

# WRIA 8 Salmon Habitat Project List

## Puget Sound Nearshore

Wednesday, August 30, 2017

### APPLICABLE STRATEGIES LEGEND:



Protect and restore floodplain connectivity



Protect and restore cold water sources and reduce thermal barriers to migration



Protect and restore forest cover and headwater areas



Protect and restore marine water and sediment quality, especially near commercial and industrial areas



Protect and restore functional riparian vegetation



Improve juvenile and adult survival at the Ballard Locks



Provide adequate stream flow



Improve water quality



Protect and restore channel complexity



Reduce predation on juvenile migrants and lake-rearing fry



Restore sediment processes necessary for key life stages



Integrate salmon recovery priorities into local and regional planning, regulations, and permitting (SMP, CAO, NPDES, etc.)



Restore shallow water rearing and refuge habitat



Remove (or reduce impacts of) overwater structures



Restore natural marine shoreline



Continue existing and conduct new research, monitoring, and adaptive management on key issues



Reconnect and enhance creek mouths





Remove fish passage barriers





Reconnect backshore areas and pocket estuaries





Increase awareness and support for salmon recovery


Feeder Bluff Restoration Feasibility Study			Description	Opportunities, Constraints, and other Considerations	Applicable Strategies
Project Number	PS-1		Nearshore feasibility assessment to identify potential beach nourishment locations and develop beach nourishment designs for restoration implementation.	Both King County and Snohomish County have identified locations for beach nourishment. Designs are a future phase.	 <p>Nearshore</p>
Four-Year Work Plan?	Project Location				
No	Nearshore				
Estimated Project Costs					
Acquisition	Restoration	Total			
Picnic Point Culvert Replacement			Description	Opportunities, Constraints, and other Considerations	Applicable Strategies
Project Number	PS-2		Replacement of the existing culvert under the railroad with a trestle to restore connectivity and improve sediment transport from the uplands. Project may also benefit fish passage.	Lots of drainage/slope stability problems exist in the drainage. Site receives quite a bit of sediment deposition from the creek but could be improved with the installation of a trestle. Two fish passage barriers upstream from the park have been identified.	 <p>Creek Mouths</p>
Four-Year Work Plan?	Project Location				
No	Snohomish County				
Estimated Project Costs					
Acquisition	Restoration	Total			


Meadowdale Beach Park Estuary and Shoreline Restoration			Description	Opportunities, Constraints, and other Considerations	Applicable Strategies
Project Number	PS-3		<p>Enhance non-natal rearing habitat by removing a portion of the hard-armored railroad embankment and the undersized culvert for Lund’s Gulch Creek. Install a multi-span bridge, create nearly one acre of tidal marsh pocket estuary and stream-connected wetlands, and restore approx. one acre of nearshore stream and riparian buffers along 1050 ft. of shoreline. The bridge opening will improve sediment delivery and natural process.</p>		 <p>Backshore      Creek Mouths</p>
Four-Year Work Plan?	Project Location				
Yes	Snohomish County				
Estimated Project Costs					
Acquisition	Restoration	Total			


Meadowdale Marina Acquisition and Removal			Description	Opportunities, Constraints, and other Considerations	Applicable Strategies
Project Number	PS-4		<p>Acquire and remove the dilapidated marina structure. The site is a total of 2.17 acres, with the buildings/wharfs representing approx. 1.7 acres of over-water structures.</p>		 <p>Overwater Structures</p>
Four-Year Work Plan?	Project Location				
No	Snohomish County				
Estimated Project Costs					
Acquisition	Restoration	Total			



Shell Creek Beach Nourishment			Description	Opportunities, Constraints, and other Considerations	Applicable Strategies
			Conduct beach nourishment activities at the mouth of Shell Creek near Yost Park.		 Nearshore
Project Number	PS-5				
Four-Year Work Plan?	Project Location				
No	Snohomish County				
Estimated Project Costs					
Acquisition	Restoration	Total			


Shell Creek Culvert Replacement			Description	Opportunities, Constraints, and other Considerations	Applicable Strategies
			Replace the existing culvert where Shell Creek crosses the railroad with a trestle to restore connectivity and improve sediment transport.		 Creek Mouths
Project Number	PS-6				
Four-Year Work Plan?	Project Location				
No	Snohomish County				
Estimated Project Costs					
Acquisition	Restoration	Total			


Brackett's Landing Park Vegetation Enhancement			Description	Opportunities, Constraints, and other Considerations	Applicable Strategies
Project Number	PS-7		<p>Riparian vegetation enhancement at Brackett's Landing including addition of low-growing trees. There is an invasive species problem just to the north of the site. Further enhance the marine riparian vegetation by adding native plants to existing backshore areas and removing non-native invasive plants.</p>	<p>Surf smelt and sand lance spawning has been documented along Olympic Beach and Brackett's Landing. The southwestern two-thirds of Olympic Beach is modified by a sea wall. The City of Edmonds owns all but 100 feet of the tidelands in this area and about two-thirds of the adjoining upland property. Heavily used public area; feasibility is likely low.</p>	 <p>Riparian Vegetation</p>
Four-Year Work Plan?	Project Location				
No	Edmonds				
Estimated Project Costs					
Acquisition	Restoration	Total			



Willow Creek Daylighting			Description	Opportunities, Constraints, and other Considerations	Applicable Strategies
Project Number	PS-8		<p>Daylight Willow Creek downstream of Edmonds Marsh to create an open channel connection between the Sound and marsh and allow fish access into the marsh for rearing.</p>		 <p>Backshore</p>
Four-Year Work Plan?	Project Location				
Yes	Edmonds				
Estimated Project Costs					
Acquisition	Restoration	Total			

Woodway Tidal Lagoon North			Description	Opportunities, Constraints, and other Considerations	Applicable Strategies
Project Number	PS-9		Potential culvert improvement project at an intertidal lagoon and mud flat where railroad was built offshore. Site is just south of Point Edwards Park.	Potential fresh water seepage into lagoon could make for good shallow water habitat. Site should be investigated further, as little is currently known.	 <p>Backshore</p>
Four-Year Work Plan?	Project Location				
No	Woodway				
Estimated Project Costs					
Acquisition	Restoration	Total			


Deer Creek Restoration or Culvert Replacement			Description	Opportunities, Constraints, and other Considerations	Applicable Strategies
Project Number	PS-10		Enhance the connectivity of Deer Creek and the associated estuarine wetland with the nearshore by replacing the two concrete culverts with an oversized culvert or a trestle bridge. Include in the project an assessment of the tidal lagoon just north of the creek mouth and whether the lagoon connection or lagoon itself can be enhanced.	Site hosts several small tidal lagoons upstream of tracks that could be improved. Significant amount of forested area in basin. Deer creek is too steep for fish passage.	  <p>Creek Mouths      Backshore</p>
Four-Year Work Plan?	Project Location				
No	Woodway				
Estimated Project Costs					
Acquisition	Restoration	Total			


Point Wells Complete Site Restoration			Description	Opportunities, Constraints, and other Considerations	Applicable Strategies
Project Number	PS-11		Restore the entire Point Wells site by completely removing the sea wall, riprap dike, and fill. Regrade the site and reconnect local freshwater sources to re-create a tidal lagoon system with an opening at the north end of the point, which was probably the original mouth of the tidal lagoon system. Reestablish native riparian and backshore vegetation.		 Nearshore      Backshore
Four-Year Work Plan?	Project Location				
No	Snohomish County				
Estimated Project Costs					
Acquisition	Restoration	Total			



Migratory Area Riparian Restoration and Invasive Species Control			Description	Opportunities, Constraints, and other Considerations	Applicable Strategies
Project Number	PS-12		Control invasive species on a coordinated basis in priority shoreline habitats and implement planting with native species in treated areas.		 Riparian Vegetation
Four-Year Work Plan?	Project Location				
Yes	Nearshore				
Estimated Project Costs					
Acquisition	Restoration	Total			


South Point Wells Habitat Acquisition and Restoration			Description	Opportunities, Constraints, and other Considerations	Applicable Strategies
Project Number	PS-13		<p>Enhance the south shoreline by removing riprap dike, eliminating invasive plants, and reestablishing native riparian and backshore vegetation. Evaluate re-creating three acre intertidal lagoon that may have been historic marsh before being filled.</p>		 <p>Nearshore      Backshore</p>
Four-Year Work Plan?	Project Location				
No	Snohomish County				
Estimated Project Costs					
Acquisition	Restoration	Total			
Point Wells North Habitat Acquisition and Restoration			Description	Opportunities, Constraints, and other Considerations	Applicable Strategies
Project Number	PS-14		<p>Acquisition and protection of a very small (~ 1 acre) remnant piece of marine riparian habitat exists on the north side of Point Wells. Despite the proximity to the Point Wells site, it would be a valuable piece to protect and restore. Approx. 850 ft of shoreline.</p>		 <p>Riparian Vegetation</p>
Four-Year Work Plan?	Project Location				
No	Snohomish County				
Estimated Project Costs					
Acquisition	Restoration	Total			








Richmond Beach North Property Acquisition and Restoration			Description	Opportunities, Constraints, and other Considerations	Applicable Strategies
Project Number	PS-15		Acquisition, demolition, and restoration of shoreline where numerous (30+) homes that are built in the nearshore north of Richmond Beach park.		 <p>Nearshore</p>
Four-Year Work Plan?	Project Location				
No	Shoreline				
Estimated Project Costs					
Acquisition	Restoration	Total			


Barnacle Creek Wetland Enhancement			Description	Opportunities, Constraints, and other Considerations	Applicable Strategies
Project Number	PS-16		Enhance tidally influenced wetland habitat on the east side of Burlington Northern Railroad Tracks at Barnacle Creek. Evaluate whether better connection through culvert replacement would be beneficial.	Is at least partially fish passable and already has wetland characteristics.	 <p>Backshore</p>
Four-Year Work Plan?	Project Location				
No	Shoreline				
Estimated Project Costs					
Acquisition	Restoration	Total			



Pipers Creek Culvert Replacement			Description	Opportunities, Constraints, and other Considerations	Applicable Strategies
Project Number	PS-17		Replace the existing culvert under the railroad with a trestle to restore connectivity and improve sediment transport. Evaluate upstream passage problems and address in ways that would improve juvenile Chinook access.	Proximity to Salmon Bay makes this site potentially valuable for restoration.	 Creek Mouths
Four-Year Work Plan?	Project Location				
No	Seattle				
Estimated Project Costs					
Acquisition	Restoration	Total			
Golden Gardens Pocket Estuary Feasibility Study			Description	Opportunities, Constraints, and other Considerations	Applicable Strategies
Project Number	PS-18		Explore creation of pocket estuary at Golden Gardens Park that juvenile fish can access. The north end of the park has a perched wetland area that has a great deal of flat land that could be converted to a more substantial wetland complex. North end of the park could be modified to allow fish access to the wetland.		 Backshore
Four-Year Work Plan?	Project Location				
No	Seattle				
Estimated Project Costs					
Acquisition	Restoration	Total			



36th Ave. NW Street End on Salmon Bay			<b>Description</b> Increase rearing/refuge habitat for juveniles by restoring the conditions at this site, which is located downstream of the Salmon Bay Natural Area just west of the railroad bridge. Alternative bank protection measures would be used to create a more gradual slope. In addition, riparian and emergent vegetation could be planted, and the substrate could be amended to restore nearshore habitat. Site includes approximately 70 ft. of shoreline.	<b>Opportunities, Constraints, and other Considerations</b>	<b>Applicable Strategies</b>  Nearshore
<b>Project Number</b>	PS-19				
<b>Four-Year Work Plan?</b>	<b>Project Location</b>				
No	Seattle				
<b>Estimated Project Costs</b>					
<b>Acquisition</b>	<b>Restoration</b>	<b>Total</b>			


Commodore Park and Wolfe Creek Restoration			<b>Description</b> Explore feasibility of habitat restoration at Commodore Park, located immediately downstream of the Hiram M. Chittenden Locks on the south bank. Purpose of the project would be to increase the limited high-quality rearing/refuge habitat for smolts that migrate through this area. Armored seawall should be removed and restored to a gentler, vegetated slope. Project could be combined with daylighting Wolfe Creek to create a pocket estuary downstream of the Locks.	<b>Opportunities, Constraints, and other Considerations</b>	<b>Applicable Strategies</b>   Nearshore      Creek Mouths
<b>Project Number</b>	PS-20				
<b>Four-Year Work Plan?</b>	<b>Project Location</b>				
No	Seattle				
<b>Estimated Project Costs</b>					
<b>Acquisition</b>	<b>Restoration</b>	<b>Total</b>			



West Point Pocket Estuary			Description	Opportunities, Constraints, and other Considerations	Applicable Strategies	
Project Number	PS-21		<p>Explore creation of pocket estuary at West Point. This area used to have some form of salt marsh that appears to have allowed fish access. Currently there is a skinny, long, perched wetland between the bulkhead and the facility. Explore possibility to expand the length of this wetland (towards the lighthouse) and come up with a permanent engineering solution to allow fish access.</p>	<p>Site is currently not tidally influenced. A heavily engineered solution would be required to maintain such an estuary, but it is one of the few opportunities available.</p>	 Backshore	
Four-Year Work Plan?	Project Location					
No	Seattle					
Estimated Project Costs						
Acquisition	Restoration	Total				
Scheuerman Creek Riparian and Marine Shoreline Restoration			Description	Opportunities, Constraints, and other Considerations	Applicable Strategies	
Project Number	PS-22		<p>Remove barrier at the mouth of Scheuerman Creek, enhance creek mouth, remove shoreline armoring, and restore native riparian vegetation to provide juvenile rearing habitat in the nearshore.</p>		 Creek Mouths	 Nearshore
Four-Year Work Plan?	Project Location					
Yes	Seattle					
Estimated Project Costs						
Acquisition	Restoration	Total				


City of Mukilteo's Riparian Vegetation Enhancement			Description	Opportunities, Constraints, and other Considerations	Applicable Strategies
Project Number			Implement nearshore riparian revegetation on priority sites identified in Mukilteo's 2011 Draft Shoreline Plan.		 <p>Riparian Vegetation</p>
PS-23					
Four-Year Work Plan?					
Project Location					
No					
Mukilteo					
Estimated Project Costs					
Acquisition	Restoration	Total			


Boeing Creek Mouth and Delta Restoration			Description	Opportunities, Constraints, and other Considerations	Applicable Strategies
Project Number			Restoration of Boeing Creek mouth and delta, to occur in concert with removal of Hidden Lake Dam and other upstream improvements that will facilitate increased downstream sediment transport. Proposed upstream dam removal will provide sediment nourishment benefits to Boeing Creek mouth and delta. Explore possibility to remove existing culvert at railroad to enhance nearshore process.	Allowing sediment to move through the system is the easiest and cheapest way to get beach nourishment along the nearshore, thereby restoring this creek's mouth and delta habitats. It is not necessary to remove fish passage barriers upstream of the creek mouth to enable greater sediment transport to the nearshore, since those barriers do not trap sediment. Habitat and fish passage conditions are good in the lower ~ 1000 feet of Boeing Creek, but the culvert crossing of the railroad right	 <p>Creek Mouths</p>  <p>Nearshore</p>
PS-24					
Four-Year Work Plan?					
Project Location					
No					
Shoreline					
Estimated Project Costs					
Acquisition	Restoration	Total			

Shilshole Bay Shoreline Restoration Assessment			Description	Opportunities, Constraints, and other Considerations	Applicable Strategies
Project Number	PS-25		SPU-led project to assess sites for potential future shoreline restoration along Shilshole segment of shoreline.		 Nearshore
Four-Year Work Plan?	Project Location				
No	Seattle				
Estimated Project Costs					
Acquisition	Restoration	Total			
Naketa Beach Home Acquisition and Restoration			Description	Opportunities, Constraints, and other Considerations	Applicable Strategies
Project Number	PS-26		Purchase the fee simple property rights for all of the parcels and remove the houses, fill, and sea wall.	Currently 12 houses in the proposed project area, but southernmost parcel has no structure.	 Nearshore
Four-Year Work Plan?	Project Location				
No	Mukilteo				
Estimated Project Costs					
Acquisition	Restoration	Total			


City of Mukilteo Tideland and Shoreline Acquisitions			Description	Opportunities, Constraints, and other Considerations	Applicable Strategies
Project Number			Acquire tidelands and shoreline habitat for protection purposes.		 <p>Riparian Vegetation</p>
PS-27					
Four-Year Work Plan?					
Project Location					
No					
Mukilteo					
Estimated Project Costs					
Acquisition	Restoration	Total			

Big Gulch Culvert Replacement and Restoration			Description	Opportunities, Constraints, and other Considerations	Applicable Strategies
Project Number			Purchase the last remaining private property and re-construct a historic saltwater estuary at the mouth of Big Gulch Creek. Replace the undersized culvert under the railroad with a trestle to restore system connectivity and improve sediment transport into the nearshore. Restore instream and riparian habitat.		 <p>Creek Mouths</p>  <p>Backshore</p>
PS-28					
Four-Year Work Plan?					
Project Location					
No					
Mukilteo					
Estimated Project Costs					
Acquisition	Restoration	Total			

Shipwreck/Hulk Creek Riparian Restoration			Description	Opportunities, Constraints, and other Considerations	Applicable Strategies
Project Number	PS-29		<p>Work with the property owners to enhance the marine riparian vegetation at the site. This would increase the amount of shade for potential forage fish spawning in the upper intertidal zone. Approximately 1000 ft. of shoreline restoration potential.</p>	<p>Site holds high potential for marine riparian vegetation restoration/enhancement. A mid-sized backshore area supports some marine riparian vegetation and there appears to be potential for enhancement with additional native planting.</p>	 <p>Riparian Vegetation</p>
Four-Year Work Plan?	Project Location				
No	Snohomish County				
Estimated Project Costs					
Acquisition	Restoration	Total			

Shipwreck / Hulk Creek Acquisition and Restoration			Description	Opportunities, Constraints, and other Considerations	Applicable Strategies
Project Number	PS-30		<p>Acquisition and restoration of former shipyard site. Approximately 1000 ft. of shoreline restoration potential. It may be possible to protect the site by purchasing the fee simple property rights or some form of conservation easement.</p>		 <p>Nearshore</p>
Four-Year Work Plan?	Project Location				
No	Snohomish County				
Estimated Project Costs					
Acquisition	Restoration	Total			



<b>Picnic Point Riparian Enhancement</b>			<b>Description</b> Marine riparian enhancement, creosote log removal, installation of nearshore interpretive signage, and feasibility and design of alternatives to address flooding, erosion, and fish passage problems. Project addresses approx. 1200 ft of shoreline.	<b>Opportunities, Constraints, and other Considerations</b>	<b>Applicable Strategies</b>  Riparian Vegetation
<b>Project Number</b>	PS-31				
<b>Four-Year Work Plan?</b>	<b>Project Location</b>				
No	Snohomish County				
<b>Estimated Project Costs</b>					
<b>Acquisition</b>	<b>Restoration</b>	<b>Total</b>			