

**Snohomish Floodplains by Design 2021-2023 Project Package**  
**June 23, 2020**

Name of Project	Project Description	Current Status	Project Proponent	Budget	Potential Match	Fish	Farm	Flood	City
<b>Capital</b>									
Property Acquisition for Integrated Opportunities	<p><b>Description:</b> Protection of floodplain land for permanent flood risk reduction and future restoration of natural river processes while supporting agricultural viability. Property acquisitions would follow the Acquisition Strategy being developed under the 2019-2021 Floodplains by Design grant. Working with willing landowners, County and partners will acquire 200-300 acres of flood-prone property. The subreach 4 area of the Lower Skykomish River (the area just south of the City of Sultan, across the river) includes an estimated 340 acres of land with an assessed market value of over \$3.7 million. The acquisition of up to 200 acres prone to repetitive flooding will enable willing landowners to divest from properties in the flood hazard zone. Acquisitions will reduce the potential to encourage new development in the floodplain while protecting existing infrastructure, create a buffer between the river and agricultural enterprises, and enabling consolidation of agricultural operations in defensible locations with reduced long-term risk.</p> <p><b>Deliverable(s):</b> 200-300 acres of floodplain protected</p> <p><b>Support needed on enabling conditions:</b></p>	<p>The County is in the process of hiring contract support to work with the Snohomish IT and SLS partners on the development of the acquisition strategy. The strategy document will be complete by the end of 2020 and will begin implementation in 2021.</p> <p>A local landowner, just south of the City of Sultan along the left bank of the Lower Skykomish, approached the County several years ago asking for buyout opportunities as they have experience repetitive flood losses and wanted to divest from the property. The County is working to purchase those two repetitive flood loss parcels from that landowner. The use of the property will be determined with input from the funder (Ecology), the community, and the Snohomish IT. All development rights will be removed and the County is interested in looking at options that protect the upland area of the property for long-term agricultural while improving water quality, temperature, and habitat along the riverward portion of the property.</p>	Snohomish County	\$3,500,000	\$1,500,000 (potential sources include SWM fees, FEMA and Conservation Futures)	X	X	X	X
Snohomish Floodplain Farmland Conservation	<p><b>Description:</b> As natural floodplain processes are restored to create vital fish habitat and reduce the risks posed by more frequent and/or extreme flood events, it is critical that the land base necessary to support local, commercial-scale farming be permanently protected to ensure the continued sustainability of the agricultural industry. Project partners will work to prioritize easement acquisitions that protect productive, high quality farmland that supports a diversity of agriculture and where continued agricultural use is viable and complementary to other natural resource protection goals. This Task will build of the Sultan Reach farmland conservation work funded by the 2019-2021 FbD Grant through the Community Floodplain Solutions project.</p> <p><b>Deliverable(s):</b> 200-300 acres permanently protected for agricultural use</p>		PCC Farmland Trust	\$1,000,000	\$250,000		X		

	<p><b>Support needed on enabling conditions:</b> <i>SLS: Support for other grant programs to provide match funding. Advocate for more funding. Support for flexibility from funders or permittees on multi-benefit solutions on farmland. I.e. boundary-line adjustments, flood easements that require moving infrastructure. Support for buy-protect-sell with Ecology</i></p>								
Sultan Reach Agricultural Resilience Projects	<p><b>Description:</b> As part of the integrated floodway planning effort being sponsored by the County using existing Floodplains by Design funding, the Conservation District will work with partners to develop projects that address the high priority concerns of agricultural landowners in this reach. We expect this to include projects that reduce flood pressures on actively eroding farmland or improve agricultural drainage. Existing funding will support conceptual design of 1-2 agricultural resilience projects as part of the larger floodway project design. We anticipate the current grant request to fund final design and implementation of these projects.</p> <p><b>Deliverable(s):</b> Final design and implementation of 1-2 projects in Sultan Reach</p> <p><b>Support needed on enabling conditions:</b> <i>SLS: Support viable ag economy / ag businesses. Things like funding for infrastructure improvements, permitting pathways for infrastructure improvements.</i></p>		Snohomish Conservation District	\$750,000	-			X	
<b>Capital - Design</b>									
Swans Trail Slough Restoration and Agricultural Resilience Project	<p><b>Description:</b> Swans Trail Slough runs alongside and then connects with a system of managed agricultural conveyances within Drainage District 13. Local farmers identified a potential project to both restore Swans Trail Slough and allow for better management of the non-natural drainage system, yielding benefits to both drainage of ag fields and fish habitat. This project could include re-connection of the slough at the upstream end with the Snohomish River and separation of the slough from the managed drainage system. Also included in this project package are implementation of two culvert capacity upgrades to improve drainage and upgrades to a pump station to improve fish passage.</p> <p><b>Deliverable(s):</b> Final design and implementation of project as scoped during FbD 19-21</p> <p><b>Support needed on enabling conditions:</b> <i>SLS: Support cooperation between fish/habitat goals and farmer drainage/land needs. May need County cooperation to work around County roads and on managed natural drainage</i></p>		Snohomish Conservation District	\$950,000	\$180,000		X	X	
Riley and Haskel Slough Water Conveyance and Connectivity Improvements	<p><b>Description:</b> The floodplain near where the Skykomish and Snoqualmie Rivers converge supports highly productive commercial agriculture, primarily in pasture and feed crops to support the livestock and dairy industry. Drainage challenges have been increasing due to poor channel conveyance of systems such as Riley and Haskell Sloughs. The sloughs also provide critical spawning and rearing habitat for Chinook salmon and other listed fish species. The Tulalip Tribes and the Snohomish Conservation District will partner to conduct a feasibility analysis to identify both drainage improvements and fish habitat restoration projects. This feasibility will include development of potential connectivity alternatives, associated geomorphic analyses, hydraulic modeling, a drainage inventory, extensive</p>		Snohomish Conservation District and Tulalip Tribes	\$914,430	\$294,430		X	X	

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	<p>community outreach, a preferred alternative, and conceptual designs. This feasibility analysis is partially funded by existing FbD and NOAA grants.</p> <p>The Conservation District and local farmers will use this information to develop a long-term approach to managing Riley Slough and other side-channels that includes sediment removal, culvert upgrades, and beaver control to improve agricultural drainage. Funding would support design and construction of two culvert/crossing projects (two willing landowners already on board). In addition, riparian planting on 5 acres would improve fish habitat as well as improve sediment and water conveyance to support ag viability.</p> <p>The Tulalip Tribes will use the assessment and funding to support conceptual design for a future restoration project on Haskell Slough, a ~2.4-mile-long (71 acre) side channel of the Skykomish River near Monroe, Washington. There is a deteriorating training dike at the upstream end of the slough that prevents surface flow connectivity with the exception of extreme flood events. The goal of the future restoration project is to enhance juvenile salmon rearing and flood refugia habitat in Haskell Slough by modifying the inlet dike to promote increased connectivity, water quantity, and water quality. Additional project benefits will include floodplain water storage and prevention of safety and infrastructure damage resulting from catastrophic dike failure.</p> <p>Project designs would be coordinated with Snohomish County as part of the Integrated Feasibility and Design effort and will evaluate design considerations that could impact and/or provide benefits to County owned infrastructure.</p> <p><b>Deliverable(s):</b> Design and construction of two culvert/crossing and drainage projects, riparian planting on 5 acres, one 30% design for a future restoration project on Haskell Slough</p> <p><b>Support needed on enabling conditions:</b> <i>SLS: Support cooperation between fish/habitat goals and farmer drainage/land needs.</i></p>								
<p><b>Final Design(s) for Integrated Project(s) in the Lower Skykomish</b></p>	<p><b>Description:</b> Complete final designs for integrated floodplain project(s) in the Lower Skykomish. Specific locations could include Shinglebolt Slough, South Slough, and one additional area identified in subreaches 3-5 of the Lower Skykomish. Final design would include a permitting list and timeline. Specific locations would be determined based on the conceptual design and feasibility work currently being conducted under the 2019-2023 Community Floodplain Solutions grant.</p> <p><b>Deliverable(s):</b></p> <p><b>Support needed on enabling conditions:</b></p>	<p>Specific locations would be determined based on the conceptual design and feasibility work currently being conducted under the 2019-2023 Community Floodplain Solutions grant. This funding request would implement the next step in the “enable, design, implement” process as we will have completed the enabling conditions, including extensive community outreach and scoping, with the first grant.</p>	<p>Snohomish County</p>	<p>\$500,000</p>	<p>\$500,000 (potential sources include County and FEMA)</p>	<p>X</p>	<p>X</p>	<p>X?</p>	
<p><b>Shinglebolt Slough Restoration Project</b></p>	<p><b>Description:</b> Project concepts would explore Rremoval of fill from old channel and incorporate LWD into Shinglebolt Slough, located south of Sultan on left bank of Skykomish River. Project concepts would explore elements that provide some flood</p>	<p>This project is being conceptualized, scoped, and designed with the current FY19</p>		<p>\$300,000</p>	<p>\$150,000</p>				

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	relief to the City of Sultan and other Mann Road infrastructure through the removal of floodplain fill and a wider floodplain flood flow inundation connection. The project concepts will address risk reduction and habitat improvements by reconnecting the east, upstream section of Shingle Bolt Slough, removing the existing rip rap and berm along 600-900 feet east of the remnant bridge infrastructure, as well as removing the existing bridge infrastructure. This would restore over 1600 feet of side channel to spring out migration flows (quantity to be determined upon conceptual modeling).	FbD grant. Those FbD funds will also be used to assess the likelihood of securing the necessary property rights to move forward with any project designs.								
South Slough Integrated Project	<b>Description:</b> Project concepts seek to provide integrated design options that preserve or enhance protections for upland areas in agriculture while restoring riverward locations. Concepts will include riparian enhancement and LWD placement along South Slough (large side channel). Early concepts include installation of 7 small jams and 9 wood structures to enhance the Chinook rearing habitat. The intent is for this project to be accomplished in conjunction with the Shingle Bolt Slough Restoration Project and within the footprint of ~20 acres of riparian restoration along the 2500 feet of channel.	This project is being conceptualized, scoped, and designed with the current FY19 FbD grant. The FY19 grant funds are being used to purchase 40 acres of property in the South Slough area		\$100,000	\$150,000					
Assessing Impacts to Public Infrastructure	<b>Description:</b> This task includes technical memos, minor mapping, and assessment of impacts to public infrastructure, including but not limited to: roads (i.e. Ben Howard and Mann Rd), parks, drainage networks, culverts, and levees/dikes. This effort is to ensure that projects being advanced by the Integration Team consider and, to the extent feasible, minimize impacts to public infrastructure during scoping and design.  <b>Deliverable(s):</b> Updates in quarterly progress reports, meeting summaries (as they occur), any mapping or assessments produced.			\$100,000	\$200,000					
<b>Capital – Scoping/Design</b>										
Lower Skykomish River Integrated Capital Project Feasibility and 30% Design	<b>Description:</b> Work with local landowners and the Integration Team to select 5-10 locations along the Lower Skykomish, to develop conceptual designs and feasibility assessments. This task will also develop 30% designs for at least one integrated capital project to “give the river room” in the Lower Skykomish. This task e project would put the river’s health first and integrate multiple benefits (farms, fish, and flood) in the best location(s) on the floodplain, as determined by a cost/benefit analysis.  Phases Steps in the project design process would include project development (outreach, screening, and conceptual design), project prioritization a project identification phase (including developing a technical background, project site selection, and a (cost/benefit analysis, discussion with the IT group, and signed landowner commitment), project screening, development of a conceptual design, and a development signed conservation easement (or equivalent) during a 30% design phase project design.  The purpose of this task is to find locations where significant flood hazards can be lowered that also provide benefits to agricultural viability and habitat, rather than trying to manage for farms, fish, and floods independently. In order to achieve	All projects in this task have been identified in the SLS Lower Skykomish River Reach Scale Plan and are at the early stages of scoping. The funding request would allow for a project prioritization process, community and technical scoping of 5-10 locations, and 30% designs for one integrated project.	Snohomish County	\$300,000	\$500,000 (potential sources include County and NEP)		X	X	X	X

	<p>significant risk reduction and “give the river room,” project concepts will include components that increase channel/floodplain hydrologic connectivity and/or restore lateral channel migration processes.</p> <p>This task implements the next step to integrate the flood hazard results identified in the reach scale hydraulic/hydrologic and geomorphic analyses from the FY19-2023 Community Floodplain Solutions grant. These technical studies will be integrated into site specific multi-benefit projects that can “give the river room” and result in significant flood risk reduction. The proposed methodology is a process for evaluating conceptual project locations through a cost/benefit analysis framework by:</p> <ol style="list-style-type: none"> <li>1) engaging the landowners in the process for comments/support and the necessary property rights and/or agreements, and</li> <li>2) developing one project into a 30% design and acquiring the necessary property acknowledgments and/or rights.</li> </ol> <p>There are two guiding principles behind this body of work:</p> <ol style="list-style-type: none"> <li>1) To provide significant flood risk reduction by restoring natural river processes that provide benefits to agricultural viability and salmon habitat, and</li> <li>2) To provide the landowner with options that do not adversely impact the flood risks to downstream or adjacent landowners</li> </ol> <p>.</p> <p><b>Deliverable(s):</b></p> <ul style="list-style-type: none"> <li>• Project Development Phase             <ul style="list-style-type: none"> <li>○ Outreach for Project Sites - PM talks to landowner about initial level of interest in participating, Explain Program Objective and discuss types of projects</li> <li>○ Project Screening Checklist</li> <li>○ 5 to 10 Conceptual Designs for Lower Skykomish R</li> </ul> </li> <li>• Project Prioritization Phase             <ul style="list-style-type: none"> <li>○ Cost Benefit Analysis (5-10 sites)- Define project scope/cost/location/schedule/risk, hazards, and changes to flood hazards, habitat, and ag viability</li> <li>○ Using the CBA, the IT group will prioritize project list of 5-10 sites</li> <li>○ Signed Landowner Acknowledgement Form for project(s)</li> </ul> </li> <li>• Project Design Phase             <ul style="list-style-type: none"> <li>○ Scoping, schedule, budget for permitting and plan set</li> <li>○ PM, County Managers, and Landowner sign Conservation Easement at 30% design</li> <li>○ Stakeholder Meeting</li> </ul> </li> </ul> <p><b>Support needed on enabling conditions:</b></p>								
<p>Hanson Dike Integrated Assessment Area</p>	<p><b>Description:</b> Project concepts would assess the trade-offs for removal of the Hanson dike as well as replanting and restoring connectivity to off-channel habitat. Design alternatives could also look at more integrated alternatives, including</p>								

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	restoration of some side channels, breaches or locations of dike removal that could improve function and improve downstream erosion.									
Haskel and Riley Slough Integrated Assessment Area	<p><b>Description:</b> Additional planting and fish habitat improvements. Replace eight culverts with concrete slab bridges. Increase flow through slough. Assess impacts to and potential improvements to publicly owned levee and roadway infrastructure via concept designs that seek to provide significant flood risk reduction.</p> <p>Note: Feasibility for this project will be coordinated with the Riley and Haskell Slough Water Conveyance Improvements project listed above under Agricultural Resilience Projects.</p>									
Fern Bluff Integrated Assessment Area	<p><b>Description:</b> Project concepts will explore partial breach of the Fern Bluff levee and removal of the smaller unnamed levee to the south, as well as mitigation of flood hazards with a setback levee. Designs would seek to reduce flood risks by improved access to the side channel behind Fern Bluff Levee.</p>									
Startup Training Levee Integrated Assessment Area	<p><b>Description:</b> A project concept has not been identified in this location. This area would need to be assessed for feasibility and conceptual designs. Based on the results of the project prioritization process, this may be one of the locations the County assesses for potential flood, fish, and farm community benefits.</p>									
Sultan Levee Integrated Assessment Area	<p><b>Description:</b> Project concepts would explore a setback of the Sultan Levee to protect agricultural land on right bank and increase floodplain connectivity. Project feasibility would evaluate options for managing sediment storage and channel migration that would not impact adjacent or downstream landowners.</p>									
Woods Creek Integrated Assessment Area	<p><b>Description:</b> Project concepts would evaluate removal of the abandoned BNSF railroad embankment and grade just upstream of the mouth of Woods Creek. Project concepts would evaluate flood risk reduction and habitat improvement potential.</p>									
Cadman Secondary Channel Improvement & Wall-Based Channel Reconnection	<p><b>Description:</b> Direct more flow through secondary channel at head of bar adjacent to Cadman to enhance rearing year-round. Would potentially help prevent erosion on opposite bank, conveying primary flood and secondary farm benefits.</p> <p>Opportunity to reconnect a wall-based channel and off-channel habitat on the quarry site once Cadman operations are complete. Side channel length is 7,900 feet.</p>		City of Monroe and Snohomish County (TBD?)							
<b>Capital – Cost Share</b>										
Agricultural Resilience Programmatic and Cost-share Support	<p><b>Description:</b> Funding is needed to advance several of the initiatives identified in the Agriculture Resilience Plan for Snohomish County to improve the agricultural community's ability to adapt and be resilient to climate changes including increased flooding, higher groundwater tables and drought. These initiatives include: innovative approaches to providing irrigation water for farming (winter storage, collective water rights management), research on-farm drainage techniques (drain tile capping, ditch water storage), improved flood warning system, cost-share funding for landowners to install drought resilience BMPs (cover cropping, biochar, agroforestry), and a system to compensate to landowners for flood water storage.</p>		Snohomish Conservation District	\$200,000	\$50,000				X	

	<p><b>Deliverable(s):</b> List of priority BMPs and approaches, implementation of at least 2 BMP pilot projects</p> <p><b>Support needed on enabling conditions:</b> <i>Ongoing discussions around winter water rights will be needed with DOE Water Rights program. SLS support on reducing regulatory barriers to implementing BMPs especially surrounding water rights and storage (source switch and retiming),</i></p>									
<b>Programmatic</b>										
<b>Integration Team Support</b>	<p><b>Description:</b> Support continued leadership, coordination and participation of Integration Team (consultant and partners). Development and maintenance of tools that support integrated floodplain management.</p> <p><b>Deliverable(s):</b></p> <p><b>Support needed on enabling conditions:</b> <i>SLS and IT: Clarify the relationship between the EC and the IT.</i></p>		Snohomish County, Tulalip Tribes and SCD	\$300,000	\$100,000		X	X	X	X
<b>Communications and Outreach</b>	<p><b>Description:</b> This task would cover outreach and engagement for each project included in the entire project package. The funding would be applied to project outreach as needed for each project. This task would not cover SLS outreach support.</p> <p><b>Deliverable(s):</b> Quarterly progress reports and invoices, final report</p> <p><b>Support needed on enabling conditions:</b> <i>SLS: Identification of quantified SLS goals and objectives that will allow us to communicate success. What does Net Gain mean? Develop a Shared Monitoring Plan?</i></p>		Snohomish County, Tulalip Tribes and SCD	\$150,000	\$50,000		X	X	X	X
<b>Grant Administration and Project Management</b>	<p><b>Description:</b> This task would cover grant administration, including sub-award management. It would also cover project management needed to successfully undertake a coordinated package of projects, including facilitation and strategic planning.</p> <p>Sub-award management. Coordination. Facilitation. Strategic planning.</p> <p><b>Deliverable(s):</b></p> <p><b>Support needed on enabling conditions:</b> <i>SLS: For this project to be successful, political and policy support from SLS will likely be necessary alongside support and leadership from Dept. of Ecology.</i></p>		Snohomish County	\$250,000	\$50,000		X	X	X	X