

**US Army Corps  
of Engineers®**

# **Papillion Creek and Tributaries Lakes, Nebraska**

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General Reevaluation Report

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## **Appendix E. Cost Engineering**



**June 2021**

**Omaha District  
Northwestern Division  
Cost & General Engineering Branch  
Engineering Division**

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## **I. OVERVIEW OF APPENDIX**

This cost appendix provides a summary explanation of the project assumptions and other cost related aspects of the project. Greater detail on many project topics can be found in the other technical appendices.

## **II. CONTRACT ACQUISITION**

The contract acquisition strategy for the levee raise and floodwall construction on Little Papillion Creek and the nonstructural measures throughout the basin is anticipated to be small business. The contract acquisition strategy for Dam Site 10 and Dam Site 19 is anticipated to be full and open due to the technical requirements involved with constructing a dam.

## **III. COST METHODOLOGY**

### **A. General**

This Fully Funded Estimate (FFE) has been prepared to October 2020 price levels. The costs are considered to be fair and reasonable to a well-equipped and capable contractor and include overhead and profit. The preparation of this estimate was created in accordance with “ER 1110-1-1300 – Cost Engineering Policy and General Requirements, (26 March 1993)” and “ER 1110-2-1302 – Civil Works Cost Engineering, (revised 30 June 2016)”. The Fully Funded Estimate (FFE) was completed in accordance with “EM 1110-2-1304 – Civil Works Construction Cost Index System (CWCCIS), (revised 31 March 2019)”.

The estimate was developed using Micro Computer Aided Cost Estimate System (MCACES) MII v4.4.2 cost estimating software. Applicable crews and equipment were applied in the estimate to correspond with the work being performed. Material prices were developed using the MII Cost Book, R.S. Means references, and quotes obtained from suppliers.

### **B. Direct Cost**

Direct costs are based on the anticipated material, equipment, and labor needed to construct the project based on the current scope of work. Material quotes were obtained for the major cost items. Direct costs were calculated independent of the contractor assigned to perform the work. Contractor assignments were determined after the formulation of the direct costs.

#### **1. Labor-Rate Determination**

Labor rates are based on 2020 Omaha R.S. Means labor database with data from *RS Means Labor Rates for the Construction Industry 2020* book. Rates were checked to ensure they met or exceeded the minimum Davis-Bacon rates.

#### **2. Equipment Rates**

All equipment costs are from MII Equipment Region 5, 2018 and MII English Cost Book 2016.

**3. Fuel Rates**

Rates have been updated as of October 2020. Current fuel prices are updated prices from the Omaha, NE area. It comes from <http://www.neo.ne.gov> which includes: Regular gas, Midgrade, Premium and Diesel Fuel.

**4. Material Costs**

Material costs are from MII English Cost Book 2016. A budgetary quote for closure structures was obtained from FloodBreak in August 2020.

**5. Sales Tax**

Local taxes are applied to the project.

**6. Productivity**

An average productivity factor for the estimate of 85% was used.

**C. Indirect Costs**

**1. Prime Contractor**

**a. Job Office Overhead (JOOH)**

Overhead rates for JOOH were applied as a running percentage. In this case, a value of 10% was applied for the prime contractor and to subcontractor's work. JOOH includes work items such as trailers, utilities, surveying, reports, work plans and traffic control.

**b. Home Office Overhead (HOOH)**

Overhead rates for HOOH were applied as a running percentage. In this case, a value of 8% was applied for the prime contractor and on subcontractor's work. HOOH includes such items as office rental/ownership costs, utilities, office equipment ownership/maintenance, office staff (managers, accountants, clerical, etc.), insurance, and miscellaneous costs. In reality, the range of home office overhead can be quite broad and depends largely on the contractor's annual volume of work and the type of work that is generally performed by the contractor.

**c. Field Office Overhead (FOOH)**

Overhead rates for FOOH were applied as a direct percentage. In this case, a value of 6% was applied for the prime contractor and on subcontractor's work. FOOH primarily covers mobilization and demobilization costs.

**d. Profit**

Profit has been included as a percentage based on the Profit Weighted Guidelines for the prime contractor.

**e. Bond**

Bond was calculated off the Class A-1 bond table.



**f. Excise Tax**

No excise tax was included.

**g. Sub-Contractor**

1) Job Office Overhead (JOOH)

Overhead rates for JOOH were applied as a running percentage. In this case, a value of 10% was applied for the sub-contractor.

2) Home Office Overhead (HOOH)

Overhead rates for HOOH were applied as a running percentage. In this case, a value of 8% was applied for the sub-contractor.

3) Profit

Profit has been included as a percentage. In this case, a value of 7% was applied for the sub-contractor.

**D. Other Assumptions**

**1. Mobilization**

Equipment needs were identified from work items in the MII estimate. Equipment was assumed to be mobilized within 50 miles of the project. Costs are covered under the contractor's field office overhead markup.

**2. Government Furnished Materials**

The estimate is based on no government furnished materials.

**3. Weather Inefficiency**

At this phase of design, there are no weather inefficiency markups/delays expected due projected weather delay impacts.

**4. Site Access**

On-site haul roads will have to be constructed and maintained. No cost is included in the estimates for the maintenance and repair of local or county roads.

**5. Waste Disposal**

No waste will be hauled off-site except construction debris from the office. Assumed that contractor will dispose of office waste with waste at his home office.

**6. Material Factors**

The placing of topsoil is to be with minimum compaction so it is assumed the imported bank cubic yards is equal to the final in-place cubic yards including any loss factor, so that  $BCY = CCY/ECY$ . One of the limitations of the MII estimating software is cannot use CCY in the proper context so ECY or Embankment CY was developed so that ECY is the same as CCY which is the unit of measure normally used in earthwork projects.

The following material factors were applied to various materials in this estimate.

Topsoil:  
ECY = BCY  
BCY (1.2) = LCY

Random Fill:  
LCY (1.25) = ECY

#### **IV. TOTAL PROJECT COST**

The following project markups are added to the construction costs to determine the rough order of magnitude of what the total project cost will be from start of design to completed project.

##### **A. Escalation**

Escalation rates have been applied using the Total Project Cost Summary (TPCS) form. Midpoints for design and construction vary for each feature and are summarized in the project schedule. Durations for the design portion of the project are based on level of effort required for each feature. Durations for the construction portion of the project are based on durations calculated using MII.

##### **B. Contingencies**

An initial Cost and Schedule Risk Analysis (CSRA) was conducted 12 May 2020. The CSRA was last updated in March 2021 with updated costs and risks. The results from the updated CSRA produced a contingency of 31%. Contingency for real estate is calculated separately from the CSRA.

##### **C. (WBS 30) Planning, Engineering, and Design (PED)**

The work covered under this account includes the project management, engineering, and design costs spent to date as well as the remaining estimated costs that will be associated with the engineering and design for this project. For this phase of design, a PED cost of 10% of the construction costs is assumed.

##### **D. (WBS 31) Construction Management**

The work covered under this account includes the expected costs for contract supervision, contract and construction administration, technical management activities, district office supervision, and administration costs. For this type of construction, an S&A cost of 8% of the construction costs is assumed.

## V. CURRENT WORKING ESTIMATES

### Little Papillion Creek Levee Raise/Floodwall

	<b>Contract Cost (\$)</b>	<b>Contingency (\$)</b>	<b>Project Cost (\$)</b>
<b>Lands &amp; Damages</b>	11,650,215	2,330,043	13,980,258
<b>Mitigation</b>	15,687	4,863	20,550
<b>Construction Costs</b>	20,568,253	6,376,158	26,944,411
<b>Planning, Engineering, and Design</b>	2,058,394	638,102	2,696,496
<b>Construction Management</b>	1,646,715	510,482	2,157,197

### Dam Site 19 with Reservoir

	<b>Contract Cost (\$)</b>	<b>Contingency (\$)</b>	<b>Project Cost (\$)</b>
<b>Lands &amp; Damages</b>	4,966,263	993,253	5,959,516
<b>Mitigation</b>	244,622	75,833	320,455
<b>Construction Costs</b>	12,697,337	3,936,174	16,633,511
<b>Planning, Engineering, and Design</b>	1,294,196	401,201	1,695,397
<b>Construction Management</b>	1,035,357	320,961	1,356,318

### Dam Site 10 – Dry Dam

	<b>Contract Cost (\$)</b>	<b>Contingency (\$)</b>	<b>Project Cost (\$)</b>
<b>Lands &amp; Damages</b>	5,846,453	1,169,291	7,015,744
<b>Mitigation</b>	26,075	8,083	34,158
<b>Construction Costs</b>	8,679,148	2,690,536	11,369,684
<b>Planning, Engineering, and Design</b>	870,522	269,862	1,140,384
<b>Construction Management</b>	696,418	215,890	912,308

**Nonstructural**

	<b>Contract Cost (\$)</b>	<b>Contingency (\$)</b>	<b>Project Cost (\$)</b>
<b>Big Papillion Creek</b>	18,517,120	5,740,307	24,257,427
<b>Papillion Creek</b>	516,146	160,005	676,151
<b>Saddle Creek</b>	2,973,677	921,840	3,895,517
<b>South Papillion Creek</b>	2,987,569	926,146	3,913,715
<b>West Papillion Creek</b>	2,104,900	652,519	2,757,419
<b>Planning, Engineering, and Design</b>	2,709,941	840,082	3,550,023
<b>Construction Management</b>	2,167,953	672,065	2,840,018

**VI. PREVIOUS ESTIMATES**

Estimates were created for the tentatively selected plan (TSP). After the TSP was determined, an optimization was performed. These previously created estimates are presented at the end of the Cost Appendix with the optimization estimates listed first and the TSP estimates at the end.

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

Printed:7/19/2021  
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**PROJECT:** Papillion Creek General Reevaluation Report  
**PROJECT NO:** P2 445371  
**LOCATION:** Omaha, NE

**DISTRICT:** Omaha District  
**POC:** CHIEF, COST ENGINEERING, Tracy Wolz  
**PREPARED:** 7/9/2021

This Estimate reflects the scope and schedule in report; Final Feasibility Report and Environmental Assessment

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	Program Year (Budget EC): 2021 Effective Price Level Date: 1 OCT 20				TOTAL FIRST COST (\$K) K	INFLATED (%) L	COST (\$K) M	CNTG (\$K) N	FULL (\$K) O	
						ESC (%) G	COST (\$K) H	CNTG (\$K) I	TOTAL (\$K) J						Spent Thru: 1-Oct-20 (\$K)
02	RELOCATIONS	\$28,484	\$8,830	31.0%	\$37,314	0.0%	\$28,484	\$8,830	\$37,314	\$0	\$37,314	20.8%	\$34,403	\$10,665	\$45,068
04	DAMS	\$17,914	\$5,553	31.0%	\$23,467	0.0%	\$17,914	\$5,553	\$23,467	\$0	\$23,467	14.8%	\$20,573	\$6,378	\$26,951
06	FISH & WILDLIFE FACILITIES	\$286	\$89	31.0%	\$375	0.0%	\$286	\$89	\$375	\$0	\$375	19.0%	\$341	\$106	\$446
11	LEVEES & FLOODWALLS	\$20,102	\$6,232	31.0%	\$26,334	0.0%	\$20,102	\$6,232	\$26,334	\$0	\$26,334	19.4%	\$24,003	\$7,441	\$31,444
14	RECREATION FACILITIES	\$2,544	\$789	31.0%	\$3,333	0.0%	\$2,544	\$789	\$3,333	\$0	\$3,333	17.7%	\$2,994	\$928	\$3,922
	#N/A	\$0	\$0 -		\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
	#N/A	\$0	\$0 -		\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
	#N/A	\$0	\$0 -		\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
CONSTRUCTION ESTIMATE TOTALS:		\$69,331	\$21,492		\$90,823	0.0%	\$69,331	\$21,492	\$90,823	\$0	\$90,823	18.7%	\$82,315	\$25,518	\$107,832
01	LANDS AND DAMAGES	\$22,463	\$4,493	20.0%	\$26,956	0.0%	\$22,463	\$4,493	\$26,956	\$0	\$26,956	11.2%	\$24,987	\$4,997	\$29,984
30	PLANNING, ENGINEERING & DESIGN	\$6,933	\$2,149	31.0%	\$9,082	0.0%	\$6,933	\$2,149	\$9,082	\$0	\$9,082	12.0%	\$7,762	\$2,406	\$10,168
31	CONSTRUCTION MANAGEMENT	\$5,546	\$1,719	31.0%	\$7,266	0.0%	\$5,546	\$1,719	\$7,266	\$0	\$7,266	24.6%	\$6,908	\$2,142	\$9,050
PROJECT COST TOTALS:		\$104,273	\$29,854	28.6%	\$134,127		\$104,273	\$29,854	\$134,127	\$0	\$134,127	17.1%	\$121,972	\$35,063	\$157,034

CHIEF, COST ENGINEERING, Tracy Wolz

**ESTIMATED TOTAL PROJECT COST: \$157,034**

PROJECT MANAGER, Rachel Shrader

CHIEF, REAL ESTATE, xxx

CHIEF, PLANNING, xxx

CHIEF, ENGINEERING, xxx

CHIEF, OPERATIONS, xxx

CHIEF, CONSTRUCTION, xxx

CHIEF, CONTRACTING,xxx

CHIEF, PM-PB, xxxx

CHIEF, DPM, xxx

Contingency on Base Estimate		80% Confidence Project Cost
Base Construction Estimate		\$69,111,187
Baseline Estimate Cost Contingency Amount ->		\$21,424,468
Baseline Estimate Construction Cost (80% Confidence) ->		\$90,535,655
		31%

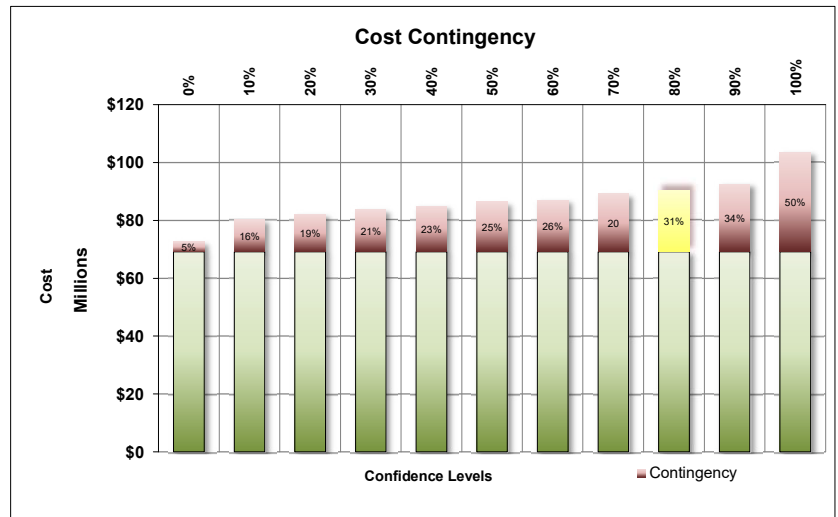
Contingency on Schedule		80% Confidence Project Schedule
Project Base Schedule Duration ->		39.8 Months
Schedule Contingency Duration ->		10.8 Months
Project Schedule Duration (80% Confidence) ->		50.6 Months
		27%

Papillion Creek GRR

## - PROJECT CONTINGENCY DEVELOPMENT -

### INITIAL CONSTRUCTION Contingency Analysis

Base Case Estimate (Excluding 01)	\$69,111,187	
Confidence Level	Contingency Value	Contingency
0%	3,455,559	5%
10%	11,057,790	16%
20%	13,131,126	19%
30%	14,513,349	21%
40%	15,895,573	23%
50%	17,277,797	25%
60%	17,968,909	26%
70%	20,042,244	29%
80%	21,424,468	31%
90%	23,497,804	34%
100%	34,555,594	50%

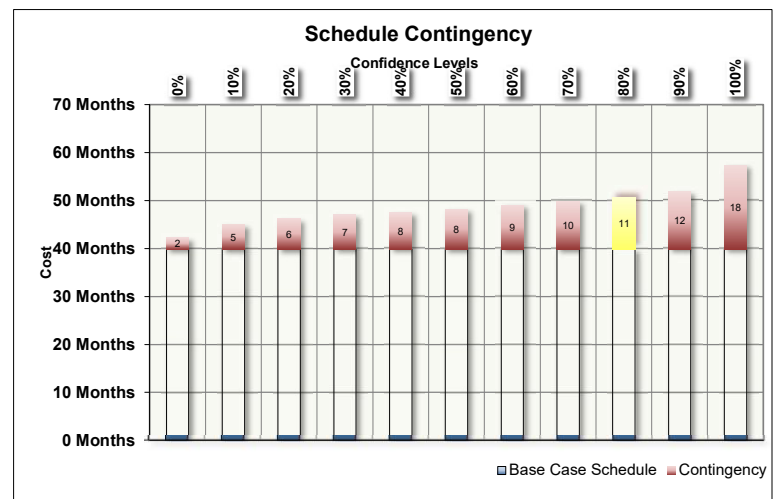


Papillion Creek GRR

## - SCHEDULE CONTINGENCY (DURATION) DEVELOPMENT -

### Contingency Analysis

Base Case Schedule	39.8 Months	
Confidence Level	Contingency Value	Contingency
0%	2 Months	6%
10%	5 Months	13%
20%	6 Months	16%
30%	7 Months	18%
40%	8 Months	19%
50%	8 Months	21%
60%	9 Months	23%
70%	10 Months	25%
80%	11 Months	27%
90%	12 Months	30%
100%	18 Months	44%



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							Qtr 4	2022	Qtr 1	Qtr 2	Qtr 3	Qtr 4	2023	Qtr 1	Qtr 2	Qtr 3	Qtr 4	2024	Qtr 1	Qtr 2	Qtr 3	Qtr 4	2025	Qtr 1	Qtr 2	Qtr 3	Qtr 4	2026	Qtr 1	Qtr 2	Qtr 3	Qtr 4	2027	Qtr 1	Qtr 2	Qtr 3	Qtr 4	2028	Qtr 1	Qtr 2
1		<div><div></div><div></div><div></div></div>	Dam Site 19	1196 days	Mon 1/3/22	Mon 8/3/26																																		
2		<div><div></div><div></div><div></div></div>	Concept Level Design & Investigation	61 days	Mon 1/3/22	Mon 3/28/22																																		
7		<div><div></div><div></div><div></div></div>	65% Plans & Specifications	105 days	Tue 3/29/22	Mon 8/22/22																																		
13		<div><div></div><div></div><div></div></div>	95% Plans & Specifications	164 days	Tue 8/23/22	Fri 4/7/23																																		
22		<div><div></div><div></div><div></div></div>	Acquire Real Estate	150 days	Mon 4/10/23	Fri 11/3/23																																		
23		<div><div></div><div></div><div></div></div>	Contracting	106 days	Fri 3/1/24	Fri 7/26/24																																		
29		<div><div></div><div></div><div></div></div>	Construction	526 days	Mon 7/29/24	Mon 8/3/26																																		
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31		<div><div></div><div></div><div></div></div>	Preconstruction Submittals	90 days	Tue 7/30/24	Mon 12/2/24																																		
32		<div><div></div><div></div><div></div></div>	Mobilization	1 day	Tue 12/3/24	Tue 12/3/24																																		
33		<div><div></div><div></div><div></div></div>	Dam Construction	434 days	Wed 12/4/24	Mon 8/3/26																																		
34		<div><div></div><div></div><div></div></div>	Spillway Excavation	360 days	Wed 12/4/24	Tue 4/21/26																																		
35		<div><div></div><div></div><div></div></div>	Embankment Placement & Compaction	360 days	Wed 12/4/24	Tue 4/21/26																																		
36		<div><div></div><div></div><div></div></div>	Outlet Structures	60 days	Mon 1/6/25	Fri 3/28/25																																		
37		<div><div></div><div></div><div></div></div>	Settling Basin	60 days	Mon 9/1/25	Fri 11/21/25																																		
38		<div><div></div><div></div><div></div></div>	Dam Instrumentati	30 days	Wed 4/22/26	Tue 6/2/26																																		
Project: Papillion Creek GRR Sch Date: Thu 3/25/21			Task	<div><div></div><div></div><div></div></div>	Project Summary	<div><div></div><div></div><div></div></div>	Manual Task	<div><div></div><div></div><div></div></div>	Start-only	<div><div></div><div></div><div></div></div>	Deadline	<div><div></div><div></div><div></div></div>																												
			Split	<div><div></div><div></div><div></div></div>	Inactive Task	<div><div></div><div></div><div></div></div>	Duration-only	<div><div></div><div></div><div></div></div>	Finish-only	<div><div></div><div></div><div></div></div>	Progress	<div><div></div><div></div><div></div></div>																												
			Milestone	<div><div></div><div></div><div></div></div>	Inactive Milestone	<div><div></div><div></div><div></div></div>	Manual Summary Rollup	<div><div></div><div></div><div></div></div>	External Tasks	<div><div></div><div></div><div></div></div>	Manual Progress	<div><div></div><div></div><div></div></div>																												
			Summary	<div><div></div><div></div><div></div></div>	Inactive Summary	<div><div></div><div></div><div></div></div>	Manual Summary	<div><div></div><div></div><div></div></div>	External Milestone	<div><div></div><div></div><div></div></div>																														
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39		<div><div></div><div></div></div>	Final Punchlist	14 days	Wed 7/15/26	Mon 8/3/26																																																																
40		<div><div></div><div></div></div>	Recreation Facilities	60 days	Wed 4/22/26	Tue 7/14/26																																																																
41		<div><div></div><div></div></div>	Parking Lot	60 days	Wed 4/22/26	Tue 7/14/26																																																																
42		<div><div></div><div></div></div>	Trail	60 days	Wed 4/22/26	Tue 7/14/26																																																																
43		<div><div></div><div></div></div>	Dam Site 10	1172 days	Thu 9/1/22	Fri 2/26/27																																																																
44		<div><div></div><div></div></div>	Concept Level Design & Investigation	61 days	Thu 9/1/22	Thu 11/24/22																																																																
49		<div><div></div><div></div></div>	65% Plans & Specifications	105 days	Fri 11/25/22	Thu 4/20/23																																																																
55		<div><div></div><div></div></div>	95% Plans & Specifications	164 days	Fri 4/21/23	Wed 12/6/23																																																																
64		<div><div></div><div></div></div>	Acquire Real Estate	240 days	Thu 12/7/23	Wed 11/6/24																																																																
65		<div><div></div><div></div></div>	Contracting	106 days	Thu 11/7/24	Thu 4/3/25																																																																
71		<div><div></div><div></div></div>	Construction	496 days	Fri 4/4/25	Fri 2/26/27																																																																
72		<div><div></div><div></div></div>	Notice To Proceed	1 day	Fri 4/4/25	Fri 4/4/25																																																																
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74		<div><div></div><div></div></div>	Mobilization	1 day	Mon 8/11/25	Mon 8/11/25																																																																
75		<div><div></div><div></div></div>	Dam Construction	404 days	Tue 8/12/25	Fri 2/26/27																																																																
76		<div><div></div><div></div></div>	Spillway Excavation	360 days	Tue 8/12/25	Mon 12/28/26																																																																
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Project: Papillion Creek GRR Sch  
Date: Thu 3/25/21

Task

Split

Milestone

Summary

Project Summary

Inactive Task

Inactive Milestone

Inactive Summary

Manual Task

Duration-only

Manual Summary Rollup

Manual Summary

Start-only

Finish-only

External Tasks

External Milestone

Deadline

Progress

Manual Progress

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ID	<div><div></div><div>i</div></div>	Task Mode	Task Name	Duration	Start	Finish	2022																																2023				2024				2025				2026				2027				2028				2029							
							Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4																															
78		<div><div></div><div></div></div>	Outlet Structures	30 days	Mon 10/6/25	Fri 11/14/25																																																																
79		<div><div></div><div></div></div>	Dam Instrumentati	30 days	Tue 12/29/26	Mon 2/8/27																																																																
80		<div><div></div><div></div></div>	Final Punchlist	14 days	Tue 2/9/27	Fri 2/26/27																																																																
81		<div><div></div><div></div></div>	Little Papillion Levee Raise	1235 days	Wed 3/1/23	Tue 11/23/27																																																																
82		<div><div></div><div></div></div>	Concept Level Design & Investigation	61 days	Wed 3/1/23	Wed 5/24/23																																																																
87		<div><div></div><div></div></div>	65% Plans & Specifications	105 days	Thu 5/25/23	Wed 10/18/23																																																																
93		<div><div></div><div></div></div>	95% Plans & Specifications	164 days	Thu 10/19/23	Tue 6/4/24																																																																
102		<div><div></div><div></div></div>	Acquire Real Estate	180 days	Wed 6/5/24	Tue 2/11/25																																																																
103		<div><div></div><div></div></div>	Contracting	106 days	Wed 2/12/25	Wed 7/9/25																																																																
104		<div><div></div><div></div></div>	Contracting Prepare Package	14 days	Wed 2/12/25	Mon 3/3/25																																																																
105		<div><div></div><div></div></div>	Solicitation	60 days	Tue 3/4/25	Mon 5/26/25																																																																
106		<div><div></div><div></div></div>	Bid Opening	1 day	Tue 5/27/25	Tue 5/27/25																																																																
107		<div><div></div><div></div></div>	Award Process	30 days	Wed 5/28/25	Tue 7/8/25																																																																
108		<div><div></div><div></div></div>	Award	1 day	Wed 7/9/25	Wed 7/9/25																																																																
109		<div><div></div><div></div></div>	Construction	619 days	Thu 7/10/25	Tue 11/23/27																																																																
110		<div><div></div><div></div></div>	Notice To Proceed	1 day	Thu 7/10/25	Thu 7/10/25																																																																
111		<div><div></div><div></div></div>	Preconstruction Submittals	90 days	Fri 7/11/25	Thu 11/13/25																																																																

Project: Papillion Creek GRR Sch

Date: Thu 3/25/21

Task

Split

Milestone

Summary

Project Summary

Inactive Task

Inactive Milestone

Inactive Summary

Manual Task

Duration-only

Manual Summary Rollup

Manual Summary

Start-only

Finish-only

External Tasks

External Milestone

Deadline

Progress

Manual Progress

Page 3



ID	<div><div>i</div></div>	Task Mode	Task Name	Duration	Start	Finish																																
							Qtr 4	2022 Qtr 1	Qtr 2	Qtr 3	Qtr 4	2023 Qtr 1	Qtr 2	Qtr 3	Qtr 4	2024 Qtr 1	Qtr 2	Qtr 3	Qtr 4	2025 Qtr 1	Qtr 2	Qtr 3	Qtr 4	2026 Qtr 1	Qtr 2	Qtr 3	Qtr 4	2027 Qtr 1	Qtr 2	Qtr 3	Qtr 4	2028 Qtr 1	Qtr 2	Qtr 3	Qtr 4	2029 Qtr 1	Qtr 2	Qtr 3
144		<div><div></div></div>	Contracting Prepare Package	14 days	Fri 3/1/24	Wed 3/20/24																																
145		<div><div></div></div>	Solicitation	60 days	Thu 3/21/24	Wed 6/12/24																																
146		<div><div></div></div>	Bid Opening	1 day	Thu 6/13/24	Thu 6/13/24																																
147		<div><div></div></div>	Award Process	30 days	Fri 6/14/24	Thu 7/25/24																																
148		<div><div></div></div>	Award	1 day	Fri 7/26/24	Fri 7/26/24																																
149		<div><div></div></div>	Construction	1397 days	Mon 7/29/24	Tue 12/4/29																																
150		<div><div></div></div>	Notice To Proceed	1 day	Mon 7/29/24	Mon 7/29/24																																
151		<div><div></div></div>	Preconstruction Submittals	90 days	Tue 7/30/24	Mon 12/2/24																																
152		<div><div></div></div>	Mobilization	1 day	Tue 12/3/24	Tue 12/3/24																																
153		<div><div></div></div>	Nonstructural Implementation	1305 days	Wed 12/4/24	Tue 12/4/29																																
154		<div><div></div></div>	Year 1 Implementati	261 days	Wed 12/4/24	Wed 12/3/25																																
155		<div><div></div></div>	Year 2 Implementati	261 days	Thu 12/4/25	Thu 12/3/26																																
156		<div><div></div></div>	Year 3 Implementati	261 days	Fri 12/4/26	Fri 12/3/27																																
157		<div><div></div></div>	Year 4 Implementati	261 days	Mon 12/6/27	Mon 12/4/28																																
158		<div><div></div></div>	Year 5 Implementati	261 days	Tue 12/5/28	Tue 12/4/29																																
Project: Papillion Creek GRR Sch Date: Thu 3/25/21			Task	<div><div></div></div>	Project Summary	<div><div></div></div>	Manual Task	<div><div></div></div>	Start-only	<div><div></div></div>	Deadline	<div><div></div></div>																										
			Split	<div><div></div></div>	Inactive Task	<div><div></div></div>	Duration-only	<div><div></div></div>	Finish-only	<div><div></div></div>	Progress	<div><div></div></div>																										
			Milestone	<div><div></div></div>	Inactive Milestone	<div><div></div></div>	Manual Summary Rollup	<div><div></div></div>	External Tasks	<div><div></div></div>	Manual Progress	<div><div></div></div>																										
			Summary	<div><div></div></div>	Inactive Summary	<div><div></div></div>	Manual Summary	<div><div></div></div>	External Milestone	<div><div></div></div>																												
Page 5																																						

CI17819 Final Proposed Plan  
Project Markups:

## Current Working Estimate

S&A 8% (Displayed as SIOH)  
E&D 10% (Displayed as MiscOwner)  
Construction Contingency: 31% (as determined by CSRA)  
Real Estate Contingency: 20% (as described in Real Estate Appendix)

This project includes levees, floodwalls, and dam construction throughout the Papillion Creek basin. There are two dams included in the estimate. On South Papillion Creek, Dam Site 19 will be constructed. Little Papillion Creek includes Dam Site 10 (technically on Thomas Creek but the benefits are shown on Little Papillion Creek) and a levee/floodwall downstream. The estimate is organized by reach. Some of the bridges along the new levee/levee raise will require closure structures. In most areas of the project, there is a trail running along one side of the creek. Therefore costs to replace the trail were included where work was being performed. Since the trails are already existing, this is included in the construction cost and is not considered recreation that has a different federal/sponsor cost share amount. It is assumed that the project will be scheduled so that overtime is not required. A productivity rate of 85% is assumed due to site constraints. The fill material for the levee raise will be purchased within a 10 mile one-way haul distance of the project site.

Estimated by  
Designed by  
Prepared by Elizabeth Peterson

Preparation Date 11/10/2020  
Effective Date of Pricing 11/10/2020  
Estimated Construction Time Days

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Description	Quantity	UOM	ContractCost	ProjectCost
<b>Summary</b>			<b>91,793,465</b>	<b>134,126,657</b>
<b>Lands and Damages</b>	<b>1</b>	<b>EA</b>	<b>22,462,931</b>	<b>26,955,517</b>
Little Papillion Levee Raise Real Estate	1	EA	11,650,215	13,980,258
Dam Site 10 Real Estate	1	EA	5,846,453	7,015,744
Dam Site 19 Real Estate	1	EA	4,966,263	5,959,516
<b>Relocations</b>	<b>1</b>	<b>EA</b>	<b>28,483,764</b>	<b>44,030,202</b>
Little Papillion Levee Raise Utility Relocations	1	EA	380,607	588,342
Little Papillion Creek Levee Raise Real Estate Considerations	1	EA	85,289	131,839
Dam Site 10 Real Estate Considerations	1	EA	670,464	1,036,404
Dam Site 19 Real Estate Considerations	1	EA	247,993	383,347
Nonstructural Plan	1	EA	27,099,412	41,890,271
<b>Dams</b>	<b>1</b>	<b>EA</b>	<b>17,913,880</b>	<b>27,691,276</b>
Dam Site 10 - Dry Dam	1	EA	8,008,684	12,379,824
Dam Site 19 with Reservoir	1	EA	9,905,196	15,311,452
<b>Mitigation</b>	<b>1</b>	<b>EA</b>	<b>286,384</b>	<b>442,692</b>
Little Papillion Levee Raise Mitigation	1	EA	15,687	24,249
Dam Site 10 Mitigation	1	EA	26,075	40,307
Dam Site 19 Mitigation	1	EA	244,622	378,137
<b>Levees and Floodwalls</b>	<b>1</b>	<b>EA</b>	<b>20,102,358</b>	<b>31,074,225</b>
Little Papillion Levee Raise and Floodwall (100 Year + 3')	1	EA	20,102,358	31,074,225
<b>Recreation Facilities</b>	<b>1</b>	<b>EA</b>	<b>2,544,148</b>	<b>3,932,744</b>
Dam Site 19 Recreation Facilities	1	EA	2,544,148	3,932,744

# Dry Dam Site 19 FRM Optimization

C117819 TSP Optimization Dry DS19 for Econ  
Project Markups:

S&A 8% (Displayed as SIOH)  
E&D 10% (Displayed as MiscOwner)  
Contingency: 25% (as determined by CSRA)

This project includes levees, floodwalls, channel widening, and dam construction throughout the Papillion Creek basin. There are two dams included in the estimate. The dams are costed as both dry dams and dams with a reservoir to determine what portion of the dam with a reservoir should be allocated to recreation. On West Papillion Creek, a floodwall and levee will be constructed. On South Papillion Creek, Dam Site 19 will be constructed. Little Papillion Creek includes Dam Site 10 (technically on Thomas Creek but the benefits are shown on Little Papillion Creek) and a levee/floodwall downstream. Big Papillion Creek includes channel widening, levee raises and floodwalls. The estimate is organized by reach. Some of the bridges along the new levee/levee raise will require closure structures. In most areas of the project, there is a trail running along one side of the creek. Therefore costs to replace the trail were included where work was being performed. Since the trails are already existing, this is included in the construction cost and is not considered recreation that has a different federal/sponsor cost share amount. It is assumed that the project will be scheduled so that overtime is not required. The fill material for the levee raise will be purchased (\$5/CY) within a 10 mile one-way haul distance of the project site.

Estimated by  
Designed by  
Prepared by Elizabeth Peterson

Preparation Date 1/4/2021  
Effective Date of Pricing 1/4/2021  
Estimated Construction Time Days

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Description	Quantity	UOM	ContractCost	ProjectCost
<b>DS19 - After ADM Dry Dam Design</b>			<b>6,203,148</b>	<b>9,149,644</b>
<b>Dry Dam Site 19 (ADM Dry Dam Design) with Spillway Invert EL 1172.4 and TOD EL 1183.9</b>	<b>1</b>	<b>EA</b>	<b>6,203,148</b>	<b>9,149,644</b>
<b>Dry Dam Site 19</b>	<b>1</b>	<b>EA</b>	<b>6,203,148</b>	<b>9,149,644</b>
<b>Embankment &amp; Spillway</b>	<b>1</b>	<b>EA</b>	<b>4,625,304</b>	<b>6,822,323</b>
<b>Embankment</b>	<b>316,100</b>	<b>BCY</b>	<b>2,602,950</b>	<b>3,839,352</b>
<b>Spillway</b>	<b>295,500</b>	<b>CY</b>	<b>2,022,354</b>	<b>2,982,972</b>
<b>Structures</b>	<b>1</b>	<b>EA</b>	<b>1,134,133</b>	<b>1,672,846</b>
<b>Intake Structure</b>	<b>1</b>	<b>EA</b>	<b>73,238</b>	<b>108,026</b>
<b>Stilling Basin</b>	<b>200</b>	<b>CY</b>	<b>161,106</b>	<b>237,631</b>
<b>Conduit, Cradle and Manhole</b>	<b>1</b>	<b>EA</b>	<b>391,898</b>	<b>578,049</b>
<b>Dewatering</b>	<b>1</b>	<b>EA</b>	<b>46,519</b>	<b>68,616</b>
<b>Filter Drain</b>	<b>1</b>	<b>EA</b>	<b>461,372</b>	<b>680,524</b>
<b>Reservoir</b>	<b>1</b>	<b>EA</b>	<b>263,755</b>	<b>389,039</b>
<b>Dam Instrumentation</b>	<b>1</b>	<b>EA</b>	<b>179,956</b>	<b>265,435</b>

# Dam Site 10 Optimization

C117819 TSP Optimization  
Project Markups:

Contingency: 36% (as determined by CSRA)  
S&A 8% (Displayed as SIOH)  
E&D 10% (Displayed as MiscOwner)

This project includes levees, floodwalls, channel widening, and dam construction throughout the Papillion Creek basin. There are two dams included in the estimate. The dams are costed as both dry dams and dams with a reservoir to determine what portion of the dam with a reservoir should be allocated to recreation. On West Papillion Creek, a floodwall and levee will be constructed. On South Papillion Creek, Dam Site 19 will be constructed. Little Papillion Creek includes Dam Site 10 (technically on Thomas Creek but the benefits are shown on Little Papillion Creek) and a levee/floodwall downstream. Big Papillion Creek includes channel widening, levee raises and floodwalls. The estimate is organized by reach. Some of the bridges along the new levee/levee raise will require closure structures. In most areas of the project, there is a trail running along one side of the creek. Therefore costs to replace the trail were included where work was being performed. Since the trails are already existing, this is included in the construction cost and is not considered recreation that has a different federal/sponsor cost share amount. It is assumed that the project will be scheduled so that overtime is not required. The fill material for the levee raise will be purchased (\$5/CY) within a 10 mile one-way haul distance of the project site.

Estimated by  
Designed by  
Prepared by Elizabeth Peterson

Preparation Date 6/5/2020  
Effective Date of Pricing 6/5/2020  
Estimated Construction Time Days

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Description	Quantity	UOM	ContractCost	ProjectCost
<b>DS10 - After ADM Dry Dam Design</b>			<b>9,145,182</b>	<b>14,083,581</b>
<b>Dry Dam Site 10 (After ADM Dry Dam Design) with Spillway Invert EL 1191.6 and TOD EL 1207.4</b>	<b>1</b>	<b>EA</b>	<b>9,145,182</b>	<b>14,083,581</b>
<b>Dam Site 10 - Dry Dam</b>	<b>1</b>	<b>EA</b>	<b>9,145,182</b>	<b>14,083,581</b>
<b>Embankment &amp; Spillway</b>	<b>1</b>	<b>EA</b>	<b>7,111,508</b>	<b>10,951,722</b>
<b>Embankment</b>	<b>387,617</b>	<b>BCY</b>	<b>3,771,657</b>	<b>5,808,352</b>
<b>Spillway</b>	<b>425,500</b>	<b>CY</b>	<b>3,339,851</b>	<b>5,143,371</b>
<b>Structures</b>	<b>1</b>	<b>EA</b>	<b>1,693,498</b>	<b>2,607,986</b>
<b>Low Level Intake</b>	<b>1</b>	<b>EA</b>	<b>63,412</b>	<b>97,655</b>
<b>Intake Structure</b>	<b>1</b>	<b>EA</b>	<b>72,385</b>	<b>111,472</b>
<b>Stilling Basin</b>	<b>1</b>	<b>EA</b>	<b>61,734</b>	<b>95,071</b>
<b>Conduit, Cradle and Manhole</b>	<b>1</b>	<b>EA</b>	<b>280,703</b>	<b>432,282</b>
<b>Settling Basin</b>	<b>1</b>	<b>EA</b>	<b>723,981</b>	<b>1,114,930</b>
<b>Filter Drain</b>	<b>1</b>	<b>EA</b>	<b>491,283</b>	<b>756,575</b>
<b>Reservoir</b>	<b>1</b>	<b>EA</b>	<b>340,177</b>	<b>523,872</b>

Description	Quantity	UOM	ContractCost	ProjectCost
<b>DS10 - After ADM Dam Design (Cost Op)</b>			<b>10,089,054</b>	<b>15,537,143</b>
<b>Dry Dam Site 10 (After ADM Dry Dam Design - Cost Op) with Spillway Invert EL 1182.0 and TOD EL 1200.7</b>	<b>1</b>	<b>EA</b>	<b>10,089,054</b>	<b>15,537,143</b>
<b>Dam Site 10 - Dry Dam</b>	<b>1</b>	<b>EA</b>	<b>10,089,054</b>	<b>15,537,143</b>
<b>Embankment &amp; Spillway</b>	<b>1</b>	<b>EA</b>	<b>8,055,380</b>	<b>12,405,285</b>
<b>Embankment</b>	<b>261,167</b>	<b>BCY</b>	<b>2,849,871</b>	<b>4,388,801</b>
<b>Spillway</b>	<b>521,800</b>	<b>CY</b>	<b>5,205,509</b>	<b>8,016,484</b>
<b>Structures</b>	<b>1</b>	<b>EA</b>	<b>1,693,498</b>	<b>2,607,986</b>
<b>Low Level Intake</b>	<b>1</b>	<b>EA</b>	<b>63,412</b>	<b>97,655</b>
<b>Intake Structure</b>	<b>1</b>	<b>EA</b>	<b>72,385</b>	<b>111,472</b>
<b>Stilling Basin</b>	<b>1</b>	<b>EA</b>	<b>61,734</b>	<b>95,071</b>
<b>Conduit, Cradle and Manhole</b>	<b>1</b>	<b>EA</b>	<b>280,703</b>	<b>432,282</b>
<b>Settling Basin</b>	<b>1</b>	<b>EA</b>	<b>723,981</b>	<b>1,114,930</b>
<b>Filter Drain</b>	<b>1</b>	<b>EA</b>	<b>491,283</b>	<b>756,575</b>
<b>Reservoir</b>	<b>1</b>	<b>EA</b>	<b>340,177</b>	<b>523,872</b>

# Dam Site 19 Optimization

C117819 TSP Optimization  
Project Markups:

Contingency: 36% (as determined by CSRA)  
S&A 8% (Displayed as SIOH)  
E&D 10% (Displayed as MiscOwner)

This project includes levees, floodwalls, channel widening, and dam construction throughout the Papillion Creek basin. There are two dams included in the estimate. The dams are costed as both dry dams and dams with a reservoir to determine what portion of the dam with a reservoir should be allocated to recreation. On West Papillion Creek, a floodwall and levee will be constructed. On South Papillion Creek, Dam Site 19 will be constructed. Little Papillion Creek includes Dam Site 10 (technically on Thomas Creek but the benefits are shown on Little Papillion Creek) and a levee/floodwall downstream. Big Papillion Creek includes channel widening, levee raises and floodwalls. The estimate is organized by reach. Some of the bridges along the new levee/levee raise will require closure structures. In most areas of the project, there is a trail running along one side of the creek. Therefore costs to replace the trail were included where work was being performed. Since the trails are already existing, this is included in the construction cost and is not considered recreation that has a different federal/sponsor cost share amount. It is assumed that the project will be scheduled so that overtime is not required. The fill material for the levee raise will be purchased (\$5/CY) within a 10 mile one-way haul distance of the project site.

Estimated by  
Designed by  
Prepared by Elizabeth Peterson

Preparation Date 6/5/2020  
Effective Date of Pricing 6/5/2020  
Estimated Construction Time Days

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Description	Quantity	UOM	ContractCost	ProjectCost
<b>DS19 - ADM Wet Dam Design</b>			<b>8,936,873</b>	<b>13,762,785</b>
<b>Dam Site 19 with Reservoir (ADM Wet Dam Design) with Spillway Invert EL 1177.5 and TOD EL 1188.7</b>	<b>1</b>	<b>EA</b>	<b>8,936,873</b>	<b>13,762,785</b>
<b>Dam Site 19 with Reservoir</b>	<b>1</b>	<b>EA</b>	<b>8,936,873</b>	<b>13,762,785</b>
<b>Embankment &amp; Spillway</b>	<b>1</b>	<b>EA</b>	<b>6,864,772</b>	<b>10,571,750</b>
<b>Embankment</b>	<b>414,050</b>	<b>BCY</b>	<b>5,162,163</b>	<b>7,949,731</b>
<b>Spillway</b>	<b>245,000</b>	<b>CY</b>	<b>1,702,610</b>	<b>2,622,019</b>
<b>Structures</b>	<b>1</b>	<b>EA</b>	<b>1,786,756</b>	<b>2,751,604</b>
<b>Intake Structure</b>	<b>1</b>	<b>EA</b>	<b>72,385</b>	<b>111,472</b>
<b>Stilling Basin</b>	<b>200</b>	<b>CY</b>	<b>166,505</b>	<b>256,418</b>
<b>Conduit, Cradle and Manhole</b>	<b>1</b>	<b>EA</b>	<b>332,602</b>	<b>512,207</b>
<b>Settling Basin</b>	<b>1</b>	<b>EA</b>	<b>723,981</b>	<b>1,114,930</b>
<b>Filter Drain</b>	<b>1</b>	<b>EA</b>	<b>491,283</b>	<b>756,575</b>
<b>Reservoir</b>	<b>1</b>	<b>EA</b>	<b>285,345</b>	<b>439,431</b>

Description	Quantity	UOM	ContractCost	ProjectCost
<b>DS19 - After ADM Wet Dam Design - NRD Pool</b>			<b>11,457,712</b>	<b>17,644,876</b>
<b>Dam Site 19 with Reservoir (After ADM Wet Design - NRD Pool) with Spillway Invert EL 1177.5 and TOD EL 1186.3</b>	<b>1</b>	<b>EA</b>	<b>11,457,712</b>	<b>17,644,876</b>
<b>Dam Site 19 with Reservoir</b>	<b>1</b>	<b>EA</b>	<b>11,457,712</b>	<b>17,644,876</b>
<b>Embankment &amp; Spillway</b>	<b>1</b>	<b>EA</b>	<b>9,385,611</b>	<b>14,453,841</b>
<b>Embankment</b>	<b>361,800</b>	<b>BCY</b>	<b>3,818,876</b>	<b>5,881,069</b>
<b>Spillway</b>	<b>583,970</b>	<b>CY</b>	<b>5,566,735</b>	<b>8,572,772</b>
<b>Structures</b>	<b>1</b>	<b>EA</b>	<b>1,786,756</b>	<b>2,751,604</b>
<b>Intake Structure</b>	<b>1</b>	<b>EA</b>	<b>72,385</b>	<b>111,472</b>
<b>Stilling Basin</b>	<b>200</b>	<b>CY</b>	<b>166,505</b>	<b>256,418</b>
<b>Conduit, Cradle and Manhole</b>	<b>1</b>	<b>EA</b>	<b>332,602</b>	<b>512,207</b>
<b>Settling Basin</b>	<b>1</b>	<b>EA</b>	<b>723,981</b>	<b>1,114,930</b>
<b>Filter Drain</b>	<b>1</b>	<b>EA</b>	<b>491,283</b>	<b>756,575</b>
<b>Reservoir</b>	<b>1</b>	<b>EA</b>	<b>285,345</b>	<b>439,431</b>

Description	Quantity	UOM	ContractCost	ProjectCost
<b>DS19 - ADM Dry Dam Design</b>			<b>7,650,208</b>	<b>11,781,321</b>
<b>Dry Dam Site 19 (ADM Dry Dam Design) with Spillway Invert EL 1172.4 and TOD EL 1183.9</b>	<b>1</b>	<b>EA</b>	<b>7,650,208</b>	<b>11,781,321</b>
<b>Dry Dam Site 19</b>	<b>1</b>	<b>EA</b>	<b>7,650,208</b>	<b>11,781,321</b>
<b>Embankment &amp; Spillway</b>	<b>1</b>	<b>EA</b>	<b>5,253,335</b>	<b>8,090,136</b>
<b>Embankment</b>	<b>316,100</b>	<b>BCY</b>	<b>2,810,097</b>	<b>4,327,549</b>
<b>Spillway</b>	<b>302,120</b>	<b>CY</b>	<b>2,443,238</b>	<b>3,762,587</b>
<b>Structures</b>	<b>1</b>	<b>EA</b>	<b>1,907,651</b>	<b>2,937,783</b>
<b>Intake Structure</b>	<b>1</b>	<b>EA</b>	<b>72,385</b>	<b>111,472</b>
<b>Stilling Basin</b>	<b>200</b>	<b>CY</b>	<b>166,505</b>	<b>256,418</b>
<b>Conduit, Cradle and Manhole</b>	<b>1</b>	<b>EA</b>	<b>401,328</b>	<b>618,045</b>
<b>Settling Basin</b>	<b>1</b>	<b>EA</b>	<b>723,981</b>	<b>1,114,930</b>
<b>Dewatering</b>	<b>1</b>	<b>EA</b>	<b>52,169</b>	<b>80,341</b>
<b>Filter Drain</b>	<b>1</b>	<b>EA</b>	<b>491,283</b>	<b>756,575</b>
<b>Reservoir</b>	<b>1</b>	<b>EA</b>	<b>309,266</b>	<b>476,270</b>
<b>Dam Instrumentation</b>	<b>1</b>	<b>EA</b>	<b>179,956</b>	<b>277,132</b>

Description	Quantity	UOM	ContractCost	ProjectCost
<b>DS19 - After ADM Wet Dam Design - Cost Op</b>			<b>12,017,915</b>	<b>18,507,589</b>
<b>Dam Site 19 with Reservoir (After ADM Wet Design - Cost Op) with Spillway Invert EL 1175.6 and TOD EL 1184.5</b>	<b>1</b>	<b>EA</b>	<b>12,017,915</b>	<b>18,507,589</b>
<b>Dam Site 19 with Reservoir</b>	<b>1</b>	<b>EA</b>	<b>12,017,915</b>	<b>18,507,589</b>
<b>Embankment &amp; Spillway</b>	<b>1</b>	<b>EA</b>	<b>9,945,814</b>	<b>15,316,554</b>
<b>Embankment</b>	<b>327,200</b>	<b>BCY</b>	<b>3,583,551</b>	<b>5,518,669</b>
<b>Spillway</b>	<b>633,400</b>	<b>CY</b>	<b>6,362,263</b>	<b>9,797,884</b>
<b>Structures</b>	<b>1</b>	<b>EA</b>	<b>1,786,756</b>	<b>2,751,604</b>
<b>Intake Structure</b>	<b>1</b>	<b>EA</b>	<b>72,385</b>	<b>111,472</b>
<b>Stilling Basin</b>	<b>200</b>	<b>CY</b>	<b>166,505</b>	<b>256,418</b>
<b>Conduit, Cradle and Manhole</b>	<b>1</b>	<b>EA</b>	<b>332,602</b>	<b>512,207</b>
<b>Settling Basin</b>	<b>1</b>	<b>EA</b>	<b>723,981</b>	<b>1,114,930</b>
<b>Filter Drain</b>	<b>1</b>	<b>EA</b>	<b>491,283</b>	<b>756,575</b>
<b>Reservoir</b>	<b>1</b>	<b>EA</b>	<b>285,345</b>	<b>439,431</b>

# Dam Site 19 Recreation Only Analysis

CI17819 TSP Optimization Updated Libraries  
Project Markups:

Contingency: 36% (as determined by CSRA)  
S&A 8% (Displayed as SIOH)  
E&D 10% (Displayed as MiscOwner)

This project includes levees, floodwalls, channel widening, and dam construction throughout the Papillion Creek basin. There are two dams included in the estimate. The dams are costed as both dry dams and dams with a reservoir to determine what portion of the dam with a reservoir should be allocated to recreation. On West Papillion Creek, a floodwall and levee will be constructed. On South Papillion Creek, Dam Site 19 will be constructed. Little Papillion Creek includes Dam Site 10 (technically on Thomas Creek but the benefits are shown on Little Papillion Creek) and a levee/floodwall downstream. Big Papillion Creek includes channel widening, levee raises and floodwalls. The estimate is organized by reach. Some of the bridges along the new levee/levee raise will require closure structures. In most areas of the project, there is a trail running along one side of the creek. Therefore costs to replace the trail were included where work was being performed. Since the trails are already existing, this is included in the construction cost and is not considered recreation that has a different federal/sponsor cost share amount. It is assumed that the project will be scheduled so that overtime is not required. The fill material for the levee raise will be purchased (\$5/CY) within a 10 mile one-way haul distance of the project site.

Estimated by  
Designed by  
Prepared by Elizabeth Peterson

Preparation Date 11/9/2020  
Effective Date of Pricing 11/9/2020  
Estimated Construction Time Days

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Description	Quantity	UOM	ContractCost	ProjectCost
<b>DS19 - After ADM Wet Dam Design - Cost Op, Recreation Only</b>			<b>15,700,757</b>	<b>24,179,165</b>
<b>Dam Site 19 with Reservoir (After ADM Wet Design - Cost Op, Recreation Only) with Spillway Invert EL 1164.0 and TOD EL 1184.5</b>	<b>1</b>	<b>EA</b>	<b>15,700,757</b>	<b>24,179,165</b>
<b>Dam Site 19 with Reservoir</b>	<b>1</b>	<b>EA</b>	<b>15,700,757</b>	<b>24,179,165</b>
<b>Embankment &amp; Spillway</b>	<b>1</b>	<b>EA</b>	<b>13,729,752</b>	<b>21,143,818</b>
<b>Embankment</b>	<b>327,200</b>	<b>BCY</b>	<b>3,436,284</b>	<b>5,291,878</b>
<b>Spillway</b>	<b>633,400</b>	<b>CY</b>	<b>10,293,468</b>	<b>15,851,940</b>
<b>Structures</b>	<b>1</b>	<b>EA</b>	<b>1,727,945</b>	<b>2,661,035</b>
<b>Intake Structure</b>	<b>1</b>	<b>EA</b>	<b>73,238</b>	<b>112,787</b>
<b>Stilling Basin</b>	<b>200</b>	<b>CY</b>	<b>161,106</b>	<b>248,103</b>
<b>Conduit, Cradle and Manhole</b>	<b>1</b>	<b>EA</b>	<b>312,511</b>	<b>481,267</b>
<b>Settling Basin</b>	<b>1</b>	<b>EA</b>	<b>719,717</b>	<b>1,108,365</b>
<b>Filter Drain</b>	<b>1</b>	<b>EA</b>	<b>461,372</b>	<b>710,513</b>
<b>Reservoir</b>	<b>1</b>	<b>EA</b>	<b>243,060</b>	<b>374,313</b>

# Big Papillion Channel Widening Optimization

C117819 TSP Optimization  
Project Markups:

Contingency: 36% (as determined by CSRA)  
S&A 8% (Displayed as SIOH)  
E&D 10% (Displayed as MiscOwner)

This project includes levees, floodwalls, channel widening, and dam construction throughout the Papillion Creek basin. There are two dams included in the estimate. The dams are costed as both dry dams and dams with a reservoir to determine what portion of the dam with a reservoir should be allocated to recreation. On West Papillion Creek, a floodwall and levee will be constructed. On South Papillion Creek, Dam Site 19 will be constructed. Little Papillion Creek includes Dam Site 10 (technically on Thomas Creek but the benefits are shown on Little Papillion Creek) and a levee/floodwall downstream. Big Papillion Creek includes channel widening, levee raises and floodwalls. The estimate is organized by reach. Some of the bridges along the new levee/levee raise will require closure structures. In most areas of the project, there is a trail running along one side of the creek. Therefore costs to replace the trail were included where work was being performed. Since the trails are already existing, this is included in the construction cost and is not considered recreation that has a different federal/sponsor cost share amount. It is assumed that the project will be scheduled so that overtime is not required. The fill material for the levee raise will be purchased (\$5/CY) within a 10 mile one-way haul distance of the project site.

Estimated by  
Designed by  
Prepared by Elizabeth Peterson

Preparation Date 6/5/2020  
Effective Date of Pricing 6/5/2020  
Estimated Construction Time Days

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Description	Quantity	UOM	ContractCost	ProjectCost
Big Papillion Channel Widening Summary			33,897,175	52,201,649
Big Papillion Channel Widening Alternatives	1	EA	33,897,175	52,201,649
Channel Widening - 150 ft Bench Width	140,000	CY	8,281,575	12,753,625
Channel Widening - 170 ft Bench Width	189,300	CY	9,048,757	13,935,086
Channel Widening - 200 ft Bench Width	285,300	CY	10,542,662	16,235,700
Channel Widening - Varied Bench Width (No Bridge Modifications)	105,000	CY	6,024,181	9,277,238

<u>Description</u>	<u>Quantity</u>	<u>UOM</u>	<u>ContractCost</u>	<u>ProjectCost</u>
<b>Big Papillion Channel Widening 150 ft Bench Width</b>			<b>8,281,575</b>	<b>12,753,625</b>
<b>Channel Widening - 150 ft Bench Width</b>	<b>140,000</b>	<b>CY</b>	<b>8,281,575</b>	<b>12,753,625</b>
<b>Site Prep &amp; Site Maintenance</b>	<b>1</b>	<b>LS</b>	<b>502,733</b>	<b>774,209</b>
<b>Earthwork</b>	<b>140,000</b>	<b>CY</b>	<b>4,163,650</b>	<b>6,412,020</b>
<b>Utility Relocations</b>	<b>1</b>	<b>EA</b>	<b>338,451</b>	<b>521,215</b>
<b>Replace Trail</b>	<b>12,775</b>	<b>LF</b>	<b>1,192,066</b>	<b>1,835,782</b>
<b>Bridge Modifications</b>	<b>1</b>	<b>EA</b>	<b>1,712,741</b>	<b>2,637,621</b>
<b>Riprap</b>	<b>5,566</b>	<b>TON</b>	<b>330,952</b>	<b>509,665</b>
<b>Bedding</b>	<b>1,043</b>	<b>TON</b>	<b>40,982</b>	<b>63,112</b>

<u>Description</u>	<u>Quantity</u>	<u>UOM</u>	<u>ContractCost</u>	<u>ProjectCost</u>
<b>Big Papillion Channel Widening 170 ft Bench Width</b>			<b>9,048,757</b>	<b>13,935,086</b>
<b>Channel Widening - 170 ft Bench Width</b>	<b>189,300</b>	<b>CY</b>	<b>9,048,757</b>	<b>13,935,086</b>
<b>Site Prep &amp; Site Maintenance</b>	<b>1</b>	<b>LS</b>	<b>502,733</b>	<b>774,209</b>
<b>Earthwork</b>	<b>189,300</b>	<b>CY</b>	<b>4,930,832</b>	<b>7,593,481</b>
<b>Utility Relocations</b>	<b>1</b>	<b>EA</b>	<b>338,451</b>	<b>521,215</b>
<b>Replace Trail</b>	<b>12,775</b>	<b>LF</b>	<b>1,192,066</b>	<b>1,835,782</b>
<b>Bridge Modifications</b>	<b>1</b>	<b>EA</b>	<b>1,712,741</b>	<b>2,637,621</b>
<b>Riprap</b>	<b>5,566</b>	<b>TON</b>	<b>330,952</b>	<b>509,665</b>
<b>Bedding</b>	<b>1,043</b>	<b>TON</b>	<b>40,982</b>	<b>63,112</b>

<u>Description</u>	<u>Quantity</u>	<u>UOM</u>	<u>ContractCost</u>	<u>ProjectCost</u>
<b>Big Papillion Channel Widening 200 ft Bench Width</b>			<b>10,542,662</b>	<b>16,235,700</b>
<b>Channel Widening - 200 ft Bench Width</b>	<b>285,300</b>	<b>CY</b>	<b>10,542,662</b>	<b>16,235,700</b>
<b>Site Prep &amp; Site Maintenance</b>	<b>1</b>	<b>LS</b>	<b>502,733</b>	<b>774,209</b>
<b>Earthwork</b>	<b>285,300</b>	<b>CY</b>	<b>6,424,737</b>	<b>9,894,095</b>
<b>Utility Relocations</b>	<b>1</b>	<b>EA</b>	<b>338,451</b>	<b>521,215</b>
<b>Replace Trail</b>	<b>12,775</b>	<b>LF</b>	<b>1,192,066</b>	<b>1,835,782</b>
<b>Bridge Modifications</b>	<b>1</b>	<b>EA</b>	<b>1,712,741</b>	<b>2,637,621</b>
<b>Riprap</b>	<b>5,566</b>	<b>TON</b>	<b>330,952</b>	<b>509,665</b>
<b>Bedding</b>	<b>1,043</b>	<b>TON</b>	<b>40,982</b>	<b>63,112</b>

<u>Description</u>	<u>Quantity</u>	<u>UOM</u>	<u>ContractCost</u>	<u>ProjectCost</u>
<b>Big Papillion Channel Widening Varied Bench Width</b>			<b>6,024,181</b>	<b>9,277,238</b>
<b>Channel Widening - Varied Bench Width (No Bridge Modifications)</b>	<b>105,000</b>	<b>CY</b>	<b>6,024,181</b>	<b>9,277,238</b>
Site Prep & Site Maintenance	1	LS	502,733	774,209
Earthwork	105,000	CY	3,618,997	5,573,255
Utility Relocations	1	EA	338,451	521,215
Replace Trail	12,775	LF	1,192,066	1,835,782
Riprap	5,566	TON	330,952	509,665
Bedding	1,043	TON	40,982	63,112

# Big Papillion Levee Raise/ Floodwall Optimization

C117819 TSP Optimization  
Project Markups:

Contingency: 36% (as determined by CSRA)  
S&A 8% (Displayed as SIOH)  
E&D 10% (Displayed as MiscOwner)

This project includes levees, floodwalls, channel widening, and dam construction throughout the Papillion Creek basin. There are two dams included in the estimate. The dams are costed as both dry dams and dams with a reservoir to determine what portion of the dam with a reservoir should be allocated to recreation. On West Papillion Creek, a floodwall and levee will be constructed. On South Papillion Creek, Dam Site 19 will be constructed. Little Papillion Creek includes Dam Site 10 (technically on Thomas Creek but the benefits are shown on Little Papillion Creek) and a levee/floodwall downstream. Big Papillion Creek includes channel widening, levee raises and floodwalls. The estimate is organized by reach. Some of the bridges along the new levee/levee raise will require closure structures. In most areas of the project, there is a trail running along one side of the creek. Therefore costs to replace the trail were included where work was being performed. Since the trails are already existing, this is included in the construction cost and is not considered recreation that has a different federal/sponsor cost share amount. It is assumed that the project will be scheduled so that overtime is not required. The fill material for the levee raise will be purchased (\$5/CY) within a 10 mile one-way haul distance of the project site.

Estimated by  
Designed by  
Prepared by Elizabeth Peterson

Preparation Date 6/5/2020  
Effective Date of Pricing 6/5/2020  
Estimated Construction Time Days

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Description	Quantity	UOM	ContractCost	ProjectCost
Big Papillion Levee Raise/Floodwall Summary			111,510,812	171,726,651
Big Papillion Levee Raise and Floodwall Alternatives	1	EA	111,510,812	171,726,651
Big Papillion Levee Raise and Floodwall (100 Year)	1	EA	24,904,266	38,352,570
Big Papillion Levee Raise and Floodwall (100 Year + 3')	1	EA	38,791,271	59,738,557
Big Papillion Levee Raise and Floodwall (100 Year + 5')	1	EA	47,815,276	73,635,525

Description	Quantity	UOM	ContractCost	ProjectCost
<b>Big Papillion Levee Raise/Floodwall 100 Year</b>			<b>24,904,266</b>	<b>38,352,570</b>
<b>Big Papillion Levee Raise and Floodwall (100 Year)</b>	<b>1</b>	<b>EA</b>	<b>24,904,266</b>	<b>38,352,570</b>
LP8-1 RR Bridge to L St	1	EA	3,058,202	4,709,631
Replace Trail	4,072	LF	379,968	585,151
Left Bank Levee	6,790	CY	74,534	114,783
Right Bank Levee	9,270	CY	127,026	195,621
Left Bank Floodwall	1	EA	1,636,919	2,520,856
Right Bank Floodwall	1	EA	839,754	1,293,221
LP8-2 L St to Confluence	1	EA	2,017,920	3,107,597
Replace Trail	2,388	LF	222,830	343,158
Left Bank Levee	53,650	CY	1,242,826	1,913,952
Right Bank Levee	23,840	CY	552,264	850,487
BP7-1 RR to L St	1	EA	3,599,623	5,543,420
Replace Trail	4,058	LF	378,662	583,139
Left Bank Levee	23,230	CY	419,039	645,321
Right Bank Levee	7,360	CY	96,228	148,192
Left Bank Floodwall	1	EA	1,066,207	1,641,959
Right Bank Floodwall	1	EA	1,639,487	2,524,810
BP7-2 L St to Q St	1	EA	4,171,355	6,423,886
Replace Trail	5,321	LF	496,515	764,634
Left Bank Levee	65,065	CY	1,448,018	2,229,947
Right Bank Levee	25,470	CY	480,473	739,928
Left Bank Floodwall	1	EA	533,163	821,071
Right Bank Floodwall	1	EA	1,213,186	1,868,306
BP8 - Q St to Harrison St	1	EA	5,400,310	8,316,477
Replace Trail	5,898	LF	550,357	847,549
Left Bank Levee	87,470	CY	2,023,227	3,115,770
Right Bank Levee	122,030	CY	2,826,726	4,353,158
Closure Structures	1	EA	6,656,856	10,251,559
L St (Big Papio), Right Side	1	EA	1,457,589	2,244,687

Description	Quantity	UOM	ContractCost	ProjectCost
72nd St (Big Papio), Left Side	1	EA	660,254	1,016,791
72nd St (Big Papio), Right Side	1	EA	660,254	1,016,791
Q St (Big Papio), Left Side	1	EA	432,432	665,946
Q St (Big Papio), Right Side	1	EA	397,666	612,405
Harrison St (Big Papio), Right Side	1	EA	385,982	594,413
L St (Little Papio), Left Side	1	EA	1,399,387	2,155,056
L St (Little Papio), Right Side	1	EA	1,112,698	1,713,555
Closure Gate Assembly	8	EA	150,594	231,914

Description	Quantity	UOM	ContractCost	ProjectCost
Big Papillion Levee Raise/Floodwall 100 Year + 3'			38,791,271	59,738,557
Big Papillion Levee Raise and Floodwall (100 Year + 3')	1	EA	38,791,271	59,738,557
LP8-1 RR Bridge to L St	1	EA	3,119,641	4,804,247
Replace Trail	3,533	LF	329,673	507,696
Left Bank Levee	34,385	CY	738,982	1,138,032
Right Bank Levee	16,150	CY	293,963	452,702
Left Bank Floodwall	1	EA	773,809	1,191,665
Right Bank Floodwall	1	EA	983,216	1,514,152
LP8-2 L St to Confluence	1	EA	3,675,498	5,660,267
Replace Trail	2,388	LF	222,830	343,158
Left Bank Levee	87,930	CY	2,036,937	3,136,883
Right Bank Levee	4,930	CY	50,800	78,233
Right Bank Floodwall	1	EA	1,364,931	2,101,993
BP7-1 RR to L St	1	EA	4,806,095	7,401,386
Replace Trail	4,208	LF	392,659	604,694
Left Bank Levee	30,890	CY	576,027	887,081
Right Bank Levee	8,145	CY	108,650	167,322
Left Bank Floodwall	1	EA	1,621,136	2,496,550
Right Bank Floodwall	1	EA	2,107,623	3,245,739
BP7-2 L St to Q St	1	EA	6,676,020	10,281,071
Replace Trail	5,321	LF	496,515	764,634
Left Bank Levee	88,180	CY	1,954,629	3,010,129
Right Bank Levee	80,680	CY	1,760,734	2,711,531
Left Bank Floodwall	1	EA	982,543	1,513,116
Right Bank Floodwall	1	EA	1,481,598	2,281,661
BP8 - Q St to Harrison St	1	EA	9,019,409	13,889,890
Replace Trail	5,898	LF	550,357	847,549
Left Bank Levee	185,165	CY	4,289,428	6,605,720
Right Bank Levee	180,425	CY	4,179,624	6,436,621
Closure Structures	1	EA	11,494,607	17,701,695

Description	Quantity	UOM	ContractCost	ProjectCost
F St (Big Papio), Left Side	1	EA	447,809	689,626
F St (Big Papio), Right Side	1	EA	447,809	689,626
L St (Big Papio), Left Side	1	EA	818,634	1,260,696
L St (Big Papio), Right Side	1	EA	2,271,423	3,497,991
72nd St (Big Papio), Left Side	1	EA	832,229	1,281,633
72nd St (Big Papio), Right Side	1	EA	832,229	1,281,633
Q St (Big Papio), Left Side	1	EA	606,952	934,707
Q St (Big Papio), Right Side	1	EA	600,871	925,342
Harrison St (Big Papio), Left Side	1	EA	414,547	638,403
Harrison St (Big Papio), Right Side	1	EA	444,049	683,836
L St (Little Papio), Left Side	1	EA	2,123,013	3,269,440
L St (Little Papio), Right Side	1	EA	1,268,761	1,953,891
Railroad Bridge	1	EA	161,939	249,386
Closure Gate Assembly	12	EA	224,342	345,487

Description	Quantity	UOM	ContractCost	ProjectCost
<b>Big Papillion Levee Raise/Floodwall 100 Year + 5'</b>			<b>47,815,276</b>	<b>73,635,525</b>
<b>Big Papillion Levee Raise and Floodwall (100 Year + 5')</b>	1	EA	47,815,276	73,635,525
<b>LP8-1 RR Bridge to L St</b>	1	EA	3,774,528	5,812,774
Replace Trail	3,778	LF	352,534	542,903
Left Bank Levee	46,815	CY	1,028,455	1,583,820
Right Bank Levee	22,740	CY	446,775	688,034
Left Bank Floodwall	1	EA	866,364	1,334,201
Right Bank Floodwall	1	EA	1,080,399	1,663,815
<b>LP8-2 L St to Confluence</b>	1	EA	4,446,102	6,846,997
Replace Trail	2,388	LF	222,830	343,158
Left Bank Levee	114,475	CY	2,651,864	4,083,870
Right Bank Levee	4,930	CY	49,132	75,664
Right Bank Floodwall	1	EA	1,522,276	2,344,305
<b>BP7-1 RR to L St</b>	1	EA	5,474,783	8,431,166
Replace Trail	4,278	LF	399,191	614,753
Left Bank Levee	44,115	CY	899,185	1,384,745
Right Bank Levee	10,035	CY	99,711	153,555
Left Bank Floodwall	1	EA	1,637,700	2,522,058
Right Bank Floodwall	1	EA	2,438,996	3,756,054
<b>BP7-2 L St to Q St</b>	1	EA	8,460,859	13,029,722
Replace Trail	5,321	LF	496,515	764,634
Left Bank Levee	100,050	CY	2,205,403	3,396,320
Right Bank Levee	113,170	CY	2,516,433	3,875,307
Left Bank Floodwall	1	EA	1,580,426	2,433,855
Right Bank Floodwall	1	EA	1,662,082	2,559,606
<b>BP8 - Q St to Harrison St</b>	1	EA	11,896,441	18,320,519
Replace Trail	5,898	LF	550,357	847,549
Left Bank Levee	248,425	CY	5,754,874	8,862,506
Right Bank Levee	241,360	CY	5,591,210	8,610,464
<b>Closure Structures</b>	1	EA	13,762,563	21,194,348

Description	Quantity	UOM	ContractCost	ProjectCost
F St (Big Papio), Left Side	1	EA	524,873	808,304
F St (Big Papio), Right Side	1	EA	442,667	681,707
L St (Big Papio), Left Side	1	EA	632,959	974,757
L St (Big Papio), Right Side	1	EA	2,519,526	3,880,070
72nd St (Big Papio), Left Side	1	EA	1,050,539	1,617,829
72nd St (Big Papio), Right Side	1	EA	1,050,539	1,617,829
Q St (Big Papio), Left Side	1	EA	722,652	1,112,884
Q St (Big Papio), Right Side	1	EA	893,834	1,376,505
Harrison St (Big Papio), Left Side	1	EA	529,589	815,567
Harrison St (Big Papio), Right Side	1	EA	699,171	1,076,724
L St (Little Papio), Left Side	1	EA	2,576,438	3,967,714
L St (Little Papio), Right Side	1	EA	1,655,713	2,549,797
Railroad Bridge	1	EA	239,723	369,174
Closure Gate Assembly	12	EA	224,342	345,487

# Little Papillion Levee Raise/ Floodwall Optimization

C117819 TSP Optimization  
Project Markups:

Contingency: 36% (as determined by CSRA)  
S&A 8% (Displayed as SIOH)  
E&D 10% (Displayed as MiscOwner)

This project includes levees, floodwalls, channel widening, and dam construction throughout the Papillion Creek basin. There are two dams included in the estimate. The dams are costed as both dry dams and dams with a reservoir to determine what portion of the dam with a reservoir should be allocated to recreation. On West Papillion Creek, a floodwall and levee will be constructed. On South Papillion Creek, Dam Site 19 will be constructed. Little Papillion Creek includes Dam Site 10 (technically on Thomas Creek but the benefits are shown on Little Papillion Creek) and a levee/floodwall downstream. Big Papillion Creek includes channel widening, levee raises and floodwalls. The estimate is organized by reach. Some of the bridges along the new levee/levee raise will require closure structures. In most areas of the project, there is a trail running along one side of the creek. Therefore costs to replace the trail were included where work was being performed. Since the trails are already existing, this is included in the construction cost and is not considered recreation that has a different federal/sponsor cost share amount. It is assumed that the project will be scheduled so that overtime is not required. The fill material for the levee raise will be purchased (\$5/CY) within a 10 mile one-way haul distance of the project site.

Estimated by  
Designed by  
Prepared by Elizabeth Peterson

Preparation Date 6/5/2020  
Effective Date of Pricing 6/5/2020  
Estimated Construction Time Days

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Description	Quantity	UOM	ContractCost	ProjectCost
Little Papillion Levee Raise/Floodwall Summary			49,608,011	76,396,337
Little Papillion Creek Levee Raise and Floodwall Alternatives	1	EA	49,608,011	76,396,337
Little Papillion Levee Raise and Floodwall (100 Year)	1	EA	6,505,605	10,018,632
Little Papillion Levee Raise and Floodwall (100 Year + 3')	1	EA	18,754,861	28,882,487
Little Papillion Levee Raise and Floodwall (100 Year + 5')	1	EA	24,347,544	37,495,218

Description	Quantity	UOM	ContractCost	ProjectCost
Little Papillion Levee Raise/Floodwall 100 Year			6,505,605	10,018,632
Little Papillion Levee Raise and Floodwall (100 Year)	1	EA	6,505,605	10,018,632
LP5-Up Tie-in above Cass St	1	EA	56,241	86,611
Replace Trail	346	LF	32,286	49,721
Left Bank Levee	175	CY	3,749	5,773
Right Bank Levee	1,650	CY	20,206	31,118
LP5 Cass St to Dodge St	1	EA	590,704	909,684
Replace Trail	989	LF	92,286	142,120
Left Bank Levee	2,060	CY	43,276	66,645
Right Bank Levee	220	CY	2,577	3,969
Left Bank Floodwall	1	EA	452,565	696,950
LP6-1 Dodge St to 72nd St	1	EA	660,551	1,017,248
Replace Trail	1,884	LF	175,801	270,733
Left Bank Levee	2,940	CY	24,372	37,533
Right Bank Levee	4,360	CY	88,557	136,379
Left Bank Floodwall	1	EA	371,821	572,604
LP6-2 72nd St to Pacific St	1	EA	522,964	805,364
Replace Trail	1,027	LF	95,832	147,581
Left Bank Levee	2,730	CY	29,642	45,649
Right Bank Levee	240	CY	5,483	8,444
Left Bank Floodwall	1	EA	392,007	603,690
LP7 Pacific St to Mercy Rd	1	EA	1,084,798	1,670,590
Replace Trail	3,336	LF	311,290	479,387
Left Bank Levee	5,330	CY	52,355	80,627
Right Bank Levee	1,245	CY	19,527	30,072
Left Bank Floodwall	1	EA	701,626	1,080,504
LP8 Mercy Rd to Saddle Creek	1	EA	679,757	1,046,825
Replace Trail	1,436	LF	133,997	206,355
Left Bank Levee	4,380	CY	71,157	109,581
Right Bank Levee	8,605	CY	198,193	305,218

<b>Description</b>	<b>Quantity</b>	<b>UOM</b>	<b>ContractCost</b>	<b>ProjectCost</b>
Left Bank Floodwall	1	EA	276,410	425,671
Closure Structures	1	EA	2,605,971	4,013,195
Ped Bridge 2 (Little Papio), Left Side	1	EA	46,557	71,697
Ped Bridge 3 (Little Papio), Left Side	1	EA	40,585	62,501
Pacific St (Little Papio), Left Side	1	EA	622,253	958,270
72nd St (Little Papio), Left Side	1	EA	919,471	1,415,985
72nd St (Little Papio), Right Side	1	EA	919,471	1,415,985
Closure Gate Assembly	3	EA	57,634	88,756
Riprap	4,537	TON	269,768	415,442
Hauling to site	4,537	TON	199,960	307,939
Hauling on site	4,537	TON	18,046	27,790
Placement	4,537	TON	51,762	79,713
Bedding	887	TON	34,852	53,672

Description	Quantity	UOM	ContractCost	ProjectCost
Little Papillion Levee Raise/Floodwall 100 Year + 3'			18,754,861	28,882,487
Little Papillion Levee Raise and Floodwall (100 Year + 3')	1	EA	18,754,861	28,882,487
LP5-Up Tie-in above Cass St	1	EA	1,131,266	1,742,150
Replace Trail	677	LF	63,173	97,286
Left Bank Levee	1,365	CY	26,277	40,466
Right Bank Levee	11,840	CY	165,109	254,268
Left Bank Floodwall	1	EA	48,147	74,146
Right Bank Floodwall	1	EA	828,561	1,275,983
LP5 Cass St to Dodge St	1	EA	1,380,514	2,125,991
Replace Trail	1,454	LF	135,676	208,941
Left Bank Levee	2,855	CY	44,422	68,410
Right Bank Levee	3,350	CY	37,040	57,042
Left Bank Floodwall	1	EA	586,160	902,687
Right Bank Floodwall	1	EA	577,215	888,912
LP6-1 Dodge St to 72nd St	1	EA	4,195,569	6,461,176
Replace Trail	4,347	LF	405,629	624,669
Left Bank Levee	10,205	CY	95,600	147,225
Right Bank Levee	10,025	CY	145,052	223,380
Left Bank Floodwall	1	EA	1,356,298	2,088,700
Right Bank Floodwall	1	EA	2,192,989	3,377,203
LP6-2 72nd St to Pacific St	1	EA	957,285	1,474,220
Replace Trail	1,027	LF	95,832	147,581
Left Bank Levee	2,730	CY	29,642	45,649
Right Bank Levee	1,470	CY	20,077	30,918
Left Bank Floodwall	1	EA	502,945	774,536
Right Bank Floodwall	1	EA	308,790	475,536
LP7 Pacific St to Mercy Rd	1	EA	1,723,633	2,654,395
Replace Trail	3,979	LF	371,290	571,787
Left Bank Levee	11,410	CY	157,515	242,573
Right Bank Levee	7,940	CY	181,949	280,201

Description	Quantity	UOM	ContractCost	ProjectCost
Left Bank Floodwall	1	EA	1,012,880	1,559,834
LP8 Mercy Rd to Saddle Creek	1	EA	1,052,075	1,620,195
Replace Trail	1,821	LF	169,922	261,680
Left Bank Levee	8,720	CY	149,021	229,492
Right Bank Levee	8,955	CY	204,545	315,000
Left Bank Floodwall	1	EA	528,586	814,023
Closure Structures	1	EA	8,009,900	12,335,246
Mercy Rd (Little Papio), Left Side	1	EA	560,315	862,884
Mercy Rd (Little Papio), Right Side	1	EA	560,315	862,884
Ped Bridge 1 (Little Papio), Left Side	1	EA	40,584	62,499
Ped Bridge 2 (Little Papio), Left Side	1	EA	77,379	119,163
Ped Bridge 2 (Little Papio), Right Side	1	EA	45,300	69,762
Ped Bridge 3 (Little Papio), Left Side	1	EA	50,556	77,856
Ped Bridge 3 (Little Papio), Right Side	1	EA	42,187	64,968
Pacific St (Little Papio), Left Side	1	EA	676,736	1,042,174
Pacific St (Little Papio), Right Side	1	EA	839,672	1,293,095
72nd St (Little Papio), Left Side	1	EA	1,380,724	2,126,315
72nd St (Little Papio), Right Side	1	EA	1,166,167	1,795,897
Ped Bridge 5 (Little Papio), Left Side	1	EA	45,060	69,392
Ped Bridge 5 (Little Papio), Right Side	1	EA	45,060	69,392
Dodge St (Little Papio), Left Side	1	EA	844,821	1,301,024
Dodge St (Little Papio), Right Side	1	EA	844,821	1,301,024
Cass St (Little Papio), Right Side	1	EA	618,126	951,913
Closure Gate Assembly	9	EA	172,081	265,005
Riprap	4,537	TON	269,768	415,442
Hauling to site	4,537	TON	199,960	307,939
Hauling on site	4,537	TON	18,046	27,790
Placement	4,537	TON	51,762	79,713
Bedding	887	TON	34,852	53,672

Description	Quantity	UOM	ContractCost	ProjectCost
Little Papillion Levee Raise/Floodwall 100 Year + 5'			24,347,544	37,495,218
Little Papillion Levee Raise and Floodwall (100 Year + 5')	1	EA	24,347,544	37,495,218
LP5-Up Tie-in above Cass St	1	EA	1,491,874	2,297,486
Replace Trail	677	LF	63,173	97,286
Left Bank Levee	2,720	CY	57,666	88,806
Right Bank Levee	18,960	CY	330,811	509,448
Left Bank Floodwall	1	EA	55,783	85,907
Right Bank Floodwall	1	EA	984,442	1,516,040
LP5 Cass St to Dodge St	1	EA	2,003,609	3,085,558
Replace Trail	1,535	LF	143,235	220,581
Left Bank Levee	3,295	CY	50,078	77,120
Right Bank Levee	3,350	CY	37,040	57,042
Left Bank Floodwall	1	EA	1,092,353	1,682,224
Right Bank Floodwall	1	EA	680,904	1,048,591
LP6-1 Dodge St to 72nd St	1	EA	4,862,404	7,488,102
Replace Trail	4,462	LF	416,360	641,194
Left Bank Levee	13,450	CY	138,049	212,596
Right Bank Levee	10,335	CY	143,522	221,024
Left Bank Floodwall	1	EA	1,658,573	2,554,203
Right Bank Floodwall	1	EA	2,505,899	3,859,084
LP6-2 72nd St to Pacific St	1	EA	1,084,771	1,670,547
Replace Trail	1,027	LF	95,832	147,581
Left Bank Levee	2,125	CY	32,627	50,245
Right Bank Levee	1,470	CY	20,077	30,918
Left Bank Floodwall	1	EA	576,631	888,012
Right Bank Floodwall	1	EA	359,604	553,791
LP7 Pacific St to Mercy Rd	1	EA	2,234,588	3,441,266
Replace Trail	4,104	LF	382,954	589,749
Left Bank Levee	16,885	CY	281,826	434,012
Right Bank Levee	16,555	CY	382,053	588,362

Description	Quantity	UOM	ContractCost	ProjectCost
Left Bank Floodwall	1	EA	1,187,755	1,829,142
LP8 Mercy Rd to Saddle Creek	1	EA	1,481,937	2,282,183
Replace Trail	2,287	LF	213,406	328,645
Left Bank Levee	13,155	CY	227,483	350,324
Right Bank Levee	16,805	CY	387,386	596,575
Left Bank Floodwall	1	EA	653,662	1,006,640
Closure Structures	1	EA	10,883,742	16,760,962
Mercy Rd (Little Papio), Left Side	1	EA	560,315	862,884
Mercy Rd (Little Papio), Right Side	1	EA	560,315	862,884
Ped Bridge 1 (Little Papio), Left Side	1	EA	43,270	66,636
Ped Bridge 1 (Little Papio), Right Side	1	EA	43,212	66,546
Ped Bridge 2 (Little Papio), Left Side	1	EA	121,035	186,394
Ped Bridge 2 (Little Papio), Right Side	1	EA	56,849	87,548
Ped Bridge 3 (Little Papio), Left Side	1	EA	75,877	116,851
Ped Bridge 3 (Little Papio), Right Side	1	EA	62,181	95,759
First Data Access Road (Little Papio), Left Side	1	EA	514,529	792,375
Ped Bridge 4 (Little Papio), Left Side	1	EA	54,124	83,352
Ped Bridge 4 (Little Papio), Right Side	1	EA	54,124	83,352
Pacific St (Little Papio), Left Side	1	EA	912,501	1,405,252
Pacific St (Little Papio), Right Side	1	EA	905,179	1,393,976
72nd St (Little Papio), Left Side	1	EA	1,703,225	2,622,966
72nd St (Little Papio), Right Side	1	EA	1,697,603	2,614,308
Ped Bridge 5 (Little Papio), Left Side	1	EA	45,060	69,392
Ped Bridge 5 (Little Papio), Right Side	1	EA	63,957	98,493
Dodge St (Little Papio), Left Side	1	EA	1,043,859	1,607,542
Dodge St (Little Papio), Right Side	1	EA	1,006,214	1,549,570
Cass St (Little Papio), Right Side	1	EA	707,318	1,089,270
Western St (Little Papio), Right Side	1	EA	443,933	683,657
Closure Gate Assembly	11	EA	209,061	321,954
Riprap	4,537	TON	269,768	415,442

Description	Quantity	UOM	ContractCost	ProjectCost
Hauling to site	4,537	TON	199,960	307,939
Hauling on site	4,537	TON	18,046	27,790
Placement	4,537	TON	51,762	79,713
Bedding	887	TON	34,852	53,672



# TSP Estimates

Papillion Creek  
Project Markups:

Contingencies Determined by ARA  
S&A 8% (Displayed as SIOH)  
E&D 10% (Displayed as MiscOwner)

Estimated by  
Designed by  
Prepared by EMP

Preparation Date 10/21/2019  
Effective Date of Pricing 10/21/2019  
Estimated Construction Time Days

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Description	Quantity	UOM	ContractCost	Contingency	SIOH	MiscOwner	ProjectCost
<b>Summary</b>			<b>81,313,733</b>	<b>31,284,839</b>	<b>7,285,710</b>	<b>9,107,138</b>	<b>128,991,420</b>
<b>Damage Reach with 100 Year Levees</b>	<b>1</b>	<b>EA</b>	<b>54,191,461</b>	<b>17,484,429</b>	<b>4,855,555</b>	<b>6,069,444</b>	<b>82,600,889</b>
<b>Little Papillion Creek</b>	<b>1</b>	<b>EA</b>	<b>21,692,880</b>	<b>7,632,627</b>	<b>1,943,682</b>	<b>2,429,603</b>	<b>33,698,792</b>
<b>Big Papillion Creek</b>	<b>1</b>	<b>EA</b>	<b>25,408,955</b>	<b>8,247,056</b>	<b>2,276,642</b>	<b>2,845,803</b>	<b>38,778,456</b>
<b>West Papillion Creek</b>	<b>1</b>	<b>EA</b>	<b>7,089,626</b>	<b>1,604,745</b>	<b>635,231</b>	<b>794,038</b>	<b>10,123,640</b>
<b>Dam Site 10 with Reservoir</b>	<b>1</b>	<b>EA</b>	<b>8,131,432</b>	<b>3,122,268</b>	<b>728,576</b>	<b>910,720</b>	<b>12,892,997</b>
<b>Dam Site 10 with Reservoir</b>	<b>1</b>	<b>EA</b>	<b>8,131,432</b>	<b>3,122,268</b>	<b>728,576</b>	<b>910,720</b>	<b>12,892,997</b>
<b>Dam Site 19 with Reservoir</b>	<b>1</b>	<b>EA</b>	<b>5,540,694</b>	<b>3,842,969</b>	<b>496,446</b>	<b>620,558</b>	<b>10,500,667</b>
<b>Dam Site 19 with Reservoir</b>	<b>1</b>	<b>EA</b>	<b>5,540,694</b>	<b>3,842,969</b>	<b>496,446</b>	<b>620,558</b>	<b>10,500,667</b>
<b>Dam Site 10 - Dry Dam</b>	<b>1</b>	<b>EA</b>	<b>7,986,364</b>	<b>3,059,889</b>	<b>715,578</b>	<b>894,473</b>	<b>12,656,303</b>
<b>Dam Site 10 - Dry Dam</b>	<b>1</b>	<b>EA</b>	<b>7,986,364</b>	<b>3,059,889</b>	<b>715,578</b>	<b>894,473</b>	<b>12,656,303</b>
<b>Dam Site 19 - Dry Dam</b>	<b>1</b>	<b>EA</b>	<b>5,463,781</b>	<b>3,775,285</b>	<b>489,555</b>	<b>611,943</b>	<b>10,340,564</b>
<b>Dam Site 19 - Dry Dam</b>	<b>1</b>	<b>EA</b>	<b>5,463,781</b>	<b>3,775,285</b>	<b>489,555</b>	<b>611,943</b>	<b>10,340,564</b>

Description	Quantity	UOM	ContractCost	Contingency	SIOH	MiscOwner	ProjectCost
<b>Detail</b>			<b>81,313,733</b>	<b>31,284,839</b>	<b>7,285,710</b>	<b>9,107,138</b>	<b>128,991,420</b>
Damage Reach with 100 Year Levees	1	EA	54,191,461	17,484,429	4,855,555	6,069,444	82,600,889
Little Papillion Creek	1	EA	21,692,880	7,632,627	1,943,682	2,429,603	33,698,792
Little Papillion Creek Levees with Dam Site 10	1	EA	6,084,204	2,355,066	545,145	681,431	9,665,846
Levee Raises	1	EA	1,941,223	873,550	173,934	217,417	3,206,124
Floodwall	1	EA	1,595,106	334,972	142,921	178,652	2,251,652
Levee - Closure Structures	1	EA	2,547,875	1,146,544	228,290	285,362	4,208,071
Levee Raises (100 Year)	1	EA	545,484	245,468	48,875	61,094	900,921
LP7 - Pacific St to Mercy Rd	9,236	CY	84,074	37,833	7,533	9,416	138,857
LP8 - Mercy Rd to Saddle Creek	30,125	CY	461,410	207,634	41,342	51,678	762,064
Floodwall	1	EA	7,276,431	1,528,051	651,968	814,960	10,271,410
LP 5 - Cole St to Dodge St	1	EA	972,828	204,294	87,165	108,957	1,373,244
LP6 - Dodge St to 72nd St	1	EA	3,537,919	742,963	316,998	396,247	4,994,126
LP6 - 72nd St to Pacific Street	1	EA	713,068	149,744	63,891	79,864	1,006,567
LP7 - Pacific St to Mercy Rd	1	EA	1,895,983	398,156	169,880	212,350	2,676,369
LP8 - Mercy Rd to Saddle Creek	1	EA	156,634	32,893	14,034	17,543	221,104
Levee - Closure Structures	1	EA	7,786,761	3,504,043	697,694	872,117	12,860,615
Pedestrian Bridge 1	2	EA	90,944	40,925	8,149	10,186	150,202
Pedestrian Bridge 2	2	EA	196,553	88,449	17,611	22,014	324,627
Pedestrian Bridge 3	2	EA	99,026	44,562	8,873	11,091	163,551
Pacific St	2	EA	1,612,428	725,593	144,474	180,592	2,663,086
72nd St	2	EA	4,059,672	1,826,852	363,747	454,683	6,704,954
Pedestrian Bridge 5	2	EA	128,867	57,990	11,546	14,433	212,837
Cass St	2	EA	1,599,272	719,672	143,295	179,118	2,641,357
Big Papillion Creek	1	EA	25,408,955	8,247,056	2,276,642	2,845,803	38,778,456
Channel Widening	1	EA	7,230,068	1,716,377	647,814	809,768	10,404,027
Blondo to I680	201,247	CY	7,230,068	1,716,377	647,814	809,768	10,404,027
Levee Raises (100 Year)	1	EA	7,367,894	3,315,552	660,163	825,204	12,168,813
BP7 - RR to L St	96,289	CY	1,526,428	686,892	136,768	170,960	2,521,048
BP7 - L St to Q St	100,178	CY	1,676,709	754,519	150,233	187,791	2,769,253

Description	Quantity	UOM	ContractCost	Contingency	SIOH	MiscOwner	ProjectCost
BP8 - Q St to Harrison St	200,534	CY	3,025,076	1,361,284	271,047	338,809	4,996,216
LP8 - L St to Confluence	37,611	CY	693,533	312,090	62,141	77,676	1,145,439
LP8 - RR to L St	32,139	CY	446,148	200,766	39,975	49,969	736,858
Levee - Closure Structures	1	EA	1,900,313	855,141	170,268	212,835	3,138,557
L St (Little Papio)	2	EA	1,900,313	855,141	170,268	212,835	3,138,557
Floodwall	1	EA	2,131,700	447,657	191,000	238,750	3,009,108
LP8 - RR Bridge to L St	1	EA	1,350,117	283,525	120,971	151,213	1,905,826
LP8 - L St to Confluence	1	EA	781,583	164,132	70,030	87,537	1,103,282
Channel Widening with Levee	1	EA	6,778,981	1,912,329	607,397	759,246	10,057,952
Blondo to I680	201,247	CY	6,778,981	1,912,329	607,397	759,246	10,057,952
West Papillion Creek	1	EA	7,089,626	1,604,745	635,231	794,038	10,123,640
Floodwall	1	EA	6,606,611	1,387,388	591,952	739,940	9,325,892
WP6 - Millard Ave to 144th St	1	EA	4,650,876	976,684	416,718	520,898	6,565,177
WP5 - 144th St to 149th St	1	EA	1,955,735	410,704	175,234	219,042	2,760,716
Levee	1	EA	483,015	217,357	43,278	54,098	797,748
WP5 - 144th St to 149th St	25,867	CY	290,182	130,582	26,000	32,500	479,265
WP6 - Millard Ave to 144th St	19,687	CY	192,833	86,775	17,278	21,597	318,483
Dam Site 10 with Reservoir	1	EA	8,131,432	3,122,268	728,576	910,720	12,892,997
Dam Site 10 with Reservoir	1	EA	8,131,432	3,122,268	728,576	910,720	12,892,997
Dam Site 10 with Reservoir	1	EA	8,131,432	3,122,268	728,576	910,720	12,892,997
Embankment & Spillway	1	EA	6,657,134	2,862,568	596,479	745,599	10,861,780
Structures	1	EA	1,134,116	181,459	101,617	127,021	1,544,212
Reservoir	1	EA	340,182	78,242	30,480	38,100	487,005
Dam Site 19 with Reservoir	1	EA	5,540,694	3,842,969	496,446	620,558	10,500,667
Dam Site 19 with Reservoir	1	EA	5,540,694	3,842,969	496,446	620,558	10,500,667
Dam Site 19 with Reservoir	1	EA	5,540,694	3,842,969	496,446	620,558	10,500,667
Embankment & Spillway	1	EA	4,121,825	3,627,206	369,316	461,644	8,579,991
Structures	1	EA	1,133,519	158,693	101,563	126,954	1,520,730
Reservoir	1	EA	285,350	57,070	25,567	31,959	399,946
Dam Site 10 - Dry Dam	1	EA	7,986,364	3,059,889	715,578	894,473	12,656,303

Description	Quantity	UOM	ContractCost	Contingency	SIOH	MiscOwner	ProjectCost
Dam Site 10 - Dry Dam	1	EA	7,986,364	3,059,889	715,578	894,473	12,656,303
Dam Site 10 - Dry Dam	1	EA	7,986,364	3,059,889	715,578	894,473	12,656,303
Embankment & Spillway	1	EA	6,512,065	2,800,188	583,481	729,351	10,625,086
Structures	1	EA	1,134,116	181,459	101,617	127,021	1,544,212
Reservoir	1	EA	340,182	78,242	30,480	38,100	487,005
Dam Site 19 - Dry Dam	1	EA	5,463,781	3,775,285	489,555	611,943	10,340,564
Dam Site 19 - Dry Dam	1	EA	5,463,781	3,775,285	489,555	611,943	10,340,564
Dam Site 19 - Dry Dam	1	EA	5,463,781	3,775,285	489,555	611,943	10,340,564
Embankment & Spillway	1	EA	4,044,912	3,559,522	362,424	453,030	8,419,888
Structures	1	EA	1,133,519	158,693	101,563	126,954	1,520,730
Reservoir	1	EA	285,350	57,070	25,567	31,959	399,946