Puget Sound Partnership
and Recovery Implementation Technical Team (RITT)

2013 Three Year Work Plan Review

for the

Stillaguamish Watershed

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Overview

The 2013 Three-Year Work Plan Update is the eighth year of implementation since the Recovery Plan was submitted to NOAA/NMFS in 2005. The Puget Sound Partnership, as the regional organization for salmon recovery, along with the Recovery Implementation Technical Team (RITT), as the regional technical team for salmon recovery, perform an assessment of the development and review of these work Plans in order to be as effective as possible in the coming years. These work plans are intended to provide a road map for implementation of the salmon recovery plans and to help establish a recovery trajectory for three years of implementation. *Given that watershed chapter areas are focusing efforts on development of monitoring and adaptive management (M&AM) plans over the next two years, the 3YWP process has been significantly scaled down for 2013. It is anticipated that the M&AM work will eventually replace much, if not all, of this process.*

The feedback below is intended to assist the watershed recovery plan implementation team as it continues to address actions and implementation of their salmon recovery plan. The feedback is also used by the Recovery Council, the Puget Sound Partnership and the RITT to inform the continued development and implementation of the regional work plan. This includes advancing issues such as adaptive management, all H integration, and capacity within the watershed teams. The feedback will also stimulate further discussion of recovery objectives to determine what the best investments are for salmon recovery over the next three years.

Guidance for the 2013 work plan update reviews

Watersheds were asked to respond to the following questions:

I. Context:

1. Provide a brief overview of the characteristics of your Chinook Salmon Recovery area. Describe the process for developing your 3YWP narrative and project/activity list. Who are the stakeholders involved and what are their roles? Are harvest and hatchery managers involved in your planning group or have they had an opportunity to comment or consult on your 3YWP?

II. Background/Planning/Logic of the Recovery Chapter:

1. What are the recovery goals for your watershed for Chinook salmon? Include information on both population goals (VSP parameters) and habitat goals.
2. What is the current strategy to accomplish the recovery goals and what assumption(s) is this strategy based on?
3. What new knowledge or information has changed your strategy, assumptions or hypotheses since your recovery chapter was written?
4. How is the sequencing and timing of actions or projects done in such a way as to implement the strategy as effectively as possible?

III. Plan and Gaps:

1. What are the obstacles or barriers for implementing monitoring and adaptive management? Where could you use support for development of your M&AM plans?
2. Considering all actions affecting salmon recovery in the watershed, is the Chinook salmon resource likely to be closer to, or further from, the recovery goals ten years from now as it is today?

Factors to be considered by the RITT in performing its technical review of the workplan update included:

I. Consistency:

1. Is the plan's current strategy either substantially the same as documented in the Recovery Plan (Volume I and II of the Puget Sound Chinook Recovery Plan plus NOAA supplement) or well supported by additional data and analysis?
2. Is the sequence of actions identified in the 3YWP consistent with the current hypotheses and strategies?

II. Sequence/Timing:

1. Are actions sequenced and timed appropriately for the current stage of implementation?

Review Process

The following review consists of the following components:

1. a regional technical review that identifies and discusses technical topics of regional concern
2. a watershed-specific technical review focusing on the specific above-mentioned technical questions and the work being done in the watershed as reflected by the three year work plan
3. a watershed-specific recovery plan consistency review of projects submitted to the SRFB for funding

Puget Sound Recovery Implementation Technical Team Review

The RITT reviewed each of the salmon recovery three-year work plan updates in May-July 2012. The RITT evaluated each individual watershed according to the four questions provided above. In the review, the RITT identified a common set of regional review comments for technical feedback that are applicable to all watersheds, as well as watershed specific feedback using the four questions. The regional technical review and watershed specific technical review comments are included below.

Regional Technical Review: Common Themes

We Are Not On Pace to Meet Recovery Goals

Our review of the progress, challenges, and opportunities for salmon recovery compiled in the three-year work plans and supporting documents indicates that progress towards Chinook salmon recovery across the region has been uneven and, on the whole, implementation of salmon recovery plans is failing to meet the pace identified in the 10 yr work plans. This slower pace, which has been a common theme since we began reviewing progress, is having a compounding impact that ultimately lessens our ability to recover Chinook salmon in the ESU. The work plans and project proposals document that the cost of implementing projects and protecting habitat continues to grow, yet the resources to do the work have not kept pace. At the same time, Chinook salmon populations in the ESU are declining. The gap between current status, recovery goals, and what it will take to get to recovery goals is growing even larger. In the last decade, nine of the 22 Chinook salmon populations continued to decline and these declines included populations in four of the five regions of Puget Sound (PSP 2012). Based on our review, the region needs to make progress on the issues below to reverse this trend.

Identify and Learn From What Is Working and What Is Not

The partners in the Puget Sound Salmon Recovery Plan lack a coordinated system for tracking progress, detailing accountability, and making decisions to improve salmon recovery strategies and actions based on information of the effectiveness of what has been implemented. The National Marine Fisheries Service (NMFS) in adopting the Puget Sound Chinook Salmon Recovery Plan identified the lack of monitoring and adaptive management plans as a critical piece that needed to be added (NMFS 2006). The monitoring and adaptive management that is occurring exists as a patchwork of different programs at local and regional scales based on the regulatory needs of different authorities, local priorities, the availability of different sources of funding and technical expertise, and often uses different scientific approaches. At the local scale, this work focuses primarily on site-specific monitoring of habitat restoration projects and salmon. In some watersheds, it also includes monitoring and adaptive management frameworks.

To address this issue the RITT has developed a framework to support the development of systematic, coordinated monitoring and decision making. The framework provides a single classification of different salmon habitats synthesized from many scientific publications to promote sharing of information among different projects; it identifies and defines suites of pressures and stressors acting on salmon and salmon ecosystems; it promotes a transparent approach that illustrates how different recovery strategies are expected to reduce pressures; it

describes logical sequences of actions and outcomes; it identifies measurable objectives for the outcomes, the sources of uncertainty associated with them, and indicators to judge progress towards meeting salmon recovery goals. The use of this consistent approach across watersheds will provide more powerful information to decision makers while still retaining the individual characteristics and priorities of the individual watershed recovery plans. For example, this approach provides a means to test similar assumptions across multiple watersheds and connect local and regional scale monitoring information to track progress across the region.

With the support of the Puget Sound Partnership, fourteen individual watershed recovery groups are applying the framework by translating sixteen recovery plans into that format and using it to assess monitoring needs and priorities. They plan on completing an initial assessment using the Framework by mid-2014. The purpose is to help salmon recovery planners in different watersheds consistently describe assumptions stated in their watershed recovery plans and to incorporate new information to evaluate these assumptions. For watersheds that have not yet developed monitoring and adaptive management plans, these assessments are expected to form the technical basis from which watersheds will be able to develop or refine individual monitoring and adaptive management plans. All watersheds are considering three basic questions to set monitoring priorities:

1) Will the information gathered from monitoring efforts affect future decisions regarding land, water, and resource management and Chinook salmon recovery?
2) Where and to what degree is there uncertainty, and how will this uncertainty affect decision making by resource managers? and
3) How will the uncertainty be reduced or resolved over time through successful implementation of the Monitoring and Adaptive Management Plan?

Making this system work will not be possible without strong policy-level leadership, support, and participation. This approach will support broader participation by all parties necessary for salmon recovery, which was lacking in the development of the existing Plan. We anticipate that further engagement of policy makers will be needed to identify the short-term and long-term measurable objectives for habitat restoration and protection, hatchery management, and harvest, as well as better integration of the different management sectors ("H"-Integration) within and across watersheds. This broad, active participation will be necessary for success.

Finally, no policy body or agency appears to have assumed responsibility for transparently documenting and integrating changes to salmon recovery plans. Changes in some strategies, such as for harvest and hatcheries, are documented in ESA consultations with the National Marine Fisheries Service, but changes in most habitat strategies in the Watersheds Recovery Plans are not. We anticipate that the updating of Watershed Plans using the framework will meet this need. It will also provide a mechanism and process to include information that is currently being collected by diverse groups. In this way, all relevant monitoring information should become part of the knowledge base of all participants in watershed recovery plan implementation and the subsequent adaptive management of implementation.

Protection of Ecosystem Functions and Habitat

Protection of existing marine and freshwater habitats is essential for salmon recovery in Puget Sound. Protection, as used here, means the conservation of habitat and the functions it provides through passive actions (e.g. habitat acquisition) and the application of land use regulatory measures. Adequate protection of salmon habitat in Puget Sound continues to be an issue in all watersheds. Our reviews noted that the continued degradation of habitat is a concern throughout the region. Some watersheds continue to lose forest cover and riparian functions within the Urban Growth Boundary (Pierce 2011, Vanderhoof *et al*. 2011).

Habitat improvements or acquisition are easier to implement by individual watershed groups, given funding, but meaningful protection of existing habitat quality relies on local regulations and their enforcement. One of the premises of the Puget Sound Chinook Recovery Plan approved by NOAA in 2005 was that habitats throughout Puget Sound would improve with the implementation of watershed strategies in the Plan and not continue to degrade. The plan identified a variety of regulatory tools that afforded protection. These included the Shoreline Management Act (SMA), Growth Management Act (GMA), Critical Area Ordinances (CAO), state Hydraulic Permit Approvals (HPA), NMFS's reviews of federal actions under Section 7 of the ESA, and other federal actions (i.e. the Army Corps of Engineers' levee vegetation management policy and others). Despite this, some watersheds noted that the current rate of habitat loss may be offsetting any gains the salmon recovery groups are making through restoration projects. The effectiveness of these regulatory processes is not documented in any cumulative, comprehensive manner. However, these regulatory actions must be effective in protecting and maintaining the current biological integrity of these areas or the implementation of projects alone will not recover Puget Sound Chinook salmon.

We note with interest that the Salmon Recovery Council did not ask for a policy review of progress in the 2013 three-year work plans. We repeat our recommendation from last year that Salmon Recovery Council (SRC), responsible agencies, watershed groups, and the RITT and other experts need to develop ways to provide technical input for integrating to a much greater extent the actions that promote salmon recovery within these local and regional decisions and regulations affecting salmon habitat. Alone none of these processes are sufficiently integrated with the Puget Sound Salmon Recovery Plan for the RITT or the SRC to provide specific guidance regarding how habitat protection should be implemented to support salmon recovery. Therefore, although some of the RITT's watershed-specific comments suggest ways that individual watershed groups could better integrate habitat protection into their recovery plan implementation, we also recognize that much of the solution to this problem lies in revising the underlying planning processes, which is not a scientific enterprise.

References:

Fresh, K.. and E. Beamer. 2012 (draft manuscript). Juvenile salmon and forage fish presence and abundance in shoreline habitats of the San Juan Islands, 2008-2009: Map applications for selected fish species.

National Marine Fisheries Service. 2006. Recovery Plan for the Puget Sound Chinook Salmon (*Oncorhynchus tshawytscha*). National Marine Fisheries Service, Northwest Region. Seattle, WA.

Pierce, K. 2011. Final Report on High Resolution Change Detection Project. Washington Department of Fish and Wildlife, Olympia, WA. Available at: http://wdfw.wa.gov/publications/01454/wdfw01454.pdf

Puget Sound Partnership. 2012. State of the Sound: A Biennual Report on the Recovery of Puget Sound.Tacoma, Washington. Available at: http://www.psp.wa.gov/sos.php

Vanderhoof, J., S. Stolnack, K. Rauscher, and K. Higgins. 2011. Lake Washington/ Cedar/ Sammamish Watershed (WRIA 8) Land Cover Change Analysis. Prepared for WRIA8 Technical Committee by King County Water and Land Resources Division, Department of Natural Resources and Parks. Seattle, Washington. Available at: http://www.govlink.org/watersheds/8/reports/W8LandcoverChangeReport7-19-2011.pdf

H Integration

In their 2003 guidance to the local watersheds, the Puget Sound Technical Recovery Team (TRT) identified the need for an integrated All-H strategy to recover Puget Sound Chinook salmon. This message was emphasized again in the Puget Sound Salmon Recovery Plan (2005) and the NOAA supplement (2006): all of these documents clearly state that actions in Habitat, Hatchery, and Harvest management (the "Hs") must be coordinated towards recovery of Puget Sound Chinook salmon. H-Integration is defined as a coordinated combination of actions among all H-Sectors - harvest, hatchery, and habitat – that together work to achieve the goal of recovering self-sustaining, harvestable salmon runs.

Although actions are taking place in all three of these "Hs" the three-year work plans do not yet reflect a coordination or integration of the "Hs. The goal of the H-Integration process within a watershed, which the RITT included under adaptive management, should be to develop integrated strategies and suites of actions among all the H-sectors that are consistent with predictions of moving salmon populations towards short, moderate, and long-term recovery goals. The overall objective of H-Integration is to summarize how the H's work together, identify actions within each H, predict the outcomes and identify performance measures in terms of VSP, track progress on the implementation of actions, and report progress on performance measures.

Six steps have been identified with the intent of advancing H-Integration with the watersheds. These six steps were developed to meet the overall goals and objectives identified above and include:

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

A couple of watersheds have expressed some frustration that all the necessary participants are not consistently participating to integrate the Hs effectively or that neither side has the capability to make changes to the others processes that drive the management of all the individual "Hs". Under this situation it is not possible to evaluate the three-year work plans or the progress towards recovery adequately unless the watersheds include significant details of the actions in all of the H's as well as how they could be integrated. Part of H-integration is assuring that all parties have a common understanding of the status of the salmon resource (All –Hs) as well as what actions are needed to move that resource to a recovered status. The understanding of the status and trends of Chinook salmon depends on information on the populations' viability characteristics, such as time series of spawning escapement, juvenile outmigrant numbers, and recruits per spawner. Some three-year work plans include this information; most do not. We recommend that watershed planning groups include this information in all watershed three-year work plans. One benefit is that the process of gathering basic status-and-trend information often results in improving communication between watershed recovery planners, fishery resource managers, and other management sectors. Likewise, it is just as important to have clearly defined habitat goals that are understood by fishery resource managers and others.

The RITT continues to urge the Salmon Recovery Council, whose members include the key parties in salmon recovery, to provide clear policy direction that all H's must work together through the adaptive management process outlined in the "Framework" for salmon recovery to progress. We believe that both effectiveness and efficiency of management and recovery dollars will be increased if habitat restoration, habitat protection, harvest management, and hatchery management (including hatchery "reform") are all part of the same salmon recovery plan.

Importance of Nearshore Marine Ecosystems to All PS Chinook Populations

Salmon recovery plans focus on issues for salmon in freshwater and estuarine habitats. With newer information regarding Chinook salmon use of nearshore habitats we recognize an emerging regional priority of increased emphasis on nearshore protection and restoration. The nearshore is an important migration corridor to and from freshwater and marine ecosystems (Fresh and Beamer 2012; Morley et al. 2012, Toft et al. 2007). These are the habitats that are crucial during the transition from freshwater to marine Chinook salmon life stages. For example, growth during a juvenile's first summer in the nearshore is an important determinant of its overall survival to returning as an adult and an essential element in estimates of population viability parameters such as productivity. What we must recognize is that our knowledge of early marine migrant life histories and requirements in the nearshore environments of Puget Sound is limited, particularly in regards to viability of individual populations, and is only broadly conceptualized in life cycle models of Chinook life history and viability.

Recovery planning for Chinook salmon on an individual watershed basis has focused on efforts to reduce ecosystem pressures and improve ecosystem processes for distinct natal populations in their freshwater and estuarine habitats. However, each salmon watershed is uniquely connected to nearshore marine habitats. Chinook recovery actions are challenged by the differences in approach that are apparent between those "watersheds" with natal and non-natal populations of Puget Sound Chinook salmon. For example, the San Juan and Island watersheds and their landscapes consist almost entirely of nearshore habitats which are utilized by migratory juvenile

and adult Chinook salmon originating in other watersheds. Similarly, the South Puget Sound and West Sound watersheds provide extensive habitats for the southernmost independent populations of Puget Sound Chinook salmon, i.e., originating in Nisqually and Puyallup/White rivers. Other non-Puget Sound salmon populations, including Canadian ones, have also been found throughout the Puget Sound nearshore environments. Designing nearshore strategies for salmon recovery and integrating them with freshwater and estuarine strategies has to address several key challenges:

1) Nearshore habitats are likely to be shared by salmon populations which originate from multiple watersheds.
2) Nearshore ecosystem processes occur at broader geographic scales than the individual watershed scale that comprises the freshwater ecosystem processes.
3) Scientific approaches and tools for nearshore protection and recovery have emphasized broader ecosystem objectives rather than objectives specific to salmon recovery (e.g., protection of forage fish spawning sites, multispecies focus, extent and density of eelgrass beds, nearshore riparian vegetation, shoreline armoring, etc.).

Thus research (e.g., assessments and learning) and monitoring (e.g., status and trends, effectiveness of implemented projects, etc.) of salmonid populations in nearshore marine habitats is likely to exceed the management scale and scope of any individual watershed. The research questions and projects need to be designed over larger (subregional and/or regional) scales. A variety of tools exist which may help integrate marine and watershed (i.e., freshwater) ecosystem planning. Genetic tools now allow researchers to estimate the proportions of individual salmon populations present in specific habitats at different times. Conceptual and qualitative models can link general nearshore ecosystem processes and pressures with their importance for salmonid use. Combined with well-designed monitoring and research programs, information regarding specific Chinook salmon populations may be gained in specific nearshore areas and/or habitats. Thus, increasing our knowledge of Chinook salmon life histories in marine environments is essential. This will require coordination and collaboration between individual watersheds, and ultimately this knowledge will be integrated and complement recovery efforts in freshwater ecosystems to achieve, in particular, a more comprehensive understanding of the diversity and spatial distribution of Puget Sound Chinook salmon populations, as well as, abundance and productivity parameters.

Resources:

Fresh, K.. and E. Beamer. 2012. Juvenile salmon and forage fish presence and abundance in shoreline habitats of the San Juan Islands, 2008-2009: Map applications for selected fish species. (http://www.skagitcoop.org/documents/Beamer_Fresh_2012_Final.pdf)

Morley, S. A., J. D. Toft, and K.M. Hanson. 2012. Ecological effects of shoreline armoring on intertidal habitats of a Puget Sound urban estuary. Estuaries and Coasts 35:774-784.

Toft, J.D., J.R. Cordell, C.A. Simenstad, and L.A Stamatiou. 2012. Fish distribution, abundance, and behavior along city shoreline types in Puget Sound. North American Journal of Fisheries Management 27: 465-480.

Developing Recovery Projects and Social Capital

The *Puget Sound Salmon Recovery Plan* (2005) noted that strategic approaches to develop proposals for restoration and protection were needed in some watersheds; however, lack of public support would hinder implementation of those projects. The Plan identified the need to build public support using incentives and education. In the last eight years, most watersheds have developed technical processes for identifying priority projects based on their hypothesized benefits to salmon. Each year, the RITT has reviewed the projects proposed for implementation and noted that in some cases opportunities associated with landowner willingness and/or participation have constrained choices identified by scientific analyses. This sometimes drove actual prioritization, sequencing, and implementation of projects, which clouds the transparency of how projects were chosen, prioritized, and sequenced. Watershed recovery planners make the best choices they can in their local areas, but the region has made little progress in implementing and testing strategies for building public support.

The RITT suspects that in local areas where recovery planners are balancing the demands to implement the most effective projects with the need to build more public support, the choices of suites of projects may represent the tradeoff between the long-term effectiveness of salmon recovery by building social capital and short term effectiveness of selecting projects that may not be the most effective. Awareness of the importance of social capital strategies in conservation is increasing (e.g. Pretty and Smith 2004, Mandarano 2007). These kinds of decisions at the watershed level, however, are being made on an ad hoc basis without consideration for their wider application or knowledge of what has worked in other places. The benefits are hard to quantify.

The RITT notes that the region has a significant opportunity to address both the overarching strategy to build public support in the Plan and the uncertainty of project selection at the local level by incorporating specific, intentional adaptive strategies to build social capita through the choice and implementation of restoration projects. Monitoring the results across the Puget Sound region could provide significant opportunities to learn and improve salmon recovery actions. The strategy and design of this would likely be different than for monitoring biological strategies. As described by Anderson et al. (2003), this might be an appropriate problem for "evolutionary problem solving" rather the more typical active or adaptive management approaches. In evolutionary problem solving, learning occurs when managers share the results of adapting many, independent prototype actions (e.g. explicit decision to build social capital through project implementation). The focus is on innovation (trying different approaches), diffusion (documenting the results and sharing them so others can try them), and adaptation. Monitoring of success is essential, but the strategy might rely less on statistical analysis and monitoring standardized variables and more on narrative sharing of experiences.

<u>Resources</u>:

Anderson, J.L., R. W. Hilborn, R.T. Lackey, and D. Ludwig. 2003. Watershed restoration – adaptive decision making in the face of uncertainty. Pages 203-332 in Strategies for Restoring River Ecosystems: Sources of Variability and Uncertainty in Natural and Managed Systems (R.C. Wissmar and P.A. Bisson, eds.). American Fisheries Society, Bethesda.

Mandarano, L. A. 2009. Social network analysis of social capital in collaborative planning. Society & Natural Resources 22:245-260.

Pretty, J., and D. Smith. 2004. Social capital in biodiversity conservation and management. Conservation Biology 18:631-638.

Watershed Specific Technical Review: Stillaguamish Watershed

I. *Consistency:*

a. *Is the plan's current strategy either substantially the same as documented in the Recovery Plan (Volume I and II of the Puget Sound Chinook Recovery Plan plus NOAA supplement) or well supported by additional data and analysis?*

b. *Is the sequence of actions identified in the 3YWP consistent with the current hypotheses and strategies?*

Yes. Strategies and projects identified in the work plan are well organized by the six priority limiting factors for habitat, and harvest management and hatchery management consistent with organization of the Stillaguamish recovery plan. Capital projects are organized around six primary limiting factors identified in the plan. While the limiting factors are given equal weight because the watershed group has concluded that equal priority is required in all to promote Chinook recovery, progress has not been equal across all factors. Riparian focused projects and programs have exceeded the 10 yr goal, whereas progress towards 10 yr goals for other limiting factors is less. The table summarizing goals and progress is set up in a way that shows potential sponsors where the greatest needs or gaps are, which could be helpful in directing future work towards unmet needs.

The watershed group said they are in the process of updating targets for estuary/nearshore, floodplain, and sediment strategies, and evaluating new targets for wetlands. We welcome this development and suggest that work with the RITT's monitoring and adaptive management framework will help further with this endeavor. Although not explicitly stated in the work plan, it seems these updates may result in a shift to prioritize certain elements of the recovery plan over others. Furthermore, the slower progress towards goals with some of the factors would suggest that the watershed group communicate a higher relative priority for those items to potential project sponsors.

The project list also includes a non-capital table that includes harvest, hatchery, and habitat protection projects, as well as categories such as monitoring and adaptive management, and stewardship. This is a good way of indicating all the pieces that are necessary for a comprehensive recovery plan in this watershed.

A significant part of the work plan involves hatchery supplementation of both the North Fork and South Fork populations with hatchery-produced fingerlings. The North Fork portion of this work is well documented in the 2005 plan, but the South Fork portion was developed after the original plan was adopted and was not discussed in the original plan. The three-year work plan includes a description of the South Fork project and an initial report on the status of its

implementation. Due to difficulty in capturing adults for spawning, the project was changed to a captive broodstock program. While it is very useful and important to have this project described in the three-year work plan, it remains important to understand exact how this project is expected to contribute to recovery. The narrative identifies results from EDT to justify the need for the hatchery programs. The population productivity and abundance as estimated from the EDT habitat analysis suggests the populations will decline to critically low levels absent hatchery supplementation. We recommend that the watershed group conduct a empirically based assessment of this hypothesis using spawner-recruit data for the populations.
It is understood that the upcoming work with the watershed group on fitting the plan to the RITT monitoring and adaptive management framework will focus on habitat components of the recovery plan. We recommend the watershed group eventually include the hatchery strategies in this framework to help the watershed group more clearly articulate the role of hatcheries in the overall recovery strategy, and monitoring and adaptive management framework.

II. Sequence/Timing:

a. Are actions sequenced and timed appropriately for the current stage of implementation?

The narrative states that there is no established priority for sequencing projects. As previously mentioned, progress towards habitat goals differs for the six limiting factors. It is hoped that this question will be answered by the watershed's monitoring and adaptive management plan and application of the RITT Chinook framework. One outcome of that work could be the development of a project prioritization protocol. Another outcome will be a clear and regionally consistent assessment of funding levels necessary to achieve recovery goals for the watershed. The adaptive management cycle included in the framework should help the watershed group communicate within the watershed and to the region, success, and impediments towards achieving recovery targets.

The watershed should evaluate if equal priority for all limiting factors should continue or if some factors should have higher priority all limiting factors for now. Translation of the Stillaguamish plan using the Chinook framework developed by the RITT that is occurring in 2103will also help sequencing work within and among habitat limiting factors. An analysis such as this might be useful in sorting out the relative roles of hydrological processes and estuary habitat in supporting recovery and the appropriate sequencing of estuary restoration, remediation of hydrological processes, and eventually the role of the supplementation programs to recovery.

PSAR and SRFB Project Consistency Review

Review of Regular Round Projects for Stillaguamish Watershed:

The WRIA 5 Salmon Recovery Lead Entity is proposing four projects for funding:

- South Pass Estuary Restoration, Acq., & Design
- NF Stillaguamish ELJ Project III
- Stillaguamish Riparian Restoration
- Jim Creek Restoration II

To determine the consistency of these projects with the strategies in the WRIA 5 Salmon Recovery Plan, the Recovery Implementation Technical Team (RITT) reviewed the WRIA 5 Salmon Plan, the three-year work plans for the watershed, and the project proposal information available in the PRISM and HWS databases (http://www.rco.wa.gov). In addition to other factors, the Stillaguamish recovery plan and three-year work plans identifies as priority riparian restoration, estuary/nearshore restoration, and placement, and maintenance of large woody debris in the mainstem and tributaries. The RITT concluded that the four proposed projects are consistent with these priorities and the WRIA 5 Salmon Recovery Plan. All these projects are included in the WRIA 5 Three-Year Work Plan.

In this watershed, as well as all the others in the Puget Sound, whether these projects will in turn contribute to moving Puget Sound salmon populations towards their recovery goals will also depend upon further funding to implement additional projects and whether other actions across all watershed chapters are being implemented, including appropriate harvest management, hatchery management, and habitat protection actions.