

# **SR 509 Completion – Stage 2 Project**



## **Puget Sound Gateway Program**

SR 509 Completion Project (Stage 2)

### **Puyallup Tribe of Indians**

Project Early Coordination Meeting  
May 11, 2021

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## Meeting Purpose and Agenda

Purpose of the meeting is to familiarize the PTOI staff to the proposed project elements, existing conditions, preliminary impacts to cultural and natural resources, and discuss conceptual mitigation plans. This project's NEPA evaluation was initiated in 1999 with a ROD issued in 2003. A re-evaluation of the project was completed in 2018, and included distribution to the PTOI. The Program is currently developing a second re-evaluation for the inclusion of the 160<sup>th</sup> St intersection as well as design refinements for stage 2.

### Agenda

- ❖ Overview of Project scope and schedule
- ❖ Cultural resources assessments; findings, APE
- ❖ Natural resources assessments
  - ❖ Wetland and Streams; existing conditions, impacts, and mitigation
  - ❖ Fish Passage barriers; known barriers, concepts for replacement

# SR 509 Completion Project

The purpose of the Project is to improve regional highway connections to serve current and future transportation needs in southwest King County. This Project will address a major gap in the roadway system that causes significant congestion on local streets in the region.

## Stage 1a: SR99/South 208<sup>th</sup> Street *(in construction)*

- Constructs a new SR99 bridge over SR 509
- Construction in progress by Sound Transit
- yr. 2020-2022

## Stage 1b: SR 509/I-5 to 24th Avenue South *(in construction)*

- Reconstructs the I-5/SR 516 interchange
- Builds new SR 509 ramps to and from I-5
- Constructs a new interchange at 24th Avenue
- yr. 2021- 2024

## Stage 2: SR 509/24th Avenue South to South 188th Street

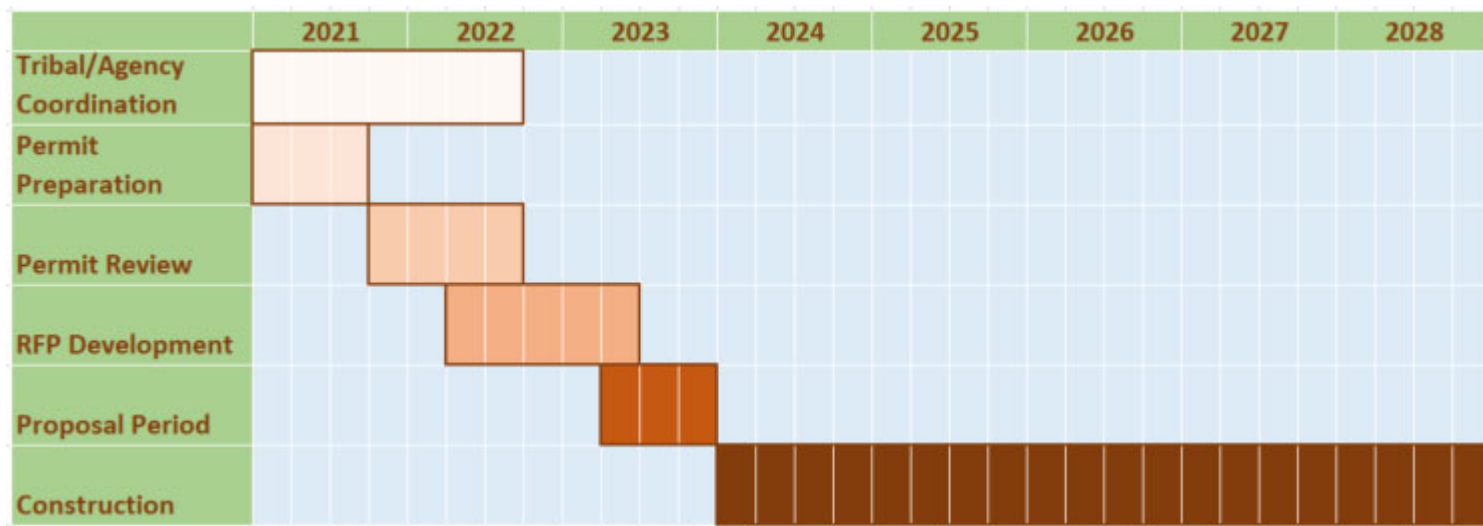
- Constructs the majority of the new SR 509
- Adds a southbound auxiliary lane on I-5 between SR 516 and South 272nd Street
- Two injunction barriers identified within Project Limits
- yr. 2024-2028



# SR 509 Completion Project

(Fly over video)

## Stage 2 Schedule:





# SR 509 Completion Project

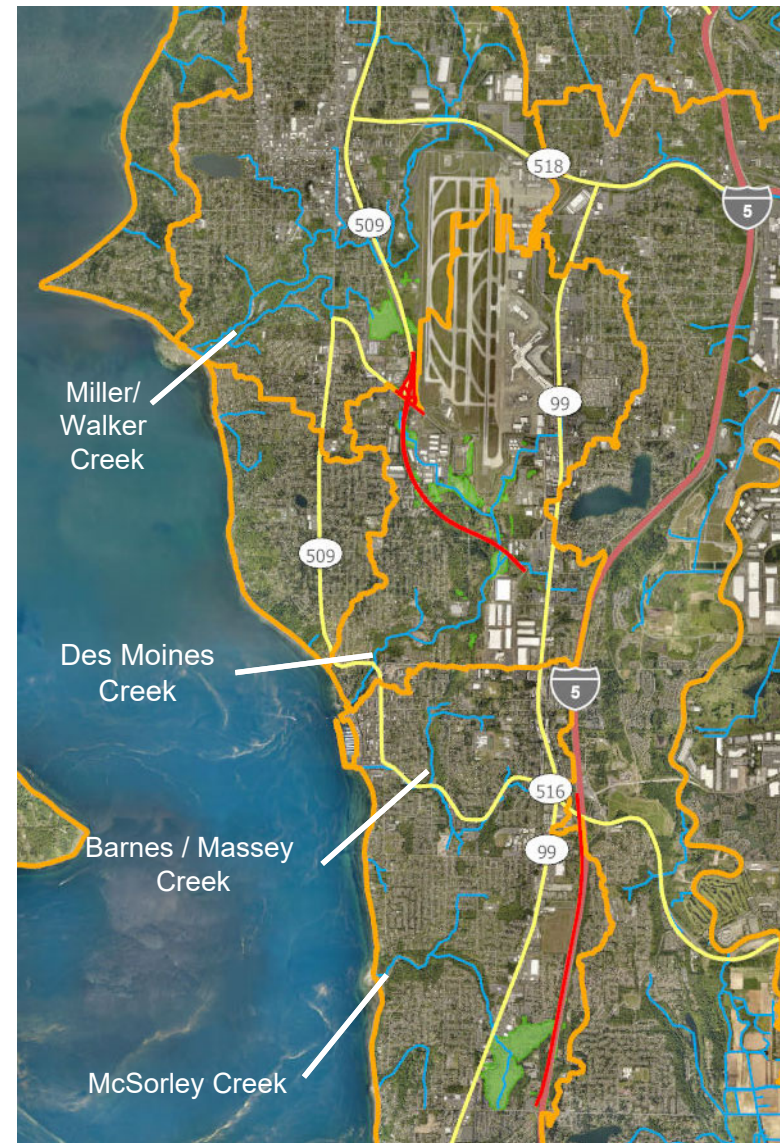
## Cultural Resources:

- Windshield survey done to support the EIS, no subsurface testing but archaeological high probability areas identified
- Area of Potential Effect (APE) update for Stage 1b sent in July 2017, survey report sent in September 2017
  - Survey included project corridor and shovel tests in high probability areas, no historic properties found
- APE Update for Stage 2 sent in March 2021, survey in progress
  - Includes updated project footprint focusing on main corridor
  - 2021 APE currently includes the footprint for the I5 and 194<sup>th</sup> culverts as well as the conceptual Barnes Creek site
- APE will be further amended and additional survey conducted on as needed basis depending on natural resources mitigation discussions

## WRIA 9, Puget Sound Nearshore Sub-watershed

### Problems related to land use practices:

- Fish passage barriers
- Shoreline armoring
- Impervious surfaces
- Loss of large woody material and channel complexity
- Disconnection from floodplain
- Degraded water quality
- Riparian loss or degradation



# Wetlands and Streams

S 160<sup>th</sup> Street to 24<sup>th</sup> Avenue S.



Wetlands in the Project Area

Subbasin	Wetland	Category	Cowardin Class	Total Size (acre)
Miller Creek	24.1L	II	PFO/PSS/PEM	33.29
	23.85	III	PFO	2.99
Des Moines Creek	23.05	III	PFO/PSS	9.28
	22.65	III	PFO/PSS	0.56
	22.55	III	PFO/PEM	0.77
	22.40R	III	PFO/PSS/PEM	23.92
	22.43	IV	PEM	0.16
	22.42	IV	PEM	0.05
	21.75	III	PFO/PSS	14.00
	21.65	III	PFO	0.29

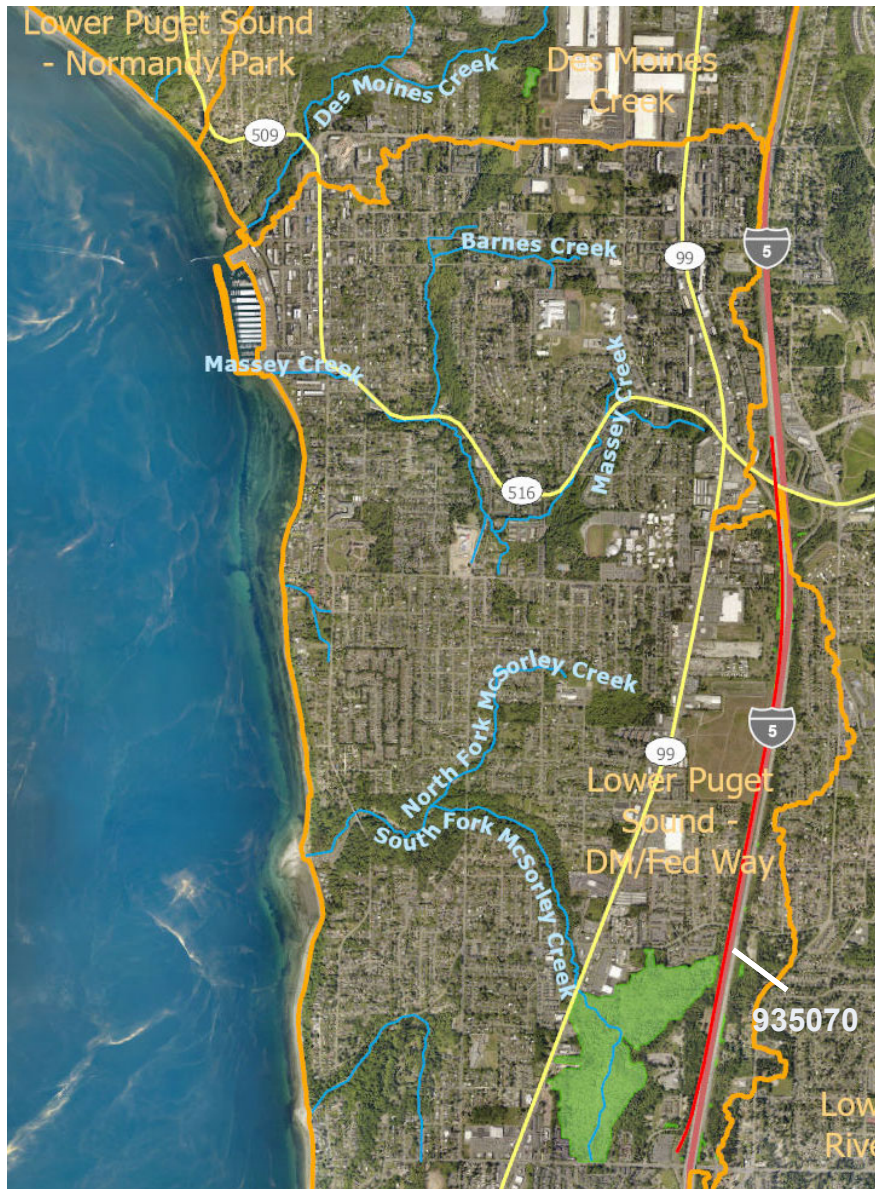
Streams in the Project Area

Subbasin	Stream Name	WDFW Site ID	WDFW Fish Use Potential
Des Moines Creek	W Fork Des Moines Creek	N/A	Yes
	UNT to Des Moines Creek	935212	Yes
	Des Moines Creek	09.0377 2.12	Yes



# Wetlands and Streams

## I-5 Corridor



Wetlands in the Project Area				
Subbasin	Wetland	Category	Cowardin	Total Size (acre)
Lower Puget Sound/DM Fed Way	148.6L	IV	PEM	0.04
	147.65R	IV	PFO/PSS/PEM	0.21
	147.6L	II	PFO/PSS/PEM	108.00

Streams in the Project Area			
Subbasin	Stream Name	WDFW Site ID	WDFW Fish Use Potential
Lower Puget Sound/DM Fed Way	UNT to South Fork McSorley Creek	935070	Yes

# **Existing Conditions – Discussion/Questions ?**

## Preliminary Impacts to Wetlands and Streams

Preliminary Impacts DRAFT			
Aquatic Resources	Permanent Impact (acre)	Temporary Impact (acre)	Conversion (acre)
Wetland	1.85	0.74	0.54
Wetland Buffer	4.39	3.42	0
Stream	0	0	0.04 shading
Stream Buffer	0	0.01	0

## Avoidance and Minimization Measures

- Proposed stormwater ponds have been repositioned or relocated to minimize wetland impacts
- Retaining walls are incorporated wherever feasible to minimize impacts to wetlands
- Longer spanned and higher elevation bridges will be constructed to avoid or minimize impacts to wetlands and streams wherever practicable
- Bridge piers moved outside of wetlands to the extent practicable

# Mitigation, Then and Now

As part of the 2003 NEPA Record Of Decision, WSDOT made several commitments to mitigate for impacts to wetland and stream habitat, including contributing \$9,000,000 to Des Moines Creek Basin planning efforts:

- Replacing a fish barrier culvert (WDFW #990115) near the mouth of Des Moines Creek, opening 3,855 linear meters of upstream habitat for fish access. This project was completed in 2007. This project also addressed local hydrology, erosion, and water quality problems.
- Contributed \$70,000 to Des Moines Creek Basin Planning efforts to mitigate for shading impacts to wetlands associated with bridge structures of the new highway spanning wetlands.

While these mitigation projects were completed as commitments under NEPA, the roadway permitting process had not been completed due to funding loss in 2008.

AMB wetland mitigation site built in 2007 and closed out with agencies for credit availability in 2017.

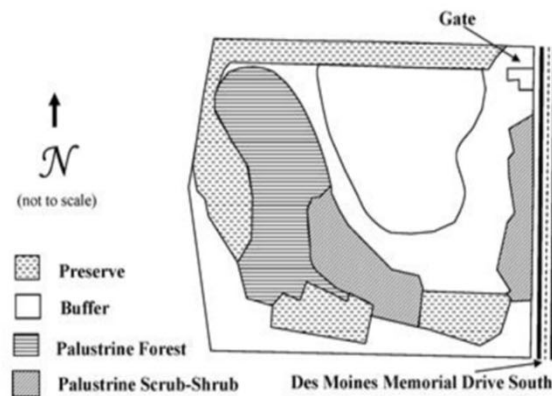
# Conceptual Mitigation Approach

Impact Type	Acres	Credit to be Used at the AMB Mitigation Site	Additional Mitigation Needs
Permanent Wetland Impact	1.85	1.559 for establishment 0.33 for enhancement 0.74 acre for preservation	0.2 ac
Permanent Wetland Conversion	0.54	0	0.54 ac
Permanent Wetland Buffer Impact	4.39	0	1.37 ac
Wetland Buffer Impact from Stage 1b	0.47	0	0.47 ac

**AMB Mitigation Site:** WSDOT Advanced mitigation site for the Project, constructed in 2007, monitoring phase closed out with permitting agencies in 2017.



Photo 2  
Woody vegetation in the wetland (May 2016).





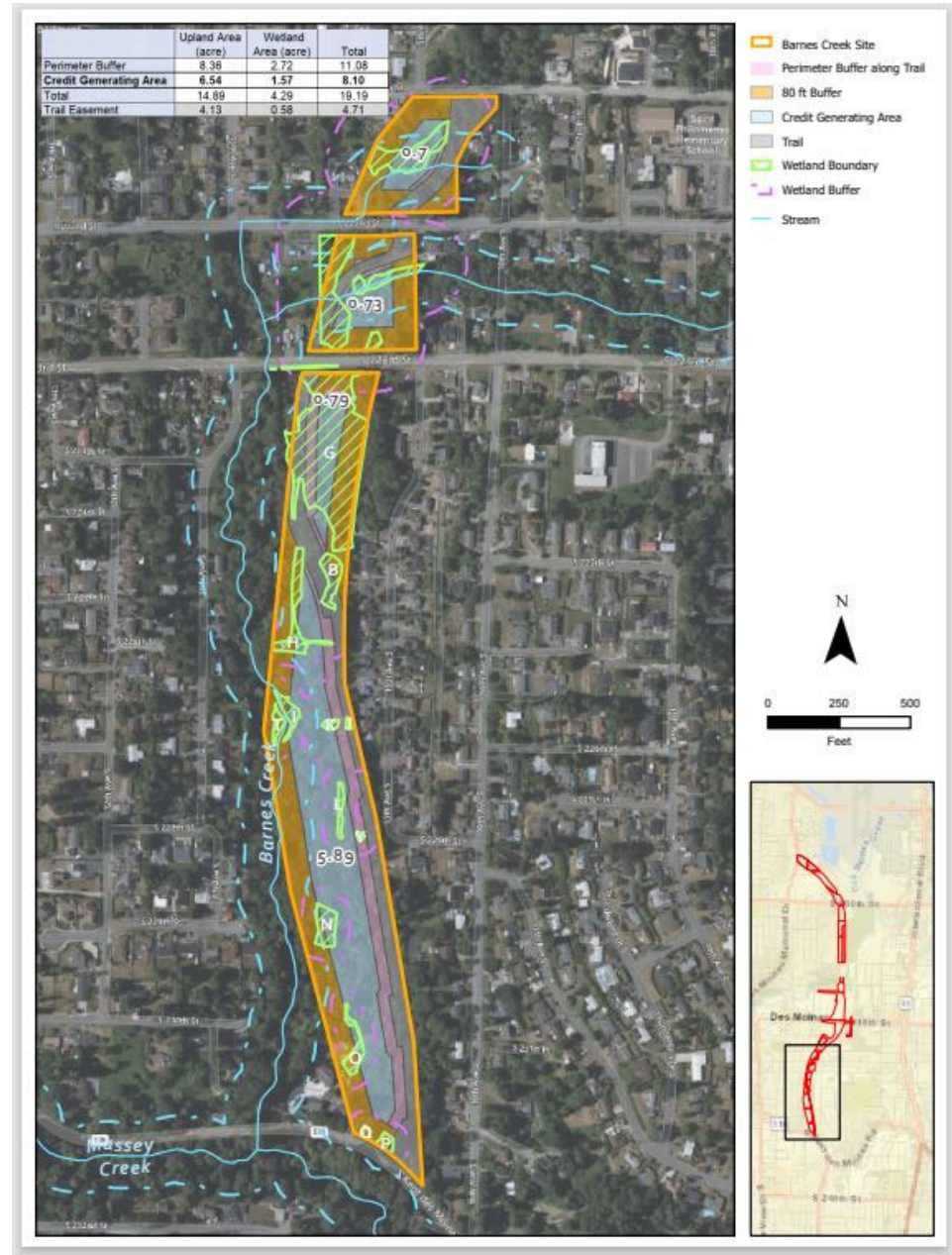
## Additional Mitigation Options

- King County In Lieu Fee
- Review of Local Watershed Plans, Shoreline Master Program documents for SeaTac, Des Moines, and Kent, Draft Salmon Habitat Plan for WRIA 9 (2020)
- WSDOT-owned property
  - Acquired in 1960s for the conceptual SR 509 ROW
  - Currently undeveloped and not proposed for future use by WSDOT
  - WSDOT mandated to sell surplus properties
  - Few remaining contiguous undeveloped areas in region
  - Eight sections were assessed for potential concurrent mitigation opportunities



# Barnes Creek

- Approximately 19 acres of contiguous parcels running N/S adjacent to Barnes Creek. The site averages approximately 275 feet across.
- Immediately upstream from Barnes / Massey confluence and WDFW #991191 (2022)
- Historic logging activity – remnant roads and ditches, primarily deciduous trees with very few conifer species
- Site has slope and depressional wetlands, with potential for several acres of credit-generating area for wetlands and buffer
- Preservation or enhancement TBD
- Intact riparian corridor serving to provide functions and habitat by maintaining connectivity in highly developed basins
- Includes Barnes Creek trail (City of Des Moines)
- City, USACE, and DOE are supportive of concept





# Barnes Creek Site Photos

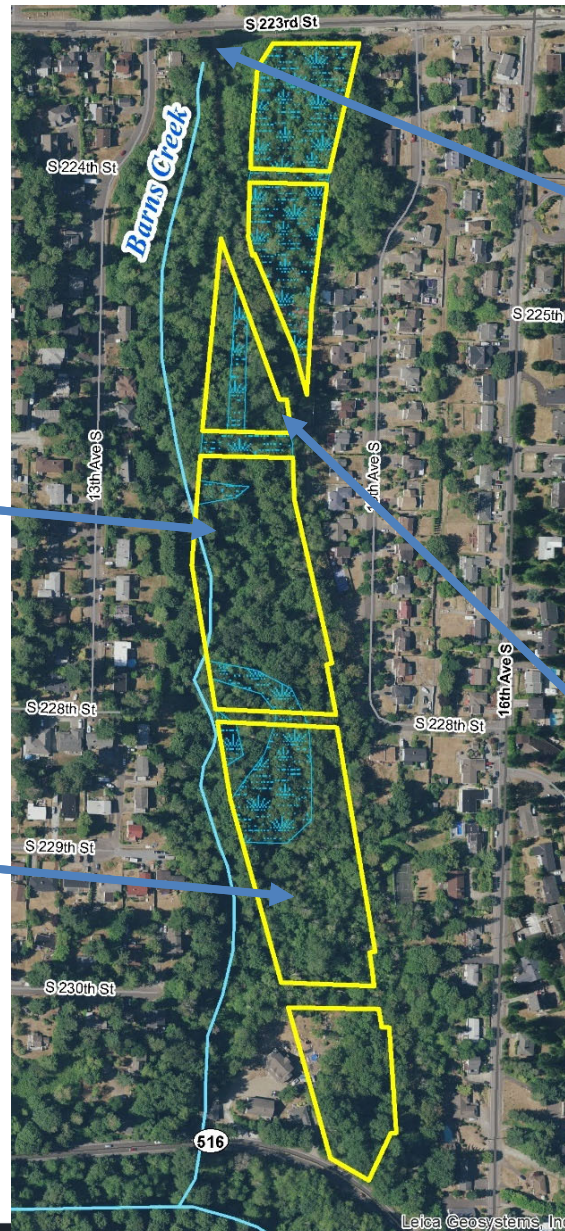
Potential enhancement; remove non-native species, plant native woody species, preservation of the existing riparian corridor.



Parcel 3 looking west toward ravine



Parcel 2 looking south



Barnes Creek downstream of S 223rd



Parcel 4 looking east from the southwest corner of the parcel

# **Preliminary Impacts & Conceptual Wetland Mitigation Plan -**

## **Discussion/Questions:**

Initial thoughts on Barnes Creek for wetland mitigation site?



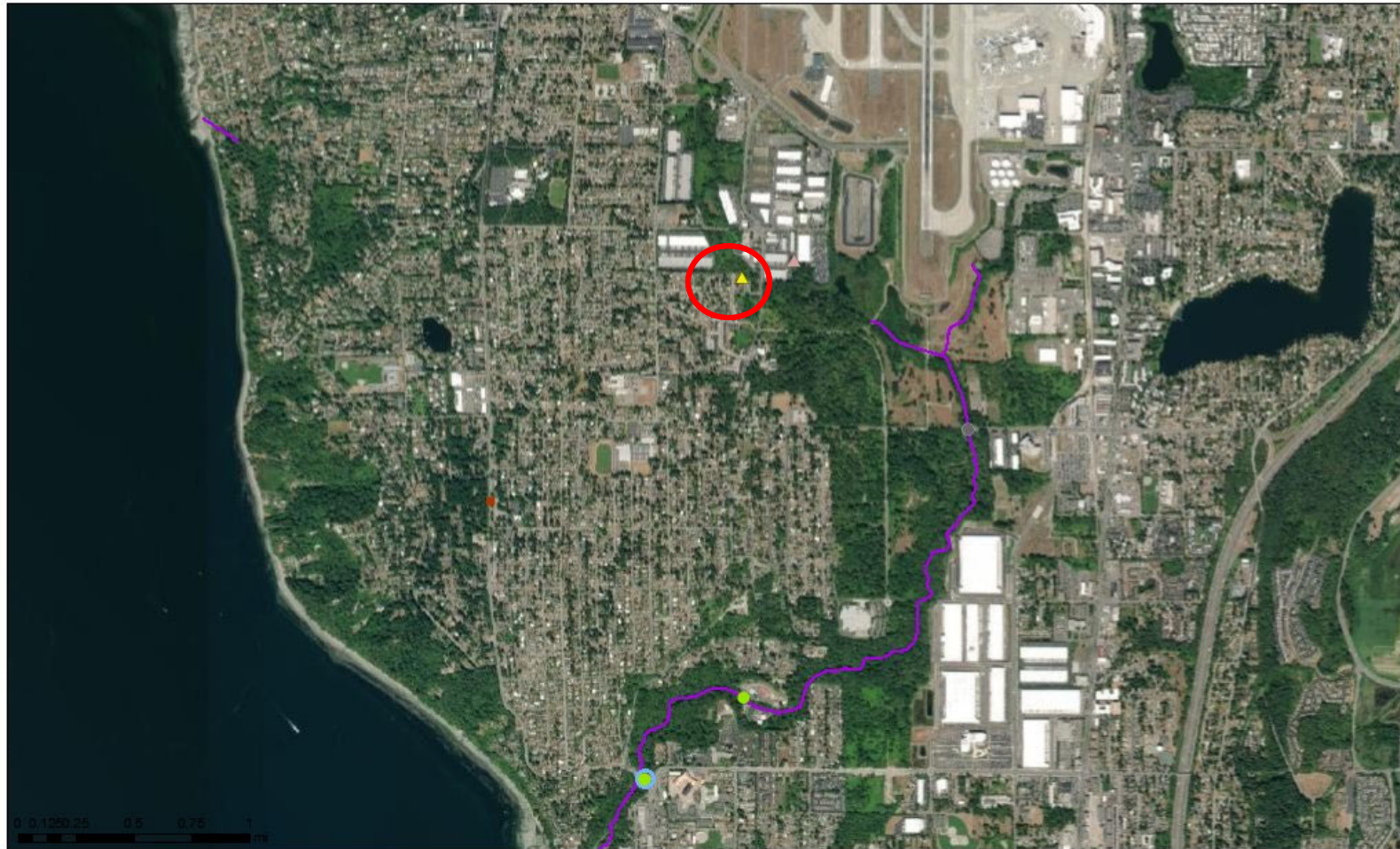
# Fish Passage Barriers

WDFW Site ID	Stream	Fish Use	Barrier Reason	Significant Reach
935212	Des Moines Creek	Yes	Depth	No
935070	UNT to SF McSorley Creek	Yes	Debris	No

WDFW Site ID	Link to WDFW Report
935212	<a href="http://apps.wdfw.wa.gov/fishpassagephotos/Reports/935212_Report.pdf">http://apps.wdfw.wa.gov/fishpassagephotos/Reports/935212_Report.pdf</a>
935070	<a href="http://apps.wdfw.wa.gov/fishpassagephotos/Reports/935070_Report.pdf">http://apps.wdfw.wa.gov/fishpassagephotos/Reports/935070_Report.pdf</a>



# WDFW Site ID 935212 UNT to Des Moines Creek



## Washington State Fish Passage



- Not a barrier
- ▲ Partial Fish Passage Blockage
- ▲ Total Fish Passage Blockage
- ▲ Barrier, Unknown Percent Passable
- Diversion
- ▲ Natural Barrier - Verified
- On a Non-Fish Bearing Stream
- Unknown
- Corrected Barriers
- Fish Distribution

<http://apps.wdfw.wa.gov/fishpassage/?extent=-122.3654,47.4050,-122.2784,47.4407>

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## WDFW Site ID 935212 UNT to Des Moines Creek



Upstream gain: 80m

Primary water source is groundwater

Project activity at this location is north/southward construction of new roadway. Project is reviewing site conditions (soils, utilities, parcel boundaries) to determine replacement options and timing.



## 935212 UNT to Des Moines Creek



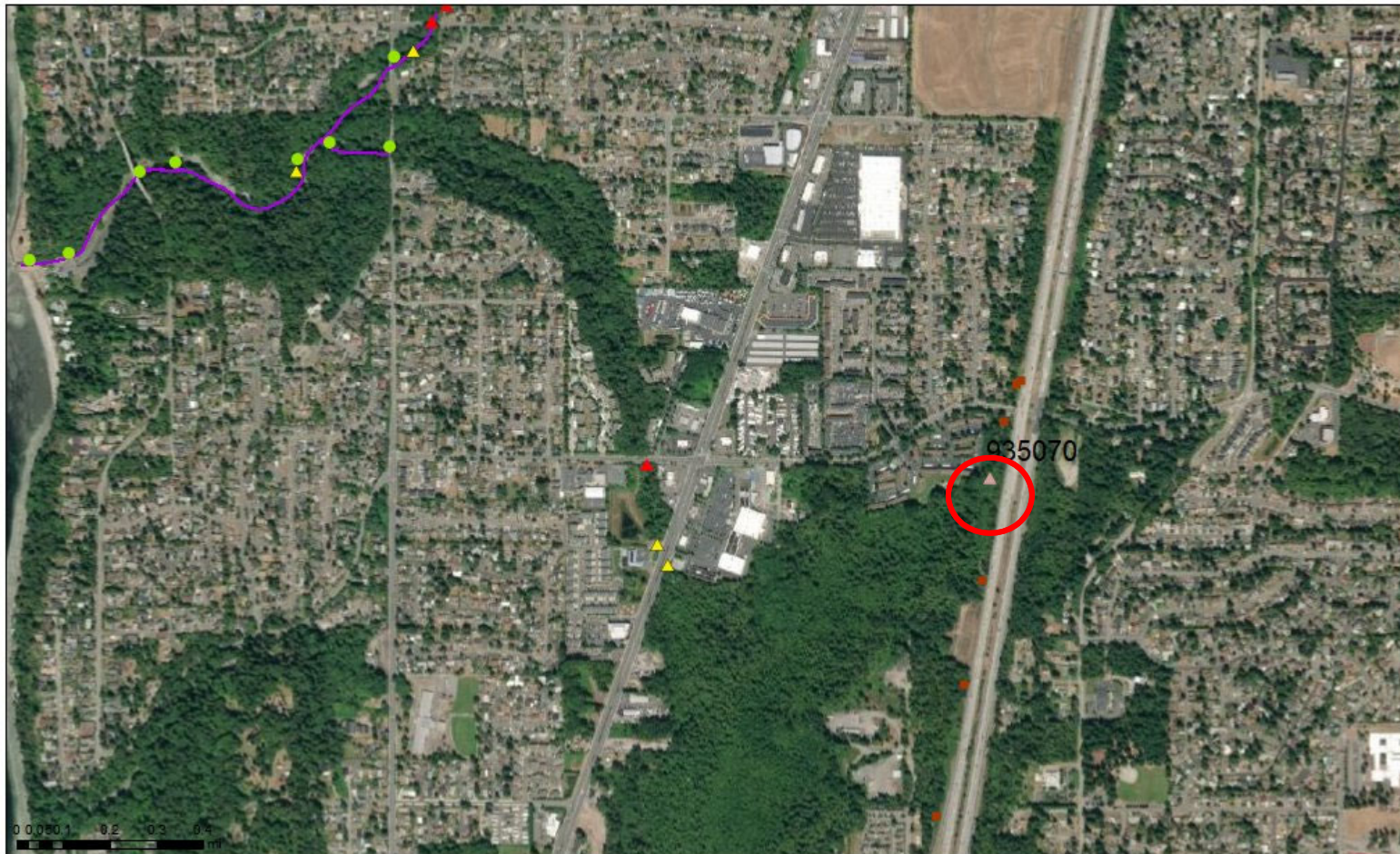
Facing upstream at pipe outlet



Facing downstream at pipe outlet



# 935070 UNT SF McSorely Creek



## Washington State Fish Passage



- Not a barrier
- ▲ Partial Fish Passage Blockage
- ▲ Total Fish Passage Blockage
- ▲ Barrier, Unknown Percent Passable
- Diversion
- ▲ Natural Barrier - Verified
- On a Non-Fish Bearing Stream
- Unknown
- Corrected Barriers
- Fish Distribution

<http://apps.wdfw.wa.gov/fishpassage/textent=122.3252,47.3604,122.2817,47.3783>

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## 935070 UNT SF McSorely Creek



Upstream gain: 144m

Primary water source is groundwater

Project activity at this location is roadway widening for auxiliary lane. Project is reviewing site conditions (ST identified liquefiable soils) to determine structure options and timing.



## 935070 – SF McSorely Creek, photos: spring, 2021



# Barrier Correction Challenges

**935070:** 144m of habitat gain.

Liquefiable soils discovered by Sound Transit. Ten lanes of I-5 flanked by ST guideway to the west and PFO wetland to the east. The roadway is currently built on fill, approximately 45ft above the culvert/stream elevation.

**WDFW Site ID 935212:** 80m of habitat gain.

Drains to standpipe and then piped ~1,000ft to Des Moines Creek.

# Barrier Correction Opportunities

**We can do better.**

We can do more.

Project staff reviewed WDFW barrier database, WRIA 9 Draft Salmon Habitat Plan, Local jurisdictions Shoreline Plans, as well as outreach to city and county staff for suggestions of mitigation options. Draft list below compiles projects identified near the areas of known barriers.



## Alternatives: Conceptual Mitigation Opportunities Identified

		Fish Passage Barrier Correction	Add'l LF of stream (new, restored)	Impervious Surface	Hwy Stormwater	WQ (other)	GW Recharge	L.W./M., Habitat Enhancement	Marine Shoreline Enhancement	Riparian Enhancement/Restoration	wetland Enhancement/Restoration
	Scope of Work										
McSorley Creek	Install stormwater conveyance systems, new stormwater detention facility, storm pipes, diversion structure along McSorley Creek				X	X	X				
	Public (city/co) 100% fish barrier correction over McSorley Creek	X	X					X		X	X
	Public (city/co) 67% fish barrier correction over McSorley Creek	X	X					X		X	X
Barnes / Massey Creek	Acquire property, restore stream habitat, restore fish passage, remove the jetty and rock from the south bank, and create a pocket estuary along Puget Sound	X	X	X		X		X	X	X	X
	Install 2 new stormwater conveyance systems, improve channel and spawning habitat, replace existing storm drains and one culvert along Massey Creek	X			X	X		X			
	Private 67% Fish barrier correction at mouth of Massey CR	X	X					X		X	X
	Private 67% Fish barrier correction at mouth of Massey CR	X	X					X		X	X
	Public (city) fish barrier correction at upstream area in Barnes Cr.	X	X					X		X	X
	Acquire property(s) to re-align Massey Creek for linear ft gain, improve habitat features instream and riparian		X				X	X		X	X
Nearshore Puget Sound	Protect and restore 1000+ ft. of active feeder bluff along mainland marine nearshore										
Nearshore Puget Sound - Salmon Creek	Private 100% fish barrier correction at mouth of Salmon Creek	X	X					X		X	X
	Public (city/co) 100% barrier correction mid-reach of Salmon Creek	X	X					X		X	X
Nearshore Puget Sound - Federal Way	Protect 900 feet of active feeder bluffs that occurs in the first third of the drift cell.								X		
	Public (city/co) 100% fish barrier correction at mouth of Redondo Creek	X	X					X		X	X
	Public (city/co) 100% fish barrier correction lower reach of Redondo Creek	X	X					X		X	X
	Public (city/co) 100% fish barrier correction at Cold Creek	X	X					X		X	X
	Public (city/co) 100% fish barrier correction at Cold Creek	X	X					X		X	X
	Public (city/co) 100% fish barrier correction at UNT to Puget Sound	X	X					X		X	X

# Discussion/Questions

- Initial thoughts on mitigation for fish passage barriers?
- Initial thoughts on in-kind vs out-of-kind mitigation projects?
- If out-of-kind bundling or pairing is optional, what does the tribe see as a priority? (water quality, flow control, riparian enhancement, green space preservation, instream habitat, impervious surface reduction, shoreline softening, etc)
- Initial thoughts on prioritizing sites within the sub-basin or nearby streams? Ex: McSorely Creek vs other basins (or tributaries)
- Does the PTOI have any specific projects they would like for us to investigate as potential mitigation?
- Field visit?