Meadowdale Beach Park & Estuary Restoration

Program: Estuary and Salmon Restoration

RCO #18-1587 RST

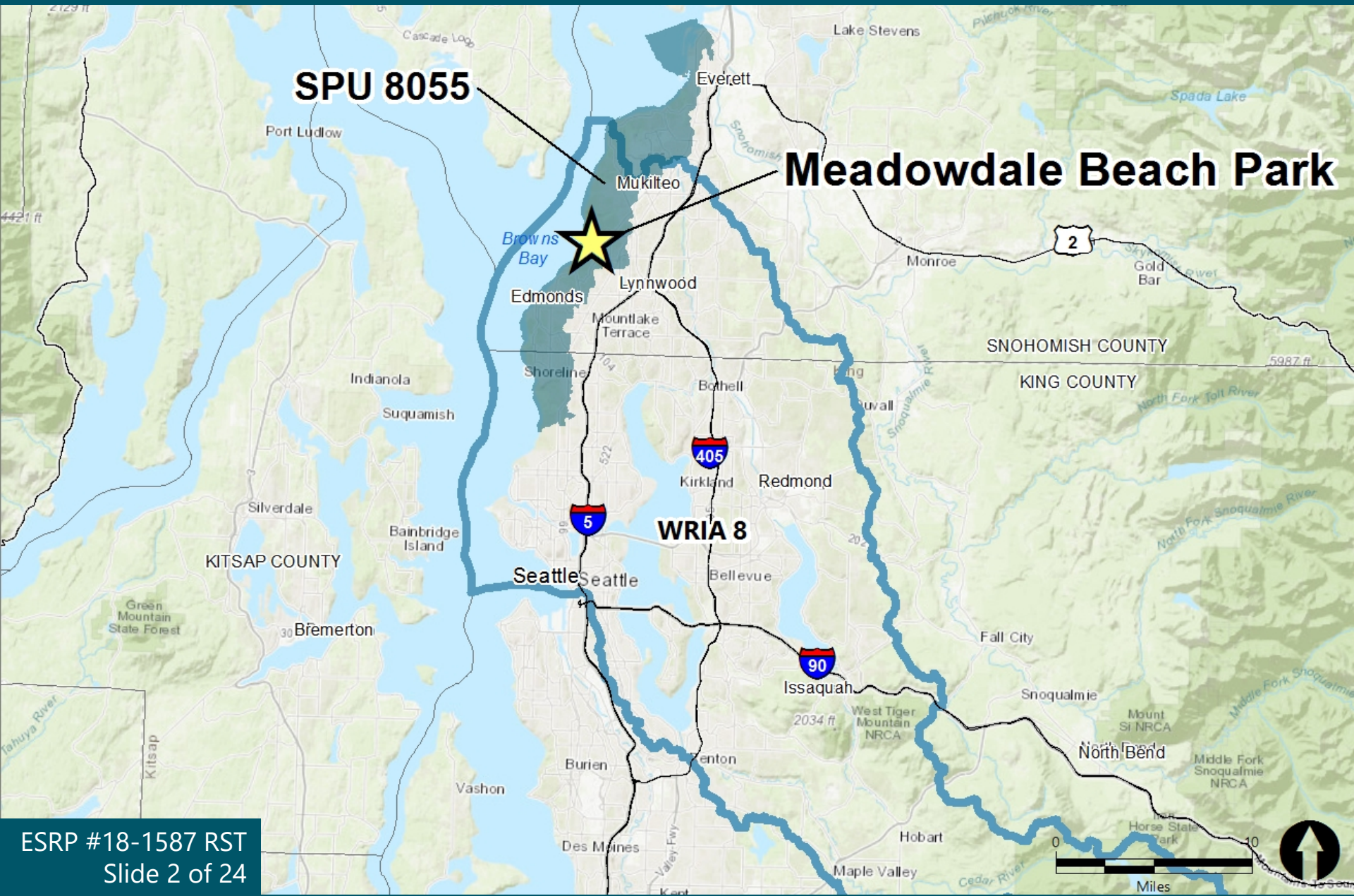
Presented by Logan Daniels

August 20, 2018

Snohomish County Marine Resources Committee

Snohomish County Parks and Recreation

Landscape Context



Project Site Existing Conditions

Railroad Corridor Shoreline Armoring

Box Culvert for Fish Passage and Non-ADA Beach Access

Trail

Lawn Area

Pedestrian Bridge

To Public Parking & Trailhead

Restroom Shelter

Public Beach

Picnic Shelter

Ranger Residence

Lund's Gulch Creek

ADA and Service Entry Only

LEGEND:

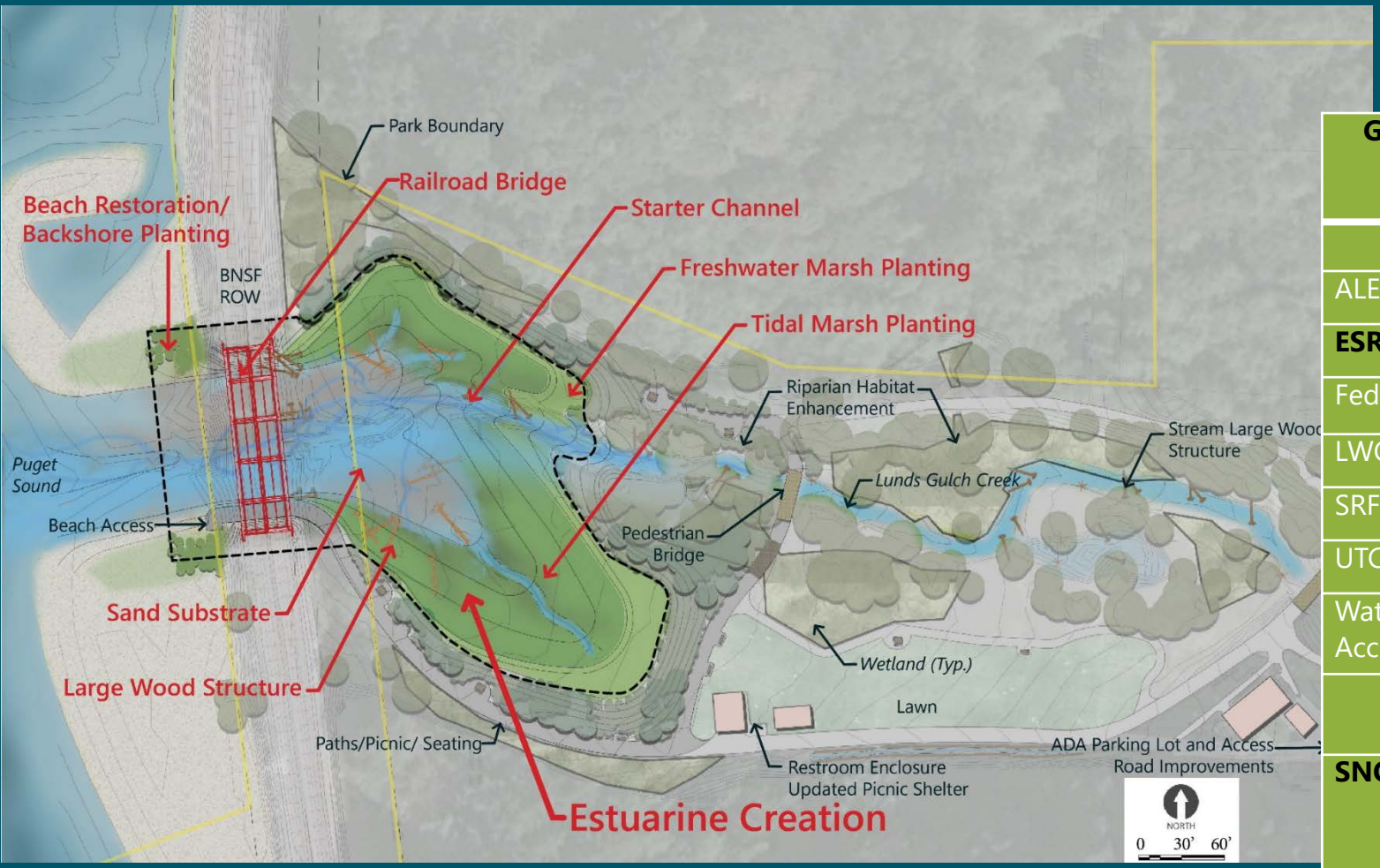
Lund's Gulch Creek

Project Area

0 300

Feet

Meadowdale – Larger Project Overview



Grant	Construction Funding Amount
ALEA	$500,000
ESRP	**$1,000,000**
Fed Rail	$3,500,000
LWCF	$500,000
SRFB	$800,000
UTC	$20,000
Water Access	$1,000,000
Total Grants	**$7,320,000**
SNOCO	**$8,380,000**
TOTAL	**$15,700,000**

A. Ecological Importance – Resilience through Process-based Restoration

Removal of 128 LF of hard armoring along shoreline

Removal of 75 LF of streambank armor

Replace with 5 span Railroad Bridge

A. Ecological Importance – Resilience through Process-based Restoration

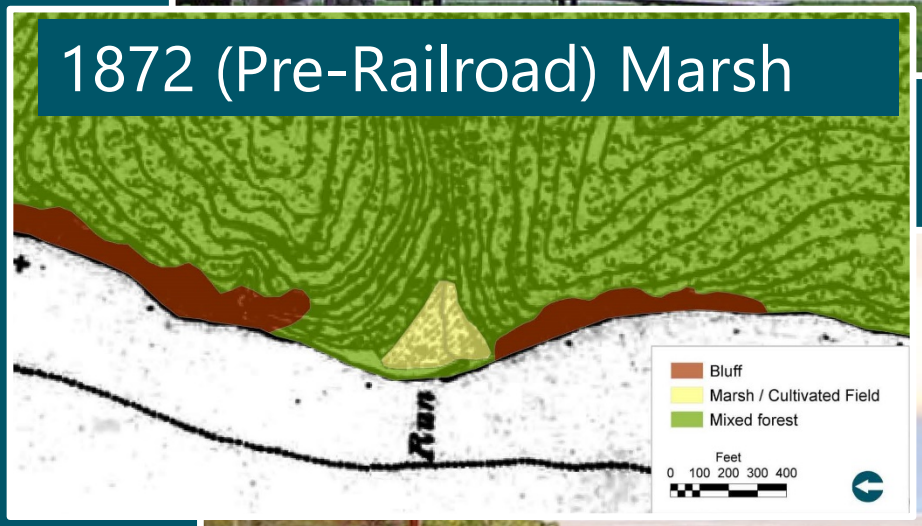
Restore Widened Channel Meander – Expanding Opening from 6’ to 90’

A. Ecological Importance – Resilience through Process-based Restoration

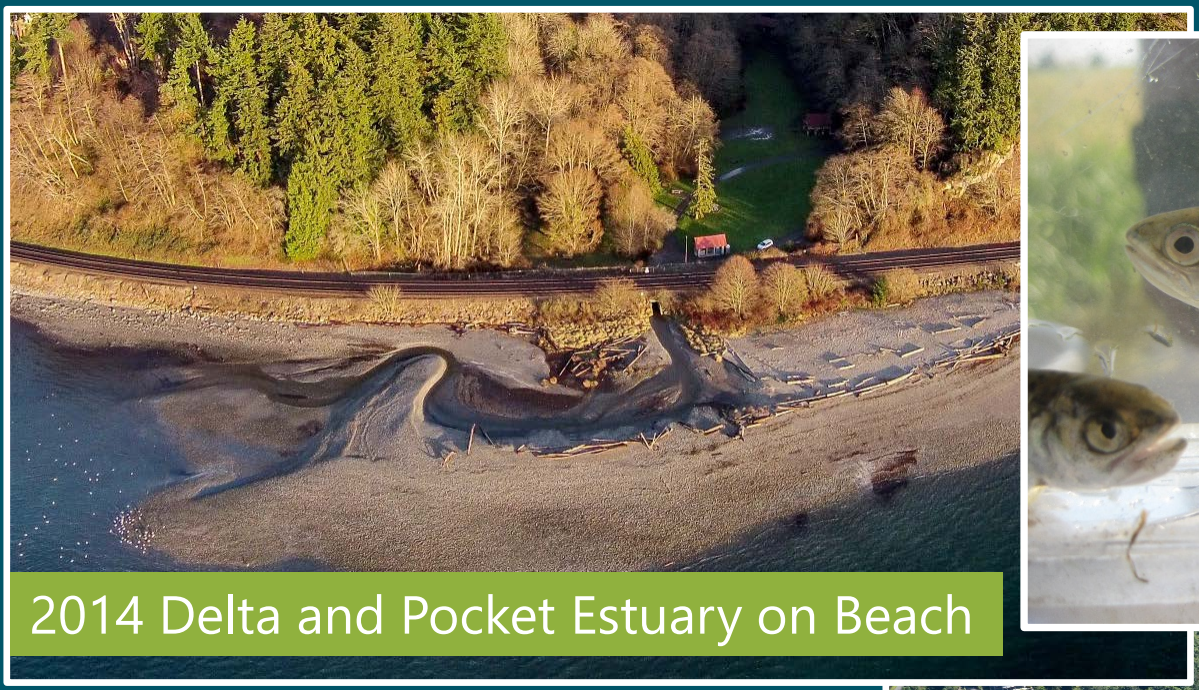
6-ft-wide culvert constrains creek and blocks sediment delivery

130-ft-long, 5-span bridge full restores creek, delivering 80-250 cy of sediment to beach annually for beach nourishment and to support large stream delta and spit

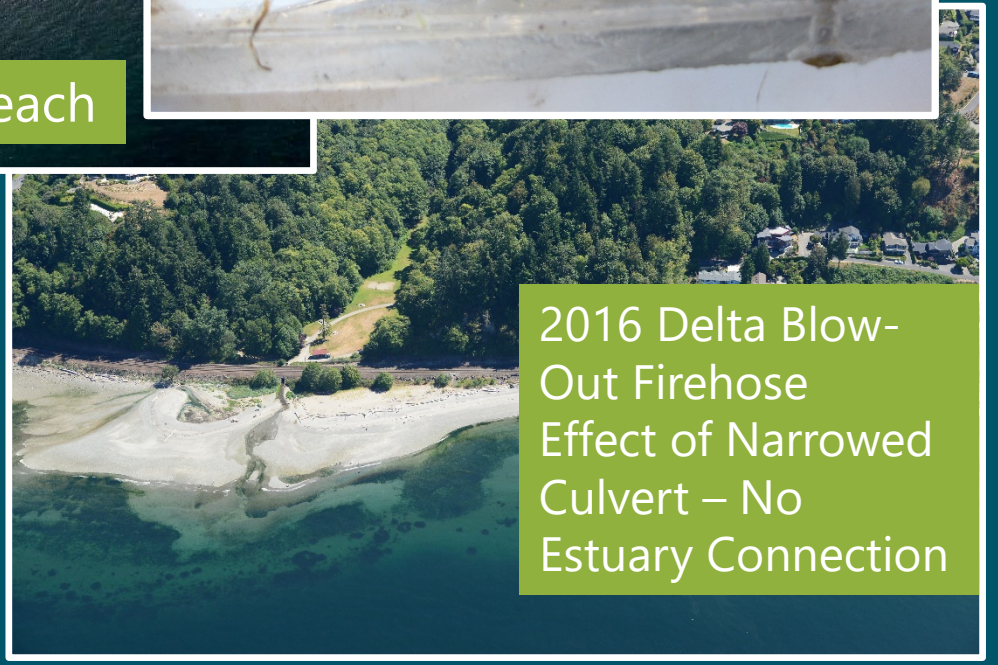
A. Ecologic Importance –Rare Ecosystem Component Restored



A. Ecologic Importance –Restoration for Rearing Habitat



2014 Delta and Pocket Estuary on Beach



2016 Delta Blow-Out Firehose Effect of Narrowed Culvert – No Estuary Connection

A. Ecological Importance - Restoration for Rearing Habitat

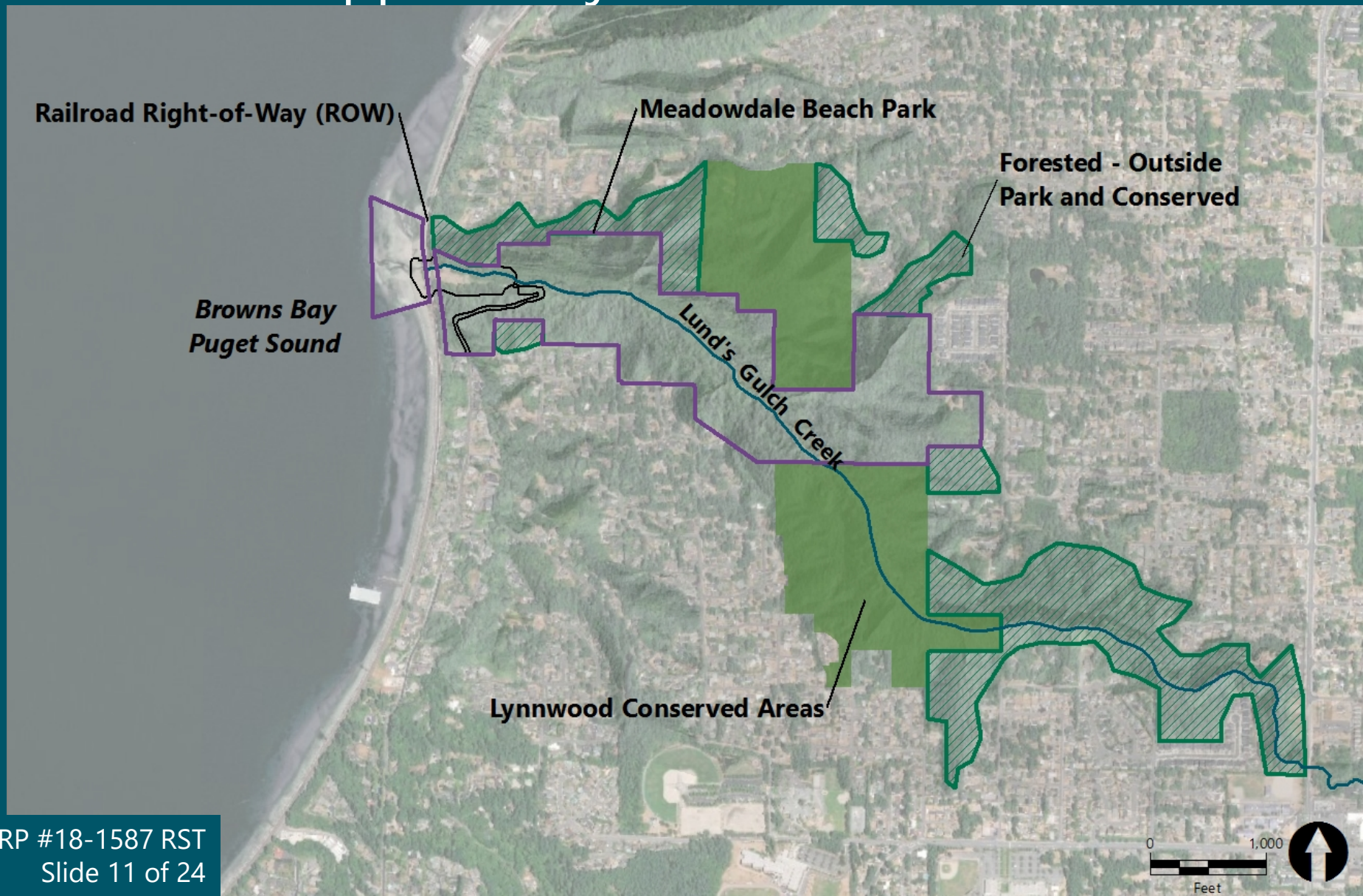
Invasive species, angular rock, and limited structure

550 feet of stream will be enhanced with large woody debris, off-channel habitat reconnected, invasive species removed and riparian buffers underplanted with conifers and native shrubs

ESRP Project

Upstream of Estuary

A. Ecological Importance - Surrounding Conditions Support Project

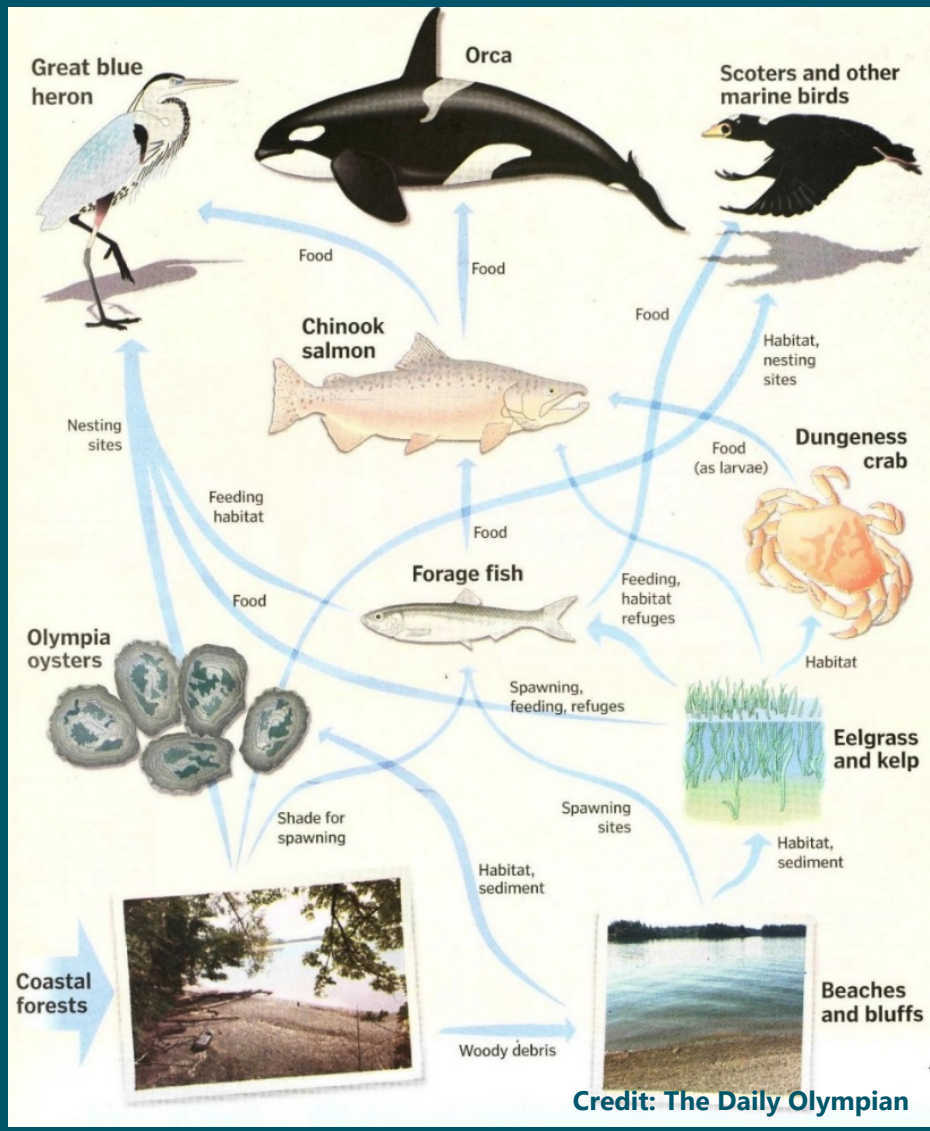


A. Ecological Importance - Ecosystem Benefits to Society

Targeted functions:

- Estuary and freshwater rearing habitat for juvenile Chinook
- Forage fish spawning on the beach (sand lance documented)
- Eelgrass beds present in the nearshore.

Upstream restoration of the riparian corridor will better shade the creek, encourage water infiltration, and provide inputs of detritus and invertebrates - prey items for juvenile Chinook and other salmonids.



A. Ecological Importance - Ecosystem Benefits to Society

Expands Educational Program Opportunities

A. Ecological Importance - Ecosystem Benefits to Society

Goal: Reconnect two pocket estuaries (tributary stream mouths) to the nearshore by 2025

TIER 1

Recovery Strategies:

- ✓ Reconnect backshore areas and pocket estuaries
- ✓ Restore natural marine shorelines
- ✓ Restore sediment processes necessary for key life stages
- ✓ Protect and restore channel complexity
- ✓ Protect and restore functional riparian vegetation

B. Technical Merit and Readiness – Identified and Resolved Uncertainties

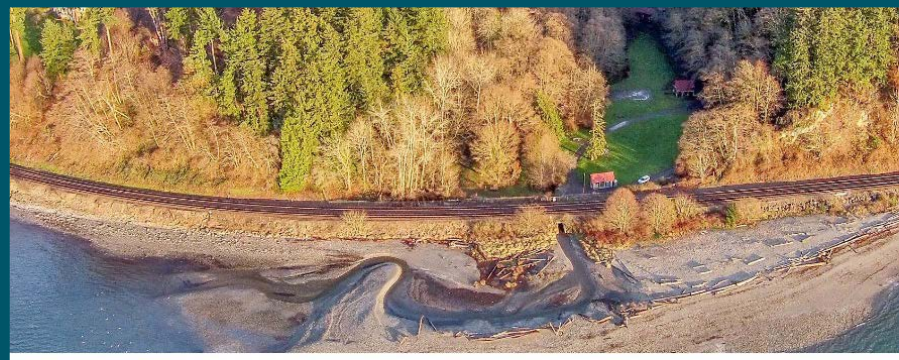
Necessary width of estuary connection for tidal exchange and sediment transport

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

September 15, 2015

Ms. Kathy Ketteridge
Anchor QEA, LLC
720 Olive Way, Suite 1900
Seattle, WA 98101

RE: MEADOWDALE BEACH PARK GEOTECHNICAL FEASIBILITY STUDY, GEOLOGIC ASSESSMENT, AND SEDIMENT LOADING, SOUTH SNOHOMISH COUNTY, WASHINGTON

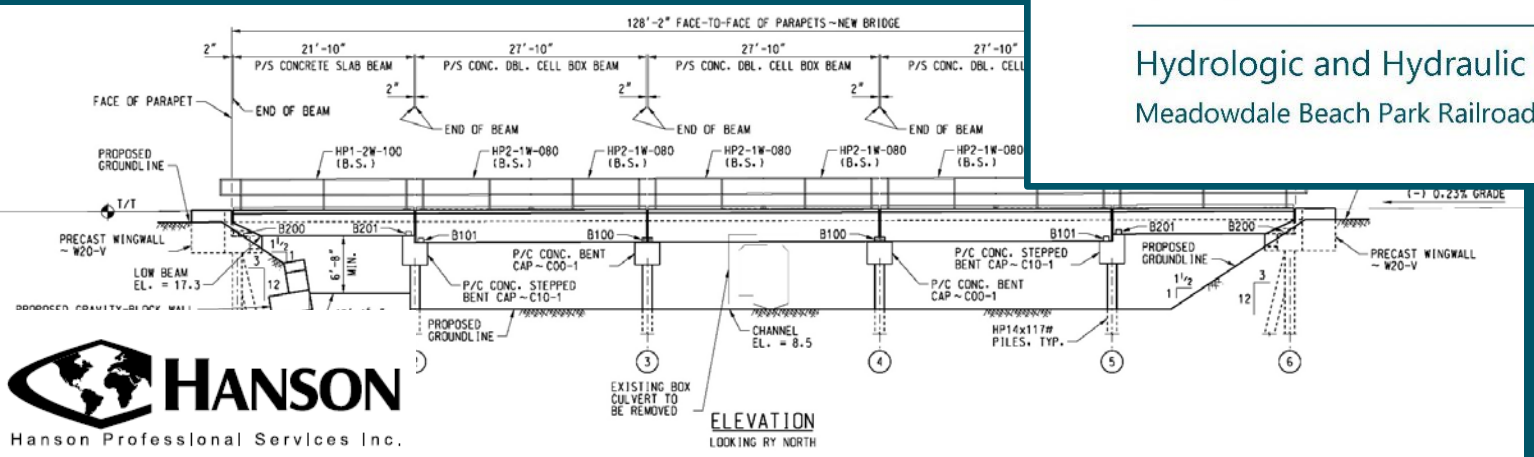


February 2018

ANCHOR QEA

Hydrologic and Hydraulic Report

Meadowdale Beach Park Railroad Bridge (0050-0021.80)



HANSON
Hanson Professional Services Inc.

B. Technical Merit and Readiness – Identified and Resolved Uncertainties

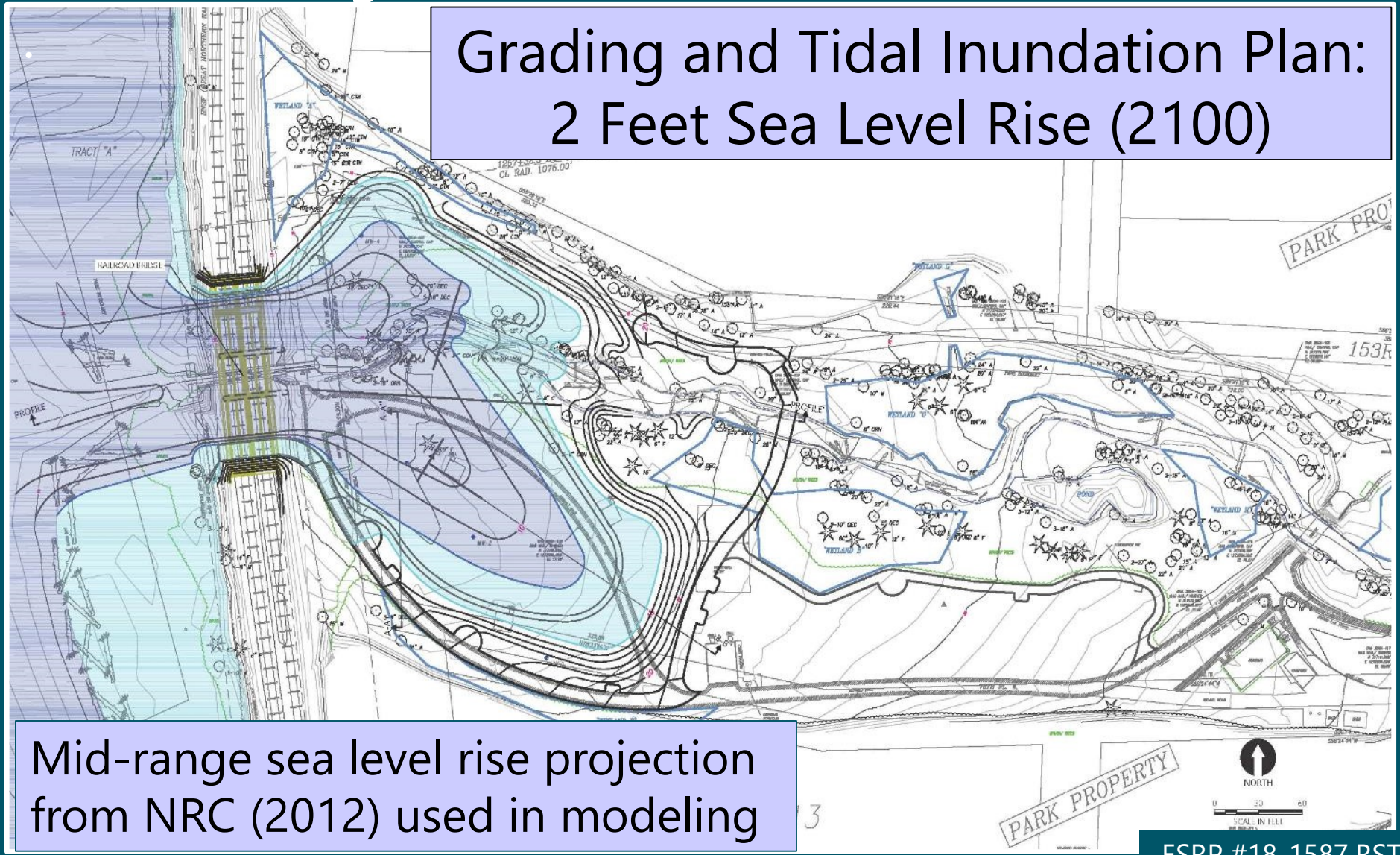
- Tidal/groundwater exchange to sustain estuary
- Instream habitat conditions and deficiencies

Stream Assessment

Pathway	Indicator	Restored Estuary Reach		Stream Reach	
		Survey Results	Habitat Rating	Survey Results	Habitat Rating
Habitat Access	Physical Barriers	Barriers absent	Properly Functioning	Barriers absent	Properly Functioning
Habitat Element: Spawning and Incubation	Substrate	89% of total length of reach was spawning habitat, 63% of which was embedded with sand	Not Properly Functioning	92% of total length of reach was spawning habitat, 88% of which was embedded with sand	Not Properly Functioning
Habitat Element: Rearing	Pools	Pool frequency was 16.2 pools per 500 feet, but lacked cover	At Risk	Pool frequency was 8.8 pools per 500 feet, but lacked cover	At Risk
		Residual pool depths were greater than 4 inches	Properly Functioning	Residual pool depths were greater than 4 inches	Properly Functioning
	LWD	30.8 pieces per 500 feet	Properly Functioning	44 pieces per 500 feet	Properly Functioning
	Off-Channel	No off-channel habitat exists	Not Properly Functioning	No off-channel habitat exists	Not Properly Functioning

B. Technical Merit and Readiness – Resilience to Climate Change

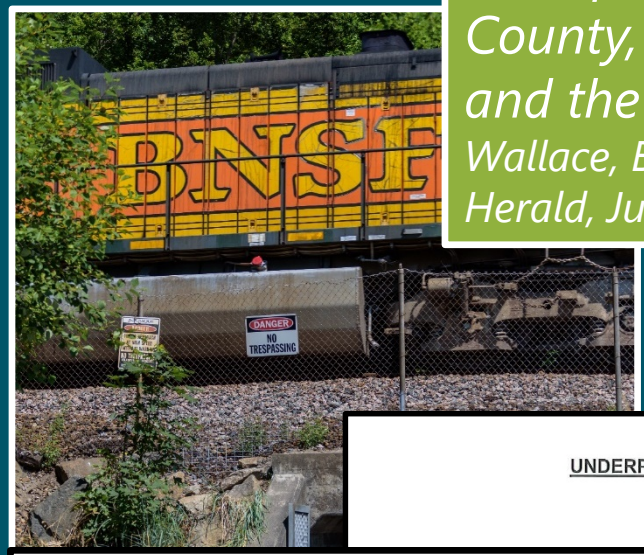
Grading and Tidal Inundation Plan: 2 Feet Sea Level Rise (2100)



Mid-range sea level rise projection from NRC (2012) used in modeling

B. Technical Merit and Readiness – Is the Project Ready to Go

"This project is a win for the County, the public, the railroad, and the environment (Courtney Wallace, BNSF Spokeperson Everett Herald, July 5, 2018)



Snohomish County

County Council

Sam Low
Nate Nehring
Terry Ryan
Brian Sullivan
Stephanie Wright

May 2, 2018

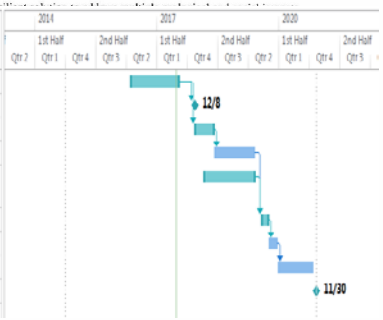
Snohomish County Parks & Recreation Department
Attn: Tom Teigen, Director

3000 Rockefeller Avenue
Everett, WA 98201-4046
(425)388-3494
FAX (425)388-3496

into natural and developed assets which help us maintain our exceptional northwest quality of life.

Executive/Council on Board

Task Name	Start	Finish
Preliminary Park Element Design	Wed 5/11/16	Fri 7/14/17
Submit to RCO/SRFB	Fri 12/8/17	Fri 12/8/17
Final Design	Mon 12/11/17	Fri 5/25/18
Permitting	Mon 5/28/18	Tue 5/28/19
Prepare Final Construction Bid Documents	Thu 3/1/18	Tue 5/28/19
Bidding	Thu 8/1/19	Wed 9/25/19
County Procurement Process	Thu 9/26/19	Wed 12/18/19
Construction	Thu 12/19/19	Mon 11/2/20
Ribbon Cutting	Mon 11/30/20	Mon 11/30/20



UNDERPASS AGREEMENT

BNSF File No. BF10001833
Nason Creek Bridge
U.S. D.O.T. No. N/A
LS 037
MP 1690.60 - 1691.40
Scenic Subdivision

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed and attested by its duly qualified and authorized officials as of the day and year first above written.

BNSF RAILWAY COMPANY

By: _____

Printed Name: ~~Steve Anderson~~ Stanford Sexton

Title: VP of Engineering

WITNESS:

_____

AGENCY

COUNTY OF CHELAN

By: _____

Printed Name: Mike Kaputa

Title: Director, Dep't of Natural Resources

...ted to be effective as of June 17, 2013
...NSF RAILWAY COMPANY, a Delaware
...unty, a political subdivision of the State of
...E POWER ADMINISTRATION **(BPA)** joins
...Mitigation Payment, only.

...TALS:

...he of railroad in and through the County of

...the existing Nason Creek Waterway by
...roject, which such habitat restoration project
...ttached hereto ("Agency Work");

...gency Work, at the request of Agency and
...SF will construct a new railroad bridge to be
...P 1690.60;

...90.60 will be removed upon completion of
...d underpass; and

...power-marketing agency
...ric Power Planning and
...Act") to protect, mitigate,
...nds and habitat affected

Landowner Willingness

Construction Ready 2019/Completion Winter 2020

C. Costs

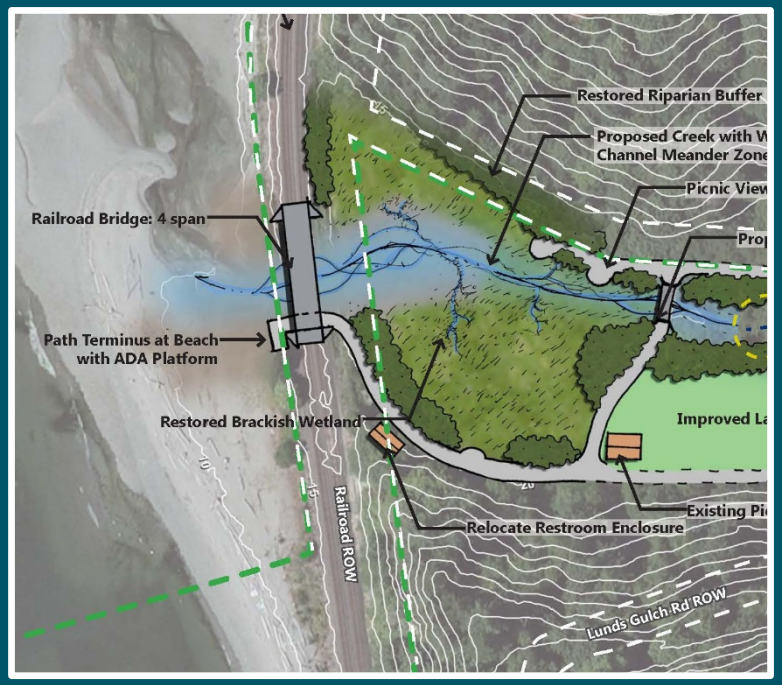
RAILROAD BRIDGE CONSTRUCTION FUNDING BREAKDOWN		
SOURCE	**AMOUNT**	**PERCENT OF TOTAL**
ESRP	**$417,700**	**5.4%**
Fed Rail Admin (CRISI)	$3,500,000	45.8%
SRFB	$261,178	3.4%
UTC	$20,000	0.3%
Water Access	$699,722	9.2%
Total Grants	$4,898,600	64.1%
Snohomish County	**$2,743,948**	**35.9%**
TOTAL	**$7,642,548**	**100%**

C. Costs

HABITAT RESTORATION CONSTRUCTION FUNDING BREAKDOWN		
SOURCE	**AMOUNT**	**PERCENT OF TOTAL**
ESRP	**$405,700**	**14.6%**
SRFB	$406,600	14.6%
ALEA	$272,800	9.8%
LWCF	$215,300	7.7%
Water Access	$57,100	2.1%
Total Grants	$1,357,500	48.8%
Snohomish County	**$1,423,600**	**51.2%**
TOTAL	**$2,781,100**	**100%**

D. Public Support

6 Stakeholder Meetings Resulted in selection of the "Preferred Alternative" With LARGEST estuary area



D. Public Support – U.S. Rep. Rick Larsen's Site Visit

"It's a great project, mostly because everybody is on the same page," U.S. Rep. Rick Larsen (Herald, July 5, 2018)

*"This will be great...**One of the biggest problems for chinook salmon in Puget Sound is the nearshore environment."** Joe Scordino, NOAA retired fisheries biologist (Herald, July 5, 2018)*

D. Public Support

Snohomish County
Marine Resources Committee

COMMITTEE MEMBERS

Sarah Brown (Chair)
bracht
(Chair)
ann
(Chair)
a Perez
ir)
pitt
ge
ley
lopkins

June 28, 2018

Tom Teigen, Director
Snohomish County Parks, Recreation, and Tourism
6705 Puget Park Drive
Snohomish, WA 98296

Dear Mr. Teigen:

The Snohomish County Marine Resources Committee (MRC) is writing this letter of support for the Meadowdale Beach Park Estuary Restoration Project. Meadowdale Beach Park serves an important resource for the community as well as for aquatic life. Thousands of county residents explore the park's trail system which follows Lund's Gulch Creek as it drains into a small estuary along Puget Sound. It is one of the very few areas where the public can access the beach in South Snohomish County which also supports migrating salmon.

The MRC supports the Meadowdale Beach Park and Estuary Restoration
nt solution for a century of ecological
Sound shoreline. This project
infrastructure can be transformed in
stal ecosystem functions.

improving and expanding documented
salmon by removing an undersized culvert
of Lund's Gulch Creek. Removal of nearly

THE TULALIP TRIBES

Board of Directors:
Marie Zackuse - Chairwoman
Teri Gobin – Vice-Chairwoman
Mel Sheldon - Treasurer
Bonnie Juneau - Secretary
Les Parks – Board Member
Marlin J. Fryberg, Jr., *Sxwilus* - Board Member
Jared Parks, Board Member

6406 Marine Drive
TULALIP, WA 98271-9694
(360) 716-4000
FAX (360) 716-4032

The Tulalip Tribes are the successors in interest to the Snohomish, Snoqualmie, and Skykomish tribes and other tribes and band signatory to the Treaty of Point Elliott

July 2, 2018

Tim Teigen, Director
Snohomish County Parks and Recrea
6705 Puget Park Drive
Snohomish, WA 98296

Dear Director Teigen ,

I am pleased to provide this letter of
Resources Department regarding the

LAKE WASHINGTON · CEDAR · SAMMAMISH · WATERSHED

Lake Washington/Cedar/Sammamish (WRIA 8) Watershed
201 S. Jackson Street, Suite 600
Seattle, WA 98104-3855

April 26, 2018

Re: Meadowdale Beach and Estuary Restoration Project – Link to WRIA 8 Recovery Strategy

PSAR Large Capital Project Review Team:

The purpose of this letter is to document the Meadowdale Beac
connection to priority WRIA 8 recovery strategies. In 2017, WRIA
of 2
ery
tage

"…Meadowdale project is the <u>first project</u> to attempt this type of restoration work along the railroads tracks and is a <u>crucial first effort toward a meaningful strategic restoration effort</u> along the Everett to Seattle shoreline."
Kurt Nelson, Tulalip Tribes Dir. Of Env. Div.

Snohomish County

County Council

Sam Low
Nate Nehring
Terry Ryan
Brian Sullivan
Stephanie Wright

3000 Rockefeller Avenue
Everett, WA 98201-4046
(425)388-3494
FAX (425)388-3496
TTY/TDD (425)388-3700

May 2, 2018

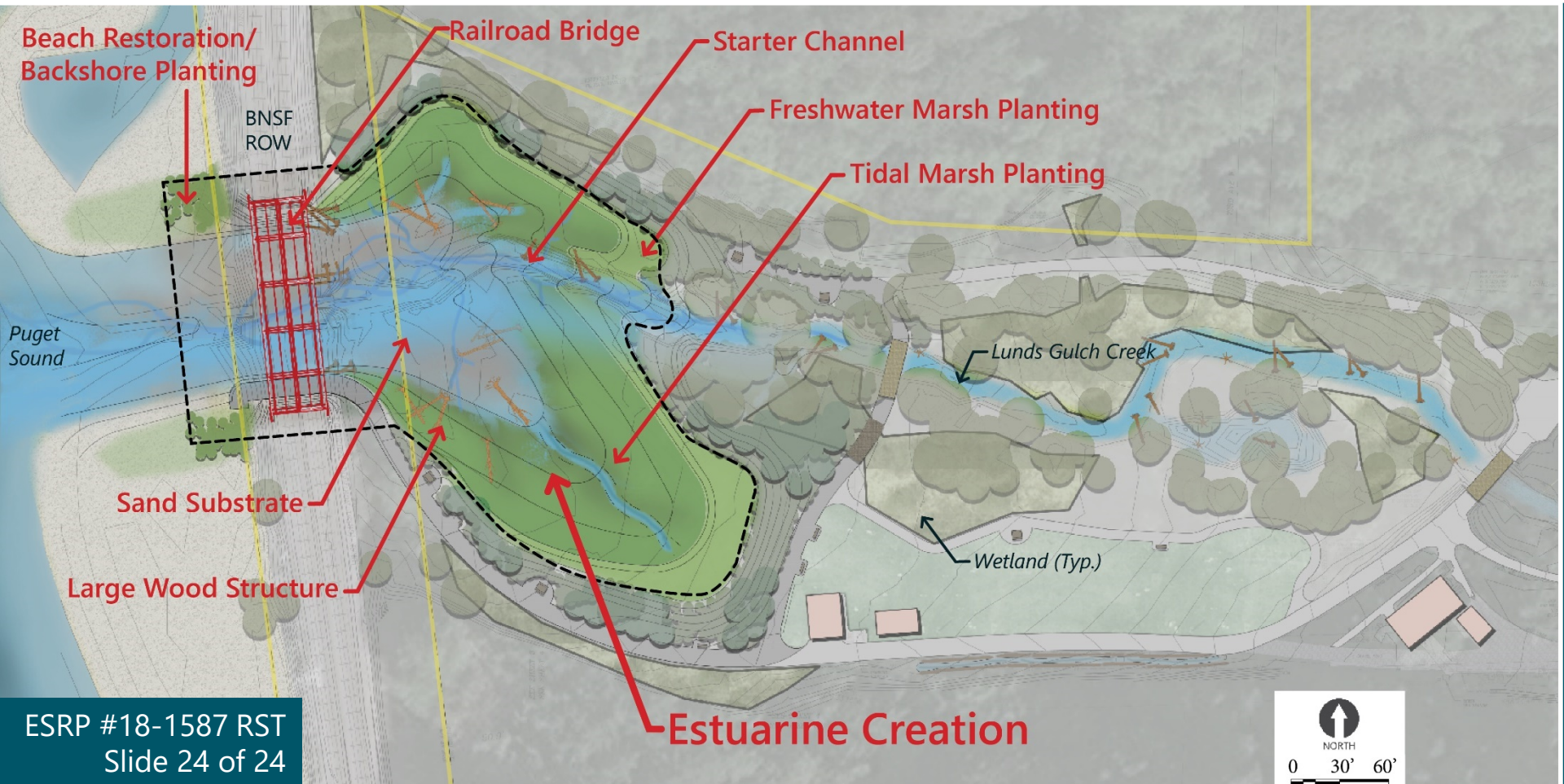
Snohomish County Parks & Recreation Department
Attn: Tom Teigen, Director
6705 Puget Park Drive
Snohomish, WA 98296

Re: Letter of Financial Commitment – Meadowdale Beach Park & Estuary Restoration Project

Dear Mr. Teigen,

The Snohomish County Council certifies that County fu
requirements for state and federal grant funds awarded f
Beach Park and Estuary Restoration project. This proje
Snohomish County, and is of regional ecosystem recove
committed to successful and timely completion of this n

Questions?


Beach Restoration/
Backshore Planting
Railroad Bridge
Starter Channel
Freshwater Marsh Planting
Tidal Marsh Planting
BNSF
ROW
Puget
Sound
Lunds Gulch Creek
Sand Substrate
Large Wood Structure
Wetland (Typ.)
Estuarine Creation
NORTH
0
30'
60'