

# Jones & Smith

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July 15, 2014

Hannah Hadley, CENWS-EN-ER  
Army Corps of Engineers  
Seattle District  
PO Box 3755  
Seattle, WA 98124-3755

**COPY FOR YOUR  
INFORMATION**

**Re: Skagit River GI Study Feasibility Report and EIS Comment**

Dear Ms. Hadley:

This letter comments on the draft Feasibility Report & Environmental Impact Statement published June 6 and presented at a public meeting on Thursday, June 19, 2014 in Mount Vernon. The undersigned attended that meeting as a representative of Skagit County Consolidated Diking Improvement District No. 22, Skagit County Diking District No. 17 and Skagit County Diking District No. 3. Our office also advises Skagit County Drainage and Irrigation Improvement Districts No. 15 and No. 17.

These special purpose districts governed by Title 85 Revised Code of Washington provide benefits to particular land within geographic boundaries where landowners voted to approve an engineered set of improvements, taxed themselves to build, and thereafter annually to operate and maintain diking and drainage improvements. These districts rely on technical assistance and flood fighting personnel of the Seattle District Army Corps of Engineers in declared emergencies and to restore damage due to flooding. The diking districts participate in the USACE administered Rehabilitation and Inspection Program, have signed Cooperation Agreements under Public Law 84-99 and use the Engineering Manuals published for nonfederal flood control works as a guide. The Districts accept as valid the statement of the problem in the Feasibility Report, and welcome the opportunity to reduce flood risk from overland flow from October to March and year around. The districts generally agree with the Goal and the two Objectives stated in the Feasibility Report and Tentatively Selected Plan (TSP) called Comprehensive Urban Levee Improvement (CULI).

The documentation of environmental constraints concerning three ESA listed species of salmon appear to be outdated in Appendix D because of reliance on U S Fish and Wildlife Service August 1997 Reconnaissance Study, and a cluster of letters received in 2001. There is no evidence of ESA consultation with NOAA NMFS or USFWS. This heading is left blank except the notation (pending). The Feasibility Report and EIS do not take account of the habitat restoration work that has been initiated and completed during the past 15 years. It also includes a list of threatened and endangered species as of 1997 and therefore omits Puget Sound Chinook salmon.

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The named Dike Districts plus District No. 1 and District No. 12 completed levee restoration to repair damage done in 2003 and 2006 floods during the “fish window” in 2011 under Cooperation Agreements with USACE. Accounting for delayed response to their damage survey reports that should have been remedied within one year, and for permit conditions, the Districts and USACE may have spent more money on mitigation of salmon habitat than was spent on restoring the levees. This statement is not made to discount the importance of environmental impact mitigation or the federal share of mitigation costs but to point out the risks to life and property which have occurred because of Endangered Species Act consultation, specifically about Puget Sound Chinook salmon habitat.

The Districts contend that the completed Skagit watershed projects and those which are in progress should be sufficient off site mitigation for CULI because of its focus on urban infrastructure. In support of this contention we offer the Three Year Implementation salmon plan for the Skagit Basin 2014-2016 following the 2010 strategic approach. See also the Strategies document prepared by Western Washington Agricultural Association for the preservation of the environment and the agricultural community, and the cover of the Skagit Delta Tidegates and Fish Initiative Implementation Agreement May 28, 2008, plus the Skagit Stream Team Annual Water Quality Report for 2012-2013. Readers of the Feasibility Study and EIS should not assume that the problems described in the letters attached to Appendix D accurately describe unmitigated habitat impacts on salmon that should be remedied in the implementation of the “Tentatively Selected Plan” or the pending ESA consultation.

The flood damage reduction plan set forth in the Feasibility Study does not recognize the steps that have been taken to implement the 2005 Chinook Recovery Plan approved by Skagit River System Cooperative and Washington Department of Fish and Wildlife. That Recovery Plan reset in 2010 has become the focal point of Skagit Watershed Council’s vision of fish habitat. Significant partnerships have been developed in the Skagit watershed to achieve salmon habitat restoration. For example, Puget Sound Energy, Seattle City Light, The Nature Conservancy, North Cascades Institute and the Skagit River System Cooperative have all implemented substantial changes and invested in fish habitat. Wiley Slough Habitat Restoration Project in District No. 22 is one large example. The Fir Island Farm project is another example of Washington Department of Fish and Wildlife converting public lands inside District No. 22 to fish habitat during the Study time frame. District No. 3 has setback levee on Dike Road and cooperated with The Nature Conservancy and Drainage District No. 17 to create the Fisher Slough Habitat Restoration Project.

The National Marine Fisheries Service and the U.S. Fish and Wildlife Service are consulting with the U S Forest Service, Washington Department of Natural Resources and Washington State Department of Ecology and the Federal Emergency Management Agency including its National Flood Insurance Program to mitigate loss to spawning habitat, incidents of mass wasting on steep slopes, forest road washouts and methods of operating dams on the Baker River and the Skagit River to protect fish habitat and lower the peak flow during flood events in the lower Skagit Valley. The future of forestry and fish can be made more secure by implementing the Tentatively Selected Plan when recognition is given to the fish habitat conservation efforts that have been made and the commitments already in place.

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The Districts endorse the concept of preparing for a flood that exceeds the 1% chance standard. Rainfall and snowmelt vary widely year to year. The Chehalis River experience shows that our region can receive 20 inches of rain in a 48 hour period. Preparing for such an event increases the chance of surviving without loss of life and the chance of sustaining property damages that are manageable. It cannot eliminate all risk. Those who live on the floodplain and in particular those who operate diking and drainage facilities want those facilities to be resilient and capable of functioning in extreme circumstances to limit damages. The primary way of limiting property damage in such a flood is to limit the maximum rise and duration of high water surface elevation on the flood plain.

Reducing water surface elevation and flood water velocity through adequate interior drainage requires adding infrastructure at salt water outlets. Concurrently providing more capacity for overland flows through roads and other barriers is essential to this approach. Controlled release of flood water to receiving salt water through pumps, tidegates and floodgates could avoid breaching salt water dikes. This key challenge to the feasibility of the Tentatively Selected Plan is not adequately described in the document.

The 2014 feasibility study describes a Tentatively Selected Plan (TSP) for a watershed at risk. Although there are risks of earthquake, fire, wind and dam failure, the most predictable and devastating hazard to the watershed is flooding. Flooding could destroy homes, businesses, city infrastructure, roads, bridges, utilities and disrupt the regional economy. The consequences of failure of the Skagit River Bridge recently brought into focus the dangers to the regional economy from cutting Interstate 5.

Skagit County and USACE made plans to flood proof Skagit County in earlier feasibility reports 1962 and 1979. Each time the people have been unwilling to vote local funding essential to implement the plan to reduce flood risks. Except for residents of Nookachamps and Fir Island, who suffered devastation in 1990 the majority of Skagit watershed residents have paid a low price for voting not to fund flood risk reduction. Whether events such as Katrina and the Chehalis flooding have changed public opinion remains to be seen. However, there is broad acceptance of the "Tentatively Selected Plan" because of the communication initiated by Skagit County government to inform citizens and the various municipal and special purpose district elected representatives serving locally.

The TSP is consistent with the essential elements of the Growth Management Act. The Act mandates population and public investment concentrated in urban areas. Natural resource lands and rural lands should be managed for low population density and high natural resource production. This vision of Skagit River watershed includes farms, forests, and fish as essential to a healthy community. The Districts urge the state and county government to align their plans for the Skagit watershed to reduce flood risk and realize a viable future with farms, forestry, and fish. In the short run the multijurisdictional hazard mitigation plan can do this. By building an early warning system, managing dams and keeping debris off bridges, coordinating the incident command structure, training leaders, including special purpose district commissioners and volunteers during annual flood awareness week drills, the Tentatively Selected Plan can reduce risk. The FEMA Community Rating System is implemented year round by Skagit County

Planning and community Development to reduce flood risk in those areas that do not receive urban protection.

Skagit County is required to adopt a Shoreline Master Plan update. RCW 90.58.100(1)(h) allows the Master Plan to approve measures to reduce flood risk of statewide interest. The Districts advocate a Shoreline Master Plan that incorporates future flood gates and added interior drainage to accommodate the statewide interest in flood damage reduction and coordinate the Tentatively Selected Plan with Skagit County Shoreline Management Master Program. This comment urges coordination of the measures in the Feasibility Study TSP and the Skagit Shoreline Master Program in the Skagit River and Skagit Bay, Joe Leary Slough and Padilla Bay, as well as Samish River and Samish Bay, and all of their special purpose district improvements.

There are dissenting voices who justly ask whether the risk reduction in the Skagit River Basin will increase the risk in the Samish River Basin including Thomas Creek. These questions should be answered by the representatives of Sedro Woolley, Burlington, Nookachamps and Clear Lake, who appear to be affected by measures at Sterling blocking Gages Slough, at Burlington Hill directing over bank water to Joe Leary Slough, and at the Hospital and Wastewater Treatment Plant "ring dikes" which displace Skagit River water.

One of the keys to understanding the Tentatively Selected Plan is to measure the impact of ring diking the Sedro-Woolley Wastewater Treatment Plant, the hospital complex on SR 20 and the Sterling cut off of Gages Slough for the benefit of the City of Burlington. These measures may direct flood water toward the Samish River. The risk increases in proportion to the volume and velocity of water that comes to Sedro-Woolley from the upper valley. Under certain extreme circumstances it appears to be unavoidable that flood water will reach the Samish River and earlier GI feasibility work by Noel Gilbrough of the USACE showed that even the "no action" alternative sent flood water to Thomas Creek and Samish River.. Consequently, the changes necessary to protect Old Highway 99, Interstate 5, the Burlington Northern Santa Fe railroad track and other landowners whose damages would be increased by high water surface elevations north and east of Burlington should be part of anticipating how flood water will pass to Samish or Padilla Bay without damaging and impairing salt water dike and drainage infrastructure.

Each of these special purpose districts have a significant bridge or bridges that are a factor limiting downstream passage of flood water. Changing bridges is expensive. Changing one bridge may cause the next bridge downstream to be less safe. The Tentatively Selected Plan lacks details about the monitoring and removal of debris to reduce the risk to bridges at Division Street, Conway and Rexville as well as Interstate 5 and the Burlington Northern Santa Fe railroad bridge. Debris management was studied in 2006 with funding from the State Department of Transportation and resulted in debris management protocols which are vaguely referenced in the EIS.

The diking districts and drainage districts aim to protect life and property by reducing flood damages in their limited jurisdictions and appreciate what has been done to articulate a practical plan for a comprehensive project with broad public support.

Thank you for the opportunity to comment.

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Respectfully yours,

JONES & SMITH

GARY T. JONES  
GTJ/lfd

cc: Commissioners District No. 3  
Commissioners District No. 17  
Commissioners District No. 22  
Commissioners Drainage District No. 15  
Commissioners Drainage District No. 17  
Kara Symonds SCPW  
Betsy Stevenson SCP&CD-Shorelines

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Year 2014 reflects currently funded projects

**FLOODPLAIN (multiple Chinook population rearing areas) (TIER 1)**



Rest'n	Building landowner support	06-2210	10.04.03	Gilligan Floodplain	Restore function to 170 acres of side channel and floodplain habitat in the Skagit R downstream from Gilligan Creek by removing 550-1500 linear feet of a rip-rap dike	1	1	Skagit Chinook Recovery Plan	Instream	170 acres	Conceptual design complete			Design	\$250,000	Construction	\$1,250,000	2017	SRSC, USFS	\$1,500,000	\$200,000	SRFB, PSAR
Rest'n	In progress phased implementation and funding	12-1209	10.04	S. Skagit Highway Floodplain Restoration	Modify or realign 1.5 miles of S. Skagit Highway to reconnect floodplain and reconnect habitat	1	1	Skagit Chinook Recovery Plan	Instream	120 acres	Feasibility/Design	Transportation Feasibility & prelim	\$200,000	Design	\$200,000	final Design	\$200,000	2018	SCL,SRSC,Skagit County	\$12,336,208	\$1,108,575	PSAR, SRFB, SCL
Rest'n	In progress phased implementation and funding	09-1440	10.05	Barnaby Reach Restoration	Restoration of floodplain and large side channel in upper Skagit reach. Feasibility study funded in 2009.	1	1	Skagit Chinook Recovery Plan	Instream	300+ acres	Feasibility/Design	Feasibility and preliminary	\$400,000	Final Design	\$300,000	Construction	?	2016	SRSC, WDFW, SCL	\$1,885,010	\$250,000	PSAR
Rest'n	Constructing 2014	13-1052	10.04.01	Davis Slough hydrologic connectivity/ Fish Passage and Flow Restoration	Improve/restore hydrologic connectivity of mainstem Skagit historic side channel	1	Floodplain Connectivity & Function, Loss of habitat	Skagit Chinook Recovery Plan	Instream	4.5 acres	Final Design complete	Construction	\$1,354,160	Monitoring	\$20,000			2015	SFEG, Skagit County	\$2,060,140	\$260,354	SRFB, Skagit Co.
Rest'n	Construction completed	11-1534		Robinson RD Orphan rock removal restoration	Removal of riprap in mainstem side channel and riparian restoration. Funded 2011 SRFB round.	1	1	Skagit Chinook Recovery Plan	Instream	250 ft of hardened bank removal/~10 acres of floodplain restoration	Active	Planting, maintenance	\$20,000					2013	Skagit County	\$137,000	\$21,000	SRFB
Rest'n	Constructing 2014	11-1555	10.09	Hobbit Corners Floodplain Restoration	Riparian restoration and LWD addition/beaver pond development	1	1	Skagit Chinook Recovery Plan	Riparian	20 acres; 30 logs	Permits in hand	Construct, maintenance, invasive control	\$60,000					2016	SFEG	\$162,308	\$24,346	SRFB
Rest'n	Active	12-1207		Lower Day Creek Slough Habitat Enhancement	Upgrade 2 farm access roads over slough chnls; riparian plantings	1	1	Skagit Chinook Recovery Plan	Riparian	1.7 ac habitat; 28 acres riparian	Design complete	Construct, planting, maintenance	??	Planting, maintenance	\$102,607			2016	SFEG	\$348,088	\$216,345	SRFB, PSE
Rest'n	Active	12-211		Upper Skiyou Slough floodplain restoration	Riparian restoration of portion of 220 ac USFS floodplain parcel;	1	1	Skagit Chinook Recovery Plan	Riparian	60 acres riparian	Permitting completed; work started	site prep, planting	\$194,100	site prep, planting	\$200,000	site prep, planting	\$200,000	2018	SRSC, USFS, SFEG	\$600,000	\$38,007	SRFB, PSE, USFS
Rest'n	Added in 2013, updated 2014	13-1054		Skagit Riparian Stewardship Project	Restore habitat and water quality for Chinook salmon and other species by actively restoring native riparian and floodplain forest vegetation; watershed strategy development	1	1	Skagit Chinook Recovery Plan	Riparian	90 acres	Active	Planting, maintenance	\$100,000	Planting, maintenance, strategy dev't	\$298,069	Planting, maintenance	\$200,000	2040	SFEG, SRSC, county	\$598,069	\$89,710	SRFB
Rest'n	Preliminary design funded	13-1055		Pressentin Park Channel Feasibility and Preliminary Design	Side Channel Feasibility analysis and preliminary design project will evaluate options for restoring and enhancing historic and existing side channel habitat	1	1	Skagit Chinook Recovery Plan	Riparian	40 acres	Just funded	Preliminary Design	\$199,913	Final Design	\$200,000	complete final design; seek construction \$		2018	SFEG, county parks	\$399,913	\$59,987	SRFB
Rest'n	Added in 2014			Lower Baker Delta Restoration	Restore floodplain function and riapiran habitat associated with bars and overflow channels on historic Baker River delta.	1	1	Skagit Chinook Recovery Plan	Riparian/Instream	40 acres	Proposal development	Acquisition of property (PSE process)	Up to \$450,000	Planning/Design	\$150,000	Initiate Restoration	\$500,000	2018	SFEG	\$1,100,000	\$350,000	SRFB, PSAR, PSE
Acq'n	Added in 2013, updated 2014	13-1056		Skagit Watershed Habitat Protection	Acquisition of floodplain properties for protection of habitat.	1	1	Skagit Chinook Recovery Plan	Riparian	300+ acres	Multi-year and ongoing	Acquisition	\$1,192,282	Acquisition	\$1,000,000	Acquisition	\$1,000,000	2020	SCL	\$3,192,282	\$478,842	SRFB
				TOTAL FLOODPLAIN TIER 1									\$3,720,455		\$2,720,676		\$3,350,000			\$24,319,018	\$3,097,167	
NEARSHORE (TIER 2)																						
Restoration	In progress phased implementation and funding	13-1508	12.03.11	Similk Beach Estuary Restoration	Restore intertidal pocket estuary by replacing road fill w/bridge	2	2	Skagit Chinook Recovery Plan	Nearshore (Beaches), Nearshore (Embayments)	18 acres	Proposed	Preliminary Design	\$305,000	Final Design	\$300,000	permitting and funding		2017	SRSC, Skagit County	\$2,605,000	\$390,750	SRFB

				TOTAL NEARSHORE TIER 2									\$305,000		\$300,000		\$0			\$2,605,000	\$390,750	
FLOODPLAIN (single Chinook population rearing areas) (TIER 2)																						
Rest'n	Implementing second year of LWD			Day Creek Habitat Restoration	Instream & floodplain restoration in lower Day Creek funded in two phases but designed & constructed simultaneously. Includes design and installation of LWD jams in chinook tributary	2	1	Skagit Chinook Recovery Plan	Instream	.25 miles of stream	Active	Construction, maintenance	\$75,000				2015	SFEG	\$407,160	\$61,100	SRFB, PSAR, DOE	
Rest'n	Added in 2014		?	Day Creek Habitat Restoration @ Kosbab	Install LWD structures at outlet of day Creek on SLT Kosbab property	2	1	Skagit Chinook Recovery Plan	Instream	.25 miles of stream	Proposed?	Design and permitting	\$80,000	Construction	\$250,000			SFEG	\$330,000	\$280,000	SRFB, PSAR	
Rest'n	Added in 2014	?	?	Goodell Creek Floodplain Restoration	Restore natural hydrogeomorphology within the 400+ acre floodplain by addressing hydromodifications in the campground and SR20	2	Floodplain Connectivity & Function, Loss of habitat	?	Instream	400 acres	Active	Concept analysis	\$70,000	final design	\$400,000	construction	\$3,000,000	2018	USIT	\$3,470,000	\$520,500	NPS, SCL, PSAR, USIT
Combo	In progress phased implementation and funding	10-1856		Hansen Creek Reach 5 Acquisition & Restoration (previously titled Martinez Acquisition and Restoration)	Acquisition and restoration of key floodplain parcels on Hansen and Red Creeks and associated wetlands; potential for additional restoration in coordination with mgmt plan in area	2	Floodplain Connectivity & Function, Loss of habitat	Skagit Chinook Recovery Plan	Instream	88.5 ac acquired; 10 ac riparian; 0.25 mi instream; 30% design	Active, funded 2013	Channel restoration and floodplain reconnection final design	\$475,000	Add'l acquisition, restoration	\$500,000	Construction		2019	SRSC	\$1,941,528	\$423,752	SRFB, Skagit Co.,PSE
Rest'n	Added in 2013	13-1060		Hansen Creek Reach 5 Restoration Feasibility	Skagit County has completed a conceptual plan to move Hansen Creek from its currently occupied, straightened channel location, to a more meandering channel to the west of the current location	2	Floodplain Connectivity & Function, Loss of habitat	Skagit Chinook Recovery Plan	Instream	Area encompassed 72 acres, stream impacted 2.46 acres	Final Design and permitting			Final design	\$288,400		2018	Skagit County Public Works, SRSC	\$288,400	\$43,260	SRFB	
Rest'n	In progress phased implementation and funding			Illabot Creek alluvial fan restoration	Remove dikes, restore Illabot Creek alluvial fan, and relocate Illabot Creek to historic channel; phase 1 construction funded 2011	2	1	Skagit Chinook Recovery Plan	Instream	440' of channel bank	Active, funded 2011			Final design and construction Phase 2	\$4,000,000	Construction	2016	SRSC	\$3,800,000	\$650,000	SRFB, PSAR	
Rest'n	In progress	11-1521	10.11.05	Downey Creek Crossing	Construction two new bridges over Downey Creek at Suitttle River road to restore historic channel and minimize impacts to 3 ac alluvial fan.	2	1	Skagit Chinook Recovery Plan	Instream	3 acres of alluvial fan	Active; funded 2011	Construction	\$1,461,000				2014	SRSC/USFS	\$983,000	\$478,000	SRFB, PSAR	
Rest'n	In progress	11-1563		Suitttle Riprap Removal	Removal of riprap to improve edge habitat in Suitttle River	2	1	Skagit Chinook Recovery Plan	Instream	600 feet	Active; funded 2011	Construction	\$250,000				2014	SRSC/USFS	\$292,675	\$43,091	SRFB, PSAR	
				TOTAL FLOODPLAIN TIER 2									\$2,411,000		\$5,438,400		\$3,000,000		\$7,712,763	\$1,699,203		
SEDIMENT & HYDROLOGY IMPAIRED Watersheds (restoration actions in spawning habitat) (Tier 3)																						
Restoration	Proposed for funding within next 3 years			Lower Cascade Roads	Deconstruction of 1.1 miles of forest road in the Boulder Creek drainage	3	4	Skagit Chinook Recovery Plan	Uplands	1.1 miles	Conceptual			Construction	\$50,000		2016	SCL	\$50,000	\$7,500	SRFB	
Restoration	Proposed for funding within next 3 years			Sauk Roads	Sediment reduction work on remaining 25/50 miles of USFS roads in Sauk Prairie and Dan Ck areas identified in recovery plan	3	4	Skagit Chinook Recovery Plan	Uplands	25 miles of roads	Conceptual			Construction	\$500,000		2016	SRSC/USFS	\$500,000	\$75,000	SRFB	
Restoration	Proposed for funding within next 3 years			Upper Sauk Erosion Control	Reduction of road sediment from USFS road in upper Sauk R.	3	4	Skagit Chinook Recovery Plan	Uplands	7 Miles	Conceptual			Construction	\$400,000		2016	SRSC/USFS	\$400,000	\$60,000	SRFB	
				TOTAL IMPAIRED WATERSHEDS Tier 3									\$0		\$950,000				\$950,000	\$142,500		



TOTAL FUNDS CAPITAL PROJECTS AND PROGRAMS										\$9,212,464		\$14,564,076		\$21,372,846		\$87,425,739		\$10,991,420		
FUTURE HABITAT PROJECT DEVELOPMENT																				
Assessments																				
Plan'g	Active			Acquisition Strategy Update	Updating watershed acquisition strategy	1				Just funded, launching team	implement	\$47,100				2015	SWC	\$47,100	\$7,100	SRFB, PSAR
Plan'g	Proposed for funding within next 3 years			Sediment Impaired Watersheds	Update of 10+ year old assessment of Skagit River sub-basins following road sediment reduction work and new road inventories/mngmt plans	3				Conceptual	planning		implement	\$120,000		2016	SWC	\$120,000	\$120,000	
Plan'g	Proposed for funding within next 3 years			Middle Skagit Project Development	Assessment completed July 2011. Assessment, identify restoration actions, develop reach-specific plans	1				Conceptual	planning		implement	\$226,000		2016	SWC	\$196,000	\$30,000	Skagit Co., SCL
Plan'g	Proposed for funding 2014			Skagit Delta Hydraulic Model	Extend FVCOM 3D hydraulic modeling across the entire geomorphic delta of the Skagit River to evaluate synergy between proposed projects and their affects on geomorphic evolution across the delta, especially in relation to flood dynamics.	1				Proposed	Data Collection	\$50,000	Modeling and analysis	\$150,000		2015	3FI	\$200,000	\$30,000	
Plan'g	Nearly complete			Riprap inventory	Update 1998 inventory of hydromodifications; Cascade, Suiattle, and major tribs above floodplain remain	1				Active	Data Collection	\$60,000	Data Collection	\$60,000	move into feasibility	?	2015	USIT, USFS	\$50,000	\$0
				TOTAL ASSESSMENTS								\$157,100	\$556,000	\$0			\$566,000	\$180,000		
Watershed Plan Implementation and Coordination																				
				Lead entity base grant (2011-2013)								\$80,000		\$80,000		\$80,000	Ongoing	SWC	\$240,000	
				Lead entity capacity (PSAR) (2011-2013)								\$173,000		\$173,000		\$173,000	Ongoing	SWC	\$519,000	
				IMPLEMENTATION &								\$253,000	\$253,000	\$253,000			\$759,000			

### Three-Year Implementation Salmon Plan for the Skagit Basin 2011-2013

Year 2011 reflects currently funded projects and those proposed in the current SRFB grant round

Project Information and How it relates to the Recovery Plan												
Project Type	Plan Category	Project Name	Brief Project Description	Priority of project	Limiting Factors	Document Ref for limiting factors	HWS Habitat Type	HWS Activity Type	Project Performance	Primary Species Benefiting	Secondary Species Benefiting	Current Project Status
<b>CAPITAL PROJECTS</b>												
<b>Habitat Capital Projects</b>												
<b>Estuary / Riverine Tidal Delta (Tier 1)</b>												
Restoration		Wiley Slough Estuary Restoration	Restoration of 160 ac tidal marsh	1	Loss of habitat	Skagit Chinook Recovery Plan	Estuary river delta	Estuary or nearshore	160.6 acres	Chinook		Near completion
Restoration		Swinomish Channel Restoration (i.e. Fornsby or Smokehouse Floodplain)	Completion of Fornsby Ck SRIs to provide fish access and dredge spoil removal from intertidal at several locations	1	Loss of habitat	Skagit Chinook Recovery Plan	Estuary river delta	Estuary or nearshore	50 acres	Chinook	Chum	Construction Completed 2009
Restoration		Swinomish Channel Fill Removal	Removal of dredge spoils from west side of Swinomish Channel to restore tidal marsh habitat	1	2	Skagit Chinook Recovery Plan	Estuary river delta	Estuary or nearshore		Chinook	Chum	Construction
Restoration		McGlinn Island Causeway	Improve hydraulic connection between the N. Fork of the Skagit and Swinomish Channel to improve access by juveniles to estuarine rearing habitat in Padilla Bay	1	Loss of habitat	Skagit Chinook Recovery Plan	Estuary river delta	Estuary or nearshore		Chinook		Feasibility/90% Design
Restoration		Milltown Island	Second phase of restoration on WDFW tidal delta island	1	2	Skagit Chinook Recovery Plan	Estuary river delta	Estuary or nearshore		Chinook	Chum	Post-construction monitoring
Restoration		Fisher Slough	Restores 50-80 acres of farmland within the riverine tidal zone to channel, scrub-shrub, forested wetland, and tributary junction habitats	1	Loss of habitat	Skagit Chinook Recovery Plan	Estuary river delta	Estuary or nearshore	66 acres	Chinook	Coho	Design & Construction
Restoration		South Fork Off Channel	Reconnection of riverine wetland in freshwater delta. Grant funding acquisition & restoration feasibility complete. Restoration not scheduled.	1	Loss of habitat	Skagit Chinook Recovery Plan	Estuary river delta	Estuary or nearshore	40 acres	Chinook	Chum	Feasibility complete
Restoration		Fir Island Farm Restoration (i.e. Dry Slough, Tidegale, Goose Reserve)	Restoration of tidal marsh on 284 acres of WDFW property currently managed as a snow goose reserve	1	Loss of habitat	Skagit Chinook Recovery Plan	Estuary river delta	Estuary or nearshore	120 acres	Chinook	Chum	Feasibility
Restoration		Cottonwood Island	Reconnection of relic side channel for rearing habitat	1	Floodplain Connectivity & Function, Loss of habitat	Skagit Chinook Recovery Plan	Instream	Instream	170 acres	Chinook	Coho	Design & Permitting
Restoration		Deepwater Slough Phase 2	Restore and reconnect 268 ac of estuarine habitat on South Fork Skagit	1	Loss of habitat	Skagit Chinook Recovery Plan	Estuary river delta	Estuary or nearshore	268 acres	Chinook		Conceptual
		<b>TOTAL ESTUARY/TIDAL DELTA CP</b>										
<b>Floodplain (multiple Chinook population rearing areas) (Tier 1)</b>												
Acquisition for Protection/ Restoration		Snell Acquisition	Proposed to remove from list for 2011. Landowner sold to another party. Acquisition of 81 acres of floodway property along 3700 feet of the Skagit River on Cockreham Is.	1	Floodplain Connectivity & Function, Loss of habitat	Skagit Chinook Recovery Plan		Land Protected/Acquired/ Leased	81 acres	Chinook		Incomplete
Restoration		Gilligan Floodplain	Restore function to 170 acres of side channel and floodplain habitat in the Skagit R downstream from Gilligan Creek by removing 170 linear meters of a flood control dike and riprap & replant	1	1	Skagit Chinook Recovery Plan	Instream	Instream	170 acres	Chinook	Coho	Feasibility/30% design complete
Restoration		Skagit River Floodplain Restoration (Middle Skagit Floodplain Restoration)	Small scale restoration actions on properties permanently protected for conservation purposes in the Upper and Middle Skagit Floodplain areas; total 25 acres of riparian restoration	1	5	Skagit Chinook Recovery Plan	Instream	Floodplain Restoration	25 acres	Chinook	Coho	Construction - funded in 2008
Restoration		Skyuli (Squiti)	Implementation date moved beyond 2013. Reconnection of mainstem side channel; project needs to follow the Gilligan dike removal not yet funded	1	1	Skagit Chinook Recovery Plan	Instream	Instream		Chinook	Coho	Conceptual
Acquisition for Restoration		Savage Slough Acquisition & Restoration	Acquisition of 211 ac in middle Skagit w/3,450 ft of river front, portion of Savage Ck., isolated Savage Slough, and assoc. off-channel habitats	1	1	Skagit Chinook Recovery Plan	Instream	Floodplain Restoration	60 acres	Chinook	Steelhead	Funded 2010; acqs complete
Restoration		Skagit Floodplain Riparian (Upper Skagit Floodplain Restoration)	Restore riparian area of 5 floodplain properties owned by the USFS along the Skagit R. and major trib junctions; will enhance 74 acres of protected riverine habitat	1	5	Skagit Chinook Recovery Plan	Instream	Floodplain Restoration	74 acres	Chinook	Coho	Construction
Acquisition for Protection		Skagit Floodplain Habitat Acquisition Phase 2 (Upper Skagit Acquisitions)	Acquisition of floodplain properties for protection of habitat	1	1	Skagit Chinook Recovery Plan	Instream	Land Protected/Acquired/ Leased		Chinook	Steelhead	Funded 2010
Restoration		Barnaby Reach Restoration	Restoration of large side chnl complex at confluence of Skagit & Sauk Rivers	1	1	Skagit Chinook Recovery Plan	Instream	Floodplain Restoration		Chinook	Steelhead	Feasibility/Design



Restoration	Sauk River Riparian Restoration	Restoration of 35 ac of riparian floodplain in Sauk R	1	3	Skagit Chinook Recovery Plan	Riparian	Floodplain Restoration				Construction
Restoration	Davis Slough hydrologic connectivity	Improve/restore hydrologic connectivity of mainstem Skagit historic side channel	1	Floodplain Connectivity & Function, Loss of habitat	Skagit Chinook Recovery Plan	Instream	Floodplain Restoration				Feasibility/90% design
Restoration	Howard Miller Steelhead Park off channel enhancement	Improve/restore hydrologic connectivity of mainstem Skagit historic side channel	1	Floodplain Connectivity & Function, Loss of habitat	Skagit Chinook Recovery Plan	Instream	Floodplain Restoration				Construction
Acquisition	Skagit Watershed Tier 1 and Tier 2 Floodplain Acquisitions	Acquisitions in Tier 1 and 2 floodplain area targeting properties identified in previous benefit/cost assessment work.	1	1	Skagit Chinook Recovery Plan	Instream	Protected/Acquired/Leased Land				Acquisition
Acquisition	Skagit Watershed Tier 1 and Tier 2 Floodplain Acquisitions Phase 2	Acquisitions in Tier 1 and 2 floodplain area targeting properties identified in previous benefit/cost assessment work.	1	1	Skagit Chinook Recovery Plan	Instream	Protected/Acquired/Leased Land		Chinook		Proposed
Restoration	Robinson Road rock removal	Removal of riprap in mainstem side channel and riparian restoration	1	1	Skagit Chinook Recovery Plan	Instream	Instream/Floodplain Restoration	250 ft of hardened bank removal/~10 acres of floodplain restoration	Chinook		Proposed
Restoration	Hobbit Corners Floodplain Restoration	Riparian restoration of	1	1	Skagit Chinook Recovery Plan	Riparian	Floodplain Restoration	20 acres; 30 logs	Chinook		Proposed
Restoration	Rose Island Inlet Side Channel Restoration	Removal of rip rap and restoration of riparian vegetation on ~40 acres of floodplain between Kesbab Slough and an unnamed Slough. Project identified in middle Skagit asmtl.	1	1	Skagit Chinook Recovery Plan	Instream	Floodplain Restoration	40 acres	Chinook		Conceptual
TOTAL FLOODPLAIN TIER 1											
Nearshore (Tier 2)											
Restoration	Lone Tree lagoon	Pocket estuary restoration	2	2		Nearshore embayments	Estuary or nearshore		Chinook	Bull Trout	Monitoring
Restoration	Turners Bay	Restore connectivity to pocket estuary by removing road fill	2	Loss of habitat	Skagit Chinook Recovery Plan	Nearshore embayments	Estuary or nearshore	8.7 acres	Chinook	Bull Trout	Design & Permitting
Acquisition for Protection	Kiket Island Conservation Acquisition	Protection of 2+ miles of shoreline, 96 ac upland peninsula island, 3.4 ac pocket estuary	2	Loss of habitat	Skagit Chinook Recovery Plan	Nearshore (Beaches), Nearshore (Embayments), Nearshore (Rocky Coast)	Nearshore or Estuarine Areas Protected	44.9 acres	Chinook	Bull Trout	Acquisition complete
Restoration	Similk Bay	Restore intertidal pocket estuary by replacing road fill w/bridge & constructing channels	2	Loss of habitat	Skagit Chinook Recovery Plan	Nearshore (Beaches), Nearshore (Embayments)	Estuary or nearshore	23.6 acres	Chinook		Conceptual
Restoration	Dugalla Heights Lagoon Restoration	Restore tidal lagoon to provide access for juvenile Chinook in WRIA 6; joint WRIA funding considered, Feasibility & design work funded through WRIA 6	2	Loss of habitat	Skagit Chinook Recovery Plan	Nearshore (Beaches), Nearshore (Embayments)	Estuary or nearshore	25 acres	Chinook		30% design
TOTAL NEARSHORE CP											
Floodplain (single Chinook population rearing areas) Tier 2											
Restoration	Day Creek Habitat Restoration	Instream & floodplain restoration in lower Day Creek funded in two phases but designed & constructed simultaneously. Includes design and installation of LWD jams in chinook tributary	2	1	Skagit Chinook Recovery Plan	Instream	Instream	3 miles stream; 21 ac riparian	Chinook		Construction
Restoration	Lower Finney Supplemental Instream (LWD treatment)	Design and installation of LWD jams in chinook tributary	2	5	Skagit Chinook Recovery Plan	Instream	Instream		Chinook	Steelhead	Construction
Restoration	Hansen Creek Alluvial Fan (Reaches 3 & 4)	Restoration project completed in 2010. Restored alluvial fan and wetland function to dredged and diked tributary	2	1	Skagit Chinook Recovery Plan	Instream	Floodplain Restoration	145 acres	Chinook	Coho	Completed in 2010
Combination	Hansen Creek Reach 5 Acquisition & Restoration (previously titled Martinez Acquisition and Restoration)	Acquisition and restoration of key floodplain parcels on Hansen and Red Creeks and associated wetlands; potential for additional restoration in coordination with mgmt plan in area	1	Floodplain Connectivity & Function, Loss of habitat	Skagit Chinook Recovery Plan	Instream	Floodplain Restoration		Coho	Chinook	Proposed
Restoration	Illapot Creek alluvial fan restoration	Relocate Illapot Creek to historic channel	2	1	Skagit Chinook Recovery Plan	Instream	Instream	440' of channel bank	Chinook	Steelhead	Design & Permitting
Restoration	Finney Riparian	Conifer plantings in hardwood dominated riparian in important chinook tributary	2	3	Skagit Chinook Recovery Plan	Riparian	Riparian		Chinook	Steelhead	Conceptual
Restoration	Downey Creek Crossing	Closing or expanding Sulistie River road crossing at Downey Cr to minimize impacts to 3 ac alluvial fan. Pushed out beyond 3 yr window last year; added back in this year as schedule accelerated	2	1	Skagit Chinook Recovery Plan	Instream	Instream	3 acres of alluvial fan	Sulistie Spring Chinook	Bull Trout	Proposed/design complete
Restoration	Cascade River Trib Fight Passage	Proposed to remove from 2011 list as barrier overtopped per Brett Barkdull. Removal of fish passage barrier at unused crossing of chinook trib on Cascade R.	2	7	Skagit Chinook Recovery Plan	Instream	Instream		Chinook	Coho	Conceptual



Restoration	Sulatlle Riprap Removal	Removal of riprap to improve edge habitat	2	1	Skagit Chinook Recovery Plan	Instream	Instream	900 feet	Chinook		Proposed
TOTAL FLOODPLAIN TIER 2											
Sediment & Hydrology Impaired Watersheds (restoration actions in spawning habitat) (Tier 3)											
Restoration	Dobsud Roads Erosion Control	Road sediment reduction project in Chinook tributary completed in 2010	3	4	Skagit Chinook Recovery Plan	Uplands	Sediment Reduction		Chinook	Steelhead	Completed in 2010
Restoration	Ilabot Creek Road decommissioning	Permanently closing 14 mi of USFS rd to protect intact habitat in Ilabot Ck	3		Skagit Chinook Recovery Plan	Uplands	Sediment Reduction		Chinook	Steelhead	Design/Permitting
Restoration	Sulatlle Roads	Road sediment reduction project completed in 2010 in important refuge tributaries to the glacially sediment rich Sulatlle R.	3	4	Skagit Chinook Recovery Plan	Uplands	Sediment Reduction		Chinook	Steelhead	Completed in 2010
Restoration	Lower Cascade Roads	Deconstruction of 1.1 miles of forest road in the Boulder Creek drainage	3	4	Skagit Chinook Recovery Plan	Uplands	Sediment Reduction	1.1 miles	Chinook	Steelhead	Conceptual
Restoration	Sauk Roads	Sediment reduction work on remaining 26/50 miles of USFS roads in Sauk Prairie and Dan Ck areas identified in recovery plan	3	4	Skagit Chinook Recovery Plan	Uplands	Sediment Reduction	25 miles of roads	Chinook	Steelhead	Conceptual
Restoration	Upper Sauk Erosion Control	Reduction of road sediment from USFS road in upper Sauk R.	3	4	Skagit Chinook Recovery Plan	Uplands	Sediment Reduction	7 Miles	Chinook	Steelhead	Conceptual
TOTAL IMPAIRED WATERSHEDS (T3)											
TOTAL CAPITAL PROJECTS AND PROGRAMS											
KEY FOR											
Habitat Capital Projects											
Amount of LE SFPB/PSAR funds											
Added in 2010											
Removed from 2010 list for reasons described											
In progress phased implementation and funding											
Post-project monitoring phase											
Primary Limiting Factor											
1- Degraded floodplain and in-river channel structure											
2- Degraded nearshore and estuarine conditions and loss of associated habitat											
3- Riparian area degradation and loss of in-river large woody debris											
4- Excessive sediments in spawning gravels											
5- Degraded water quality and temperature											
6- Impaired instream flows											
7- Barriers to fish passage											
Acquisition											
AP- Acquisition for protection											
AR- Acquisition for restoration											
R- Restoration											
Restoration Type & Performance											
I- Instream habitat projects (stream miles treated)											
W- Wetland habitat projects (acres created/treated)											
E- Estuarine habitat projects (acres created and treated)											
L- Land acquisition projects (acres/ miles acquired for protection and/or restoration)											
R- Riparian habitat projects (stream miles/acres treated)											
U- Upland habitat projects (acres treated)											
P- Fish passage projects (barriers removed/stream miles opened/fish screens installed)											
M- Marine shoreline projects (miles/acres) (pocket estuaries and shorelines outside of natal delta areas and tributaries to Puget Sound)											
F- Floodplain reconnection projects (miles/acres)											



Project Planning							Project Cost and Sponsor			
2011 Activity to be funded	2011 Estimated Cost	2012 Activity to be funded	2012 Estimated Cost	2013 Activity to be funded	2013 Estimated Cost	Likely End Date	Likely Sponsor	Total cost of project	Local share or other funding	Source of funds (PSAR, SRFB, other)
Monitoring	\$75,000	Monitoring	\$75,000	Monitoring		2015	SRSC	\$4,305,197	\$2,284,954	SRFB, PSNER
Monitoring		Monitoring				2012	SRSC			
Construction		Monitoring				2012	SRSC	\$953,600	\$90,000	PSAR, PSCS
Feasibility/Design			\$3,000,000	Permitting		2015	SRSC	\$3,511,754	\$544,861	SRFB, PSAR
Construction		Construction				2012	SRSC	\$432,208	\$57,583	SRFB, PSCS
Construction and monitoring	\$354,470	Monitoring	\$180,000	Monitoring		2011	TNC	\$7,700,000	\$2,800,000	SRFB, PSAR, NOAA
			\$300,000	Design/Permitting		2011		\$195,000	\$20,000	
Design	\$25,000		\$10,000,000	Construction		2015	WDFW	\$10,276,900	\$50,000	PSAR, SRFB, ESRP
90% Design	\$1,400,000	Permitting		Construction		2012	SCD	\$1,500,000	\$200,000	SRFB, PSAR
			\$300,000	Feasibility/Design		2017	WDFW	\$4,000,000		SRFB, PSAR, PSNER
	\$1,854,470		\$13,855,000		\$0			\$32,874,659	\$8,047,498	
							Skagit County	\$516,000	\$86,000	PSAR
				Design/Permitting/Construction	\$2,000,000	2016	SRSC	\$2,060,000	\$309,000	SRFB, PSAR
Planting maintenance						2011	SFEG	\$234,055	\$34,000	SRFB
Further design & riparian restoration		Restoration			\$1,000,000	2014	SCL, SRSC, Skagit Co.	\$3,497,500	\$1,437,125	PSAR
Planting maintenance						2011	SFEG	\$357,850	\$53,678	PSAR
Acquisition		Acquisition		Acquisition		2012	SLTL/SCL	\$1,509,218	\$226,383	SRFB, PSAR
Feasibility/Design		Feasibility				2012	SRSC	\$285,010	\$42,750	PSAR

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