



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

MILL CREEK FLOOD RISK MANAGEMENT GENERAL INVESTIGATION

Draft Feasibility Study and Environmental Assessment Report

January 2020

APPENDIX D
COST ENGINEERING

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DRAFT

Mill Creek General Investigation Feasibility Study and Environmental Assessment Report - DRAFT
Appendix D, Cost Engineering

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

Printed:1/6/2020
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PROJECT: Mill Creek GI
PROJECT NO: P2 xxxxxx
LOCATION: Walla Walla Washington

DISTRICT: Walla Walla District
POC: CHIEF, COST ENGINEERING, xxx

PREPARED: 10/9/2019

Small Levee Raise (0.70' Channel Levee Raise)

This Estimate reflects the scope and schedule in report;

Mill Creek GI DDR

Civil Works Work Breakdown Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)					TOTAL PROJECT COST (FULLY FUNDED)					
WBS NUMBER A	Civil Works Feature & Sub-Feature Description B	COST (\$K) C	CNTG (\$K) D	CNTG (%) E	TOTAL (\$K) F	ESC (%) G	COST (\$K) H	CNTG (\$K) I	TOTAL (\$K) J	Program Year (Budget EC): 2020 Effective Price Level Date: 1 OCT 19		TOTAL FIRST COST (\$K) K	INFLATED (%) L	COST (\$K) M	CNTG (\$K) N	FULL (\$K) O
										Spent Thru: 1-Oct-19 (\$K)						
11	Small Levee Raise	\$866	\$355	41.0%	\$1,221	0.0%	\$866	\$355	\$1,221	\$0	\$1,221	17.0%	\$1,014	\$416	\$1,429	
09	Pipe Column Repair	\$997	\$409	41.0%	\$1,406	0.0%	\$997	\$409	\$1,406	\$0	\$1,406	17.9%	\$1,176	\$482	\$1,658	
09	Ceiling Repair	\$1,567	\$642	41.0%	\$2,209	0.0%	\$1,567	\$642	\$2,209	\$0	\$2,209	18.8%	\$1,862	\$763	\$2,625	
09	Wall Tieback Repair	\$1,050	\$431	41.0%	\$1,481	0.0%	\$1,050	\$431	\$1,481	\$0	\$1,481	18.8%	\$1,247	\$511	\$1,759	
CONSTRUCTION ESTIMATE TOTALS:		\$4,480	\$1,837		\$6,317	0.0%	\$4,480	\$1,837	\$6,317	\$0	\$6,317	18.3%	\$5,298	\$2,172	\$7,470	
01	LANDS AND DAMAGES	\$0	\$0 -		\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0	
30	PLANNING, ENGINEERING & DESIGN	\$1,366	\$560	41.0%	\$1,927	0.0%	\$1,366	\$560	\$1,927	\$0	\$1,927	21.6%	\$1,662	\$681	\$2,344	
31	CONSTRUCTION MANAGEMENT	\$650	\$266	41.0%	\$916	0.0%	\$650	\$266	\$916	\$0	\$916	24.2%	\$807	\$331	\$1,138	
PROJECT COST TOTALS:		\$6,496	\$2,663	41.0%	\$9,159		\$6,496	\$2,663	\$9,159	\$0	\$9,159	19.6%	\$7,767	\$3,184	\$10,952	

CHIEF, COST ENGINEERING, xxx

ESTIMATED TOTAL PROJECT COST: \$10,952

PROJECT MANAGER, xxx

CHIEF, REAL ESTATE, xxx

CHIEF, PLANNING, xxx

CHIEF, ENGINEERING, xxx

CHIEF, OPERATIONS, xxx

CHIEF, CONSTRUCTION, xxx

CHIEF, CONTRACTING,xxx

CHIEF, PM-PB, xxx

CHIEF, DPM, xxx

Mill Creek General Investigation Feasibility Study and Environmental Assessment Report - DRAFT
Appendix D, Cost Engineering

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

Printed:1/6/2020
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****** CONTRACT COST SUMMARY ******

PROJECT: Mill Creek GI
 LOCATION: Walla Walla Washington
 This Estimate reflects the scope and schedule in report;

Mill Creek GI DDR

DISTRICT: Walla Walla District
 POC: CHIEF, COST ENGINEERING, xxx

PREPARED: 10/9/2019

Civil Works Work Breakdown Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)				TOTAL PROJECT COST (FULLY FUNDED)				
		Estimate Prepared:		9-Oct-19		Program Year (Budget EC):		2020						
		Effective Price Level:		1-Oct-19		Effective Price Level Date:		1 OCT 19						
		RISK BASED												
WBS NUMBER	Civil Works Feature & Sub-Feature Description	COST (\$K)	CNTG (\$K)	CNTG (%)	TOTAL (\$K)	ESC (%)	COST (\$K)	CNTG (\$K)	TOTAL (\$K)	Mid-Point Date	INFLATED (%)	COST (\$K)	CNTG (\$K)	FULL (\$K)
A	B	C	D	E	F	G	H	I	J	P	L	M	N	O
PHASE 1 or CONTRACT 1														
11	Small Levee Raise	\$866	\$355	41.0%	\$1,221	0.0%	\$866	\$355	\$1,221	2025Q2	17.0%	\$1,014	\$416	\$1,429
09	Pipe Column Repair	\$997	\$409	41.0%	\$1,406	0.0%	\$997	\$409	\$1,406	2025Q3	17.9%	\$1,176	\$482	\$1,658
09	Ceiling Repair	\$1,567	\$642	41.0%	\$2,209	0.0%	\$1,567	\$642	\$2,209	2025Q4	18.8%	\$1,862	\$763	\$2,625
09	Wall Tieback Repair	\$1,050	\$431	41.0%	\$1,481	0.0%	\$1,050	\$431	\$1,481	2025Q4	18.8%	\$1,247	\$511	\$1,759
CONSTRUCTION ESTIMATE TOTALS:		\$4,480	\$1,837	41.0%	\$6,317		\$4,480	\$1,837	\$6,317			\$5,298	\$2,172	\$7,470
01	LANDS AND DAMAGES	\$0	\$0	0.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
30	PLANNING, ENGINEERING & DESIGN													
2.5%	Project Management	\$112	\$46	41.0%	\$158	0.0%	\$112	\$46	\$158	2025Q1	20.7%	\$135	\$55	\$191
1.0%	Planning & Environmental Compliance	\$45	\$18	41.0%	\$63	0.0%	\$45	\$18	\$63	2025Q1	20.7%	\$54	\$22	\$76
15.0%	Engineering & Design	\$672	\$276	41.0%	\$948	0.0%	\$672	\$276	\$948	2025Q1	20.7%	\$811	\$333	\$1,144
1.0%	Reviews, ATRs, IEPRs, VE	\$45	\$18	41.0%	\$63	0.0%	\$45	\$18	\$63	2025Q1	20.7%	\$54	\$22	\$76
1.0%	Life Cycle Updates (cost, schedule, risks)	\$45	\$18	41.0%	\$63	0.0%	\$45	\$18	\$63	2025Q1	20.7%	\$54	\$22	\$76
1.0%	Contracting & Reprographics	\$45	\$18	41.0%	\$63	0.0%	\$45	\$18	\$63	2025Q1	20.7%	\$54	\$22	\$76
3.0%	Engineering During Construction	\$134	\$55	41.0%	\$190	0.0%	\$134	\$55	\$190	2025Q4	24.2%	\$167	\$68	\$235
2.0%	Planning During Construction	\$90	\$37	41.0%	\$126	0.0%	\$90	\$37	\$126	2025Q4	24.2%	\$111	\$46	\$157
3.0%	Adaptive Management & Monitoring	\$134	\$55	41.0%	\$190	0.0%	\$134	\$55	\$190	2025Q4	24.2%	\$167	\$68	\$235
1.0%	Project Operations	\$45	\$18	41.0%	\$63	0.0%	\$45	\$18	\$63	2025Q1	20.7%	\$54	\$22	\$76
31	CONSTRUCTION MANAGEMENT													
10.0%	Construction Management	\$448	\$184	41.0%	\$632	0.0%	\$448	\$184	\$632	2025Q4	24.2%	\$556	\$228	\$784
2.0%	Project Operation:	\$90	\$37	41.0%	\$126	0.0%	\$90	\$37	\$126	2025Q4	24.2%	\$111	\$46	\$157
2.5%	Project Management	\$112	\$46	41.0%	\$158	0.0%	\$112	\$46	\$158	2025Q4	24.2%	\$139	\$57	\$196
CONTRACT COST TOTALS:		\$6,496	\$2,663		\$9,159		\$6,496	\$2,663	\$9,159			\$7,767	\$3,184	\$10,952

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Appendix D, Cost Engineering

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

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PROJECT: Mill Creek GI
PROJECT NO: P2 xxxxxx
LOCATION: Walla Walla Washington

DISTRICT: Walla Walla District
POC: CHIEF, COST ENGINEERING, xxx

PREPARED: 10/9/2019

Moderate Levee Raise (1.2' Channel Levee Raise)

This Estimate reflects the scope and schedule in report;

Mill Creek GI DDR

Civil Works Work Breakdown Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)					TOTAL PROJECT COST (FULLY FUNDED)					
WBS NUMBER A	Civil Works Feature & Sub-Feature Description B	COST (\$K) C	CNTG (\$K) D	CNTG (%) E	TOTAL (\$K) F	ESC (%) G	COST (\$K) H	CNTG (\$K) I	TOTAL (\$K) J	Program Year (Budget EC): Effective Price Level Date: 2020 1 OCT 19	Spent Thru: 1-Oct-19 (\$K) K	TOTAL FIRST COST (\$K) K	INFLATED (%) L	COST (\$K) M	CNTG (\$K) N	FULL (\$K) O
09	Pipe Column Repair	\$997	\$409	41.0%	\$1,406	0.0%	\$997	\$409	\$1,406		\$0	\$1,406	17.0%	\$1,167	\$478	\$1,645
09	Ceiling Repair	\$1,567	\$642	41.0%	\$2,209	0.0%	\$1,567	\$642	\$2,209		\$0	\$2,209	17.9%	\$1,848	\$758	\$2,605
09	Wall Tieback Repair	\$1,050	\$431	41.0%	\$1,481	0.0%	\$1,050	\$431	\$1,481		\$0	\$1,481	18.8%	\$1,247	\$511	\$1,759
CONSTRUCTION ESTIMATE TOTALS:		\$5,701	\$2,337		\$8,038	0.0%	\$5,701	\$2,337	\$8,038		\$0	\$8,038	17.3%	\$6,686	\$2,741	\$9,428
01	LANDS AND DAMAGES	\$0	\$0 -		\$0	-	\$0	\$0	\$0		\$0	\$0	-	\$0	\$0	\$0
30	PLANNING, ENGINEERING & DESIGN	\$1,739	\$713	41.0%	\$2,452	0.0%	\$1,739	\$713	\$2,452		\$0	\$2,452	14.7%	\$1,995	\$818	\$2,813
31	CONSTRUCTION MANAGEMENT	\$827	\$339	41.0%	\$1,166	0.0%	\$827	\$339	\$1,166		\$0	\$1,166	20.7%	\$998	\$409	\$1,407
PROJECT COST TOTALS:		\$8,266	\$3,389	41.0%	\$11,656		\$8,266	\$3,389	\$11,656		\$0	\$11,656	17.1%	\$9,679	\$3,968	\$13,648

CHIEF, COST ENGINEERING, xxx

ESTIMATED TOTAL PROJECT COST: \$13,648

PROJECT MANAGER, xxx

CHIEF, REAL ESTATE, xxx

CHIEF, PLANNING, xxx

CHIEF, ENGINEERING, xxx

CHIEF, OPERATIONS, xxx

CHIEF, CONSTRUCTION, xxx

CHIEF, CONTRACTING, xxx

CHIEF, PM-PB, xxx

CHIEF, DPM, xxx

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PREPARED: 10/9/2019

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		Estimate Prepared:		9-Oct-19		Program Year (Budget EC):		2020						
		Effective Price Level:		1-Oct-19		Effective Price Level Date:		1 OCT 19						
		RISK BASED												
WBS NUMBER	Civil Works Feature & Sub-Feature Description	COST (\$K)	CNTG (\$K)	CNTG (%)	TOTAL (\$K)	ESC (%)	COST (\$K)	CNTG (\$K)	TOTAL (\$K)	Mid-Point Date	INFLATED (%)	COST (\$K)	CNTG (\$K)	FULL (\$K)
A	B	C	D	E	F	G	H	I	J	P	L	M	N	O
PHASE 1 or CONTRACT 1														
11	Moderate Levee Raise	\$2,087	\$856	41.0%	\$2,943	0.0%	\$2,087	\$856	\$2,943	2025Q1	16.2%	\$2,424	\$994	\$3,418
09	Pipe Column Repair	\$997	\$409	41.0%	\$1,406	0.0%	\$997	\$409	\$1,406	2025Q2	17.0%	\$1,167	\$478	\$1,645
09	Ceiling Repair	\$1,567	\$642	41.0%	\$2,209	0.0%	\$1,567	\$642	\$2,209	2025Q3	17.9%	\$1,848	\$758	\$2,605
09	Wall Tieback Repair	\$1,050	\$431	41.0%	\$1,481	0.0%	\$1,050	\$431	\$1,481	2025Q4	18.8%	\$1,247	\$511	\$1,759
CONSTRUCTION ESTIMATE TOTALS:		\$5,701	\$2,337	41.0%	\$8,038		\$5,701	\$2,337	\$8,038			\$6,686	\$2,741	\$9,428
01	LANDS AND DAMAGES	\$0	\$0	0.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
30	PLANNING, ENGINEERING & DESIGN													
2.5%	Project Management	\$143	\$58	41.0%	\$201	0.0%	\$143	\$58	\$201	2023Q1	12.0%	\$160	\$65	\$225
1.0%	Planning & Environmental Compliance	\$57	\$23	41.0%	\$80	0.0%	\$57	\$23	\$80	2023Q1	12.0%	\$64	\$26	\$90
15.0%	Engineering & Design	\$855	\$351	41.0%	\$1,206	0.0%	\$855	\$351	\$1,206	2023Q1	12.0%	\$958	\$393	\$1,350
1.0%	Reviews, ATRs, IEPRs, VE	\$57	\$23	41.0%	\$80	0.0%	\$57	\$23	\$80	2023Q1	12.0%	\$64	\$26	\$90
1.0%	Life Cycle Updates (cost, schedule, risks)	\$57	\$23	41.0%	\$80	0.0%	\$57	\$23	\$80	2023Q1	12.0%	\$64	\$26	\$90
1.0%	Contracting & Reprographics	\$57	\$23	41.0%	\$80	0.0%	\$57	\$23	\$80	2023Q1	12.0%	\$64	\$26	\$90
3.0%	Engineering During Construction	\$171	\$70	41.0%	\$241	0.0%	\$171	\$70	\$241	2025Q1	20.7%	\$206	\$85	\$291
2.0%	Planning During Construction	\$114	\$47	41.0%	\$161	0.0%	\$114	\$47	\$161	2025Q1	20.7%	\$138	\$56	\$194
3.0%	Adaptive Management & Monitoring	\$171	\$70	41.0%	\$241	0.0%	\$171	\$70	\$241	2026Q1	25.3%	\$214	\$88	\$302
1.0%	Project Operations	\$57	\$23	41.0%	\$80	0.0%	\$57	\$23	\$80	2023Q1	12.0%	\$64	\$26	\$90
31	CONSTRUCTION MANAGEMENT													
10.0%	Construction Management	\$570	\$234	41.0%	\$804	0.0%	\$570	\$234	\$804	2025Q1	20.7%	\$688	\$282	\$970
2.0%	Project Operation:	\$114	\$47	41.0%	\$161	0.0%	\$114	\$47	\$161	2025Q1	20.7%	\$138	\$56	\$194
2.5%	Project Management	\$143	\$58	41.0%	\$201	0.0%	\$143	\$58	\$201	2025Q1	20.7%	\$172	\$71	\$243
CONTRACT COST TOTALS:		\$8,266	\$3,389		\$11,656		\$8,266	\$3,389	\$11,656			\$9,679	\$3,968	\$13,648