

LOWER DUNGENESS RIVER
SECTION 544
ECOSYSTEM RESTORATION

APPENDIX E
COST ENGINEERING

**DRAFT Detailed Project Report and
Environmental Assessment**



**US Army Corps
of Engineers®**
Seattle District

Standard Corps Report

Title Page

PROJECT DESCRIPTION

There are three 10% design alternatives that attempt to reestablish a hydrologic connection between the Dungeness River and the historic floodplain on the right of the bank from RM 0.9 to 1.75. The first is the Town Road Setback Concept, the second being the Meadowbrook Creek Concept and the third is the Meadowbrook Creek with the road on the levee. All alternatives will include levee removal, levee construction, engineered log jams, large wood clusters, new side channels, new back channel areas, forested berms, buried toe, and plantings. Meadowbrook Creek is the more elaborate of the two proposals.

BASES OF DESIGN

This estimate is based on 10% design Quantity Takeoffs, dated Oct 2014.

Prices are good for the period October 2014 through December 2014.

ACQUISITION PLAN

A conservative approach is to assume that this project will be acquired by Small Business Acquisition methods.

This work is to be performed by a Contractor under the Small Business Administration 8a program.

Estimated by NWS-Cost Engineering

Designed by USACE Seattle District

Prepared by Anthony Rodriguez

Preparation Date 10/15/2014

Effective Date of Pricing 10/15/2014

Estimated Construction Time 360 Days

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SUB-CONTRACTING PLAN

The following are subcontractor on this project:

Sitework Subcontractor

Landscaping Subcontractor

Geotech Subcontractor

It is assumed that the Prime Contractor will provide oversight and minimal work.

PROJECT CONSTRUCTION

SITE ACCESS

The Dungeness River Ecosystem Restoration Project is located between river miles 1 and 2 along the Dungeness River and approximately 1 mile from its outlet at Dungeness Bay on the Strait of Juan de Fuca, near Dungeness, WA. Primary access is via Town Road.

BORROW AREAS

It is anticipated that there will be more excavated material than what is required for construction of the new levees. Assume no borrow material will be needed.

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CONSTRUCTION METHODOLOGY

Standard heavy construction practices are anticipated. Traffic control will be needed for the duration of construction along Town Road.

UNUSUAL CONDITION

There are certain areas that are very wet and may only be accessed during certain times of the year.

UNIQUE TECHNIQUES OF CONSTRUCTION

The use of swamp mats will most likely be needed to prevent the heavy equipment from getting stuck in the mud.

CONSTRUCTION WINDOWS

SCHEDULE

The construction is anticipated to start in August of 2013 since this is the driest time of the year.

The fish window is from ____ to ____ and construction will not be permitted during this time.

OVERTIME

This estimate contains no overtime to complete the project

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Standard Corps Report

Description	Quantity	UOM	ContractCost	Escalation	Contingency	ProjectCost
Project Cost Summary			4,265,813	0	0	4,265,813
ALTERNATIVE 2 - MeadowBrook Revision 3	1.00	EA	4,265,813	0	0	4,265,813
MOB/DEMOB	1.00	EA	56,769	0	0	56,769
Traffic Control	5.00	DAY	9,498	0	0	9,498
Mob/Demob	1.00	EA	47,271	0	0	47,271
SITE PREPARATION	1.00	LS	49,159	0	0	49,159
Construction Entrance	33.00	CY	5,438	0	0	5,438
Clear & GrubTemp Site Access/Staging	119,000.00	SY	33,183	0	0	33,183
Swamp Mats	1,000.00	LF	10,539	0	0	10,539
SOUTH ACCESS ROAD	925.00	LF	66,940	0	0	66,940
Crushed Base Course	2,466.67	SY	63,872	0	0	63,872
Gate	1.00	EA	3,068	0	0	3,068
SIDE CHANNEL EXCAVATION	31,171.00	BCY	423,707	0	0	423,707
Channel- Excavate & Stockpile Material	31,171.00	BCY	373,434	0	0	373,434
Centerline Staking	1.00	LS	14,939	0	0	14,939
Earthwork, excavate plug, embankment	111.00	CY	1,093	0	0	1,093
Spawning Gravel	225.00	CY	15,299	0	0	15,299
Dewatering	15.40	DAY	18,942	0	0	18,942
VEGETATED TERRACES	16,378.00	BCY	45,298	0	0	45,298
LEVEE CONSTRUCTION	3,940.00	LF	1,605,767	0	0	1,605,767
Embankment Material	76,354.00	LCY	1,107,083	0	0	1,107,083
Riprap	3,656.00	LCY	128,798	0	0	128,798
Spall Rock	1,462.00	LCY	24,587	0	0	24,587
Gravel Surface 1-1/4" Minus	1,050.00	LCY	53,908	0	0	53,908
Hydroseed	17,511.11	SY	22,363	0	0	22,363
2-Foot Strip Cut	26,013.00	LCY	211,049	0	0	211,049
Buried Toe	1.00	EA	57,980	0	0	57,980
Excavate for buried toe	9,542.00	LCY	47,593	0	0	47,593
Backfill Buried Toe	4,422.00	LCY	10,387	0	0	10,387

Description	Quantity	UOM	ContractCost	Escalation	Contingency	ProjectCost
LEVEE DEMO	1.00	EA	303,526	0	0	303,526
Embankment Material	22,563.00	BCY	229,831	0	0	229,831
Riprap	3,033.00	BCY	49,081	0	0	49,081
Spalls	1,521.00	BCY	24,614	0	0	24,614
LANDSCAPE PLANTINGS OTHER THAN SEEDING	1.00	LS	41,005	0	0	41,005
Delivery of Plants	118.00	EA	7,119	0	0	7,119
ELJ	272.00	EA	963	0	0	963
Back Channel	7,000.00	EA	24,773	0	0	24,773
Vegetated Terraces	2,303.00	EA	8,150	0	0	8,150
BOX CULVERT & BRIDGE	1.00	EA	191,659	0	0	191,659
5x12 Culvert	30.00	LF	57,469	0	0	57,469
Culvert	30.00	LF	41,937	0	0	41,937
Excavation	67.00	BCY	250	0	0	250
Bedding	13.00	BCY	757	0	0	757
Riprap	100.00	BCY	6,628	0	0	6,628
Streambed Cobble	13.00	BCY	716	0	0	716
Backfill/Spread	87.10	LCY	114	0	0	114
Guadrail	40.00	LF	7,067	0	0	7,067
4x5 Culvert	49.00	LF	39,002	0	0	39,002
Culvert	49.00	LF	36,568	0	0	36,568
Excavation	58.00	BCY	216	0	0	216
Bedding	7.00	BCY	408	0	0	408
Riprap	20.00	BCY	1,326	0	0	1,326
Streambed Cobble	7.00	BCY	386	0	0	386
Backfill/Spread	75.40	LCY	99	0	0	99
30-FT span 26' Wide Bridge	30.00	LF	95,188	0	0	95,188
Bridge	30.00	LF	83,450	0	0	83,450
Excavation	281.00	BCY	1,047	0	0	1,047
Backfill/Spread	365.30	LCY	477	0	0	477

Standard Corps Report

Description	Quantity	UOM	ContractCost	Escalation	Contingency	ProjectCost
Guadrail	80.00	LF	10,214	0	0	10,214
UTILITY RELOCATE	1,570.00	LF	69,091	0	0	69,091
Demo Overhead	1,570.00	LF	10,340	0	0	10,340
Demolition of Poles	6.28	EA	7,134	0	0	7,134
Demolition of Pole accessories	0.63	EA	2,079	0	0	2,079
Hauling	0.85	HR	1,127	0	0	1,127
New Power Line	1,570.00	LF	58,752	0	0	58,752
Install Wood Pole	6.28	EA	58,752	0	0	58,752
Wooden Pole	6.28	EA	38,940	0	0	38,940
Grounding	0.31	EA	182	0	0	182
Conductors	1,570.00	LF	19,631	0	0	19,631
ROAD WORK	1.00	EA	449,530	0	0	449,530
Demo Existing Roadway	1,500.00	LF	124,554	0	0	124,554
Roadway	45,000.00	SF	124,554	0	0	124,554
Demo	5,000.00	SY	80,917	0	0	80,917
Haul	2,000.00	LCY	22,016	0	0	22,016
Disposal	1,477.78	TON	21,621	0	0	21,621
Build New Roadway	1,500.00	LF	324,977	0	0	324,977
Crushed Base Course	5,000.00	SY	129,470	0	0	129,470
Paving, Hot Mix AC	5,000.00	SY	166,245	0	0	166,245
Lane Markings	6,000.00	LF	29,261	0	0	29,261
ANCHORED WOOD CLUSTERS	24.00	EA	188,316	0	0	188,316
ENGINEERED LOG JAMS	1.00	LS	609,272	0	0	609,272
ELJ	16.00	EA	609,272	0	0	609,272
FLOODPLAIN FENCE	2,500.00	LF	165,772	0	0	165,772

**** TOTAL PROJECT COST SUMMARY ****

PROJECT: **Dungeness River Eco Restoration**
PROJECT NO:
LOCATION: **Dungeness, WA**

DISTRICT: **NWS Seattle**

PREPARED: **11/5/2014**

POC: **CHIEF, COST ENGINEERING, John Du**

This Estimate reflects the scope and schedule in report; CAP Feasibility STUDY - WASHOUT CREEK

Civil Works Work Breakdown Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)					TOTAL PROJECT COST (FULLY FUNDED)				
WBS NUMBER	Civil Works Feature & Sub-Feature Description	COST (\$K)	CNTG (\$K)	CNTG (%)	TOTAL (\$K)	ESC (%)	COST (\$K)	CNTG (\$K)	REMAINING COST (\$K)	2016 Effective Price Level Date: 1-Oct-15 Spent Thru: 10/1/2013	TOTAL FIRST COST (\$K)	ESC (%)	COST (\$K)	CNTG (\$K)	FULL (\$K)
02	RELOCATIONS	\$518	\$104	20%	\$622	1.9%	\$528	\$106	\$633		\$633	2.5%	\$541	\$108	\$649
06	FISH & WILDLIFE FACILITIES	\$3,747	\$749	20%	\$4,496	1.9%	\$3,817	\$763	\$4,580		\$4,580	2.5%	\$3,911	\$782	\$4,694
CONSTRUCTION ESTIMATE TOTALS:		\$4,265	\$853		\$5,118	1.9%	\$4,345	\$869	\$5,214		\$5,214	2.5%	\$4,452	\$890	\$5,343
01	LANDS AND DAMAGES	\$100	\$10	10%	\$110	1.9%	\$102	\$10	\$112		\$112		\$102	\$10	\$112
30	PLANNING, ENGINEERING & DESIGN	\$570	\$114	20%	\$684	3.4%	\$590	\$118	\$707		\$707	-0.1%	\$589	\$118	\$707
31	CONSTRUCTION MANAGEMENT	\$405	\$81	20%	\$486	3.4%	\$419	\$84	\$503		\$503	4.9%	\$439	\$88	\$527
PROJECT COST TOTALS:		\$5,340	\$1,058	20%	\$6,398		\$5,455	\$1,081	\$6,536		\$6,536	2.3%	\$5,583	\$1,106	\$6,689

- _____ CHIEF, COST ENGINEERING, John Dudgeon
- _____ PROJECT MANAGER, David Cook
- _____ CHIEF, REAL ESTATE, Chris Borton
- _____ CHIEF, PLANNING, Valorie Ringold
- _____ CHIEF, ENGINEERING, JoAnn Walls
- _____ CHIEF, OPERATIONS, Beth Coffey
- _____ CHIEF, CONSTRUCTION, Aril Berg
- _____ CHIEF, CONTRACTING, Patricia Blackwood
- _____ CHIEF, PM-PB, xxxx
- _____ CHIEF, DPM, Olton Swanson

ESTIMATED TOTAL PROJECT COST: \$6,689
 ESTIMATED FEDERAL COST: **65%** \$4,348
 ESTIMATED NON-FEDERAL COST: **35%** \$2,341

22 - FEASIBILITY STUDY (CAP studies): \$760
 ESTIMATED FEDERAL COST: **\$430**
 ESTIMATED NON-FEDERAL COST: **\$330**

ESTIMATED FEDERAL COST OF PROJECT \$4,778

**** TOTAL PROJECT COST SUMMARY ****

**** CONTRACT COST SUMMARY ****

PROJECT: Dungeness River Eco Restoration
LOCATION: Dungeness, WA
This Estimate reflects the scope and schedule in report;

CAP Feasibility STUDY - WASHOUT CREEK

DISTRICT: NWS Seattle
POC: CHIEF, COST ENGINEERING, John Dudgeon

PREPARED: 11/5/2014

WBS Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)				TOTAL PROJECT COST (FULLY FUNDED)				
		Estimate Prepared: 3/15/2014				Program Year (Budget EC): 2016								
		Estimate Price Level: 1-Oct-14				Effective Price Level Date: 1-Oct-15								
WBS NUMBER A	Civil Works Feature & Sub-Feature Description B	COST (\$K) C	RISK BASED		TOTAL (\$K) F	ESC (%) G	COST (\$K) H	CNTG (\$K) I	TOTAL (\$K) J	Mid-Point Date P	ESC (%) L	COST (\$K) M	CNTG (\$K) N	FULL (\$K) O
			CNTG (\$K) D	CNTG (%) E										
PHASE 1 or CONTRACT 1														
02	RELOCATIONS	\$518	\$104	20.0%	\$622	1.9%	\$528	\$106	\$633	2017Q2	2.5%	\$541	\$108	\$649
06	FISH & WILDLIFE FACILITIES	\$3,747	\$749	20.0%	\$4,496	1.9%	\$3,817	\$763	\$4,580	2017Q2	2.5%	\$3,911	\$782	\$4,694
CONSTRUCTION ESTIMATE TOTALS:		\$4,265	\$853	20.0%	\$5,118		\$4,345	\$869	\$5,214			\$4,452	\$890	\$5,343
01	LANDS AND DAMAGES	\$100	\$10	10.0%	\$110	1.9%	\$102	\$10	\$112	2016Q1		\$102	\$10	\$112
30	PLANNING, ENGINEERING & DESIGN													
0.015	Project Management	\$40	\$8	20.0%	\$48	3.4%	\$41	\$8	\$50	2015Q4	-1.0%	\$41	\$8	\$49
0.01	Planning & Environmental Compliance	\$43	\$9	20.0%	\$52	3.4%	\$44	\$9	\$53	2015Q4	-1.0%	\$44	\$9	\$53
0.1	Engineering & Design	\$300	\$60	20.0%	\$360	3.4%	\$310	\$62	\$372	2015Q4	-1.0%	\$307	\$61	\$369
0.01	Engineering Tech Review ITR & VE	\$43	\$9	20.0%	\$52	3.4%	\$44	\$9	\$53	2015Q4	-1.0%	\$44	\$9	\$53
0.01	Contracting & Reprographics	\$43	\$9	20.0%	\$52	3.4%	\$44	\$9	\$53	2015Q4	-1.0%	\$44	\$9	\$53
0.01	Engineering During Construction	\$43	\$9	20.0%	\$52	3.4%	\$44	\$9	\$53	2017Q2	4.9%	\$47	\$9	\$56
0.01	Planning During Construction	\$43	\$9	20.0%	\$52	3.4%	\$44	\$9	\$53	2017Q2	4.9%	\$47	\$9	\$56
0.005	Project Operations	\$15	\$3	20.0%	\$18	3.4%	\$16	\$3	\$19	2015Q4	-1.0%	\$15	\$3	\$18
31	CONSTRUCTION MANAGEMENT													
0.09	Construction Management	\$300	\$60	20.0%	\$360	3.4%	\$310	\$62	\$372	2017Q2	4.9%	\$325	\$65	\$390
0.02	Project Operation:	\$40	\$8	20.0%	\$48	3.4%	\$41	\$8	\$50	2017Q2	4.9%	\$43	\$9	\$52
0.025	Project Management	\$65	\$13	20.0%	\$78	3.4%	\$67	\$13	\$81	2017Q2	4.9%	\$71	\$14	\$85
CONTRACT COST TOTALS:		\$5,340	\$1,058		\$6,398		\$5,455	\$1,081	\$6,536			\$5,583	\$1,106	\$6,689