

## Final Report

### Project #11-1553, Willow Creek daylighting

Submitted by Keeley O'Connell on 02/19/2014

Accepted by Elizabeth Butler on 02/21/2014

#### CONTACTS

**Primary Sponsor:** City of Edmonds

**Lead Entity:** WRIA 8 LE (King County)

**Managing Agency:** Rec. and Conserv. Office

**Project Contact:** Jerry Shuster  
shuster@ci.edmonds.wa.us

**Alt Project Contact:** Keeley O'Connell  
keeley@earthcorps.org

**RCO Grant Manager:** Elizabeth Butler  
elizabeth.butler@rco.wa.gov

#### DESCRIPTION OF THE COMPLETED PROJECT

**Project Start Date:** 12/08/2011

**FundingEnd Date:** 12/31/2013

**RCO Closure Date:**

City of Edmonds completed the first phase of feasibility assessment for restoring tidal inflows and maximizing Chinook salmon rearing habitat in Edmonds Marsh through daylighting the connection between Willow Creek and Puget Sound. Edmonds Marsh is located within the City of Edmonds in the Central Puget Sound basin. The feasibility report: a) evaluated the topography and hydrology of the marsh area to determine the potential for use by juvenile Chinook; b) analyzed three options for daylighting Willow Creek; c) assessed the hydrology of a restored marsh system that identified the freshwater and saltwater hydrology signal, average water elevation, maximum and minimum water levels and hydroperiod during tidal fluctuations; d) evaluated the potential size and habitat types in a restored marsh; e) provided conceptual designs for the preferred alternative; and f) developed a conceptual plan and early cost estimate for the preferred alternative.

The evaluation of sediment accretion, erosion, and transport, and storm water inputs, and real estate negotiations will be part of the next feasibility assessment phase.

#### SITE LOCATION

**General Area of Project:** Puget Sound, Edmonds

##### Waterbodies:

**Cong District:** 01  
**Cong District 2012:** 07  
**County:** Snohomish  
**HUC:** KITSAP  
**Leg District:** 21  
**Leg District 2012:** 21  
**Salmon Recov Reg 05:** Puget Sound  
**Section:** 26  
**Township/Range:** T27NR03E  
**WAU:** Puget



##### Sponsor Clarifications:

Sponsor recommends Associated Waterbodies should indicate Puget Sound

## 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 full scope of restoring Edmonds Marsh involves the need for construction of a new 'daylighted' tidal channel connection from Edmonds Marsh to Puget Sound, improvement of fish passage barrier issues upstream of the marsh complex, improving spawning habitat in the upper watersheds, eradicating invasive species, and addressing quantity and quality of stormwater as it pertains to marsh and flooding of neighboring properties. Eventually, we intend the project to also address social interests, such as access and recreation opportunities, economic and social value of a restored system in terms of climate change and sea-level rise preparedness, carbon sequestration capacity, and economic value of ecosystem services. We will engage the community through education and action opportunities in every phase, when possible, from feasibility through stewardship, particularly streamside property owners. This restoration project is being developed in coordination with stakeholders and property owners within the vicinity of the Marsh, namely Chevron, Port of Edmonds, Washington Department of Transportation, and BNSF Railway Company.

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. People For Puget Sound provided the report to the City of Edmonds and began discussions with City staff in the Public Works and Parks and Recreation departments. 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.

People For Puget Sound staff also helped form the Friends of Edmonds Marsh group in 2011, which began educating the community on Edmonds Marsh and the benefits of restoration. Since then, the grassroots group has hosted booths at two annual Edmonds events, the Waterfront Festival and the Puget Sound Birdfest, and at the two weekly farmers markets in town. People For Puget Sound, in partnership with City stormwater management staff, provided a Streamside Property Owners workshop series in the Spring of 2012 with funding from NOAA and Restore America's Estuaries Community Restoration Program fund. Friends of Edmonds Marsh continues to provide community engagement and education of this project to the community through its facebook page and community presentations, including numerous presentations to City Council.

### Project changes:

The only change to the project was a change in project sponsor from People For Puget Sound to the City of Edmonds in late 2012. The reason for the change was the organizational closure of People For Puget Sound halfway through the project.

### Lessons learned:

Lessons learned include having an understanding of the challenges and benefits of navigating a multi-benefit project in an urban setting. The urban setting of this project in the City of Edmonds has made it challenging to address all needs of all stakeholders. The Project Sponsor has worked with consultants, adjacent property owners (BNSF, Chevron, Port of Edmonds), city Council and citizens to navigate through these challenges and reach a result that clearly outlines the needs of the project and stakeholders in order to move the project into the next and future phases, from design through construction and stewardship.

### Engineering contractors:

The City of Edmonds hired Shannon & Wilson, Inc for this project phase of early feasibility study and conceptual plan. 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.

### Project outcomes:

The phase of the project scope completed was an early feasibility study of daylighting the Willow Creek connection to Puget Sound. The purpose and scope of this phase of study is to explore the feasibility of providing (and maximizing) Chinook salmon access to rearing habitat, and evaluate the potential size and habitat types in Edmonds Marsh. Deliverables included documenting the existing conditions, topography, and hydrology of the Edmonds Marsh complex; screening and evaluation of three daylight alternatives based on fisheries functional and biological response, coastal hydrodynamics, and engineering, cost estimates, infrastructure, and property and political constraints. Then for the preferred alternative the consultant team developed a conceptual plan of the alternative, performed hydrodynamic modeling of the daylight channel, quantified future juvenile Chinook rearing habitat areas, assessed water depths and hydroperiods of potential rearing areas, evaluated impacts on flood water surface elevations, developed an early cost estimate, and provided information and recommendations for future phases of final feasibility, restoration design and permitting.

## AMENDMENTS

#	Type	Applied Date	Description
1	Project Sponsor Change	12/07/2012	Project sponsor is changed to City of Edmonds, as People for Puget Sound is ceasing operations and transitioning projects to other agencies.

## OVERALL PROJECT COSTS

Funding Formula:		Requested		Original		Final	
Puget Sound Acq. & Restoration:		\$100,000.00	(66%)	\$100,000.00	(66%)	\$100,000.00	(66%)
Sponsor Match:		\$52,100.00	(34%)	\$52,100.00	(34%)	\$52,100.00	(34%)
Total:		\$152,100.00	(100%)	\$152,100.00	(100%)	\$152,100.00	(100%)
Paid To Date:		\$100,000.00		Last Released Billing: 02/24/2014			
Remaining RCO Funds:		\$0.00		Pending Billing: No			
Advance Balance:		\$0.00		Match Bank:	\$0.00	Number of Billings: 5	
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	
Non-Capital							
Non-Capital Costs				\$127,643.06		\$26,820.25	
Equipment							
Non-Capital Total		\$152,100.00		\$127,643.06		\$26,820.25	
Total		\$152,100.00		\$127,643.06		\$26,820.25	

Project Cost Metrics:	Original Agreement	Final
PCSRF Federal Funds:		
State Funds:	\$100,000.00	\$100,000.00
		<i>Two additional invoices have been submitted by the Project Sponsor. The total State funds spent to date is \$100,000.00</i>
Other Federal Funding:		
Pending Billing - RCO Share Approved:		
Retainage - RCO amount retained:		\$0.00
Amount of other monetary funding:	\$6,700.00	\$0.00
	<i>This monetary match is provided through NOAA/Restore America's Estuaries Community Restoration Program via People For Puget Sound. As of 8/26/11, People For Puget Sound does not have a signed contract with NOAA for this grant, however, this is guaranteed annual funding source for People For Puget Sound through our partnership with Restore America's Estuaries. Funding began on June 1, 2011 and will expire on October 31st, 2012.</i>	<i>The former Project Sponsor, People For Puget Sound, did not use the NOAA funding for this project and is therefore not included in project match.</i>
Project identifier for the other monetary funding:	NOAA/Restore America's Estuaries Community Restoration Program	
	<i>Project number can be provided when contract is finalized b/w NOAA and People For Puget Sound</i>	<i>We did not apply this funding to match the non-capital costs of this project</i>
Source of other monetary funding:	N/A	N/A
Value of Donated Unpaid Labor (Volunteers):	\$0.00	\$0.00
Source of Donated Un-paid labor contributions:	City of Edmonds	N/A
Number of hours volunteers contributed to the project:		0
Describe how the value of the volunteers was determined:		N/A
Value of Donated Paid Labor:	\$45,400.00	\$54,463.00
	<i>This amount has been secured as in-kind match by the City of Edmonds as donated paid labor that directly supports the scope of work for this proposal.</i>	
Source of Donated Paid Contributions:		City of Edmonds
Value of Other In-Kind Contributions:	\$0.00	\$0.00
Source of Other In-Kind Contributions:		N/A
Description of other In-Kind contributions:	N/A	N/A

PROJECT METRICS

	Original Agreement	Final
Completion Date		
Projected date of completion:	06/28/2013	06/28/2013
Project Goals		
Goals, purpose, and expected benefits:	The report will test feasibility of maximizing Chinook salmon rearing habitat in Edmonds marsh by taking Willow Creek out of a pipe and restoring the stream connection to Puget Sound. The long-term goal is restoration of Edmonds Marsh to benefit juvenile chinook and coho salmon.	The report tested feasibility of maximizing Chinook salmon rearing habitat in Edmonds marsh by taking Willow Creek out of a pipe and restoring the stream connection to Puget Sound. The long-term goal is restoration of Edmonds Marsh to benefit juvenile chinook and coho salmon.

WORKSITE #1: Edmonds Marsh

**Worksite Description:** Edmonds Marsh is a 24 acre remnant barrier estuary located in Edmonds, WA. Two creeks flow year round into the marsh, Willow And Shellabarger Creeks. The outlet of the marsh is Willow Creek, which is ditched and channelized along the railroad tracks, pass under the RR tracks in two 24 in diam pipe culverts then continues for 1400 ft in a 36 in diam pipe underground and empties into Puget Sound at -4 ft below MHW.

**Driving Directions:** Address: 180 W Dayton St, Edmonds, WA  
Take exit 177- Edmonds/WA-104/ Kingston Ferry from I-5. Head west off I-5 following signs for Edmonds and Kingston ferry. As you near downtown Edmonds, follow the signs for Kingston Ferry/Waterfront. After about a half-mile take a left onto Dayton Ave. Take the second left into Harbor Square (unfortunately there are no signs, but if you cross the RR tracks you've gone too far). The Marsh will be on your right from here. Take your second possible right and follow the road back. You will dead end into the Marsh access area. You'll see the Marsh sign and boardwalk in front of you.

**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	\$152,100.00	\$127,643.06	\$26,820.25	\$154,463.31
Worksite Total	\$152,100.00	\$127,643.06	\$26,820.25	\$154,463.31

Worksite Costs by Category:	Original Agreement	Final
Planning/Coordination funding:	\$34,300.00	\$23,022.00
Habitat Assessment Funding:	\$117,800.00	\$131,441.00

WORKSITE #1 METRICS

	Original Agreement	Final
Targeted salmonid ESU/DPS:	Chinook Salmon-Puget Sound ESU	Chinook Salmon-Puget Sound ESU
Targeted species (non-ESU species):	None	None
Area Encompassed (acres):	24.0	26.6 <i>The engineering consultant determined the actual size of Edmonds Marsh to be 26.6 acres, instead of the original estimate of 24 acres.</i>
Miles of Stream Affected:		0.00 <i>Willow Creek flows into the Marsh.</i>

Restoration Planning And Coordination Project

Conducting habitat restoration scoping and feasibility studies

Description of the Plan:	Assess the feasibility of maximizing Chinook salmon rearing habitat in Edmonds Marsh through daylighting the connection between Willow Creek and Puget Sound. Identify restoration strategies that maximize area and ecological function for juvenile Chinook rearing habitat.	Assessed the feasibility of maximizing Chinook salmon rearing habitat in Edmonds Marsh through daylighting the connection between Willow Creek and Puget Sound. Identified restoration strategies that maximize area and ecological function for juvenile Chinook rearing habitat.
Name of the Plan:	Feasibility Study for Willow Creek Daylighting WRIA 8 Salmon Recovery Council. 2005. Final Lake Washington/Cedar / Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan. Seattle, WA. Project M233	Shannon& Wilson. 2013. Willow Creek Daylighting Final- Early Feasibility Study, Edmonds, WA. May 10th, 2013. Prepared by Shannon& Wilson, 400 N 34th St Suite 100, Seattle, WA 98103. 21-1-12393-206
Total cost for Conducting habitat restoration scoping and feasibility studies:		

## Salmonid Habitat Assessment / Inventory

### Habitat surveys

Total cost for Habitat surveys:

Acres of habitat assessed:

24.0

26.0

Amount Of Habitat Assessed That Needed Restoration:

24.0

26.0

Type of Habitat Assessment:

Estuarine/nearshore habitat  
conditions, Landscape mapping,  
Wetlands

Estuarine/nearshore habitat  
conditions, Landscape mapping,  
Wetlands

### Landowner willingness inventory

Total cost for Landowner willingness inventory:

Document Name:

Landowner Acknowledgement  
form included in attachments #8  
and # 20.

Landowner Acknowledgement  
form included in attachments #8  
and # 20.

Number of landowners contacted:

1

1

## PROPERTY DESCRIPTION (Edmonds Marsh)

**Activity:** Planning

### Control & Tenure:

**Instrument Type:** Landowner Agreement

**Timing:** Existing

**Term Length:** Perpetuity

**# yrs:**

**Expiration Date:**

**Landowner Type:** Local

**Note:** Landowner Agreement with City of Edmonds is provided in  
Attachments.

### Sponsor Clarifications:

Sponsor verified the above information is correct and complete.

### Sponsor Clarifications:

## SPONSOR CERTIFICATION

☒ I certify that this project has been completed in accordance with the project agreement.

☒ 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 02/19/2014