

Barnes Creek Mitigation Site

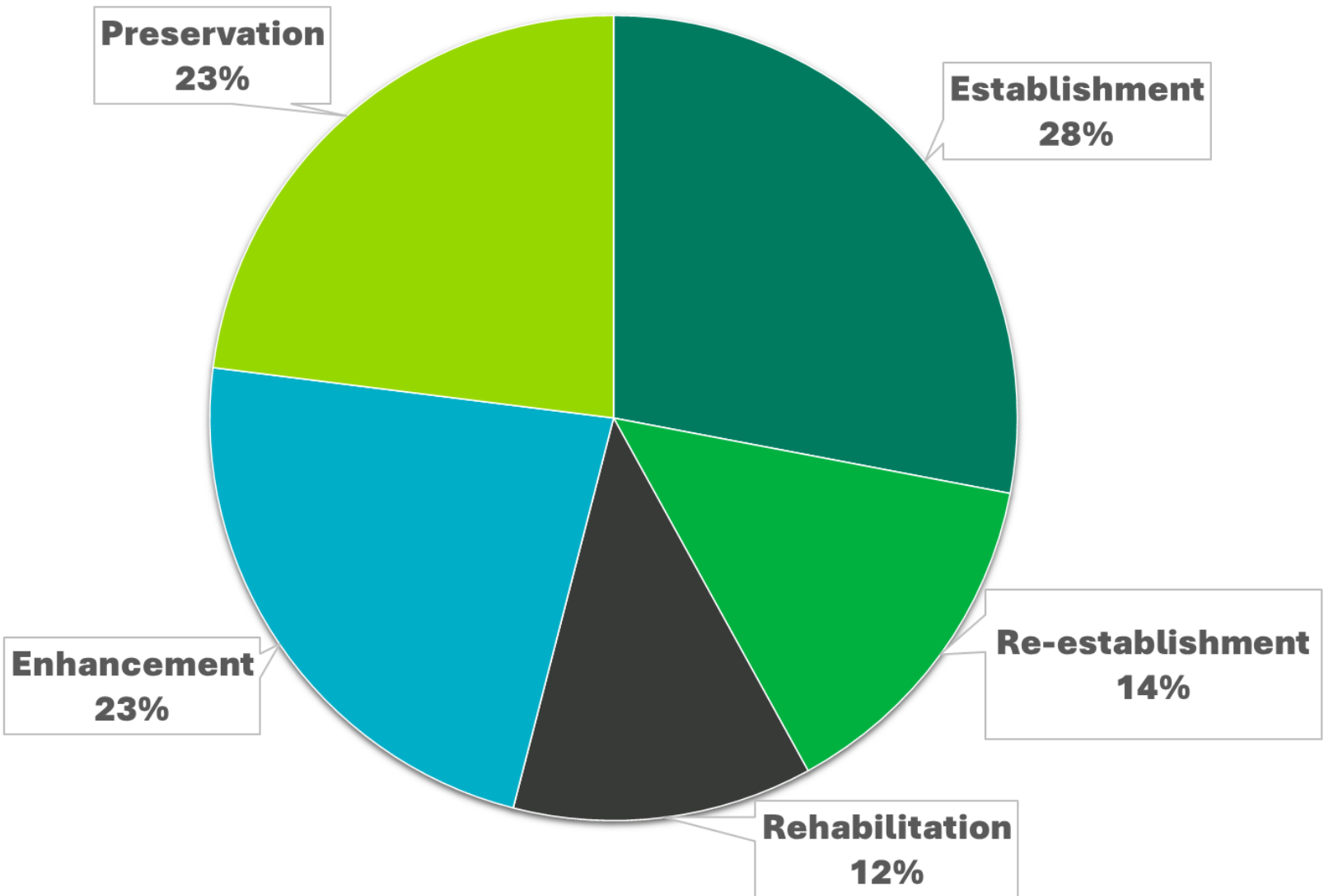
Prioritizing a Preservation Concept in an Urban Environment

Jennie Husby, WSDOT Wetland Biologist

Maki Dalzell, PWS, HNTB

October 2024

WSDOT permittee- responsible mitigation





DEPARTMENT OF
ECOLOGY
State of Washington



US Army Corps
of Engineers
Seattle District



Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance

Version 2

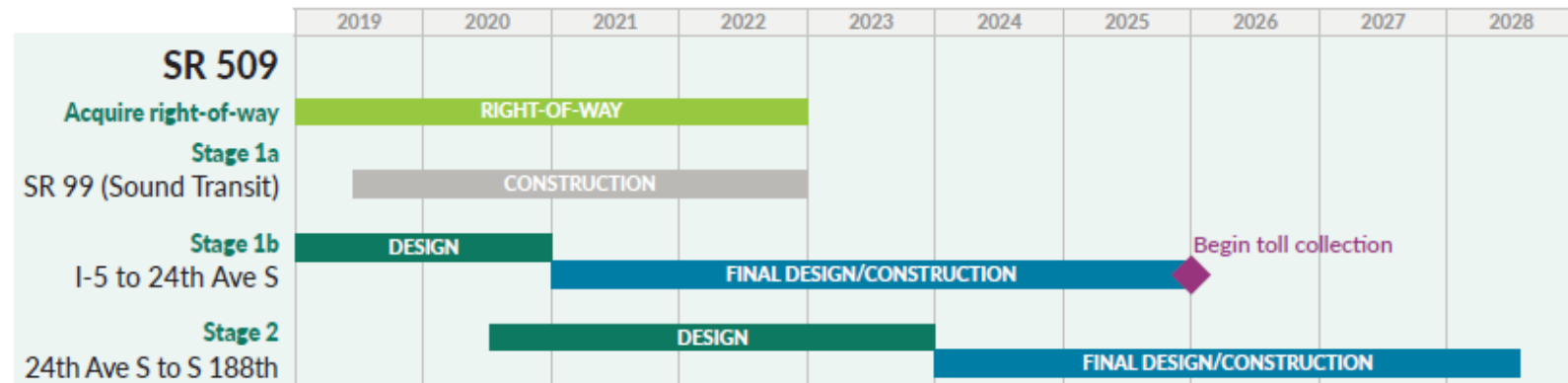
April 2021
Publication 21-06-003

"Preservation has the following advantages as a compensatory mitigation tool:

- Preservation can ensure protection of high-quality, high-functioning aquatic systems that are critical for the health of the watershed.
- **Preservation can help maintain and protect habitat corridors that connect otherwise isolated wetland habitats.**
- Preservation does not involve the uncertainty of success inherent in restoration, creation, or enhancement.
- Preservation of wetlands collectively throughout a watershed (i.e., through corridors and habitat patch-network connectivity) helps maintain and protect the environmental processes of the watershed.
- Preservation is the most ecologically effective option for wetland types that are rare or impossible to replace such as peatlands and old-growth or mature forested wetlands."

SR 509 Completion Project

- **SR 509 – Stage 1a**
Opened to traffic in 2022
- **SR 509 – Stage 1b**
I-5 to 24th Avenue South
New Expressway
Open to traffic in 2025
- **SR 509 – Stage 2**
24th Avenue South to
South 188th Street New
Expressway
Open to traffic by 2028

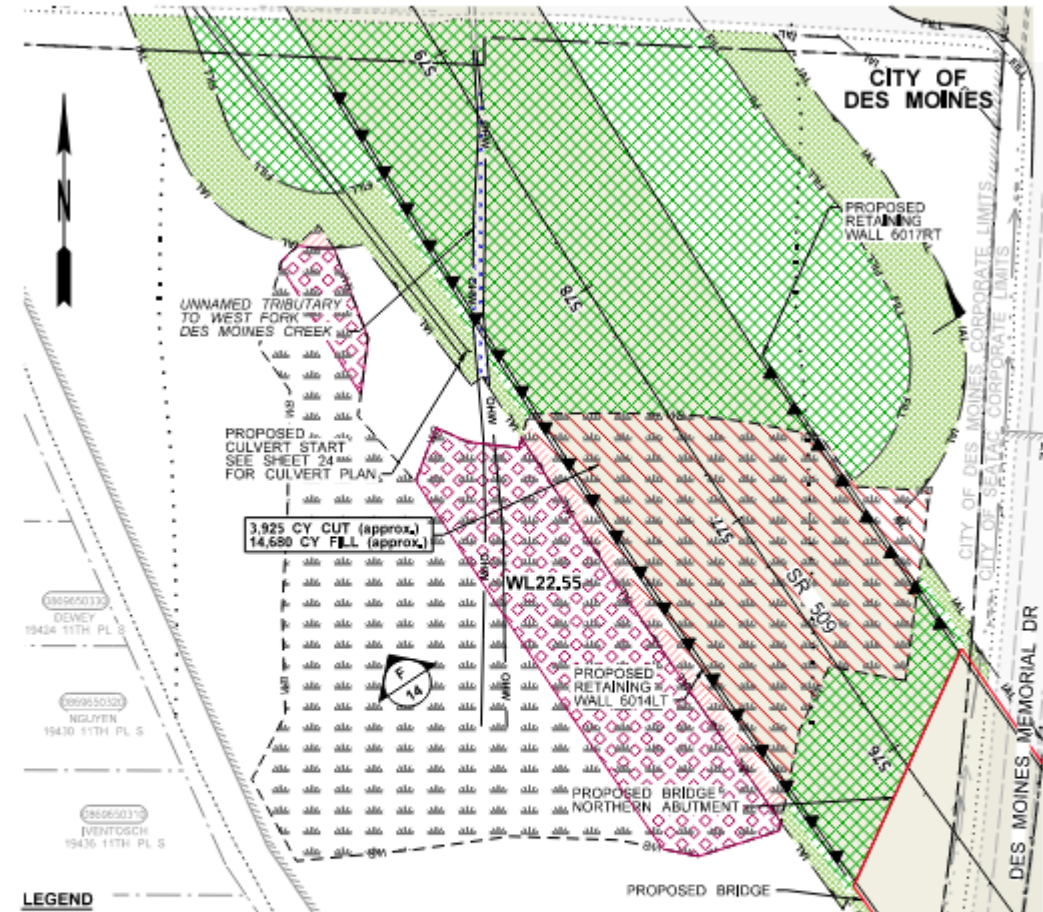


History of SR 509 Completion Project

Year	Milestone
1960s-1990s	Purchased 3.3 miles of right-of-way for the new SR 509 route
1995	Released Tier I Corridor Draft Environmental Impact Statement (DEIS)
2002	Published Tier II DEIS
2003	Final EIS and Record of Decision (ROD) approved
2006	Published Final Wetland Mitigation Report
2008	Project pause due to loss of funding
2007-2011	Some mitigation work were carried forward and constructed
2015	State legislature funded the project under the Puget Sound Gateway Program
2020-2021	Re-delineated/re-assessed wetlands and other sensitive areas in the corridor
2023	Finalized Conceptual Wetland Mitigation Report for Stage 2 Obtained 401/404 permits

Stage 2 Wetland Impacts

Impact Type	Duration	Acres
Wetland Impact	Permanent	1.48
	Long-term Temporary	0.53
	Permanent Conversion	0.62
	Indirect	0.94
Wetland Buffer Impact	Permanent	1.08
	Temporary	1.06



LEGEND

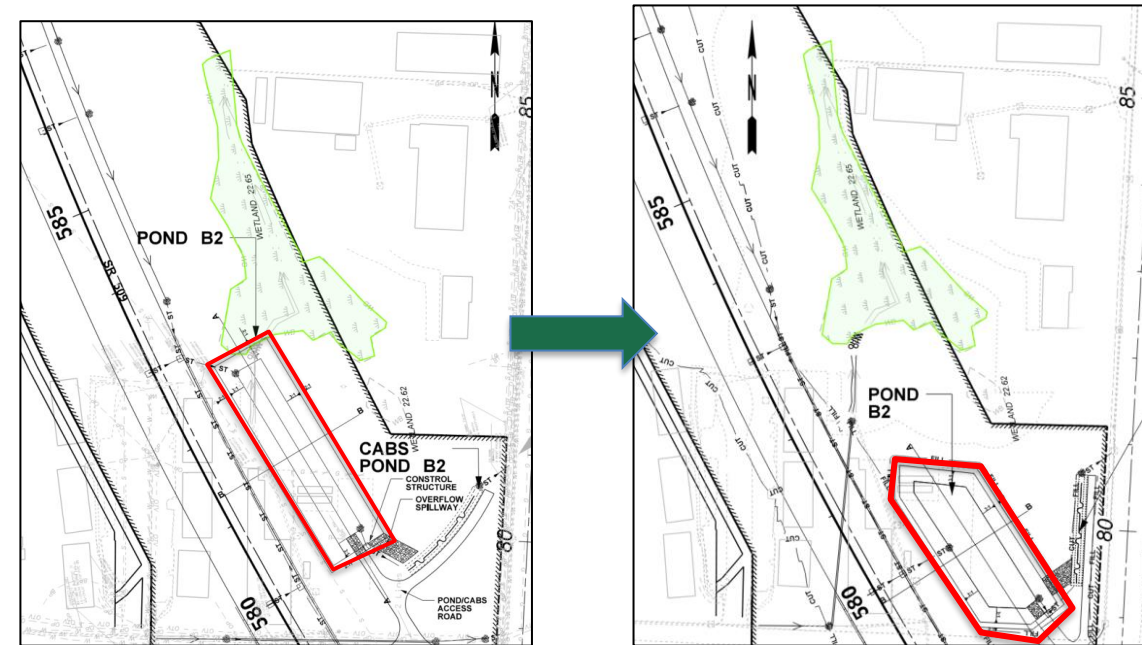
- | | | | |
|--|-------------------------|--|---------------------------------------|
| | WSDOT RIGHT OF WAY | | 465 ALIGNMENT & STATION |
| | CITY RIGHT OF WAY | | PROPOSED BRIDGE |
| | PROPERTY LINE | | CUT CUT LINE |
| | EXISTING DITCH | | FILL FILL LINE |
| | PROPOSED DITCH | | IMPACT AREA LINE |
| | EXISTING CULVERT | | WETLAND BOUNDARY |
| | PROPOSED CULVERT | | WETLAND |
| | EXISTING PAVEMENT | | WETLAND BUFFER |
| | PROPOSED PAVEMENT | | STREAM BOUNDARY (ORDINARY HIGH WATER) |
| | EXISTING RETAINING WALL | | STREAM BUFFER |
| | PROPOSED RETAINING WALL | | |

WETLAND 22.55		
	SQ. FT.	ACRES
WETLAND AREA	33,416	0,77
PERM WETLAND IMPACT	10,593	0,24
TEMP WETLAND IMPACT	894	0,02
INDIRECT WETLAND IMPACT	7,790	0,18
PERM WETLAND BUFFER IMPACT	27,792	0,64
TEMP WETLAND BUFFER IMPACT	7,936	0,18

UNIT WEST FORK DES MOINES CREEK		
	SQ. FT.	ACRES
PERM. STREAM IMPACT		SHEET 11 SHEET 11

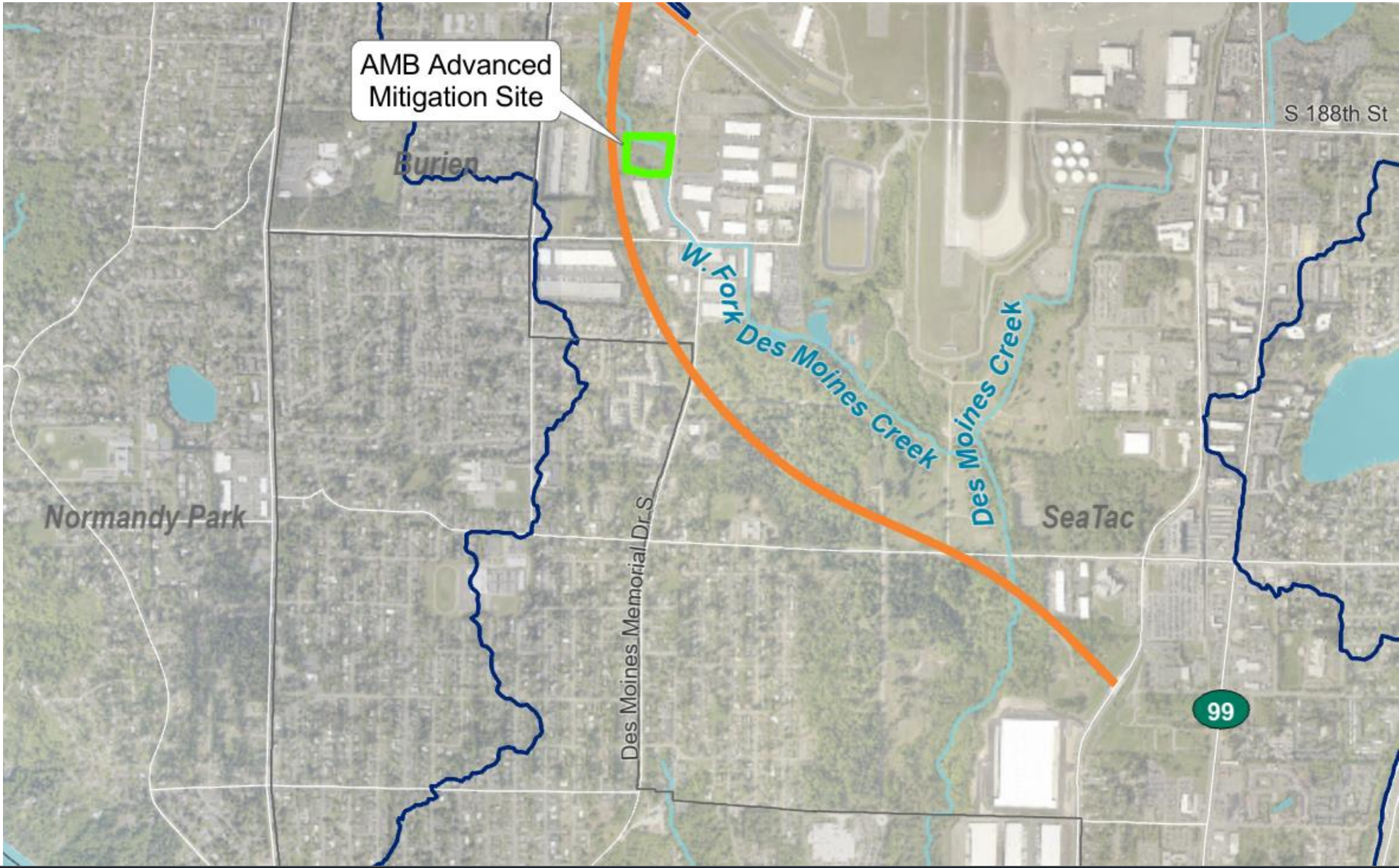
Avoidance & Minimization

- Adjusting the horizontal and vertical alignment (i.e. bridge height) during early planning phases
- Spanning wetlands and locating bridge piers outside of wetlands to the greatest extent practicable.
- Incorporating retaining walls wherever feasible.
- Locating stormwater treatment ponds, vaults, and drains outside of wetlands.
- Widening needed for the I-5 southbound auxiliary lane will occur toward the inside median instead of toward the outside lane to avoid wetland impacts



Compensation

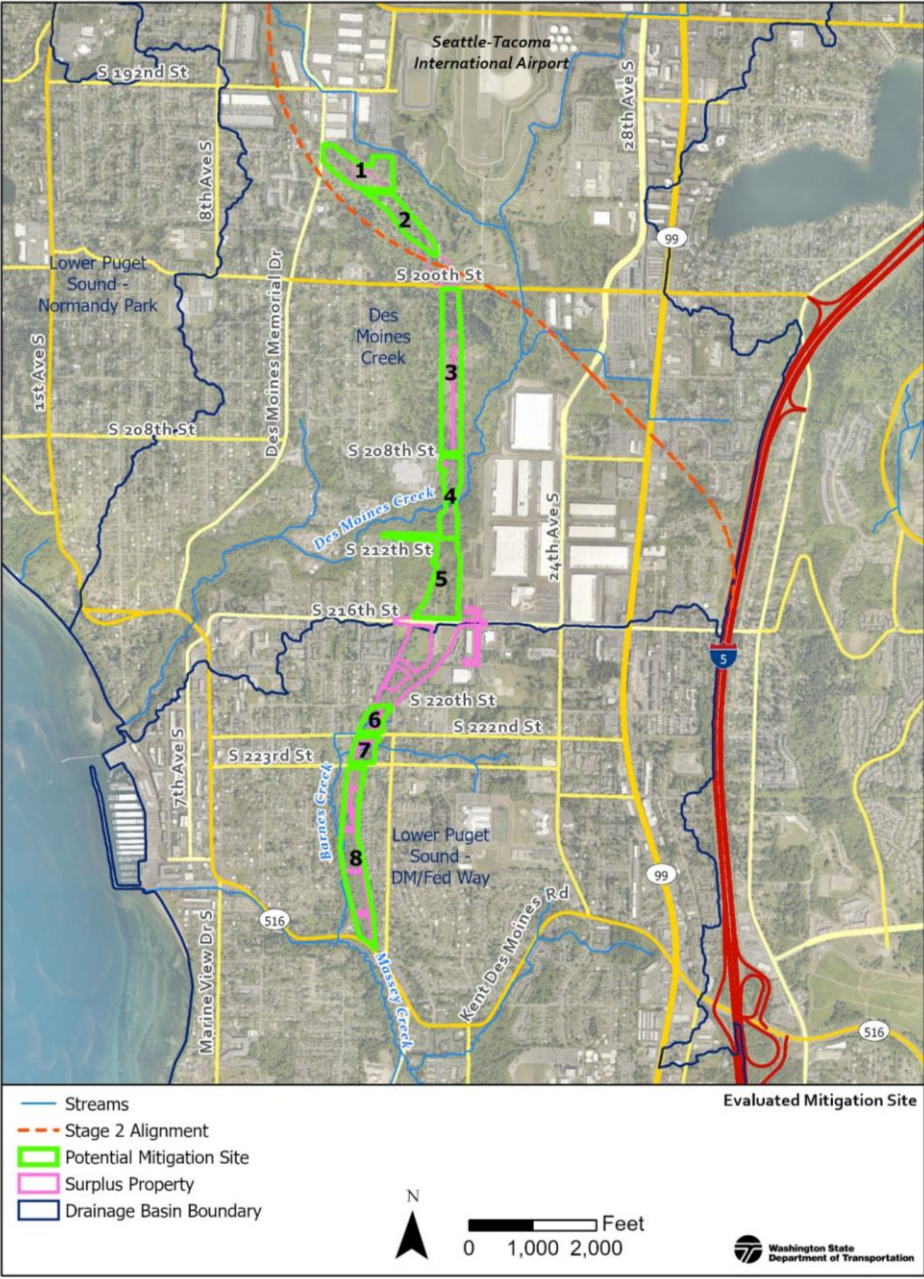
- Stage 2 Project Footprint
- Mitigation Site
- Stream
- Water
- Des Moines Creek Drainage Basin



Compensation

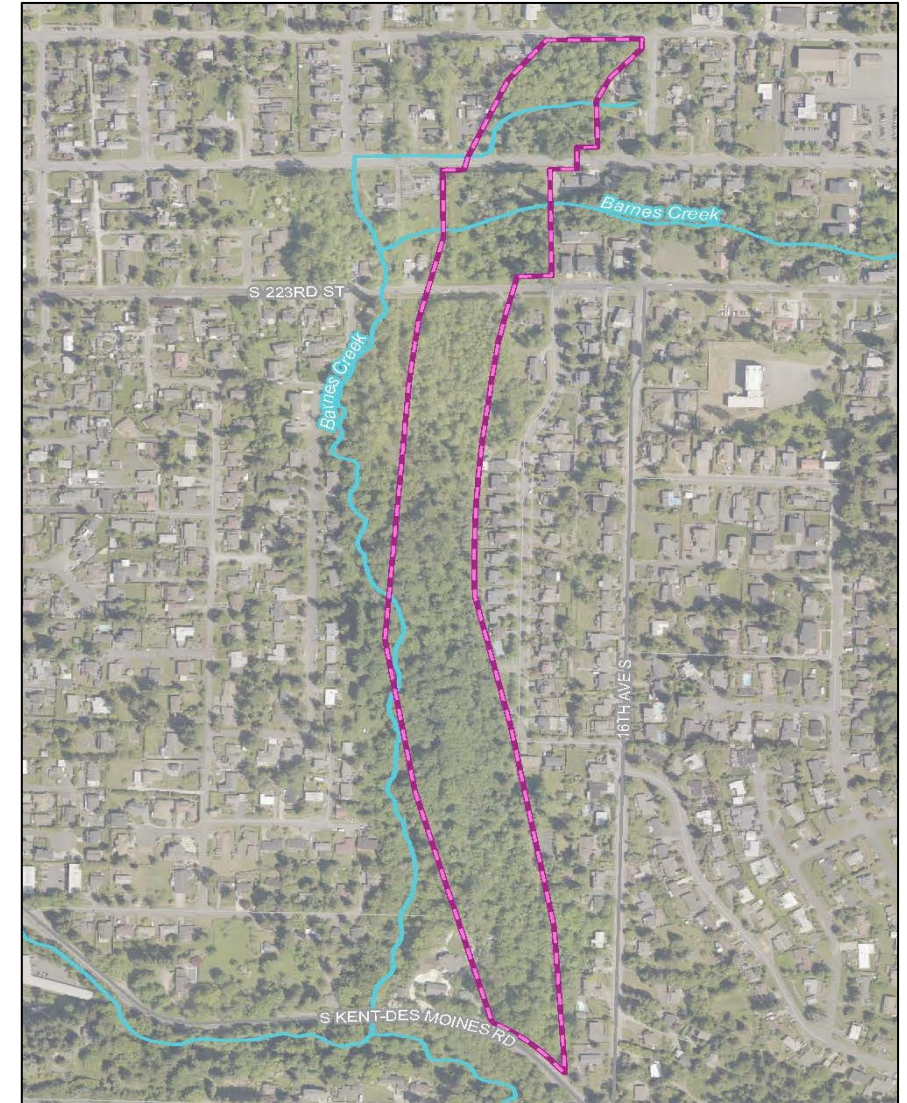
Impact Type	Acres	Credit to be used at AMB Mitigation Site	Credit still needed
Permanent Wetland Impact	1.48	1.573 establishment credit 0.002 enhancement credit	0
Long-term Temporary Wetland Impact	0.53	0.279 enhancement credit	0
Permanent Wetland Conversion	0.62	0.05 enhancement credit 0.740 preservation credit	2.094 wetland preservation credit
Indirect Wetland Impact	0.94	0	2.927 upland preservation credit
Permanent Wetland Buffer Impact	1.08	0	1.42 upland preservation credit

WSDOT surplus properties



Barnes Creek - Site Conditions

- Approximately 20 acres
- Currently undeveloped but at risk once surplused
- High-intensity residential surrounding the site
- Barnes Creek and its tributary run along the western perimeter
- Wetland delineation conducted in June 2021 and identified 17 depressional/slope wetlands (2 Category II, 13 Category III, and 2 Category IV wetlands)
- Immediately upstream from the corrected fish barrier at SR 516

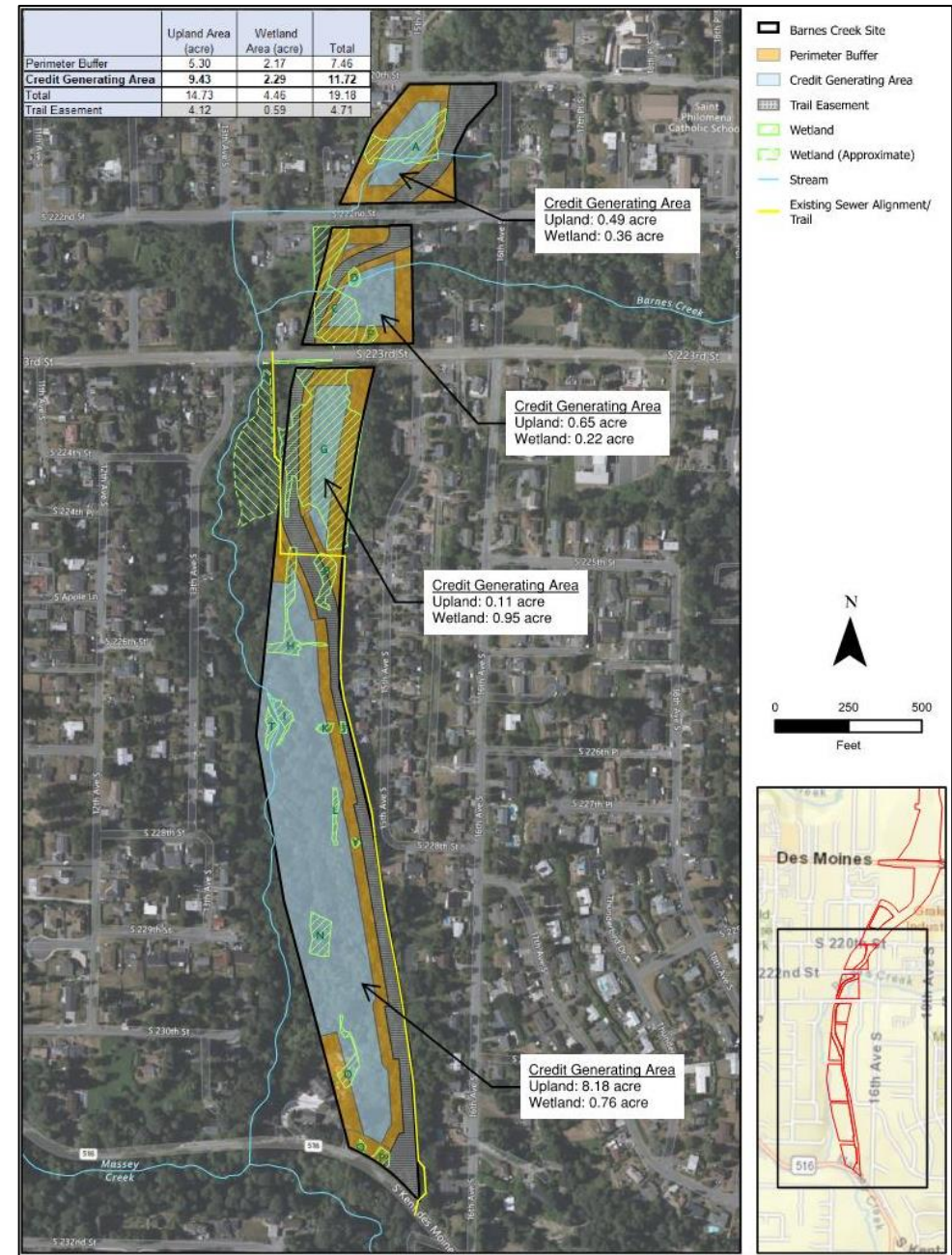


Proposed Ratios at Barnes Creek

- 4:1 for Wetland Preservation for Cat II Permanent Conversion Impacts (1/2 of 8:1)
- 6:1 for Wetland Preservation for Cat III Permanent Conversion Impacts (1/2 of 12:1)
- 3.25:1 for Upland Preservation for Cat II Indirect Impact (1/4 of 13:1)
- 2.5:1 for Upland Preservation for Cat III Indirect Impacts (1/4 of 10:1)
- 1:1 for Buffer Impacts

Challenges

- Planned Future Trail
- Varied Perimeter Buffers
 - 60 feet within the site boundary
 - 25-40 feet along the trail easement
 - No perimeter buffers on steep ravines
- Invasive Species Removal
- Encroachment/Encampment



Current Status

- Summer 2024 – Invasive Removal
- Fall 2024 - Planting



Summary Points

- Consider prioritizing riparian corridors that need protection
- Take advantage of properties that you already have
- A combined approach with other mitigation types (re-establishment or enhancement) could get you what you need for compensatory mitigation with preservation
- Upland preservation may be used to compensate for indirect wetland impacts
- Start coordinating early!