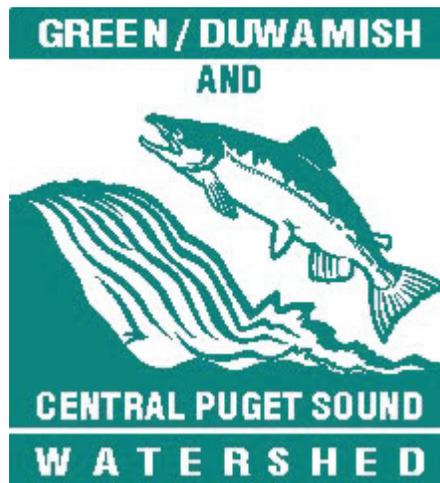


**First Annual Progress Report on Implementation of
the Salmon Habitat Plan
for the
Green/Duwamish and Central Puget Sound
Watershed (WRIA 9)**

Covering the Period August 2005 – December 2007



July 10, 2008

I. INTRODUCTION

The **WRIA 9 Salmon Habitat Plan: Making Our Watershed Fit for a King** was completed in August 2005 by the WRIA 9 Steering Committee and ratified in December 2005. Its creation was supported financially by all 17 local government partners in the Green/Duwamish and Central Puget Sound Watershed (WRIA 9) and the King Conservation District. In addition, representatives of many of the partner groups listed on pages 2-3 contributed ideas to the draft and final plans, both as members of the Steering Committee and as members of individual organizations.

The WRIA 9 Plan was prepared specifically in response to the listing of Chinook salmon under the Endangered Species Act (ESA) by National Marine Fisheries Services (NMFS) in 1999. The WRIA 9 Plan therefore represents the response to the legal obligation of each of the 16 WRIA 9 jurisdictions to participate in the recovery of Chinook salmon.

The WRIA 9 Salmon Habitat Plan provides guidance over a period of ten years (until 2015) for local governments, volunteer groups, and other partners in the protection and restoration of salmon habitat in the watershed. In January 2007, the Habitat Plan was incorporated by reference into the federally-approved Puget Sound Salmon Recovery Plan. It is important to note that the focus of the Habitat Plan through 2015 is on projects and programs in the Duwamish Transition Zone, marine nearshore, lower Green River, and Middle Green River per Habitat Plan Policy MS-1. There is, however, extensive work that is also proceeding in the Upper Green River through the Army Corp of Engineers and Tacoma Public Utilities.

The Salmon Habitat Plan, together with amendments from November 2007, is available on-line at <http://dnr.metrokc.gov/Wrias/9/HabitatPlan.htm>.

To help partners translate the recommendations of the Habitat Plan into discrete actions, an Implementation Guidance document was prepared in 2006 and adopted by the WRIA 9 Forum in 2007. Complementing this document was an Implementation Technical Committee (ITC), also created in 2006. The Implementation Guidance document calls for annual progress reports on implementation of Habitat Plan recommendations. The following report is the first annual WRIA 9 Salmon Habitat Plan progress report.

All documents, including this report, are available on-line at: <http://dnr.metrokc.gov/Wrias/9/participant.html>.

The purpose of this WRIA 9 Annual report is to:

- Provide a snapshot of progress toward implementing the WRIA 9 Salmon Habitat Plan, and
- Assess the effectiveness of the WRIA 9 effort by measuring progress against benchmarks.

Because this Annual report is being issued only two years after adoption of the WRIA 9 Salmon Habitat Plan and less than two years after final adoption of the Puget Sound Salmon Recovery Plan, the results are necessarily preliminary. They do serve, however, to provide a starting point in what will be a long and on-going effort to evaluate the progress of Chinook salmon recovery and watershed health improvements in WRIA 9.

These annual reports will be complemented by more formal evaluations in future years that consist of adaptive management and five-year progress reports. The accumulated information in the annual reports will provide enough information by 2010 to begin the process of:

- Evaluating the results of projects and programs,
- Identifying lessons learned, and
- Recommending changes to improve progress and results.

Partners Who Participate in WRIA 9 Activities:

We are grateful to the following partners in helping us to recover Chinook salmon and the health of the Green/Duwamish and Central Puget Sound watershed:

Local Governments: Cities of Algona, Auburn, Black Diamond, Burien, Covington, Des Moines, Enumclaw, Federal Way, Kent, Maple Valley, Normandy Park, Renton, SeaTac, Seattle, Tacoma, Tukwila; King County

Other Governments/Agencies: U.S. Army Corps of Engineers, Washington State Department of Fish and Wildlife, Washington State Department of Ecology, Washington State Department of Natural Resources, Washington State Parks, Port of Seattle, King County Flood Control Zone District, Covington Water District, King Conservation District, WSU –King County Extension, Puget Sound Partnership, National Marine Fisheries Service

Non-profit/Volunteer Groups: Mid-Sound Regional Fisheries Enhancement Group, People For Puget Sound, Puget Soundkeeper Alliance, Trout Unlimited, Environmental Coalition of South Seattle, Green/Duwamish Watershed Alliance, Duwamish River Cleanup Coalition, Cascade Land Conservancy, Washington Water Trust, Trust for Public Lands, Friends of Soos Creek Park, Wild Fish Conservancy, SHADOW, Middle Green River Coalition, South King County Chapter of Sierra Club, Black River Watershed Alliance, Normandy Park Community Club – Stewards of the Cove, Des Moines Creek Volunteers, Environmental Science Center of Seahurst Park, Fauntleroy Watershed Council, Vashon-Maury Island Land Trust, Vashon-Maury Island Audubon Society, Washington Conservation Corps, EarthCorps, Puget Sound Shared Strategy

II. IMPLEMENTATION HIGHLIGHTS

A. Projects

In 2007 WRIA 9 partners secured nearly \$9 million (\$8,993,958) in funding for implementation of Salmon Habitat Plan projects. See section III (Status of Habitat Plan actions) for status of current active projects.

B. Programs and Policies

In addition to working hard to get projects on the ground, WRIA 9 staff in cooperation with partners also pursued implementation of a variety of Salmon Habitat programs and policies including:

1. Worked with Implementation Technical Committee (ITC) to accomplish 2007 Work ITC Program tasks:
 - H-integration [habitat, hatchery, harvest],
 - Development of monitoring templates, and
 - Development of reporting templates.
2. Completed WRIA 9 jurisdiction regulatory survey.
2. Initiated first Salmon Habitat Plan amendment process, completed in November 2007.
3. Secured a \$36,700 King Conservation District grant to conduct a marine nearshore armoring alternatives/regulations workshop in fall 2008.
4. Conducted meetings with WRIA 9 marine nearshore city planning departments regarding the importance of marine nearshore and shoreline regulations.
5. Held on-going meetings with WRIA 9 jurisdictions regarding Salmon Habitat Plan implementation efforts (Black Diamond, Enumclaw, Burien).
6. Completed groundwater quantity/quality coordination project (DOE/EPA grant).
7. Participated in watershed integration efforts with WADOE and WRIs 7 and 8.
8. Reviewed and responded to land development proposals within WRIA 9.
9. Tracked legal opinions that affect WRIA 9 (e.g., Shoreline Hearings Board decisions regarding armoring).
10. Met with King Conservation District regarding funding for watershed environmental indicators monitoring and initiated process for future consideration of coordination and funding.

11. Participated in Salmon Recovery Funding Board project technical review process.
12. Participated in King County Natural Resource Stewardship Network project technical review (for Jenkins Creek park project).
13. Developed WRIA 9 2007 three-year work schedule.
14. Began development of a six-year Capital Improvement Program.

III. STATUS OF SALMON HABITAT PLAN ACTIONS

This section reviews the current status of WRIA 9 Salmon Habitat Plan actions including projects (protection and restoration) and programs. The focus of the WRIA 9 Plan is on implementation 56 priority projects (see Table 8-2 in the WRIA 9 Salmon Habitat Plan) and 26 programs over the first ten years below the Upper subwatershed. It is important to note, however, that the Army Corp of Engineers (ACOE) and Tacoma Public Utilities (TPU) are implementing a variety of salmon projects that are included in the WRIA 9 Plan, including Project UG-4 (Fish Passage to and From the Upper subwatershed). The upstream fish collection facility was completed recently by TPU at the Tacoma Headworks dam, and the ACOE is nearing completion of the downstream juvenile fish passage facility. The Middle Green gravel and large woody debris supplementation programs (MG-2 and MG-3; see Table 4) being implemented by the ACOE, TPU, King County and other local governments are also essential to assuring that fish being passed by the TPU collection facility and the ACOE downstream passage facility have the spawning and rearing habitat they need.

Although WRIA 9 Plan actions constitute the core of the Chinook salmon recovery strategy for WRIA 9, it is important to note that the relationship between hatcheries, harvest, and flows (also know as H-integration) is also important elements in the long term strategy. H-integration is in its early stages in WRIA 9 as well as in most other watersheds in Puget Sound. Ultimately, however, it is the interplay of the H's and our ability to mitigate the affects of population growth within the watershed that will determine the success of habitat-focused salmon recovery efforts. Monitoring will therefore play an essential role in determining our effectiveness.

It is also important to note that WRIA 9 Plan actions will benefit multiple species both listed under the Endangered Species Act and non-listed species, and improve the overall aquatic ecosystem. Riparian improvements, side channel reconnections, preservation of existing good quality habitat will benefit coho and steelhead as well as Chinook. Recovery of Chinook salmon is also essential to long term survival of Puget Sound orcas, another ESA-listed species. The recovery of Puget Sound itself is dependent to a large extent on the actions described in the WRIA 9 Plan and the 14 other Puget Sound watershed plans.

A. WRIA 9 Salmon Habitat Plan Priorities

The project priorities of the WRIA 9 Salmon Habitat Plan are established by policy MS-1 as follows:

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.

Since adoption of the WRIA 9 Salmon Habitat Plan, approximately 26% of project funding has been focused on the transition zone, with the remaining 74% directed to rearing and spawning habitat projects (Estimate based on total acres and river miles of habitat restoration and protection of completed projects and active projects)

B. Project Actions

Similar to other large capital projects, the WRIA 9 Salmon Habitat Plan projects are in a variety of phases ranging from landowner willingness inquiries and acquisition through design, engineering, permitting, and construction. Most projects therefore have project timeframes of six years or more. WRIA 9 staff is working to develop a six-year capital improvement plan (CIP) and schedule for completion by the end of 2008. In the meantime, this summary presents a list of projects completed since 1999 (Table 1) and up-to-date information on the status of each habitat restoration/protection project currently underway within WRIA 9 (Table 2).

COMPLETED PROJECTS LIST

The following projects were carried out by various local, tribal, and federal agencies. Projects were made possible through financial support from the King Conservation District, local governments, and state and federal agencies. Volunteers and nonprofit groups provided substantial amounts of labor for many of these projects. The map following this table illustrates the location of those completed projects that are also included in the WRIA 9 Plan.

Table 1

PROJECT	SUBWATERSHED	APPROXIMATE RIVERMILE	TOTAL COST
O'Grady Stream Restoration (1999)	Middle Green	40	n/a
Big Spring Creek Restoration (2000)	Middle Green	7 (on Newaukum Ck)	\$620,000
Metzler Park Side Channel Acquisition (2000-2001)	Middle Green	40	\$525,000
Green River Restoration at Metzler-O'Grady (2000)	Middle Green	40	\$1,190,000
Mullen Slough Restoration (2000)	Lower Green	23	n/a
Porter Levee Restoration (2000)	Middle Green	34.5	\$212,215
Longfellow Creek Restoration (2000)	Duwamish	1	n/a
Upper Green River Culvert Replacement at Sweeney Creek (2000)	Upper Green		\$380,000
Kanaskat Property Acquisition (2000-2001)	Middle Green	NA (King County)	\$4,000,000
Eagle's Landing Park Acquisition (2002)	Marine Nearshore (Burien)	NA	n/a
Middle Green River Acquisition (2002)	Middle Green		\$1,190,000
Codiga Farms Side Channel Habitat Restoration (2006)	Duwamish	11	n/a
Duwamish Riverbend Hill (Grandmother's Hill) Park Acquisition (2004)	Duwamish	7	n/a
Seahurst Seawall	Marine Nearshore	NA	\$1,088,000

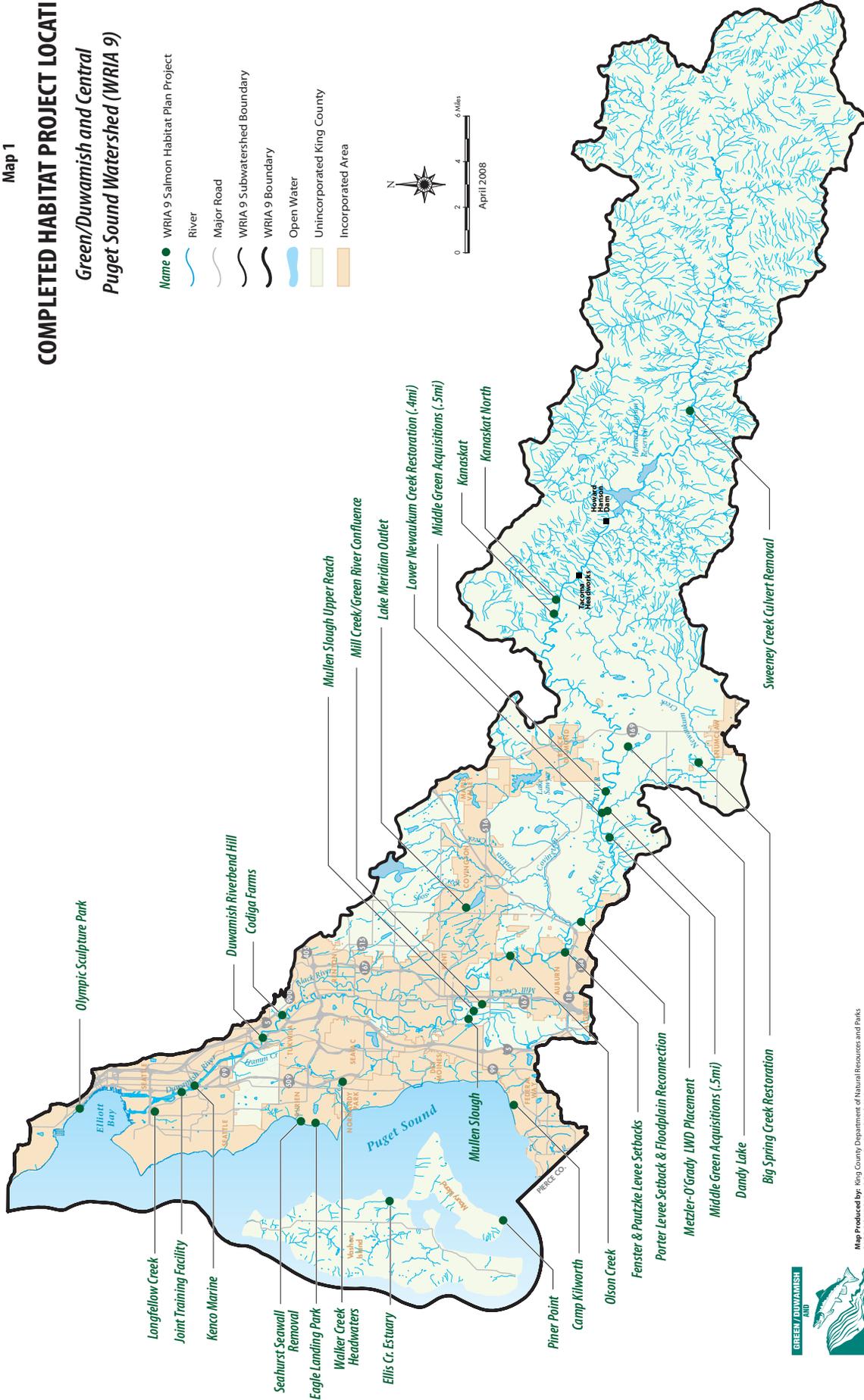
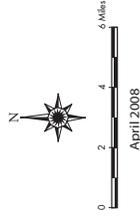
Removal (2005)	(Burien)		
Olson Creek Restoration – Phase 1 (2005)	Lower Green	28.5	n/a
Lower Newaukum Creek Restoration (2005)	Middle Green	40.5	\$938,581
Dandy Lake Habitat Acquisition (2005)	Middle Green	NA (King County)	\$725,000
Mill Creek/Green River Confluence Restoration (2005)	Lower Green	24	\$300,000 (feasibility)
Walker Creek Headwaters Acquisition (2005)	Marine Nearshore (Burien)	NA	\$450,000
Fenster Levee Setback Phase I –Rivermile 32.0 (2005)	Middle Green	32	\$811,400
Kenco Marine Restoration (2006)	Duwamish	6	n/a
Elliott Bay Shoreline Restoration at Olympic Sculpture Park (2006)	Marine Nearshore (Seattle)	NA	\$2,589,744
Ellis Creek Estuary Acquisition and Restoration (2006-2007)	Marine Nearshore (Vashon/Maury)	NA	\$229,430
Lake Meridian Outlet Stream and Wetland Restoration (2005)	Lower Green	NA (Kent)	\$800,000
Camp Kilworth Nearshore Acquisition (2007)	Marine Nearshore (Federal Way)	NA	\$3,000,000
Piner Point Acquisition (2007)	Marine Nearshore (Vashon/Maury)	NA	\$469,980
Seattle Fire Training Center Mitigation Site (2007)	Duwamish (Seattle)	5.2	\$1,00,000 (construction costs only)

Map 1

COMPLETED HABITAT PROJECT LOCATIONS

Green/Duwamish and Central Puget Sound Watershed (WRIA 9)

- Name ● WRIA 9 Salmon Habitat Plan Project
- River
- Major Road
- WRIA 9 Subwatershed Boundary
- WRIA 9 Boundary
- Open Water
- Unincorporated King County
- Incorporated Area



Map Produced by: King County Department of Natural Resources and Parks
 DNR/GIS/WEB/Visual Communications & Web Unit
 File Name: 0804_WSHabPgmMAP1.LPFE



Table 2: WRIA 9 Habitat Plan Active Projects

Action Name and Description	Likely sponsor	Project program, HP #	2007 Total	SRFB	KCD	ERP	Other Fund Sources	2008		2009		2010		Likely end date
								Year 2 Scope	Year 2 Cost	Year 3 Scope	Year 3 Cost	Year 4 Scope	Year 4 Cost	
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.														
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	\$2,924,000	\$950,000	\$325,000	\$1,649,000	King County, US ACOE	Construction	\$1,975,000	Monitoring/Adaptive Management	\$85,000	Monitoring/Adaptive Management	\$85,000	2008
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	\$3,158,521	\$950,000	\$325,000	\$1,649,000	Tukwila: \$100,000 (2007 acquisition and 2008); CFT: \$350,000 (2007); St. Budget Appro.: \$1,400,000	Complete acquisition	\$1,700,000	Design, engineering, permitting	\$200,000	Archeological data recovery	\$100,000	2011
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.														
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	\$475,000	\$100,000		\$175,000	Kent \$100,000; CFT: \$100,000	Complete Design & Permitting	\$451,200	Construct Project	?	Monitoring & Adaptive Management	\$50,000	
Downey Framsted: Acquire three properties immediately upstream of the Mullen Slough confluence and demolish buildings on one. A subsequent phase would likely modify Prager Road and allow reconnection of the upland to the river.	Kent (lead), King County, Green River, Flood Control Zone District	Project, LG-7	\$1,200,000	\$975,085			Kent \$180,000; King County \$25,000; Green River Flood Control Zone District \$25,000	Complete Acquisition	\$1,205,000					
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		\$175,000	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
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.														

Action Name and Description	Likely sponsor	Project, program, HP #	2007 Total	SRFB	KCD	ERP	Other Fund Sources	2008		2009		2010		Likely end date
								Year 2 Scope	Year 2 Cost	Year 3 Scope	Year 3 Cost	Year 4 Scope	Year 4 Cost	
Capital Projects														
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
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	\$537,398		\$150,000	\$200,000	Burien \$23,500	Monitoring/Adaptive Management	\$25,000	Feasibility	\$40,000	Design, engineering, permitting	\$100,000	Const. in 2011
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	\$496,460	\$380,738	\$115,722		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	
Functioning Nearshore Habitat Protection: Protect site with high habitat resource value - Camp Killworth. 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	\$2,916,000				Washington Wildlife & Recreation Program \$1,000,000; Conservation Futures \$400,000; City of Federal Way	Acquisition	\$3,116,000					2008
Ellis Creek Salt marsh Protection and Restoration on Vashon Island: Acquire and restore salmonid-accessible salt marsh and riparian land at the mouth of Ellis Creek on Tramp Harbor on the east side of Vashon Island. CONSTRUCTION COMPLETE	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
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											

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

Action Name and Description	Likely sponsor	Project, program, HP #	2007 Total	SRFB	KCD	ERP	Other Fund Sources	2008		2009		2010		Likely end date
								Year 2 Scope	Year 2 Cost	Year 3 Scope	Year 3 Cost	Year 4 Scope	Year 4 Cost	
Capital Projects														
Functioning Nearshore Habitat Protection on Vashon/Maury Island: Protect sites with high habitat resource values - Pt. Heyer, Drift Cell	King County	Project, NS-17	\$414,000	\$360,000	\$54,000		King County (\$54,000)							2008
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				
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.														
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	\$938,581	\$788,581	\$75,000		King County \$75,000, ACOE	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: Fenster Levee Phase 1A - Remove levees, lower the elevation of terraces and construct engineered logjams to reinstate floodplain connectivity and channel migration.	Auburn, King County	Project, MG-18	\$705,000	\$250,000	\$275,000		Green River Flood Control Zone District \$90,000; City of Auburn \$33,000; pipeline 5- \$180,000	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: Fenster Levee Phase 1B - 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
Big Spring Creek Restoration: Construct new stream channel to replace ditch. Connect coldwater springs to Newaukum Creek.	King County	Project, MG-7	\$250,000		\$100,000		King County \$150,000	Construction						2008

C. Project Implementation Benchmarks

Table 8 of the WRIA 9 Implementation Guidance document established three-, five-, eight-, and 10-year benchmarks for the Nearshore, Duwamish Estuary, Lower Green River, and Middle Green River subwatersheds. The benchmarks focus on those habitat improvements that address the WRIA 9 Salmon Habitat Plan priorities, and are based on what is achievable if watershed partners maintain a commitment to regional cooperation and if funding can be obtained from state and federal sources.

This first Annual Report issued at the end of the second full year of implementation of the WRIA 9 Salmon Habitat Plan documents the status of attaining the three-year benchmarks. The benchmarks are:

By the end of Year 3 (2008) the following types of habitat are completed or are being actively developed, including securing funding, developing designs, and beginning permitting/agency coordination:

**Table 3: Green/Duwamish and Central Puget Sound Watershed
Three Year Benchmarks (end of 2008)¹**

Benchmark	Actual²
Nearshore	
Protection of 1.5 miles of shoreline	.20 miles
Restoration of 4,000 feet of shoreline	5,000
Restoration of two pocket estuaries	1
Duwamish	
Restoration of 8 acres of shallow water habitat	4.16 acres
Restoration of 1 mile of shoreline bank	.10 mile
Lower Green	
Restoration of 5 acres of reconnected off-channel habitat, including riparian vegetation	9.1 acres
Completion of 4,000 feet of levee setback	0 feet
Middle Green	
Restoration of 15 acres of reconnected off-channel habitat, including riparian vegetation	4 acres
Completion of 4,500 feet of levee setback	6,000
5.5 miles of tributary improvement	2.1 miles

¹ As established in the November 2006 WRIA 9 Implementation Guidance document

² Approximate as of January 2008, based on completed and active projects listed in section III.B report.

Table 3 provides a mixed story of progress in attaining the three-year benchmarks. In the Duwamish Estuary, home to the transition zone and the key focus area of policy MS-1, WRIA 9 is less than half way to achieving the benchmark for creation of shallow water habitat and only a tenth of the way to achieving the benchmark for shoreline bank restoration. There has also been a lack of progress in levee setbacks in the Lower Green. There are, however, projects on the horizon that should get WRIA 9 well on the way to achieving our ten-year levee setback

benchmark. WRIA 9 is also far ahead of the benchmark for off-channel habitat restoration in the Lower Green river and are ahead of the benchmark for nearshore shoreline restoration.

In looking behind the numbers of specific projects and where they are located, the reasons for a mixed story of progress become apparent. The two most significant factors are property availability and cost. In the Duwamish, where most property is zoned for industrial uses, availability is low and cost is high (\$1 million per acre on average). Creating shallow water habitat and shoreline bank restoration that accompanies it is also very expensive because of the large amount of earth (which may be contaminated) that needs to be removed and disposed of. In the Lower Green River, however, properties are not as constrained (relatively) and riparian planting is relatively inexpensive. Table 3 demonstrates the challenges of implementing a capital facilities program for habitat restoration projects where multiple institutional and financial barriers exist. The good news is that although WRIA 9 project implementation that meets the limiting factors addressed in the benchmarks is lagging, progress is being made with 26 projects completed since 1999.

It is important to keep in mind that the benchmarks were developed to track progress in addressing key limiting factors of habitat decline in the Green/Duwamish and Central Puget Sound Watershed. There are, however, habitat improvements that are not captured by the benchmarks such as large woody debris and gravel supplementation, and protection of sources of cold, clear water such as Big Spring Creek and the Bass Lake Natural Area in the Middle Green River subwatershed.

D. Programmatic and Regulatory Actions

The WRIA 9 Implementation Guidance document calls for annual status updates of Salmon Habitat Plan programs and regulatory actions. Implementation questions include:

1. Which Salmon Habitat Plan programs and regulatory actions have been implemented?
2. How many and which WRIA 9 jurisdictions have implemented Salmon Habitat Plan programs and regulatory actions?
3. What factors are affecting implementation?

The implementation questions were addressed in a survey of each WRIA 9 jurisdiction during the summer of 2007. The survey responses were used to determine the status of program and regulatory implementation compared to benchmarks established by the Implementation Guidance document. Table 9 of the Implementation Guidance document establishes three-, five-, eight-, and 10-year benchmarks. This first Annual Report, issued at the end of the second year of implementation of the WRIA 9 Salmon Habitat Plan, focuses on the status of attaining the three-year benchmarks. The three-year program and regulatory benchmark is:

By the end of Year 3, each jurisdiction will have implemented or begun implementing 30 percent of those programs relevant to the jurisdiction. (Relevant programs are being identified in 2006 by jurisdiction staff working with WRIA staff.)

1. Status of WRIA 9 Salmon Habitat Plan Program Implementation

The WRIA 9 Salmon Habitat Plan has 26 recommended programs that could be implemented by local jurisdictions within WRIA 9. Not all are applicable to every jurisdiction. Responses to the survey were received from 10 of 17 WRIA 9 local jurisdictions. Of the 10 jurisdictions that responded to the survey on average 70% indicated they were implementing or intended to implement applicable watershed wide programs in their jurisdictions, and 73% on average indicated they were implementing or intended to implement applicable subwatershed programs.

Table 4: Status of Programmatic Habitat Plan Actions

Action	Action Description	# Implement/ Intending to Implement	Not Applicable
WW-1: Conduct Shoreline Stewardship Workshops and Outreach	Offer shoreline property owners shoreline design workshops to provide information they can readily use to be better stewards of their property. There would likely be different workshops for different parts of the watershed such as Puget Sound beaches and bluffs, Green/Duwamish River mainstem, tributary streams, and lakes.	7	0
WW-2: Increase/Expand Water Conservation Incentive Programs	Increase water conservation campaigns promoting the use of more efficient toilets and appliances and water use practices. Expand efforts directed at better landscape irrigation. Offer free landscape irrigation audits for high water users. Offer free indoor water conservation kits for households.	6	3
WW-3: Increase/Expand Natural Yard Care Programs for Landscapers	Offer educational programs for landscape designers, contractors, groundskeepers, and property managers about the benefits of and practices of natural yard care and use of native/riparian vegetation. Different programs could address the needs of different audiences: design vs. maintenance, preservation of topsoil vs. building healthy soil, plant selection vs. plant care. Explicitly address the tradeoffs between conventional and natural yard care practices. Existing models for such programs are trainings offered by Seattle Public Utilities on irrigation systems and the Washington Association of Landscape Professionals.	4	0
WW-4: Increase/Expand the Natural Yard Care Program for Single Family Homeowners	Expand the existing Natural Yard Care program to promote the value of native riparian vegetation for stream health and the cost savings of native drought-tolerant vegetation for upland areas. Through a series of neighborhood workshops, the program focuses on promoting better lawn and garden care among neighbors by removing barriers to change.	8	0

Action	Action Description	# Implement/ Intending to Implement	Not Applicable
WW-5: Promote the Planting of Native Trees	Promote the planting of native trees. Coordinate with nurseries, home improvement centers, and arborists to develop a marketing campaign promoting the benefits of native trees. Offer native trees as part of neighborhood improvement projects. Promote the benefits of trees and increased forest cover. Such benefits include shade in summer, increased property values, improved salmon/wildlife/bird habitat, and improved groundwater recharge. Cities may wish to identify desired percentages of tree cover to achieve to provide a goal to work toward and measure progress.	9	0
WW-6: Promote Better Volunteer Carwash Practices	Local jurisdictions should promote volunteer carwashes that keep soapy and oily water out of the storm drain system through: <ul style="list-style-type: none"> ▪ Promoting use of car wash kits. The kits include a catch basin and pump to direct the wastewater to the sanitary sewer. Modest incentives or publicity should be used to reward those who use the kits; and ▪ Encouraging use of car wash coupons for fundraisers (e.g., through the Puget Sound Carwash Association Charity Carwash Program). 	8	0
WW-7: Increase Public Awareness about What Healthy Streams and Rivers Look Like and How to Enjoy Recreating on Them	Increase public awareness about what healthy streams and rivers look like and practices to be avoided when recreating on them. These efforts should emphasize that healthy rivers include large amounts of large woody debris and have abundant native trees and shrubs on their banks. To make up for the lack of wood, restoration projects include placement of wood in streams and rivers. Protecting native vegetation along stream and river banks will encourage the growth of large trees that can fall into the streams in the long run.	7	1
WW-8: Increase Involvement of Volunteers in Habitat Stewardship	Increase citizen participation in stewardship programs that involve volunteers in restoring, maintaining, and monitoring habitat protection and restoration projects. Continued grant assistance to non-governmental groups will support their volunteer organization.	9	0
WW-9: Green/Duwamish Volunteer Revegetation Program	The Volunteer Revegetation Program in the Green/Duwamish River Watershed will support riparian planting projects through a partnership between the U.S. Army Corps of Engineers and local jurisdictions. This program would improve fish and wildlife habitat throughout the Green/Duwamish River basin by providing significant quantities of native plants to volunteer groups for replanting the riparian habitat along the mainstem Green River and its tributaries. Control of invasive plant species and maintenance will be essential to the success of these projects.	3	7

Action	Action Description	# Implement/ Intending to Implement	Not Applicable
WW-10: Support/Expand the Natural Resource/Basin Steward Programs	Support and expand, within local jurisdictions, the natural resource/basin steward programs that work with private landowners to protect and restore salmon habitat and rural resource lands. Expanding these types of efforts will increase the number of people voluntarily improving the health of their land and water.	7	2
WW-11: Expand/Improve Incentives Programs	Expand existing incentives and develop new incentives for property owners to protect salmon habitat. The desired outcome of this project is to increase awareness and use of existing incentive programs. This project should occur in two phases: Phase I: WRIA 9 jurisdictions should evaluate their application of incentives for habitat protection; and Phase II: Using the information developed in Phase I, a WRIA-wide effort should be considered to enhance the effectiveness of incentives.	7	0
WW-12: Improve Enforcement of Existing Land Use and Other Regulations	Improve enforcement of existing regulations that protect salmon and salmon habitat. Complying with existing and future regulations is an important tool to ensure long-term protection of salmon habitat in the watershed. All levels of government should ensure that implementing and complying with policies and regulations are sufficient to achieve their purpose, consistent with long-term salmon habitat protection.	10	0
WW-13: Increase Use of Low Impact Development and Porous Concrete	Improve water quality generally and reduce the volume of stormwater runoff through low impact development including use of porous paving materials. Promote infiltration to the maximum extent possible as the preferred means of stormwater volume control.	10	0
WW-14: Provide Incentives for Developers to Follow Built Green™ Checklist Sections Benefiting Salmon	Encourage the use of the Built Green™ building program through incentives provided by local governments to developers. Built Green™ provides checklists for building single family houses, multi-family housing, communities, and remodels. Sections of the checklists that improve water quality and salmon habitat include site preparation, stormwater management, and homeowner operations and maintenance. In exchange for reaching certain point thresholds for the relevant Built Green™ sections, local jurisdictions could provide developers with incentives such as reduced permit costs, reduced impact fees, reduced or flexible buffer widths, and other changes that will encourage voluntary participation. Active promotion of these incentives by jurisdiction planning/permitting departments may be necessary to encourage wide-spread use.	7	0

Action	Action Description	# Implement/ Intending to Implement	Not Applicable
WW-15: Develop a Coordinated Acquisition Program for Natural Areas	Develop and implement a coordinated natural areas (“open space”) identification and protection program. Once key properties are identified and prioritized, pursue grant funding or other means to preserve and protect target areas. Acquisition of additional natural areas should include provision for necessary site management and maintenance.	6	2
WW-16: Develop Salmon Restoration Tools Consistent with Agricultural Land Uses	Develop a suite of tools that will allow and encourage voluntary projects by farmers to protect and restore habitat while preserving agriculture. Although the primary focus of the program would be the larger farms on the Green River mainstem, it also could include smaller, “hobby” farms adjacent to tributary streams. King County Basin Stewards, County agricultural programs staff, and WRIA 9 staff should work with the agricultural community to prepare incentive and public outreach programs tailored to the issues of farms.	2	7
Middle Green-1: Enumclaw Plateau Dairy Nutrient Management Program	Protect water quality in agricultural areas by creating markets for manure. This would be done by facilitating the export of manure from dairy farms and off the Enumclaw Plateau, to prevent excess nutrient runoff into waterways, and to improve nutrient management on farms. This program would be run by the King County Department of Natural Resources and Parks in conjunction with King Conservation District, Natural Resource Conservation Service, King County Solid Waste Division, and private dairy farmers. The King County Agriculture Program has done a feasibility study and (at the time of publication) is soliciting proposals for this program. Dairy farmers in the Enumclaw Plateau have expressed interest in this program.	1	9
Middle Green-2 and 3: Middle Green River Gravel & LWD Supplementation Program	The U.S. Army Corps of Engineers, Tacoma Public Utilities, King County, and other local governments should continue gravel supplementation in the Middle Green River on an annual basis or in conjunction with specific projects.	1	9
Middle Green-4: Side Channel Reconnection Program	Initiate a side channel rehabilitation/reconnection program that concentrates efforts from river miles 45 to 32. Side channels and other off-channel habitat would be created or enhanced by excavation in the currently functioning floodplain. Side channels would be excavated at strategic locations listed below. Because these efforts would occur over a long period of time and would require monitoring and maintenance, a programmatic approach is necessary	2	8
Duwamish-1: Eliminate Perennial Pepperweed	Carry out a comprehensive cooperative weed control effort to eliminate perennial pepperweed (<i>Lepidium latifolium</i>), a Class B noxious weed, which has formed a heavy infestation from upstream of North Wind’s Weir (river mile 6.3) to Herring’s House Park (river mile 1.1).	1	8

Action	Action Description	# Implement/ Intending to Implement	Not Applicable
	This weed grows well in intertidal and riprapped areas. Pepperweed control is typically done by hand, making control relatively expensive and time-consuming compared to control of other weeds.		
Duwamish-2: Eliminate Common Reed from SR 509 Intertidal Wetlands	Carry out a comprehensive cooperative weed program to eliminate non-native common reed (<i>Phragmites australis</i>) at the SR 509 Intertidal Wetlands site and rehabilitate the existing restoration site.	1	8
Nearshore-1: Promote Habitat Restoration on Private Property by Offering a “Toolbox” of Nearshore Habitat Project Designs	This program would promote voluntary restoration on private properties by creating a “toolbox” of stock or model habitat designs/techniques that can be applied to create needed habitats (e.g., removal of derelict docks, revegetation with riparian vegetation).	4	4
Nearshore-2: Create a Soft Armoring Technical Assistance and Cost- Share Program	This program would both offer technical assistance on alternative shoreline protection (“soft” armoring) and provide a cost-share program to encourage landowners to use these techniques.	3	4
Nearshore-3: Create an Incentive Program to Encourage Multiple Family/Neighborhood Use of Docks and Boat Ramps	This program would reduce the impacts of docks and boat ramps by encouraging consolidation of several docks or ramps into one structure that would serve the entire community.	1	5
Nearshore-5: Citizen Volunteer Forage Fish Monitoring Program	This program would both help to fill important data gaps about where forage fish spawn and educate the public, especially marine shoreline landowners, about the importance of a healthy nearshore.	2	6

2. Regulatory Actions

Local land use and environmental regulations are an important component of protecting existing resources that salmon and people depend on. Of the 10 jurisdictions that responded to the survey, on average approximately half indicated they were implementing the regulatory actions addressed in the survey. Note that regulatory effectiveness is not yet addressed by the jurisdictions that responded to the survey. This may be due to the challenges of measuring regulatory effectiveness including issues of how to measure effectiveness, potential subjectivity of measures, expense of long term monitoring, and the need for an understanding of the regulatory environment or results can be misinterpreted (e.g., variances from bulk standards are a legal land use tool available to provide relief to property owners even though some see variances as a “defect” in regulations). King County is in the process of developing a Critical Areas code

effectiveness monitoring program. Some local jurisdictions have also recently received state and federal grants to begin evaluating the effectiveness of their land use and environmental regulations. WRIA 9 expects this work will inform and help refine the development of future regulatory surveys.

Table 5

Regulatory Actions		Yes	No
1.	Have you updated your Critical/Sensitive Areas Ordinance regulations since 2003?	8	2
2.	Have you updated your Shoreline Master Program (SMP) since 2005?	3	7
3.	Are Low Impact Development (LID) options included in your surface water management code?	7	3
	If no, are you planning to include LID in your code prior to the August 2009 deadline established by the NPDES permit?	3	----*
4.	Do you have adequate support and resources to implement stormwater management measures (e.g., a process to locate and remove stormwater pollution sources or construction site runoff control review and inspection) that protect salmons and promote recovery?	5	4^
5.	Does your jurisdiction have a regulatory effectiveness monitoring program? (e.g., do you have a mechanism or process in place to monitor the effectiveness of your land use and environmental regulations?)	0	10

* No response.

^ One jurisdiction did not respond.

E. MONITORING

Salmon Habitat Plan-recommended monitoring in WRIA 9 is in its early stages. The primary focus of monitoring will be on project implementation and effectiveness and on watershed-wide environmental indicators (i.e. what is the state of the health of the watershed?). Population or VSP (Viable Salmonid Population parameters) monitoring is long term (at least ten years) and is primarily the responsibility of the Washington Department of Fish and Wildlife (WDFW) and the federal government.

Two WRIA 9 Salmon Habitat Plan projects have completed pre-construction monitoring and have on-going post-construction effectiveness monitoring in place. These projects are Seahurst Seawall Removal Phase I and Olympic Sculpture Park Nearshore Embayment. To date, both projects are seeing increased juvenile salmonid usage following project completion.

Various elements of watershed-wide environmental indicators monitoring occur throughout the WRIA 9 watershed by various agencies including King County, Tacoma Public Utilities, and the Army Corp of Engineers. The goal of WRIA 9 is develop a concise, consolidated monitoring program that focuses on the key environmental indicators identified in the WRIA Implementation Guidance document prior to our first five-year progress report.

F. H-INTEGRATION

The Washington Department of Fish and Wildlife (WDFW) defines H-integration as a coordinated combination of actions among all H-sectors – harvest, hatchery, and habitat (inclusive of hydro) – that together work to achieve the goal of recovering self-sustaining, harvestable salmon runs. The process WDFW has requested Puget Sound watersheds to use to address H-integration is to complete three tables that summarize conditions, sequencing and timing, and expected results over time by VSP (i.e. abundance, productivity, spatial structure, and diversity) for each H. The intent of the exercise is to reach agreement among the major parties responsible for each H in characterizing how actions (projects, programs, and policies) taken by each party can ultimately recover self-sustaining, harvestable salmon runs.

WRIA 9 began its H-integration process in August 2007 with a workshop intended to provide an overview of the H's to key parties in the process, including WRIA 9 staff, King County Water and Land Resources Division science staff, WDFW, the Muckleshoot Indian Tribe (MIT), Tacoma Public Utilities (TPU), and the Army Corps of Engineers (ACOE). Since then this group has met monthly to develop a long term H-integration strategy. A draft H-integration report is expected to be distributed for peer and public review and comment by the end of 2008.

IV. CONCLUSIONS

The primary conclusion that can be drawn from this first annual report on the implementation of the WRIA 9 Salmon Habitat Plan is that we have all accomplished a great deal. There is, however, a lot left to do. With the adoption of the WRIA 9 Plan in 2005, partners in the watershed have a strategy for implementing projects based on a much greater understanding of the needs of the watershed and of salmon than before we started in 1999. Twenty-seven projects (protection and restoration) have been completed since 1999, with five of those projects completed since the WRIA 9 Plan was adopted. WRIA 9 also has 15 projects under development and expects to construct North Winds Weir in the Duwamish Estuary transition zone in 2008. Several of the watershed-wide and sub-watershed programs that focus on stewardship and public education have been implemented, and most of WRIA 9's local jurisdictions have updated or are in the process of updating regulations essential for the recovery of watershed health.

It is not surprising that more needs to be done and that many of the three-year numerical benchmarks are not being met. Funding levels (especially SRFB funding) are down, Duwamish transition zone properties in particular are very expensive and rarely on the market, and local governments are at a disadvantage competing in the market place for properties because they cannot offer more than fair market value to sellers. The capacity to implement a ten year \$300 million capital improvement plan (CIP) is also severely constrained.

In order to continue to implement the WRIA 9 Plan, we have three fundamental needs:

1. The continued participation of all of the local WRIA 9 jurisdictions in policy and program implementation,
2. An increase in funding to implement restoration and acquisition projects, and
3. Regional support in the form of continued advocacy for salmon recovery at the watershed level from the Puget Sound Partnership (PSP).

Specific short-term next steps for WRIA 9 staff include:

1. Refining the three-year work schedule based on project prioritization and sequencing,
2. Developing a Marketing Plan,
3. Addressing the goals and objectives of the legislation creating the Puget Sound Partnership (ESSB 5372) that shifts the focus from Chinook salmon recovery to the recovery of the health of Puget Sound,
4. Developing an achievable six-year Capital Improvement Projects (CIP) program by the end of 2008,
5. Completing integration of the “H’s” by the end of 2008,
6. Refining project effectiveness monitoring protocols, and
7. Developing an environmental indicators monitoring partnership with King County, the King Conservation District, and other interested WRIAs (i.e. 8 and 10).

Finally, feedback on the content and format of this report is encouraged. Please contact Gordon Thomson, WRIA 9 Habitat Plan Manager at: Gordon.thomson@kingcounty.gov, 206-296-8013 if you have comments.

Thank you for your continued support and enthusiasm in our mission to recover salmon in the Green/Duwamish and Central Puget Sound watershed and contribute to improving the health of Puget Sound.