Claiborne and Millers Ferry Locks and Dams Fish Passage Study

Appendix C: Cost May 2023







APPENDIX-C: Cost

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C.1. Introduction

C.1.1. Study Area

Claiborne and Millers Ferry Locks and Dams are part of the Alabama-Coosa-Tallapoosa (ACT) River system. The ACT is an interconnected river system and drainage basin that that extends from southeast Tennessee and the northwest corner of Georgia through Alabama and discharges at Mobile Bay in southwest Alabama. The system contains 5 U.S. Army Corps of Engineers (USACE) dams and 11 privately owned dams as shown on Figure C1.



Figure C1: The Alabama-Coosa-Tallapoosa (ACT) River system

C.1.2. Purpose

The purpose of the study is to evaluate Federal interest in establishing fish passage through restoring connectivity in the Alabama and Cahaba Rivers. The system is highly impaired by two dams which restrict access to historical spawning grounds on the Cahaba River from species present in the lower Alabama River. This disruption of natural fish migration patterns has resulted in a decline in native aquatic species populations. Passage would reconnect over 230 miles of the Alabama and Cahaba Rivers to the Mobile River Delta into the Gulf of Mexico, providing connectivity for multiple species of fish, crawfish, mussels, turtles, etc. These species are extremely important to this

freshwater ecosystem and are critical to sustain biodiversity and encourage a healthy ecosystem. This system provides one of the last habitats to many affected species and increased access to historical spawning grounds should result in an increase in the size and distribution of native fish populations.

C.2. Development and Description of Alternatives

C.2.1. Development of Alternatives

Many alternatives and measures were developed and screened out prior to development of any reliable cost estimates. The initial array of alternatives presented at the Alternatives Milestone Meeting (AMM) included 20 measures as presented in <u>Table C-1</u> along with the screening status. These alternatives were screened on factors other than cost, so a complete description of the measures and explanation of the screening is available in other parts of this report.

	Screened out / Carried Forward
Alternatives	
Alt. 1: No Action Alternative	Carried Forward
Alt. 2: Dam Removal- Both CL and MF	Carried Forward
Alt. 3: Fixed Weir Rock Arch- Both CL and MF	Carried Forward
Alt. 4: Fish Lift- Both CL and MF	Screened Out
Alt. 5: Natural Bypass Channel- Both CL and MF	Carried Forward
Alt. 6: Partial Dam Removal- Both CL and MF	Carried Forward
Alt. 7: Dam Removal- CL; Fixed Weir Rock Arch- MF	Carried Forward
Alt. 8: Dam Removal- CL; Fish Lift- MF	Screened Out
Alt. 9: Dam Removal- CL Bypass Channel- MF	Carried Forward
Alt. 10: Dam Removal- CL; Partial Dam Removal- MF	Carried Forward
Alt. 11: Fixed Weir Rock Arch- CL; Fish Lift- MF	Screened Out
Alt. 12: Bypass- CL; Fixed Weir Arch- MF	Carried Forward
Alt. 13: Bypass- CL; Fish Lift- MF	Screened Out
Alt. 14: Fish Lift- CL; Fixed Wei Rock Arch- MF	Screened Out
Alt. 15: Partial Dam Removal- CL; Fixed Weir Rock Arch- MF	Screened Out
Alt. 16: Partial Dam Removal- CL; Fish Lift-	Screened Out

Table C-1: Initial Array of Alternatives

Alt 17: Partial Dam Removal- CL; Natural	Carried Forward
Bypass- MF	
Alt. 18: No Structural Change- CL; Fixed	Screened Out
Weir Rock Arch- MF	
Alt. 19: No Structural Change- CL; Fish Lift-	Screened Out
MF	
Alt. 20: No Structural Change- CL; Natural	Screened Out
Bypass- MF	

The focused array of alternatives, including site specific options, was developed before the AMM. The focused array of alternatives includes ten structural and/or combination alternatives. The complete list is included in <u>Table C-2</u>.

Table C-2: Focused Array of Alternatives

Focused Array of Alternatives	Screened Out / Carried Forward
Alt. 1: No Action Alternative	Carried Forward
Alt. 2: Dam Removal- Both CL and MF	Carried Forward
Alt. 3: Fixed Weir Rock Arch- Both CL and	Carried Forward
Alt. 5: Natural Bypass Channel- Both CL	Carried Forward
Alt. 6: Partial Dam Removal- Both CL and	Carried Forward
Alt. 7: Dam Removal- CL; Fixed Weir Rock	Carried Forward
Alt. 9: Dam Removal- CL Bypass Channel-	Carried Forward
Alt. 10: Dam Removal- CL; Partial Dam	Carried Forward
Alt. 12: Bypass- CL; Fixed Weir Arch- MF	Carried Forward
Alt. 17: Partial Dam Removal- CL; Natural	Carried Forward

C.2.2. Screening of Focused Array

This array of alternatives was analyzed based on environmental benefits achieved, and incremental cost analyses of those benefits. Dam removal was screened out due to violations of study-specific constraints and high overall systemwide impacts. Dam removal would end hydropower generation, a current project authorized purpose at Millers Ferry resulting in a substantial loss in annual benefits. Dam removal would result in negative systemwide environmental impacts including invasive species migration, dredging requirements, contaminated sediment, and unmet flow requirements. All alternatives with that option were removed resulting in the Final Array of Alternatives.

C.3. Development of Alternative Estimates for Final Array

C.3.1. Price Level

The total estimated cost for each of the final alternatives consists of the estimated construction cost, the real estate cost, the Planning, Engineering and Design (PED) cost, the Construction Management (CM) cost, and a contingency developed using an

Abbreviated Risk Analysis (ARA). Each estimate is a class 4 level estimate per ER 1110-2-1302.

C.3.2. Cost Estimate Structure

The cost estimate was developed using a collaboration of several components. Each measure was estimated as a separate project and combined to make alternatives shown in <u>Table C-2</u>. Specifically, the Claiborne Bypass Channel and Rock Weir Arch were each estimated separately from the Millers Ferry Bypass Channel and Rock Weir Arch in MCACES 2nd generation software (MII). In the ARA and Total Project Cost Summaries (TPCS) the measures were combined using simple addition. This approach is justified due to the geographical separation of the project sites. There are no anticipated economies of scale applicable to the alternatives that would need to be included in these estimates.

The construction cost estimates were prepared using MII. Prices used in developing the construction estimates have been found in the 2022 MII Cost Book and material pricing has been validated by requesting quotes from local suppliers. The MII equipment library was set to the 2022 Region III Equipment Library which captures equipment rates in the southeast United States. These rates were backchecked and modified as required to reflect accurate equipment pricing from recent historical projects in Alabama. Labor rates were modified per Davis-Bacon wage rates in Monroe and Wilcox counties Alabama. Project markups were included in the MII estimate as appropriate. PED and CM costs were developed using typical rates from previous Civil Works studies completed by Mobile District. Rates were validated by the project development team and changes were made as necessary to reflect accurate PED and CM costs. An ARA was conducted for each of the study alternatives to provide a basis for carrying contingency forward. These contingency rates were included in the TPCS. Real estate costs and their respective contingency and administrative costs were provided by real estate division and included for each alternative.

C.3.3. Risk Analysis and Contingency

For the analysis an ARA was prepared for each alternative. The ARAs were prepared with input from the PDT to quantify the risks and assigning likelihood and impact of each risk. Existing geotechnical data was not sufficient to develop conceptual design and cost estimates which result in a medium risk. ARA results are included in the Cost Exhibit C-1.

C.3.4. Cost Estimate Presentation

A TPCS was prepared for each alternative. The TPCS combines the RE costs, construction costs, Contingency, PED, and CM, and applies escalation factors to calculate a total project cost for each alternative. Table C-3 shows the Total Project Costs, estimated operations and maintenance (O&M) costs, and estimated construction durations for each of the final array of alternatives. O&M costs are at FY2025 Price level to facilitate economic analysis.

Table C-3: Total Project Costs and Durations of Final Array

Alternative	Total Project Cost	Annual O&M (FY25)	Construction Duration
Alt. 1: No Action Alternative	\$0	\$0	0 Months
Alt. 3: Fixed Weir Rock Arch- Both CL and MF	\$227,000,000	\$200,000	24 Months
Alt. 5d: Natural Bypass Channel- Both Dams (CL right bank, MF right bank)	\$188,000,000 \$200,000		30 Months
Alt. 12b: Fixed Weir Rock Arch- CL; Natural Bypass Channel- MF	\$201,000,000	\$200,000	30 Months
Alt. 13b: Natural Bypass Channel (CL right bank); Fixed Weir Rock Arch- MF	\$214,000,000	\$200,000	24 Months

C.3.5. Development of Operations and Maintenance Costs

Operations and maintenance costs of the final array of alternatives, although not a part of the TPCS, are used in the economics analysis. The O&M costs for the alternatives include routine maintenance costs for the planned gates at Millers Ferry, additional Water Management monitoring, and removal of debris and shoaling at fish passage sites. The O&M cost estimates may be seen in table C-3. O&M costs were estimated using FY25 Price Level.

C.4. Development of the Estimated Schedule

The estimated construction durations have been developed based on the anticipated project requirements from "notice to proceed" through construction completion. The projected project construction durations may be seen in table C-3.

C.5. Selection of the Recommended Plan

Based on the analysis considering project objectives, environmental outcomes, P&G criteria, Cost Effectiveness Analysis (CE), and the Multi-Criteria Decision Analysis (MCDA), the tentatively selected plan (TSP) is Alternative 5d – Natural Bypass Channel at both Claiborne and Millers Ferry Locks and Dams. Alternative 5d has the lowest cost and highest ecological lift of all final array alternatives, is the only best buy action alternative and has the highest comprehensive score from the MCDA. This alternative provides connectivity to the Cahaba River while providing the most acceptable method of fish passage. Sixteen Federally listed threatened and endangered species benefit equally or more with alternative 5d than any other alternative evaluated. Additionally, alternative 5d is preferred by the non-Federal sponsor. The TSP becomes the Recommended Plan once endorsed at the Agency Decision Milestone.

C.6. Development of the Recommended Plan

This section will be developed after the Agency Decision Milestone (ADM).

C.7. Exhibits

- 1) Exhibit C-1: Abbreviated Risk Analysis for the Final Array of Alternatives
- 2) Exhibit C-2: TPCS Sheets for the Final Array of Alternatives

		Abbreviated Risk Analysis						
	Project (less than \$40M):	Claiborne and Millers Ferry Lo	cks and Dams Fisl	h Passage S	Alternative	Alt 3	3	
	Project Development Stage/Atternative: Risk Category:	Moderate Risk: Typical Project		be	Meeting Date:	:	12/9/2022	
		tal Estimated Construction Control	ent Cont - 14	400 004 507	-			
	1 c	Dial Estimated Construction Contra	act Cost = 5	109,981,527				
	CWWBS	Feature of Work	<u>Estim</u>	nated Cost	% Contingency	<u>\$</u>	Contingency	Total
	•							
_	01 LANDS AND DAMAGES	Real Estate	\$	170,000	32%	\$	55,000 \$	225,000
	1 06 01 FISH FACILITIES AT DAMS	CL Excavation	\$	2,857,420	46.4%	\$	1,327,160 \$	4,184,580
	2 06 01 FISH FACILITIES AT DAMS	CL Conc Installation	\$	13,507,769	42.7%	\$	5,772,470 \$	19,280,239
	3 06 01 FISH FACILITIES AT DAMS	CL Cofferdam	\$	4,239,012	58.7%	\$	2,489,144 \$	6,728,156
	4 06 01 FISH FACILITIES AT DAMS	CL Prefab Bridge	\$	5,683,638	42.7%	\$	2,428 <mark>,</mark> 871 \$	8,112,509
	5 06 01 FISH FACILITIES AT DAMS	MF Excavation	\$	59,236,347	46.4%	\$	27,512,966 \$	86,749,313
	6 06 01 FISH FACILITIES AT DAMS	MF Conc Installation	\$	14,608,963	42.7%	\$	6,243,059 \$	20,852,022
	7 06 01 FISH FACILITIES AT DAMS	MF Cofferdam	\$	3,651,787	58.7%	\$	2,144,326 \$	5,796,113.21
	8 06 01 FISH FACILITIES AT DAMS	MF Gate Structure (Rock Arch)	\$	5 12 ,953	40.4%	\$	207,386 \$	720,339.45
	9 06 01 FISH FACILITIES AT DAMS	MF Prefab Bridge	\$	5,683,638	42.7%	\$	2,428,871 \$	8,112,509.09
	10		\$		0%	\$	- \$	-
	11		\$		0%	\$	- \$	-
	12 All Other	Remaining Construction Items	\$		0.0% 0%	\$	- \$	-
	13 30 PLANNING, ENGINEERING, AND DESIGN	Planning, Engineering, & Design	\$	10,335,100	24.7%	\$	2,548,915 \$	12,884,015
	14 31 CONSTRUCTION MANAGEMENT	Construction Management	\$	5,820,000	24.8%	\$	1,443,104 \$	7,263,104
2	XX FORD DOLLAR RISK ADD (EQUALLY DISPERSED TO ALL, MUST	INCLUDE JUSTIFICATION SEE BELOW)				\$		
		Totak						
			Real Estate \$	170,000	32%	\$	55,000 \$	225,000.10
						-		

					-			
		Total Construction Estimate \$	109,981,527	46%	\$	50,554,254 \$	5	160,535,781
		Total Planning, Engineering & Design \$	10,335,100	25%	\$	2,548,915 \$	5	12,884,015
		Total Construction Management \$	5,820,000	25%	\$	1,443,104 \$	5	7,263,104
		Total Excluding Real Estate \$	126,136,627	43%	\$	54,546,273 \$	i	180,682,900
				Base		50%		80%
		Confidence Lev	vel Range Estimate (\$000's)	\$126,137k		\$158,865k		\$180,683k
_					* 50%8	based on base is at 5% CL.		
	Fixed Dollar Risk Add: (Allows for additional risk to							
	be added to the risk analsyis. Must include							
	justification. Does not allocate to Real Estate.							

	-	Abbreviated Risk Analysis		-	-			
	Project (less than \$40M): Project Development Stage/Alternative:	Claiborne and Millers Ferry Locks and Da Feasibility (Alternatives)	ams F	ish Passage	Alternativ	e: Alt	: 5	
	Risk Category:	Moderate Risk: Typical Project Construc	tion 1	Гуре	Meeting Date	e:	12/9/2022	
	T	otal Estimated Construction Contract Cost =	\$	84,090,635				
	CWWBS	Feature of Work	Est	imated Cost	% Contingency	:	\$ Contingency	Total
	-							
	01 LANDS AND DAMAGES	Real Estate	\$	660	25.0%	\$	165 \$	825
1	06 01 FI SH FACILITIES AT DAMS	CL Excavation	\$	6,699,901	46.4%	\$	3,111,842 \$	9,811,743
2	06 01 FI SH FACILITIES AT DAMS	CL Cofferdam	\$	735,825	58.7%	\$	432,076 \$	1,167,901
3	06 01 FISH FACILITIES AT DAMS	CL Rock Lining and Weirs	\$	5,772,540	47.5%	\$	2,739,707 \$	8,512,247
4	06 01 FISH FACILITIES AT DAMS	CL Prefab Bridge	\$	5,683,638	42.7%	\$	2,428,871 \$	8,112,509
5	06 01 FISH FACILITIES AT DAMS	MF Excavation	\$	27,284,862	46.4%	\$	12,672,751 \$	39,957,613
6	06 01 FISH FACILITIES AT DAMS	MF Cofferdam	\$	1,055,794	58.7%	\$	619,961 \$	1,675,755
7	06 01 FISH FACILITIES AT DAMS	MF Rock Lining and Weirs	\$	23,882,959	47.5%	\$	11,335,097 \$	35,218,055.57
8	06 01 FISH FACILITIES AT DAMS	MF Gate Structure (Bypass)	\$	1,607,839	52.0%	\$	836,484 \$	2,444,323.19
9	06 01 FI SH FACILITIES AT DAMS	MF Prefab Bridge	\$	11,367,276	42.7%	\$	4,857,742 \$	16,225,018.18
10			\$		0.0%	\$	- \$	
11			\$		0.0%	\$	- \$	-
12	All Other	Remaining Construction Items	\$	1	0.0% 7.0%	\$	0 \$	1
13	30 PLANNING, ENGINEERING, AND DESIGN	Planning, Engineering, & Design	\$	16,312,750	24.7%	\$	4,023,165 \$	20,335,915
14	31 CONSTRUCTION MANAGEMENT	Construction Management	\$	8,830,000	27.8%	\$	2,454,911 \$	11,284,911
хх	FIXED DOLLAR RISK ADD (EQUALLY DISPERSED TO ALL, MUST	T INCLUDE JUSTIFICATION SEE BELOW)				\$		
		Totals						
		Real Estate	\$	660	25%	\$	165 \$	825.00
		Total Construction Estimate	\$	84,090,635	46%	\$	39,034,531 \$	123,125,166
		Total Planning, Engineering & Design	\$	16,312,750	25%	\$	4,023,165 \$	20,335,915
		Total Construction Management	\$	8,830,000	28%	\$	2,454,911 \$	11,284,911
		Total Excluding Real Estate	\$	109.233.385	42%	\$	45.512.607 \$	154,745,992

	Confidence Level Range Estimate (\$000's)	\$1	09,233k	\$136,541k	\$154,746k
			•	50% based on base is at 5% CL.	
Fixed Dollar Risk Add: (Allows for additional risk to					
be added to the risk analsyis. Must include					
justification. Does not allocate to Real Estate.					

Base

50%

80%

		Abbreviated Risk Analysis						
	Project (less than \$40M) Project Development Stage/Alternative:	Claiborne and Millers Ferry Locks and Da Feasibility (Alternatives)	ams F	Fish Passage	Alternative:	Alt	12b	
	Risk Category	Moderate Risk: Typical Project Construct	tion 1	Гуре	Meeting Date:		12/9/2022	
	Т	otal Estimated Construction Contract Cost =	\$	91,486,569				
	CWWBS	Feature of Work	<u>Est</u>	imated Cost	% Contingency	<u>\$</u>	Contingency	 <u>Total</u>
	▼							
	01 LANDS AND DAMAGES	Real Estate	\$	620,000	25.0%	\$	155,000 \$	\$ 775,000
1	06 01 FISH FACILITIES AT DAMS	CL Excavation	\$	2,857,420	46.4%	\$	1,327,160 \$	\$ 4,184,580
2	06 01 FISH FACILITIES AT DAMS	CL Conc Installation	\$	13,507,769	42.7%	\$	5,772,470 \$	\$ 19,280,239
3	06 01 FISH FACILITIES AT DAMS	CL Cofferdam	\$	4,239,012	58.7%	\$	2,489,144 \$	\$ 6,728,156
4	06 01 FISH FACILITIES AT DAMS	CL Prefab Bridge	\$	5,683,638	42.7%	\$	2,428,871 \$	\$ 8,112,509
5	06 01 FISH FACILITIES AT DAMS	MF Excavation	\$	27,284,862	46.4%	\$	12,672,751 \$	\$ 39,957,613
6	06 01 FISH FACILITIES AT DAMS	MF Cofferdam	\$	1,055,794	58.7%	\$	619,961 \$	\$ 1,675,755
7	06 01 FISH FACILITIES AT DAMS	MF Rock Lining and Weirs	\$	23,882,959	47.5%	\$	11,335,097 \$	\$ 35,218,055.57
8	06 01 FISH FACILITIES AT DAMS	MF Gate Structure (Bypass)	\$	1,607,839	52.0%	\$	836,484 \$	\$ 2,444,323.19
9	06 01 FISH FACILITIES AT DAMS	MF Prefab Bridge	\$	11,367,276	42.7%	\$	4,857,742 \$	\$ 16,225,018.18
10			\$	-	0%	\$	- \$	\$ -
11			\$		0%	\$	- 9	\$ -
12	All Other	Remaining Construction Items	\$	-	0.0% 0%	\$	- \$	\$ -
13	30 PLANNING, ENGINEERING, AND DESIGN	Planning, Engineering, & Design	\$	15,885,400	24.7%	\$	3,917,769 \$	\$ 19,803,169
14	31 CONSTRUCTION MANAGEMENT	Construction Management	\$	9,606,000	24.8%	\$	2,381,866 \$	\$ 11,987,866
хх	FIXED DOLLAR RISK ADD (EQUALLY DISPERSED TO ALL, MUS	T INCLUDE JUSTIFICATION SEE BELOW)				\$	-	
		Totals						
		Real Estate	\$	620,000	25%	\$	155,000 \$	\$ 775,000.00
		Total Construction Estimate	\$	91,486,569	46%	\$	42,339,681 \$	\$ 133,826,250

	Total Construction Estimate \$	91,486,569	46%	\$	42,339,681	\$ 133,826,250
	Total Planning, Engineering & Design \$	15,885,400	25%	\$	3,917,769	\$ 19,803,169
	Total Construction Management \$	9,606,000	25%	\$	2,381,866	\$ 11,987,866
	Total Excluding Real Estate \$	116,977,969	42%	\$	48,639,316	\$ 165,617,285
			Bas	ie	50%	80%
	Confidence Level	Range Estimate (\$000's)	\$116,97	8k	\$146,161k	 \$165,617k
				*50%	based on base is at 5% CL.	
Fixed Dollar Risk Add: (Allows for additional risk to						
be added to the risk analsyis. Must include						
justification. Does not allocate to Real Estate.						

	,	Abbreviated Risk Analysis								
	Project (less than \$40M):	Claiborne and Millers Ferry Locks and Da	ms F	ish Passage		Alternative:	Alt	13b		
	Project Development Stage/Alternative:	Feasibility (Alternatives)								
	Risk Category:	Moderate Risk: Typical Project Construct	on	ly pe		Meeting Date:		12/9/2022		
	T	otal Estimated Construction Contract Cost =	Ş	102,585,593						
	CWWBS	Feature of Work	Est	imated Cost		% Contingency	5	Contingency		Total
	*									
	01 LANDS AND DAMAGES	Real Estate	\$	230,000		26.1%	\$	60,000 \$		290,000
1	06 01 FISH FACILITIES AT DAMS	CL Excavation	\$	6,699,901		46.4%	\$	3,111,842 \$		9,811,743
2	06 01 FISH FACILITIES AT DAMIS	CL Cofferdam	\$	735,825		58.7%	\$	432,076 \$		1,167,901
3	06 01 FISH FACILITIES AT DAMIS	CL Rock Lining and Weirs	\$	5,772,540		47.5%	\$	2,739,707 \$		8,512,247
4	06 01 FISH FACILITIES AT DAMS	CL Prefab Bridge	\$	5,683,638		42.7%	\$	2,428,871 \$		8,112,509
5	06 01 FISH FACILITIES AT DAMS	MF Excavation	\$	59,236,347		46.4%	\$	27,512,966 \$		86,749,313
6	06 01 FISH FACILITIES AT DAMS	MF Conc Installation	\$	14,608,963		42.7%	\$	6,243,059 \$	<u>i</u>	20,852,022
7	06 01 FISH FACILITIES AT DAMS	MF Cofferdam	\$	3,651,787		58.7%	\$	2,144,326 \$	<u>i </u>	5,796,113.21
8	06 01 FISH FACILITIES AT DAMS	MF Gate Structure (Rock Arch)	\$	512,953		40.4%	\$	207,386 \$	<u>i </u>	720,339.45
9	06 01 FISH FACILITIES AT DAMS	MF Prefab Bridge	\$	5,683,638		42.7%	\$	2,428,871 \$	<u>i </u>	8,112,509.09
10			\$			0.0%	\$	- \$;	-
11			\$			0.0%	\$	- \$	<u>i</u>	-
12	All Other	Remaining Construction Items	\$	1	0.0%	7.0%	\$	0 \$	i	1
13	30 PLANNING, ENGINEERING, AND DESIGN	Planning, Engineering, & Design	\$	10,762,450		24.7%	\$	2,654,311 \$		13,416,761
14	31 CONSTRUCTION MANAGEMENT	Construction Management	\$	5,043,000		24.8%	\$	1,250,442 \$		6,293,442
хх	FIXED DOLLAR RISK ADD (EQUALLY DISPERSED TO ALL, MUST	FINCLUDE JUSTIFICATION SEE BELOW)					\$	-		
		Tetal								
		Real Estate	\$	230.000		26%	\$	60.000 \$		290.000.10
		Total Construction Estimate	\$	102,585,593		46%	\$	47,249,104 \$	5	149,834,697
		Total Planning, Engineering & Design	\$	10,762,450		25%	\$	2,654,311 \$	1	13,416,761
		Total Construction Management	\$	5,043,000		25%	\$	1,250,442 \$	í	6,293,442
		Total Excluding Real Estate	\$	118,391,043		43%	\$	51,153,858 \$		169,544,901
				F (1) (4)		Base		50%		80%
		Confidence Lev	/el Ra	ange Estimate (\$	000°s)	\$118,391k	(\$149,083k		\$169,545k
	Fixed Dollar Risk Add: (Allows for additional risk to be added to the risk analsyis. Must include justification. Does not allocate to Real Estate.						51	an anned UTDANE BALTIN (L.		

Example C-2: TPCS Sheets for Final Array of Alternatives

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

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PROJECT: Claiborne and Millers Ferry Locks and Dams Fish Passage Study PROJECT NO: Alt 3 Rock Arch Both Dams

DISTRICT: Mobile District POC: CHIEF, COST ENGINEERING, George Brown

PREPARED: 1/31/2031

LOCATION: Monroe and Wilcox Counties, AI

This Estimate reflects the scope and schedule in report; Study Draft Feasibility Report

Civil	Civil Works Work Breakdown Structure		ESTIMATED COST					PROJE (Consta	CT FIRST CO ant Dollar Bas	TOTAL PROJECT COST (FULLY FUNDED)					
							Pro	gram Year (B ective Price							
WRS	Civil Works	COST	ONTO	ONTG	TOTAL	ESC	COST	ONTG	TOTAL	Spent Thru:			COST	ONTG	5111
NUMBER	Feature & Sub-Feature Description	(SK)	(SK)	(%)	(SK)	(%)	(SK)	(SK)	(SK)	(SK)	(SK)	(%)	(SK)	(SK)	(SK)
A	B	C	D	E	F	G	Н	1	J		ĸ	L	M	N	0
06	Excavation	\$62,093	\$28,811	46.4%	\$90,904	5.5%	\$65.528	\$30,405	\$95,933	so	\$95,933	15.2%	\$75,480	\$35,023	\$110.503
06	Concrete Installation	\$28,117	\$12,006	42.7%	\$40,123	5.5%	\$29,673	\$12,670	\$42,343	so	\$42,343	15.2%	\$34,179	\$14,594	\$48,773
06	Cofferdam	\$7,891	\$4,632	58.7%	\$12,523	5.5%	\$8,328	\$4,888	\$13,216	\$0	\$13,216	15.2%	\$9,592	\$5,631	\$15,223
06	Prefab Bridge	\$11,368	\$4,854	42.7%	\$16,222	5.5%	\$11,997	\$5,123	\$17,120	\$0	\$17,120	15.2%	\$13,819	\$5,901	\$19,720
06	Gate Structure	\$513	\$207	40.4%	\$720	5.5%	\$541	\$219	\$760	\$0	\$760	15.2%	\$624	\$252	\$876
06	Rock Armoring & Weirs	\$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:	\$109,982	\$50,511	-	\$160,493	5.5%	\$116,067	\$53,305	\$169,372	\$0	\$169,372	15.2%	\$133,693	\$61,400	\$195,094
01	LANDS AND DAMAGES	\$170	\$55	32.4%	\$225	5.5%	\$179	\$58	\$237	\$0	\$237	8.0%	\$194	\$63	\$256
30	PLANNING, ENGINEERING & DESIGN	\$10,335	\$2,553	24.7%	\$12,888	5.1%	\$10,861	\$2,683	\$13,544	\$0	\$13,544	9.3%	\$11,869	\$2,932	\$14,800
31	CONSTRUCTION MANAGEMENT	\$11,548	\$2,864	24.8%	\$14,412	5.1%	\$12,136	\$3,010	\$15,146	\$0	\$15,146	12.7%	\$13,679	\$3,392	\$17,071
	PROJECT COST TOTALS:	\$132,035	\$55,982	42.4%	\$188,017		\$139,243	\$59,055	\$198,298	\$0	\$198,298	14.6%	\$159,435	\$67,787	\$227,222

	CHIEF, COST ENGINEERING, George Brown
	PROJECT MANAGER, Jonas White
	CHIEF, REAL ESTATE, Karen Kennedy
	CHIEF, PLANNING, Jenny Jacobson
	CHIEF, ENGINEERING, Jason Krick
	CHIEF, OPERATIONS, Nelson Sanchez
	CHIEF, CONSTRUCTION, George Condoyiannis
	CHIEF, CONTRACTING, Jeff Burgess
	CHIEF, PM-PB, xxxx
Filename: TPCS Alt 3_updated xlsx TPCS	CHIEF, DPM, Pete Taylor

ESTIMATED TOTAL PROJECT COST: \$227,222

Example C-2: TPCS Sheets for Final Array of Alternatives

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

Printed:1/31/2023 Page 2 of 3

**** CONTRACT COST SUMMARY ****

PROJECT:	Claiborne and Millers Ferry Locks and	Dams Fish Passage Study	DISTRICT:	Mobile District	PREPARED:	1/31/2031
LOCATION:	Monroe and Wilcox Counties, Al		POC:	CHIEF, COST ENGINEERING, George Brown		
This Estimate reflect	ts the scope and schedule in report;	Study Draft Feasibility Report				

Civ	vil Works Work Breakdown Structure		PROJECT FIRST COST (Constant Dollar Basis)				TOTAL PROJECT COST (FULLY FUNDED)							
		Estin Effect	nate Preparek ive Price Lev	d: el:	31-Jan-23 1-Oct-22	Program Effectiv	n Year (Bud ve Price Lew	get EC): el Date:	2025 1 OCT 24					
WBS NUMBER A	Civil Works <u>Feature & Sub-Feature Description</u> B Claiborne	COST (\$K) C	CNTG (\$K) D	CNTG (%) E	TOTAL _(\$K) F	ESC (%) G	COST (\$K) H	CNTG (\$K) /	TOTAL _(<u>\$K)_</u> _J	Mid-Point Date P	INFLATED _(%) L	COST _(\$K)	CNTG (\$K) N	FULL _(\$K)0
06 06 06	Excavation Concrete Installation Cofferdam	\$2,857 \$13,508 \$4,239	\$1,326 \$5,768 \$2,488	46.4% 42.7% 58.7%	\$4,183 \$19,276 \$6,727	5.5% 5.5% 5.5%	\$3,015 \$14,255 \$4,474	\$1,399 \$6,087 \$2,626	\$4,414 \$20,342 \$7,099	2030Q3 2030Q3 2030Q3	15.2% 15.2% 15.2%	\$3,473 \$16,420 \$5,153	\$1,611 \$7,011 \$3,025	\$5,084 \$23,432 \$8,178
06 06 06	Prefab Bridge Gate Structure Rock Armoring & Weirs #tt/A	\$5,684 \$0 \$0 \$0	\$2,427 \$0 \$0 \$0	42.7% 0.0% 0.0% 0.0%	\$8,111 \$0 \$0 \$0	5.5% 0.0% 0.0% 0.0%	\$5,998 \$0 \$0 \$0	\$2,561 \$0 \$0 \$0	\$8,560 \$0 \$0 \$0	2030Q3 0 0	15.2% 0.0% 0.0% 0.0%	\$6,909 \$0 \$0 \$0	\$2,950 \$0 \$0 \$0	\$9,860 \$0 \$0 \$0
	#WA CONSTRUCTION ESTIMATE TOTALS:	\$0 \$26,288	\$0	0.0%	\$0	0.0%	\$0 \$27,742	\$0 \$12,673	\$0 \$40,416	0	0.0%	\$0	\$0 \$14,598	\$0
01	LANDS AND DAMAGES	\$90	\$35	38.9%	\$125	5.5%	\$95	\$37	\$132	2028Q1	8.0%	\$103	\$40	\$142
30 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	PLANNING, ENGINEERING & DESIGN 0% Project Management 0% Planning & Environmental Compliance 0% Engineering & Design 0% Reviews, ATRs, IEPRs, VE 0% Life Cycle Updates (cost, schedule, risks) 0% Contracting & Reprographics 0% Engineering During Construction 0% Adaptive Management & Monitoring 0% Project Operations CONSTRUCTION MANAGEMENT 0% Construction Management 0% Project Operation: 0% Project Operation: 0% Project Operation: 0% Project Operation:	\$300 \$1,275 \$6,100 \$300 \$120 \$100 \$100 \$100 \$1,800 \$40 \$2,386 \$0 \$394	\$74 \$315 \$1,507 \$74 \$30 \$25 \$445 \$10 \$587 \$0 \$98	24.7% 24.7% 24.7% 24.7% 24.7% 24.7% 24.7% 24.7% 24.7% 24.7% 24.8% 24.8% 24.8%	\$374 \$1,500 \$7,607 \$374 \$150 \$125 \$249 \$125 \$2,245 \$50 \$2,953 \$0 \$492	5.1% 5.1% 5.1% 5.1% 5.1% 5.1% 5.1% 5.1%	\$315 \$1,340 \$8,410 \$315 \$105 \$210 \$105 \$1,892 \$42 \$42 \$2,488 \$0 \$414	\$78 \$331 \$1,583 \$31 \$26 \$52 \$26 \$467 \$10 \$617 \$0 \$103	\$393 \$1,671 \$7,994 \$3393 \$157 \$131 \$2,359 \$52 \$3,103 \$0 \$517	2028Q1 2028Q1 2028Q1 2028Q1 2028Q1 2028Q1 2028Q1 2030Q3 2030Q3 2030Q3 0 2030Q3 0 2030Q3	6.7% 6.7% 6.7% 6.7% 12.7% 12.7% 20.3% 6.7% 12.7% 0.0% 12.7%	\$337 \$1,430 \$6,843 \$337 \$135 \$112 \$2,275 \$45 \$2,2802 \$2,802 \$467	\$83 \$353 \$1,690 \$83 \$28 \$59 \$29 \$562 \$11 \$695 \$0 \$116	\$420 \$1,794 \$8,533 \$420 \$168 \$140 \$295 \$148 \$2,837 \$56 \$3,497 \$3,497 \$583
	CONTRACT COST TOTALS:	\$39,473	\$15,281		\$54,754		\$41,599	\$16,112	\$57,711			\$47,198	\$18,380	\$65,577

DATE April 28, 2023

Example C-2: TPCS Sheets for Final Array of Alternatives

**** CONTRACT COST SUMMARY ****

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PROJECT: LOCATION: This Estimate re	Claiborne and Millers Ferry Locks and Monroe and Wilcox Counties, Al flects the scope and schedule in report;	Dams Fish F Study Draft Fe	Passage S asibility Rep	tudy ort					DISTRICT: POC:	Mobile District CHIEF, COS	T ENGINEERING, G	PF Seorge Brown	REPARED:	1/31/2031
Civ	il Works Work Breakdown Structure		ESTIMATED COST					FIRST COS Dollar Basis	T 5)					
WBS	Civil Works	Estim Effecti COST	nate Prepare ive Price Lev CNTG	d: rel: CNTG	31-Jan-23 1-Oct-22 TOTAL	Prograr Effectiv ESC	n Year (Bud ve Price Lev COST	get EC): el Date: CNTG	2025 1 OCT 24 TOTAL	Mid-Point	INFLATED	COST	CNTG	FULL
NUMBER A	Feature & Sub-Feature Description R	(SK)	(\$K)	<u>(%)</u> F	<u>(\$K)</u>	<u>(%)</u>	(\$K) H	(\$K)	(\$K)	Date P	(%)	<u>(SK)</u>	(\$K) N	(\$K)
<u>^</u>	Millers Ferry	L C	U	-	·	Ŭ	"		5	· ·	2			Ŭ
06	Excavation	\$59,236	\$27,488	46.4%	\$86,722	5.5%	\$62,513	\$29,006	\$91,519	2030Q3	15.2%	\$72,007	\$33,411	\$105,418
06	Concrete Installation	\$14,009	\$0,238	42.7%	\$20,847	0.0%	\$10,417	\$0,083	\$22,000	2030Q3	15.2%	\$17,759	\$7,583	\$25,342
06	Conerdam Prefab Bridge	\$5,002	\$2,144 \$2,427	08.7% 42.7%	\$0,790	5.5%	\$5,804 \$5,008	\$2,202 \$2,581	\$0,110	2030Q3	15.2%	\$4,439 \$6,000	\$2,606	\$7,045
06	Gate Structure	\$513	\$207	40.4%	\$720	5.5%	\$5,550	\$2,001	\$760	2030Q3	15.2%	\$624	\$252	\$876
06	Rock Armoring & Weirs	\$0	\$0	0.0%	\$0	0.0%	\$0	\$0	SO	0	0.0%	\$0	\$0	\$0
	#N/A	\$0	\$0	0.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
	#N/A	\$0	\$0	0.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
	CONSTRUCTION ESTIMATE TOTALS:	\$83,694	\$38,502	46.0%	\$122,196		\$88,324	\$40,632	\$128,956			\$101,738	\$46,802	\$148,540
01	LANDS AND DAMAGES	\$80	\$20	25.0%	\$100	5.5%	\$84	\$21	\$106	2028Q1	8.0%	\$91	\$23	\$114
30	PLANNING, ENGINEERING & DESIGN													
0.	0% Project Management	\$0	\$0	24.7%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
0.	0% Planning & Environmental Compliance	\$0	\$0	24.7%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
0.	0% Engineering & Design	\$0	\$0	24.7%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
0.0	0% Reviews, ATRS, IEPRS, VE	\$0	\$0	24.7%	\$0	0.0%	\$U 60	\$0	\$U 60	0	0.0%	\$0	\$U ¢O	\$0 ¢0
0.	Contracting & Reprographics	50 50	eU 20	24.1%	50 50	0.0%	0¢	3U \$0	30 S0		0.0%	50 20	40 ¢0	\$0 \$0
0.	0% Engineering During Construction	\$0	50	24.7%	50	0.0%	\$0 \$0	\$0 \$0	\$0 \$0	l õ	0.0%	50	40 \$0	\$0 \$0
0.	0% Planning During Construction	50	50	24.7%	\$0	0.0%	\$0	\$0	so	ō	0.0%	\$0	\$0	\$0
0.	0% Adaptive Management & Monitoring	\$0	\$0	24.7%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
0.	0% Project Operations	\$0	\$0	24.7%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
31	CONSTRUCTION MANAGEMENT													
9.	0% Construction Management	\$7,532	\$1,868	24.8%	\$9,401	5.1%	\$7,916	\$1,963	\$9,879	2030Q3	12.7%	\$8,922	\$2,213	\$11,135
0.	0% Project Operation:	\$0	\$0	24.8%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
1.	D% Project Management	\$1,255	\$311	24.8%	\$1,567	5.1%	\$1,319	\$327	\$1,646	2030Q3	12.7%	\$1,487	\$369	\$1,856
	CONTRACT COST TOTALS:	\$92,562	\$40,701		\$133,263		\$97,644	\$42,943	\$140,587			\$112,238	\$49,407	\$161,645

Filename: TPCS Alt 3_updated.xlsx TPCS

Example C-2: TPCS Sheets for Final Array of Alternatives

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

Printed:12/16/2022 Page 1 of 3

PROJECT: Claiborne and Millers Ferry Locks and Dams Fish Passage Study PROJECT NO: Alt 5 Bypass Both Dams

POC: CHIEF, COST ENGINEERING, George Brown

PREPARED: 12/13/2022

LOCATION: Monroe and Wilcox Counties, AI

DISTRICT: Mobile District

This Estimate reflects the scope and schedule in report; Study Draft Feasibility Report

Civil	Works Work Breakdown Structure	ESTIMATED COST						PROJEC (Consta	T FIRST CO nt Dollar Bac	TOTAL PROJECT COST (FULLY FUNDED)					
					Pro Ef	gram Year (E lective Price	Budget EC): Level Date:	2025 1 OCT 24	TOTAL						
										Spent Thru:	FIRST				
WBS	Civil Works	COST	CNTG	CNTG	TOTAL	ESC	COST	CNTG	TOTAL	1-Oot-22	COST	INFLATED	COST	CNTG	FULL
NUMBER	Feature & Sub-Feature Description	(5K)	(\$K)	(%)	(5K)	(%)	(SK)	(\$80)	(\$K)	(\$K)	(SK)	(%)	(\$K)	(\$K)	(\$K)
^	в	c	b	-	r	9		'	2		<u>^</u>	<u>۲</u>		~	0
06	Excavation	\$33,985	\$15,769	45.4%	\$49,754	5.5%	\$35,865	\$16,641	\$52,507	\$0	\$52,507	15.9%	\$41,580	\$19,293	\$60,873
06	Concrete Installation	\$0	\$0 -		\$0	-	\$0	\$0	\$0	\$0	\$0	┣	\$0	\$0	\$0
06	Cofferdam	\$1,792	\$1,052	58.7%	\$2,844	5.5%	\$1,891	\$1,110	\$3,001	\$0	\$3,001	15.9%	\$2,192	\$1,287	\$3,479
06	Prefab Bridge	\$17,051	\$7,281	42.7%	\$24,332	5.5%	\$17,994	\$7,684	\$25,678	\$0	\$25,678	15.9%	\$20,861	\$8,908	\$29,769
06	Gate Structure	\$1,608	\$836	52.0%	\$2,444	5.5%	\$1,697	\$882	\$2,579	\$0	\$2,579	15.9%	\$1,967	\$1,023	\$2,990
06	Rock Armoring & Weirs	\$29,656	\$14,087	47.5%	\$43,743	5.5%	\$31,297	\$14,865	\$46,163	\$0	\$46,163	15.9%	\$36,283	\$17,235	\$53,518
	#N/A	\$0	\$0 -		\$0	-	\$0	\$0	\$0	\$0	\$0	┣	\$0	\$0	\$0
	#N/A	\$0	\$O -		\$0	-	\$0	\$0	\$0	\$0	\$0	┣	\$0	\$0	\$0
	CONSTRUCTION ESTIMATE TOTALS:	\$84,092	\$39,024	-	\$123,116	5.5%	\$88,744	\$41,184	\$129,928		\$129,928	15.9%	\$102,884	\$47,745	\$150,630
01	LANDS AND DAMAGES	\$660	\$165	25.0%	\$825	5.5%	\$697	\$174	\$871	\$0	\$871	8.0%	\$752	\$188	\$940
30	PLANNING, ENGINEERING & DESIGN	\$16,313	\$4,029	24.7%	\$20,342	5.1%	\$17,143	\$4,234	\$21,378	\$0	\$21,378	8.4%	\$18,577	\$4,588	\$23,165
31	CONSTRUCTION MANAGEMENT	\$8,830	\$2,455	27.8%	\$11,284	5.1%	\$9,279	\$2,580	\$11,859	\$0	\$11,859	13.3%	\$10,516	\$2,923	\$13,440
	PROJECT COST TOTALS:	\$109,895	\$45,673	41.6%	\$155,568		\$115,863	\$48,172	\$164,035	\$0	\$184,035	14.7%	\$132,729	\$55,445	\$188,175

	CHIEF, COST ENGINEERING, George Brown
	PROJECT MANAGER, Jonas White
	CHIEF, REAL ESTATE, Karen Kennedy
	CHIEF, PLANNING, Jenny Jacobson
	CHIEF, ENGINEERING, Jason Krick
	CHIEF, OPERATIONS, Nelson Sanchez
	CHIEF, CONSTRUCTION, George Condoyiannis
	CHIEF, CONTRACTING, Jeff Burgess
	CHIEF, PM-PB, xxxx
Fliename: TPCS.Alt 5 visv TPCS	CHIEF, DPM, Pete Taylor

ESTIMATED TOTAL PROJECT COST: \$188,175

Example C-2: TPCS Sheets for Final Array of Alternatives

**** CONTRACT COST SUMMARY ****														
PROJECT: LOCATION: This Estimate refe	Claiborne and Millers Ferry Locks and Monroe and Wilcox Counties, Al ects the scope and schedule in report;	tudy ort		_			DISTRICT: POC:	Mobile District CHIEF, COS	T ENGINEERING	Pf 6, George Brown	REPARED:	12/13/2022		
Civil	Works Work Breakdown Structure		ESTIMAT	ED COST			PROJECT (Constant I	FIRST COST Dollar Basis	r)		TOTAL PR	OJECT COST (FULL	Y FUNDED)	
		Estin Effecti	iate Preparei ve Price Lev	d: ei:	8-Deo-22 1-Oct-22	Program Effectiv	n Year (Bud ve Price Lev	get EC): el Date:	2025 1 OCT 24					
				RISK BASED										
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) /	TOTAL (\$K) J	Mid-Point Date P	INFLATED 	COST (\$K) M	CNTG (\$K) N	FULL (\$K) 0
	Cialborne													
06	Excavation Concrete Installation	\$6,700	\$3,109	45.4%	\$9,809	5.5%	\$7,071	\$3,281	\$10,351	2030Q4	15.9%	\$8,197	\$3,804	\$12,001
06	Cofferdam	\$736	\$432	58,7%	40 51.168	5.5%	\$777	\$456	\$1,233	203004	15.9%	5900	\$529	\$1,429
06	Prefab Bridge	\$5,684	\$2,427	42.7%	\$8,111	5.5%	\$5,998	\$2,561	\$8,560	2030Q4	15.9%	\$6,954	\$2,969	\$9,924
06	Gate Structure	\$0	\$0	0.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
06	Rock Armoring & Weirs	\$5,773	\$2,742	47.5%	\$8,515	5.5%	\$6,092	\$2,894	\$8,986	2030Q4	15.9%	\$7,063	\$3,355	\$10,418
	≠N/A	\$0	\$0	0.0%	\$0	0.0%	\$0	\$0	\$0	٥	0.0%	\$0	\$0	\$0
	≠N/A	\$0	\$0	0.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
	CONSTRUCTION ESTIMATE TOTALS:	\$18,893	\$8,710	45.1%	\$27,803		\$19,938	\$9,192	\$29,130			\$23,115	\$10,657	\$33,772
01	LANDS AND DAMAGES	\$660	\$165	25.0%	\$825	5.5%	\$697	\$174	\$871	2028Q1	8.0%	\$752	\$188	\$940
30	PLANNING, ENGINEERING & DESIGN													
0.09	6 Project Management	\$300	\$74	24.7%	\$374	5.1%	\$315	\$78	\$393	2028Q1	6.7%	\$337	\$83	\$420
0.09	6 Planning & Environmental Compliance	\$7,253	\$1,791	24.7%	\$9,044	5.1%	\$7,622	\$1,883	\$9,505	2028Q1	6.7%	\$8,136	\$2,010	\$10,146
0.09	6 Engineering & Design	\$6,100	\$1,507	24.7%	\$7,607	5.1%	\$6,410	\$1,583	\$7,994	2028Q1	6.7%	\$6,843	\$1,690	\$8,533
0.09	6 Reviews, ATRS, IEPRS, VE	\$300	\$74	24.7%	\$374	5.1%	\$315	\$78	\$393	2028Q1	6.7%	\$337	\$83	\$420
0.05	Contracting & Reprographics	ş120 \$100	93U 576	24.7%	\$150 \$150	5.170	\$126 \$105	931 576	915/ 5134	202801	6.7%	9135 \$117	\$33	\$168
0.05	Engineering During Construction	\$200	940 549	24.7%	\$749	5.1%	\$210	\$52	\$767	202004	13 3%	\$738	659	\$297
0.09	6 Planning During Construction	\$100	\$25	24.7%	\$125	5.1%	\$105	\$26	\$131	2030Q4	13.3%	\$119	\$29	\$149
0.09	6 Adaptive Management & Monitoring	\$1,800	\$445	24.7%	\$2,245	5.1%	\$1,892	\$467	\$2,359	2033Q3	20.3%	\$2,275	\$562	\$2,837
0.09	6 Project Operations	\$40	\$10	24.7%	\$50	5.1%	\$42	\$10	\$52	2028Q1	6.7%	\$45	\$11	\$56
31	CONSTRUCTION MANAGEMENT													
9.05	6 Construction Management	\$1,700	\$473	27.8%	\$2,173	5.1%	\$1,787	\$497	\$2,284	2030Q4	13.3%	\$2,025	\$563	\$2,588
0.05	6 Project Operation:	\$0	\$0	27.8%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
1.69	6 Project Management	\$283	\$79	27.8%	\$362	5.1%	\$298	\$83	\$381	2030Q4	13.3%	\$338	\$94	\$431
	CONTRACT COST TOTALS:	\$37,850	\$13,456		\$51,306		\$39,863	\$14,180	\$64,043			\$44,807	\$16,090	\$80,897

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

Printed: 12/16/2022 Page 2 of 3

Filename: TPCS At 5.xisx TPCS

Printed:12/16/2022 Page 3 of 3

Example C-2: TPCS Sheets for Final Array of Alternatives

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

PROJECT: LOCKTIN: The Estimate Frequency: Market and Millers Ferty Locks and Dams Fish Passage Study The Estimate Frequency: Market and Millers Ferty Locks and Dams Fish Passage Study The Estimate Frequency: Market and Millers Ferty Locks and Dams Fish Passage Study The Estimate Frequency: Market and Millers Ferty Locks and Dams Fish Passage Study The Estimate Frequency: Market and Millers Ferty Locks and Dams Fish Passage Study The Estimate Frequency: Market And Dams Study and Feasibility Report District: Market And Dams Fish Passage Study Total PROJECT FIRST COST (Constant Dollar Basks) District: Total PROJECT cost (Full Y Funder) Preprint (Full Y Funder) Total PROJECT cost (Full Y Funder) Total PROJECT Cost (Full Y Funder) Will be for A miller Ferty 06 Cost Onto Builder Ferty 06 Cost Description Builder Ferty 06 Cost Builder Ferty 06 <t< th=""><th>/2022</th></t<>	/2022
Chill Works Work Breakdown Structure ESTMATED COST PROJECT FIRST COST (Constant Dollar Bask) TOTAL PROJECT COST (FULLY FUNDED) WBS Chill Works Estmate Prepared: IPRCIVE Price Level: 8-Des-22 IPRCIVE Price Level: Program Year (Budget EC): I -OCT 24 2025 IPRCIVE Price Level: 1 OCT 24 WBS Chill Works COST CNTS TOTAL (BN) (BN) (BN) <td></td>	
WBS Civil Works Estmate Prepared: 8-Deo-22 Effective Price Level: Program Year (Budget EC): 2025 1 OCT 24 WBS Civil Works COST CNTG CNTG TOTAL ESc COST CNTG TOTAL MUMBER Feature 3 Gub/Feature Description GST CNTG CNTG TOTAL Bate (BK) (
WBS CMI Works COST CNTG COTO TOTAL ESC COST CNTG TOTAL Mileter Party	
O6 Excavation \$27,285 \$12,660 46.4% \$39,945 \$5% \$28,795 \$13,361 \$42,155 203004 15.9% \$33,382 \$15,409 06 Concrete installation \$0 \$0 0.0% \$0 0.0% \$0 0.0% \$0 0.0% \$0 0.0% \$0 0.0% \$0 0.0% \$0 0.0% \$0 0.0% \$0 0.0% \$0 0.0% \$0 0.0% \$0 0.0% \$0 0.0% \$0 0.0% \$0 0.0% \$0 0.0% \$1,114 \$654 \$1,769 203004 15.9% \$12,322 \$758 06 Gate Structure \$1,058 \$835 \$2,0% \$2,444 \$5.% \$1,197 \$37,176 203004 15.9% \$19,627 \$13,380 06 Sate Structure \$1,083 \$1,341 47.5% \$33,32,27 \$5.% \$1,972 \$37,176 203004 15.9% \$19,627 \$13,980 10	LL K)
OC Contentiant \$1,056 \$82,0 \$81,076 \$5,5% \$1,114 \$864 \$1,791 203024 15,9% \$1,252 \$758 OC Pretab Bridge \$1,156 \$82,442 \$5,5% \$11,965 \$5,122 \$17,114 \$864 \$17,918 203024 15,9% \$12,92 \$758 OC Gate Structure \$1,088 \$8336 \$2,0% \$2,444 \$5,5% \$11,957 \$822 \$2,579 203024 15,9% \$1,967 \$1,023 OC Rock Armoring & Weirs \$23,883 \$11,344 47,5% \$35,227 \$5,5% \$16,977 \$23,7176 203024 15,9% \$29,220 \$13,880 MA \$0 \$0 0.0% \$0 0.0% \$0 \$0 \$0 \$0 0 0.0% \$0 0 0.0% \$0 0 0.0% \$0 0 0.0% \$0 0 0.0% \$0 0 0.0% \$0 0 0.0% \$0 0	\$48,872 \$0
06 Rock Armoning & Weirs \$23,883 \$11,344 47.5% \$35,227 5.5% \$25,204 \$11,972 \$37,176 2030Q4 15.9% \$29,220 \$13,880 #N/A \$0 \$0 0.0% \$0 0.0% \$0	\$2,050 \$19,846 \$2,990
CONSTRUCTION ESTIMATE TOTALS: \$65,199 \$30,314 46.5% \$86,613 \$68,606 \$31,992 \$100,798 \$79,769 \$37,089 01 LAND AMID AMIAGES \$0 \$0 0.0% \$0 \$0.0% \$0 \$0 \$0 \$0.0% \$0 \$0 \$0 \$0.0% \$0 \$0 \$0.0% \$0 \$0 \$0.0% \$0 \$0 \$0.0% \$0 \$0 \$0.0% \$0	\$43,100 \$0 \$0
01 LANDS AND DAMAGES \$0 \$0 0.0% \$0 <td>\$116.858</td>	\$116.858
30 PLANNING, ENGINEERING & DESIGN 50 50 24.7% 50 0.0% 50 50 0 0.0% 50	\$0
0.0% Filanning & Environmental Compliance \$0 \$0 24.7% \$0 0.0% \$0	\$0
0.0% Reviews, ATRs, IEPRs, VE \$0 \$0 24.7% \$0 0.0% \$0 \$0 \$0 0 0.0% \$0 \$0 \$0	\$0 \$0
0.0% Life Cycle Updates (cost, schedule, risks) \$0 \$0 \$0 0.0% \$0 <th< td=""><td>\$0 \$0 \$0</td></th<>	\$0 \$0 \$0
0.0% Engineering During Construction \$0 \$0 24.7% \$0 0.0% \$0 \$0 0.0% \$0 <td>\$0 \$0 \$0</td>	\$0 \$0 \$0
0.0% Project Operations \$0 \$0 24.7% \$0 0.0% \$0 \$0 \$0 0 0.0% \$0 \$0 \$0	\$0
Drive State Construction Minimum Adversament \$5,868 \$1,631 27.8% \$7,499 5.1% \$6,167 \$1,714 \$7,881 2030Q4 13.3% \$6,999 \$1,943 0.0% Project Operation: \$0 \$0 27.8% \$0 0.0% \$0 \$0 0 0.0% \$0<	\$8,931 \$0
1.6% Project Management \$978 \$272 27.9% \$1,250 5.1% \$1,028 \$286 \$1,313 2030Q4 13.3% \$1,165 \$324 CONTRACT COST TOTAL8: \$72,045 \$32,218 \$104,262 \$76,000 \$33,992 \$106,862 \$87,923 \$39,355	\$1,489

Filename: TPCS Alt 5.xisx TPCS

DATE April 28, 2023

Example C-2: TPCS Sheets for Final Array of Alternatives

Printed: 1/4/2023 Page 1 of 3

PROJECT: Claiborne and Millers Ferry Locks and Dams Fish Passage Study PROJECT NO: Alt 12b CL Rock Arch, MF Bypass LOCATION: Monroe and Wilcox Counties, AI

DISTRICT: Mobile District PREPARED: 12/13/2022 POC: CHIEF, COST ENGINEERING, George Brown

This Estimate reflects the scope and schedule in report; Study Draft Feasibility Report

Civil	Works Work Breakdown Structure	ESTIMATED COST						PRO. (Cons	JECT FIRST C stant Dollar B	TOTAL PROJECT COST (FULLY FUNDED)					
							Pro Eff	gram Year (l lective Price	Budget EC): Level Date:	2025 1 OCT 24					
										Spent Thru:	TOTAL FIRST				
WBS	Civil Works	COST	CNTG	CNTG	TOTAL	ESC	COST	CNTG	TOTAL	1-Oct-22	COST	INFLATED	COST	CNTG	FULL
A NUMBER	Feature & Sub-Feature Description B	<u>(\$K)</u> C	(\$K) D	<u>(%)</u> E	<u>(\$K)</u> F	<u>(%)</u> G	(\$K) H	(\$K) I	<u>(\$K)</u> J	<u>(\$K)</u>	(\$K) K	<u>(%)</u> L	<u>(\$K)</u> M	(\$K) N	<u>(\$K)</u> 0
06	Excavation	\$30,142	\$13,986	46.4%	\$44,128	5.5%	\$31,810	\$14,760	\$46,569	\$0	\$46,569	15.9%	\$36,878	\$17,111	\$53,989
06	Concrete Installation	\$13,508	\$5,768	42.7%	\$19,276	5.5%	\$14,255	\$6,087	\$20,342	\$0	\$20,342	15.9%	\$16,527	\$7,057	\$23,584
06	Cofferdam	\$5,295	\$3,108	58.7%	\$8,403	5.5%	\$5,588	\$3,280	\$8,868	\$0	\$8,868	15.9%	\$6,478	\$3,803	\$10,281
06	Prefab Bridge	\$17,051	\$7,281	42.7%	\$24,332	5.5%	\$17,994	\$7,684	\$25,678	\$0	\$25,678	15.9%	\$20,861	\$8,908	\$29,769
06	Gate Structure	\$1,608	\$836	52.0%	\$2,444	5.5%	\$1,697	\$882	\$2,579	\$0	\$2,579	15.9%	\$1,967	\$1,023	\$2,990
06	Rock Armoring & Weirs	\$23,883	\$11,344	47.5%	\$35,227	5.5%	\$25,204	\$11,972	\$37,176	\$0	\$37,176	15.9%	\$29,220	\$13,880	\$43,100
	#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:	\$91,487	\$42,323	-	\$133,810	5.5%	\$96,549	\$44,665	\$141,213	\$0	\$141,213	15.9%	\$111,932	\$51,781	\$163,713
01	LANDS AND DAMAGES	\$620	\$155	25.0%	\$775	5.5%	\$654	\$164	\$818	\$0	\$818	8.0%	\$707	\$177	\$883
30	PLANNING, ENGINEERING & DESIGN	\$15,885	\$3,924	24.7%	\$19,809	5.1%	\$16,693	\$4,123	\$20,817	\$0	\$20,817	8.4%	\$18,097	\$4,470	\$22,566
31	CONSTRUCTION MANAGEMENT	\$9,606	\$2,382	24.8%	\$11,988	5.1%	\$10,095	\$2,504	\$12,599	\$0	\$12,599	13.3%	\$11,441	\$2,837	\$14,278
	PROJECT COST TOTALS:	\$117,598	\$48,784	41.5%	\$166,382		\$123,991	\$51,455	\$175,447	\$0	\$175,447	14.8%	\$142,176	\$59,265	\$201,441

 CHIEF, COST ENGINEERING, George Brown
 PROJECT MANAGER, Jonas White
 CHIEF, REAL ESTATE, Karen Kennedy
 CHIEF, PLANNING, Jenny Jacobson
 CHIEF, ENGINEERING, Jason Krick
 CHIEF, OPERATIONS, Nelson Sanchez
 CHIEF, CONSTRUCTION, George Condoviannis
 CHIEF, CONTRACTING, Jeff Burgess
 CHIEF, PM-PB, xxxx

Filename: TPCS <u>Alt 12h Ci. Rock Arch MF Bypass visv</u> CHIEF, DPM, Pete Taylor TPCS

ESTIMATED TOTAL PROJECT COST: \$201,441

DATE April 28, 2023

Printed:1/4/2023

Example C-2: TPCS Sheets for Final Array of Alternatives

TOTAL PROJECT COST SUMMARY MA													Page 2 of 3	
				,	*** CONTRACT	COST SUN	/MARY ****							
PROJECT: LOCATION: This Estimate r	Claiborne and Millers Ferry Locks and Monroe and Wilcox Counties, Al reflects the scope and schedule in report;	Dams Fish I Study Draft Fe	Passage Si asibility Repo	tudy ort					DISTRICT: POC:	Mobile District CHIEF, COST	FENGINEERING, George	PF Brown	REPARED:	12/13/2022
Ci	vil Works Work Breakdown Structure	ESTIMATED COST					PROJECT (Constant	FIRST COS Dollar Basi	5)					
		Estin Effect	nate Prepareo ive Price Lev	d: el:	8-Dec-22 1-Oct-22	Program Effectiv	m Year (Bud ve Price Lev	get EC): el Date:	2025 1 OCT 24					
WBS NUMBER A	Civil Works Feature & Sub-Feature Description B	COST (\$K) C	CNTG _(\$K) 	CNTG (%) E	TOTAL _(\$K)_ F	ESC _(%) 	COST (\$K)	CNTG _(\$K)/	TOTAL _(\$K) _J	Mid-Point Date P	INFLATED (%) L	COST (\$K) M	CNTG (\$K) N	FULL _(\$K)0
06 06 06	Excavation Concrete Installation Cofferdam	\$2,857 \$13,508 \$4,239	\$1,326 \$5,768 \$2,488	46.4% 42.7% 58.7%	\$4,183 \$19,276 \$8,727	5.5% 5.5% 5.5%	\$3,015 \$14,255 \$4,474	\$1,399 \$6,087 \$2,626	\$4,414 \$20,342 \$7.099	2030Q4 2030Q4 2030Q4	15.9% 15.9% 15.9%	\$3,495 \$16,527 \$5,186	\$1,622 \$7,057 \$3.044	\$5,117 \$23,584 \$8,231
06 06 06	Prefab Bridge Gate Structure Rock Armoring & Weirs	\$5,684 \$0 \$0	\$2,427 \$0 \$0	42.7% 0.0% 0.0%	\$8,111 \$0 \$0	5.5% 0.0% 0.0%	\$5,998 \$0 \$0	\$2,561 \$0 \$0	\$8,560 \$0 \$0	2030Q4 0 0	15.9% 0.0% 0.0%	\$6,954 \$0 \$0	\$2,969 \$0 \$0	\$9,924 \$0 \$0
	#N/A #N/A	\$0 \$0	\$0 \$0	0.0% 0.0%	\$0 \$0	0.0% 0.0%	\$0 \$0	\$0 \$0	\$0 \$0	0	0.0% 0.0%	\$0 \$0	\$0 \$0	\$0 \$0
01	CONSTRUCTION ESTIMATE TOTALS:	\$26,288	\$12,009	45.7%	\$38,297	5.5%	\$27,742	\$12,673	\$40,416	20290.1	0.0%	\$32,163	\$14,693	\$46,855
30	PLANNING, ENGINEERING & DESIGN	960	920	23.076	9113	0.076	980	424	Qile	202041	0.076	\$105	320	\$120
0 0	2.0% Project Management 2.0% Planning & Environmental Compliance 2.0% Engineering & Design	\$300 \$6,825 \$6,100	\$74 \$1,686 \$1,507	24.7% 24.7% 24.7%	\$374 \$8,511 \$7,607	5.1% 5.1% 5.1%	\$315 \$7,172 \$6,410	\$78 \$1,772 \$1,583	\$393 \$8,944 \$7,994	2028Q1 2028Q1 2028Q1	6.7% 6.7% 6.7%	\$337 \$7,656 \$6,843	\$83 \$1,891 \$1,690	\$420 \$9,547 \$8,533
0	2.0% Reviews, ATRs, IEPRs, VE Life Cycle Updates (cost, schedule, risks) Contracting & Reprographics O% Engineering Construction	\$300 \$120 \$100 \$200	\$74 \$30 \$25 \$49	24.7% 24.7% 24.7% 24.7%	\$374 \$150 \$125 \$240	5.1% 5.1% 5.1%	\$315 \$126 \$105 \$210	\$78 \$31 \$26 \$52	\$393 \$157 \$131 \$262	2028Q1 2028Q1 2028Q1 2028Q1	6.7% 6.7% 6.7%	\$337 \$135 \$112 \$238	\$83 \$33 \$28 \$59	\$420 \$168 \$140 \$297
((20% Planning During Construction 20% Planning During Construction 20% Adaptive Management & Monitoring 20% Project Operations	\$100 \$1,800 \$40	\$25 \$445 \$10	24.7% 24.7% 24.7%	\$125 \$2,245 \$50	5.1% 5.1% 5.1%	\$105 \$1,892 \$42	\$26 \$467 \$10	\$131 \$2,359 \$52	2030Q4 2033Q3 2028Q1	13.3% 20.3% 6.7%	\$119 \$2,275 \$45	\$29 \$562 \$11	\$149 \$2,837 \$56
31	CONSTRUCTION MANAGEMENT 0.0% Construction Management	\$2,366	\$587	24.8%	\$2,953	5.1%	\$2,486	\$617	\$3,103	2030Q4	13.3%	\$2,818	\$699	\$3,517
1	2.0% Project Operation: 2.5% Project Management	\$0 \$394	\$0 \$98	24.8% 24.8%	\$0 \$492	0.0% 5.1%	\$0 \$414	\$0 \$103	\$0 \$517	0 2030Q4	0.0% 13.3%	\$0 \$470	\$0 \$116	\$0 \$586
	CONTRACT COST TOTALS:	\$45,023	\$16,640		\$61,663		\$47,432	\$17,540	\$64,971			\$53,649	\$20,003	\$73,653

Filename: TPCS Alt 12b CL Rock Arch MF Bypass.xlsx TPCS

DATE April 28, 2023

Example C-2: TPCS Sheets for Final Array of Alternatives

		**** TOTAL PROJECT COST SUMMARY ****												Printed: 1/4/2023 Page 3 of 3		
				•	*** CONTRACT	COST SUN	MARY ****									
PROJECT: LOCATION: This Estimate ref	Claiborne and Millers Ferry Locks and Monroe and Wilcox Counties, Al lects the scope and schedule in report;	Dams Fish I Study Draft Fe	Passage Si asibility Repo	tudy xrt					DISTRICT: POC:	Mobile District CHIEF, COST	FENGINEERING, George Br	PF	REPARED:	12/13/2022		
Civil Works Work Breakdown Structure ESTIMATED COST							PROJECT (Constant	FIRST COS Dollar Basis	T 5)	TOTAL PROJECT COST (FULLY FUNDED)						
		Estimate Prepared: 8-Dec-22 Effective Price Level: 1-Oct-22						get EC): el Date:	2025 1 OCT 24							
WBS NUMBER A	Civil Works <u>Feature & Sub-Feature Description</u> B Millers Ferry	COST (\$K) C	CNTG (\$K) D	CNTG (%) E	TOTAL (\$K) F	ESC (%) G	COST (\$K) H	CNTG (\$K) /	TOTAL (\$K) J	Mid-Point Date P	INFLATED L	COST (\$K) M	CNTG (\$K) N	FULL _(\$K)0		
06 06	Excavation Concrete Installation	\$27,285 \$0	\$12,660 \$0	46.4% 0.0%	\$39,945 \$0	5.5% 0.0%	\$28,795 \$0	\$13,361 \$0	\$42,155 \$0	2030Q4 0	15.9% 0.0%	\$33,382 \$0	\$15,489 \$0	\$48,872 \$0		
06	Prefab Bridge Gate Structure	\$11,367 \$11,608	\$4,854 \$836	42.7% 52.0%	\$16,221 \$2,444	5.5% 5.5%	\$1,114 \$11,996 \$1,697	\$5,122 \$882	\$17,118 \$2,579	2030Q4 2030Q4 2030Q4	15.9% 15.9%	\$13,907 \$1,967	\$750 \$5,938 \$1,023	\$2,050 \$19,846 \$2,990		
06	Rock Amoring & Weirs #N/A #N/A	\$23,883 \$0 \$0	\$11,344 \$0 \$0	47.5% 0.0% 0.0%	\$35,227 \$0 \$0	0.0% 0.0%	\$25,204 \$0 \$0	\$11,972 \$0 \$0	\$37,176 \$0 \$0	0	0.0%	\$29,220 \$0 \$0	\$13,880 \$0 \$0	\$43,100 \$0 \$0		
	CONSTRUCTION ESTIMATE TOTALS:	\$65,199	\$30,314	46.5%	\$95,513	-	\$68,806	\$31,992	\$100,798			\$79,769	\$37,089	\$116,858		
01	LANDS AND DAMAGES	\$530	\$133	25.0%	\$663	5.5%	\$559	\$140	\$699	2028Q1	8.0%	\$604	\$151	\$755		
30 0.0 0.0	PLANNING, ENGINEERING & DESIGN % Project Management % Planning & Environmental Compliance	\$0 \$0	\$0 \$0	24.7% 24.7%	\$0 \$0	0.0% 0.0%	\$0 \$0	\$0 \$0	\$0 \$0	0	0.0% 0.0%	\$0 \$0	\$0 \$0	\$0 \$0		
0.0 0.0 0.0	 Engineering & Design Reviews, ATRs, IEPRs, VE Life Cycle Updates (cost, schedule, risks) Contexture & Parameteria 	\$0 \$0 \$0	\$0 \$0 \$0	24.7% 24.7% 24.7%	\$0 \$0 \$0	0.0%	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	0	0.0% 0.0% 0.0%	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0		
0.0 0.0 0.0	Contracting & Reprographics Engineering During Construction Planning During Construction Adaptive Management & Monitoring	\$0 \$0 \$0	\$0 \$0 \$0	24.7% 24.7% 24.7% 24.7%	\$0 \$0 \$0	0.0%	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	0	0.0%	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0		
0.0 31	Project Operations CONSTRUCTION MANAGEMENT	\$0	\$0	24.7%	\$0	0.0%	\$0	\$0	\$0	ő	0.0%	\$0	\$0	\$0 \$0		
9.0 0.0 1.5	% Construction Management % Project Operation: % Project Management	\$5,868 \$0 \$978	\$1,455 \$0 \$243	24.8% 24.8% 24.8%	\$7,323 \$0 \$1,221	5.1% 0.0% 5.1%	\$6,167 \$0 \$1,028	\$1,529 \$0 \$255	\$7,696 \$0 \$1,283	2030Q4 0 2030Q4	13.3% 0.0% 13.3%	\$6,989 \$0 \$1,165	\$1,733 \$0 \$289	\$8,722 \$0 \$1,454		
	CONTRACT COST TOTALS:	\$72,575	\$32,145		\$104,720		\$76,560	\$33,916	\$110,475			\$88,527	\$39,262	\$127,789		

Filename: TPCS Alt 12b CL Rock Arch MF Bypass.xlsx TPCS

Example C-2: TPCS Sheets for Final Array of Alternatives

ESTIMATED TOTAL PROJECT COST:

\$213,746

	**** TOTAL PROJECT COST SUMMARY ****									
PROJECT: PROJECT NO:	Claiborne and Millers Ferry Locks and Dams Fish Passage Study Alt 13b CL Bypass, MF Rock Arch	DISTRICT: Mobile District PREPARED POC: CHIEF, COST ENGINEERING, George Brown	: 1/31/2023							
LOCATION:	Monroe and Wilcox Counties, Al	,								

This Estimate reflects the scope and schedule in report; Study Draft Feasibility Report

Civil	Civil Works Work Breakdown Structure ESTIMATED COST						PROJE((Consta	CT FIRST COS nt Dollar Basi	TOTAL PROJECT COST (FULLY FUNDED)						
							Pro Ef	gram Year (l lective Price	Budget EC): Level Date:	2025 1 OCT 24 Spent Thru:	TOTAL FIRST				
WBS	Civil Works	COST	CNTG	CNTG	TOTAL	ESC	COST	CNTG	TOTAL	1-Oct-22	COST	INFLATED	COST	CNTG	FULL
NUMBER	Feature & Sub-Feature Description	(\$K)	(\$K)	(%)	(\$K)	(%)	(\$K)	(\$K)	(\$K)	(\$K)	(\$K)	(%)	(\$K)	(\$K)	(\$K)
A	в	С	D	E	F	G	н	1	J		ĸ	L	M	N	0
06	Excavation	\$85,038	\$30 504	48.4%	\$06 530	5.5%	\$80 584	\$32.287	\$101.871	50	\$101.871	15.2%	\$80 151	\$37 100	\$117 342
06	Concrete Installation	\$14,600	\$6 238	42.7%	\$20,847	5.5%	\$15,417	\$6 583	\$22,000	\$0	\$22,000	15.2%	\$17 750	\$7.583	\$25.342
06	Cofferdam	\$4 388	\$2,578	58 7%	\$6 964	5.5%	\$4,631	\$2,718	\$7.349	\$0	\$7,340	15.2%	\$5,334	\$3,131	\$8,485
06	Prefab Bridge	\$11.368	\$4,854	42.7%	\$16 222	5.5%	\$11,007	\$5 123	\$17,120	\$0	\$17 120	15.2%	\$13,810	\$5,001	\$19,720
06	Gate Structure	\$513	\$207	40.4%	\$720	5.5%	\$541	\$210	\$780	\$0	\$760	15.2%	\$624	\$252	\$976
06	Rock Armoring & Weirs	\$5,773	\$2 742	47.5%	\$8,515	5.5%	\$6.092	\$2,894	\$8,986	\$0	\$8,986	15.2%	\$7.018	\$3,333	\$10,351
	#N/A	\$0	SO -		SO	-	SO	SO	\$0	\$0	SO	-	SO	\$0	\$0
	#N/A	\$0	SO -		\$0	-	\$0	so	\$0	\$0	so	-	so	\$0	SO
														**	•-
	CONSTRUCTION ESTIMATE TOTALS:	\$102,587	\$47,212	-	\$149,799	5.5%	\$108,263	\$49,824	\$158,086	\$0	\$158,086	15.2%	\$124,704	\$57,390	\$182,094
01	LANDS AND DAMAGES	\$230	\$60	26.1%	\$290	5.5%	\$243	\$63	\$306	\$0	\$306	8.0%	\$262	\$68	\$331
30	PLANNING, ENGINEERING & DESIGN	\$10,762	\$2,658	24.7%	\$13,420	5.1%	\$11,310	\$2,794	\$14,103	\$0	\$14,103	9.2%	\$12,348	\$3,050	\$15,398
31	CONSTRUCTION MANAGEMENT	\$10,772	\$2,671	24.8%	\$13,443	5.1%	\$11,320	\$2,807	\$14,127	\$0	\$14,127	12.7%	\$12,759	\$3,164	\$15,923
	PROJECT COST TOTALS:	\$124,351	\$52,601	42.3%	\$176,952		\$131,135	\$55,488	\$186,623	\$0	\$186,623	14.5%	\$150,073	\$63,673	\$213,746

 CHIEF, COST ENGINEERING, George Brown
 PROJECT MANAGER, Jonas White
 CHIEF, REAL ESTATE, Karen Kennedy
 CHIEF, PLANNING, Jenny Jacobson
 CHIEF, ENGINEERING, Jason Krick
 CHIEF, OPERATIONS, Nelson Sanchez
 CHIEF, CONSTRUCTION, George Condoviannis
 CHIEF, CONTRACTING, Jeff Burgess
 CHIEF, PM-PB, xxxx

Filename: TPCS.<u>Alt 13h.Cl. Rypass.MF.Rock.Arch_updated.vtsx</u> CHIEF, DPM, Pete Taylor TPCS

Example C-2: TPCS Sheets for Final Array of Alternatives

**** TOTAL PROJECT COST SUMMARY ****												P	rinted:1/31/2023 Page 2 of 3	
					*** CONTRACT	COSTISUN	MARY ****							-
PROJECT: LOCATION: This Estimate refle	Claiborne and Millers Ferry Locks and Monroe and Wilcox Counties, Al ects the scope and schedule in report;	Dams Fish F Study Draft Fe	Passage Si asibility Repo	udy art					DISTRICT: POC:	Mobile Distric CHIEF, COS	t TENGINEERING	PF 3, George Brown	REPARED:	1/31/2023
Civil Works Work Breakdown Structure ESTIMATED COST							PROJECT	FIRST COS	Ţ					
							(Constant)	Dollar Basis	9			-		
		Estimate Prepared: 31-Jan-23 Effective Price Level: 1-Oct-22						get EC): el Date:	2025 1 OCT 24					
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)	TOTAL _(\$K) _J	Mid-Point Date P	INFLATED	COST (\$K) M	CNTG (\$K) N	FULL (\$K) 0
06	Claiborne Excavation Concrete Installation	\$6,700 \$0	\$3,109 \$0	46.4%	\$9,809 \$0	5.5%	\$7,071 \$0	\$3,281 \$0	\$10,351 \$0	2030Q3	15.2%	\$8,144 \$0	\$3,779 \$0	\$11,924
06	Cofferdam Prefab Bridge	\$736 \$5.684	\$432 \$2,427	58.7% 42.7%	\$1,168 \$8,111	5.5% 5.5%	\$777 \$5.998	\$456 \$2,561	\$1,233 \$8,560	2030Q3 2030Q3	15.2% 15.2%	\$895 \$6.909	\$525 \$2,950	\$1,420 \$9,860
06	Gate Structure	\$0	\$0	0.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
06	Rock Armoning & Weirs	\$5,773	\$2,742	47.5%	\$8,515	5.5%	\$6,092	\$2,894	\$8,986	2030Q3	15.2%	\$7,018	\$3,333 ¢0	\$10,351
	#NA	\$0	\$0	0.0%	\$0	0.0%	\$0	\$0	\$0	ő	0.0%	\$0	\$0	\$0
	CONSTRUCTION ESTIMATE TOTALS:	\$18,893	\$8,710	46.1%	\$27,603		\$19,938	\$9,192	\$29,130			\$22,966	\$10,588	\$33,554
01	LANDS AND DAMAGES	\$150	\$40	26.7%	\$190	5.5%	\$158	\$42	\$201	2028Q1	8.0%	\$171	\$46	\$217
30	PLANNING, ENGINEERING & DESIGN	\$200	\$74	24.7%	\$274	E 19/	\$215	\$70	\$202	202901	8.7%	\$207	#07	\$420
0.09	6 Planning & Environmental Compliance	\$1,702	\$420	24.7%	\$2,122	5.1%	\$1,789	\$442	\$2,230	2028Q1	6.7%	\$1,909	\$472	\$2,381
0.09	6 Engineering & Design	\$6,100	\$1,507	24.7%	\$7,607	5.1%	\$6,410	\$1,583	\$7,994	2028Q1	6.7%	\$6,843	\$1,690	\$8,533
0.09	6 Reviews, ATRs, IEPRs, VE	\$300	\$74	24.7%	\$374	5.1%	\$315	\$78	\$393	2028Q1	6.7%	\$337	\$83	\$420
0.09	6 Life Cycle Updates (cost, schedule, risks)	\$120	\$30	24.7%	\$150	5.1%	\$126	\$31	\$157	2028Q1	6.7%	\$135	\$33	\$168
0.05	Contracting & Reprographics	\$100	\$25	24.7%	\$125	5.1%	\$105	\$26	\$131	2028Q1	0.7%	\$112	\$28	\$140
0.05	K Planning During Construction	\$200	999 \$25	24.7%	\$125	5.1%	\$210	\$32	\$202	203003	12.7%	\$237 \$118	\$29	\$148
0.09	6 Adaptive Management & Monitoring	\$1,800	\$445	24.7%	\$2,245	5.1%	\$1,892	\$467	\$2,359	2033Q3	20.3%	\$2,275	\$562	\$2,837
0.09	6 Project Operations	\$40	\$10	24.7%	\$50	5.1%	\$42	\$10	\$52	2028Q1	6.7%	\$45	\$11	\$56
31	CONSTRUCTION MANAGEMENT													
9.09	6 Construction Management	\$1,700	\$422	24.8%	\$2,122	5.1%	\$1,787	\$443	\$2,230	2030Q3	12.7%	\$2,014	\$499	\$2,514
0.09	6 Project Operation:	\$0	\$0	24.8%	\$0	0.0%	\$0	\$0 \$74	\$0	202022	0.0%	\$0	\$0	\$0
1.37	 Frojeci Management 	ə263	\$rU	24.0%	\$30 4	0.1%	ą∠98	ş/4	a3/2	203043	12.1%	ş330	202	3419
	CONTRACT COST TOTALS:	\$31,789	\$11,900		\$43,689		\$33,491	\$12,545	\$46,036	I		\$37,835	\$14,266	\$52,101

Filename: TPCS Alt 13b CL Bypass MF Rock Arch_updated.xlsx TPCS

DATE April 28, 2023

Example C-2: TPCS Sheets for Final Array of Alternatives

**** CONTRACT COST SUMMARY **** PROJECT: Claiborne and Millers Ferry Locks and Dams Fish Passage Study DISTRICT: Mobile District PREPARED: 1/31/2023 LOCATION: Monroe and Wilcox Counties, Al POC: CHIEF, COST ENGINEERING, George Brown This Estimate reflects the scope and schedule in report; Study Draft Feasibility Report PROJECT FIRST COST Civil Works Work Breakdown Structure ESTIMATED COST TOTAL PROJECT COST (FULLY FUNDED) (Constant Dollar Basis) Estimate Prepared: 31-Jan-23 Program Year (Budget EC): 2025 Effective Price Level: 1-Oct-22 Effective Price Level Date: 1 OCT 24 WBS CNTG TOTAL INFLATED CNTG Civil Works COST CNTG ESC COST CNTG TOTAL Mid-Point COST FULL NUMBER Feature & Sub-Feature Description (\$K) C _(\$K)_____ D <u>(%)</u> E (\$K) F (%) G (\$K) (\$K) (\$K) Date _(%) _L (\$K) M (\$K) N (\$K) 0 А н Millers Ferry 46 4% \$82,513 203003 15.2% \$72.007 \$105,418 06 Excavation \$50 236 \$27,486 \$86,722 5.5% \$29,006 \$91,519 \$33,411 06 Concrete Installation \$14,609 \$6,238 42.7% \$20,847 5.5% \$15,417 \$6,583 \$22,000 2030Q3 15.2% \$17,750 \$7,583 \$25,342 06 Cofferdam \$3,652 \$2,144 58.7% \$5,796 5.5% \$3,854 \$2,262 \$6,116 2030Q3 15.2% \$4,439 \$2,606 \$7,04 Prefab Bridge 5.5% \$2,950 06 \$5,684 \$2,427 42.7% \$2,561 203003 15.2% \$6,909 \$9,860 \$8,111 \$5,998 \$8,560 06 Gate Structure \$513 \$207 40.4% \$720 5.5% \$541 \$219 \$760 2030Q3 15.2% \$624 \$252 \$876 06 Rock Armoring & Weirs **S**0 0.0% **S**0 **SO** \$0 \$0 0.0% S0 S0 \$0 0 0.0% \$0 #N/A \$0 \$0 0.0% \$0 0.0% \$0 **\$**0 \$0 0.0% \$0 \$0 0 \$0 #N/A \$0 \$O 0.0% \$0 0.0% \$0 **\$**0 \$0 0 0.0% **\$**0 \$0 \$0 CONSTRUCTION ESTIMATE TOTALS: \$122,196 \$40,632 \$128,956 \$101,738 \$46,802 \$148,540 \$83,694 \$38,502 46.0% \$88,324 LANDS AND DAMAGES 202801 8.0% \$114 01 \$20 25.0% \$100 5 5% \$94 \$21 \$106 \$01 \$23 \$80 PLANNING, ENGINEERING & DESIGN 30 \$0 24 7% \$0 0.0% \$0 0.0% \$0 0.0% Project Management \$0 **SO** \$0 0 **S**0 \$0 \$0 \$0 \$0 0.0% Planning & Environmental Compliance \$0 **\$**0 24.7% \$0 0.0% \$0 \$O \$0 0 0.0% **\$**0 \$0 **\$**0 0.0% \$0 **\$**0 \$0 \$0 0.0% Engineering & Design \$0 24.7% **S**0 \$0 0 0.0% 0.0% Reviews, ATRs, IEPRs, VE \$0 \$0 24.7% \$0 0.0% \$0 \$0 \$0 0 0.0% \$0 \$0 0.0% Life Cycle Updates (cost, schedule, risks) \$0 **S**0 24.7% \$0 0.0% \$0 \$0 0.0% \$0 \$0 \$0 \$0 0 0.0% Contracting & Reprographics \$0 \$0 24.7% \$0 0.0% \$0 \$0 \$0 0 0.0% \$0 \$0 \$0 \$0 \$0 \$0 \$0 24.7% \$0 0.0% \$0 \$0 \$0 0.0% \$0 0.0% Engineering During Construction 0 0.0% Planning During Construction \$0 **\$**0 24.7% \$0 0.0% \$0 **\$**0 \$0 0 0.0% \$0 \$0 \$0 0.0% Adaptive Management & Monitoring \$0 **\$**0 24.7% **S**0 0.0% \$0 **\$**0 \$0 0 0.0% \$0 \$0 \$0 0.0% Project Operations \$0 **\$**0 24.7% \$0 0.0% \$0 **\$**0 \$0 0 0.0% \$0 \$0 \$0 CONSTRUCTION MANAGEMENT 31 9.0% Construction Management \$7,532 \$1,868 24.8% \$9,401 \$7,916 \$1,963 \$9,879 2030Q3 12.7% \$8,922 \$2,213 \$11,135 5.1% 0.0% Project Operation: \$0 **\$**0 24.8% \$0 0.0% \$0 **\$**0 \$0 0 0.0% \$0 \$0 1.5% Project Management \$1,255 \$311 24.8% \$1,567 5.1% \$1,319 \$327 \$1.646 2030Q3 12.7% \$1,487 \$369 \$1,856 CONTRACT COST TOTALS: \$92,562 \$40,701 \$133,263 \$97.644 \$42.943 \$140.587 \$112,238 \$49,407 \$161,645

Filename: TPCS Alt 13b CL Bypass MF Rock Arch_updated.xlsx TPCS

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

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