WASHINGTON STATE
Recreation and
Conservation Office

Final Report

Project #13-1107, Willow Creek Daylighting Final Feasibility Study

Submitted by Keeley O'Connell on 01/19/2016 Accepted by Josh Lambert on 01/26/2016

CONTACTS

Primary Sponsor: City of Edmonds

Lead Entity: WRIA 8 LE (King County)

Managing Agency: Rec. and Conserv. Office

Project Contact: Jerry Shuster
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Alt Project Contact: Keeley O'Connell
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Billing Contact: Megan Luttrell
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RCO Grant Manager: Josh Lambert
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DESCRIPTION OF THE COMPLETED PROJECT

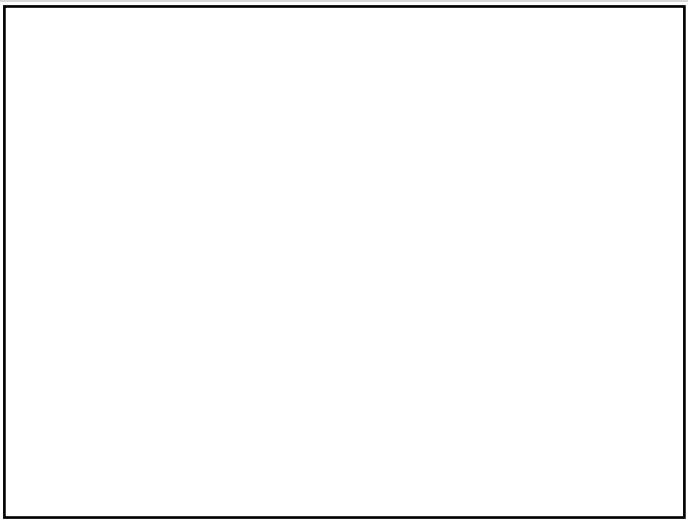
Project Start Date: 12/05/2013 **FundingEnd Date:** 12/31/2015 **RCO Closure Date:**

Edmonds Marsh is a 32-acre remnant of a historical 100+-acre barrier estuary and marsh complex located a short distance from the downtown core in the suburban City of Edmonds. This project is intended to address the key salmon recovery issue of limited juvenile access to important, yet rare, nearshore rearing habitat. The goal is to identify a design approach to restoration that significantly improves the connection between Edmonds Marsh and Puget Sound to provide juvenile salmon access to this intact estuarine rearing habitat by daylighting the Willow Creek outlet of Edmonds Marsh to Puget Sound. The Early Feasibility Study (completed in May 2013 and funded by RCO 11-1553) indicated this restoration action will provide improved access to 28 acres of estuarine marsh habitat suitable for juvenile Chinook salmon. The goal of the current project phase, Final Feasibility, was to address the remaining technical and social aspects of the project prior to entering into design work. These aspects included evaluating the marsh outlet configuration that would allow for juvenile salmon access into the marsh while still providing public park uses, evaluate the need for structural measures in the daylight channel to improve fish passage conditions and/or protect infrastructure, determine the need for a self-regulating tidegate to protect from coastal flooding, and assess the availability of the Unocal property for a daylighted channel and planted buffers.

SITE LOCATION

General Area of Project: Edmonds Marsh

Waterbodies:



Cong District 2012:	07
County:	Snohomish
HUC:	KITSAP
Leg District 2012:	21
Salmon Recov Reg 05:	Puget Sound
Section:	26
Township/Range:	T27NR03E
WAU:	Puget
WRIA:	Cedar-Sammamish

Sponsor Clarifications:

Sponsor verified the above information is correct and complete.

PROJECT NARRATIVE

Project history:

This project is intended to address the key salmon recovery issue of limited juvenile access to important, yet rare, nearshore rearing habitat. The goal of the project is to significantly improve the connection between Edmonds Marsh and Puget Sound to again allow juvenile salmon access to this intact estuarine rearing habitat. This project represents a unique opportunity to increase the diversity of nearshore habitat types available to juvenile Chinook along the highly degraded WRIA 8 shoreline.
The project evolved out of an idea that had been kicking around the community for over 15 years. Daylighting Willow Creek first appeared on Washington State Department of Transportation- Ferries Division draft plan for a proposed new ferry terminal in Edmonds. Daylighting the creek under the new facility was proposed as an environmental mitigation action for the development. People For Puget Sound also proposed the action in a 2009 report, “Biological Condition of the Edmonds Waterfront and Preliminary Feasibility Considerations for Nearshore Ecosystem Restoration”, prepared for the Maria Norbury Foundation. That report included a conceptual design that recommended daylighting Willow Creek to the public City-owned Marina Beach Park and additional upstream fish habitat improvements and barrier removals.
In 2011, People For Puget Sound in partnership with the City of Edmonds, as a willing landowner, pursued further research into the feasibility of these restoration actions by applying to RCO to fund an early feasibility study. The City of Edmonds has been and remains the primary project sponsor since 2012.
The City of Edmonds completed the Early Feasibility Study of the project in 2013 and secured funding through RCO for completion of the Final Feasibility phase as presented here.
Project changes:
The City of Edmonds and consultant, Shannon & Wilson, were unable to secure access from Chevron to the Unocal property to perform soil sampling and surveys as was originally outlined in the scope of work for this phase of the project. Shannon & Wilson did, however, secure documentation from Chevron via their consultant Arcadis showing recent surveys of the property and results of all contamination sampling. Shannon & Wilson used this information to prepare sections in the final report attached in PRISM. In addition, the City Parks and Recreation Department determined the Marina Beach Park should go through a Master Planning Process to involve public feedback into the final alignment for Willow Creek across the beach. This process involved a robust public engagement effort, and though it set the final product for this phase of the project back several months, the City has engagement from the community and overall wide support for the project, as well as a new park design that accommodates the daylighted creek channel.
Lessons learned:
Negotiating with Chevron, while challenging, has led to full and frequent communications not only with Chevron, but also with Washington Department of Transportation and Burlington-Northern Santa Fe Railroad. These frequent and thorough conversations places this project in a good position to move forward into design with all adjacent landowners up to date and aware of project progress.
Engineering contractors:
The City of Edmonds continued to use Shannon & Wilson, Inc for this project phase of final feasibility study. Contact: David Cline, PE WA, Senior Associate, Shannon & Wilson, Inc. 400 N 34th St, Suite 100, Seattle, WA 98103, 206-632-8020, drc@shanwil.com <mailto:drc@shanwil.com>
Project outcomes:
The phase of the project scope completed was the final feasibility study of daylighting the Willow Creek connection to Puget Sound. The purpose and scope of this phase of study was to address the remaining technical and social aspects of the project prior to entering into design work- including outstanding technical issues related to fish passage, fish habitat, soil contamination along the Unocal property, and design coordination for the BNSF. It also updates each of the key technical issues presented in the Early Feasibility Study, identifies a final preferred restoration plan, and offers recommendations for the design and permitting phases of the project.

Deliverables included: Cultural resources assessment of the geotechnical field explorations and daylighted channel plan; Topographic survey along the proposed daylighted channel and Marsh restoration areas; Evaluation of beach outlet to inform the City of daylighted channel alignments across the Marina Beach Park beach; Hydrodynamic modeling and analyses of the daylighted channel to generate a more detailed evaluation of fish passage and stormwater flood conditions; Geotechnical assessment of daylighted channel conditions along the Marina Beach Park beach areas and evaluate proposed daylighted channel and design options for areas along steep slopes at the southern end of the Unocal property near the BNSF bridge(s) crossing; Review of documents relating to Unocal’s cleanup of contaminated soils, evaluate residual soil contamination risks along the daylighted channel route on the Unocal property, and recommendations for final design; and Summaries of property owner and stakeholder outreach meetings with Unocal/Chevron, WSDOT Ferries, the Port, and BNSF.

AMENDMENTS

#	Type	Applied Date	Description
1	Special Conditions Change	05/12/2014	The sponsor agrees to comply with Attachment A “EPA Provisions for Puget Sound Estuary and Restoration Projects”. Attachment A is incorporated by this reference as if fully set forth herein. This project is used as state match for the National Estuary Program administered by the U. S. Environmental Protection Agency. As such, the EPA Provisions are required in addition to the RCO standard Terms and Conditions.

EQUIPMENT

Item Description	Model #	Purchase Date	Amount	Serial #
			$0.00	
			$0.00	

OVERALL PROJECT COSTS

Funding Formula:	Requested		Original		Final	
Puget Sound Acq. & Restoration:	$0.00	(0%)	$200,000.00	(85%)	$180,000.00	(85%)
Salmon State Projects:	$200,000.00	(85%)	$0.00	(0%)	$0.00	(0%)
Sponsor Match:	$35,300.00	(15%)	$35,300.00	(15%)	$31,770.00	(15%)
Total:	$235,300.00	(100%)	$235,300.00	(100%)	$211,770.00	(100%)

Paid To Date:	$180,000.00			**Last Released Billing:**	03/30/2016
Remaining RCO Funds:	$0.00			**Pending Billing:**	No
Advance Balance:	$0.00	**Match Bank:**	$0.00	**Number of Billings:**	4
Admin Limit:	$0.00	**Admin Spent:**	$0.00		
A&E Limit:	$0.00	**A&E Spent:**	$0.00		

Billed Cost Summary:	Original Agreement	Expended	Non-Reimbursable	Total Billed
Non-Capital				
Non-Capital Costs		$273,987.69		$273,987.69
Equipment				
Non-Capital Total	$235,300.00	$273,987.69		$273,987.69
Total	$235,300.00	$273,987.69		$273,987.69

Project Cost Metrics:	Original Agreement	Final
PCSRF Federal Funds (A.10):		
State Funds (A.11):	$180,000.00	$180,000.00
Other Federal Funding:		
Pending Billing - RCO Share Approved:		
Retainage - RCO amount retained:		$20,000.00
Amount of other monetary funding (A.12):	$5,000.00	$48,162.00
Project identifier for the other monetary funding (A.12.b):	City of Edmonds- annual Capital Improvement budget	City of Edmonds- annual Capital Improvement budget
Source of other monetary funding (A.12.a):	City of Edmonds	City of Edmonds
Value of Donated Unpaid Labor (Volunteers) (A.13.a.2):	$0.00	$0.00
Source of Donated Un-paid labor contributions (A.13.a.4):	n/a	n/a
Number of hours volunteers contributed to the project (A.13.a.1):		0
Describe how the value of the volunteers was determined (A.13.a.3):		n/a
Value of Donated Paid Labor (A.13.b.1):	$30,300.00	$25,826.00
Source of Donated Paid Contributions (A.13.b.2):	City of Edmonds staff	City of Edmonds staff
Value of Other In-Kind Contributions (A.13.c.1):	$0.00	$0.00
Source of Other In-Kind Contributions (A.13.c.3):	n/a	n/a
Description of other In-Kind contributions (A.13.c.2):	n/a	n/a

PROJECT METRICS

	Original Agreement	Final
Completion Date		
Projected date of completion:	3/31/2015	12/31/2015
Project Goals		
Goals, purpose, and expected benefits (A.17):	The goal of the project is to identify the preferred restoration approach that will significantly improve the connection between Edmonds Marsh and Puget Sound to provide juvenile salmon access to this intact estuarine rearing habitat by daylighting the Willow Creek outlet of Edmonds Marsh to Puget Sound.	The goal of the project is to identify the preferred restoration approach that will significantly improve the connection between Edmonds Marsh and Puget Sound to provide juvenile salmon access to this intact estuarine rearing habitat by daylighting the Willow Creek outlet of Edmonds Marsh to Puget Sound.

WORKSITE #1: Edmonds Marsh

Worksite Description: Edmonds Marsh is a 32-acre remnant of a historical 100+-acre barrier estuary and marsh complex located a short distance from the downtown core in the suburban City of Edmonds. The current outlet of the marsh is via a combination of a narrow, steep ditch and a 1,600' long system of buried pipes and vaults that empties into Puget Sound at approximately -8.0' MLLW. A flap tide gate is present mid-way along the pipe outfall system. The current conditions of the site significantly limit fish access, and no evidence of juvenile rearing or adult coho spawning in recent years has been observed. The primary activity at this worksite is to daylight the Willow Creek outlet across Marina Beach located south of the marina breakwater to connect the marsh directly to Puget Sound. In addition, this project aims to address additional issues on and adjacent to the site, such as upstream fish passage barriers, potential stormwater volume and water quality, sedimentation and contamination of soils on adjacent properties, that could allow for expanding and enhancing juvenile salmon rearing and secondarily adult coho spawning, as well as enhance the existing cutthroat populations.

Driving Directions: From I-5 (north or south bound) take exit 177 for Edmonds/Hwy 104, Kingston Ferry. Follow signs for WA-104 and merge onto Hwy 104/Edmonds Way heading west. Follow WA-104 into Edmonds following signs for the Kingston Ferry. Take a left on Dayton Ave. Take your second right into the Port of Edmonds Harbor Square Business Park (if you cross the RR tracks, you've gone too far). Follow this road into the Business Park and head south. Edmonds Marsh access is in the SW corner of the Harbor Square Business Park.

Coordinates for Worksite Directions - Latitude: 47.81 **Longitude:** -122.39

Sponsor Clarifications:

Sponsor verified the above information is correct and complete.

WORKSITE #1 COSTS

Worksite Billed Cost:	Estimated	Expended	Non-Reimbursable	Total Billed
Equipment				
Non-Capital Costs	$235,300.00	$273,987.69		$273,987.69
Worksite Total	$235,300.00	$273,987.69		$273,987.69

Worksite Costs by Category:	Original Agreement	Final
Planning/Coordination funding (B.1.a):	$215,300.00	$268,018.00
Cultural resource funding:	$20,000.00	$5,970.00

WORKSITE #1 METRICS

	Original Agreement	Final
Targeted salmonid ESU/DPS (A.23):	Chinook Salmon-Puget Sound ESU, Chum Salmon-Puget Sound/Strait of Georgia ESU, Coho Salmon-Puget Sound/Strait of Georgia ESU, Pink Salmon-Odd year ESU, Steelhead-Puget Sound DPS	Chinook Salmon-Puget Sound ESU, Chum Salmon-Puget Sound/Strait of Georgia ESU, Coho Salmon-Puget Sound/Strait of Georgia ESU, Pink Salmon-Odd year ESU, Steelhead-Puget Sound DPS
Targeted species (non-ESU species):	Cutthroat, Searun Cutthroat	Cutthroat, Searun Cutthroat
Area Encompassed (acres) (B.0.b.1):	27.0	28.0
Miles of Stream Affected (B.0.b.2):	0.33	0.33
	This number was calculated from the draft Early Feasibilty Study which indicates the existing confined, channelized ditch is 700ft long and that the proposed daylighted channel would extend an additional 700ft along the RR to the east then 350ft from under the RR tracks across Marina Beach. The length of the channel across Marina Beach could be up to 700ft long, depending on the final channel design.	

Restoration Planning And Coordination Project

Conducting habitat restoration scoping and feasibility studies

Total cost for Conducting habitat restoration scoping and feasibility studies:	$215,300.00

Project Identified in a Plan or Watershed Assessment (B.1.b.8.a):	none	Draft Puget Sound Salmon Recovery Plan, Several Authors, June 30, 2005 - revised December 2005, http://www.psp.wa.gov/SR_map.php
Description of the Plan (B.1.b.8.b):	none	Lake Washington/Cedar/Sammamish watershed contains two major river systems, three large lakes, and 80 miles of shoreline. Species in the WRIA 8 watershed include Chinook, sockeye, coho, kokanee, steelhead, bull trout, and rainbow and coastal cutthroat. Listed Chinook species include the Sammamish and Cedar River populations. Ecosystem Diagnosis and Treatment will determine the quantitative goals for in stream and landscape habitats, and Chinook goals would increase productivity to twice the current juvenile survival. Limiting factors for Chinook include altered hydrology, loss of floodplain connectivity, lack of riparian vegetation, disrupted sediment processes, loss of channel and shoreline complexity, fish passage barriers, and degraded water/sediment quality. Conservation Strategy objectives will maintain, restore, or enhance watershed processes that create favorable habitat characteristics, enhance habitat and connecting corridors, maintain a well-dispersed network of high-quality refuge habitats and connect high quality and recovered habitats for population expansion centers. Strategies include protect and manage upper watershed's intact habitat, encourage direction of growth into existing urban areas, manage rural development to avoid/reduce impact, restore productivity and rearing habitat in Cedar and Sammamish Rivers, and Lake Washington and tributaries, improve habitat in Lake Washington and Ship Canal, and restore the nearshore where possible.

Cultural Resources

Cultural resources

Total cost for Cultural resources:	$20,000.00	
Acres surveyed for cultural resources:	28.00	28.00

PROPERTY DESCRIPTION (Edmonds Marsh City-owned Property)

Activity: Planning

Control & Tenure:

Instrument Type: Sponsor owned property

Timing: Proposed

Term Length: Perpetuity **# yrs:**

Expiration Date:

Landowner Type: Local **Note:**

Sponsor Clarifications:

Sponsor verified the above information is correct and complete.

Sponsor Clarifications:

SPONSOR CERTIFICATION

[X] I certify that this project has been completed in accordance with the project agreement.

[X] I certify that, to the best of my knowledge, the information in the Final Report is true and correct.

Submitted by Keeley O'Connell on 01/19/2016