NARRATIVE SUPPORTING
WRIA 9 2008 THREE-YEAR WORK PROGRAM PRIORITIES

Puget Sound Partnership 3 Year Work Schedule Questions to Watersheds

The three-year work program updates should include a narrative to describe the progress, changes, and status of the implementation of the Recovery Plan and your work program. The following questions are intended as a guide for this narrative:

1. What has changed and why in this update from the prior adopted work programs for your watershed? Changes include project changes, priorities, and sequence. For example, if there are changes to projects on your three-year priority list, what is the rationale for including, omitting, or changing the rank of projects? Have you made any adjustments related to considering sequencing, timing, or H-Integration issues? If so, describe.

The WRIA 9 3 Year Work Schedule has been paired down to those projects that are mot likely to be started or completed within the 3 year window (as a practical matter most CIP projects require 6 years from inception to completion). One project (Riverbend Park-DUW-6) was added. King County sponsored levee setback projects (which are included in the WRIA 9 Plan) in the Lower Green River have also been added because they are scheduled on the King County Flood Control CIP program. We have adopted a project prioritization and sequencing methodology that will be used to evaluate all of the WRIA 9 priority projects by the time of submittal of the 2009 Three Year Work Schedule. H-integration meetings were begun in late 2007 and will proceed through 2008. WRIA 9 is working toward adoption of a 6 year Capital Improvement Project list for 2009.

2. What is the status of implementing the Recovery Plan and your work program? This includes where you have accomplished priority actions, where you have struggled, and how you have resolved.

We are behind our 3 year benchmark for implementing transition zone projects. This is primarily due to: lack of funding, permitting delays, expense of the properties, and inability to compete against private sector offers. Otherwise have made and are making progress on main stem levee setback projects, and marine nearshore acquisition and restoration projects. Major projects in the upper watershed sponsored by Tacoma Public Utilities (TPU) and the Army Corp of Engineers (ACOE) are also making progress. These projects include construction of the ACOE fish ladder facility, the TPU fish haul facility, ACOE gravel and wood supplementation programs immediately below the TPU headworks dam, and removal of some fish barriers in the upper watershed.

3. Are projects on the three-year lists those that can be done or those that can be started in three years?

Both. As a practical matter, few capital restoration projects can be started and completed in 3 years. The projects listed in the Three Year Work Schedule include those that can be started within 3 years but may not be completed in 3 years, as well as those in progress. WRIA 9 is developing a 6 year CIP program consisting of prioritized and sequenced projects.

4. Are they the projects that are highest priority known at this point?

Yes.

5. Are there projects that are left off the list?

Priority projects (as identified in the WRIA 9 Plan in table 9-2) that are not likely to start or be completed in 3 years.

6. How are watershed groups deciding the costs for the projects?

High and low cost estimates were initially made for the WRIA 9 Salmon Habitat Plan (See Table 8-2 in the Plan). Detailed costs are calculated by project sponsors.

7. Are costs for the whole project, for a portion of the project?

Typically for a portion. Most projects can not be completed in 3 years and therefore need to be phased.

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.

Project Prioritization and Sequencing:

All 3 year Work Schedule projects are identified as priority projects in Table 8-2 of the WRIA 9 Salmon Habitat Plan. All WRIA 9 priority projects were ranked as either Tier 1 or Tier 2 projects following project by project evaluation by WRIA 9 retained fisheries expertise using a prioritization methodology developed by Anchor Environmental and Grette and Associates.

In 2008 WRIA 9 began the process of reevaluating all priority projects using an updated prioritization and sequencing methodology developed by King County Water and Land Resources Division scientific staff. Although not used for evaluation of the 2008 Three Year Work Schedule

projects, the 2009 Three Year Work Schedule will be developed using the new prioritization and sequencing methodology.

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 MS-1 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 sub group of the ITC has been engaged since October 2007 in addressing H-integration, specifically the "6-Steps" and the H-integration tables. At this point (April 2008) drafts of the first 3 steps of H-integration have been completed for WRIA 9. A significant ITC Work Program task for 2008 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.

Consistency with Puget Sound Partnership Goals

The six legislative goals of the Puget Sound Partnership (PSP) are:

a) A healthy human population supported by a healthy Puget Sound that is not threatened by changes in the ecosystem;
b) A quality of human life that is sustained by a functioning Puget Sound ecosystem;
c) Healthy and sustaining populations of native species in Puget Sound, including a robust food web;

d) A healthy Puget Sound where freshwater, estuary, near shore, marine, and upland habitats are protected, restored, and sustained;
e) An ecosystem that is supported by ground water levels as well as river and stream flow levels sufficient to sustain people, fish, and wildlife, and the natural functions of the environment;
f) Fresh and marine waters and sediments of a sufficient quality so that the waters in the region are safe for drinking, swimming, shellfish harvest and consumption, and other human uses and enjoyment, and are not harmful to the native marine mammals, fish, birds, and shellfish of the region.

Although the WRIA 9 Plan was prepared in response to the listing of Puget Sound Chinook salmon under the Endangered Species Act (ESA), it is important to understand that the WRIA 9 Plan takes an "ecosystems" approach to salmon recovery. This means that projects and programs that are essential for Chinook salmon recovery have multiple benefits for humans as well as other species f fish and wildlife. Improvements in watershed health and the goods and services provided by the watershed extend to all who depend on the watershed. This reality is demonstrated by the ecological economics analysis that was completed for WRIA 9 in support of the WRIA 9 Plan.

The WRIA 9 ecological economics analysis demonstrates that the value of ecological goods and services per year is $1.7 billion to $6.3 billion per year. Habitat Plan actions to restore viable salmonid populations also will preserve and restore 23 categories of ecosystem goods and services identified in the Green/Duwamish and Central Puget Sound Watershed. Healthy ecosystems produce goods and services for free and in perpetuity. They are essential to maintaining a healthy economy and livable communities within WRIA 9. Ecosystem goods and services enhanced by Habitat Plan actions include:

- Flood protection;
- Natural stormwater maintenance;
- Drinking water production and filtration;
- Reduction of pathogens and pollutants;
- Waste absorption;
- Storm protection;
- Biodiversity preservation;
- Nutrient regulation;
- Increased production of fish, shellfish, timber, and other food and raw materials;
- Nursery and refugia services;
- Erosion control;
- Biodiversity;
- Aesthetic value (beauty); and

- Recreational opportunities for fishing, hunting, boating, hiking, bird watching, and educational and scientific benefits.

As an example of how much a single restoration project can contribute to increasing "natural capital" in WRIA 9 the ecological economic analysis calculated the benefits of restoring marine nearshore and Transition Zone habitat in WRIA 9. The analysis determined that the most significant goods and services are flood protection, natural stormwater management, drinking water production and filtration, reduction of pathogens and pollutants, waste absorption, storm protection, biodiversity preservation, nutrient regulation, increased production of fish, shellfish, and other food and raw materials, erosion control, aesthetic value, and recreational fishing, hunting, boating, hiking, bird watching, and educational and scientific benefits. Clearly, the six PSP goals are addressed in specific and concrete terms through the implementation of WRIA 9 Habitat Plan projects. The entire ecological economics analysis (*Ecological Services Enhanced by Salmon Habitat Conservation in the Green/Duwamish and Central Puget Sound Watershed*, February 2005) can be found on-line at: http://dnr.metrokc.gov/Wrias/9/participant.html.

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

Three-Year Watershed Implementation Priorities - Puget Sound Salmon Recovery Plan

WRIA 9 Habitat Work Schedule for Green/Duwamish and Central Puget Sound Watershed

													2009		2010		2011		
Project Name	**Priority Tier**	**Project Description**	**Likely sponsor**	**Total cost of first three years/phases**	**Local Share**	**SRFBPSAR**	**Source of Funds**	**Primary Limiting Factors**	**Habitat Type**	**Activity Type**	**Primary Species**	**Secondary Species**	**Year 1 Scope**	**Year 1 Cost**	**Year 2 Scope**	**Year 2 Cost**	**Year 3 Scope**	**Year 3 Cost**	**Likely end date**
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 perameters for this subwatershed focus on productivity.																			
North Wind's Weir (Project, DUW-10)	**1**	Shallow Water Habitat Rehabilitation at RM 6.3: Create two acres of off-channel, shallow water habitat in the transition zone	King County	$3,200,000	$1,974,000	950000 (2007)	King County $325,000; US ACOE $1,600,000; KCD $325,000	Reduced habitat capacity. Competition with Hatchery origin juveniles.	Transitions zone estuary.	Shallow water habitat restoration.	Chinook	Steelhead, Bull trout, Orca	Construction	$1,975,000	Monitoring/ Adaptive Management	$85,000	Monitoring/ Adaptive Management	$85,000	2009
Riverbend Hill (Project DUW-6)	**1**	Reshape and revegetate the riverbank along South 115th Street at rivermiles 7.2 to 6.9, right bank, including relocation of South 115th. Set back the revetment where possible. The project would include placement of large woody debris and planting of native vegetation.	Tukwila	Habitat project costs to be determined		Unknown at this time	CFT (2008, submitted)	Reduced habitat capacity. Competition with Hatchery origin juveniles.	Transitions zone estuary.	Shallow water habitat restoration.	Chinook	Steelhead, Bull Trout, Orca	Design, engineering.		Permitting		Construction		2011
Riverton Creek Flapgate Removal and Restoration	**1**	Removed flapgates and restore an open water connection of Riverton Creek to the Duwamish River. This will restore and enhance salmonid habitat within Riverton Creek and improve its connection to the Duwamish River using natural processes and habitat elements to facilitate upstream migration and to provide	Tukwila	Feasibility phase: $50,000	$7,500	$42,500	Tukwila $7500	Reduced habitat capacity. Competition with Hatchery origin juveniles.	Transitions zone estuary.	Fish passage	Chinook	Coho	Feasibility		Design		Construction		2011
Subtotals				**$3,250,000**	**$1,981,500**	**$992,500**								**$1,975,000**		**$85,000**		**$85,000**	
Lower Green River Subwatershed: Protect/restore refuge, habitat complexity and connectivity for juvenile salmon over range of flow conditions and variety of locations. VSP perameters for this subwatershed focus on productivity.																			
Riverview Park Restoration (Project LG-7)	**1**	Provide summer rearing habitat and high flow winter refuge through excavation of an off-channel area combined with placement of large woody debris and	Kent	$2,020,000	KCD $40,000 (2006) PENDING: $50,000, PENDING: Kent $617,000	$150,000 (2006)	KCD, Kent	Altered stream flow, channel structure& complexity, riparian areas, LWD.	Intream	Instream flow	Chinook	Steelhead, Bull Trout,Orca	Complete Design & Permitting	$451,200	Construct Project	?	Monitoring & Adaptive Management	$50,000	
Riverside Estates Levee Setback Project LG-1)	**1**	Levee setback, revegetation, benching, LWD.	King County	$3,038,983			KCFCZD	Altered stream flow, channel structure& complexity, riparian areas, LWD.	Intream	Instream flow	Chinook	Steelhead, Bull Trout,Orca	Construciton	$290,268	Construction	$447,637	Construction	$2,301,078	2011
Lower Green River Acquisition in Kent (Project LG-7)	**1**	Acquire three properties immediately upstream of the Mullen Slough confluence and demolish buildings on one. A feasibility study will determine options for modifying Frager Road, reconnection of the upland to the river, and restoration of riparian habitat. Also acquire the Koch property on the left bank downstream of Riverview Park.	Kent (lead), King County, Green River Flood Control Zone District	$1,200,000		$975,085 (2003)	Kent $180,000; King County $25,000; Green River Flood Control Zone District $25,000	Altered stream flow, channel structure& complexity, riparian areas, LWD.	Intream	Instream flow	Chinook	Steelhead, Bull Trout,Orca	Complete Acquisition	$1,205,000					
Desimone Levee Phases 1-4 (Project LG-13)	**1**	Levee setback, revegetation, benching, LWD.	King County	$2,844,256			KCFCZD	Altered stream flow, channel structure& complexity, riparian areas, LWD.	Intream	Instream flow	Chinook	Steelhead, Bull Trout,Orca	Design	$80,607	Engineering, design, permitting.	$898,673	Construction	$1,864,976	2011
Mill Creek Floodplain Wetland and Off-Channel Habitat Rehabilitation (Project LG-7)	**2**	Restore lower 0.3 miles of Mill Creek and adjacent segments of currently armored riverbank.	Kent	$1,500,000		$100,000 (2006)	APPROVED: CFT: $100,000 (2005 or 2006); City of Kent: $100,000 (2005 or 2006)	Altered stream flow, channel structure& complexity, riparian areas, LWD.	Intream	Instream flow	Chinook	Steelhead, Bull Trout,Orca	Complete Design & Permitting	$100,000	Construct Project	$1,400,000	Monitoring & Adaptive Management		2009

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

													2009		2010		2011		
Project Name	**Priority Tier**	**Project Description**	**Likely sponsor**	**Total cost of first three years/phases**	**Local Share**	**SRFBPSAR**	**Source of Funds**	**Primary Limiting Factors**	**Habitat Type**	**Activity Type**	**Primary Species**	**Secondary Species**	**Year 1 Scope**	**Year 1 Cost**	**Year 2 Scope**	**Year 2 Cost**	**Year 3 Scope**	**Year 3 Cost**	**Likely end date**
Capital Projects																			
Mainstem Maintenance (Project LG-10)	**1**	Boeing Levee Setback and Restoration between RM 18 and 17.1 to enable extensive habitat rehabilitation.	Kent & King County	$2,733,347			GRFCZD, KCD, Kent, ACOE	Altered stream flow, channel structure& complexity, riparian areas, LWD.	Instream	Instream flow	Chinook	Steelhead, Bull Trout,Orca	Design Restoration Construction, Permitting	$150,000	Construction	$1,075,211	Complete Construction	$1,658,136	2012
Subtotals				**$11,518,586**	**$3,781,256**	**$1,225,085**								**$2,277,075**		**$3,821,521**		**$5,874,190**	
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 perameters for this subwatershed focus on productivity.																			
Ellisport Creek Fish Passage Improvements on Vashon Island (projet NS-9)	**2**	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	Acquisition $20,000 Cleanup $500,000 Culvert replacement $500,000				Altered stream flow.	Instream, riparian.	Fish passage.	Chinook	Orca, forage fish	Acquisition	$20,000	Cleanup	$500,000	Culvert Removal	$500,000	2011
Dockton Road Removal and Feeder Bluff Restoration on Vashon Island (Project NS-19)	**2**	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					Loss of habitat,	Nearshore embayment.	Nearshore.	Chinook	Orca, forage fish	Feasibility, Technical Design						
Burien Seahurst Park Shoreline Restoration, Phase II (Project NS-5)	**1**	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	Burien		$150,000		Burien, IAC, PSAW, KCD $150,000 (2007)	Loss of habitat,	Nearshore beach.	Nearshore.	Chinook	Orca, forage fish			Feasibility	$40,000	Design, engineering, permitting	$100,000	Const. in 2011
Evaluate How to Improve Habitat Value of Raab's Lagoon/Pocket Estuary on Maury Island (Project NS-14)	**2**	Work with property owner and neighbors to identify ways to improve habitat.	King County	Costs not available				Loss of habitat,	Nearshore embayment.	Nearshore.	Chinook	Orca, forage fish	Feasibility, Technical Design						
Beaconsfield-On-The-Sound (project NS-11)	**1**	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	$500,000	$70,500	$50,873 (2005-2006); $100,000 (2006), $380,739 (2007)	Cascade Land Conservancy $2,977 (2005), KCD $64,500 (2006); Normandy Park $6,000 (2005), CFT (2008 submitted)	Loss of habitat,	Nearshore beach.	Nearshore.	Chinook	Orca, forage fish	Feasibility, Technical Design	$100,000	Acquisition	$150,000	Construction	$250,000	
Marine Nearshore Acquisition Capital Projects																			
Functioning Nearshore Habitat Protection: Protect site with high habitat resource value - Camp Kilworth (Project NS-17)		Most of this 25 acre parcel is forested upland and will serve as park. Nearshore is high quality and requires no restoration.	Federal Way	$3,116,000			Washington Wildlife & Recreation Program $1,000,000; Conservation Futures $400,000; City of Federal Way $1,016,000; TBD	Loss of habitat,	Nearshore beach.	Land acquired	Chinook	Orca, forage fish	Acquisition	$3,116,000					2008
Functioning Nearshore Habitat Protection on Vashon/Maury Island-Dockton(Project NS-17)	**2**	Protect sites with high habitat resource values - Dockton	King County	Adequate funding secured			Conservation Futures, NOAA	Loss of habitat,	Nearshore beach.	Land acquired	Chinook	Orca, forage fish	Acquisition						2008
Functioning Nearshore Habitat Protection on Vashon/Maury Island-Inspiration Pt. (Project NS-17)	**2**	Protect sites with high habitat resource values - Inspiration Pt.	King County	Adequate funding secured			Conservation Futures, NOAA	Loss of habitat,	Nearshore beach.	Land acquired	Chinook	Orca, forage fish	Acquisition						2008
Functioning Nearshore Habitat Protection on Vashon/Maury Island-Neill Pt. (Project NS-17)	**2**	Protect sites with high habitat resource values - Neill Pt.	King County	Adequate funding secured			Conservation Futures, NOAA	Loss of habitat	Nearshore beach.	Land acquired	Chinook	Orca, forage fish	Acquisition						

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

													2009		2010		2011		
Project Name	**Priority Tier**	**Project Description**	**Likely sponsor**	**Total cost of first three years/phases**	**Local Share**	**SRFBPSAR**	**Source of Funds**	**Primary Limiting Factors**	**Habitat Type**	**Activity Type**	**Primary Species**	**Secondary Species**	**Year 1 Scope**	**Year 1 Cost**	**Year 2 Scope**	**Year 2 Cost**	**Year 3 Scope**	**Year 3 Cost**	**Likely end date**
Capital Projects																			
Functioning Nearshore Habitat Protection on Vashon/Maury Island-Rabb's Lagoon **(Project NS-17)**	**2**	Protect sites with high habitat resource values - Rabb's Lagoon	King County	Adequate funding secured			Conservation Futures, NOAA	Loss of habitat	Nearshore beach.	Land acquired	Chinook	Orca, forage fish	Acquisition						
Functioning Nearshore Habitat Protection on Vashon/Maury Island-Piner Pt. **(Project NS-17)**	**2**	Protect sites with high habitat resource values - Piner Pt.	King County	Adequate funding secured; need $100,000 for bulkhead removal			SRB	Loss of habitat	Nearshore beach.	Land acquired	Chinook	Orca, forage fish	Acquisition						
Functioning Nearshore Habitat Protection on Vashon/Maury Island-NorthIlla **(Project NS-17)**	**2**	Protect sites with high habitat resource values - NorthIlla	King County	Adequate funding secured			Conservation Futures, NOAA	Loss of habitat	Nearshore beach.	Land acquired	Chinook	Orca, forage fish	Acquisition						
Functioning Nearshore Habitat Protection on Vashon/Maury Island- Pt. Hyer **(Project NS-17)**	**1**	Protect sites with high habitat resource values - Pt. Heyer Drift Cell	King County	$2,400,000			KC SWM; CFT (2008, submitted); RCO ALEA (2008 submitted; KC Park Levy (2008, submitted)	Loss of habitat,	Nearshore beach.	Land acquired	Chinook	Orca	Acquisition						2008
Subtotals				**$4,636,000**	**$220,500**	**$531,612**								**$3,236,000**		**$690,000**		**$850,000**	
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.																			
Flaming Geyser Floodplain Reconnection, Side Channel Connection and Habitat Restoration between RM 45.1 and RM 44.3 (Project MG-3)	**2**	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	$1,100,000		$150,000	King County, State Parks, IAC,	Channel structure/complexity.	Intream, riparian	Riparian, intream flow	Chinook	Steelhead, bull trout	Feasibility & Design	$150,000	Construction	$900,000			2009
Newaukum Creek Mouth Restoration Between Creek Miles 0.0 and 4.3 (Project MG-8)	**1**	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	$1,175,000		$788,581 (2004)	King County, ACOE	Riparian areas and LWD recruitment	Intream, riparian	Riparian, intream flow	Chinook	Steelhead, bull trout	Design & Permitting	$100,000	Construction	$1,075,000	Monitoring/Adaptive Management		
Setback and Removal of Fenster and Pautzke Levees to Reconnect the Floodplain and Allow Channel Migration near RM 32(Project MG-18)	**1**	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	$1,400,000		$675,900 (2005-2006)	Green River Flood Control Zone District $90,000; City of Auburn $33,000	Channel structure/complexity.	Intream, riparian	Riparian, intream flow	Chinook	Steelhead, bull trout	Construction	$1,225,000	Monitoring/Adaptive Management	$75,000	Monitoring/Adaptive Management	$75,000	2008
Setback and Removal of Fenster and Pautzke Levees to Reconnect the Floodplain and Allow Channel Migration near RM 32(Project MG-18)	**1**	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	$600,000 - $800,000		$250,000 (2007)		Channel structure/complexity.	Intream, riparian	Riparian, intream flow	Chinook	Steelhead, bull trout			Design & Permitting	$150,000	Construction	$650,000	2010
Setback and Removal of Fenster and Pautzke Levees to Reconnect the Floodplain and Allow Channel Migration near RM 32 (Project MG-18)	**1**	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	$3,500,000				Channel structure/complexity.	Intream, riparian	Riparian, intream flow	Chinook	Steelhead, bull trout			Design & Permitting	$100,000	Construction	$3,400,000	
Big Spring Creek Restoration (Project MG-7)	**1**	Construct new stream channel to replace ditch. Connect coldwater springs to Newaukum Creek.	King County	$1,194,590		$1,864,481	KCD $100,000 (2007)	Stream flow patterns. High H2O temperature.	Intream, riparian	Water quality	Chinook	Coho	Construction						2008

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

													2009		2010		2011		
Project Name	**Priority Tier**	**Project Description**	**Likely sponsor**	**Total cost of first three years/phases**	**Local Share**	**SRFBPSAR**	**Source of Funds**	**Primary Limiting Factors**	**Habitat Type**	**Activity Type**	**Primary Species**	**Secondary Species**	**Year 1 Scope**	**Year 1 Cost**	**Year 2 Scope**	**Year 2 Cost**	**Year 3 Scope**	**Year 3 Cost**	**Likely end date**
Capital Projects																			
Subtotals				**$20,520,000**															
Totals				**$39,924,586**															
Non Capital Programs-Not Prioritized																			
Lead entity coordination			Lead entity	$225,000									Staffing (1 FTE)	$75,000	Staffing (1 FTE)	$75,000	Staffing (1 FTE)	$75,000	Ongoing
Adaptive management and monitoring			Multiple stakeholders	$600,000									Staffing (3 FTEs)	$200,000	Staffing (3 FTEs)	$200,000	Staffing (3 FTEs)	$200,000	Ongoing
Nearshore Habitat Workshop			King County	$35,000															
Construct Seahurst Environmental Learning Center			City of Burien and Environmental Science Center	$150-$200K															
Create incentives Program to Remove Failing Septic Systems on Vashon/Maury Island			King County																
Project Management and Public Outreach			WRIA Staff																
Stewardship & Educational Outreach			WRIA Staff																
Water Conservation Incentive Programs			Multiple stakeholders																
Work with jurisdictions and Department of Ecology to support a Shorelines Exemption for properties affected by salmon habitat restoration			Multiple stakeholders																
Promote Plantive of Native Trees			Multiple stakeholders																
Develop a Coordinated Acquisition Program for Natural Areas			King County																
Increase/Expand Natural Yard Care Programs			Multiple stakeholders																
Conduct Shoreline Stewardship Workshops and Outreach - Beach/Bluff Educational Programs, including HPA education to agency staff and citizens.			Multiple stakeholders																
Create Soft Armoring Tech Assist/Cost Share			King County																
Citizen Volunteer Forage Fish Monitoring Program			Multiple stakeholders																
Promote Better Volunteer Carwash Practices			Multiple stakeholders																
Increase Public Awareness about What Healthy Streams and Rivers Look Like and How to Enjoy Recreating on Them			Multiple stakeholders																
Expand/Improve Incentives Programs			Multiple stakeholders																
Increase Use of Low Impact Development and Porous Concrete			Multiple stakeholders																
Develop Salmon Restoration Tools Consistent with Agricultural Land Uses			Multiple stakeholders																
Work with Co-Managers to integrate Hatchery & Harvest Practices with Habitat Plan Objectives			Multiple stakeholders																
Olympic sculpture park post construction monitoring in years 1 (2007), 2, 3 and 5.			City of Seattle	$77,000 WDFW grant, SRFB, KCD															
Water supply coordination per DOE/EPA Watershed assistance grant			Multiple stakeholders	$50,000															