

**UPPER MISSISSIPPI RIVER RESTORATION
FEASIBILITY REPORT
WITH INTEGRATED ENVIRONMENTAL ASSESSMENT**

**BEAVER ISLAND
HABITAT REHABILITATION AND ENHANCEMENT PROJECT**

**POOL 14, UPPER MISSISSIPPI RIVER MILES 513.0-517.0
CLINTON COUNTY, IOWA**

APPENDIX I

COST ESTIMATE

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**APPENDIX I
COST ESTIMATE**

I. INTRODUCTION

This appendix contains a Total Project Cost Summary prepared for the *Beaver Island Habitat Rehabilitation and Enhancement Project* (Project). The proposed Project is located in Clinton County, Iowa, between the Cities of Camanche and Clinton, in Pool 14 between Upper Mississippi River river miles 513.0 and 517.0. Areas considered as part of this Project and described as the “Project area” include Beaver Island, Beaver Slough, Albany Island, and Albany Slough. The Project area contains about 1,678 acres of interconnected backwaters, secondary channels, wetlands and floodplain habitat.

II. PROJECT DESCRIPTION

The goals of the proposed Project are to restore and protect off-channel aquatic, wetland, and floodplain forest habitat on Beaver Island through construction of measures which will increase the quality of year-round habitat for fish, increase floodplain forest diversity, and increase structure and function of side channel habitat.

A. Tree and Brush Clearing. The topographic diversity sites will require the clearing of the existing trees and brush. The intersection of Beaver Slough and Upper Cut will require removal of trees and brush for the placement of a closure structure. Albany Island will require two locations for removal of trees and brush on the upstream interior side and the downstream navigation side. No grubbing or stump removal is required. The cleared debris will be loaded onto a barge and transported to shore. Once the debris is unloaded on shore it will be processed by chipping and hauled to a proper disposal recycling facility.

B. Dredging. The Project consists of mechanically dredging backwater areas of the Beaver Island complex. The backwater areas will be dredged using a crane with a 4cy clamshell bucket and/or a long reach excavator on a floating plant. The long reach excavator on a floating plant will perform the

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initial pass and final pass to clean up slopes and high spots. The crane with clamshell bucket on a floating plant will excavate the bulk of the dredged material. The material will be sidecast for the most part with some areas of double handling in a scow. A long reach excavator, on shore, will be used to pull, spread and stack dredged material on shore, with the assistance of a dozer.

C. Bank Stabilization. The intersection of Beaver Slough and Upper Cut will require the placement of a closure structure. Albany Island will require two locations for bank stabilization using a floating plant with a skid steer dumping the riprap and an excavator shaping the material. These two locations are the upstream interior side and the downstream navigation side of Albany Island. A chevron at the upstream point of Albany Island is to be constructed in the same manner as the Island's bank stabilization. To enhance mussel habitat, substrate consisting of river stone will be placed between the interior side of Albany Island and the navigation side of Beaver Island.

D. Grading and Shaping. Once the dredged material has dried at the topographic diversity sites it will be shaped onsite with dozers to the appropriate slopes. Once shaping is complete, temporary seeding may be employed if permanent seeding cannot occur immediately. This will prepare the areas to receive the final tree and shrub plantings.

E. Tree and Shrub Planting. Topographic diversity sites will be divided into ½ acre plots, which will be planted with one size of tree (#3, #5 or #15) over the period of three years. All planted trees will receive a tree tube to assist with the survival of the trees. Forested wetland shrubs will be interplanted with the forested wetland trees. The understory seed mixture will be planted below the shrubs and trees. A buffer mix that includes seeds and stakes will be planted on the slopes approaching the planting areas.

III. COST METHODOLOGY

A. General. This Fully Funded Estimate (FFE) has been prepared to October 2017 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 Engineering Regulation (ER) 110-1-1300, *Cost Engineering Policy and General Requirements* (26 March 1993) and ER 1110-2-1302, *Civil Works Cost Engineering* (30 June 2016). The Fully Funded Estimate (FFE) was completed in accordance with Engineering Manual 110-2-1304, *Civil Works Construction Cost Index System (CWCCIS)*, (revised 31 March 2016).

The estimate was developed using Micro Computer Aided Cost Estimate System (MCACES) MII v4.3 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. The midpoint of construction is anticipated to be the 1st quarter of 2019 for Contract 1, 3rd quarter of 2020 for Contract 2, 4th quarter of 2021 for Contract 3 and 3rd quarter of 2024 for Contract 4, and was used to determine the FFE.

This Project is assumed to be an open bid, although the possibility of this being an 8A contract was discussed and properly evaluated in the determination of what contingency value to apply to the Project.

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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 riverstone, riprap, trees and shrubs. Direct costs were calculated independent of the contractor assigned to perform the work.

1. Labor-Rate Determination. Labor Rates are based on 2016 Davis-Bacon Wage Rates general decision IA160003.

2. Equipment Rates. All equipment costs are from MII Equipment Region 5 2014 and MII English Cost Book 2015.

3. Fuel Rates. Rates have been updated as of Thursday, August 11, 2016. Current fuel prices are based on Midwest averages from <http://www.eia.doe.gov/>. This includes: Gasoline, On-Road Diesel, and Off-Road Diesel.

4. Overtime Considerations. Overtime was considered and deemed necessary for the mechanical dredging work. It has been applied in the estimate as a 5-day week, 12-hour single shift workday.

5. Sales Tax. Sales tax has been included and is applied, to material costs only, at a rate of 7%.

6. Productivity. Production rates were created based on historical rates used in the Cost Engineering Section in Rock Island District and also based on what was determined reasonable by the cost estimator. In addition, user crews were created using the estimator's judgment.

C. Indirect Costs. Contractor assignments were determined after the formulation of the direct costs. Each of the four separate contracts were assigned a Prime Contractor with the associated subcontractors. Due to different construction schedules and scope of work the percentages for the markups will vary between the four contracts.

Prime Contractor: Will perform Construct Beaver Island Closure Structure, Construct Albany Island Chevron and Bankline Protection, Add Mussel Habitat, Excavate Dredge Cuts, Transport Material to Topographic Diversity Sites, Shape Topographic Diversity Sites and add Substrate to Excavated Cuts for Fisheries Habitat.

Clearing Subcontractor: Will perform Clear Trees Associated with Forest Diversity Sites

Landscaping Subcontractor: Will perform Plant Seeds, Trees and Shrubs

Surveying Subcontractor: Will perform all Surveying Work.

QC Subcontractor: Will perform all Quality Control Work.

1. Prime Contractor

a. Job Office Overhead. Overhead rate for Job Office Overhead (JOOH) was calculated with itemized costs, based on the developed construction schedule and each contract's scope of work. In this case, a value between 13.19% - 28.66% was calculated for the prime contractor plus 2% for

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small tools (own work and subcontracted work, except the 2% small tools is only on the Prime Contractor's own work).

b. Home Office Overhead. Overhead rate for Home Office Overhead (HOOH) was applied as a running percentage. In this case, a value of 8% was applied for the prime contractor. Home Office Overhead 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 (own work and subcontracted work).

c. Profit. Profit has been included and was applied using the profit weighted guidelines. In this case, a value between 9.26% - 9.67% was calculated for the prime contractor (own work and subcontracted work).

d. Bond. Bond was included based on the bond table class B. In this case, a value between 0.92% - 1.22% was calculated for the prime contractor (own work and subcontracted work).

2. Subcontractors

a. Job Office Overhead. Overhead rates for JOOH were applied as a direct percentage. In this case, a value between 13% - 15% was applied to the subcontractors.

b. Home Office Overhead. Overhead rates for HOOH were applied as a running percentage. In this case, a value between 5% - 7% was applied to the subcontractors.

c. Profit. Profit has been included and was applied as a running percentage. In this case, a value between 7.5% - 9% was assumed for the subcontractors.

D. Escalation. The Project costs have been escalated to the midpoint of construction, assumed to be the 1st quarter of 2019 for Contract 1; 3rd quarter of 2020 for Contract 2; 4th quarter of 2021 for Contract 3; and 3rd quarter of 2024 for Contract 4.

E. Contingency. After review of Project documents and discussion with members of the Project Development Team involved in the design of the Project, an informal risk analysis was conducted resulting in the development of a contingency. This contingency was developed reflecting the uncertainty associated with the work features. This includes the development of the contingencies applied to Planning, Engineering, and Design (PED) as well as Construction Management feature accounts.

F. Other Assumptions

1. Mobilization. Equipment needs were identified from work items in the MII estimate. Equipment was assumed to be mobilized within 150 miles for land based equipment. Marine equipment was assumed to be mobilized within a distance upriver or downriver that included at least three biddable contractors for this type of work. Different periods for mobilization were created based on the construction schedule.

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2. Government Furnished Materials. The estimate is based on no government furnished materials.

3. Site Access. It is assumed that the site can be accessible from May 15 to November 15 of each year, except in the event of a flood.

4. Waste Disposal. Cleared trees and brush will be chipped on-site and hauled away to a proper recycling disposal facility. No disposal fees are necessary as this area/region has plenty of local tree/brush recycling facilities that will take the material for free, as they process the material and resell it as mulch. It is assumed that there will be no other disposal removal from the site.

5. Construction Restraints. Tree clearing is only allowed from April 01 to September 30 of each year.

IV. PROJECT FEATURE ACCOUNTS

A. (01) Lands and Damages. This account contains no values as no real estate will need to be acquired for this Project.

B. (06) Fish and Wildlife Facilities. The items included in this account are for adaptive management and monitoring, which includes Floodplain Forest Diversity, Albany Island Bank Stabilization, Albany Slough Freshwater Mussel Habitat and Aquatic Habitat. The Floodplain Forest Diversity includes costs for monitoring & analysis using forest plot survey annually. Albany Island Bank Stabilization includes costs for monitoring, analysis and reporting using site inspection and ADCP data collection annually and AM Feature: riprap/chevron rock install/remove. Albany Slough Freshwater Mussel Habitat includes costs for monitoring, analysis and reporting using mussel survey and data analysis every three years. The Aquatic Habitat includes costs for monitoring, analysis and reporting using fish surveys, water quality and data analysis annually and AM Feature: notch closing structure.

C. (09) Channels & Canals. The mechanical dredging and topographic diversity site shaping are included under this account as well as other miscellaneous tasks such as silt fencing, tree and brush clearing, pre and post dredging surveys, fish substrate and tree and shrub planting.

D. (16) Bank Stabilization. The placement of a riprap closure structure on Beaver Island, placement of a riprap chevron at the head of Albany Island, placement of riprap bank stabilization along the upstream and downstream sides of Albany Island, along with river stone mussel substrate along Albany Island are included under this account as well as other miscellaneous tasks such as tree and brush clearing.

E. (30) Planning, Engineering, and Design. The work covered under this account includes the Project Management and the Planning, Engineering, and Design (PED) costs spent to date as well as the remaining estimated costs that will be associated with the engineering and design for this Project. The Project Engineer and Project Manager determined the percentages for PED.

F. (31) Construction Management. The work covered under this account includes the expected costs for contract supervision, contract and construction administration, technical management

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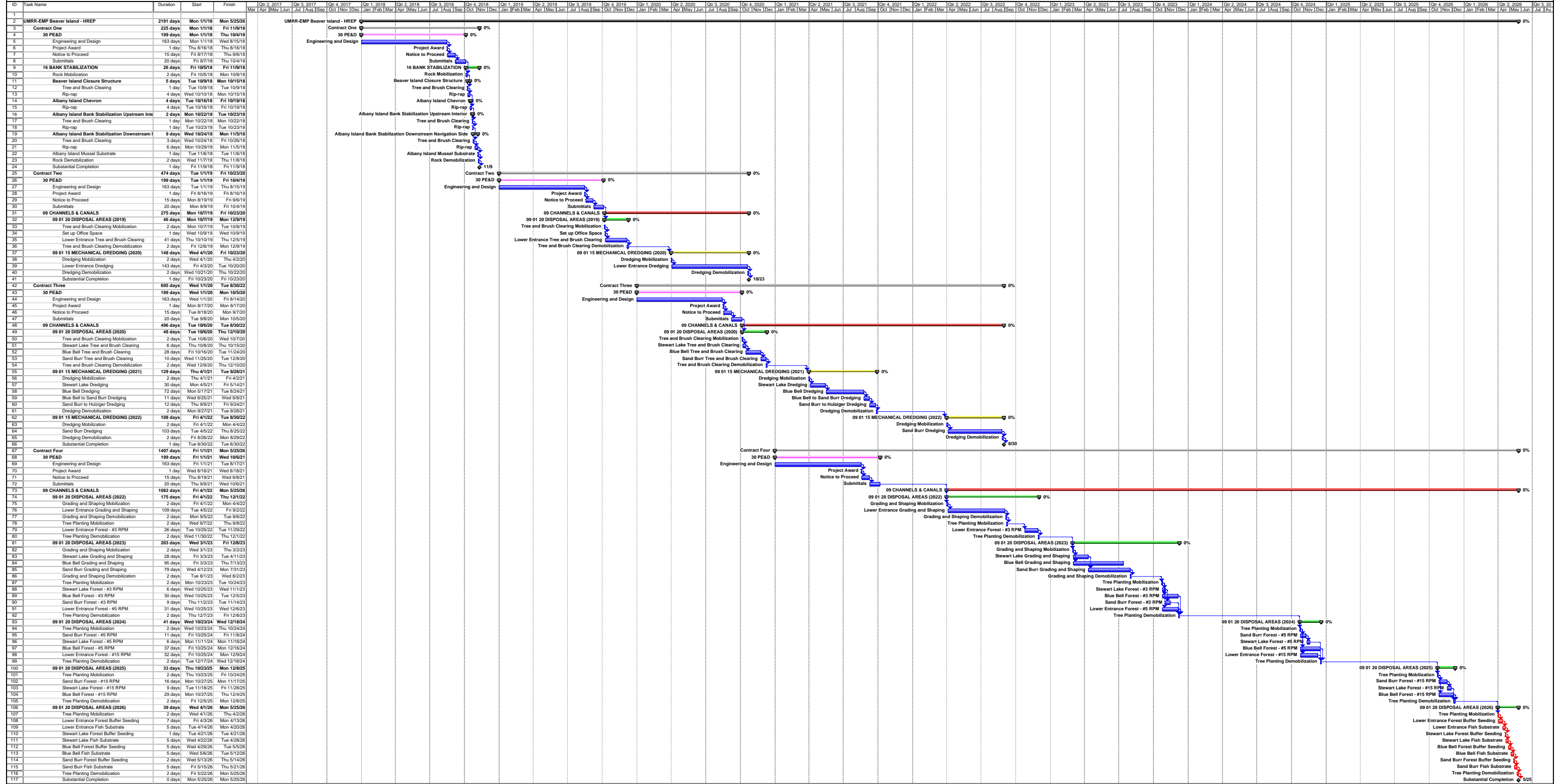
activities, district office supervision, and administration costs. The Project Engineer and Project Manager determined the percentages for Construction Management.

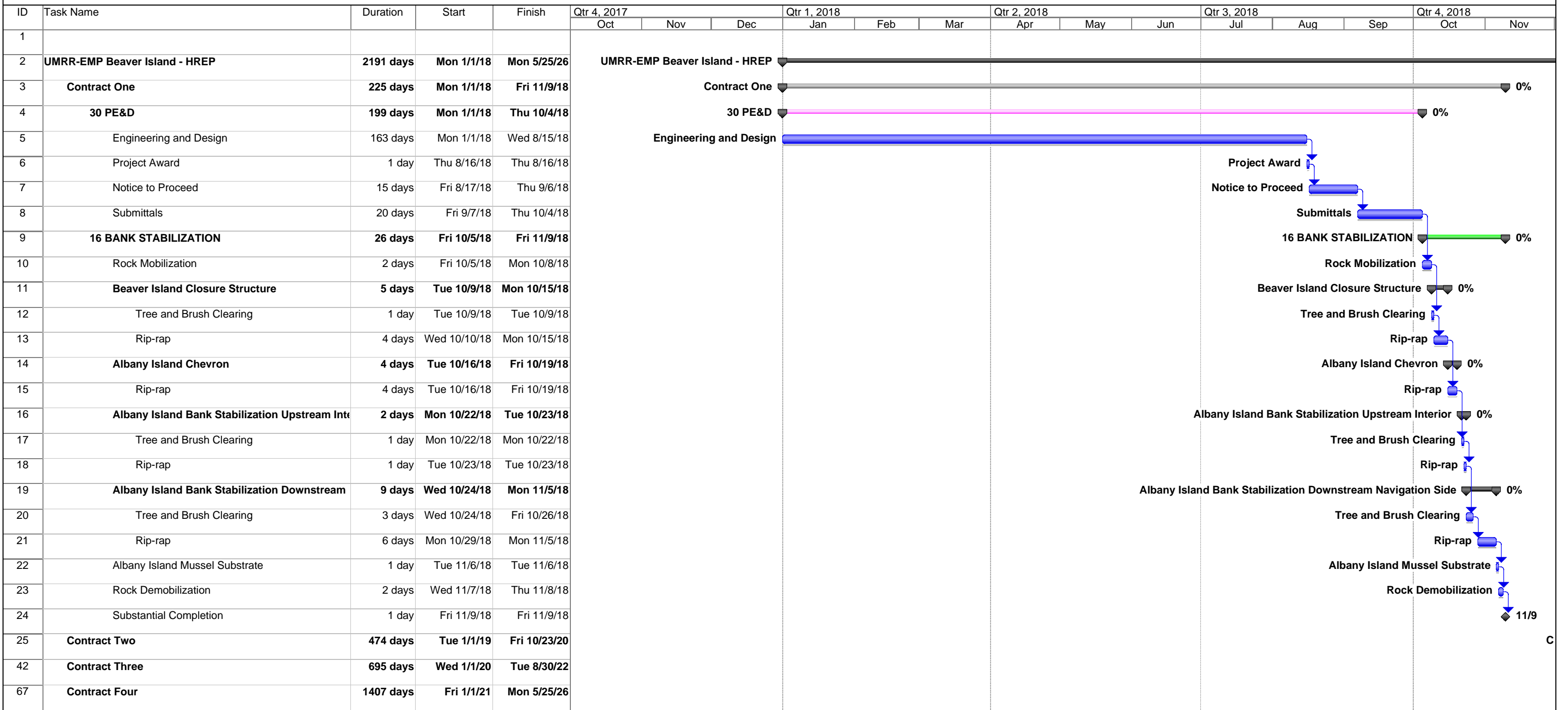
V. PROJECT SCHEDULE

The estimated duration of the Project is 9 years, which is based on the construction schedule. The schedule was created following the durations for crews and equipment in the MII estimate. A working time of May 15 to November 15 of each year was applied to the schedule. The Project duration also includes the separation of the tree and shrub planting over three years after the dredging work has been completed. Due to the size of this project and the sequencing of construction features it has been assumed that the project will be procured by four separate contracts. Appendix I-A shows the Project Schedule.

VI. TOTAL PROJECT COST

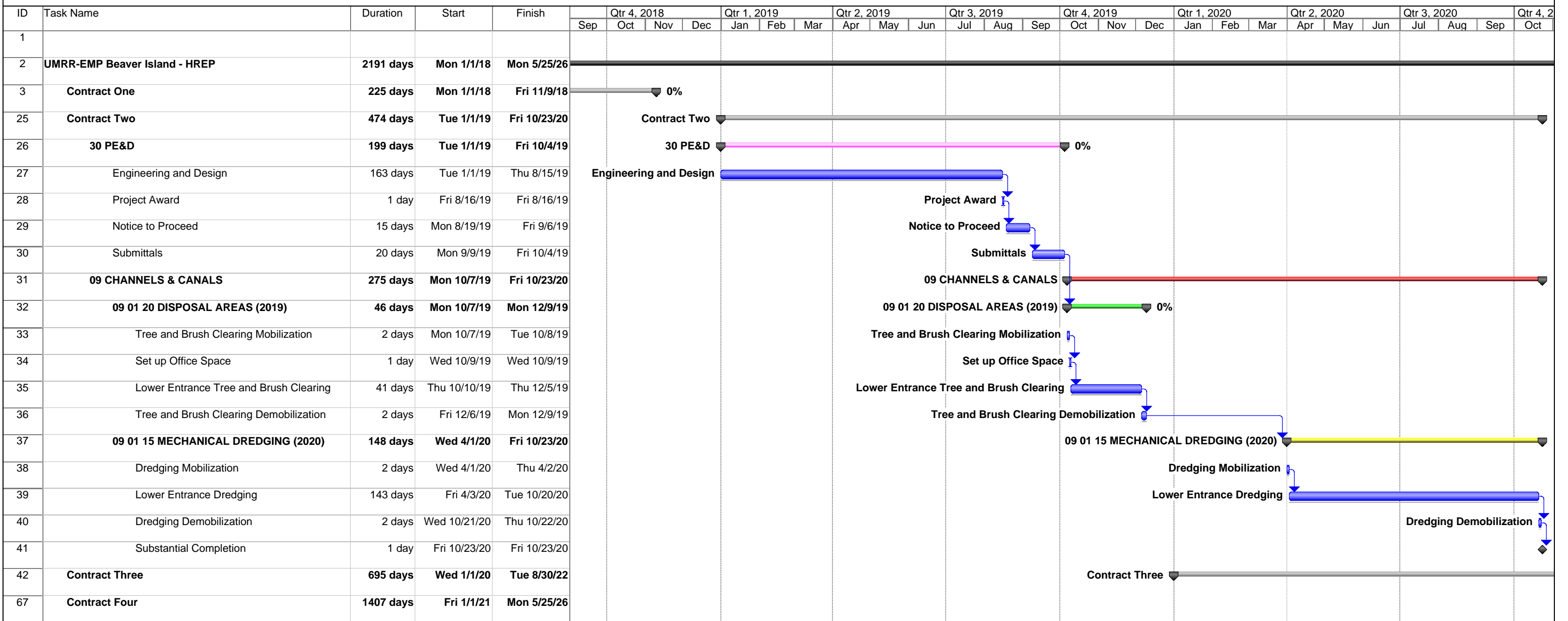
The total Project cost for the Current Working Estimate (CWE) is \$21,520,000.00 (includes contingency). The Constant Dollar Basis cost is \$23,403,000.00 (includes contingency and escalation). The Total Project Cost for the Fully Funded Estimate (FFE) is \$25,288,000.00 at 2017 fiscal year pricing (includes contingency, escalation, and inflation). Based on the construction schedule, work will commence in August 2018. There is no cost sharing on this Project as it is expected to be fully funded by the U.S. Army Corps of Engineers. Appendix I-A shows the Total Project Cost Summary.





Project: Beaver Island ATR Schedule
Subject: Contract One
Date: Fri 9/9/16

Critical		Task		Baseline		Milestone		Project Summary		Deadline	
Critical Split		Split		Baseline Split		Summary Progress		External Tasks			
Critical Progress		Task Progress		Baseline Milestone		Summary		External Milestone			



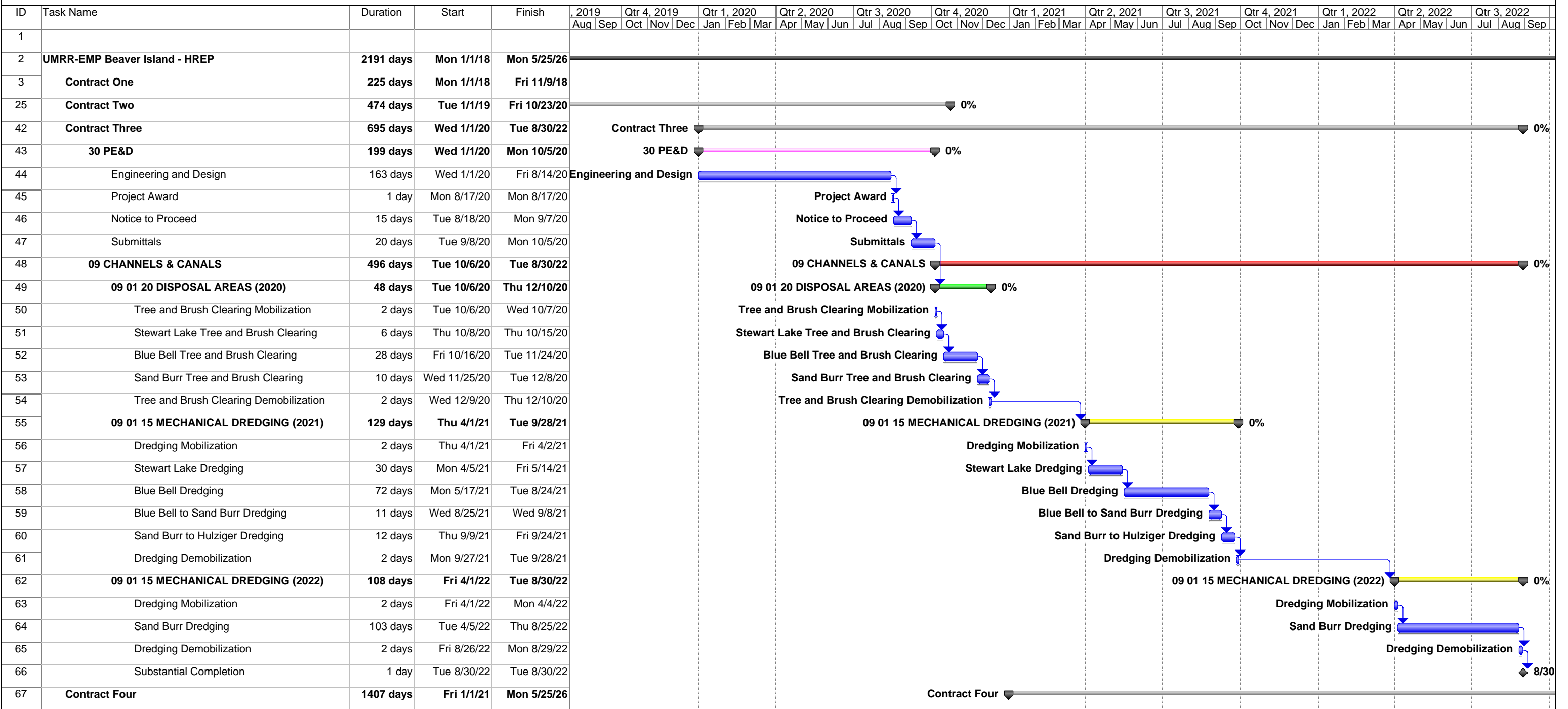
Project: Beaver Island ATR Schedule
Subject: Contract Two
Date: Fri 9/9/16

Critical		Task		Baseline		Milestone		Project Summary		Deadline	
Critical Split		Split		Baseline Split		Summary Progress		External Tasks			
Critical Progress		Task Progress		Baseline Milestone		Summary		External Milestone			

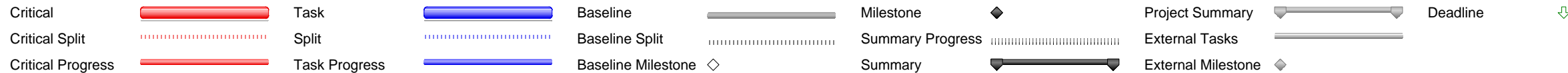
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 with Integrated Environmental Assessment

Beaver Island
 Habitat Rehabilitation and Enhancement Project
 Contract Three

Pool 14, Upper Mississippi River Miles 513.0-517.0
 Clinton County, Iowa
 Project Schedule



Project: Beaver Island ATR Schedule
 Subject: Contract Three
 Date: Fri 9/9/16



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

PROJECT: Beaver Island Habitat Rehabilitation and Enhancement Project
PROJECT NO: 134034
LOCATION: Clinton County, Iowa - Mississippi River, Pool 14, River Mile 513.0-515.5

DISTRICT: Rock Island District
POC: CHIEF, COST ENGINEERING, Charles Van Laarhoven
PREPARED: 11/10/2016

This Estimate reflects the scope and schedule in report; 0

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:	Spent Thru: 12/17/2015 (\$K)	TOTAL FIRST COST (\$K) K	INFLATED (%) L	COST (\$K) M	CNTG (\$K) N	FULL (\$K) O
										2018 1 OCT 17						
06	FISH & WILDLIFE FACILITIES	\$231	\$68	29.7%	\$299	1.9%	\$235	\$70	\$305		\$0	\$305	13.7%	\$268	\$79	\$347
09	CHANNELS & CANALS	\$12,002	\$3,559	29.7%	\$15,561	1.9%	\$12,226	\$3,625	\$15,850		\$0	\$15,850	8.7%	\$13,293	\$3,941	\$17,234
16	BANK STABILIZATION	\$1,185	\$351	29.7%	\$1,537	1.9%	\$1,207	\$358	\$1,565		\$0	\$1,565	2.0%	\$1,231	\$365	\$1,596
	#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
	#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:	\$13,418	\$3,979		\$17,397	1.9%	\$13,668	\$4,053	\$17,721		\$0	\$17,721	8.2%	\$14,791	\$4,386	\$19,177
01	LANDS AND DAMAGES	\$0	\$0	-	\$0	-	\$0	\$0	\$0		\$0	\$0	-	\$0	\$0	\$0
30	PLANNING, ENGINEERING & DESIGN	\$2,080	\$480	23.1%	\$2,560	4.0%	\$2,163	\$500	\$2,663		\$1,427	\$4,090	11.2%	\$2,406	\$556	\$4,388
31	CONSTRUCTION MANAGEMENT	\$1,342	\$220	16.4%	\$1,562	1.9%	\$1,367	\$225	\$1,592		\$0	\$1,592	8.2%	\$1,480	\$243	\$1,723
	PROJECT COST TOTALS:	\$16,840	\$4,679	27.8%	\$21,520		\$17,199	\$4,777	\$21,976		\$1,427	\$23,403	8.6%	\$18,677	\$5,184	\$25,288

CHIEF, COST ENGINEERING, Charles Van Laarhoven

PROJECT MANAGER, Karla Sparks

CHIEF, REAL ESTATE, Stuart Jackson

CHIEF, PLANNING, xxx

CHIEF, ENGINEERING, xxx

CHIEF, OPERATIONS, xxx

CHIEF, CONSTRUCTION, xxx

CHIEF, CONTRACTING, xxx

CHIEF, PM-PB, xxx

CHIEF, DPM, xxx

ESTIMATED FEDERAL COST: 100% \$25,288
ESTIMATED NON-FEDERAL COST: 0% \$0

ESTIMATED TOTAL PROJECT COST: \$25,288

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

**** CONTRACT COST SUMMARY ****

PROJECT: Beaver Island Habitat Rehabilitation and Enhancement Project
 LOCATION: Clinton County, Iowa - Mississippi River, Pool 14, River Mile 513.0-515.5
 This Estimate reflects the scope and schedule in report; 0

DISTRICT: Rock Island District
 POC: CHIEF, COST ENGINEERING, Charles Van Laarhoven
 PREPARED: 11/10/2016

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	Mid-Point Date P	INFLATED (%) L	COST (\$K) M	CNTG (\$K) N	FULL (\$K) O
		RISK BASED												
16	PHASE 1 or CONTRACT 1 BANK STABILIZATION	\$1,185	\$351	29.7%	\$1,537	1.9%	\$1,207	\$358	\$1,565	2019Q1	2.0%	\$1,231	\$365	\$1,596
CONSTRUCTION ESTIMATE TOTALS:		\$1,185	\$351	29.7%	\$1,537		\$1,207	\$358	\$1,565			\$1,231	\$365	\$1,596
01	LANDS AND DAMAGES	\$0	\$0	0.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
30	PLANNING, ENGINEERING & DESIGN													
2.0%	Project Management	\$24	\$6	23.1%	\$30	4.0%	\$25	\$6	\$31	2018Q3	2.0%	\$25	\$6	\$31
0.0%	Planning & Environmental Compliance	\$0	\$0	23.1%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
10.5%	Engineering & Design	\$124	\$29	23.1%	\$153	4.0%	\$129	\$30	\$159	2018Q3	2.0%	\$132	\$30	\$162
0.0%	Reviews, ATRs, IEPRs, VE	\$0	\$0	23.1%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
0.0%	Life Cycle Updates (cost, schedule, risks)	\$0	\$0	23.1%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
0.0%	Contracting & Reprographics	\$0	\$0	23.1%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
3.0%	Engineering During Construction	\$36	\$8	23.1%	\$44	4.0%	\$37	\$9	\$46	2019Q1	4.0%	\$39	\$9	\$48
0.0%	Planning During Construction	\$0	\$0	23.1%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
0.0%	Project Operations	\$0	\$0	23.1%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
31	CONSTRUCTION MANAGEMENT													
10.0%	Construction Management	\$119	\$20	16.4%	\$139	1.9%	\$121	\$20	\$141	2019Q1	2.0%	\$124	\$20	\$144
0.0%	Project Operation:	\$0	\$0	16.4%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
0.0%	Project Management	\$0	\$0	16.4%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
CONTRACT COST TOTALS:		\$1,488	\$413		\$1,902		\$1,520	\$422	\$1,942			\$1,551	\$431	\$1,981

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

**** CONTRACT COST SUMMARY ****

PROJECT: Beaver Island Habitat Rehabilitation and Enhancement Project
 LOCATION: Clinton County, Iowa - Mississippi River, Pool 14, River Mile 513.0-515.5
 This Estimate reflects the scope and schedule in report; 0

DISTRICT: Rock Island District
 POC: CHIEF, COST ENGINEERING, Charles Van Laarhoven
 PREPARED: 11/10/2016

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	Mid-Point Date P	INFLATED (%) L	COST (\$K) M	CNTG (\$K) N	FULL (\$K) O
09	PHASE 2 or CONTRACT 2 CHANNELS & CANALS	\$3,451	\$1,023	29.7%	\$4,474	1.9%	\$3,515	\$1,042	\$4,557	2020Q3	5.0%	\$3,692	\$1,095	\$4,787
	CONSTRUCTION ESTIMATE TOTALS:	\$3,451	\$1,023	29.7%	\$4,474		\$3,515	\$1,042	\$4,557			\$3,692	\$1,095	\$4,787
01	LANDS AND DAMAGES	\$0	\$0	0.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
30	PLANNING, ENGINEERING & DESIGN													
2.0%	Project Management	\$69	\$16	23.1%	\$85	4.0%	\$72	\$17	\$88	2019Q3	6.1%	\$76	\$18	\$94
0.0%	Planning & Environmental Compliance	\$0	\$0	23.1%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
10.5%	Engineering & Design	\$362	\$84	23.1%	\$446	4.0%	\$376	\$87	\$463	2019Q3	6.1%	\$399	\$92	\$492
0.0%	Reviews, ATRs, IEPRs, VE	\$0	\$0	23.1%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
0.0%	Life Cycle Updates (cost, schedule, risks)	\$0	\$0	23.1%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
0.0%	Contracting & Reprographics	\$0	\$0	23.1%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
3.0%	Engineering During Construction	\$104	\$24	23.1%	\$128	4.0%	\$108	\$25	\$133	2020Q3	10.3%	\$119	\$28	\$147
0.0%	Planning During Construction	\$0	\$0	23.1%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
0.0%	Project Operations	\$0	\$0	23.1%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
31	CONSTRUCTION MANAGEMENT													
10.0%	Construction Management	\$345	\$57	16.4%	\$402	1.9%	\$352	\$58	\$409	2020Q3	5.1%	\$369	\$61	\$430
0.0%	Project Operation:	\$0	\$0	16.4%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
0.0%	Project Management	\$0	\$0	16.4%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
	CONTRACT COST TOTALS:	\$4,331	\$1,203		\$5,534		\$4,423	\$1,228	\$5,651			\$4,656	\$1,293	\$5,949

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

**** CONTRACT COST SUMMARY ****

PROJECT: Beaver Island Habitat Rehabilitation and Enhancement Project
 LOCATION: Clinton County, Iowa - Mississippi River, Pool 14, River Mile 513.0-515.5
 This Estimate reflects the scope and schedule in report; 0

DISTRICT: Rock Island District
 POC: CHIEF, COST ENGINEERING, Charles Van Laarhoven
 PREPARED: 11/10/2016

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	Estimate Prepared: Effective Price Level:		8-Nov-16 1-Oct-16	TOTAL (\$K) F	Program Year (Budget EC): Effective Price Level Date:		2018 1 OCT 17	Mid-Point Date P	INFLATED (%) L	COST (\$K) M	CNTG (\$K) N	FULL (\$K) O	
		COST (\$K) C	CNTG (\$K) D	CNTG (%) E		ESC (%) G	COST (\$K) H	CNTG (\$K) I						TOTAL (\$K) J
09	PHASE 3 or CONTRACT 3 CHANNELS & CANALS	\$4,961	\$1,471	29.7%	\$6,432	1.9%	\$5,054	\$1,498	\$6,552	2021Q4	7.7%	\$5,442	\$1,614	\$7,056
CONSTRUCTION ESTIMATE TOTALS:		\$4,961	\$1,471	29.7%	\$6,432		\$5,054	\$1,498	\$6,552			\$5,442	\$1,614	\$7,056
01	LANDS AND DAMAGES	\$0	\$0	0.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
30	PLANNING, ENGINEERING & DESIGN													
2.0%	Project Management	\$99	\$23	23.1%	\$122	4.0%	\$108	\$24	\$127	2020Q3	10.3%	\$114	\$26	\$140
0.0%	Planning & Environmental Compliance	\$0	\$0	23.1%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
10.5%	Engineering & Design	\$521	\$120	23.1%	\$641	4.0%	\$542	\$125	\$667	2020Q3	10.3%	\$598	\$138	\$736
0.0%	Reviews, ATRs, IEPRs, VE	\$0	\$0	23.1%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
0.0%	Life Cycle Updates (cost, schedule, risks)	\$0	\$0	23.1%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
0.0%	Contracting & Reprographics	\$0	\$0	23.1%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
3.0%	Engineering During Construction	\$149	\$34	23.1%	\$183	4.0%	\$155	\$36	\$191	2021Q4	15.9%	\$180	\$41	\$221
0.0%	Planning During Construction	\$0	\$0	23.1%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
0.0%	Project Operations	\$0	\$0	23.1%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
31	CONSTRUCTION MANAGEMENT													
10.0%	Construction Management	\$496	\$81	16.4%	\$577	1.9%	\$505	\$83	\$588	2021Q4	7.7%	\$544	\$89	\$634
0.0%	Project Operation:	\$0	\$0	16.4%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
0.0%	Project Management	\$0	\$0	16.4%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
CONTRACT COST TOTALS:		\$6,226	\$1,730		\$7,956		\$6,359	\$1,766	\$8,125			\$6,877	\$1,909	\$8,786

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

**** CONTRACT COST SUMMARY ****

PROJECT: Beaver Island Habitat Rehabilitation and Enhancement Project
 LOCATION: Clinton County, Iowa - Mississippi River, Pool 14, River Mile 513.0-515.5
 This Estimate reflects the scope and schedule in report; 0

DISTRICT: Rock Island District
 POC: CHIEF, COST ENGINEERING, Charles Van Laarhoven
 PREPARED: 11/10/2016

Civil Works Work Breakdown Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)				TOTAL PROJECT COST (FULLY FUNDED)				
		Estimate Prepared: Effective Price Level:		8-Nov-16 1-Oct-16	Program Year (Budget EC): 2018 Effective Price Level Date: 1 OCT 17				FULLY FUNDED PROJECT ESTIMATE					
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 4 or CONTRACT 4														
06	FISH & WILDLIFE FACILITIES	\$231	\$68	29.7%	\$299	1.9%	\$235	\$70	\$305	2024Q3	13.7%	\$268	\$79	\$347
09	CHANNELS & CANALS	\$3,590	\$1,064	29.7%	\$4,655	1.9%	\$3,657	\$1,084	\$4,741	2024Q3	13.7%	\$4,158	\$1,233	\$5,391
CONSTRUCTION ESTIMATE TOTALS:		\$3,821	\$1,133	29.7%	\$4,954		\$3,892	\$1,154	\$5,046			\$4,426	\$1,312	\$5,738
01	LANDS AND DAMAGES	\$0	\$0	0.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
30	PLANNING, ENGINEERING & DESIGN													
2.0%	Project Management	\$76	\$18	23.1%	\$94	4.0%	\$79	\$18	\$97	2021Q3	14.7%	\$91	\$21	\$112
0.0%	Planning & Environmental Compliance	\$0	\$0	23.1%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
10.5%	Engineering & Design	\$401	\$93	23.1%	\$494	4.0%	\$417	\$96	\$513	2021Q3	14.7%	\$479	\$111	\$589
0.0%	Reviews, ATRs, IEPRs, VE	\$0	\$0	23.1%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
0.0%	Life Cycle Updates (cost, schedule, risks)	\$0	\$0	23.1%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
0.0%	Contracting & Reprographics	\$0	\$0	23.1%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
3.0%	Engineering During Construction	\$115	\$27	23.1%	\$142	4.0%	\$120	\$28	\$147	2024Q3	29.6%	\$155	\$36	\$191
0.0%	Planning During Construction	\$0	\$0	23.1%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
0.0%	Project Operations	\$0	\$0	23.1%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
31	CONSTRUCTION MANAGEMENT													
10.0%	Construction Management	\$382	\$63	16.4%	\$445	1.9%	\$389	\$64	\$453	2024Q3	13.7%	\$443	\$73	\$515
0.0%	Project Operation:	\$0	\$0	16.4%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
0.0%	Project Management	\$0	\$0	16.4%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
CONTRACT COST TOTALS:		\$4,795	\$1,332		\$6,128		\$4,897	\$1,360	\$6,257			\$5,593	\$1,552	\$7,145

