

ATTACHMENT 4 – Metrics and Budget Information

- a. Metrics Table
- b. Mann Rd estimates
- c. Budget Uploads

FbD 2018 Project Measures Outcomes (Attachement 4a)	
Floodplain or estuary area restored or reconnected (acres)	Task 2.3 - Reconnect up to 200 acres of floodplain area and historic side channels, once property is acquired. Task 2.3 - Project will restore up to 30 acres (assuming a 80-150ft buffer, depending on the location) of South (Tychman) Slough.
Overall river ecosystem functions improved (river miles)	Task 2.1 - Fish passage barrier removal will increase access to approximately 0.5 miles of upstream habitat. Task 2.2 - Fish passage barrier corrections will improve access to approximately 2.6 miles of upstream habitat. Task 4.1 - 30% designs alternatives will explore the following outcomes: excavation of about 2,600 lineal feet of historic side channel, restoration of 3,400 lineal feet of side channel, and rip rap removal.
Area of connected floodplain protected from development (that could cause further degradation in acres)	Task 2.3 - Up to 200 acres in the South (Tychman)/Shinglebolt Slough area. Signed landowner acknowledgement form for about 40 acres in the Area of Interest (map #).
Levee information: setback depth (feet), length of benefit/improvement (linear feet)	N/A
Features (structures or homes) removed from floodplain	Task 2.1 - 0.5 miles of roadway elevated to continue to provide access for community with over 600 residents. Task 2.3 - Up to 200 acres acquired, including the removal of on-site homes, accessory structures, and infrastructure.
Area with improved flood safety (acres)	Task 2.1 - 0.5 miles of roadway elevated to continue to provide access for community with over 600 residents. The Skyline View Neighborhood will have improved emergency access during flood events. Task 2.3 - Up to 200 acres with improved flood safety resulting from acquisitions/easements and removal of development rights.
Number of people with reduced flood risk	Task 2.1 - Reduce flood risk and increase emergency access reliability for over 600 residents (238 homes) assuming an estimate of 2.5 people per home. Task 2.3 - Acquisitions and easements, as well as the removal of development rights, in the floodway will reduce flood risk to existing and future homeowners.
Value of property with reduced flood risk	Task 2.3 - Up to 200 acres with an assessed market value of over \$2.2 million.
Area of agricultural land acquired (direct or easement) and protected for agricultural use (acres)	Task 4.1 & 4.2 - Integrated Floodway Designs and agriculture resiliency projects will result in protected agricultural land. Acreage will be determined during 30% design process.
Area with improved drainage or other agricultural improvements (acres)	Task 4.2 - Agriculture resiliency projects will result in improved drainage or other agricultural improvements. Acreage will be determined during 30% design process.
Jobs touched	Design, construction, and acquisition tasks create direct professional services and labor employment opportunities and indirect economic development through local provision of support services (e.g. fuel, food, etc.). Task 2.1 - Reduced flood-related road closures, increasing the accessibility of over 600 residents to jobs due to a 75% reduction in road closures.
Damage cost abated (estimated annual maintenance cost savings)	Task 2.1 - Cost savings of \$1,104,000 based on prevailing wage estimates for delay of drivers. Based on a 75% reduction in road closures, at a rate of \$40/hour, the savings to the over 600 residents is significant (\$1,104,000). Estimates based on FEMA Benefit-Cost Assessment software. Project also saves the County and partners thousands of dollars per year responding to road closure and clearing debris.
State, Fed, local or other sponsor funding sources	Task 2.1 - County funds (mostly Roads funds) for \$1.231 million. Task 2.2 - Federal grant funds \$310,000 (\$60,000 Natural Resource Conservation Services Regional Conservation Partnership Program, \$250,000 RCO Family Forest Fish Passage Program). Task 3.1 & 3.2 - County staff time for \$150,000. Includes time for 2-D hydraulic and hydrologic models as well as geomorphic assessment. Task 4.1 & 4.2 - Federal and State grants (\$60,000 EPA National Estuary Program and \$80,000 WDFW Estuary and Salmon Restoration Program). County funds WMA for \$55,000.
Trails/area opened to public (miles/acres)	Task 3.1 and 3.2 - Information from the 2-D modelling and geomorphic assessment/risk analysis will inform planning for future Steelhead County Park (70 acres).
River access (boating, fishing, etc.) sites maintained or improved (# of sites)	Task 3 - modelling and assessment will inform designs for Steelhead County Park which will include the design for at least one hand-launching location.
Other benefits such as water quality, water quantity (use local proponent's measures success)	Task 2.3 - Riparian plantings along South Slough will provide water quality and temperature improvements Task 4 - Actions that restore natural river processes have the potential to add over 1 million cubic yards of sediment storage. Task 4.1 - Water quality increased, temp decreased due to increased connectivity.

FbD Applicants: Fill this out to the best of your ability and upload to EAGL.

MANN ROAD AND BEN HOWARD RD IMPROVEMENTS - PLANNING LEVEL COST ESTIMATE				
PROJECT ESTIMATING DATA			PLANNING LEVEL ESTIMATE	
ITEM	QUANTITY	UNIT	UNIT COST	TOTAL COST
PREPARATION				
MOBILIZATION	1	L.S.		137,100
CLEARING AND GRUBBING	0.90	ACRE	\$25,000.00	22,500
REMOVAL OF STRUCTURE AND OBSTRUCTION	1	L.S.	\$24,600.00	24,600
GRADING				
ROADWAY EXCAVATION INCL. HAUL	740	C.Y.	\$35.00	25,900
GRAVEL BORROW INCL. HAUL	9,380	TON	\$30.00	281,400
DRAINAGE				
QUARRY SPALLS	90	TON	\$50.00	4,500
CORRUGATED POLYETHYLENE CULV. PIPE 18 IN. DIAM.	90	L.F.	\$110.00	9,900
PRECAST REINF. CONC. BOX CULVERT 7 FT.	1	L.S.	\$65,000.00	65,000
PRECAST REINF. CONC. BOX CULVERT 18 FT.	1	L.S.	\$150,000.00	150,000
CORRUGATED POLYETHYLENE CULV. PIPE 48 IN. DIAM.	150	L.F.	\$200.00	30,000
STRUCTURE				
GEOGRID REINFORCED EARTH SLOPE	940	S.F.	\$35.00	32,900
SURFACING				
CRUSHED SURFACING BASE COURSE	2,100	TON	\$35.00	73,500
CRUSHED SURFACING TOP COURSE	240	TON	\$40.00	9,600
HOT MIX ASPHALT				
PLANING BITUMINOUS PAVEMENT	420	SY	\$20.00	8,400
HMA CL. 1/2 IN. PG 64-22	1,820	TON	\$160.00	291,200
HMA FOR APPROACH CL 1/2 IN PG 64-22	110	TON	\$160.00	17,600
EROSION CONTROL AND ROADSIDE RESTORATION				
ESC LEAD	55	DAY	\$100.00	5,500
TOPSOIL TYPE A	340	C.Y.	\$40.00	13,600
SEEDING, FERTILIZING, AND MULCHING	0.90	ACRE	\$3,000.00	2,700
EROSION/WATER POLLUTION CONTROL	1	L.S.	\$17,000.00	17,000
WATTLE	2,290	L.F.	\$4.00	9,160
HIGH VISIBILITY SILT FENCE	1,680	L.F.	\$5.50	9,240
TRAFFIC				
BEAM GUARDRAIL TYPE 31 - 8 FT. LONG POST	1,240	L.F.	\$55.00	68,200
BEAM GUARDRAIL TYPE 31 NON-FLARED TERMINAL	8	EA	\$3,500.00	28,000
PAINT LINE	7,200	L.F.	\$2.00	14,400
PERMANENT SIGNING	1	L.S.	\$1,600.00	1,600
PROJECT TEMPORARY TRAFFIC CONTROL	1	L.S.	\$57,000.00	57,000
CONSTRUCTION SIGNS CLASS "A"	360	SF	\$15.00	5,400
OTHER				
SHORING OR EXTRA EXCAVATION CLASS B	770	S.F.	\$6.00	4,620
ROADWAY SURVEYING	1	L.S.	\$39,000.00	39,000
ROADSIDE CLEANUP	15,000	EST	\$1.00	15,000
SPCC PLAN	1	L.S.	\$1,500.00	1,500
MAILBOX SUPPORT TYPE 1	3	EACH	\$500.00	1,500
TEMPORARY STREAM BYPASS				30,000
CONTINGENCY			30%	452,000
CONSTRUCTION TOTAL (CN)				1,960,000
PE ENGINEERING INCLUDING MITIGATION COST \$40,000				412,000
CE ENGINEERING				294,000
ROW ACQUISITION				40,000
Total Project Cost				\$2,706,000

Advancing Sustainable Solutions in the Snohomish Basin

Floodplains by Design 2019-2021 Biennium

		Task 1	Task 2 - Project-Scale Actions in the Sultan Reach			Task 3 - Predict Future Hydraulics/Hydrology and Risk		Task 4 - Advancing Integrated Floodplain Management		Total
			2.1	2.2	2.3	3.1	3.2	4.1	4.2	
			Design & Construction	Design & Construction	Acquisition	Modelling	Assessment	Planning & Design	Planning & Design	
		Project Admin/Mgmt	Ben Howard/Mann Road Elevations	Haystack Creek Fish Passage Improvements	Sultan Reach Acquisitions	2-D hydraulic/hydrologic Modelling	Geomorphic Assessment and Risk Analysis	Integrated Floodway Design	Agricultural Resilience Designs	
Ecology FbD		100,000	\$ 671,000	\$ 250,000	\$ 2,486,200	\$ 320,000	\$ 325,000	\$ 410,000	\$ 250,000	\$ 4,812,200
County Match	SWM (WMA, REET II)	\$ 50,000.00				\$ 100,000	50,000	\$ 55,000		\$ 255,000
	PW Road Fund		\$ 1,231,000							\$ 1,231,000
	Conservation Futures									\$ -
Other Match	Parks land (2007-onward)									\$ -
	Landowner in-kind									\$ -
	Snohomish Conservation District			\$ 310,000					\$ 140,000	\$ 450,000
Total		\$ 150,000	\$ 1,902,000	\$ 560,000	\$ 2,486,200	\$ 420,000	\$ 375,000	\$ 465,000	\$ 390,000	\$ 6,748,200
Ecology FbD Request			\$ 4,812,200	71%						
Match/Source			\$ 1,936,000	29%						
Total Project Cost			\$ 6,748,200	100%						