout**

- Brown Trout
- Bull Trout
- Cutthroat
- Kokanee
- Rainbow
- Searun Cutthroat √

0 15

\$277,000

0.20

Note: The original estimate did not account for temporary impacts on the marine shoreline (approx. 250 lf) for temporary building pads and staging activities.

Not Collected at Closure

Note: Author will be determined

once the County has gone out for

Design Request For Qualifications

and selected and awarded design

contract

BNSF R/W

Name of the Recovery Plan that identifies the need or justification for conducting this project. If not identified in Recovery Plan, name the watershed assessment or other plan which justifies the need for the project. Use endnote citation format (Author, date, title, source, source address). If project was not identified in a plan, enter "none." (500 characters max).

Priority in Recovery Plan Priority in Recovery Plan. How is the project prioritized or justified by the above plan? (i.e. addresses a priority action, occurs in a priority area, or targets a priority species). Include page reference. If project was not identified in a Plan, enter 'None'

Name and Description of Plan

Project Identified in a Plan or Watershed Assessment.

Name and brief description of the plan that was developed through the grant. If no plan was developed, enter "None".

Cultural Resources

Activities that provide a report on a systematic set of field investigations that determine the presence or absence of cultural resource material.

Cultural resources

Activities that provide a report on a systematic set of field investigations that determine the presence or absence of cultural resource material. Often involves the services of a professional archaeologist, a literature review, site surface survey, small excavations, site monitoring, and photographic (and related) documentation of the resource.

Total cost for Cultural resources

Enter the cost (to the nearest dollar) of this work type, as close as you can reasonably get it.

Acres surveyed for cultural resources

Number of acres surveyed for cultural resources (to nearest 0.01 acre).

6.40 10.00 Note: Approximately half of this Note: Clarification to original note. The APE includes area of acreage is devoted to potential construction staging needs for the proposed vertical and horizontal railroad that will need to be shown disturbance during construction on the plans. The remaining area including railroad bridge, estuary, Includes the area that will be park and access road disturbed for future restoration improvements (6.4ac.). The site including the 1 acre of tidal marsh area of 10 acres includes pocket estuary and 1 acre of additional areas that are not stream riparian enhancement, proposed to be disturbed but were included in project site area for connection of freshwater wetland, and improvements within Critical Areas review due to either

Not Collected at Closure

steep slopes or wetlands.

\$18,000

Overall Metrics

	Current Agreement	Final
Completion Date Projected date of completion Estimated date the scope of work will be completed.	12/29/2011	01/11/201{ Note: Preliminary Design Report was submitted to RCO on 1/11/18.

Project Goals

Goals, purpose, and expected benefits (A.17) Short description of the goals and purpose of the project and how it is expected to benefit salmonids or salmonid habitat.

Planning Costs

		Date of Last Released Billing 08/08/2017
	Proposed	Final
Worksite: Meadowdale Beach County Park (#1)		
SPLIT	DUT FINAL TOTAL BELOW \$295,00	00.00 \$330,643.23
Design for Salmon restoration Costs	\$277	7,000 \$319,982
Cultural Resource Costs	\$18	3,000 \$10,661
	Difference	\$0

Billed Summary

				Date of Last	Released Billing 08/08/2017
	Project Ag	greement		Totals To Date	
Category	RCO	Total	Expended	Non Reimbursable	Total Billed
Non-Capital					
Non-Capital Costs			330,643.23		330,643.23
Equipment					
Non-Capital Total	250,000.00	295,000.00	330,643.23		330,643.23
Total	250,000.00	295,000.00	330,643.23		330,643.23

Sponsor Match

		Proposed	Final
Project Funding			
PCSRF Federal Funds (A.10)			
State Funds (A.11)		\$250,000.00	\$225,000.00
Retainage - RCO amount retained			\$25,000.00
Sponsor Match: Monetary Funding			
Amount of other monetary funding (A 12)		\$45.000	\$80.643
Source of other monetary funding (A.12.a)			
Sponsor Match: Donated Un-paid Labor (volunteers)			
Value of Donated Unpaid Labor (Volunteers) (A.13.a.2)		\$0	\$0
Source of Donated Un-paid labor contributions (A.13.a.4)			
Number of hours volunteers contributed to the project (A.13.a.1)		Collected at Closure	0
Describe how the value of the volunteers was determined (A.13.a.3)		Collected at Closure	
Sponsor Match: Donated Paid Labor			
Value of Donated Paid Labor (A.13.b.1)		\$0	\$0
Source of Donated Paid Contributions (A.13.b.2)			
Sponsor Match: Other In-kind Contributions			
Value of Other In-Kind Contributions (A.13.c.1)		\$0	\$0
Source of Other In-Kind Contributions (A.13.c.3)			
Description of other In-Kind contributions (A.13.c.2)			
	Amount Total	\$295,000	\$330,643
	Total Billed		\$330,643
	Difference		\$0

Attachments

PHOTOS (JPG, GIF)

FILES AND PHOTOS

File Type	Attach Date	Attachment Type	Title	Person	File Name, Number Associations	Shared
No atta	achments m	natch filter criteria				

Certify & Submit

Status History			
Report Status	Date	User	Note
Accepted	06/18/2018	Elizabeth Butler	Thank you for your work on Meadowdale Restoration Design, Logan Nice job on the final report! Let me know when you expect to submit your final invoice, and we'll prepare to close the project complete shortly thereafter. with gratitude, Elizabeth
Submitted	06/06/2018	Logan Daniels	Elizabeth, I hope I have addressed all of your previous concerns. I am going ahead optimistically and hitting "Submit Final Report". Thank you for your assistance.
Draft	03/13/2018	Logan Daniels	



Property Report

PROJECT: 15-1056 PLN, MEADOWDALE BEACH PARK & ESTUARY RESTORATION DESIGN <u>Sponsor: Snohomish County Parks Dept</u> Program: Puget Sound Acq. & Restoration Status: Active Project Start Date: 12/09/2015 Agreement End Date: 02/26/2018

PROPERTY: BNSF Railroad Right of Way (1: Meadowdale Beach County Park)

Property Basics

Acquisition ✓ Planning

Property Location

Property Name Property Address (optional) City	BNSF Railroad Right of Way	Property Description	Incl 2-rail railroad on 8' high rock embankment, 6' wide culvert, portions of shoreline, freshwater marsh, and creek. Work for prelim design incl. survey, geotechnical borings, archaeological and cultural resource investigation, critical areas delineation
State	Zip	Associated Worksite	Meadowdale Beach County Park (#1)
Landowner		Control and 1	Tenure

Landowner Name	Burlington Northern Santa Fe Railroad	Instrument Type	Landowner Agreement
Address	PO Box 961056	Timing	Proposed
(optional)	Fort Worth	Term Type	Perpetuity
City		# Yrs	
State		Expiration Date	
Landowner Type	Private	Note	Parks has an existing agreement for shared use of the culvert under the embankment. The RR R/W is

approximately 100' and bisects park parcel

27040500200100. This project will require a new Agreement to be executed btw BNSF and Snohomish County.

Parcel Numbers

County Name No parcels	Parcel Number	Mapped Notes (optional)
Recording Numbers		
Instrument Type	Recording Number	Notes
No recordings		

RCO Notes

✓ Property data verified by RCO Staff

Attachments

PHOTOS (JPG, GIF)

FILES A	ND PHOTOS	;				
File Type	Attach Date	Attachment Type	Title	Person	File Name, Number Associations	Shared
No at	tachments i	match filter criteria				



Property Report

PROJECT: 15-1056 PLN, MEADOWDALE BEACH PARK & ESTUARY RESTORATION DESIGN <u>Sponsor: Snohomish County Parks Dept</u> Program: Puget Sound Acq. & Restoration Status: Active Project Start Date: 12/09/2015 Agreement End Date: 02/26/2018

PROPERTY: Meadowdale Beach Park (1: Meadowdale Beach County Park)

Property Basics

Acquisition ✓ Planning

Property Location

Property Name Property Address (optional)	Meadowdale Beach Park 6026 156th St SW	Property Description	Snohomish County Park: includes tidelands, portions of shoreline and freshwater marsh, low-land meadow, Lunds Gulch Creek. Work for prelim design incl. survey, geotechnical borings, test pits, archaeological and cultural
Citv	Edmonds		resource investigation, critical a
State	WA Zip 98026	Associated Worksite	Meadowdale Beach County Park (#1)
Landowner		Control and T	enure
Landowner Name	Snohomish County	Instrument	Fype Sponsor owned property (deed)
Address	3000 Rockefeller Avenue	Timing	Evicting

	Address		riming	Existing
	(optional)		Term Type	Perpetuity
	City	Everett	# Vro	
State	State		# 115	
State		WA ZI P 90201	Expiration Date	
	Landowner Type	Local	N. A.	Incl 3 TPN's and County Poad P/M/: Tidelands is
			NOTE	27040500200200; Shoreline area, meadow, and creek are

on 27040500200100; portion of meadow located on 00500900000500; and marsh is located partially on road r/w.

Parcel Numbers

County Name No parcels	Parcel Number	Mapped Notes (optional)
Recording Numbers		
Instrument Type	Recording Number	Notes

RCO Notes

✓ Property data verified by RCO Staff

Attachments

PHOTOS (JPG, GIF)

FILES AND PHOTOS		

File Type	Attach Date	Attachment Type	Title	Person	File Name, Number Associations	Shared
No at	tachments n	natch filter criteria				