The Snohomish River Basin

Building a Healthy Watershed

Snohomish Basin
Salmon Recovery Forum

Snoqualmie ~ Watershed
Forum

Overview of the Basin's Ten-Year Conservation Plan

The *Snohomish River Basin Salmon Conservation Plan* (2005) is a multi-salmonid strategy that emphasizes two Endangered Species Act (ESA) listed species, Chinook salmon and bull trout char, as well as non-listed coho, all of which are used as proxies for all salmonids in the Basin. The *Plan*, developed by the 39-member Snohomish Basin Salmon Recovery Forum (the Forum), incorporates actions across habitat, harvest and hatchery management to bring the listed wild stocks back to healthy, harvestable levels. For habitat, the *Plan* hypothesizes that the quality and quantity of rearing habitat in the nearshore, estuary and mainstem rivers is the primary habitat factor limiting performance of these two species. While habitat protection actions are supposed to maintain current levels of habitat across the Basin, restoration actions should build habitat to make further improvements across the Viable Salmonid Population parameters – abundance, productivity, spatial structure and diversity. For harvest, the *Plan* hypothesizes that use of harvest ceilings at multiple levels – within Puget Sound, in international waters, and at the extreme terminal area – will allow for greater control and higher numbers of fish returning to spawn. To limit the side effects of hatcheries such as straying, the *Plan* hypothesizes that integration of the hatchery stocks with natural origin stocks will improve the genetic fitness of stocks in the basin.

Habitat

To bring the ESA-listed species back to healthy, harvestable levels (as well as to hold the line for non-listed species), the *Plan* uses an ecosystem approach that relies on protection and restoration actions that both maintain current intact habitat and build more habitat. Under this approach, the *Plan* integrates analyses on current and potential fish use, habitat conditions and watershed processes to prioritize recovery areas and actions into "sub-basin strategy groups." Within each sub-basin strategy group, the *Plan* tailors a specific recovery strategy aimed at restoring habitat conditions and improving population performance as measured by the Viable Salmonid Population (VSP) parameters – abundance, productivity, spatial structure and diversity. In this way, the *Plan* focuses levels and types of efforts where they will have the greatest benefits to salmonids in the near- and long-term. As described below, actions in each recovery strategy include activities aimed at protecting current intact habitat and restoration.

- Protection Efforts - The Summary Table on page 6 highlights the current intact habitat for the basin, as of 2005 when the *Plan* was completed. Forum members rely on a robust mix of activities to ensure that intact habitat is maintained, including: acquisitions, regulations, incentives, and education and outreach. Acquisitions are targeted at protecting and restoring key reaches and protecting areas where intact watershed processes are crucial. Acquisition actions include conservation easements, transfer of development rights (TDR) and fee simple title. Such actions are further prioritized for key land uses – such as supporting viable agriculture.

  The Forum depends on the existing regulatory framework – regulations, permitting, land use restrictions and comprehensive planning – to minimize the development impacts. For example, regulations such as critical areas under the Growth Management Act and Shoreline Master Plans mandate buffers around wetlands; the Hydraulic Permit Approval Program by the WA Department of Fish and Wildlife restricts activities in or near streams; and comprehensive plans set the direction for increasing density.

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Incentives are used to encourage desirable behavior among key groups. King and Snohomish Counties provide considerable assistance to the agricultural community to support viable agriculture, such as technical assistance, financial assistance and farm planning. Non-government organizations (NGOs), such as Salmon Safe, have developed labeling that identifies and rewards farmers who maintain and/or improve habitat.

Outreach and education efforts will have the broadest impact on the Forum's ability to maintain public interest in recovery and in changing behaviors that negatively impact habitat. Outreach is targeted in two ways: broad outreach aimed at raising general awareness of the problem; and a "social marketing" approach that targets influencing specific behaviors in a specific demographic. Such programs are typically the most effective and efficient use of resources to gain a positive behavior change.

- Restoration Efforts – The *Plan*'s restoration actions build on protection efforts to support recovery and long-term resilience of the Skykomish and Snoqualmie populations. The Snohomish Basin is the second largest basin in Puget Sound with 2,700 miles of streams and covering 1,856 square miles and 14 jurisdictions. The Forum's strategy needed to engage local jurisdictions and focus habitat gains that would produce results quickly. Together with the National Oceanic and Atmospheric Administration (NOAA), the Forum and Technical Committee developed an eight-step process to develop this strategy. The eight steps were:

  1. Evaluate current and potential fish use.
  2. Evaluate current aquatic habitat conditions.
  3. Evaluate current conditions of watershed processes.
  4.-6. Develop an overall basin restoration strategy by integrating the above analyses; using EDT to identify limiting factors and evaluate restoration potential; grouping sub-basins into Sub-basin Strategy Groups; and developing hypotheses, recovery strategies and sequence of actions for each Sub-basin Strategy Group.
  7. Develop alternatives for where to focus efforts, the level of basinwide gains necessary, specific restoration sites and sequencing across Sub-basin Strategy Groups.
  8. Model *Plan* alternatives using SHIRAZ and EDT.

  The *Plan's* resulting ten-year targets are prioritized so as to improve habitat conditions in areas most appropriate to each of the salmonid proxies' life history strategies and ecological processes that create the habitats that fish use. To further sequence across Sub-basin Strategy Groups, the Forum decided that 80% of restoration efforts over the next ten years should focus on the nearshore, estuary and mainstems, 15% in lowland tributaries and 5% in headwaters areas. The *Plan*'s ten-year habitat protection and restoration targets are summarized in the Summary Table on page 6.

Harvest

With rearing habitat identified as the primary factor limiting productivity of the basin, the co-managers focused on harvest management efforts aimed at allowing more wild fish to reach the available spawning area. The *Co-managers' Puget Sound Chinook Harvest Management Plan* (2004) sets the overall annual exploitation rate ceiling at a level that will assure harvest does not impede recovery of the Skykomish and Snoqualmie Chinook salmon populations. The co-managers (Tulalip Tribes and Department of Fish and Wildlife) have created a Rebuilding Exploitation Rate to manage harvest not to exceed 24% of the total return in any year. This exploitation rate is a ceiling that includes all harvest-related mortality (direct and incidental, landed and non-landed) in all salmon fisheries that impact Snohomish Chinook salmon from Southeast Alaska to the Snohomish River. Currently, the lack of a specific indicator stock for Snohomish fish precludes a more refined estimate for the total exploitation rate. However, the co-managers are developing a genetic makeup of local fish for this purpose. The Pacific Salmon Commission is about to begin negotiations on a new treaty in which the Snohomish and other Puget Sound basins hope to reduce northern harvest rates, thereby boosting our recovery efforts.

On top of this effort, harvest is managed through selective fisheries and time-area management to minimize the impacts on wild fish. Local fisheries, targeting Chinook salmon in Tulalip Bay (Area 8D) and the Snohomish River, focus on hatchery-origin fish so that the impacts to wild Snohomish Chinook salmon may be minimized. Both the net and recreational fisheries are included in the exploitation ceiling.

Ultimately, the co-managers are working to ensure that fishery-related mortality will not impede rebuilding of natural Puget Sound Chinook salmon populations to levels that will sustain fisheries, enable ecological functions, and be consistent with treaty-reserved fishing right. Since the listing of Chinook in 1999 and changes in harvest management (reducing harvest from 80% in the 1970s to the current 24%), escapement appears to be increasing.

Hatchery

Since 2005, the co-managers have implemented a new hatchery management strategy for the Snohomish Basin, which integrates natural origin fish into the hatchery broodstock to improve genetic fitness of both wild and hatchery fish. In this way, the hatcheries are considered "secondary," meaning they are managed not to jeopardize natural stocks. The four key improvements of the Hatchery Scientific Review Group are summarized as follows.

1. Broodstock – Green River broodstock has been elminated from the basin, thus elminating gene pool dilution.
2. Fish marking – All hatchery origin fish are 100% marked by removing the adipose fin to allow for visual identification of hatchery fish. Coded-wire tagging (CWT) programs now include double-index tagging to help evaluate the effects of fisheries on both marked and unmarked fish. Tulalip Hatchery fish have thermal-marked otoliths to identify them separately from other hatchery fish.

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3. Integration of wild fish into the hatchery broodstock – Hatchery fish are now produced with a 70% influence from adult fish collected from the Wallace River and Sunset Falls adult traps. The number of wild adults is limited 300 to 700 natural origin fish, using the AHA model. Limits have been put in place to ensure that the practice does not jeopardize natural stock recovery.
4. Allocation of eggs - The Wallace hatchery provides the broodstock for the Tulalip hatchery. For the first year, 1,000,000 eggs are allocated to the Wallace. The next 750,000 go to Tulalip. After that eggs are allocated at a 50:50 split. Because the Wallace River program provides eggs to the Tulalip Hatchery, integration of the Tulalip program is considered "one generation out." Although only hatchery origin fish returning to the Wallace Hatchery will be used to provide eggs to Tulalip, the Tulalip broodstock will be considered integrated because its brood source will be from an integrated hatchery program in the previous generation.

Furthermore, hatchery fish have been spawned to coincide with a summer run, while the wild stocks in the Skykomish and Snoqualmie are fall run fish, so overlap between the hatchery and wild fish will be minimal. When combined with the harvest management efforts, this means that hatchery origin fish should have little contribution to wild stocks and will be 95% of the terminal area catch.

An Integrated Plan for Recovery

The habitat, harvest and hatchery management portions of the *Plan* were developed in a coordinated fashion. The recovery exploitation rate was based on current conditions and consideration of how the system is expected to perform under improved habitat conditions. The hatchery broodstock protocol was developed using a model of habitat conditions so that natural broodstock used in the hatchery program will not unduly impact the ability of the system to move toward recovery goals. Habitat, harvest and hatchery management plans were analyzed together using the EDT, SHIRAZ and AHA models. The plans for each of the H's are designed to work in conjunction with one another to provide sufficient numbers of genetically diverse fish to take advantage of improved habitat conditions made available by *Plan* implementation.

Adaptive Management

The *Plan* was developed so that its implementation would be adaptive, meaning that the *Plan* itself would be a living document. Actions are monitored for results locally and cumulatively, and are evaluated against the hypotheses in the *Plan*. The Forum is currently revising the adaptive management recommendations; however, monitoring items will be spread across:

- Implementation effectiveness – are jurisdictions and partners implementing actions that they committed to and at the rate needed to reach the 10-year targets?
- Direct (project) effectiveness – how effective is a specific project, type of project or program at achieving its goals? Can projects or programs be implemented differently to achieve more effective results?

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- Cumulative effectiveness (Status and trends) – are projects in general, or a group of projects or programs, achieving the anticipated results? Is the sum total of harvest, hatchery and habitat actions resulting in improved population performance?
- Validation – are the basin and sub-basin strategy group hypotheses valid and are we achieving recovery across Puget Sound?

In 2006, as part of the overall Puget Sound effort at implementing adaptive management, the Snohomish Basin embarked on a process to refine its integration of harvest, hatchery and habitat management. This process follows the six steps outlined by the region in a workshop: identifying participants; gaining a common understanding of how the system works; agreeing on common goals and community values; examining, evaluating and selecting a suite of complementary actions; documenting all steps; and monitoring and reporting.

In 2007, fisheries north of the Canada-US border are high such that Southern – US – fisheries can not reach the RER; thus a total exploitation rate at this point in time is closer to 39% than 24%. In 2008, the Stillaguamish stock is the controlling stock for harvest; therefore, harvest levels across Puget Sound should be more in line with our RER targets.

Another area of activity under the adaptive management heading is the incorporation of the climate change pilot study performed by NOAA and the University of Washington Climate Impacts Group (CIG). The study found that in the **absence** of restoration actions identified in the Plan Chinook populations in the Snohomish Basin would decline 15-39% by 2050. With **full implementation** of the Plan (again all upstream of the estuary), populations would fall 5-23% by 2050. Basin staff are using this information to monitor the impacts of climate change to the basin and develop a suite of research needs and capital and non-capital actions to address concerns outlined in the study. Initial work suggests more monitoring in areas such as the South Fork Skykomish River, as well as identifying actions that ensure instream flows from the upper part of the basin, will be critical to the implementation success. This work was not completed in 2007 and will continue in 2008.

Basin staff worked with Shared Strategy on the regional adaptive management effort, through individual interviews, discussion at the Puget Sound Salmon Recovery Council and at the adaptive management workshop. With the multitude of monitoring consortia and work at the regional and state scales, adaptive management at the basin level is threatened by the amount of time put into shaping regional and state efforts, in addition to the likelihood that funding for locally driven results that apply directly to our *Plan* will go unfunded given the lack of financial and other support for monitoring in general. The opportunity in these areas is that these larger-scale systems may be established and provide useful information on areas such as status and trends monitoring that the Basin can then use for reporting and managing implementation.

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Summary Table of Snohomish Basin Needed Habitat Gains

Sub-basin Strategy Group and Habitat Condition	Current Intact	Needed Habitat Gain in 10 Years	Needed Habitat Gain in 3 Years	Total Needed at Year 2015
Nearshore Beaches and Shoreline	8.4 miles	At least 1 mile	0.3 miles	At least 9.4 miles
Estuary: Tidal Marsh	1,483 acres	1,237 acres	412 acres	2,720 acres
Mainstem-primary Restoration:				
Restored Edge Habitat	236 miles	10.4 miles	3.5 miles	246.4 miles
Restored Riparian Habitat	5,991 acres	256 acres	85 acres	6,247 acres
Restored Off-channel Habitat	350 acres	167 acres	56 acres	517 acres
Large Woody Debris	N/A	41 new logjams	14 new logjams	N/A
Other Sub-basins Restoration:				
Restored Riparian Habitat	N/A	94 acres	32 acres	N/A
Restored Off-channel Habitat	N/A	57 acres	19 acres	N/A

Summary Table of Habitat Gains and Costs by Priority Tier – Funding needs only

Project Tier	Marine Shoreline Miles	Estuary Tidal Marsh Acres	Fish Passage Barriers Removed	Riparian Restoration Acres	Protected Acres	Off-Channel Habitat Acres	Roads decom-missioned Miles	Projects Designed	Total Cost
Tier I	0.57	925	8	177.5	8,384	97	0	53	$60,967,423
Tier 2	0.63	0	9	16	260	6	0	0	$17,293,000
Tier 3	0.5	0	12	5	0	0	38.7	4	$8,132,720
Total	**1.70**	**925**	**29**	**198.5**	**8644**	**103**	**38.7**	**57**	**$99,917,224**

2007 Accomplishments

Habitat restoration actions – as reported by project sponsors – is shown in the table below. Note that the habitat gains are preliminary, becoming gains only after effectiveness is determined.

Progress Towards 10 year Targets in 2007…

Sub-Basin Strategy Group and Habitat Condition	Needed Habitat Gain in 10 Years	2007 Progress*	Percentage of 10 Year Goals Completed in 2007	Met Goal for Year?
Nearshore Beaches and Shoreline	At least 1 mile	.4 miles	40%	Completed
Estuary: Tidal Marsh	1,237 acres	111.5 acres	9.1%	Progress Made
Mainstem Primary Restoration:				
Restored Edge Habitat	10.4 miles	.95 miles	9.9%	Progress Made
Restored Riparian Habitat	256 acres	75.3 acres	25.4%	Completed
Restored Off-Channel Habitat	167 acres	5 acres	3%	No
Large Woody Debris (LWD)	41 new logjams	2 new logjams	4.9%	No
Other Sub-Basin Restoration				
Restored Riparian Habitat	94 acres	108.79 acres	100%	Completed
Restored Off-Channel Habitat	57 acres	200 acres	100%	Completed

*Progress on restoration is habitat that is on a trajectory to be restored and is not yet fully realized

Non-capital actions focused on six key areas:

1. We were awarded and a grant from the Washington Department of Ecology that ided our watershed in reviewing the overlap of plans that support ecosystem recovery, hosting a nearshore workshop with the Snohomish-Camano Nearshore Cooperative, and making recommendations for how to better integrate our efforts with other efforts (e.g., the Puget Sound Partnership).
2. We completed a report: *Snohomish Basin Steelhead Trout (Oncorhynchus mykiss) "State of the Knowledge."* This report compiled the existing knowledge on steelhead in our basin – the first step in the recovery planning process.
3. We began work on our overall outreach strategy – seeking how to integrate our efforts with existing programs (locally, as well as extra-basin), and where and how to seek behavior change and implementation of restoration actions (or best management practices). The strategy identifies key target audiences and our approach and funding needs to implement the strategy.

4. We completed most of the work on our basin funding strategy. Through this process, the Forum found that we were successful in getting around $7-9million for recovery. The Forum decided that to get our recovery back on track, we needed to seek on the order of $15 million per year. This work will also be one of the top priorities for basin staff over the course of the next couple of years.
5. Another area of activity under the adaptive management heading is the incorporation of the climate change pilot study performed by NOAA and the University of Washington Climate Impacts Group (CIG). The study found that in the **absence** of restoration actions identified in the Plan Chinook populations in the Snohomish Basin would decline 15-39% by 2050. With **full implementation** of the Plan (again all upstream of the estuary), populations would fall 5-23% by 2050. Basin staff are using this information to monitor the impacts of climate change to the basin and develop a suite of research needs and capital and non-capital actions to address concerns outlined in the study. This work was not completed, though staff made progress.
6. In 2006, as part of the overall Puget Sound effort at implementing adaptive management, the Snohomish Basin embarked on a process to refine its integration of harvest, hatchery and habitat management. Through this process in 2007, the basin has accomplished the following:
    - Idenfication of scenarios for modeling in AHA, particularly to split the Snoqualmie stocks out to determine the potential hatchery origin influence on Snoqualmie productivity.
    - Completion of the AHA model run, and continued conversation around the use of the model and its implications for the Basin.
    - Completion, though unsuccessful, of a grant proposal to the Pacific Salmon Commission to collect field data to ground truth the model outputs.

2008 Work Program

In addition to coordination at the local and regional levels, the basin has the following items on its work plan for 2008.

- The basin will aggressively seek funding to implement its funding strategy, with the idea to get $15 million per year.
- Basin staff, with extra funding from Snohomish County, will seek to significantly advance its efforts for habitat protection, developing the local strategy to monitor for habitat protection and seeking changes in how we approach the issue with partners.
- Seek to improve its capital program management, with staff hired using the 5% funding from the last biennial budget.
- Wrap up (for now) our significant H-integration efforts, shifting focus to other aspects of adaptive management.
- Make our adaptive management strategy outlined in Section 13 of our *Plan* operational, and seek funding to support it.
- Implement our outreach strategy, developing materials and approaches for implementing our plan.

Snohomish Basin's Three-Year Work Program

The Snohomish River Basin Three-Year Work Program supports goals laid out in the ten-year *Plan* by protecting current intact habitat, filling habitat gaps through restoration efforts, and improving the integration of harvest and hatchery management to effectively and efficiently recover listed salmonids and prevent the listing of new species. For 2008, the total list of projects reflects actions being taken by project sponsors throughout the basin as well as projects that could take place given different funding levels, the opportunistic nature of restoration and recommendations from the *Plan*. The list of projects would be largely self-selecting for a given funding source, based on landowner willingness, match and other readiness criteria, as exemplified in the project list submitted to the Puget Sound Partnership in November 2006. In this manner, the project list in the Three-year Work Program represents a comprehensive list of potential actions that follow the specific sequencing laid out in the ten-year *Plan*, and is not to be considered a definitive list of projects that will definitely take place over the next three years.

All projects in the work program are consistent with the priorities laid out in the *Plan* by sub-basin strategy group. In addition to capital projects, the work program highlights protection measures and their evaluation. It also addresses non-capital, capacity and harvest/hatchery/h-integration needs in the basin. The work program is divided into seven sections covering actions in the following areas: nearshore, estuary, mainstem-primary, other basins, basinwide capacity-building, cross-WRIA/Whidbey Basin, and harvest/hatchery/h-integration efforts. A separate table at the end is provided outlining existing activities that are fully funded.

The Summary Tables on page 6 outline the habitat gains needed in the Snohomish Basin over the course of the 10-year planning cycle and the proportional (3-year) goals targeted under the Basin's 2008-2010 Work Program. These protection and restoration goals (or Habitat Gains) serve as benchmarks for what might be achieved in the next three years and is a refinement of the list of projects developed for the ten-year plan (included in the *Plan's Appendix L*). Even with a larger list, the Three-year Work Program still reflects the *Plan's* strategic focus, with less than 20% of the funding going to projects outside the nearshore, estuary and mainstem rivers.

Over time, the Forum and Technical Committee are committed to refining the Three-year Work Program list through the adaptive management process to develop a very specific, targeted list of project and program actions sequenced by year. At present, this process would not yield this desired result and would potentially jeopardize potential habitat gains, funding (if subject to greater regional centralization) and support for restoration in the basin (both by project sponsors and the public).

Some projects in the nearshore and estuary are linked to mitigation sites. The Forum has not yet determined how to count habitat gains on projects that involve mitigation and restoration. The Forum is seeking consensus on how to measure the habitat gain on projects where a sponsor completes additional work to required mitigation. This discussion is part of the Forum work plan within the next couple of years.

The Snohomish River Basin Three-year Work Program

How the Three-year Work Program is Tiered

The tiering of projects in the list first reflects the *Plan*'s priorities. However, other tier criteria were incorporated to distinguish between "tier one" projects that could be done within a sponsor's current capacity and those requiring a growth in the sponsor's capacity – particularly in terms of staffing. The tiering criteria are further outlined below.

Tiering criteria began with the *Plan*. Each individual project was tiered according to the priority action outlined for the sub-basin strategy group where the project is located. For example, in the mainstem-primary restoration sub-basin strategy group, a tier-one priority action would be to improve edge habitat, whereas a tier-two priority action would be to address water quality impacts (as outlined in Section 11 of the *Plan*). Projects were not to be tiered higher than their priority level from the *Plan*, holding all projects subject to their biological/watershed processes need.

Projects were then tiered into an additional two groupings according to a sponsor's capacity to complete the work in the next three years. The groupings, "a" and "b," reflect a project sponsor's capacity to successfully complete a specific project. For example, a project tiered as "1a" would be a tier-one priority in the *Plan*, and the sponsor could implement the project given current capacity. A project tiered as "1b" would still be a tier-one priority action in the *Plan*, but the sponsor would not be able to implement the project, given their current capacity. In some cases, these projects are kept in the Three-year Work Program, because other projects may drop from the list, changing a sponsor's capacity to implement a lower tiered project, such as landowner willingness or changes in political priorities. In other cases, these projects were dropped from the list and tracked elsewhere until conditions change to put the project back on the list.

Matching Funds

Many of the project sponsors have detailed matching funds. The amounts indicated represent current committed funds only. As such, the list does not show how effective sponsors in the Snohomish Basin are at matching grant sources. Looking at Community Salmon Fund and Salmon Recovery Funding Board grant rounds, most sponsors have matched at least 50% on each project. Given the 3-year window for recovery in this work program, sponsors have little information on what grants will match, or how other match sources will come into play. This information will be added in the future as grant programs and work programs come closer to start dates. Overall, based on a draft funding analysis of 2006 results completed by Forum staff in March 2007, the basin has obtained roughly $10 million (including mitigation projects), with 58% of funding coming from local sources (including mitigation), 3% private, 13% tribal, 19% federal, and 7% state funding.

With the immanent passage of the 2008-10 State Biennial Budget, the Snohomish Basin stands to receive a significant boost in state funding, approaching $3.5 million. This funding is the result of a regional collaboration with the Puget Sound Partnership and the Governor to garner funds for salmon recovery in Puget Sound. While certain Three-year Work Program projects are likely to be

funded by this source, these projects are still subject to a grant approval process through the Salmon Recovery Funding Board. Therefore, these funds are not shown as allocated to specific projects at the time of submittal of the Work Program. This allocation will be detailed in the next Three-year Work Program.

In addition, Snohomish County's Capital Improvement Projects (CIP) program regularly matches staff time, money from the County budget and other grant sources and material contributions (such as large wood and plants) to leverage funding for projects. In past years, the County has matched approximately $550,000 per year in cash to Snohomish Basin projects. The work program reflects and estimation of staff time to match to each project, but it does not reflect the $550,000 figure, which would be spread across all projects each year, depending on what projects are likely to be funded by other sources. Although their projects show match figures, King County matching funds fall under a similar scheme, matching about $500,000 per year.

Structure of the Sub-basin Summaries Below

The information provided below demonstrates how the work program will achieve the next three-year increment of the Forum's ten-year habitat milestones, as outlined in the *Plan*. The sections below summarize: funding need and results for tier 1, 2 and 3 projects, the magnitude of the resultant work, the types of projects, how efforts are sequenced, certainty of completion in the three-year timeframe and the rationale for the approach taken. The information is divided into the same sections as the project list: nearshore, estuary, mainstem-primary, other basins, basinwide capacity-building, cross-wria/Whidbey Basin, and harvest/hatchery/h-integration efforts.

Need: $3,986,123 for tier 1 projects; an additional $12,330,000 to complete tier 2 projects; and an additional $1,190,000 for tier 3 projects.

Results: Tier 1 projects and programs within the Snohomish Basin nearshore will result in a number of habitat gains including: 1 barrier removed, 3000 ft backshore restored, and a number of additional project undergoing feasibility and design. Tier 2 projects (no programs) will result in: 2200 ft of beach nourished, 19 acres of mudflat created, 1100 ft beach/backshore restored, and 143,000 ft of tank farm removed. Tier 3 projects (no programs) will result in the Maulsby area enhanced and restored.

Additional projects and programs will take place in coordination with nearby WRIAs (3,4,5,6,7,8). These projects are highlighted in a category listing Cross-WRIA gains shown on page 22.

Magnitude: The miles of marine shoreline identified in the 3-year Work Program sum to 1.7 miles of restored marine shoreline, of which 0.57 are tier-1 priority projects. The ten-year plan identifies a need for 1 mile of restored shoreline to be intact by 2015. This 3-year Work Program is on track for restoring the necessary 0.3 acres over the next three years. The amount of project identified reflects the greater attention paid to the nearshore system by coordination among the Forum, Snohomish Marine Resources Committee, Puget Sound Action Team, Washington State University Extension, People for Puget Sound and numerous project partners over the course of

the last year. At the same time, the greater number of project areas identified in this 3-year Work Program also highlights the greater need for coordination and strategy development, adaptively managing our actions to determine if more marine shoreline should be restored than what was considered under the *Plan.*

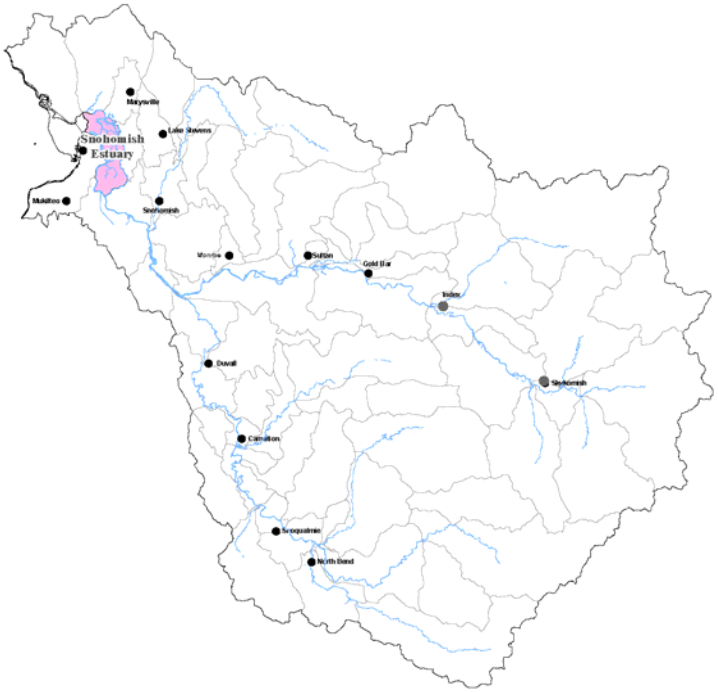
Types of projects/programs: beach nourishment, beach and backshore restoration, edge habitat enhancement, culvert replacement/barrier removal, feasibility of restoration and protection actions, filling data gaps for juvenile Salmonid prey, setting funding and protection/restoration strategies north of the river mouth for future nearshore actions.

Sequence: The November 2007 nearshore workshop with the Snohomish-Camano Nearshore Cooperative highlights the need for protection of existing processes North of Everett, more effort needed in outreach and education, and more coordinated monitoring efforts. Protecting existing habitat in this area is the highest priority where nearshore processes are more intact. Additional research, feasibility and design, if funded, will move projects from concepts to completed projects and add greater focus to the nearshore strategy. Feasibility work should include identification and analysis of marine food webs including the prey needs for salmonids, data on what processes are degraded and in need of restoration, and greater detail on pocket estuaries. The necessary capacity-building and feasibility work taking place in the next three years will direct future efforts that result in on-the-ground restoration efforts.

Reality: At present, marine protection and restoration efforts are not as coordinated as the efforts for salmon recovery in the Snohomish Estuary or in the mainstem rivers. The nearshore workshop held in November 2007 has helped bring about better coordination among these partners. Some of activities are starting to bear fruit, such as expansion of the Snohomish Estuary hydrodynamic model, which models hydraulics, hydrology, salinity and temperature in the estuary, nearshore and entire Whidbey Basin. This model will be a foundational piece in developing restoration actions, as will other data collected such as intertidal vegetation and substrate. The Basin still needs to address the role of mitigation and restoration efforts to ensure a baseline of habitat remains in place and is improved or increased with restoration.

Rationale: Over the past year, Forum staff have continued to place a high priority on working with the Snohomish Marine Resources Committee and the Snohomish-Camano Nearshore Cooperative, a loose confederation of agencies, NGOs and project sponsors working on marine protection and restoration issues in the marine system in Snohomish County (WRIAs 5, 7 and part of 8). This networking culminated in the nearshore workshop held on November 2007. As mentioned, the workshop highlighted a number of areas where partners can work more effectively together. However, we were unable to reach a consensus on how to prioritize capital projects, needing more time and knowledge among the partners in the group. Working on getting better monitoring information and doing physical assessments will aid the Cooperative and Basin in moving forward on these key issues. Another project intiated in 2007 was an exploration of establishing a Port Susan Marine Stewardship Area. This project has received funding for 2008 to explore an MSA concept similar to that in the San Juans. Though Port Susan is a small part of the Basin, the benefits will affect Snohomish Basin fish, warranting our collaboration in this project.

Nearshore



Need: $14,761,500 for tier 1 projects, which will leverage an already-identified match of $6 million, for total project costs of $21,194,300.

Results: Tier 1 restoration efforts will yield: the restoration of 926 acres of tidal marsh; improvement of 25,228 ft of estuary edge habitat; 3 fish friendly tidegates and pump station improvements; 2 projects improving water quality; and 21 acres of riparian restoration.

Magnitude: Action over the next three years will result in restoration of function across one of the largest estuaries in Puget Sound. EDT and SHIRAZ modeling indicate the estuary is the biggest bottleneck for Chinook production, with approximately 85% of off-channel and tidal marsh lost due to current land use actions, such as diking. Considerable coordination of effort has resulted in over 1,300 acres of public land ownership in the estuary, with the potential for an additional 1,600 acres on Ebey Island. Coordination and partnerships have also focused priorities that will lead to one of the largest wetland restoration efforts in Washington State.

Estuary

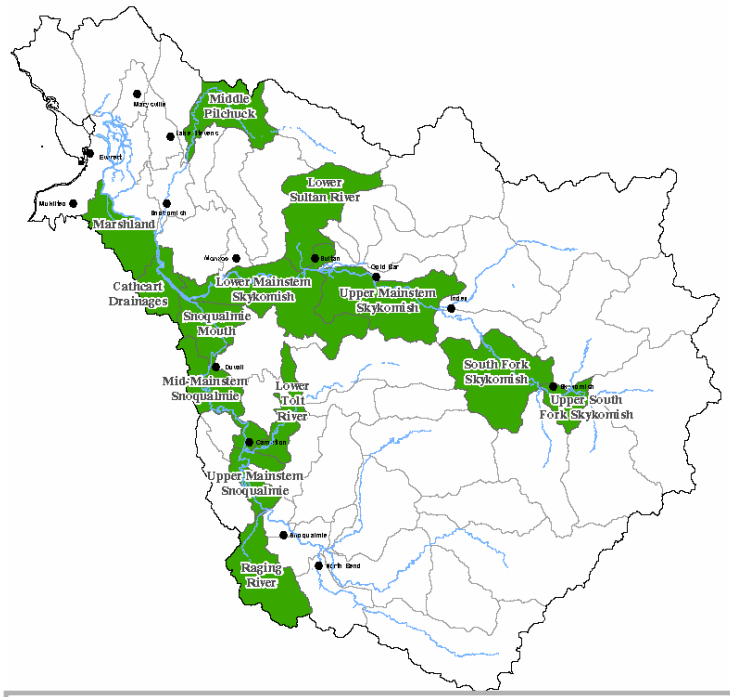
Types of Projects/programs: breaching and/or setting back dikes to protect critical infrastructure, restoration of riparian areas to improve conditions in the major sloughs and in off-channel and tidal marsh areas, restoration of edge habitat making the sloughs more functional and improving fish passage and juvenile survival rates in areas where tidegates are present.

Sequence: High priority actions in the estuary are a result of considerable work and focus of project partners and a committed public. Most of the projects identified in the work plan are ready for implementation, and most have match. Project sponsors have obtained commitments from landowners in the estuary and are ready to implement projects. A number of the landowners include government agencies and non-government organizations, increasing the certainty that project results will remain intact. A number of partnerships have arisen out of project work taking place in the estuary, including monitoring by NOAA Fisheries to determine the use of estuarine habitat by salmonids. Basin partners have completed the Snohomish Estuary hydrodynamic modeling effort, which looked at the individual and synergistic effects of breaching dikes across over 1,100 acres of estuary. This model serves as the technical foundation for hydraulic designs and monitoring for juvenile salmonid use and preference for ranges of temperature and salinity, both of which have not been researched in other systems.

Reality: Sponsors have built a high level of public/private buy-in with projects, with many of the properties publicly owned, increasing certainty that restoration will remain intact. Project sponsors have built considerable momentum in the estuary, which would be lost if funding to follow through on promises to landowners and the public (at the time of acquisition by public agencies) were not available.

Rationale: Restoration of the Snohomish Estuary is a keystone locally and in the region. Fully funding the Snohomish Estuary part of the 3-year work program will keep the momentum gained over the past five years and complete restoration of the second largest estuary in Puget Sound. Restoring these lands will have a significant effect on abundance, productivity and diversity for Chinook salmon, bull trout char and other species. With the current list of actions, sponsors will be able to take immediate action to restore function to a significant bottleneck in the juvenile life history stage of Chinook salmon, bull trout char and other salmonids in the Basin, speeding recovery in the basin and following one of the Snohomish Basin Salmon Recovery Forum's goals to complete as much restoration as possible early in the implementation process. The projects listed for the estuary have had considerable technical review in the *Plan, Ecosystem Restoration Opportunities in the Snohomish River Valley, Washington*, and SEWIP. Projects are ready for final design and construction and represent one of the most cost effective opportunities in the Snohomish Basin, taking advantage of the restoration opportunities presented by the amount of public land owned in the estuary. Project sponsors have begun an estuary working group to discuss how to better coordinate and share resources, such as design and implementation of project effectiveness and status and trends monitoring.

Estuary



Need: $23,564,500 for tier 1 projects; with an additional $5,000 for a tier 2 project.

Results: Projects and programs proposed are a mix of feasibility, design and construction that seek to improve the quality and quantity of rearing habitat. In the next three years, Tier 1 Capital projects will: remove 3 barriers to fish, restore 156.5 acres of riparian area, protect 8,214 acres, improve over 97 acres of off-channel habitat, improve 18,560 feet of edge habitat, and install 14 logjams. The Tier 2 project adds another minimum of 6 acres of off-channel habitat.

Magnitude: Projects over the next three years will demonstrate substantial improvements in edge, off-channel and riparian habitats, with some increase in large wood structures. According to the *Plan*, the mainstem-primary sub-basin strategy group contains the core Chinook salmon spawning and freshwater rearing habitat. The *Plan's* actions will increase rearing capacity in areas just downstream of core spawning areas. Throughout the mainstem rivers, the actions identified in this 3-year Work Program would result in roughly half of the ten year target for edge habitat, 1/3 of the 10-year target for off-channel and floodplain restoration, 1/5 the amount of riparian habitat, and remain on track for removal of fish passage barriers.

Mainstem-primary

Types of projects/programs: Projects represent a mix of feasibility, design and construction to improve the habitat processes that support rearing habitat. Projects include: removing invasive species, planting riparian buffers, improving edge habitat, reconnecting off-channel habitats and installing large woody debris jams. Programmatic work will focus on outreach and education, farm certification and different methodologies for feasibility and restoration to improve the science behind restoration and salmon recovery. Monitoring protection measures and adaptive management will ensure that projects and programs will meet the *Plan's* goals and improve the quality and quantity of habitat for recovery.

Sequence: The current mix of projects will ensure that capital project construction will improve habitat in addition to funding necessary feasibility and design to ensure that future construction will keep the Forum on track to reaching its goals. The mainstem is the third focus area (in addition to the nearshore and estuary) for substantial restoration effort in the basin. Focusing a majority of recovery efforts in these priority areas will promote listed species recovery while still maintaining and improving habitat in the lowland tributaries and headwaters areas.

Reality: While planning efforts were underway, project sponsors were taking action in the mainstem area to improve habitat conditions, provide outreach to landowners on best management practices and build the capacity to take actions that will improve habitat. These actions have since taken root in the community, as demonstrated by the considerable number of potential projects and actions in the highest priority areas of the mainstem rivers. Non-capital actions will continue to build the capacity necessary to support capital projects, protect areas important for salmon recovery, adaptively manage the hypothesis and actions identified in the *Plan*, and increase the efficiency of sponsors' actions.

Rationale: Actions taken in the mainstem will both build capacity to support projects and protection of habitats, and implement restoration actions that increase the quality and quantity of salmonid rearing habitat. Snohomish Basin project sponsors have spent considerable effort in taking the recommendations of the *Plan* and making them operational. The projects identified in this 3-year Work Program are the result of outreach and feasibility planning that will increase habitat immediately downstream of core spawning areas. The projects work with river processes in key action areas, such that funds expended restore processes that create and maintain habitat, rather than build structures with a short life span. Furthermore, the basin has made significant gains in mainstem habitat, as demonstrated in the funded projects section of the 3-year Work Plan list.

Mainstem-primary

Need: $5,480,000 for tier 1 projects, $2,173,250 for Tier 2 projects and $3,090,440 for tier 3 projects.

Results: Tier 1 actions in the work program will achieve: 3 miles of instream enhancements, removal of 1 barrier to fish passage, and acquisition of 170 acres of important habitat. Tier 2 actions will: improve16 acres of riparian habitat, acquire 260 acres to support habitat forming processes, and remove 7 barriers to fish passage. Tier 3 actions will: remove 12 barriers to fish, restore 5 acres of riparian habitat, improve 2.5 miles of edge habitat, and decommission over 33 miles of road.

Magnitude: Other Sub-basin Strategy Groups projects will fulfill *Plan* targets (riparian planting and off-channel habitat), as well as other goals outlined in other sections of the *Plan*, such as road decommissioning and replacing blocking culverts. The *Plan* is a multi-species plan, postulating that early actions in the *Plan* should bring listed species back on track while supporting other species so they do not become listed. Actions taken in the Other Sub-basin Strategy Groups part of the work program support both listed species (Chinook salmon and bull trout char) and work to improve conditions for steelhead and coho. The projects identified in these areas are short on identified riparian restoration and on target for floodplain restoration. The incorporation of

Other Sub-basin Strategy Groups

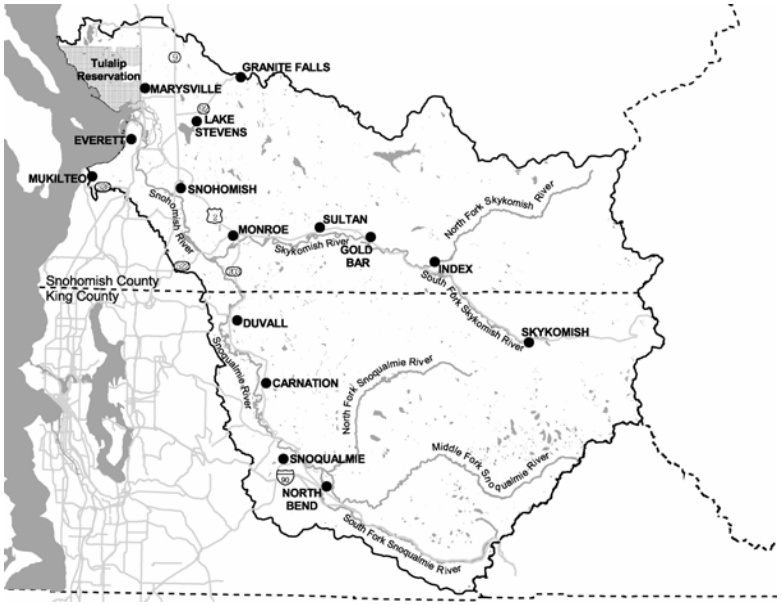
climate change analysis performed by NOAA Fisheries Service and the UW Climate Impacts Group will likely yield more projects to increase riparian coverage and water infiltration, both of which should aid in maintaining summer flows and cool stream temperatures.

Types of projects/programs: Projects in the Other Sub-basin Strategy Groups will restore riparian buffers, increase off-channel rearing capacity, replace blocking culverts for adult and juvenile passage and decommission roads on US Forest Service lands.

Sequence: The Snohomish Basin Salmon Recovery Forum set a goal to expend 20% of its effort outside the nearshore, estuary and mainstem, because efforts in these areas will maintain the processes that form habitat in the lower parts of the basin and because actions in these areas build capacity and support for *Plan* implementation. Projects identified in these areas account for approximately 16% of the work program. Part of the reason for the smaller economic value of projects is that projects in the nearshore and estuary are very expensive, such as building cross-dikes in the estuary. To build the capacity and support for protection and restoration in the rest of the basin, the projects and programs in the tributary watersheds is a critical part of the whole workplan.

Reality: Many of the capital projects in tributary watersheds are the result of outreach and education programs, where willing landowners become excited about working on projects that support salmon habitat. These landowners have a role to play in supporting the work and funding of salmon recovery.

Rationale: This kind of capacity and excitement will be critical in maintaining future decision-making, both in terms of funding future salmon projects and in changing how our land uses affect the landscape. Work in these areas still improves habitat for Chinook salmon and bull trout char. Actions in other basins will also bolster the watershed processes that form salmon habitat in the nearshore, estuary and mainstem. Projects in the other basins include culvert replacements and streams that are important to steelhead trout, bull trout char and coho salmon, including those areas that are at risk and will have a greater impact on the habitat forming processes that affect the mainstem, estuary and nearshore. Finally, actions taken in these other basins will provide resilience for non-Chinook salmonids and protect watershed processes, instream flows and stream temperatures all of which are affected by climate change scenarios as outlined in the NOAA/CIG report.



Need: $5,609,869 for tier 1 projects

Results: 6 projects relate directly to further planning needs; 4 projects cover monitoring and adaptive management; 4 projects will provide outreach and education; 11 projects build capacity for sponsors to implement the work plan; and 2 projects fulfill data needs across sub-basin strategy group boundaries.

Magnitude: Projects range from lead entity (Forum) support, monitoring and adaptive management, and evaluating protection measures to technical assistance, a recovery plant nursery, and a restoration ecologist and planting crew. These programs are the backbone of the Snohomish Basin's ability to develop strategic actions that will recover salmon in the basin. Without this support, the strategic and sequencing planning, capacity to maintain long-term levels of action, an educated committed public and adaptive management will not take place.

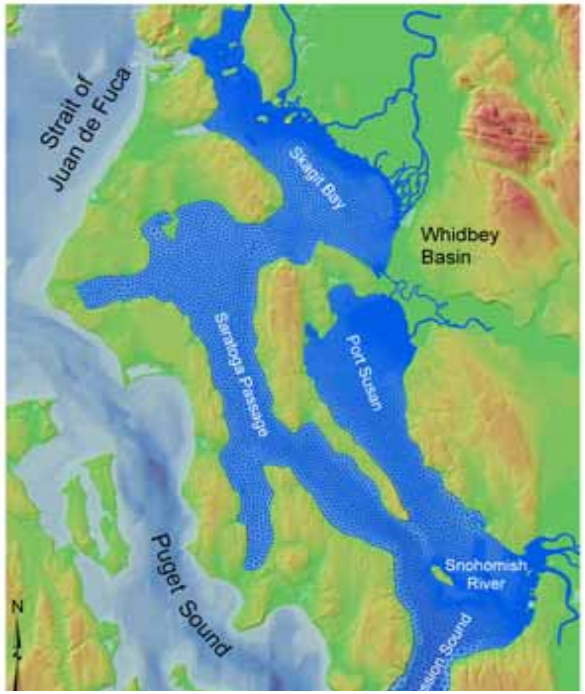
Basinwide Non-capital/Capacity-building

Types of projects/programs: lead entity support, setting instream flows, monitoring and adaptive management, evaluating protection measures, outreach and education, staffing support for project sponsors

Sequence: The lead entity support will maintain support for the Forum as a body for collaboration on projects and programs that lead to salmon recovery and potentially other work taking place within Puget Sound, such as the Orca listings and water quality. Basin staff continue to actively participate in the creation of the Action Agenda with the Puget Sound Partnership. We hope this collaboration will result in more funding not only for the capital work building more habitat, but also support the programmatic actions necessary to build those projects. In the *Plan*, the Forum recognized the importance of setting instream flows, developing a farm/fish strategy for the basin, evaluating the importance of protection, and monitoring and adaptive management. These projects/programs must be started early in the *Plan* implementation process to ensure the efficacy of efforts in the basin. Outreach and education and technical assistance will continue to build a broad base of support for salmon recovery, leading to protection and restoration of salmon habitat. Capacity-building efforts will maintain high quality staff and allow project sponsors to implement projects and programs elsewhere in the work program.

Reality: The lead entity will finalize the refinement of the monitoring and adaptive management plan, wrap up the initial steps in the H-integration process and will significantly advance habitat protection in 2008. Furthermore, the Basin is using the 5% funding from the biennial appropriation to improve management of its capital program, resulting in a more refined 3-year Work Plan for 2009 and a more synergistic approach to basinwide restoration (as opposed to a narrow focus on individual sites). Sequencing will provide greater certainty of what actions must take place in each three-year work program to achieve maximum benefit and recover salmon.

Rationale: The Basinwide non-capital/capacity-building portion of the work plan is the keystone upon which the Forum and project sponsors will work to effectively and efficiently implement the *Plan*. If these projects and programs are not funded, implementation of the *Plan* and the Forum's objectives will be hampered, losing the significant momentum built during the planning process.



Need: $2,568,000 for tier 1 projects (total cost for all WRIAs)

Results: These tier 1 projects will support the nearshore project and programmatic actions that will support recovery in the Whidbey Basin and into WRIA 8. Projects include building the public capacity for protection and restoration of the nearshore ecosystem, improving the engineering/contractor capacity for nearshore projects and expansion of more detailed hydrodynamic modeling of the Whidbey Basin.

Magnitude: Splitting the cross-WRIA/Whidbey Basin projects from other nearshore actions highlights the considerable effort placed on working collaboratively throughout the Whidbey Basin. As the hydrodynamic modeling perfomed in this area demonstrates, actions in the Skagit, Stillaguamish, Island County and Snohomish Basins are integrally linked hydrologically and are thus crucial to supporting salmon recovery in these areas. These projects and programs also reflect the coordination efforts between the Snohomish Forum and the Snohomish County Marine Resources Committee, a high priority identified in the 2006 3-year Work Program.

Cross-WRIA/Whidbey Basin

Types of projects/programs: Projects in the Other Sub-basin Strategy Groups will provide for the Beach Watchers program, Mussel Watch Program, further hydrodynamic modeling, training for nearshore restoration design and construction, creosote log removal and a Nearshore and Estuary Sound Stewards Program.

Sequence: Outreach and education programs that build the public's capacity to protect and restore marine resources, and the tools to support their efforts are crucial to a successful strategy. The Snohomish Basin is supporting these efforts across WRIA boundaries to make the most effective and efficient use of partners' capacity and expertise.

Reality: Snohomish Basin project sponsors and partners are still in the relatively early stages of coordination in the marine ecosystem. Projects and programs in this 3-year Work Program are more heavily weighted toward building capacity and support that will result in future on-the-ground actions.

Rationale: As clearly demonstrated in the Snohomish Estuary and mainstem rivers, building local (public) capacity for action and at the same time providing for feasibility analyses will result in a robust strategy for nearshore restoration and protection that will provide for salmon recovery, marine resources and Puget Sound Partnership goals. Coordinating these actionsa across WRIA boundaries will ensure these actions are appropriately scaled for the marine environment.

Cross-WRIA/Whidbey Basin

Tulalip Tribes' Bernie Kai-Kai Gobin Salmon Hatchery

Need: $1,285,692 for tier 1 projects; $738,000 to complete tier 2 projects

Results: Investments in capital equipment and capacity will allow the co-managers to build their capacity to implement the *Plan's* recommendations. The co-managers will work to improve data collection and analysis that will lead to better harvest and hatchery decisions and their effects on natural origin stocks. Further, this evaluation will assist the Forum in evaluating and validating the *Plan's* hypotheses. The H's work program is extended to include non-listed species to improve the co-managers knowledge of the interactions of harvest and hatchery management on natural origin stocks to prevent further listings in the basin.

Magnitude: To fully implement the *Plan,* the co-managers are seeking 3 projects that will assist in the integration efforts, six projects that will collect the data needed to make decisions, 3 projects that will evaluate and validate the *Plan's* harvest/hatchery/h-integration/stock assessment goals and 10 projects that perform similar functions for managing the interactions of harvest and hatchery actions on non-listed species.

Harvest, Hatchery & H-integration

Types of projects/programs: stock assessment, coded-wire tagging to track fish and harvest, assessment of terminal area harvest, assessment of the ecological interactions between hatchery and wild stocks and evaluation of management efforts.

Sequence: All of the projects and capacity building listed in the work plan will follow through on implementation of the co-managers actions as outlined in the *Plan*. Projects and capacity-building are necessary now to ensure that habitat protection and restoration actions are supported by changes in abundance and diversity of fish resulting from better harvest and hatchery management.

Reality: The co-managers have the capacity to fulfill most of the actions outlined in the work plan; however, to fully implement the *Plan* and the Forum's objectives, they need more staffing capacity to complete the work.

Rationale: Investments in harvest, hatchery stock assessment and H-integration are included in the 3-year work program. These projects will improve the data necessary to make decisions informed by the best available science. The projects will also build the capacity for the Tulalip Tribes as co-manager of the harvest, hatchery facilities and H-integration effort to have the staffing required to plan and adaptively manage these aspects of the *Plan*. More data on harvest will enable the Co-managers to manage the levels of harvest needed to allow for population growth rather than just escapement, following the Rebuilding Exploitation Rate objective. Further developing the hatchery facilities, monitoring and management will better incorporate natural origin fish into hatchery fish to increase fitness and reduce impacts on natural fish. When combined with habitat improvements to increase juvenile survivability, H-integration efforts will improve the chances for recovery by increasing the abundance and diversity of natural origin and hatchery stocks.

Harvest, Hatchery & H-integration

Snohomish Basin Three-Year Work Program

Project & Project Number

(263

Refer to Excel table for more information

Subbasin Strategy Group

- Nearshore
- Estuary
- Mainstem
- Other Basins

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Miles

Snohomish County

PUBLIC WORKS

SURFACE WATER MANAGEMENT

(425) 388-3464

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Three-Year Watershed Implementation Work Program for the Snohomish River Basin 2008 - 2010

										2008		2009		2010			
Row	Map ID	Tier	Action name and description	Likely sponsor	Project / program status	Total cost of first three years	Funding Need	Matching Funds	Source of matching funds	Year 1 Scope	Year 1 Cost	Year 2 Scope	Year 2 Cost	Year 3 Scope	Year 3 Cost	Likely end date	Additional funds needed after 2010
Nearshore Capital projects and programs																	
1	526	1a	Nearshore - Daylighting of Japanese Gulch; 1 barrier removed; some % mitigation	Port of Everett and/or WSF	concept design	**$3,325,000**	$3,325,000	$0	NA	Feasibility and conceptual design	$25,000	Property Acquisition & Engineering and design	$1,800,000	Daylighting	$1,500,000	2009	$120,000 (monitoring costs)
2	446	1a	Nearshore - Shoreline restoration at riprapped South end of Jetty Island; 3,000ft backshore planned; 1,000ft completed 2007	Port of Everett with US Army Corps of Engineers	Partially Constructed Feb. 2007	**$775,000**	$200,000	$575,000	Corps of Engineers; Port of Everett; Snoho. MRC ($10k for mon)	Monitor success of 2007 placement; sands have fed drift cell along west side of island	$10,000 (funded by Sno. MRC)	If Year 1 a success, add 1000 ft of restoration	$750,000	Monitor success of 2009 extension	$15,000	On going; (based on renourishment rate)	$0
3	446	2a	Nearshore - Sand Berm at Jetty Island South; 2,200ft beach nourishment	Port of Everett with US Army Corps of Engineers	Feasibility - based on success of Project ID 5	**$50,000**	$25,000	$25,000	Port of Everett		$0		$0	Feasibility and design (based on success of South end of Jetty Island extension project No. 5)	$50,000	Ongoing - renourishment rate unknown	$ 150,000
4	738	2a	Nearshore - Renourish Existing Jetty Island Berm ; 19 acres marsh/mudflat created; sheltered area shown to have high ecological function	Port of Everett with US Army Corps of Engineers	Berm constructed in 1990; renourished in 2007	**$250,000**	$225,000	$25,000	Port of Everett; Corps of Engineers	Monitor success of 2007 renourishment	$10,000	Expect to renourish berm again in 2009 to better place material for berm longevity	$240,000	Monitor success of 2009 renourishment	$10,000	Indef.	Renourishment needed on 2-8 year cycle
5	818	1a	Nearshore - Quilceda Creek Estuary Restoration; feasibility and design	Tulalip Tribes	Concept	**$250,000**	$225,000	$25,000	Grants/Tribal		$0	Feasibility	$50,000	Design	$200,000	2013	$2,250,000
6	526	2a	Nearshore - Beach Restoration Demonstration@ Mukilteo Tank Farm; 1,100ft beach/backshore restoration; some % mitigation	Port of Everett	Constructed in 2005-2006	**$320,000**	$30,000	$290,000	Port of Everett	Monitor Year 3 physical and biological performance on beach	$100,000	May need renourishment	$110,000	Monitor physical and biological performance on beach	$110,000	2016	$500,000 (provided by Port of Everett)
7	526	2a	Nearshore - Partial removal of the creosote-treated and shadowing Tank Farm Pier; 98,000/143,000 sq ft to be removed as mitigation	Washington State Ferries	Concept design	**$9,690,000**	$7,050,000	$2,640,000	WSF			Engineering design, permitting	$1,800,000	Construction - removal of an additional 98,000 sf of the Tank Farm Pier between 2010 - 2011	$2,600,000	2012	$5,290,000
8	526	2b	Nearshore - Full removal of the creosote-treated and shadowing Tank Farm Pier; remove remaining 45,000 sq ft of tank farm pier	Washington State Ferries and/or others	Concept design	**$5,000,000**	$5,000,000	$0	NA			Engineering design, permitting	$2,400,000	Construction - removal of 45,000 sf of the Tank Farm Pier	$2,600,000	2009 or 2010	None
9	442	3a	Nearshore - Maulsby Swamp Mudflats/Enhanced Connection; not quantified	City of Everett	Feasibility	**$1,210,000**	$1,190,000	$20,000	City of Everett	Feasibility	$110,000	Design	$100,000	Construction	$1,000,000	2011	$2,000,000
			Total Nearshore capital need			**$20,870,000**	**$17,270,000**	**$3,600,000**		**Total year 1 need**	**$245,000**	**Total year 2 need**	**$7,250,000**	**Total year 3 need**	**$8,085,000**		**$9,690,000**
Nearshore Non-capital projects and programs																	
10		1a	Future habitat project development - Fill data gaps for feasiblility of nearshore projects.	Mukilteo, Tulalip Tribes	Feasibility	**$150,000**	$130,000	$20,000	Snohomish County	Feasibility	$150,000		$0				$0
11		1b	Watershed Recovery Plan Implementation - Nearshore Protection and Restoration capacity building	Tulalip Tribes	Personnel Planning	**$96,123**	$96,123	$0	Grants	Annual Implementation	$32,041	Annual Implementation	$32,041	Annual Implementation	$32,041	ongoing	$32,041/yr.
12		1a	Shoreline Landowner workshops & technical assistance - outreach in shoreline communities focusing on nearshore functions for salmon and opportunities for protection and enhancement	Snohomish County MRC, WSU Beach Watchers, Tulalip Tribes, Puget Sound Partnership	Feasibility	**$20,000**	$5,000	$15,000	Unknown								
13		1a	Dungeness crab harvest regulation packet to WDFW -- develop proposal for WDFW to update Dungeness crab harvest regulations to minimize derelict gear impact.	Snohomish County MRC, NW Straits	Implementation	**$5,000**	$5,000	$0	Unknown								
			Total Nearshore non-capital need			**$271,123**	**$236,123**	**$35,000**		**Total year 1 need**	**$182,041**	**Total year 2 need**	**$32,041**	**Total year 3 need**	**$32,041**		**$0**
				Total Nearshore need		**$21,141,123**	**$17,506,123**	**$3,635,000**		**Total year 1 need**	**$427,041**	**Total year 2 need**	**$7,282,041**	**Total year 3 need**	**$8,117,041**		**$9,690,000**

										2008		2009		2010			
Row	Map ID	Tier	Action name and description	Likely sponsor	Project/program status	Total cost of first three years	Funding Need	Matching Funds	Source of matching funds	Year 1 Scope	Year 1 Cost	Year 2 Scope	Year 2 Cost	Year 3 Scope	Year 3 Cost	Likely end date	Additional funds needed after 2010
Estuary Capital projects and programs																	
14	455	1a	Estuary - Bigelow Creek/Simpson Lee; some % mitigation; 35ac tidal marsh; 5,428ft edge habitat to be restored	City of Everett	Design	**$3,200,000**	$2,700,000	$500,000	City of Everett	Design	$300,000	Construction	$900,000	Construction	$2,000,000	2010	$0
15	739	1a	Estuary - DD6 Cross Dike & Habitat Restoration; 40 acres tidal marsh to be restored	City of Everett, Snohomish County	Pre-Design	**$ 3,500,000**	$ 2,500,000	$ 1,000,000	City of Everett & Snohomish County	Design	$300,000	Design/Permitting	$700,000	Construction Phase 1	$2,500,000	2012	$7,300,000
16	740	1a	Estuary - DD13 & Riparian Restoration Acquisition/Conservation Easement; 90 acres to be protected	Cascade Land Conservancy (CLC) , DD13, Snohomish County	Concept	**$500,000**	$500,000	$0	NA	Acquisition pending landowner	$500,000		$0		$0	ongoing stewardship	$0
17	741	1a	Estuary - Infrastructure upgrade for flood control/drainage and WQ/fish access and restoration of flow through Swan Trail Slough; install fish-friendly tidegate & pump; 15ac tidal marsh to be restored	DD13, Snohomish Conservation District (SCD)	Construction	**$125,800**	$4,000	$121,800	DD13/Pioneers In Conservation	Design, construction, monitoring and maintenance	$121,800	Monitoring/maintenance	$2,000	Monitoring/maintenance	$2,000	2009	$0
18	740	1a	Estuary - Edge habitat restoration on earthen dike on Van der Vieren and Roetcisoender estate property; 3,000 ft edge habitat to be restored	DD13/SCD	Construction	**$40,000**	$30,000	$10,000	DD13, SWM, SCD	Permits, design, installation of LWD and revegetation	$34,000	Maintenance	$4,000	Monitoring/maintenance	$2,000	2009	$0
19	568	1a	Estuary - Swan Trail Slough riparian restoration & tidegate connectivy improvements; 8 ac riparian restoration, improve tidegates	DD13/SCD, Snohomish County	Design	**$72,000**	$72,000	$0	DD13, landowner, SWM, SCD	Construction	$35,000	Monitoring/maintenance	$35,000	Maintenance	$2,000	2011	$4,000
20	775	1a	Estuary - Install at least two additional fish-friendly tidegates with associated water quality improvements	Diking and drainage districts, SCD, Snohomish County & Ohers	Concept	**$150,000**	$150,000	$0	NA		$0	Feasibility	$50,000	Design	$100,000	2015	$3,875,000
21	741	1a	Estuary - DD13 fish passage improvements, phase II, with associated water quality improvements	DD13/SCD	Concept	**$100,000**	$95,000	$5,000	SCD	Design/permits	$5,000	Construction	$95,000		$0	2009	$0
22	453	1a	Estuary - Smith Island restoration; 475 ac tidal marsh and 10,500 ft edge habitat to be restored	Snohomish county	Acquisition in 2007 - Design	**$5,500,000**	$5,250,000	$250,000	Snohomish County & SWM staff time	Design & Maintenance	$500,000	Construction	$3,000,000	Construction	$2,000,000	2011	$2,000,000
23	457	1a	Estuary - North Ebey Island Enhancement; enhance 3 acres riparian	Snohomish County	Completed/monitoring and maintenance	**$3,000**	$3,000	$0	NA	Maintenance	$1,500	Maintenance	$1,500		$0	2009	$0
24	742	1a	Estuary - Snohomish Estuary Edge Enhancement Phase II to restore 1 ac tidal marsh and install another 20 log jams	Snohomish County	Concept	**$250,000**	$240,000	$10,000	SWM staff			Design	$30,000	Design/Construction	$220,000	2009	$0
25	773	1a	Estuary - Improve habitat connectivity through dike breaches on County-owned properties, 1,000 feet edge habitat improvements	Snohomish County	Concept	**$450,000**	$450,000	$0	NA	NA	$0	Design/permits	$50,000	Construction	$400,000	2011	$0
26	774	1a	Estuary - Assess and improve mainstem channel habitat connectivity	Snohomish County	Concept	**$218,500**	$182,500	$35,750	Snohomish County SWM	NA	$0	Feasibility	$50,000	Design	$100,000	2011	$0
27	452	1a	Estuary - Qwuloot Estuary Restoration; 360ac tidal marsh, 5,300ft edge habitat restoration	Tulalip Tribes	Design	**$3,200,000**	$1,200,000	$2,000,000	Grants/Tribal	Continue Construction ($1.5 million in 2007)	$2,200,000	Construction	$1,000,000			2009	$0
28	744	1a	Estuary - Acquire 1,600ac of Ebey Island south of SR2 and restore tidal marsh.	WDFW	concept	**$3,860,000**	$1,360,000	$2,500,000	state leg. Capital funds	feasibility study of size and practicality	$100,000	acquisition	$2,460,000	acquisition and design	$1,300,000	2012	$4,230,000
29	876	1a	Estuary - Pump station improvements and system modifications	SCD,DD#13	Concept	**$25,000**	$25,000	$0		Concept	$0	Construction	$25,000	complete			
			Total Estuary capital need			**$21,194,300**	**$14,761,500**	**$6,432,550**		***Total year 1 need***	**$4,097,300**	***Total year 2 need***	**$8,402,500**	***Total year 3 need***	**$8,626,000**		**$17,409,000**

										2008		2009		2010				
Row	Map ID	Tier	Action name and description	Likely sponsor	Project/program status	Total cost of first three years	Funding Need	Matching Funds	Source of matching funds	Year 1 Scope	Year 1 Cost	Year 2 Scope	Year 2 Cost	Year 3 Scope	Year 3 Cost	Likely end date	Additional funds needed after 2010
Estuary Non-capital projects and programs																	
			Total Estuary non-capital need			***$0***	***$0***	***$0***		***Total year 1 need***	***$0***	***Total year 2 need***	***$0***	***Total year 3 need***	***$0***		***$0***
				Total Estuary need		***$21,194,300***	***$14,761,500***	***$6,432,550***		***Total year 1 need***	***$4,097,300***	***Total year 2 need***	***$8,402,500***	***Total year 3 need***	***$8,626,000***		***$17,409,000***
Mainstem Capital projects and programs																	
30	819	1a	Mainstem Primary - Sultan River Side Channel Enhancement to increase side-channel complexity, rearing and spawning habitat.	AASF and PUD	Concept	***$105,000***	$105,000	$0	Future Grants and PUD	Design and Construction	$100,000	Monitoring and Maintenance	$5,000		$0	2010	$0
31	756	1a	Mainstem Primary - Pilchuck/ SnohomishConfluence Acquisition to protect 50 acres.	Cascade Land Conservancy, City of Snohomish	Investigation/ Negotiation	***$600,000***	$600,000	$0	NA	Acquisition - timing pending landowners	$600,000		$0		$0	ongoing stewardship	$0
32	630	1a	Mainstem primary - Marshland area restoration sub-area plan to identify, evaluate and implement potential marshland restoration projects in 846 acre Marshland Area.	City of Everett, Marshland Flood Control District, Snohomish County, WDOT, Tulalip Tribes	Feasibility	***$650,000***	$250,000	$400,000	City of Everett			Plan	$300,000	Design	$350,000	2012	$10,000,000
33	820	1a	Mainstem Primary - Tolt River Restoration to improve 5 ac riparian habitat and remove invasives.	City of Seattle	Feasibility	***$150,000***	$100,000	$50,000	City of Seattle	Construction	$25,000	Construction	$100,000	Construction	$25,000	ongoing	$100,000
34	437	1a	Primary mainstem - Tolt San Souci Acquistions to protect 41 acres off-channel habitat.	King County/City of Seattle	Concept	***$4,000,000***	$3,600,000	$400,000	Conservation Futures	Acquisition	$2,000,000	Acquisition	$2,000,000		$0	2010	$0
35	580	1a	Mainstem primary - McElhoe-Person Levee setback to restore 1,300 feet edge, 5 acres off-channel and 2 acres riparian habitat.	King County	Feasibility	***$1,000,000***	$900,000	$100,000	King County	Design	$250,000	Construction	$730,000	Maintenance & monitoring	$20,000	2010	$0
36		1a	Mainstem Primary - Snoqualmie Riparian Restoration on Agriculture Lands to restore 15 acres riparian habitat and address alluvial fan restoration.	King County	Construction	***$300,000***	$250,000	$50,000	King County	Construction	$100,000	Construction	$100,000	Construction	$100,000	ongoing	$700,000
37	791	1a	Mainstem primary - Stossel Creek Acquisitions to protect 346 acres.	King County	Concept	***$3,500,000***	$3,350,000	$150,000	Conservation Futures	NA	$0		$0	Acquisition	$3,500,000	2010	$0
38	776	1a	Mainstem Primary - Tolt River Natural Area Acquisitions to protect 54 acres	King County	Feasibility	***$300,000***	$250,000	$50,000	KCD grant	NA	$0	Acquisition	$300,000		$0	2009	$0
39	777	1a	Mainstem primary - Raging River Upper Preston Reach Acquisitions to protect 24 acres	King County	Concept	***$3,000,000***	$3,000,000	$0	NA	NA	$0	Acquisition	$3,000,000		$0	2009	$0
40	572	1a	Mainstem-primary - Deer Creek Stream Relocation and Riparian Enhancement to restore 400 ft edge habitat.	King County	Feasibility	***$150,000***	$100,000	$50,000	King County	Design	$50,000	Construction	$90,000	Maintenance & monitoring	$10,000	2010	$0
41	757	1a	Mainstem primary & secondary - Snohomish River/Pilchuck River Confluence to acquire and restore 20 riparian acres along 0.75 mi of river.	SFF (Sustainable Fisheries Foundation), Snohomish County, Tulalip Tribes	Concept	***$300,000***	$300,000	$0	Snohomish County, Tulalip Tribes	Pre-project monitoring, permitting	$50,000	Construction of levee setback and restoration	$200,000	Maintenance and monitoring of performance	$50,000	2014	$0
42	475	1a	Mainstem primary - Lower Skykomish reach analysis to restore 50 ac riparian, 5,300 ft edge and 50 ac off-channel habitat and install 10 log jams.	Snohomish County	Feasibility	***$1,500,000***	$1,325,000	$175,000	SWM staff	Feasibility(fully funded by SWM)	$100,000	Design/permits	$250,000	Construction	$1,150,000	2012	$0

										2008		2009		2010			
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43	749	1a	Mainstem-primary - Shinglebolt Slough acquisition and restoration to restore off-channel habitat at confluence of the Sultan and Skykomish Rivers.	Snohomish County	Feasibility Complete	**$400,000**	$400,000	$0	NA	Feasibility Complete	$0	Design/Acquisition	$200,000	Construction	$200,000	2011	$0
44	478	1a	Mainstem-primary - Buck Island Floodplain Forest Enhancement to restore 1 ac off-channel, 500 ft edge and 2 ac riparian habitat	SSFETF	Design	**$200,000**	$180,000	$20,000	SSFETF Volunteers	Construction	$60,000	Construction	$80,000	Construction/Maintenance & monitoring	$60,000	2015	$15,000
45	750	1a	Mainstem-primary - Stillwater Floodplain Restoration to restore 25 ac riparian habitat	SSFETF	Concept	**$260,000**	$245,000	$15,000	SSFETF Volunteers	Feasibility & Design	$80,000	Construction, Monitoring & Maintenance	$80,000	Construction, Monitoring & Maintenance	$100,000	2012	$25,000
46	754	1a	Mainstem Primary - Stillwater linear logjams to improve 2,000 ft edge habitat	Wild Fish Conservancy	design	**$220,000**	$170,000	$50,000	wood donat.	design	$20,000	construction	$200,000		$0	2009	$0
47	755	1a	Mainstem Primary - Stillwater riprap removal along 0.5 mi Snoqualmie River edge	WDFW, Wild Fish Conservancy	concept	**$690,000**	$680,000	$10,000	WDFW staff	hydraulic modeling	$30,000	design	$100,000	construction	$550,000	2010	$0
48	824	1a	Mainstem-primary - McCormick Park Riparian Restoration to improve 10 ac riparian habitat.	SSFETF (Stilly Snohomish Fisheries Enhancement Task Force), City of Duvall	Construction	**$200,000**	$100,000	$100,000	KCD grants; USFWS grant	Construction	$80,000	Construction	$80,000	Construction/Monitoring & Maintenance	$40,000	2012	$25,000
49	751	1a	Mainstem Primary - Peoples Creek riparian restoration and 2 culvert replacments	Stewardship Partners;Snohomish CD; Northwest Chinook Recovery	On-Going	**$300,000**	$288,000	$12,000	State LIP	Feasibility	$60,000	Implementation	$150,000	Implementation/Monitoring	$90,000	2010	$0
50	753	1a	Mainstem Primary - Snoqualmie floodplain and riverbank acquisition and restoration (near Cherry Creek) to acquire 1.7 miles of shoreline and 140 acres floodplain	WDFW	concept	**$1,706,000**	$1,430,500	$275,500	NAWCA grant	acquisition	$825,500	design	$100,000	construction	$780,500	2010	$0
51	780	1a	Mainstem Primary - Acquire and restore 550 ac Cherry Creek floodplain	WDFW	concept	**$2,126,000**	$2,116,000	$10,000	WDFW staff	feasibility study	$50,000	acquisition and design	$500,000	construction	$1,576,000	2012	$0
52	862	1a	Mainstem Primary - Cherry Valley Stream Restoration, Remeandering Cherry creek through WDFW property and connecting with WFC project. Substantial riparian planting.	Ducks Unlimited, WFC, WDFW	Design / Permitting	**$615,000**	$150,000	$465,000	Pacific Salmon Commission NAWCA	Finalize design and permitting	$32,370	Construction	$58,815	Construction	$58,815	2010	$0
53	861	1a	Mainstem Primary - Fern Bluff Levee Enhancement. Acquisition; increase flow in off channel slough behind levee; enhance tributary	WDFW	concept	**$500,000**	$490,000	$10,000	WDFW staff	feasibility study	$10,000	acquisition	$200,000	design	$50,000	2012	$240,000
54	827	1b	Mainstem-primary - Middle Pilchuck reach restoration to restore 20 ac riparian, 2,600 ft edge habitat and install 4 log jams	Snohomish County	Concept	**$325,000**	$275,000	$50,000	SWM staff	Concept	$0	Concept	$0	Feasibility/Design	$75,000	2015	$250,000
55	828	1a	Mainstem-primary - Snoqualmie Honor Farm Stream and River Restoration design	Tulalip Tribes	Concept	**$160,000**	$140,000	$20,000	Grants/Tribal		$0	Feasibility	$60,000	Design	$100,000	2013	$750,000
56	858	1a	Mainstem Primary - Pilchuck River (near Lake Stevens) to enhance edge habitat complexity and riparian forests	SSFETF	Design & Construction	**$255,000**	$200,000	$55,000	SRFB grant, SSFETF, Sno. Co.	Design & Construction	$100,000	Design & Construction, Maintenance & Monitoring	$100,000	Construction, Maintenance & Monitoring	$55,000	2018	$40,000
57	859	1a	Mainstem Primary - Pilchuck River (near Russell Rd. Bridge) to enhance edge habitat complexity and riparian forests	SSFETF	Design & Construction	**$60,000**	$40,000	$20,000	NFWF CSF grant, SSFETF, Sno. Co.	Design & Construction	$50,000	Maintenance & Monitoring	$5,000	Maintenance & Monitoring	$5,000	2012	$5,000
58	860	1a	Mainstem Primary - Tychman Slough to enhance edge habitat complexity and riparian forests	SSFETF, SCD	Feasibility	**$100,000**	$85,000	$15,000	SSFETF	Feasibility & Design	$10,000	Construction	$80,000	Maintenance & Monitoring	$10,000	2012	$15,000
59	879	1b	Mainstem Primary - Protect 18 acres of floodplain habitat along the Tolt River.	City of Carnation	Feasibility	**$1,750,000**	$1,500,000	$250,000	KC Flood District		0	Acquisition	$1,750,000		$0	2009	$0

										2008		2009		2010			
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60	854	1a	Mainstem Primary - Oxbow Farm wetland enhancement on 1-2 acres	Stewardship Partners	Construction	**$150,000**	$50,000	$100,000	KCD grant/Ducks Unlimited	Design		Construction		Maintenance/Monitoring			
61	855	1a	Mainstem Primary - Wallace Acres riparian restoration to enhance/restore 2 acres of riparian habitat and fish passage	Stewardship Partners	Design/Construction	**$125,000**	$75,000	$50,000	DOE 319 grant? SRFB?	Planting,Maintenance & monitoring	$45,000	Planting, Maintenance, Monitoring	$30,000	Construction	$50,000		
62	857	1a	Mainstem- Primary - Riparian Restoration on farmland in Tuck Creek basin to restore/enhance .5 acres of riparian forest	Stewardship Partners	Construction	**$50,000**	$20,000	$30,000	DOE 319 grant	Design	$5,000	Construction	$30,000	Construction	$15,000		
63	852	1a	Mainstem-secondary - South Fork Skykomish Acquisitions Miller, Beckler, Foss, Tye Reach	CLC, Snoqualmie Watershed Forum	Investigation, Feasibility	**$500,000**	$250,000	$250,000	King County Conservation Futures	Investigation		Acquisition	$250,000	Acquisition	$250,000		$0
64	878	1a	Mainstem primary- Upper Raging River Protection and Restoration to protect and restore 7000 acres of instream, riparian, and upland habitat	Mountains to Sound Greenway Trust/CLC	Design	**$1,000,000**	$500,000	$500,000	KCD Grant, MTSGT, WDNR, SRFB?			Design	$100,000	Construction	$350,000	2011	$50,000
65	877	1a	Mainstem primary- Raging River Knotweed Control and Revegetation identifying affected areas and replanting control sites	Mountains to Sound Greenway Trust	Design	**$100,000**	$50,000	$50,000	potential KCD grant	Design	$25,000	Construction	$50,000	Monitoring	$25,000	2011	$0
66	856	2a	Mainstem- Primary - Willie Green's Organic Farm slough maintenance	Stewardship Partners	Maintenance	**$5,000**	$5,000	$0	KCD Maintenance grant	Maintenance	$5,000	Maintenance		Maintenance			
			Total Mainstem capital need			**$27,352,000**	**$23,569,500**	**$3,782,500**		**Total year 1 need**	**$4,762,870**	**Total year 2 need**	**$11,278,815**	**Total year 3 need**	**$9,645,315**		**$12,215,000**
Mainstem Non-capital projects and programs																	
			Total Mainstem non-capital need			**$0**	**$0**	**$0**		**Total year 1 need**	**$0**	**Total year 2 need**	**$0**	**Total year 3 need**	**$0**		
			Total Mainstem need			**$27,352,000**	**$23,569,500**	**$3,782,500**		**Total year 1 need**	**$4,762,870**	**Total year 2 need**	**$11,278,815**	**Total year 3 need**	**$9,645,315**		**$12,215,000**
Other Sub-basin Strategy Groups Capital projects and programs																	
67	829	1a	Headwaters Secondary Restoration - Pilchuck River Riparian Restoration and Fish Enhancement to reduce fine sediment input and increase channel complexity	AASF and SSFETF	Construction	**$60,000**	$11,000	$49,000	NFWF-CSF Grant, Snohomish County	Construction	$50,000	Construction	$10,000		$0	2009	$0
68	782	1a	Headwaters - land acquisitions for protection	Cascade Land Conservancy	Concept	**$2,000,000**	$2,000,000	$0	NA		$500,000		$1,000,000		$500,000		$0
69	784	1a	Rural Steams Secondary - Patterson Creek Stevlingson Acquisition to protect 10 acres	King County	Concept	**$425,000**	$375,000	$50,000	King County		$0	Acquisition	$425,000		$0	2008	$0
70	783	1a	Rural Steams Secondary - Patterson Creek State DNR Land Acquisition to protect 160 acres	King County	Concept	**$2,500,000**	$2,450,000	$50,000	King County		$0		$0	Acquisition	$2,500,000	2010	$0
71	785	1a	Multiple Sub-basins Snohomish Conservation District - Fish passage improvements within drainage and flood control districts	SCD (Snohomish Conservation District)	Concept	**$400,000**	$390,000	$10,000	SCD		$0	Design/permits	$10,000	Construction	$390,000		$0
72		1a	Multiple Sub-basins - Snohomish Basin Steward 2 projects per year	Snohomish County	implementation	**$300,000**	$200,000	$100,000	SWM staff, other fees, grants	Feasibility/Design/Construction	$100,000	Feasibility/Design/Construction	$100,000	Feasibility/Design/Construction	$100,000	ongoing	$100,000 per year
73	830	2a	Rural Streams Primary - Woods Creek Riparian Restoration and In-stream Enhancement	AASF, SSFETF and SCD	Feasibility	**$90,000**	$90,000	$0	Future Grants and Project Sponsors	Design and Construction	$30,000	Design and Construction	$30,000	Design and Construction	$30,000	2010	$150,000
74	712	2a	Rural Streams Primary - Woods Creek Fish Barrier Removals	AASF, SSFETF and Snohomish Conservation District (SCD)	Concept	**$230,000**	$230,000	$0	NA	Design	$30,000	Construction	$100,000	Construction	$100,000	2010	$0
75		2a	Mainstem - Secondary/Headwaters North Fork Skykomish Acquisition to protect 180 acres	CLC	Investigation, Feasibility	**$500,000**	$500,000	$0	NA	Acquisition	$500,000		$0		$0		$0

										2008		2009		2010			
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76	762	2a	Mainstem- Secondary - Trout Creek mouth & NF Skykomish River land acquisition to acquire 80 acres near the mouth of Trout Ck and NF Skykomish River	Snohomish County or USFS	Concept and possibly Design	$240,000	$240,000	$0	NA	Pursue funding	$0	If funding becomes available, contact owner, otherwise continue pursuing funding options.	$0	Design restoration to be done on land once acquired. Puchase parcel.	$240,000	2010	$20,000
77	833	2a	Rural Streams Primary - Cherry Valley Dairy Stream Enhancement to improve 1 acre riparian habitat and remove 1 barrier	Stewardship Partners	Design	$75,000	$65,000	$10,000	Stewardship Partners	Construction	$40,000	Construction	$30,000	Maintenance	$5,000	2010	$0
78	834	2a	Headwaters secondary - Stream restoration, slope stabilization, and road obliteration of portions of USFS Roads 6066 and 6067, removing 1 barrier and restoring 1 ac riparian habitat	Tulalip Tribes or USFS	Design	$198,000	$153,000	$45,000	USFS	Complete design, NEPA	$45,000	Constuction of some of the associated trails (not part of road decom. project)	$0	Construction	$153,000	2011	none if year 3 costs obtained
79	835	2a	Mainstem secondary - Stream restoration & stabilization at key locations in the Tye and South Fork Skykomish Rivers, restoring hydrologic and sediment processes	Sustainable Fisheries Foundation	Concept	$235,000	$120,000	$45,000	USFS and BPA , and possibly WSDOT and/or BNSF railroad.	On hold, pursue funding.	$0	Design	$15,000	NEPA and final Design	$25,000	2012	$195,000
80	836	2a	Mainstem secondary - Replacement of culverts with a bridge on a tributary to the North Fork Skykomish River, improving fish access.	Sustainable Fisheries Foundation	Concept	$66,000	$54,000	$12,000	USFS	On hold, pursue funding	$0	Design	$10,000	Construction	$56,000	2010	$0
81	836	2a	Mainstem secondary - Replacement of twin under-sized impassable culverts tributary to the North Fork Skykomish River to remove fish passage barrier.	Sustainable Fisheries Foundation	Design	$31,000	$25,500	$5,500	USFS	On hold, pursue funding.	$0	Design	$5,500	Construction	$15,500	2010	$0
82	695	2b	Headwaters Secondary - Replacement of impassable culvert on Money Creek (a trib S Fork Skykomish River) at Lake Elizabeth, removing 1 fish barrier .	Snohomish County or USFS	Design	$23,000	$19,000	$4,000	USFS	On hold, pursue fudning	$0	Design	$4,000	Construction	$19,000	2010	$0
83		3a	Urban Streams - 1 Allen Creek Fish Barrier Culvert Removal	AASF	Concept	$50,000	$50,000	$0	Future Grants	Design and Construction	$50,000		$0		0	2009	$0
84	837	3a	Urban Streams - 3 Quilceda Creek Fish Barrier Culvert Removals	AASF (Adopt-A-Stream Foundation)	Concept	$150,000	$150,000	$0	Future Grants, Property owners	Design and Construction	$50,000	Design and Construction	$50,000	Design and Construction	$50,000	2009	$0
85	786	3a	Multiple Sub-basins - Everett Pipeline Culvert Replacement Program - 7 over 10yrs	City of Everett	implementation	$250,000	$125,000	$125,000	Army Corps of Engineers	Design/Construction	$50,000	Design/Construction	$100,000	Design/Construction	$100,000	ongoing	$510,000
86	787	3a	Headwaters - SF Snoqualmie River Dispersed Site Rehabitlitation to clean up site and restore riparian habitat	Mountain to Sound Greenway Trust and USFS	Design	$20,000	$15,000	$5,000	USFS	On hold, pursue funding.	$0	Design	$2,500	Construction	$175,000	2010	$0
87	788	3a	Headwaters - Road Decommissioning and/or road conversion to trail in SF Snoqualmie watershed.	Mountain to Sound Greenway Trust and USFS	Design	$400,000	$300,000	$100,000	Mountain to Sound Greenway Trust and USFS	Design and NEPA	$100,000	Construction	$300,000	Project likley done by year 3 if funding provided in years 1 and 2	$0	2009	$0
88	887	3a	Urban Streams - Kuhlman Creek restoration and fish passage improvement	Snohomish County	Design	$250,000	$250,000	$0	SWM Staff	Design	$50,000	Construction	$200,000	complete	$0	2009	$0
89	838	3a	Rural Streams Secondary - Harris Creek Tributary/Booth to improve passage in 1.5 miles of stream	SSFETF	Feasibility	$100,000	$100,000	$0	FFFPP - pending	Design/Construction	$60,000	Construction	$37,500	Maintenance & monitoring	$2,500	2010	0
90	768	3a	Rural Stream - Secondary - Riparian Restoration on farmland in Ames Creek Basin	Stewardship Partners	On-Going	$150,000	$126,000	$24,000	Pioneers Grant	Implementation	$60,000	Implementation	$60,000	Implementation	$30,000	Ongoing	$0
91	769	3a	Mainstem - Secondary - Lower Woods Creek Channel Enhancement	Trout Unlimited - Sky Valley Chapter of	Design	$20,000	$20,000	$0	NA		$0		$0	Implementation	$20,000	2010	$0
92	842	3a	Rural Streams Secondary - Coho Creek Stream and Wetland Restoration along 2.5 miles of stream and wetland	Tulalip Tribes	Design	$1,070,000	$1,070,000	$0	Grants/Tribal	Construction	$535,000	Construction	$535,000		$0	2009	$0

										2008		2009		2010			
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93	500	3b	Rural Streams Secondary - NE 52nd Place Fish Passage Improvement	King County	Feasibility	**$450,000**	$450,000	$0	NA		$0	Design	$50,000	Construction	$400,000	2010	$0
94		1a	Future Habitat Project Development - Analysis and feasibility to determine future projects for the SF Skykomish River from Sunset Falls to confluence with Foss River to prioritize restoration need.	Snohomish County and USFS	Feasibility	**$40,000**	$30,000	$10,000	Snohomish County and USF, and possibly Skykomish mitigation agreement								
95	874	3a	Rural Streams Secondary - Quilceda and Sturgeon Creek Habitat Accessibility and Habitat Restoration Feasibility Project	Tulalip Tribes	Concept	**$150,000**	$130,000	$20,000	Tulalip Tribes	Feasibility	$75,000		$757,000				$0
96	866	3a	Headwaters-Secondary - Miller River Restoration. Design and construct riparian and instream restoration actions in the lowermost two miles of the Miller River, whose active channel is now braided and unstable, shallow, and several hundred feet wide - summer baslefows sometimes go subsurface due to recent deacades of thick alluvial deposits.	Sustainable Fisheries Foundation or USFS.	Concept	**$280,000**	$240,000	$40,000	USFS	Complete Federal Watersehd Analysis required to be conducted and begin design.	$30,000 - funding already obtained from USFS	Design	$30,000	Construction	$110,000	2012	$110,000
97	867	3a	Headwaters- Secondary - Obliteration of 4-6 miles of logging roads on steep, unstable slopes adjacent to Harlan Creek, a major salmon-bearing triburary to the Beckler River.	Sustainable Fisheries Foundation or USFS.	Design	**$270,000**	$245,000	$35,000	USFS	On hold, pusue funding.	$0	Design and NEPA	$40,000	Construction	$195,000	2010 or 2011	None if all funding provided by 2010
98	868	3a	Headwaters - Secondary - Obliteration of 8 miles of gravel road on steep unsatble slopes justabove Evergreen Creek, a major salmonid -bearing tributrary to the Beckler River. The road has failed (some very large) at several stream corossing in the last decade, and there is continumed high risk of additional failues at current and additional sites since there is no access to maintain ther road.	Sustainable Fisheries Foundation or USFS.	Design	**$410,000**	$110,000	$300,000	FHA and USFS	On hold, pursuing funding with FHA - funding level from FHA will be determined in Spring 2008.	$4,000	Complete Design and NEPA	$46,000	Construction	$360,000	2010 or 2011	None if all funding provided by 2011
99	869	3a	Headwaters Primary - Replacement of 48" culvert in upper North Fork Skykomish River side channel to remove 1 fish passage barrier.	USFS	Feasibility	**$136,000**	$100,000	$36,000	USFS (not secured)	Concept	$1,000	Design	$15,000	Construction	$120,000	2010	$0
100	870	3a	Headwaters - Replacement of 36" culvert in Lennox Creek to remove 1 fish passage barrier.	USFS or King County	Feasibility	**$13,000**	$82,000	$21,000	USFS (not secured)	Concept	$0	Concept	$1,000	Design	$12,000	2011	$90,000
101	871	3a	Headwaters Restoration above Falls - Decommission or convert to trail 23 miles in South Fork Snoqualmie	Mountains to Sound Greenway Trust and USFS	Planning	**$1,025,000**	up to $1,014,000	???	Partnerships w/ Mtns to Sound Greenway, City of Seattle, and others, plus USFS	Planning/Environmental Documentation	$11,000	Design Phase I	$100,000	Design Phase II, Begin Construction Phase I	$550,000	2012	$364,000
102	872	3a	Headwaters Restoration above falls - Decommission 1.7 miles along Quartz Creek (Middle Fork Snoqualmie)	Mountains to Sound Greenway Trust and USFS	On hold pending funds	**$95,000**	up to $95,000	???	Mountains to Sound Greenway Trust and USFS	on hold	$0	Design	$15,000	Construction	$80,000	2010	$0
103	873	3a	Headwaters Restoration above falls - Decommission 11 miles on Bessemer Mtn (North Fork Snoqualmie)	USFS, Wa DNR, Mountains to Sound Greenway Trust	On hold pending funds	**$600,000**	up to $600,000	???	Wa DNR or USFS	on hold	$0	Design	$100,000	Construction	$500,000	2011	$0

										2008		2009		2010			
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104	880	2a	Headwaters Restoration above falls - Three Forks Park and Tollgate Farm Park Floodplain Restoration including 10 acres riparian habitat	City of Snoqualmie & City of North Bend	Concept	**$250,000**	$210,000	$40,000	KCD grant			Construction	$200,000	Maintenance & Monitoring	$50,000	2011	$50,000
105	853	3a	Rural Stream secondary - Keller Dairy riparian restoration on Patterson Creek- # acres of riparian forest to be restored/enhanced.	Stewardship Partners	Design	**$25,000**	$20,000	$5,000	DOE 319 grant?	Design/Planning/Prep	$5,000	Planting, Maintenance, Monitoring	$15,000	Planting, Maintenance, Monitoring	$5,000		
106	875	2a	Mainstem secondary restoration - Fish friendly tide gate at Batt Slough	SCD/ MFCD	Concept	**$65,000**	$48,750	$16,250	SCD	Concept	$0	Construction	$65,000	complete	$0	2009	
107	713	2a	Rural Streams Primary - Cherry Creek Pump Station Improvement, Pump and Tidegate modifications	SCD, DD#7	Concept	**$40,000**	$40,000	$0	None in hand yet	concept	$0	Construction	$40,000	Complete	$0		
108	863	3a	Rural Streams Secondary - French Creek Basin Restoration (continuation): Restore 620 acres Flood Plain Habitat, Return 4 miles of FC and Tribs to original channels (remove from ditches), Develop or Increase Fish Passage to restored habitats.	Ducks Unlimited	Feasibility	**$828,720**	$657,440	$171,280	NAWCA Private Landowners DU (in-kind) other	Feasibility	$178,720	Design / Permitting	$150,000	Begin Construction / Easement purchase	$500,000	2011	$171,280
109	864	3a	Rural Streams Secondary - French Creek Basin Riparian Enhancement: Enhance approximately 88 acres of floodplain habitat by planting of native shrub/scrub community.	Ducks Unlimited	Construction	**$220,000**	$187,000	$33,000	DU/Private Landowners/WDFW	Riparian planting	$20,000	Riparian planting	$190,000	Maintenance	$10,000	2009	
			Total Other Sub-basins (non-listed species) capital need			**$14,730,720**	**$11,678,690**	**$1,362,030**		**Total year 1 need**	**$2,544,720**	**Total year 2 need**	**$4,838,500**	**Total year 3 need**	**$7,403,000**		**$1,660,280**
Other Sub-basin Strategy Groups Non-capital projects and programs																	
110		1a	Monitoring & Adaptive Mangement - Identification of scour flow and base flow events that limit the potential capacity and recovery of salmonid stocks across the Skykomish Basin to determine hydrologic processes limited fishery habitat in the Skykomish basin.	Tulalip Tribes or USFS	Design	**$30,500**	$24,000	$6,500	USFS	Design phase - complete with input from USGS, DOE, King Co. DNR, and Snohomish Co.SWM	$5,250	Model flows in stream systems w/ little or no gage history, either by correlation to existing gages, record extension, and/or use of regional curves (w/ field verific.)	$10,500	Set priorities for where to establish additional short-term gages to make correlations to exsiting long-term gages. Begin establishing new gages.	$14,750	2014	$12,000
111		2a	Multiple Sub-basins - Farm plans and BMP implementation for WQ improvements, with riparian habitat restoration	Snohomish Conservation District	Ongoing	**$360,000**	$60,000	$300,000	SCD	Work with rural landowners to improve WQ and riparian habitat	$120,000	Work with rural landowners to improve WQ and riparian habitat	$120,000	Work with rural landowners to improve WQ and riparian habitat	$120,000	ongoing	$120,000/year
112		2a	Habitat protection & Outreach and Education - Stream Stewardship and Adaptive Management of Recreation Impacts to inventory and monitor the impacts of recreation on riparian and instream habitats in the North and South Forks Skykomish River	Tulalip Tribes or USFS	Expand current Stewardship, Envir. Edu., Monitoring, and Impacts Management program	**$33,000**	$18,000	$15,000	USFS and RAC	Contiuned inventory, educationm and impacts mitigation programs..	$11,000	Contiuned inventory, educationm and impacts mitigation programs..	$11,000	Contiuned inventory, educationm and impacts mitigation programs..	$11,000	2012	$22,000
113		2a	WRIA 07 watertype inventory and assessment	Wild Fish Conservancy	Concept	**$300,000**	**$300,000**	$8,000	Wild Fish Conservancy	Fieldwork, data entry	$90,000	Fieldwork, data entry	$90,000	Fieldwork, data entry, and interactive mapping	$120,000	2011	$0
114		3a	Monitoring & Adaptive Mangement- Instream habitat and bank surveys of mainstem of SF Skykomish River from Sunset Falls to confluence with Foss River to gather baseline information. Surveys based on climate change analysis.	Snohomish County and USFS	Design	**$25,000**	$20,000	$5,000	Snohomish County and USF, and possibly Skykomish mitigation agreement	Design	$2,500	Survey implementation	$22,500	Project likley done by year 3 if funding provided in years 1 and 2	$0	2009	$0
			Total Other Sub-basins (non-capital) need			**$748,500**	**$422,000**	**$334,500**		**Total year 1 need**	**$228,750**	**Total year 2 need**	**$254,000**	**Total year 3 need**	**$265,750**		**$34,000**
			Total Other Sub-basins need			**$15,479,220**	**$12,100,690**	**$1,696,530**		**Total year 1 need**	**$2,773,470**	**Total year 2 need**	**$5,092,500**	**Total year 3 need**	**$7,668,750**		**$1,694,280**
Basinwide Non-capital/capacity-building																	
115		1a	Watershed Recovery Plan Implementation - Snoqualmie watershed - Technical Assistance to landowners	King County	Ongoing	**$1,332,000**	$372,000	$960,000	King County & Snoqualmie Forum ILA	Technical assistance by basin stewards, agricultural stewards, forestry stewards.	$444,000	Same	$444,000	Same	$444,000	ongoing	$0

										2008		2009		2010			
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116		1a	Salmon Recovery coordination/implementation - Lead Entity coordination (2 full time planning staff, plus professional services at Snohomish County)	Snohomish County	Implementation	$900,000	$604,000	$296,000	Snohomish County WDFW DOE	Implementation	$300,000	Implementation	$300,000	Implementation	$300,000	ongoing	$2,700,000
117		1a	Habitat protection - Snoqualmie watershed Incentives Program	King County	Ongoing	$264,000	$144,000	$120,000	King County	Program to be defined	$88,000		$88,000		$88,000	ongoing	$0
118		1a	Habitat protection - evaluate protection of salmonid habitat from preservation, land use regulations, outreach and eduction, and monitoring/adaptive management to develop a strategy to improve protection mechanisms as necessary	Snohomish County	Feasibility	$180,000	$150,000	$30,000	Snohomish County	Design first cut at habitat protection	$30,000	Implementation	$75,000	Implementation	$75,000	ongoing	$175,000
119		1a	Instream Flow protection - Basin next steps: 1) obtain agreement from key stakeholders to come to the table; 2) determine what kind of evaluation and changes to make (new instream flow rule? Implementation of the rule?)	Snohomish County, Forum	Concept	$200,000	$162,500	$37,500	SWM staff/LE staff	Design	$50,000	Implementation	$100,000	Implementation	$50,000	2010	$0
120		1a	Instream Flow protection - Estimate groundwater contribution to surface water flows and incorporate into instream flow models	Tulalip Tribes, Washington State	Monitoring and research	$1,200,000	$1,050,000	$150,000	Grants/Local	Implementation	$465,000	Implementation	$425,000	Implementation	$310,000	2011	$120,000
121		1b	Instream Flow Protection - Instream Flow Planning, building capacity for basinwide instream flow planning	Tulalip Tribes	Personnel Planning	$96,123	$96,123	$0	Grants	Annual Implementation	$32,041	Annual Implementation	$32,041	Annual Implementation	$32,041	ongoing	$32,041/yr.
122		1a	Monitoring & Adaptive Mangement - Establish a precipitation gauge network in the Snohomish Basin for modeling instream flows to build capacity for estimating stream flows in ungauged critical habitat sub-basins.	Tulalip Tribes	Monitoring and research	$220,000	$100,000	$120,000	Grants	Annual Implementation	$140,000	Annual Implementation	$40,000	Annual Implementation	$40,000	ongoing	$40,000/yr.
123		1a	Monitoring & Adaptive Mangement - Compile stand age coverages in priority basins and complete data gaps, creating a clearinghouse for stand age coverages	Tulalip Tribes	Monitoring and research	$80,000	$80,000	$0	Grants	Implementation	$80,000		$0		$0	2009	$0
124		1b	Monitoring & Adaptive Management - Stream gauging program to improve understanding of hydrology	Snohomish County	Monitoring and research	$120,000	$75,000	$45,000	Snohomish County	Staffing & equipment	$40,000	Staffing & equipment	$40,000	Staffing & equipment	$40,000	ongoing	$40,000/yr.
125		1b	Monitoring & Adaptive Mangement - Capacity Building for habitat monitoring, building capacity for basinwide habitat monitoring	Tulalip Tribes	Monitoring	$225,000	$165,000	$60,000	Grants/Tribal	Annual Implementation	$75,000	Annual Implementation	$75,000	Annual Implementation	$75,000	ongoing	$75,000/yr.
126		1a	Education & Outreach - Complete basinwide education and outreach strategy; begin implementation	King and Snohomish Counties, Forum	Ongoing	$500,000	$425,000	$75,000	Snohomish County	Complete outreach strategy	$30,000	Implementation	$200,000	Implementation	$225,000	ongoing	$50,000/yr.
127		1a	Education & Outreach - Snoqualmie Stewardship Program, providing education, outreach and landowner assistance in the Snoqualmie	Snoqualmie Stewardship Partners	Ongoing	$240,000	$90,000	$150,000	Private Grants	Education, landwoner outreach, workshops, promotion, and farm tours	$80,000	Same	$80,000	Same	$80,000	ongoing	$0
128		1a	Education and Outreach - REYs education program to Snohomish Basin schools, working with 4 schools and approx. 450 community members	SSFETF	Implementation	$30,000	$30,000	$0	NA	Implementation	$10,000	Implementation	$10,000	Implementation	$10,000	ongoing	$10,000/ year

										2008		2009		2010			
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129		1b	Watershed Recovery Plan Implementation - Coordinate a basinwide large wood program to take advantage of economies of scale, providing wood for projects with sponsors paying only for transportation in each project grant application	Snohomish and King Counties, all project sponsors, WADNR, WSDOT	Concept	**$600,000**	$450,000	$150,000	King and Snohomish Counties	Implementation	$200,000	Implementation	$200,000	Implementation	$200,000	ongoing	$1,400,000
130		1b	Watershed Recovery Plan Implementation: - Snohomish County riparian restoration and maintenance crew, plus restoration ecologist, providing a full-time restoration crew with 5 FTEs (4 biology technicians, 1 biologist/habitat biologist/restoraton ecologist)	Snohomish County	Feasibility	**$1,140,000**	$969,000	$171,000	Snohomish County	Design, construction, maintenance and monitoring	$380,000	Design, construction, maintenance and monitoring	$380,000	Design, construction, maintenance and monitoring	$380,000	ongoing	$2,660,000
131		1b	Watershed Recovery Plan Implementation - Capacity building - project manager aid in project development and oversight	SSFETF	Personnel Planning	**$120,000**	$90,000	$30,000	SSFETF	Support Volunteers; education & outreach	$40,000	Support Volunteers; education & outreach	$40,000	Support Volunteers; education & outreach	$40,000	on-going	$40,000/yr
132		1b	Watershed Recovery Plan Implementation - Capacity building - volunteer coordinator for recruitment, support and coordination	SSFETF	Personnel Planning	**$150,000**	$120,000	$30,000	SSFETF	Project design & implementation	$50,000	Project design & implementation	$50,000	Project design & implementation	$50,000	on-going	$50,000/yr
133		1b	Watershed Recovery Plan Implementation - Capacity Building - Stream Protection and Restoration, building capacity for stream protection and restoration strategy	Tulalip Tribes	Personnel Planning	**$96,123**	$96,123	$0	Grants	Annual Implementation	$32,041	Annual Implementation	$32,041	Annual Implementation	$32,041	ongoing	$32,041/yr.
134		1b	Watershed Recovery Plan Implementation - Capacity Building Restoration Plan Implementation, maintaining capacity for plan implementation	Tulalip Tribes	Personnel Planning	**$96,123**	$96,123	$0	Grants	Annual Implementation	$32,041	Annual Implementation	$32,041	Annual Implementation	$32,041	ongoing	$32,041/yr.
135		1b	Watershed Recovery Plan Implementation - Wild Fish Conservancy capacity building, GIS and other training	Wild Fish Conservancy	Implementation	**$98,000**	$85,000	$13,000	Wild Fish Conservancy	Implementation	$71,000	Implementation	$13,500	Implementation	$13,500	2010	$0
136		1b	Snoqualmie Stewardship Planning - Collaborative sustainability planning with an emphasis on community and stakeholder involvement, low impact development, landowner stewardship, and use of incentive-based programs.	Stewardship Partners	Feasibility	$100,000	$90,000	$10,000	Stewardship Partners	Planning/Design	35,000	Design/Implementation	35,000	Implementation	30,000	Ongoing	
137		1b	Snoqualmie Salmon-Safe- Outreach, certification, marketing and promotions to support local farmers engaged in restoration projects and BMPs with the recognized Salmon-Safe label	Stewardship Partners	Ongoing	$120,000	$70,000	$50,000	Private Grants, DOE 319 Grant, King County CSF	Program Implementation	40,000	Program Implementation	40,000	Program Implementation	40,000	onging	$50,000
	Total Basinwide non-capital/capacity-building need					**$8,107,369**	**$5,609,869**	**$2,497,500**		**Total year 1 need**	**$2,744,123**	**Total year 2 need**	**$2,731,623**	**Total year 3 need**	**$2,586,623**		**$7,105,000**
Cross WRIA or Whidbey Basin Capital projects and programs																	
138		1a	Nearshore - Fish utilization study in Northern Puget Sound	WDFW, San Juan County	Feasibility	**$2,000,000**	$1,900,000	$100,000	San Juan County	Design of study, purchase equipment	$500,000	Implementation	$750,000	Implementation	$750,000		$0
139		1b	Future habitat project development - WRIAs 5, 7, & 8 - Pocket Estuary Mapping, resulting in a prioritized list of restoration/protection sites	Snohomish County MRC	Concept	**$80,000**	$80,000	$0	NA	Begin Mapping	$40,000	Complete Mapping	$40,000		$0	2009	0
	Total Cross WRIA Capital projects and programs need					**$2,080,000**	**$1,980,000**	**$100,000**		**Total year 1 need**	**$540,000**	**Total year 2 need**	**$790,000**	**Total year 3 need**	**$750,000**		**$0**
Cross WRIA or Whidbey Basin non-capital projects and programs																	
140		1a	Regional - Training Workshops for engineers & contractors to build nearshore capacity	Puget Sound Partnership	Concept	**$40,000**	$40,000	$0	n/a	No Action	$0	Feasibility and Pilot Workshop	$30,000	Workshop	$10,000	Ongoing	$10,000 every other year
141		1b	Nearshore - Support of the Snohomish/Camano Nearshore Cooperative	Snohomish County													

										2008		2009		2010			
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142		1a	Outreach / Education: WSU Beach Watchers increase capacity for research, restoration and education relating especially to the nearshore, marine and estuarine environment. Results in creosote log removal, spartina monitoring, suppression and removal, water quality monitoring, community educaiton, reduced bycatch of Dungeness Crab and more.	WSU Extension/ Snohomish County	Implementation	**$210,000**	$110,000	$100,000	Snohomish MRC, Tulalip Tribes, US EPA, WSU Extension, Snohomish County, City of Mukilteo, WDOH	Annual Implementation	70,000 annually	Annual Implementation	70,000 annually	Annual Implementation	70,000 annually	ongoing	70,000 per year
143		1a	Monitoring & Adaptive Mangement - Complete sidescan bathymetric survey of marine shoreline from Mukilteo to Port Susan; incorporate data into hydrodynamic model	Snohomish County, Tulalip Tribes	Feasibility	**$250,000**	$200,000	$50,000	Snohomish County	Implementation	$250,000		$0		$0		$0
144		1a	Nearshore - Shore Stewards Program for Snohomish County/Snohomish Basin portion; builds landowner capacity for nearshore protection and restoration	WSU Extension/Snohomish County Marine Resources Committee	Implementation	**$60,000**	$38,000	$32,000	Snhomish County General Funds, WDOE PPG Grant	Annual Implementation	$20,000	Annual Implementation	$20,000	Annual Implementation	$20,000	ongoing	$140,000
145		1a	Pocket Estuary Mapping - WRIAs 5,7,& 8 pocket estuary mapping, resulting in a prioritized list of restoration/protection sites	Snohomish County MRC	Concept	**$60,000**	$60,000	$0		Concept	$0	feasibility	$30,000	Implementation	$30,000	2011	$20,000
146		1a	Candidate Sites analysis for nearshore restoration & protection - - Complete mostly-developed candidate sites for nearshore restoration & protection document	Snohomish MRC,		**$20,000**	$5,000	$15,000	Snohomish MRC	Implementation	$15,000	5000	$0	complete	$0	2008	$0
147		1a	Port Susan Marine Stewardship Area/Conservation Action Plan -- establish a port susan MSA in concert with ecosystm-based conservation action plan to identify ecosystem trheats, stresses and sources, anddevelop strategies to abate threas	Port Susan MSA Working Group, NWSC, I.C. MRC, Stillaguamish Tribe, Tulalip Tribes, SnoCo MRC, TNC, WSU Extension	feasibility	**$150,000**	$135,000	$15,000	NWSF	feasibility	$50,000	Implementation	$50,000	implementation	$50,000	2012	$100,000
			Total Cross WRIA non-capital projects and programs need			**$790,000**	**$588,000**	**$212,000**		**Total year 1 need**	**$335,000**	**Total year 2 need**	**$130,000**	**Total year 3 need**	**$110,000**		**$260,000**
				Total Cross-WRIA need		**$2,870,000**	**$2,568,000**	**$312,000**		**Total year 1 need**	**$875,000**	**Total year 2 need**	**$920,000**	**Total year 3 need**	**$860,000**		**$260,000**
Harvest, hatchery, h-integration, stock assessment Capital projects																	
148		1a	Hatchery, Harvest, Stock Assessment - Acquire electronic fish counter tunnels to enum. Chin. Releases, building basinwide capacity for stock assessment and monitoring.	Tulalip Tribes	Capital Equipment	**$8,300**	$8,300	$0	NA			Purchase	$8,300				2009	$0
149		1a	Hatchery, Harvest, Stock Assessment - Build stock assessment laboratory, acquire equipment, supplies, reagents, building basinwide capacity for stock assessment and monitoring.	Tulalip Tribes	Capital Equipment/ Supplies	**$75,000**	$75,000	$0	NA	Construction and Purchase	$50,000	Construction and Purchase	$25,000			2009	$0
150		2a	Monitoring & Adaptive Mangement - Second Snoqualmie Smolt Trap to establish the relative juvenile production of different spawning areas of the Snoqualmie	King County	Concept	**$375,000**	$375,000		NA	Monitoring	$125,000	Monitoring	$125,000	Monitoring	$125,000	ongoing	$0
151		1a	Monitoring & Adaptive Mangement - Operate smolt traps on Skykomish and Snoqualmie Rivers to establish baseline productivity and evaluate recovery	Tulalip Tribes, NOAA Fisheries	Monitoring and research	**$750,000**	$450,000	$300,000	Grants/Tribal/Local	Implementation	250,000	Implementation	$250,000	Implementation	$250,000	2010	$0
			Total capital h's need			**$1,208,300**	**$908,300**	**$300,000**		**Total year 1 need**	**$425,000**	**Total year 2 need**	**$408,300**	**Total year 3 need**	**$375,000**		**$0**

											2008		2009		2010			
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Harvest, hatchery, h-integration, stock assessment Non-capital																	
152		1a	Hatchery, Harvest, Stock Assessment - Implement 100% Chin. mass marking req't., improving ability to harvest hatchery-origin fish and protect wild stocks; increases ability to implement hatchery broodstock integration protocol	Tulalip Tribes	Annual requirement	***$45,000***	$45,000	$0	NA	Annual requirement	$15,000	Annual requirement	$15,000	Annual requirement	$15,000	ongoing	$15,000/yr.
153		1a	Hatchery, Harvest, Stock Assessment - Implement 100% Chin. thermal otolith marking req't. assessing hatchery contribution ot natural spawning escapement	Tulalip Tribes	Annual requirement	***$22,500***	$22,500	$0	NA	Annual monitoring requirement	$7,500	Annual monitoring requirement	$7,500	Annual monitoring requirement	$7,500	ongoing	$7,500/yr.
154		1a	Hatchery, Harvest, Stock Assessment - Acquire & apply 100,000 CWT's for Tulalip Chinook, assessing cost-wide exploitation on hatchery and wild Chinook	Tulalip Tribes	Annual monitoring requirement	***$29,092***	$29,092	$0	NA	Annual monitoring requirement	$9,697	Annual monitoring requirement	$9,697	Annual monitoring requirement	$9,697	ongoing	$9,697/yr.
155		1a	Hatchery, Harvest, Stock Assessment - Operate stock assessment laboratory, increasing local capacity for rapid determination and dissemination of stock assessment information	Tulalip Tribes	Annual monitoring requirement	***$75,000***	$75,000	$0	NA	Annual monitoring requirement	$25,000	Annual monitoring requirement	$25,000	Annual monitoring requirement	$25,000	ongoing	$25,000/yr.
156		1a	Habitat Assessment - Monitor Snoh. Chin. genet. comp: (NOR adults and juveniles in estuary), improving knowledge of which fish use which habitats	Tulalip Tribes, NOAA Fisheries	Implementation/ Adaptive Management	***$60,000***	$60,000	$0	NA	Monitoring	$20,000	Monitoring	$20,000	Monitoring	$20,000	ongoing	$20,000
157		1a	Hatchery - Monitor ecol. Int's: juvenile hat/nat. Chin. In estuary assessing ecological interactions of hatchery and wild fish	Tulalip Tribes, NOAA Fisheries	Annual monitoring requirement/ Adaptive management	***$60,000***	$60,000	$0	NA	Monitoring	$20,000	Monitoring	$20,000	Monitoring	$20,000	ongoing	$20,000
158		2a	Hatchery, Harvest, Stock Assessment - Temporal and spatial utilization of spawning habitat by hatchery and wild fish in the Snoqualmie, quantifying effects of Skykomish integrated hatchery program on Snoqualmie population	King County,Tulalip Tribes, WDFW	Implementation/Adaptive Management	***$688,000***	$363,000	$325,000	NA	Implementation	$74,000	Implementation	$89,000	Implementation	$89,000	2012	$111,000
			Total non-capital h's need			***$979,592***	***$654,592***	***$325,000***		***Total year 1 need***	***$171,197***	***Total year 2 need***	***$186,197***	***Total year 3 need***	***$186,197***		***$151,000***
Harvest, hatchery, h-integration, stock assessment benefitting non-listed species																	
159		1a	Hatchery, Harvest, Stock Assessment - Acquire electronic fish counter tunnels to enumerate Tulalip chum releases, building basinwide capacity for stock assessment monitoring	Tulalip Tribes	Capital Equipment	***$8,300***	$8,300	$0	NA			Purchase	$8,300			2008	$0
160		1a	Hatchery, Harvest, Stock Assessment - Implement 100% Coho thermal otolith marking requirement, assessing hatchery contribution to natural spawning escapement	Tulalip Tribes	Annual monitoring requirement	***$22,500***	$22,500	$0	NA	Annual monitoring requirement	$7,500	Annual monitoring requirement	$7,500	Annual monitoring requirement	$7,500	ongoing	$7,500/Yr
161		1a	Hatchery, Harvest, Stock Assessment - Recalibrating Coho Escapement to improve assessment of coast-wide coho exploitation rates	Tulalip Tribes	Monitoring and research/ Adaptive management	***$310,000***	$310,000		NA	Planning	$20,000	Implementation	$145,000	Implementation	$145,000	2009	$0
162		1a	Hatchery - Monitor ecol. Int's: juvenile hat/nat. Coho in estuary to assess ecological interactions of hatchery and wild fish.	Tulalip Tribes, NOAA Fisheries	Annual monitoring requirement	***$60,000***	$60,000	$0	NA	Monitoring	$20,000	Monitoring	$20,000	Monitoring	$20,000	ongoing	$20,000/Yr
163		1a	Hatchery - Monitor ecol. Int's: juvenile hat/nat. chum in estuary to assess ecological interactions of hatchery and wild fish.	Tulalip Tribes, NOAA Fisheries	Annual monitoring requirement	***$60,000***	$60,000	$0	NA	Monitoring	$20,000	Monitoring	$20,000	Monitoring	$20,000	ongoing	$20,000/Yr
			Total non-listed species h's need			***$460,800***	***$460,800***	***$0***		***Total year 1 need***	***$67,500***	***Total year 2 need***	***$200,800***	***Total year 3 need***	***$192,500***		
			Total H's Need			***$2,648,692***	***$2,023,692***	***$625,000***		***Total year 1 need***	***$663,697***	***Total year 2 need***	***$795,297***	***Total year 3 need***	***$753,697***		***$151,000***
			Total Basin Need			***$98,792,704***	***$78,139,374***	***$18,981,080***		***Total year 1 need***	***$16,343,501***	***Total year 2 need***	***$36,502,776***	***Total year 3 need***	***$38,257,426***		***$48,524,280***

Existing/funded Work Program for the Snohomish River Basin 2008 - 2010

									2008		2009		2010			
Row	Map ID	Tier	Action name and description	Sponsor	Project/program status	Total cost of first three years	Matching Funds	Source of matching funds	Year 1 Scope	Year 1 Cost	Year 2 Scope	Year 2 Cost	Year 3 Scope	Year 3 Cost	Likely end date	Additional funds needed after 2010
Nearshore Projects and Programs funded and underway																
1		2a	Gravid female dungeness crab habitat survey -- ID Gravid crab habitat from 0-250 ft in Snohomish County	Snohomish County MRC	Feasibility	**$45,000**	$45,000	NWSC								
			Total nearshore work funded			**$45,000**	**$45,000**		**Total year 1 cost**	**$0**	**Total year 2 cost**	**$0**	**Total year 3 cost**	**$0**		
Estuary Projects and Programs funded and underway																
2	430	1a	Estuary - Snohomish Estuary Edge Enhancement Phase I to restore 3 ac tidal marsh, 5 ac riparian and install 20 log jams.	Snohomish County	Design/Construction	**$150,000**	$150,000	SWM staff	Construction	$150,000		$0		$0	2008	$0
3	549	1a	Estuary - Smith Island/Union Slough Marine Wetland Restoration; some % mitigation; 100ac tidal marsh	US Army Corps of Engineers, City of Everett	Construction	**$500,000**	$300,000	US Army Corps of Engeneers, City of Everett	Continue construction from 2007	$500,000		$0		$0	2008	$0
4	529	2a	Estuary - Biringer Farm Estuarine Restoration/ Mitigation Bank; some % mitigation; to restore >325 ac tidal marsh/mudflat	Port of Everett/Wildlands of Washington, Inc.	In permitting	$0	$0	Port of Everett/ Wildlands of Washington, Inc.	Permitting; establish banking instrument; start interior construction	$0	Construction	$0	Monitoring	$0		$0
5		1a	Monitoring & Adaptive Mangement - Conduct beach seining, fyke netting in estuary and nearshore marine areas and pocket estuaries to improve understanding of salmon use and habitat preference in estuarine habitats.	Tulalip Tribes, NOAA Fisheries	Monitoring and research	**$198,000**	$198,000	Grants/Tribal/Local	Implementation	$66,000	Implementation	$66,000	Implementation	$66,000	2010	$0
			Total estuary work funded			**$848,000**	**$648,000**		**Total year 1 cost**	**$716,000**	**Total year 2 cost**	**$66,000**	**Total year 3 cost**	**$66,000**		**$0**
Mainstem-primary Projects and Programs funded and underway																
6	155	1a	Mainstem primary - Chinook bend levee removal to restore 2,000 ft edge and 1 acre off-channel habitat.	King County	Design	**$1,000,000**	$615,000	SRFB, King County, KCD grant	Design	$100,000	Construction	$850,000	Maintenance & monitoring	$50,000	2010	$0
7	438	1a	Mainstem-primary - Camp Gilead Reconnection to restore 1.3 miles fish access, 400 feet edge and 4 acres off-channel habitat by removing 1 barrier.	King County	Design	**$450,000**	$100,000	King County	Design	$65,000	Construction	$375,000	Maintenance & monitoring	$10,000	2010	$0
8	333	1a	Mainstem-primary - Snoqualmie-Tolt Levee Setback to restore 2,500 feet edge, 12 acres off-channel and 6 ac riparian habitat	Seattle/King County	Design	**$4,200,000**	$4,000,000	KCD grant, Seattle, King County	Construction	$4,000,000	Monitoring	$100,000	Monitoring	$100,000	2010	$0
9	473	1a	Mainstem-primary - Skykomish Braided Reach to restore 17.5 acres riparian, 2,450 ft edge habitats and install 4 log jams.	Snohomish County	Permitting	**$3,100,000**	$3,100,000	SRFB, Snohomish County	Construction	$500,000	Construction/Maintenance & monitoring	$1,300,000	Construction/Maintenance & monitoring	$1,300,000	2010	$0
10	885	1a	Mainstem Primary - Lower Snoqualmie Restoration and Maintenance Crew to restore 18 ac riparian habitat	Stewardship Partners	Maintenance	**$105,000**	$50,000	KCD grant	Maintenance & monitoring	$35,000	Maintenance & monitoring	$35,000	Maintenance & monitoring	$35,000	ongoing	$700,000
11	616	1a	Mainstem Primary - Oxbow Farm Channel Enhancement to enhance fish passage	Stewardship Partners	Feasibility	**$46,000**	$20,000	In-Kind Stewardship Partners	Design	$20,000	Construction	$26,000		$0	2009	$0
12	886	1a	Mainstem Primary - Herb Co. Farm Riparian Restoration to improve 0.5 ac riparian habitat	Stewardship Partners	Design	**$18,000**	$3,000	KCD grant	Construction	$8,000	Maintenance	$6,000	Maintenance & monitoring	$4,000	2010	$0
13	400	1a	Mainstem Primary - Jubilee Farm Riparian Restoration to restore 6 ac riparian habitat	Stewardship Partners	Construction	**$30,000**	$8,000	King County	Planting,Maintenance & monitoring	$10,000	Planting,Maintenance & monitoring	$10,000	Maintenance & monitoring	$10,000	2010	$0
14	614	1a	Mainstem-primary - Stout Property Riparian Restoration to improve 2 ac riparian habitat	Stewardship Partners	Design	**$100,000**	$25,000	KCD grant	Construction	$40,000	Construction	$40,000	Maintenance & monitoring	$20,000	2009	$0
15	714	1a	Mainstem Primary - Cherry Creek Floodplain Restoration to improve 2,400 ft edge and 1.5 ac riparian habitat	Wild Fish Conservancy	Feasibility	**$600,000**	$160,000	NFWF, King County, KCD	Design	$80,000	Construction	$200,000	Construction	$320,000	2011	$50,000

									2008		2009		2010			
Row	Map ID	Tier	Action name and description	Sponsor	Project/program status	Total cost of first three years	Matching Funds	Source of matching funds	Year 1 Scope	Year 1 Cost	Year 2 Scope	Year 2 Cost	Year 3 Scope	Year 3 Cost	Likely end date	Additional funds needed after 2010
16	792	1a	Mainstem Primary - Cherry Creek Relict Channel Connection restoring 1,500 ft off-channel habitat	Wild Fish Conservancy	Design	$200,000	$160,000	KCD, NFWF, King County	Design	$25,000	Implementation	$165,000	Monitoring/Evaluation	$10,000	2010	$0
17	752	1a	Mainstem Primary - Snoqualmie River Nature's Last Stand riparian restoration	Stewardship Partners	On-Going	$25,000	$25,000	SRFB/PSAR	Construction	$18,000	Maintenance/Monitoring	$5,000	Maintenance/Monitoring	$2,000	2010	$0
18	713	1a	Monitoring & Adaptive Mangement - Cherry Creek Pump Monitoring to enhance fish passage, monitor water quality and optimize pump operation	Wild Fish Conservancy	Data collection	$126,268	$34,550	KCD	Data collection	101,268	Data collection/Reporting	$12,500	Data collection/Reporting	$12,500	2010	$0
			Total mainstem-primary work funded			$10,000,268	$8,300,550		**Total year 1 cost**	$5,002,268	**Total year 2 cost**	$3,124,500	**Total year 3 cost**	$1,873,500		
Other Sub-basin Strategy Groups Projects and Programs funded and underway																
19	882	1a	Headwaters - Middle Fork Snoqualmie River Valley Invasive Removal Project to control invasives	Cascade Land Conservancy	Construction	$70,000	$27,000	various	Construction	$27,000	Construction	$43,000		$0		$0
20	883	2a	Headwaters - City of Snoqualmie Natural Area Acquisitions to protect 0.5 acres	City of Snoqualmie	Concept	$180,000	$120,000	Conservation Futures, KCD grant	Acquisition	$180,000		$0		$0	2008	$0
21	840	3a	Rural streams secondary - Little Pilchuck Creek restoration	SFF; Private landowners, Lake Stevens School District, SSFETF	Concept	$25,000	$5,000	Private Landowners	site prep, plantings, post-project monitoring and maintenance	$15,000	post-project monitoring and maintenance	$5,000	post-project monitoring and maintenance	$5,000	2013	$0
22	839	3a	Urban Streams - Jones Ck Reach on Marysville School Distr. Restoration	SSFETF	Feasibility	$150,000	$15,000	SSFETF Volunteers	Construction	$100,000	Construction/Monitoring & maintenance	$40,000	Construction/Monitoring & maintenance	$10,000	2010	$10,000
23	884	3a	Headwaters - Wallace River riparian restoration	Snohomish County	Feasibility	$20,000	$20,000	Snohomish County	Construction	$20,000		$0		$0	2008	$0
24	843	3b	Rural Streams Secondary - NE 67th Place Fish Passage Improvement	King County	Feasibility	$50,000	$50,000	King County		$0		$0	Design	$50,000	2011	$0
25	376	4a	Rural Secondary- Creswell Culvert replacement of 3 culverts	Snohomish County	Design	$200,000	$200,000	Snohomish Road Maintenance	Design	$20,000	Replace 1 culvert	$60,000	Replace 2 culverts	$120,000	2010	
26	881	4a	Rural Secondary- Dubuque Creek at Newberg Road, replace 3 culverts	Snohomish County	Design	$650,000	$650,000	REET & WMA	Replace 1 culvert	$250,000	Replace 2 culverts	$400,000	complete	$0	2009	$0
27	865	3a	Urban Streams - 4 WF Quilceda Creek properties: LWD installation (30 logs) and riparian enhancement (30,000 sq ft).	AASF	Permit	$30,000	$10,000	Sno Co and AASF Plant and LWD Donation. Landowner and volunteer labor	Design, Permit, Construction, Plant	$30,000	Completed	$0.00	Completed	$0.00	2008	$0.00
28		3a	Monitoring & Adaptive Management - complete Federal Watershed Analysis and and an Environmental Assessment for Access and Travel Management (ATM) in order to be allowed to propose and complete obliteration of roads in the Miller and Foss watersheds, which drain into the South Fork Skykomish River.	USFS	Analysis and document preparation ongoing.	$55,000	$55,000	USFS	Complete most of the Federal Watershed Analysis and the separate ATM EA in FY08.	45000	Complete remainder of the Federal Watershed Analysis and the separate ATM EA in early FY09..	10000	Project completed in 2009.	$0	2009	None

									2008		2009		2010			
Row	Map ID	Tier	Action name and description	Sponsor	Project/program status	Total cost of first three years	Matching Funds	Source of matching funds	Year 1 Scope	Year 1 Cost	Year 2 Scope	Year 2 Cost	Year 3 Scope	Year 3 Cost	Likely end date	Additional funds needed after 2010
29		2a	Instream Flow protection - Allen-Quilceda Tributary Ranking Project to list and rank tributaries for low instream flows	Ecology & WDFW	Ongoing	**$40,000**	$40,000	Ecology	Tributary list, assessment report, briefing to Forum	$40,000		$0		$0	2008	$0
			Total other SBSG's work funded			***$1,470,000***	***$1,192,000***		***Total year 1 cost***	***$727,000***	***Total year 2 cost***	***$558,000***	***Total year 3 cost***	***$185,000***		
Basinwide Non-capital/Capacity Building Projects and Programs funded and underway																
30		1a	Salmon Recovery coordination/implementation - Maintain Snoqualmie Watershed Alliance	Snoqualmie Forum	Ongoing	**$720,000**	$720,000	King County & Snoqualmie Forum ILA	Ongoing work planning, grant solicitation, prioritization, implementation and grant writing	$240,000	Same	$240,000	Same	$240,000	ongoing	$0
31		1a	Watershed Recovery Plan Implementation - Snohomish Watershed Steward providing BMP and LID promotion and technical assistance	Snohomish County	Ongoing	**$90,000**	$90,000	Snohomish County	Annual Implementation	$30,000	Annual Implementation	$30,000	Annual Implementation	$30,000	Ongoing	$30,000/yr
32		1a	Watershed Recovery Plan Implementation - Develop a farm/fish strategy that identifies solutions that benefit farming and fish	Snohomish County with others	Feasibility	**$25,000**	$25,000	King and Snohomish Counties	Feasibility	$25,000					2009	$0
33		1a	Monitoring and Adaptive Management - Configure the Habitat Work Schedule database for implementation monitoring in the Snohomish Basin.	Snohomish County with others	Design	**$59,876**	$59,876	Snohomish County, WDFW	Design/Implementation	$59,876	Implementation		Implementation		Ongoing	?
34		1a	Watershed Recovery Plan Implementation - Improve captial program management: 1) refine 3-year Work Plan; 2) improve delivery of capital projects; 3) assist in implementing the funding strategy	Snohomish County with others	Implementation	**$132,925**	$132,925	Snohomish County, WDFW	Implementation	$66,462	Implementation	$66,463				
35		1a	Education & Outreach - Youth & Parent Education Program to visit 31 sites, providing 900 contact hours with 1,650 participants	Snohomish County, King County	Ongoing	**$66,000**	$66,000	Snohomish County	Annual Implementation	$22,000	Annual Implementation	$22,000	Annual Implementation	$22,000	Ongoing	$22,000/Yr
36		1a	Education & Outreach - Adult Education Program for educators and homeowners to visit 31 sites, providing 900 contact hours to 1,650 participants	Snohomish County, King County	Ongoing	**$66,000**	$66,000	Snohomish County	Annual Implementation	$22,000	Annual Implementation	$22,000	Annual Implementation	$22,000	Ongoing	$22,000/Yr
37		1a	Education and Outreach - Salmon Watch Program & Pond Watch Program to engage up to 40 citizens per year in salmon recovery and water quality issues with 500 volunteer hours/year	Snohomish County, King County	Ongoing	**$33,000**	$33,000	Snohomish County	Annual Implementation	$11,000	Annual Implementation	$11,000	Annual Implementation	$11,000	Ongoing	$11,000/Yr
38		2a	Water quality protection - Pet Waste Management program targetted at getting dog owners in Urban Growth Areas in Snohomish County to cleanup and dispose of pet waste.	Snohomish County, King County	Piloting	Unknown, depending on SnoCo rate increase outcome	Unknown	Snohomish County (as part of NPDES implementation)	Piloting		Implementation		Implementation			
39		2a	Water Quality Protection - Natural Yard Care program aimed at homeowners and renters to educate them on practices to control erosion, increase infiltration, and	Snohomish County, King County	Program Development	Unknown, depending on SnoCo rate increase outcome	Unknown	Snohomish County (as part of NPDES implementation)	Program Development		Piloting in certain areas of watershed		Implementation			
40		2a	Water Quality Protection - Soaps and Toxins program aimed at homeowners and renters to keep hazardous waste and vehicle discharges out of waterways	Snohomish County, King County	Concept	Unknown, depending on SnoCo rate increase outcome	Unknown	Snohomish County (as part of NPDES implementation)	Concept		Formative research/porogram development		Formative research/program development			

									2008		2009		2010			
Row	Map ID	Tier	Action name and description	Sponsor	Project/program status	Total cost of first three years	Matching Funds	Source of matching funds	Year 1 Scope	Year 1 Cost	Year 2 Scope	Year 2 Cost	Year 3 Scope	Year 3 Cost	Likely end date	Additional funds needed after 2010
41		2a	*Water Quality Protection - Septic System Program aimed at educating septic system owners to keep bacteria, pathogens, nitrogen and phosphorus out the waterways*	*Snohomish County, King County*	*Program Development*	*Unknown, depending on SnoCo rate increase outcome*	*Unknown*	*Snohomish County (as part of NPDES implementation)*	*Program Development*		*Piloting in certain areas of watershed*		*Piloting in certain areas of watershed*			
42		2a	*Water Quality Protection - Streamside Landowner Program to educate landowners to manage vegetation, development, livestock, and erosion to affect pollution, temperature, sediment and flow.*	*Snohomish County, King County*	*Implementation*	*Unknown, depending on SnoCo rate increase outcome*	*Unknown*	*Snohomish County (as part of NPDES implementation)*	*Implementation*		*Follow-up on implementation*		*Year off before cycle resumes.*			
43		2a	*Water Quality Protection - Urban BMP Toolbox Program to educate homeowners about the variety of pollutants that can be protected through changes in yard care, stormwater facility operation, vegetation management etc.*	*Snohomish County, King County*	*Piloting*	*Unknown, depending on SnoCo rate increase outcome*	*Unknown*	*Snohomish County (as part of NPDES implementation)*	*Piloting*		*Piloting/ Implementation*		*Implementation*			
	Total basinwide non-capital/capcity building work funded					***$1,192,801***	***$1,192,801***		***Total year 1 cost***	***$476,338***	***Total year 2 cost***	***$391,463***	***Total year 3 cost***	***$325,000***		

									2008		2009		2010			
Row	Map ID	Tier	Action name and description	Sponsor	Project/program status	Total cost of first three years	Matching Funds	Source of matching funds	Year 1 Scope	Year 1 Cost	Year 2 Scope	Year 2 Cost	Year 3 Scope	Year 3 Cost	Likely end date	Additional funds needed after 2010
Cross WRIA or Whidbey Basin Capital projects and programs funded and underway																
44		1a	Nearshore - Creosote log/piling removal WRIAs 5 , 7, & 8, removing 120 tons	DNR, NWSC, Snohomish County Marine Resources Committee	Construction	**$120,000**	$120,000	DNR, NWSC, Snohomish County	Removal	$40,000	Removal	$40,000	Removal	$40,000	ongoing	$40,000 per year
45		1a	Shoreline bioengineering demonstration project -- project to demonstrate alternative forms of bank protection (dipersal of wave energy) through the use of vegetation of other (softer) means than rip rap bulkheads	Snohomish County MRC, Snohomish County, Tulalip Tribes, People for Puget Sound	Concept	**$35,000**	$35,000	Snohomish County Surface Water Management	Concept	$0	Concept	$0	Feasibility	$35,000	2012	$115,000
46		1a	Monitoring - Mussel Watch Program WRIAs 5, 7, & 8, to identify pollutant concentrations in marine waters and engage community in project implementation and outreach	Snohomish County Marine Resources Committee, NOAA, Stillaguamish Tribe of Indians	Monitoring and Research	**$47,500**	$47,500	Snohomish County Marine Resource Committee, Stillaguamish Tribe, NOAA	Annual Implementation	$15,000	Annual Implementation	$17,500	Annual Implementation	$15,000	ongoing	$15,000 per year
47		1a	Outreach and Education - WRIAs 5, 7, & 8 Nearshore and Estuary Sound Stewards Program, developing and implementing a volunteer-based management program for marine and estuarine areas	Snohomish County Marine Resources Committee, People for Puget Sound	Implementation	**$37,500**	$37,500	People For Puget Sound staff; Snohomish County Marine Resource Committee	Implementation	$14,500	Implementation	$12,500	Implementation	$10,500	Ongoing	$10,500 per year
48		1a	Remove derelict fishing gear. Identify locations and remove derelict fishing gear in the marine environment	Snohomich County, Tulalip Tribes, People for Puget Sound	implementation	**$60,000**	$60,000	NWSC	Implementation	$30,000	Implementation	$0	Implementation	$30,000	Ongoing	$0
			Total Cross-WRIA or Whidbey Basin work funded			**$300,000**	**$300,000**		**Total year 1 cost**	**$99,500**	**Total year 2 cost**	**$70,000**	**Total year 3 cost**	**$130,500**		
Harvest, hatchery, h-integration, stock assessment projects and programs funded and underway																
49		1a	Hatchery, Harvest, Stock Assessment - Acquire and replace equipment upgrades to increase ability to detect coded-wire tags, building basinwide capacity for stock assessment and monitoring.	Tulalip Tribes	Capital Equipment	**$20,000**	$20,000	Mass marking implementation funds	Purchase	$10,000	Purchase	$5,000	Purchase	$5,000	2010	$0
50		1a	Harvest - Implement weekly test fishery in Area 8A to assess catch rates, Chinook by catch rates, and other parameters, assessing terminal area incidental harvest of natural origin Chinook leading to improved management of fisheries	Tulalip Tribes	Implementation/ Adaptive Management	**$60,000**	$60,000	Grant/Tribal	Implementation	$20,000	Implementation	$20,000	Implementation	$20,000	ongoing	$20,000/yr.
51		1a	Hatchery, Harvest, Stock Assessment - Monitor Hat. Chin. contrib. rates to fisheries, hatcheries, escapements (otol, CWT's, fin clips), improving assessment of terminal area harvest rates by time and area.	Tulalip Tribes, WDFW	Annual monitoring requirement	**$108,382**	$108,382	Tribal hatchery reform, PST implementation funds, mass marking implementation funds	Annual monitoring requirement	$36,127	Annual monitoring requirement	$36,127	Annual monitoring requirement	$36,127	ongoing	$36,127/yr.
52		1a	Hatchery - Continue implementing Sky. Chin. nat.-origin broodstock integration program integrating hatchery broodstock with natural population.	Tulalip Tribes, WDFW	Implementation/ Adaptive Management	**$60,000**	$60,000	WDFW / Tribal hatchery management funds	Implementation	$20,000	Implementation	$20,000	Implementation	$20,000	ongoing	$20,000/yr.

									2008		2009		2010			
Row	Map ID	Tier	Action name and description	Sponsor	Project/program status	Total cost of first three years	Matching Funds	Source of matching funds	Year 1 Scope	Year 1 Cost	Year 2 Scope	Year 2 Cost	Year 3 Scope	Year 3 Cost	Likely end date	Additional funds needed after 2010
53		1a	Harvest - Recompute recovery exploitation rates and critical escapement guidelines for Snohomish Chinook populations and other modifications to harvest plan, improving management of harvest appropriate for moving populations toward recovery goals	Tulalip Tribes, WDFW	Implementation/ Adaptive Management	**$10,000**	$10,000	Grant			Implementation	$10,000			ongoing	$10,000/5-yrs
54		1a	Hatchery, Harvest, Stock Assessment - Monitor Snoh. Chin. Genet. Comp.: (DNA baseline), assessing contribution of Snohomish-origin Chinook to coastwide fisheries leading to improved estimates of exploitation rates	Tulalip Tribes, WDFW	Monitoring and research	**$65,520**	$65,520	Chinook Technical Committee, Letter of Agreement funds (PSC)	Monitoring	$65,520					2008	$0
55		1a	Hatchery - Monitor Snoh. Chin. Genet. Comp.: (hat. broodstock integration), testing assumptions of broodstock integration protocol leading to improved protocol	Tulalip Tribes, WDFW	Implementation/ Adaptive management	**$42,000**	$42,000	Hatchery scientific review Group via Washington State recreation and Conservation Office funds	Implementation	$42,000					2008	$0
			Total H's work funded			**$365,902**	**$365,902**		**Total year 1 cost**	**$193,647**	**Total year 2 cost**	**$91,127**	**Total year 3 cost**	**$81,127**		
Harvest, hatchery, h-integration, stock assessment projects and programs benefitting non-listed species funded and underway																
56		1a	Hatchery, Harvest, Stock Assessment - Implement 100% Coho mass marking requirement, improving ability to harvest hatchery-origin fish and protect wild stocks; improving ability to implement hatchery broodstock protocol	Tulalip Tribes	Annual requirement	**$45,000**	$45,000	Fed. Funding expected	Annual requirement	$15,000	Annual requirement	$15,000	Annual requirement	$15,000	ongoing	$15,000/Yr
57		1a	Hatchery, Harvest, Stock Assessment - Acquire & apply 50,000 CWT's for Tulalip Coho to assess coast-wide exploitation rates on hatchery and wild coho	Tulalip Tribes	Annual monitoring requirement	**$29,092**	$29,092	PST implementation funds	Annual monitoring requirement	$9,697	Annual monitoring requirement	$9,697	Annual monitoring requirement	$9,697	ongoing	$9,697/Yr
58		1a	Hatchery - Continue implementing Sky. Coho nat.-origin broodstock integration program, integrating hatchery broodstock with natural population	Tulalip Tribes, WDFW	Implementation/ Adaptive Management	**$60,000**	$60,000	WDFW / Tulalip hatchery reform funds	Implementation/ Adaptive Mgmt	$20,000	Implementation/Adaptive Mgmt	$20,000	Implementation/Adaptive Mgmt	$20,000	ongoing	$20,000/Yr
59		1a	Hatchery, Harvest, Stock Assessment - Monitor Hat. Coho contrib. rates to fisheries, hatcheries, escapements (otol, CWT's, fin clips), improving assessment of termindal area harvest by time and area; assess contributino of hatchery fish to natural escapement	Tulalip Tribes, WDFW	Annual monitoring requirement	**$108,381**	$108,381	PST Implementation funds; Mass marking implementation funds	Annual monitoring requirement	$36,127	Annual monitoring requirement	$36,127	Annual monitoring requirement	$36,127	ongoing	$36,127/Yr
60		1a	Hatchery, Harvest, Stock Assessment - Annually monitor contrib. rates of Tulalip Hat. chum to fisheries, hatcheries, escapements (100% unique genetic mark), improving assessment of terminal area harvest rates by time and area; assess contribution of hatchery fish to natural escapement	Tulalip Tribes	Annual monitoring requirement	**$66,000**	$66,000	PST implementation funds	Annual monitoring requirement	$22,000	Annual monitoring requirement	$22,000	Annual monitoring requirement	$22,000	ongoing	$22,000/Yr
			Total H's benefitting non-listed species work funded			**$308,473**	**$308,473**		**Total year 1 cost**	**$102,824**	**Total year 2 cost**	**$102,824**	**Total year 3 cost**	**$102,824**		
			Total Funded Projects			**$14,530,444**	**$12,352,726**		**Total year 1 need**	**$7,317,577**	**Total year 2 need**	**$4,403,915**	**Total year 3 need**	**$2,763,952**		