

**LOWER NOOKSACK RIVER PROJECT:
ALTERNATIVES ANALYSIS**

APPENDIX I: COST ESTIMATE

**Nooksack Alternative 2a - Marietta Levee Removal
Planning Level Cost Estimate**

Updated on 6-19-2015 Sky

ITEM	DESCRIPTION	EST. QTY	UNIT	UNIT COST	ITEM TOTAL	REMARKS
LAND						
1	Land Purchase	1	LS	\$ 1,350,000	\$ 1,350,000	27 parcels remaining for acquisition
				SUBTOTAL	\$ 1,350,000	
Discipline Reports & Permitting						
2	Engineered Plans & Permitting	1	LS	\$ 50,000	\$ 50,000	Levee and road removal design
				SUBTOTAL	\$ 50,000	
CONSTRUCTION						
3	Mobilization and Force Accounts	1	LS	\$ 125,747	\$ 125,747	
4	Cultural Resources Monitor	50	Day	\$ 750	\$ 37,500	Includes time for demolition of existing residential structures
5	Construction Access	4	LS	\$ 4,500	\$ 18,000	Temporary access ramps of quarry spalls; estimate 4 needed
6	TESC	1	LS	\$ 56,650.00	\$ 56,650	Includes ESC lead, erosion/water pollution control, silt fence, inlet & outlet protection.
7	Levee Removal for 3300 feet	7,830	CY	\$ 6	\$ 46,980	Assumes combination of wholesale removal @ \$8/CY and lowering @ \$4/CY; \$6/CY average. Existing levee height @ 4 ft; top width @ 8ft, and 2:1 slope.
8	Structures demolition	22	EA	\$ 25,000	\$ 550,000	
9	Remove and Disposal of Existing Roadway Asphalt (Marietta Dr & Bayon R	3,810	CY	\$ 15	\$ 57,150	
10	Surface Roughening	11,420	SY	\$ 3.25	\$ 37,115	
11	Revegetation / Native riparian planting, and monitoring	12	AC	\$ 4,500	\$ 54,000	
12	Sales Tax	1	9.50%	\$ 221,648.53	\$ 221,649	
				SUBTOTAL	\$ 1,204,791	
MONITORING (ESTABLISHMENT)						
13	Monitoring		YR	\$	\$ -	
				SUBTOTAL	\$ -	
MAINTENANCE (ESTABLISHMENT)						
14	Annual Report		YR	\$	\$ -	
15	Land Mgmt (weed, water, trash, repair, etc.)		YR	\$	\$ -	
				SUBTOTAL	\$ -	
CONSTRUCTION MANAGEMENT						
16	Construction Administration, Testing and Inspection	1	LS	\$ 50,000	\$ 50,000	
				SUBTOTAL	\$ 50,000	
					TOTAL COST	\$ 2,654,791
CONTINGENCIES						
17	Contingency (Construction Only)	1	20%	\$ 196,628.48	\$ 196,628	
					TOTAL CONTINGENC	\$ 196,628
					TOTAL COST	\$ 2,851,419

Nooksack Alternative 3a - Slater Road Elevation Project

Planning Level Cost Estimate

Ben: Updated on 6-19-15 Sky

ITEM	DESCRIPTION	EST. QTY	UNIT	UNIT COST	ITEM TOTAL	REMARKS
LAND						
1			LS	\$	-	Marietta levee removal will offset any wetland impacts
				SUBTOTAL	\$	-
Discipline Reports & Permitting						
3	Engineered Plans & Specifications	1	LS	\$ 825,000	\$ 825,000	Assume 6% of Const.
4	Permitting	1	LS	\$ 400,000	\$ 400,000	
				SUBTOTAL	\$ 1,225,000	
CONSTRUCTION						
5	Mobilization	1	LS	\$ 960,000	\$ 960,000	8% of Construction Costs of 12 Million
6	Work as Directed by Engineer	1	FA	\$ 360,000	\$ 360,000	3% of Construction Costs of 12 Million
5	Damage Caused by Flood Waters	1	FA	\$ 120,000	\$ 120,000	1% of Construction Costs
6	Mobile Office	1	EA	\$ 15,000	\$ 15,000	
7	Clearing and Grubbing and Roadside Cleanup	1	LS	\$ 50,000	\$ 50,000	Same as Original Estimate
8	Cultural Resources Monitor	30	Day	\$ 750	\$ 22,500	
9	Remove Existing Culverts (2)	1	LS	\$ 15,000	\$ 15,000	
10	Temporary Traffic Excavation	1	LS	\$ 65,000	\$ 65,000	Would be required for material delivery
11	Portable Changeable Message Sign (24Hrs/day)	440	Day	\$ 100	\$ 44,000	210 Working Day x 2
12	Temporary Concrete Barrier	3,000	LF	\$ 22	\$ 66,000	1 side down the length of the project
13	Temporary Paint Striping (2 Times)	12,000	LF	\$ 0.30	\$ 3,600	
14	Roadway Surveying	1	LS	\$ 100,000	\$ 100,000	0.75% of Construction
15	Structure Surveying	1	LS	\$ 135,000	\$ 135,000	1.00% of Construction
16	Construct and remove temp. access ramps	1	LS	\$ 50,000	\$ 50,000	
17	Remove and Disposal of Existing Roadway Asphalt	3,500	CY	\$ 15	\$ 52,500	3000 x 0.75 x 25=2000CY + 0.34 x 40 x 3000=1500CY
18	Remove Existing Roadway	12,500	CY	\$ 12	\$ 150,000	
19	Streambed Gravel	120	Ton	\$ 26	\$ 3,120	5 x 45 x 1500=12,500CY
20	Gravel Borrow Incl. Haul	19,000	Ton	\$ 15	\$ 285,000	20 x 20 x 700 =280,000/27 x 1.85
21	Common Borrow Incl. Haul	10,000	Ton	\$ 12	\$ 120,000	10 x 20 x 700=140,000/27 x 1.85
22	Crushed Quarry Stone (Shoulders)	1,200	Ton	\$ 28	\$ 33,600	
23	Prefabricated Vertical Drains	474,000	LF	\$ 0.55	\$ 260,700	Same as Original Estimate
24	Sand Drainage Blanket	9,400	Ton	\$ 10	\$ 92,120	
25	Embankment Compaction	8,250	CY	\$ 2.20	\$ 18,150	
26	Settlement Monitoring Plate	14	EA	\$ 550	\$ 7,700	
27	Roadway Excavation Incl. Haul	8,330	CY	\$ 13	\$ 111,622	
28	Gravel Backfill for Walls	420	CY	\$ 30	\$ 12,600	
29	Structural Excavation Class A Incl. Haul	230	CY	\$ 80	\$ 18,400	
30	Shoring or Extra Excavation Class A	1	LS	\$ 25,000	\$ 25,000	
31	Construction Geotextile for Separation	35,000	SY	\$ 2.50	\$ 87,500	
32	Construction Geotextile for Soil Stabilization	16,500	SY	\$ 3	\$ 49,500	
33	Gravel Base	8,000	Ton	\$ 15	\$ 120,000	
34	Cellular Confinement System	4,020	SY	\$ 42	\$ 168,840	
35	Shoulder Ballast	22,834	Ton	\$ 15	\$ 342,510	
36	Crushed Surfacing Base Course	1,258	Ton	\$ 24	\$ 30,192	
37	Crushed Surfacing Top Course	2,085	Ton	\$ 26	\$ 54,210	
38	HMA Class 12" PG 64-22	2,984	Ton	\$ 70	\$ 208,880	
39	Extruded Curb	300	LF	\$ 14	\$ 4,200	
40	Bridge Approach Slab	236	SY	\$ 350	\$ 82,600	
41	Superstructure Slater Road Bridge	1	LS	\$ 3,500,000	\$ 3,500,000	
42	Conc. Class 4000 for Substructure	400	CY	\$ 850	\$ 340,000	
43	Conc. Class 4000D for Superstructure	700	CY	\$ 850	\$ 595,000	
44	St. Reinf. Bar for Substructure	75,000	LB	\$ 3	\$ 187,500	
45	Epoxy-Coated St. Reinf. Bar for Superstructure	150,000	LB	\$ 3	\$ 450,000	
46	Furnishing & Driving Cast-In-Place Conc. Test Pile 18 In. Diam.	2	EA	\$ 25,000	\$ 50,000	
47	Furnishing Cast-In-Place Conc. Pile 18 In. Diam.	8,400	LF	\$ 300	\$ 2,520,000	
48	Driving Cast-In-Place Conc. Pile 18 In. Diam.	80	EA	\$ 3,500	\$ 280,000	
49	Traffic Barrier - Superstructure	1,600	LF	\$ 150	\$ 240,000	
50	Plain St. Curb Pipe .064 In. Th. 12 In. Diam.	80	LF	\$ 31	\$ 2,480	
51	Class 52 - 12" Dia. DI Storm Pipe	371	LF	\$ 78	\$ 28,938	
52	Catch Basin Type 1	4	EA	\$ 856	\$ 3,424	
53	Br. Drainage Containment System.	1	LS	\$ 50,000	\$ 50,000	
54	ESC Lead	120	Day	\$ 120	\$ 14,400	
55	Erosion/Water Pollution Control	1	FA	\$ 72,000	\$ 72,000	
56	Seeding, Fertilizing, and Mulching	2	AC	\$ 4,750	\$ 10,925	
57	Silt Fence	3,000	LF	\$ 3.65	\$ 10,950	
58	Check Dam	16	LF	\$ 13.10	\$ 210	
59	Construction Road/Access/Parking Area Stabilization	1,830	SY	\$ 16	\$ 29,280	
60	Inlet Protection	4	EA	\$ 220	\$ 880	
61	Outlet Protection	2	EA	\$ 350	\$ 700	
62	Construction Dewatering	1	FA	\$ 14,000	\$ 14,000	
63	Straw Bale Barrier	17	EA	\$ 28	\$ 481	
64	Sediment Trap	2	EA	\$ 5,500	\$ 11,000	
65	Plastic Covering	480	SY	\$ 1.90	\$ 912	
66	Construction Stormwater Filtration (Screen, Bag or Fibre Filter)	2	EA	\$ 550	\$ 1,100	
67	Temporary Seeding	0	AC	\$ 15,000	\$ 4,500	
68	Surface Roughening	1,500	SY	\$ 3.25	\$ 4,875	
69	Temporary Mulching	1	AC	\$ 12,000	\$ 6,000	Includes purchasing and placing habitat features 20 root wads 18" min dia 10' long, anchored snags 3 each and 5 rootwads, also protective signing
70	Topsoil Type C	1,470	CY	\$ 30	\$ 44,100	Includes purchasing and placing habitat features 20 root wads 18" min dia 10' long, anchored snags 3 each and 5 rootwads also protective signing
71	Flexible Guide Post	62	EA	\$ 28	\$ 1,748	
72	Beam Guardrail Type 31-8ft Long Posts	3,000	LF	\$ 29	\$ 86,100	
73	Beam Guardrail SRT Terminal	4	EA	\$ 2,800	\$ 11,200	
74	Beam Guardrail Transition Section Type 1	2	EA	\$ 1,850	\$ 3,700	
75	Beam Guardrail Transition Section Type 2	2	EA	\$ 1,325	\$ 2,650	
76	Guardrail End Section Design G	6	EA	\$ 3,240	\$ 19,440	
77	Removing Guardrail	520	LF	\$ 34	\$ 17,420	
78	Temporary Impact Attenuator	3	EA	\$ 7,800	\$ 23,400	
79	Permanent Signing	1	LS	\$ 15,000	\$ 15,000	
80	Paint Line	12,600	LF	\$ 0.6	\$ 7,560	Stripe From River Br. To R/R
81	Temporary Pavement Marking	12,000	LF	\$ 0.5	\$ 6,000	Stripe From River Br. To R/R
82	Bridge Scour Riprap	8,400	Ton	\$ 45	\$ 378,000	
83	Bridge Scour Pad Filter Blanket	600	Ton	\$ 40	\$ 24,000	
84	Bridge Scour Pad Topsoil Type B	200	CY	\$ 30	\$ 6,000	
85	Bridge Scour Pad Topsoil Type C	200	CY	\$ 30	\$ 6,000	
86	Sales Tax	1	9.50%	\$ 1,275,557	\$ 1,275,557	
				SUBTOTAL	\$ 14,702,474	
MONITORING (ESTABLISHMENT)						
87	Monitoring		YR	\$	-	
				SUBTOTAL	\$ -	
MAINTENANCE (ESTABLISHMENT)						
88	Annual Report		YR	\$	-	
89	Land Mgmt (weed, water, trash, repair, etc.)		YR	\$	-	
				SUBTOTAL	\$ -	
CONSTRUCTION MANAGEMENT						
90	Construction Administration, Testing and Inspection	1	LS	\$ 500,000	\$ 500,000	
				SUBTOTAL	\$ 500,000	
				TOTAL COST	\$ 16,427,474	
CONTINGENCIES						
125	Contingency	1	20%	\$ 2,685,383.42	\$ 2,685,383	
				TOTAL CONTINGENCY	\$ 2,685,383	
				TOTAL COST	\$ 19,112,858	

Nooksack Alternative 3b - Left Bank Levee Modifications

Planning Level Cost Estimate

Updated on 6-19-2015 Sky

ITEM	DESCRIPTION	EST. QTY	UNIT	UNIT COST	ITEM TOTAL	REMARKS
LAND						
1	Land Purchase		AC		\$ -	
2	Purchase Fees & Real Estate Excise Tax		LS		\$ -	
				SUBTOTAL	\$ -	
Discipline Reports & Permitting						
3	Engineered Plans & Specifications	1	LS	\$ 150,000	\$ 150,000	Engineering Costs 6%
4	Permitting	1	LS	\$ 100,000	\$ 100,000	
				SUBTOTAL	\$ 250,000	
CONSTRUCTION						
5	Mobilization and Force Accounts	1	LS	\$ 250,000	\$ 250,000	
6	Mobile Office	0	EA	\$ -	\$ -	
7	Cultural Resource Monitor	50	Day	\$ 750	\$ 37,500	Assumes 2000 CY per Day
8	Construction Access Roadways and Removal	1	LS	\$ 10,000	\$ 10,000	Small staging area needed
9	TESC	1	LS	\$ 104,190	\$ 104,190	Includes ESC lead, erosion/water pollution control, silt fence, inlet & outlet protection.
10	New Channel to Silver Creek and Tennant Creek	74,176	CY	\$ 7	\$ 519,232	10 ft bottom width; 5 ft depth; 3:1 slope
11	Lower Levee	9,672	CY	\$ 4	\$ 38,688	Existing levee height @ 6.5 ft; top width @ 12 ft, and 2:1 slope.
12	Remove Levee	11,256	CY	\$ 8	\$ 90,048	Existing levee height @ 6.5 ft; top width @ 12 ft, and 2:1 slope.
13	Revegetation/Native Riparian Planting and Monitoring	5	AC	\$ 4,500	\$ 22,950	Cost to revegetate lowered levee area
14	Riparian Revegetation (of former Ag land)	119	AC	\$ 4,500	\$ 533,250	Assumes no irrigation
15				\$ -	\$ -	
16	Sales Tax	1	9.50%	\$ 152,557	\$ 152,557	
				SUBTOTAL	\$ 1,758,415	
MONITORING (ESTABLISHMENT)						
17	Monitoring	5	YR	\$ 15,000	\$ 75,000	
				SUBTOTAL	\$ 75,000	
MAINTENANCE (ESTABLISHMENT)						
18	Annual Report	5	YR	\$ 5,000	\$ 25,000	
19	Land Mgmt (weed, water, trash, repair, etc.)	5	YR	\$ 15,000	\$ 75,000	
				SUBTOTAL	\$ 100,000	
CONSTRUCTION MANAGEMENT						
20	Construction Administration, Testing and Inspection	1		\$ 100,000	\$ 100,000	4% of construction
				SUBTOTAL	\$ 100,000	
CONTINGENCIES						
21	Contingency	1	20%	\$ 321,171.60	\$ 321,172	
				TOTAL CONTINGENC	\$ 321,172	
				TOTAL COST	\$ 2,604,586	

Nooksack Alternative 4c - Right Bank Levee Modifications

Planning Level Cost Estimate

Updated on 6-19-2015 Sky

ITEM	DESCRIPTION	EST. QTY	UNIT	UNIT COST	ITEM TOTAL	REMARKS
LAND						
1	Property Acquisition/ Acquire New Properties	1	LS	\$ 4,788,735	\$ 4,788,735	18 parcels, 9 in reservation (individual in trust), 9 outside of reservation; Cost estimate at 3x market value based on 2014 acquisitions in project area.
				SUBTOTAL	\$ 4,788,735	
Discipline Reports & Permitting						
3	Engineered Plans & Specifications	1	LS	\$ 468,529	\$ 468,529	Engineering Costs 6%
4	Permitting	1	LS	\$ 100,000	\$ 100,000	
				SUBTOTAL	\$ 568,529	
CONSTRUCTION						
5	Mobilization	1	LS	\$ 527,415	\$ 527,415	8% of construction cost
6	Work as Directed by Engineer	1	LS	\$ 197,781	\$ 197,781	3% of construction cost
7	Damage Caused by Flood Waters	1	FA	\$ 65,927	\$ 65,927	1% of construction cost
8	Mobile Office	1	FA	\$ 15,000	\$ 15,000	
9	Cultural Resources Monitor	30	EA	\$ 750	\$ 22,500	Assumes 2000 CY per Day
10	Construction Access Roadways Construction and Removal	1	Day	\$ 40,000	\$ 40,000	Temporary Road (gravel material)
11	Clearing and Grubbing and Roadside Cleanup	1	LS	\$ 50,000	\$ 50,000	
12	Temporary Traffic Control	1	LS	\$ 10,000	\$ 10,000	
13	TESC	1	LS	\$ 147,300	\$ 147,300	Includes ESC lead, erosion/water pollution control, silt fence, inlet & outlet protection, fish removal, etc.
14	New levee	195,930	CY	\$ 22	\$ 4,310,460	Estimate for 3 ft of freeboard above 100 year WSE and 3 ft of settlement; cost for imported glacial till; Assumes avg. height @ 13.7 ft; top width @ 12 ft, 2:1 slope
15	Remove levee	15,550	CY	\$ 8	\$ 124,400	Existing levee height @ 6.5 ft; top width @ 12 ft, and 2:1 slope.
16	Lower levee	11,978	CY	\$ 4	\$ 47,912	Existing levee height @ 6.5 ft; top width @ 12 ft, and 2:1 slope.
17	New channel to Slater Slough	14,954	CY	\$ 7	\$ 104,678	10 ft bottom width; 5 ft depth; 3:1 slope
18	Remove and Disposal of Existing Roadway Asphalt (Ferndale Rd)	5,230	EA	\$ 15	\$ 78,450	
19	Structures demolition	5	EA	\$ 25,000	\$ 125,000	
20	Bridge demolition and removal	1	SY	\$ 50,000	\$ 50,000	Removal of bridge at Ferndale Rd & Kwina Slough
21	Surface Roughening	15,690	AC	\$ 3.25	\$ 50,993	
22	Native riparian planting and monitoring	114	AC	\$ 4,500	\$ 511,200	
23	Hydroseeding	10	AC	\$ 6,000	\$ 57,000	Area of new levee
24	Native riparian planting and monitoring	7	LS	\$ 4,500	\$ 31,500	Area of lowered levee times 2 (6 ac) + 1 acre building area demo
25	Boat launch at Ferndale Rd (S of Kwina Slough)	1	LS	\$ 250,000	\$ 250,000	Access road; parking; restrooms; concrete launch
26	Sales Tax (Construction and Property Acquisition)	1	9.50%	\$ 1,102,593.75	\$ 1,102,594	
				SUBTOTAL	\$ 7,920,109	
MONITORING (ESTABLISHMENT)						
27	Monitoring	5	YR	\$ 15,000	\$ 75,000	
				SUBTOTAL	\$ 75,000	
MAINTENANCE (ESTABLISHMENT)						
28	Annual Report	5	YR	\$ 5,000	\$ 25,000	
29	Land Mgmt (weed, water, trash, repair, etc.)	5	YR	\$ 15,000	\$ 75,000	
				SUBTOTAL	\$ 100,000	
CONSTRUCTION MANAGEMENT						
30	Construction Administration, Testing and Inspection	1	LS	\$ 200,000	\$ 200,000	
				SUBTOTAL	\$ 200,000	
CONTINGENCIES						
31	Contingency (Construction only)	1	20%	\$ 1,363,502.99	\$ 1,363,503	20% of construction costs
				TOTAL CONTINGENC	\$ 1,363,503	
				TOTAL COST	\$ 15,015,875	

Nooksack Alternative 4d - Southern Right Bank Setback Alternative

Planning Level Cost Estimate

Updated on 6-19-2015 Sky

ITEM	DESCRIPTION	EST. QTY	UNIT	UNIT COST	ITEM TOTAL	REMARKS
LAND						
1	Property Acquisition/ Acquire New Properties	1	LS	\$ 4,209,390	\$ 4,209,390	15 parcels, 9 in reservation (individual owned), 6 outside reservation, Cost based on 3x sum of market value based on 2014 sale price
				SUBTOTAL	\$ 4,209,390	
Discipline Reports & Permitting						
3	Engineered Plans & Specifications	1	LS	\$ 452,405	\$ 452,405	Engineering Costs 6%
4	Permitting	1	LS	\$ 100,000	\$ 100,000	
				SUBTOTAL	\$ 552,405	
CONSTRUCTION						
5	Mobilization	1	LS	\$ 512,863	\$ 512,863	8% of construction cost
6	Work as Directed by Engineer	1	LS	\$ 192,324	\$ 192,324	3% of construction cost
7	Damage Caused by Flood Waters	1	FA	\$ 64,108	\$ 64,108	1% of construction cost
8	Mobile Office	1	FA	\$ 15,000	\$ 15,000	
9	Cultural Resources Monitor	30	EA	\$ 750	\$ 22,500	Assumes 2000 CY per Day
10	Construction Access Roadways Construction and Removal	1	Day	\$ 10,000	\$ 10,000	Staging area (gravel material) .
11	Temporary Traffic Control	1	LS	\$ 10,000	\$ 10,000	Temporary traffic control, then road closure
12	Clearing and Grubbing and Roadside Cleanup	1	LS	\$ 50,000	\$ 50,000	Clear & grub for levee area
13	TESC	1	LS	\$ 147,300	\$ 147,300	Includes ESC lead, erosion/water pollution control, silt fence, inlet & outlet protection, fish removal, etc.
14	New levee	231,766	CY	\$ 22	\$ 5,098,861	Estimate for 3 ft of freeboard above 100 year WSE and 3 ft of settlement; cost for imported glacial till; Assumes avg. height @ 14.1 ft; top width @ 12 ft, 2:1 slope
15	Remove levee	11,375	CY	\$ 8	\$ 91,000	Existing levee height @ 6.5 ft; top width @ 12 ft, and 2:1 slope.
16	Lower levee	8,763	CY	\$ 4	\$ 35,053	Existing levee height @ 6.5 ft; top width @ 12 ft, and 2:1 slope.
17	New channel to Slater Slough	14,769	CY	\$ 9	\$ 136,609	
18	Remove and Disposal of Existing Roadway Asphalt (Ferndale Rd)	3,318	CY	\$ 15	\$ 49,767	
19	Bridge demolition and removal	1	EA	\$ 50,000	\$ 50,000	Removal of bridge at Ferndale Rd & Kwina Slough
20	Surface Roughening	9,953	SY	\$ 3	\$ 32,348	
21	Revegetation / Native riparian planting, irrigation, and monitoring	50	AC	\$ 4,500	\$ 225,450	
22	Hydroseeding	11	AC	\$ 6,000	\$ 64,227	Area of new levee
23	Native riparian planting and monitoring	4	AC	\$ 4,500	\$ 19,800	Area of lowered levee x 2
24	Boat launch at Ferndale Rd (S of Kwina Slough)	1	LS	\$ 250,000	\$ 250,000	Access road; parking; restrooms; concrete launch
25	Sales Tax (Construction and Property Acquisition)	1	9.50%	\$ 1,072,226.93	\$ 1,072,227	
				SUBTOTAL	\$ 8,149,436	
MONITORING (ESTABLISHMENT)						
26	Monitoring	5	YR	\$ 15,000	\$ 75,000	
				SUBTOTAL	\$ 75,000	
MAINTENANCE (ESTABLISHMENT)						
27	Annual Report	5	YR	\$ 5,000	\$ 25,000	
28	Land Mgmt (weed, water, trash, repair, etc.)	5	YR	\$ 15,000	\$ 75,000	
				SUBTOTAL	\$ 100,000	
CONSTRUCTION MANAGEMENT						
29	Construction Administration, Testing and Inspection	1	LS	\$ 200,000	\$ 200,000	
				SUBTOTAL	\$ 200,000	
				TOTAL COST	\$ 13,286,231	
CONTINGENCIES						
30	Contingency (Construction Only)	1	20%	\$ 1,415,441.85	\$ 1,415,442	20% of construction costs
				TOTAL CONTINGENC	\$ 1,415,442	
				TOTAL COST	\$ 14,701,673	

Nooksack Alternative 4e - Southern Right Bank Setback Extension

Planning Level Cost Estimate

Updated on 6-19-2015 Sky

ITEM	DESCRIPTION	EST. QTY	UNIT	UNIT COST	ITEM TOTAL	REMARKS
LAND						
1	Property Acquisition/ Acquire New Properties	1	LS	\$ 9,054,305	\$ 9,054,305	30 parcels to purchase, 20 individually owned in trust, 10 individually owned. Cost based on 3x sum of market value based on 2014 sale price.
				SUBTOTAL	\$ 9,054,305	
Discipline Reports & Permitting						
3	Engineered Plans & Specifications	1	LS	\$ 592,315	\$ 592,315	
4	Permitting	1	LS	\$ 100,000	\$ 100,000	
				SUBTOTAL	\$ 692,315	
CONSTRUCTION						
5	Mobilization	1	LS	\$ 649,884	\$ 649,884	8% of construction cost
6	Work as Directed by Engineer	1	FA	\$ 243,707	\$ 243,707	3% of construction cost
7	Damage Caused by Flood Waters	1	FA	\$ 81,236	\$ 81,236	1% of construction cost
8	Mobile Office	1	EA	\$ 15,000	\$ 15,000	
9	Cultural Resources Monitor	30	Day	\$ 750	\$ 22,500	Assumes 2000 CY per Day
10	Construction Access Roadways Construction and Removal	1	LS	\$ 10,000	\$ 10,000	Staging area (gravel material)
11	Temporary Traffic Control	1	LS	\$ 10,000	\$ 10,000	Temporary traffic control, then road closure
12	Clearing and Grubbing new levee area	1	LS	\$ 50,000	\$ 50,000	Clear & grub for levee area
13	TESC	1	LS	\$ 147,300	\$ 147,300	Includes ESC lead, erosion/water pollution control, silt fence, inlet & outlet protection, fish removal, etc.
14	New levee	281,823	CY	\$ 22	\$ 6,200,112	Estimate for 3 ft of freeboard above 100 year WSE and 3 ft of settlement; cost for imported glacial till; Assumes avg. height @ 14.6 ft; top width @ 12 ft, 2:1 slope
15	Remove levee	14,123	CY	\$ 8	\$ 112,988	Existing levee height @ 6.5 ft; top width @ 12 ft, and 2:1 slope.
16	Lower levee	10,881	CY	\$ 4	\$ 43,522	Existing levee height @ 6.5 ft; top width @ 12 ft, and 2:1 slope.
17	New channels to Slater Slough	14,769	CY	\$ 9.25	\$ 136,609	
18	Culvert to replace tidegates under Marine Dr	1	EA	\$ 50,000	\$ 50,000	
19	Remove and Disposal of Existing Roadway Asphalt (Ferndale Rd, Lummi Shore Rd)	5,096	CY	\$ 15	\$ 76,433	
20	Bridge demolition and removal	1	EA	\$ 50,000	\$ 50,000	Removal of bridge at Ferndale Rd & Kwina Slough
21	Surface Roughening	15,287	SY	\$ 3.25	\$ 49,682	
22	Revegetation / Native riparian planting, irrigation, and monitoring	90	AC	\$ 4,500	\$ 403,200	
23	Hydroseeding	13	AC	\$ 6,000	\$ 78,024	Area of new levee
24	Native riparian planting and monitoring	6	AC	\$ 4,500	\$ 24,750	Area of lowered levee x 2
25	Elevate roadway (Lummi Shore Rd)	9,984	CY	\$ 22	\$ 219,648	Cost for imported glacial till
26	Road reconstruction (Lummi Shore Rd)	5,333	SY	\$ 31.2	\$ 166,400	
27	Boat launch at Ferndale Rd (S of Kwina Slough)	1	LS	\$ 250,000	\$ 250,000	Access road; parking; restrooms; concrete launch
28	Sales Tax (Construction and Property Acquisition)	1	9.50%	\$ 1,723,803.32	\$ 1,723,803	
				SUBTOTAL	\$ 10,814,796	
MONITORING (ESTABLISHMENT)						
29	Monitoring	5	YR	\$ 15,000	\$ 75,000	
				SUBTOTAL	\$ 75,000	
MAINTENANCE (ESTABLISHMENT)						
30	Annual Report	5	YR	\$ 5,000	\$ 25,000	
31	Land Mgmt (weed, water, trash, repair, etc.)	5	YR	\$ 15,000	\$ 75,000	
				SUBTOTAL	\$ 100,000	
CONSTRUCTION MANAGEMENT						
32	Construction Administration, Testing and Inspection	1	LS	\$ 300,000	\$ 300,000	
				SUBTOTAL	\$ 300,000	
CONTINGENCIES						
33	Contingency (Construction Only)	1	20%	\$ 1,818,198.62	\$ 1,818,199	20% of Construction Costs
				TOTAL CONTINGENC	\$ 1,818,199	
				TOTAL COST	\$ 22,854,616	