

NARRATIVE SUPPORTING WRIA 9 2007 THREE-YEAR WORK PROGRAM PRIORITIES

NOTE FOR THREE-YEAR WORK SCHEDULE SPREADSHEET:

Projects are prioritized 1 through 3. Priority 1 projects are also shaded. Priority 1 projects are those with a high confidence of construction within the next 3 years. Priority 2 projects may be constructed within the next 3 years if property acquisition is successful within the next 12 months. Priority 3 projects are not likely to be constructed within the next 3 years but are priority Habitat Plan projects nonetheless.

Overview:

The overarching goal for the WRIA 9 Salmon Habitat Plan, approved by the Steering Committee in 2002, is to “Protect, rehabilitate, and enhance habitat to support viable salmonid populations in response to the Endangered Species Act listing of Chinook salmon and bull trout, using an ecosystem approach. This approach will also benefit other non-listed aquatic species.”

The recommendations of the Plan rest on a strong foundation of scientific assessment and analysis. The scientific foundation is based on years of study of the watershed that culminated in a Strategic Assessment during 2002-2005. This Strategic Assessment consists of original research to fill in gaps in understanding identified by previous work. It also includes analysis that helped make sense of a large amount of technical information and began the process of translating science into policy.

The scientific work in the Strategic Assessment was guided by the:

- 1) Viable Salmonid Population (VSP) framework;
- 2) Habitat Plan Substantive Scope and Approach, approved by the WRIA 9 Steering Committee in 2002; and
- 3) Technical guidance document developed by the Puget Sound Technical Recovery Team (2003) for integrated salmonid habitat recovery planning.

The results of the Strategic Assessment have made possible the identification of clear priorities for work over the next 10 years:

The focus of management action (projects and programs) implementation efforts in the WRIA 9 Habitat Plan will be on the following limiting habitats that exist within the Green/Duwamish and Central Puget Sound Watershed:

- Duwamish Estuary transition habitat;
- Middle Green River, Lower Green River, Duwamish Estuary, and Marine Nearshore rearing habitat; and
- Middle Green and Lower Green River spawning habitat.

Because of the importance of the Duwamish transition zone – where young salmonids make the transition from being freshwater fish to saltwater fish – and the negative effect on habitat recovery efforts upstream if a severe transition zone restriction does exist, 40% of funding for projects and

programs will be focused on the transition zone. The remaining 60% of funding for projects and programs will be split between rearing and spawning limiting habitats. Policy MS1 (Habitat Plan, Page 5-16) provides the guidance on where to focus initial efforts to recover Chinook in WRIA 9. Because of its importance, Policy MS1 is reproduced in its entirety below.

The focus of habitat efforts in these areas will be on increasing the productivity of the population by improving the quality and quantity of habitats identified above thereby addressing the two key VSP's for WRIA 9 (productivity and spatial structure) identified by the Technical Recovery Team in its 2004 review of the Strategic Assessment.

Key Salmon Habitat Needs in WRIA 9 Subwatersheds:

Based on the findings of the Strategic Assessment, the Habitat Plan focuses on actions and policies that address the following key salmon habitat needs:

Watershed-Wide Needs:

- Prevent and reduce armoring of stream banks and shorelines;
- Promote low impact development such as porous pavement, bioswales, and clustered development;
- Replace culverts that block fish passage on tributary streams;
- Protect and improve water quality by focusing on “nonpoint” pollution that comes from stormwater runoff from streets, highways, parking lots, roofs, yards, and cleared lands;
- Allow natural river flows in an unconstrained river channel where possible; and
- Maintain adequate stream flows.

Duwamish Estuary Subwatershed:

- Restore vegetated shallow subtidal and intertidal habitats and brackish marshes by restoring dredged, armored, and filled areas;
- Increase shallow water and slow water “transition zone” habitat where salmon transform from freshwater to salt water fish;
- Improve sediment quality through the Lower Duwamish Waterway Superfund cleanup;
- Protect and restore water quality through point and nonpoint pollution source control;
- Restore off-channel refuge habitat and mainstem pools in Tukwila; and
- Improve natural sediment transport and deposition processes.

Lower Green River Subwatershed:

- Protect and restore side channels, off-channel wetlands, tributary mouths, and pools that provide shelter and habitat complexity for young salmon;

- Protect and restore natural sediment movement by reconnecting sediment sources to the river;
- Preserve groundwater inflow from the historical White River channel; and
- Modify the Black River Pump Station to improve fish passage.

Marine Nearshore Subwatershed:

- Protect and restore lagoons, spits, and pocket estuaries where small streams enter Puget Sound;
- Protect and expand vegetated shallow water “nearshore” and marsh habitats;
- Protect feeder bluffs that provide sediment needed for beach nourishment by preventing and, where possible, removing bulkheads;
- Protect and expand forage fish spawning beaches used by herring, sand lance, and surf smelt; and
- Improve sediment quality, particularly in Elliott Bay.

Middle Green River Subwatershed:

- Protect and restore side channels, off-channel wetlands, tributary mouths, and pools that provide shelter and habitat complexity for young salmon;
- Protect and restore natural sediment movement by reconnecting sediment sources to the river;
- Protect and restore spawning and rearing habitat in lower Newaukum and Soos Creeks; and
- Maintain regional groundwater recharge and base flows to the mainstem Green River through forest retention and low impact development.

Summary of Projects:

Actions in this Habitat Plan can be divided into two categories:

Programs: A body of work requiring staffing and/or funding. In this Plan, programs focus on stormwater management, stewardship/public education, internal government practices, and other governmental and non-governmental efforts.

Projects: On-the-ground actions to protect, restore, rehabilitate, or substitute habitat or the processes that create habitat.

The Plan recommends an array of projects and programs that watershed partners can strive to carry out over the next 10 years. These actions will:

- Protect existing processes and habitats that are working well;

- Restore processes and habitats that can be returned to good conditions;
- Rehabilitate damaged processes and habitats that can be sustained with on-going efforts; and
- Substitute processes and habitats that are lost.

In the first 10 years, the Plan recommends:

- 77 on-the-ground restoration projects;
- 57 habitat protection projects (including 50 habitat protection areas on Vashon/Maury Island and seven King County-proposed “Last Best Places Middle Green” acquisitions); and
- 30 programs (16 watershed-wide and 14 subwatershed).

Fifty-six of the 77 on-the-ground habitat projects are considered the highest priority because of their importance in addressing habitat limiting factors affecting Chinook salmon (Habitat Plan Table 8-2, pages 8-7 through 8-18).

These recommended actions were identified and evaluated by people who understand the watershed. Each project had to pass both a scientific/technical review and a feasibility review to be included in this Plan. As with many recommendations in this Plan, it is expected that these projects will be refined in the years to come as still more scientific information becomes available.

Projects are on-the-ground efforts that move earth and plant trees, including:

- Excavating shallow water habitat in estuarine and marine nearshore habitats;
- Installation of large woody debris in freshwater habitats;
- Planting of native vegetation in both marine and freshwater habitats;
- Control of noxious and invasive weeds throughout the watershed;
- Levee setbacks on the Green River mainstem;
- Introduction of spawning gravel in the Green River mainstem;
- Side channel reconnection in freshwater habitats; and
- Removal of bulkheads or replacement with softer forms of shoreline protection in marine nearshore habitats.

Complementing these restoration/rehabilitation/substitution projects are projects to protect high value habitat. Depending on the habitat value, location (e.g., next to a migrating channel), and interest of the landowner, these projects will make use of property acquisition, conservation easements, incentives, and/or information and education.

The recommended projects in this Plan will complement on-going and planned habitat activities such as:

- Good stewardship of streams, shorelines, and uplands by homeowners;
- Implementing farm plans and other conservation measures by farmers;
- Sustainable forestry practices by small woodlot owners;
- Use of BuiltGreen™ and other low impact development practices by developers;
- Habitat restoration projects organized by non-profit organizations and carried out by thousands of volunteers;
- Improved stormwater management by local governments;
- Sound land use planning and growth management by local governments;
- Fish passage facility construction and operation to the Upper Green River Subwatershed by the U.S. Army Corps of Engineers and the Tacoma Public Utilities; and
- Many other innovative, sustained efforts by individuals, groups, businesses, and governments intended to improve water quality and protect and restore salmon habitat.

Finally, the Plan includes policies that provide high-level guidance to activities that directly or indirectly affect salmon habitat. In this Plan, policies are mostly recommended for local governments and address land use, stormwater management, stewardship/public education, and internal government practices.

Habitat Plan Review by the Puget Sound Technical Recovery Team:

The Technical Recovery Team (TRT), acting as an independent scientific body convened by NOAA Fisheries, reviewed the WRIA 9 Salmon Habitat Plan. Their review noted that one of the “key technical gaps” of the plan is the need to develop a quantitative estimate of habitat volume necessary to achieve recovery of Chinook salmon. A key recommendation of the TRT is to “employ a quantitative model to begin the task of providing numerical estimates and prediction of population response to recovery action.” The TRT also noted that the Muckleshoot Indian Tribe has developed a quantitative model (SHIRAZ) for the WRIA 9 watershed. The Muckleshoot Indian Tribe now participated on the WRIA 9 Implementation Technical Committee and has communicated a willingness to consider running Shiraz based on the WRIA 9 Salmon Habitat Plan parameters.

Projects Selected for WRIA 9 Three-Year Watershed Implementation Priorities:

The WRIA 9 Draft Three-Year Watershed Implementation Priorities recommends projects based upon the guidance of the Habitat Plan Policy MSI referred to earlier in this document.

This policy addresses the viable salmonid population (VSP) guidance provided by the Puget Sound Technical Recovery Team discussed earlier in this chapter. Key to implementing this guidance is productivity of juvenile Chinook as a short-term (10 year) goal. The long term (50 to 100 years) goal for the watershed is to increase spatial structure and diversity.

Management Strategy (MS) 1:

Discussion: The purpose of Policy MS1 is to provide guidance on where to focus initial efforts to recover Chinook in WRIA 9.

Primary Habitat Limiting Factors:

The primary habitat limiting factors responsible for the poor population viability characteristics, particularly productivity and spatial structure, in this watershed, as reflected in high priority conservation hypotheses, are:

- **Transition Zone Habitat** in the Duwamish River Estuary;
- **Rearing Habitat** in the Middle Green River, Lower Green River, Duwamish River, and Marine Nearshore; and
- **Spawning Habitat** in the Middle Green River and upper Lower Green River.

Top Tier Watershed-Wide Priority Actions and Priority Geographic Areas:

Actions to address transition, rearing, and spawning habitat in the specific areas listed for each are the *top tier* of priority actions and geographic areas (see Habitat Plan Table 8-2 in Chapter 8, beginning at page 8-7 for summary of priority actions). The actions of this Plan within these areas have the highest estimated potential to improve productivity in the short-term and spatial structure and diversity in the long-term, which are the express watershed-wide goals of this Plan.

Policy MS1 does not address the Upper Green River Subwatershed because this Plan is deferring, over the next 10 years, to the actions being taken by Tacoma Public Utilities and the U.S. Army Corps of Engineers to improve habitat conditions in the Upper Green River Subwatershed and remove upstream and downstream fish barriers at the dams. The Upper Green River Subwatershed, however, is the single most significant opportunity to recover spatial structure in WRIA 9. Over the long term, the Upper Green River may provide an opportunity to re-establish a spring Chinook life history type. There is also, over time, a possibility of reserving the Upper Green River Subwatershed for a segregated naturally spawning Chinook population free of hatchery origin recruits.

MS1: The focus of management action implementation efforts in this Habitat Plan will be on the following distinct habitats that are limiting viable salmonid populations in WRIA 9:

- Duwamish Estuary transition zone habitat;
- Middle Green River, Lower Green River, Duwamish Estuary, Marine Nearshore rearing habitat; and
- Middle Green and upper Lower Green River spawning habitat.

Because of the importance of the transition zone and the negative effect on habitat recovery efforts upstream if a severe transition zone habitat limitation does exist, 40% of funding for management action recovery efforts will be focused on the transition zone. The remaining 60% of funding for management action recovery efforts will be split 30% for the rearing habitats and 30% for the spawning habitats as described above. This allocation of funding would apply over the first 10 year period of the Habitat Plan (i.e. annual funding allocations could vary from this distribution) and would be subject to change as part of adaptive management.

The projects within the Three-Year Watershed Implementation Priorities Matrix are listed by WRIA 9 subwatersheds, and the subwatersheds are listed in priority order. Projects within subwatersheds are not listed in priority order. If the project will be implemented in phases, the specific phase is underlined within the project description. Key habitat management strategies are documented within the subwatershed headings.

Consistent with the guidance of Policy MS1, the Draft Matrix focuses on improving habitat within the transition zone of the Duwamish Estuary Subwatershed. Early steps are underway and work will continue over the next three years. In addition, preparation of the Duwamish Transition Zone Blueprint has been initiated and will supplement guidance for the continuation of work in the Duwamish Estuary Subwatershed. It is believed that this work will significantly improve the transition zone habitat, reducing the “bottleneck” impact caused of scarcity of this type of habitat.

Actions within other subwatersheds are also identified to initiate early project tasks in order to prepare projects for subsequent construction. The projects share funding and support consistent with the MS1 recommendations. Projects within the Upper Green River Subwatershed are not included in the 3-Year Matrix and may be considered in the future (see MS1 above for the rationale).

The WRIA 9 Three-Year Implementation Priorities Matrix was presented to the WRIA 9 Steering Committee on March 9, 2006 and unanimously approved.

H-Integration Status in WRIA 9

The WRIA 9 Forum of Local Governments approved the creation of an Implementation Technical Committee (ITC) in January 2007. Importantly, the ITC includes representatives from both co-managers (Washington State Department of Fish and Wildlife and the Muckleshoot Indian Tribe), as well Tacoma Public Utilities. All four “H’s” are therefore represented at the WRIA 9 table for the first time since work began on developing an ecosystem approach to recovering Chinook salmon in the Green-Duwamish system. A significant ITC Work Program task for 2007 is developing an H-integration strategy for WRIA 9. Consistent with the Puget Sound regional H-integration approach, WRIA 9 will address goals, objectives, and steps for advancing H-integration as follows:

Goals of H-Integration Process

- Develop integrated strategies and suites of actions among the H-sectors that are consistent with predictions of moving salmon populations towards short, moderate, and long-term recovery goals
- Help decision-makers clearly see the interaction and cumulative effects of actions among the H-sectors

Objectives

- Integrate strategies and actions to result in an observable increase of VSP parameters
- Quantitatively assess and summarize the cumulative effectiveness of integrated actions on VSP parameters
- Provide an overview that:
 - Summarizes how the H’s work together

- Outlines actions that will be taken in each H
- Predicts outcomes and identifies performance measures in terms of VSP
- Tracks progress on implementation of actions
- Reports progress on performance measures

Six Steps in Advancing H-Integration...

1. Identify the people that need to participate and how to involve them.
2. Gain a common understanding of how the system works—habitat conditions and fish populations this includes: habitat conditions and priority limiting factors, harvest rates, hatchery management, fish population status (e.g. VSP parameters,) community needs.
3. Agree upon common goals and a set of outcomes across the H-sectors that describe what will be achieved related to those goals in measurable terms.
4. Examine, evaluate and select a suite of complementary actions across the H-s to achieve the outcomes. (Determine what evaluation tools to use.)
5. Document: rationale, implementation steps (specific complementary actions in hatcheries, harvest, and habitat,) expected outcomes (including effects on VSP,) benchmarks.
6. Build and implement a Verification, Effectiveness and Accountability system: Implement actions, monitor results, prepare annual performance reports, and adjust over time.

Three-Year Watershed Implementation Priorities - Puget Sound Salmon Recovery Plan
WRIA 9 Habitat Work Schedule for Green/Duwamish and Central Puget Sound Watershed

Priority Tier	Primary Limiting Factors Addressed	Action Name and Description	Likely Sponsor	Project, program, HP #	Total cost of first three years/phases	SRFB	KCD	ERP	Other Fund Sources	2008		2009		2010		Likely end date	For Habitat projects (see key for categories)								
										Year 2 Scope	Year 2 Cost	Year 3 Scope	Year 3 Cost	Year 4 Scope	Year 4 Cost		Acquisition	Restoration type, if applicable	Location w/in watershed	Performance					
Capital Projects																									
Duwamish Subwatershed: Enlarge Duwamish estuarine transition zone habitat by expanding shallow water and slow water areas, and expand/enhance the estuary, particularly vegetated shallow subtidal and intertidal habitats and brackish marshes. VSP parameters for this subwatershed focus on productivity.																									
1	2,5	North Wind's Weir Shallow Water Habitat Rehabilitation at RM 6.3: Create two acres of off-channel, shallow water habitat in the transition zone	King County	Project, DUW-10	\$2,145,000				King County; US ACOE	Construction	\$1,975,000	Monitoring/Adaptive Management	\$85,000	Monitoring/Adaptive Management	\$85,000	2008	AR, R	E	Estuarine	2 ac					
1	2,5	Shallow Water Habitat Creation: Creation of approximately 0.36 acre of nearshore habitat including a new cove and 2.1 acres of vegetated buffer adjacent to the river at City Light South at RM 5.2 (left bank) as part of mitigation by City of Seattle	Seattle	Project, DUW-11	Habitat project costs to be determined	n/a	n/a	Funding will come from off-site mitigation for impacts of construction at Joint Training Facility on Hamm Creek		Construction						2008	R	E	Estuarine	2.1 ac					
2	2,5	Duwamish Gardens Shallow Water Habitat Creation at RM 7.0: Phase I: Acquire 2.2 acres of upland; Phase II: Create shallow water off channel habitat	Tukwila	Project, DUW-7	Phase I (acquisition): \$1,700,000	\$311,000 (2006)	\$15,000 (2006); PENDING: KCD \$200,000 (2007)		APPROVED: CFT: \$350,000 (2006); City of Tukwila: \$50,000 (2006); PENDING: ALEA: \$195,000 (2006); City of Tukwila (2007) \$50,000	Complete acquisition	\$1,700,000	Design, engineering, permitting	\$200,000	Archeological data recovery	\$100,000	2011	AR, R	E	Estuarine	2.2 ac					
3	2,5	Shallow Water Habitat Creation at RM 7.0-5.5: Create a minimum of 20 acres of new off-channel shallow water/marsh habitat with associated riparian vegetation; Restore 1 acre upstream of RM 5.5	Tukwila	Project, DUW-7	\$1,500,000				CFT, ALEA, City of Tukwila, KCD	Feasibility/Acquisition	\$1,300,000	Design, engineering, permitting	\$100,000	Complete design, engineering, permitting	\$100,000	2011	AR, R	E	Estuarine	1 ac					
3	1,5	Bank Restoration and Revestment Setback at RM 6.6-5.5: Set back and restore the river bank; <u>Combination of 3 projects to restore 1 mile bank layback, revegetation RM 4.7-7.0</u>	Tukwila & King County	Project, DUW-7, 9, 11	\$500,000				CFT, ALEA, City of Tukwila, KCD	Feasibility, negotiation with property owner, design and permitting	\$150,000	LWD and materials purchase	\$100,000	Placement and planting	\$250,000	2009	R	E	Estuarine	1 mi					
3	2,5	Shallow Water Habitat Creation at RM 7.0-5.5: Create a minimum of 20 acres of new off-channel shallow water/marsh habitat with associated riparian vegetation; <u>Property Acquisition of 5 acres for 2010 restoration</u>	Multiple stakeholders	Project, DUW-7	\$6,100,000				CFT, ALEA, City of Tukwila, KCD	Property owner outreach	\$60,000	Secure funding	\$40,000	Complete acquisition	\$6,000,000	2010	AR, R	E	Estuarine	5 ac					
3	2,5	Shallow Water Habitat Creation: Creation of shallow water habitat and shoreline restoration between RM 5.5-4.7 (and farther downstream) within the expected Lower Duwamish Superfund cleanup area	Multiple stakeholders	Project, DUW-11	Unknown, TBD by Natural Resource Trustees	n/a (probably)	n/a (probably)	Funding will for the most part come from Natural Resource Damages		Actions will be scheduled by Natural Resource Trustees and/or potentially responsible parties					n/a	R	E	Estuarine	0.8 mi						
		Subtotals			\$11,945,000	\$311,000					\$5,185,000		\$525,000	\$6,535,000											
Lower Green River Subwatershed: Protect/restore refuge, habitat complexity and connectivity for juvenile salmon over range of flow conditions and variety of locations. VSP parameters for this subwatershed focus on productivity.																									
1	1,3	Riverview Park Restoration: Provide summer rearing habitat and high flow winter refuge through excavation of an off-channel area combined with placement of large woody debris and revegetation.	Kent	Project, LG-7	\$2,020,000	\$150,000 (2006)	\$40,000 (2006) PENDING: \$50,000	PENDING: \$1,163,000	PENDING: Kent \$617,000	Complete Design & Permitting	\$451,200	Construct Project	?	Monitoring & Adaptive Management	\$50,000		AR, R	I	Main	0.13 mi					

CAVEAT: Subwatersheds listed in order of priority. Projects prioritized 1 through 3.

Priority Tier	Primary Limiting Factors	Action Name and Description	Likely sponsor	Project, program, HP #	Total cost of first three years/phases	SRFB	KCD	ERP	Other Fund Sources	2008		2009		2010		For Habitat projects (see key for categories)						
										Year 2 Scope	Year 2 Cost	Year 3 Scope	Year 3 Cost	Year 4 Scope	Year 4 Cost	Likely end date	Acquisition	Restoration type, if applicable	Location w/in watershed	Performance		
Capital Projects																						
1	1,3	Lower Green River Acquisition in Kent: Acquire three properties immediately upstream of the Mullen Slough confluence and demolish buildings on one. A subsequent phase would likely modify Frager Road and allow reconnection of the upland to the river. Also acquire the Koch property on the left bank downstream of Riverview Park. A subsequent phase would restore riparian habitat.	Kent (lead), King County, Green River Flood Control Zone District	Project, LG-7	\$1,200,000	\$975,085 (2003)				Kent \$180,000; King County \$25,000; Green River Flood Control Zone District \$25,000	Complete Acquisition	\$1,205,000						AR, R	R	Main	?	
2	1,3	Mill Creek Floodplain Wetland and Off-Channel Habitat Rehabilitation: Restore lower 0.3 miles of Mill Creek and adjacent segments of currently armored riverbank.	Kent	Project, LG-7	\$1,500,000	\$100,000 (2006)				APPROVED: CFT: \$100,000 (2005 or 2006); City of Kent: \$100,000 (2005 or 2006)	Complete Design & Permitting	\$100,000	Construct Project	\$1,400,000	Monitoring & Adaptive Management	2009		AR, R	I, W	Main	0.3 mi	
3	1,3	Briscoe Off Channel Habitat Rehabilitation between RM 16.1 and 15.8: Remove armoring on the Briscoe meander shoreline, excavate flood refugium for juvenile salmonid rearing habitat, install large woody debris, and plant native riparian vegetation.	Kent	Project, LG-12	\$1,000,000									Feasibility, design, permitting	\$100,000	2011		R	R	Main	0.3 mi	
3	1,3	Nelson Side-Channel Habitat Rehabilitation between RM 12.65 and 12.5: Restore historical flood refugia and off-channel rearing habitat on a riverside sheep pasture.	Tukwila	Project, LG-15	\$1,500,000								Feasibility	\$40,000	Design, Permitting	\$100,000	2011		R	R	Main	0.15 mi
3	1,3	Mainstem Maintenance: Boeing Levee Setback and Restoration between RM 18 and 17.1 to enable extensive habitat rehabilitation.	Kent & King County	Project, LG-10	\$650,000					GRFCZD, KCD, Kent, ACOE	Design Restoration Construction, Permitting	\$150,000	Construction	\$1,500,000	Complete Construction	\$1,500,000			R	R	Main	0.9 mi
		Subtotals			\$7,870,000	\$1,225,085						\$1,906,200		\$2,940,000		\$1,750,000						
Nearshore Subwatershed: Protect, restore, or rehabilitate: sediment transport processes by reconnecting sediment sources and removing shoreline armoring; pocket estuaries, lagoons, and spits; and sediment quality, particularly in Elliott Bay. VSP parameters for this subwatershed focus on productivity.																						
1	2,3	Olympic Sculpture Park Tidal Embayment and Shallow Water Habitat Rehabilitation: Create a 0.64 acre embayment at the northern end of the Elliott Bay seawall and an approximately 800 foot long and 15 foot wide habitat bench between Pier 70 and Myrtle Edwards Park. CONSTRUCTION COMPLETE	Seattle	Project, NS-3	\$3,114,000					Estuary and Salmon Restoration Program \$77,712; Estuary and Salmon Restoration \$35,500; King Conservation District (post-construction monitoring) \$83,827	Monitoring/Adaptive Management	\$25,000	Monitoring/Adaptive Management	\$25,000	Monitoring/Adaptive Management	\$25,000	2006		R	M	Marine	0.64 ac
2	2,3	Burien Seahurst Park Shoreline Restoration, Phase II: Continue shoreline restoration actions conducted in southern portion of Seahurst Park in Burien by removing a portion of shoreline armoring in the central area of the park, restoring natural beach slopes, and adding riparian vegetation.	Burien	Project, NS-5	???					Burien, IAC, PSAW			Feasibility	\$40,000	Design, engineering, permitting	\$100,000	Const. in 2011		AR, R	M	Marine	?
2	2,3	Beaconsfield-On-The-Sound: Feeder Bluff Protection and Restoration of Beach Feeding Processes in Normandy Park: Purchase and restore one of the last major privately-held undeveloped feeder bluffs along the mainland marine shoreline.	Normandy Park	Project, NS-11	\$500,000	\$50,873 (2005-2006); \$100,000 (2006)				Cascade Land Conservancy \$2,977 (2005) and \$64,500 (2006); Normandy Park \$6,000 (2005)	Feasibility, Technical Design	\$100,000	Acquisition	\$150,000	Construction	\$250,000			AR, R	M	Marine	1,000 ft

CAVEAT: Subwatersheds listed in order of priority. Projects prioritized 1 through 3.

Priority Tier	Primary Limiting Factors Addressed	Action Name and Description	Likely sponsor	Project, program, HP #	Total cost of first three years/phases	SRFB	KCD	ERP	Other Fund Sources	2008		2009		2010		For Habitat projects (see key for categories)				
										Year 2 Scope	Year 2 Cost	Year 3 Scope	Year 3 Cost	Year 4 Scope	Year 4 Cost	Likely end date	Acquisition	Restoration type, if applicable	Location w/in watershed	Performance
Capital Projects																				
3	2,3	Functioning Nearshore Habitat Protection: Protect site with high habitat resource value - Foss Property.	Normandy Park	Project NS-17	Adequate funding secured				Estuary and Salmon Restoration Program \$65,000	Acquisition	\$160,000	Education and stewardship scope		Education and stewardship scope		2008	AP	M	Marine	?
2	2,3	Functioning Nearshore Habitat Protection: Protect site with high habitat resource value - Camp Kilworth. Most of this 25 acre parcel is forested upland and will serve as park. Nearshore is high quality and requires no restoration.	Federal Way	New project	\$3,116,000				Washington Wildlife & Recreation Program \$1,000,000; Conservation Futures \$400,000; City of Federal Way \$1,016,000; TBD \$700,000	Acquisition	\$3,116,000					2008	AP	M	Marine	2.5 ac
1	2,3	Ellis Creek Saltmarsh Protection and Restoration on Vashon Island: Acquire and restore salmonid-accessible saltmarsh and riparian land at the mouth of Ellis Creek on Tramp Harbor on the east side of Vashon Island. CONSTRUCTION SUMMER 2007	King County	Project, NS-10	\$348,000	\$189,438 (2006)			CFT, King County (\$40,000), KCD	Monitoring/Adaptive Management	\$5,000	Monitoring/Adaptive Management	\$5,000	Monitoring/Adaptive Management	\$5,000	2007	AP	M	Marine	3.13 ac
1	2,3	Functioning Nearshore Habitat Protection on Vashon/Maury Island: Protect sites with high habitat resource values - <u>Lost Lake</u>	King County	Project, NS-17	Adequate funding secured				Conservation Futures, NOAA	TO BE COMPLETED 2007						2007	AP	M	Marine	?
1	2,3	Functioning Nearshore Habitat Protection on Vashon/Maury Island: Protect sites with high habitat resource values - <u>Maury Island Marine Park</u>	King County	Project, NS-17	Adequate funding secured				Conservation Futures, NOAA	TO BE COMPLETED 2007						2007	AP	M	Marine	?
1	2,3	Functioning Nearshore Habitat Protection on Vashon/Maury Island: Protect sites with high habitat resource values - <u>Inspiration Pt</u>	King County	Project, NS-17	Adequate funding secured				Conservation Futures, NOAA	TO BE COMPLETED 2007						2007	AP	M	Marine	?
1	2,3	Functioning Nearshore Habitat Protection on Vashon/Maury Island: Protect sites with high habitat resource values - <u>Pt. Robinson</u>	King County	Project, NS-17	Adequate funding secured				Conservation Futures, NOAA	Acquisition						2008	AP	M	Marine	?
1	2,3	Functioning Nearshore Habitat Protection on Vashon/Maury Island: Protect sites with high habitat resource values - <u>Dockton</u>	King County	Project, NS-17	Adequate funding secured				Conservation Futures, NOAA	Acquisition						2008	AP	M	Marine	?
1	2,3	Functioning Nearshore Habitat Protection on Vashon/Maury Island: Protect sites with high habitat resource values - <u>Neill Pt</u>	King County	Project, NS-17	Adequate funding secured				Conservation Futures, NOAA	Acquisition						2008	AP	M	Marine	?
1	2,3	Functioning Nearshore Habitat Protection on Vashon/Maury Island: Protect sites with high habitat resource values - <u>Manzanita</u>	King County	Project, NS-17	Adequate funding secured				Conservation Futures, NOAA	Acquisition						2008	AP	M	Marine	?
1	2,3	Functioning Nearshore Habitat Protection on Vashon/Maury Island: Protect sites with high habitat resource values - <u>Northall (Piner West)</u>	King County	Project NS-17	Adequate funding secured				Conservation Futures, NOAA	Acquisition						2008	AP	M	Marine	?
1	2,3	Functioning Nearshore Habitat Protection on Vashon/Maury Island: Protect sites with high habitat resource values - <u>Raab's Lagoon Pocket Estuary</u>	King County	Project, NS-17	Adequate funding secured				Conservation Futures, NOAA	Acquisition						2008	AP	M	Marine	?
3	2,3	Evaluate How to Improve Habitat Value of Raab's Lagoon/Pocket Estuary on Maury Island: Work with property owner and neighbors to identify ways to improve habitat.	King County	Project, NS-14	Costs not available												R	M	Marine	?

CAVEAT: Subwatersheds listed in order of priority. Projects prioritized 1 through 3.

Priority Tier	Primary Limiting Factors Addressed	Action Name and Description	Likely sponsor	Project, program, HP #	Total cost of first three years/phases	SRFB	KCD	ERP	Other Fund Sources	2008		2009		2010		Likely end date	For Habitat projects (see key for categories)			
										Year 2 Scope	Year 2 Cost	Year 3 Scope	Year 3 Cost	Year 4 Scope	Year 4 Cost		Acquisition	Restoration type, if applicable	Location w/in watershed	Performance
Capital Projects																				
3	2,3	Functioning Nearshore Habitat Protection on Vashon/Maury Island: Protect sites with high habitat resource values - <u>Pt. Heyer Drift Cell</u>	King County	Project, NS-17	???											2008	AP	M	Marine	?
3	2,3	Functioning Nearshore Habitat Protection on Vashon/Maury Island: Protect sites with high habitat resource values - <u>Christensen Creek</u> . This project also will require restoration in a subsequent phase.	King County	Project, NS-17	???												AP	M	Marine	?
3	2,3	Camp Sealth Fish Passage Improvements on Vashon Island: Improve fish passage and improve conditions in pocket estuaries.	King County	Project, NS-9	\$100,000 - \$200,000												R	M	Marine	?
3	2,3	Mileta Creek Fish Passage Improvements on Vashon Island: Improve fish passage and improve conditions in pocket estuaries.	King County	Project, NS-9	\$100,000 - \$200,000												R	M	Marine	?
3	2,3	Ellisport Creek Fish Passage Improvements on Vashon Island: Improve fish passage, beach condition, and cleanup hydrocarbons. This is a two phase project: 1) acquisition and 2) cleanup.	King County and/or Vashon-Maury Island Land Trust	Project, NS-9	Acquisition \$20,000 Cleanup \$500,000 Culvert replacement \$500,000					Acquisition cost determined		Acquisition					R	M	Marine	?
3	2,3	Sandford Point Feeder Bluff Restoration on Vashon Island: Remove derelict bulkhead in front of feeder bluff.	King County	Project, NS-18	\$195,000												R	M	Marine	?
3	2,3	Dockton Road Removal and Feeder Bluff Restoration on Vashon Island: Remove road and intertidal fill. Acquire upland properties if threatened by erosion. Project depends on Roads deciding to abandon the road.	King County Roads Division	Project, NS -17 and NS-19													R	M	Marine	?
		Subtotals			\$8,493,000 - \$8,693,000						\$3,406,000		\$215,000		\$375,000					
Middle Green River Subwatershed: Protect/restore habitat that provides refuge and habitat complexity for juvenile salmon over a range of flow conditions and a variety of locations; enhance natural sediment recruitment by reconnecting sediment sources to river; protect and restore spawning and rearing habitat in lower Newaukum and Soos Creeks; maintain regional groundwater recharge and base flows to mainstem Green River.																				
3	1,2	Flaming Geyser Floodplain Reconnection, Side Channel Connection and Habitat Restoration between RM 45.1 and RM 44.3: Phase 1 Side Channel Connection - Excavate a connection between the wall-based side channel inlet and the mainstem and construct logjams to reinstate channel migration.	King County	Project, MG-3	\$1,100,000	\$150,000			King County, State Parks, IAC,	Feasibility & Design	\$150,000	Construction	\$900,000			2009	R	I	Main	0.8 mi
3	1,3	Flaming Geyser Side Channel Construction, Floodplain Reconnection near RM 44: Phase 2 - Construct a side channel to increase the amount of off-channel habitat near river mile 44.	King County	Project, MG-4	\$100,000								Feasibility & Design	\$100,000			R	I	Main	?
3	1,3	Newaukum Creek Corridor Restoration Between Creek Miles 0.0 and 14.3: Restore process-based ecological functions that include wetland and riparian restoration on the Enumclaw Plateau. <u>Early phases.</u>	King County	Project, MG-6	\$1,075,000				King County, ACOE,	Feasibility & Design	\$75,000	Begin Construction	\$500,000	Construction	\$500,000		R	I	Main	14.3 mi

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Priority Tier	Primary Limiting Factors Addressed	Action Name and Description	Likely sponsor	Project, program, HP #	Total cost of first three years/phases	SRFB	KCD	ERP	Other Fund Sources	2008		2009		2010		For Habitat projects (see key for categories)					
										Year 2 Scope	Year 2 Cost	Year 3 Scope	Year 3 Cost	Year 4 Scope	Year 4 Cost	Likely end date	Acquisition	Restoration type, if applicable	Location w/in watershed	Performance	
Capital Projects																					
3	1,3	Newaukum Creek Mouth Restoration Between Creek Miles 0.0 and 4.3: Place large woody debris and plant native trees along the lower 4.3 miles of the creek, and reconfigure the lower 1,800 feet of the creek near the mouth.	King County	Project, MG-8	\$1,175,000	\$788,581 (2004)			King County, ACOE	Design & Permitting	\$100,000	Construction	\$1,075,000	Monitoring/Adaptive Management				R	I	Main	4.3 mi
3	1,3	Lones Levee Removal near RM 38: Restore natural channel migration processes, consistent with current flow regimes of the Green River by removing Lones Levee at river mile 38.	King County	Project, MG-9	\$3,000,000				SRFB Round 5, 2004: \$788,581; King County, ACOE	Design & Permitting	\$100,000	Design & Permitting	\$100,000	Construction	\$2,800,000	2010		R	I	Main	?
2	1,3	Setback and Removal of Fenster and Pautzke Levees to Reconnect the Floodplain and Allow Channel Migration near RM 32: Fenster Levee Phase IA - Remove levees, lower the elevation of terraces and construct engineered logjams to reinstate floodplain connectivity and channel migration.	Auburn, King County	Project, MG-18	\$1,400,000	\$675,900 (2005-2006)			Green River Flood Control Zone District \$90,000; City of Auburn \$33,000	Construction	\$1,225,000	Monitoring/Adaptive Management	\$75,000	Monitoring/Adaptive Management	\$75,000	2008		AR,R	I	Main	?
3	1,3	Setback and Removal of Fenster and Pautzke Levees to Reconnect the Floodplain and Allow Channel Migration near RM 32: Fenster Levee Phase IB - Remove levees, lower the elevation of terraces and construct engineered logjams to reinstate floodplain connectivity and channel migration.	Auburn, King County	Project, MG-18	\$600,000 - \$800,000							Design & Permitting	\$150,000	Construction	\$650,000	2010		AR,R	I	Main	?
3	1,3	Setback and Removal of Fenster and Pautzke Levees to Reconnect the Floodplain and Allow Channel Migration near RM 32: Pautzke Levee - Remove levees, lower the elevation of terraces and construct engineered logjams to reinstate floodplain connectivity and channel migration. Phases A - E.	King County	Project, MG-18	\$3,500,000							Design & Permitting	\$100,000	Construction	\$3,400,000			AR,R	I	Main	?
2	1,3	Big Spring Creek Restoration: Construct new stream channel to replace ditch. Connect coldwater springs to Newaukum Creek.	King County	Project, MG-7	\$1,194,590					Construction						2008		R	I	Main	?
		Subtotals			\$13,144,590 - \$13,344,590	\$150,000					\$1,650,000		\$2,900,000		\$7,525,000						
		Totals			\$41,452,590 - \$41,852,590	\$1,686,085						\$12,147,200		\$6,580,000		\$16,185,000					
		Programs and Key Actions- Not Prioritized																			
		Lead entity coordination	Lead entity	Program	\$225,000					Staffing (1 FTE)	\$75,000	Staffing (1 FTE)	\$75,000	Staffing (1 FTE)	\$75,000	Ongoing					
		Adaptive management and monitoring	Multiple stakeholders	Program	\$600,000					Staffing (3 FTEs)	\$200,000	Staffing (3 FTEs)	\$200,000	Staffing (3 FTEs)	\$200,000	Ongoing					
		Nearshore Habitat Toolbox	King County	Program, N-1	\$250,000					feasibility	\$20,000	design, permits, contract	\$40,000	construction	\$190,000						
		Create incentives Program to Remove Failing Septic Systems on Vashon/Maury Island	King County	Program, N-4																	
		Project Management and Public Outreach	WRIA Staff																		
		Stewardship & Educational Outreach	WRIA Staff																		
		Water Conservation Incentive Programs	Multiple stakeholders	Program, WW-2																	
		Work with jurisdictions and Department of Ecology to support a Shorelines Exemption for properties affected by salmon habitat	Multiple stakeholders	Policy IN2																	
		Promote Plantive of Native Trees	Multiple stakeholders	WW-5																	
		Develop a Coordinated Acquisition Program for Natural Areas	King County	WW-15																	

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										Year 2 Scope	Year 2 Cost	Year 3 Scope	Year 3 Cost	Year 4 Scope	Year 4 Cost	Likely end date	Acquisition	Restoration type, if applicable	Location w/in watershed	Performance
Capital Projects																				
		Increase/Expand Natural Yard Care Programs	Multiple stakeholders	WW-3,4																
		Conduct Shoreline Stewardship Workshops and Outreach - Beach/Bluff Educational Programs, including HPA education to agency staff and citizens.	Multiple stakeholders	WW-1																
		Create Soft Armoring Tech Assist/Cost Share	King County	Program, N-2																
		Citizen Volunteer Forage Fish Monitoring Program	Multiple stakeholders	Program N-5																
		Promote Better Volunteer Carwash Practices	Multiple stakeholders	Program, WW-6																
		Increase Public Awareness about What Healthy Streams and Rivers Look Like and How to Enjoy Recreating on Them	Multiple stakeholders	Program, WW-7																
		Expand/Improve Incentives Programs	Multiple stakeholders	WW-11																
		Increase Use of Low Impact Development and Porous Concrete	Multiple stakeholders	Program, WW-13																
		Develop Salmon Restoration Tools Consistent with Agricultural Land Uses	Multiple stakeholders	Program, WW-16																
		Work with Co-Managers to integrate Hatchery & Harvest Practices with Habitat Plan Objectives	Multiple stakeholders																	
		Olympic sculpture park post construction monitoring.	City of Seattle		\$77,000 WDFW grant, SRFB, KCD															
		Water supply coordination per DOE/EPA Watershed assistance grant	Multiple stakeholders		\$50,000															