APPENDIX B: Preliminary Implementation Sequence for Snoqualmie Capital Projects

In 2004, Snoqualmie Watershed Forum staff worked with governments and non-governmental organizations to create a comprehensive list of capital improvement projects to address salmon habitat needs for recovery. Utilizing scientific research, scientific modeling and staff expertise, Forum staff and science staff from various organizations in the watershed have created a preliminary sequence to implement capital projects in the Snoqualmie Watershed. This will help focus efforts for the next 10 years. Both the project list and the sequencing are works in progress and will be changed based on the Plan's adaptive management results.

All projects throughout the watershed are important as salmon recovery moves forward. This implementation sequencing is applied to all rivers and tributaries of the Snoqualmie Watershed. Geographic areas are sequenced across stream reaches first and then actions are sequenced within those stream reaches. To the extent possible, projects should be implemented in top rated areas first.

SNOQUALMIE CHINOOK IMPLEMENTATION SEQUENCE			
Stream Reach	**EASC Ranking for Chinook Abundance (VSP) Step 5**	**Implementation Sequence**	**Scientific Rationale**
Watershed Processes Protection (No EDT reaches)	N/A	If watershed processes are not adversely affecting salmon habitat downstream the following order can be followed.	Watershed processes affect downstream habitat. Any major process problems affecting salmon habitat should be addressed first.
Major (core) Chinook Spawning Reach (EDT reach Snoq 3)	1	**1. Snoqualmie River RM 20.8-24.9**	Ranked first by Step 5 of EASC for Chinook restoration and degradation potential and is a core spawning area. Also, most spawning and rearing chinook must at least migrate through this section of the Snoqualmie.
Major (core) Chinook Spawning Reach (EDT reach Snoq 5)	3	~~**2. Snoqualmie River RM 31.2-35**~~ (Patterson Creek to Raging River confluences)	Ranked third by Step 5 of EASC for Chinook restoration potential and is a core spawning area
Major (core) Chinook Spawning Reach (EDT reaches Tolt 1A, B, C, D)	6	**3. Lower Tolt River RM 0.0-4.8** (to gradient break)	Ranked high by Step 5 of EASC for Chinook restoration and degradation potential and is a core spawning area. Also, watershed processes in this reach greatly affect number 1 ranked stream reach. EASC Coho ranking (A).
Major (core) Chinook Spawning Reach (EDT reach Raging 1)	7	**4. Lower Raging River RM 0.0-4.5** (to gradient break)	Ranked high by Step 5 of EASC for Chinook restoration and degradation potential and is a core spawning area. Also, watershed processes in this reach greatly affect number 2 ranked stream reach. EASC Coho ranking (B).

SNOQUALMIE CHINOOK IMPLEMENTATION SEQUENCE			
Stream Reach	**EASC Ranking for Chinook Abundance (VSP) Step 5**	**Implementation Sequence**	**Scientific Rationale**
Major (core) Chinook Spawning Reach (EDT reaches Snoq 6 and 7)	3 (ranking was combined with EDT reach Snoq5)	**5. Snoqualmie River RM 35-39.6** (Raging River to Tokul Creek confluences, including the Tokul Creek RM 0.0-1.0)	Ranked 3rd by Step 5 of EASC for Chinook restoration potential and is furthest upstream core spawning area.
Chinook Juvenile Rearing, Migration and Minor Spawning Reaches (EDT reach Snoq 2A)	2	**6. Snoqualmie River Mouth RM 6.5-10.3** (King County border to Tuck Creek including Cherry Creek RM 0.0-2.0)	Ranked high by Step 5 of EASC for Chinook restoration and degradation potential and is an important juvenile rearing and migration area for all salmonids.
Chinook Juvenile Rearing, Migration and Minor Spawning Reaches (EDT reach Snoq 2B	1 (ranking was combined with EDT reach for Snoq 3)	**7. Snoqualmie River RM 17-20.8** (Ames Lake Creek to Harris Creek confluences including Harris Creek RM 0.0-1.5)	Ranked high by Step 5 of EASC for Chinook restoration and degradation potential and is downstream of all core Chinook spawning areas. Downstream of Harris Creek Coho spawning area.
Chinook Juvenile Rearing, Migration and Minor Spawning Reaches (EDT reach Snoq 4)	3	**8. Snoqualmie River RM 24.9-31.2** (Tolt River to Patterson Creek confluences including Griffin Creek RM 0.0-1.0 and Patterson Creek RM 0.0-2.0)	Ranked high by Step 5 of EASC for Chinook restoration and degradation potential and is downstream of 1 core Chinook spawning area. Downstream of Griffin and Patterson Creeks Coho spawning areas.
Chinook Juvenile Rearing, Migration and Minor Spawning Reaches (EDT reach 2B)	1 (ranking was combined with EDT reach for Snoq 3)	**9. Snoqualmie River RM 10.3-17** (Tuck Creek to Ames Lake Creek confluences including Ames Lake Creek RM 0.0-2.0 and Tuck Creek RM 0.0-1.5)	Ranked high by EDT for Chinook potential and downstream of all core spawning areas. Not immediately downstream of major Coho spawning tributaries.
Minor Tributary Chinook Spawning Reaches	14 SF Tolt 15 NF Tolt	**10. Tolt River RM 4.8 –SF & NF Tolt RM 2.0, Raging River RM 4.5-9.0, Patterson Creek's Canyon Creek RM 0.0-1.0**	Minor tributary Chinook spawning and rearing occurs in theses reaches. No major migration occurring.
Major Coho Spawning Reaches (No EDT reach)	NA	**11. Griffin Creek (highest priority)** **Harris Creek** **Patterson Creek** **Cherry Creek** **Stossel Creek**	All ranked high for Coho abundance (in WDFW surveys) and EASC ranking ("A" or "B"). Griffin Creek has the highest Coho abundance of tributaries.

Note:
Though many headwaters areas do not have direct salmon habitat, headwaters projects are important for protecting and restoring watershed processes that support habitat downstream. In fact, protecting and restoring watershed processes may be the first priority if the areas are creating problems downstream.

Implementation sequence within stream reach:

1. Protect intact aquatic salmon habitat (e.g. acquisition, easement, incentive or regulation).
2. Protect or restore natural processes (internal or up or downstream) that support the creation or maintenance of habitat conditions (i.e. processes of gravel and wood recruitment or reduction of excessive fine sediment transport).
3. Remove anthropogenic instream barriers with priority given to Chinook barriers followed by coho barriers.
4. Reconnect off-channel habitat (e.g. connect disconnected oxbows, enhance side channels, reconnect floodplain through levee removals or setbacks)
5. Restore edge habitat (e.g. remove bank hardening, utilize alternative, or soft bank stabilization).
6. Riparian enhancement (e.g. riparian planting)
7. Address water quality impacts (i.e. identify water quality problems and address sources)
8. Enhance instream structure (e.g. install large woody debris and engineered log jams)

Table from the Snohomish Basin Salmon Conservation Plan (2005), pages 11-47 and 11-48.