Brunswick Harbor Modifications Study, Glynn County, GA

Draft Integrated Feasibility Report and Environmental Assessment

Cost Engineering Appendix

U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT 100 WEST OGLETHORPE AVENUE SAVANNAH, GEORGIA 31401



June 2020

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Attachments

- Attachment 1 Total Project Cost Worksheets Attachment 2 – MCACES Summary Sheets
- Attachment 3 Project Schedule

1.0 **Project Description**

This report presents the U.S. Army Corps of Engineers (USACE), Savannah District (CESAS), plan to examine harbor modifications to reduce transportation cost inefficiencies experienced by the largest ship type (roll-on/roll-off) utilizing Brunswick Harbor. The purpose of the study is to investigate existing conditions in the Brunswick Harbor and propose modifications with the purpose of contributing to national economic development while protecting the nation's environment and considering improved safety for navigating vessels. This estimate is in the alternatives phase. The project is in Brunswick, Georgia in Glynn County.

The Port of Brunswick, GA is the largest auto-port in the U.S. Last year, over 629,000 combined auto/machinery units moved through the port for import or export (GPA, 2019). The Brunswick Harbor Channel is a 36' deep (MLLW) by 400' wide channel. The channel was designed in the 1990s for a Roll-on/Roll-off (Ro/Ro) design vessel with dimensions of 660 feet long and 106 feet wide. Today, longer and wider vessels use the channel. This study was authorized under Section 1207 of the Water Resources Development Act (WRDA) 2016 and appropriations were received in FY2019 to begin the study. A Feasibility Cost-Sharing Agreement was executed in April 2019.

A similar study was performed in 2008 which included similar measures to the study being performed today. ROM estimates were generated for the PDT escalating the costs from the 2008 study using CWCCIS. Current costs will be provided for the study alternatives per USACE and other applicable regulations.

Alternatives generated by the study include combinations of four different dredging scenarios involving four areas and potentially two different disposal sites. The sites all include deepening and/or widening of the existing navigation channel. The areas include the following:

- Cedar Hammock Range Bend Widener
- Turning Basin
- Sidney Lanier Bridge
- St. Simon's Sound Channel Widener

Disposal sites include the following:

- Andrews Island
- Bird Island

All baseline costs are calculated using the existing Andrews Island as a disposal area. The navigation channel has historically been maintained using a suction cutter head dredge with materials being disposed of on Andrews Island. No sunk costs have been expended as the project is not yet authorized. All first costs assume budget year 2020.

See Section 5.6 of the main report for the anticipated cost share of the project.

1.1 Alternative 1: No Action Alternative

The No Action Alternative is analyzed as the future without-project conditions for comparison with the action alternatives. Taking no action would mean continuing

standard operations at Brunswick Harbor with no improvements to the Federal navigation channel. All physical conditions at the time of this analysis are assumed to remain. The new berth at Colonel's Island and terminal expansion are included in the No Action Alternative. The No Action Alternative assumes one way RO/RO traffic within Brunswick Harbor, however vessels do occasionally meet in two locations – the St. Simons Sound and the Colonels Island Turning Basin. Vessels rarely meet in the turning basin as conditions must be ideal for the maneuver to take place and both pilots must agree to it. Meetings in the St. Simons Sound occur outside of the federal channel. The No Action Alternative also assumes O&M dredging would occur within the Federal navigation channel at authorized depths (-36 MLLW + 2' Allowable Over Depth).

1.2 Alternative 2: Bend Widener

Alternative 2 would expand the Cedar Hammock Range bend widener located between stations 20+300 to 23+300. The bend widener would be expanded by a maximum of 321 feet on the north side and at a length of approximately 2,700 feet. Approximately 205,000 cubic yards of material would need to be dredged to expand the bend widener. Most of the dredged material would be placed in the Andrews Island Dredged Material Management Facility. Beneficial use of a portion of material from the bend widener is being considered for placement on the existing Bird Island to address erosion concerns.

Brunswick Harbor Modification Study - ALT 2							
		Bend V	Videner				
CWBS	Feature	Construction	Contingency	Total	First Cost	Total Cost	
09	Channels and Canals	\$5,424	\$1,844	\$7,268	\$7,268	\$8,571	
18	Cultural Resource Preservation	\$562	\$191	\$753	\$753	\$915	
	SubTotal	\$5,986	\$2,035	\$8,021	\$8,021	\$9,485	
01	Lands and Damages	\$13	\$3	\$16	\$16	\$17	
30	Preconstruction Engineering and Design	\$542	\$184	\$726	\$726	\$850	
31	Construction Management	\$509	\$173	\$682	\$682	\$850	
	Total	\$7,050	\$2,396	\$9,445	\$9,445	\$11,191	

Table 1 – Alternative 2 – Total Project Cost Summary

	Brunswick Harbor Modification Study - ALT 2 w O&M							
	Bend Wi	dener and Tu	rning Basin E	xpansion				
CWBS	Feature	Construction	Contingency	Total	First Cost	Total Cost		
09	Channels and Canals	\$6,056	\$2,059	\$8,115	\$8,115	\$10,361		
18	Cultural Resource Preservation	\$562	\$191	\$753	\$753	\$915		
	SubTotal	\$6,618	\$2,250	\$8,868	\$8,868	\$11,275		
01	Lands and Damages	\$13	\$3	\$16	\$16	\$17		
30	Preconstruction Engineering and Design	\$599	\$204	\$803	\$803	\$1,050		
31	Construction Management	\$564	\$192	\$682	\$756	\$1,050		
	Total	\$7,794	\$2,649	\$10,442	\$10,442	\$13,381		

1.3 Alternative 3: Turning Basin Expansion

Alternative 3 would include expanding the existing turning basin at the Colonel's Island facility along approximately 3,200 feet increasing the width by a maximum of 395 feet

along South Brunswick River from stations 0+900 to 5+300. The turning basin expansion would require approximately 346,000 cubic yards of dredged material to be removed. All of the dredged material would be placed in the Andrews Island Dredged Material Management Facility.

	Brunswick Harbor Modification Study - ALT 3									
		Turning Basin								
CWBS	Feature	Construction	Contingency	Total	First Cost	Total Cost				
09	Channels and Canals	\$4,800	\$1,632	\$6,432	\$6,432	\$7,585				
18	Cultural Resource Preservation	\$562	\$191	\$753	\$753	\$915				
	SubTotal	\$5,362	\$1,823	\$7,185	\$7,185	\$8,499				
01	Lands and Damages	\$13	\$3	\$16	\$16	\$17				
30	Preconstruction Engineering and Design	\$486	\$165	\$651	\$651	\$762				
31	Construction Management	\$455	\$155	\$610	\$610	\$762				
	Total	\$6,316	\$2,146	\$8,462	\$8,462	\$10,028				

Table 2 – Alternative 3 – Total Project Cost Summary

-										
	Brunswick Harbor Modification Study - ALT 3 w O&M									
	Bend Wi	dener and Tu	rning Basin E	xpansion						
CWBS	Feature	Construction	Contingency	Total	First Cost	Total Cost				
09	Channels and Canals	\$11,666	\$3,966	\$15,632	\$15,632	\$27,033				
18	Cultural Resource Preservation	\$562	\$191	\$753	\$753	\$915				
	SubTotal	\$12,228	\$4,158	\$16,385	\$16,385	\$27,947				
01	Lands and Damages	\$13	\$3	\$16	\$16	\$17				
30	Preconstruction Engineering and Design	\$1,106	\$376	\$1,482	\$1,482	\$2,936				
31	Construction Management	\$1,038	\$353	\$610	\$1,391	\$2,936				
	Total	\$14,384	\$4,890	\$19,274	\$19,274	\$33,765				

1.4 Alternative 4: Meeting Area West of Sidney Lanier Bridge

Alternative 4 would create a RO/RO vessel meeting area upstream of the Sidney Lanier Bridge to the turning basin at the Colonel's Island facility (a distance of approximately 8,700 feet). This part of the Federal Navigation Channel is currently 400 feet wide. The Federal channel would be expanded by approximately 200 feet on both the north and south side of the channel to create a new channel width of 800 feet from stations 34+200 to 43+200. The meeting area would require dredging of approximately 800,000 cubic yards of material. All of the dredged material would be placed in the Andrews Island Dredged Material Management Facility.

 Table 3 - Alternative 4 - Total Project Cost Summary

			Sidney Lane Channel Widener					
CWBS	Feature	Construction	Contingency	Total	First Cost	Total Cost		
09	Channels and Canals	\$12,493	\$4,248	\$16,741	\$16,741	\$19,740		
18	Cultural Resource Preservation	\$562	\$191	\$753	\$753	\$915		
	SubTotal	\$13,055	\$4,439	\$17,494	\$17,494	\$20,655		
01	Lands and Damages	\$13	\$3	\$16	\$16	\$17		
30	Preconstruction Engineering and Design	\$1,173	\$399	\$1,572	\$1,572	\$1,840		
31	Construction Management	\$1,110	\$377	\$1,487	\$1,487	\$1,840		
	Total	\$15,351	\$5,218	\$20,569	\$20,569	\$24,342		

1.5 Alternative 5: Meeting Area at St. Simon's Sound

Alternative 5 would create a RO/RO vessel meeting area located at St. Simon's Sound near the entrance channel to Brunswick Harbor. Since this area is naturally deep water, no dredging would be required. Creating a meeting area at St. Simon's Sound would re-locate the north toe of the existing channel approximately 800 feet to the north from stations -6+800 to 4+300. Alternative 4 would expand the Federal channel at St. Simon's Sound by 800 feet north of the existing channel along a length of approximately 10,000 feet. The existing channel centerline would not change.

		St. Simons Meeting Area					
CWBS	Feature	Construction	Contingency	Total	First Cost	Total Cost	
09	Channels and Canals	\$0	\$0	\$0	\$0	\$0	
18	Cultural Resource Preservation	\$562	\$191	\$753	\$753	\$915	
	SubTotal	\$562	\$191	\$753	\$753	\$915	
01	Lands and Damages	\$13	\$3	\$16	\$16	\$17	
30	Preconstruction Engineering and Design	\$50	\$17	\$67	\$67	\$78	
31	Construction Management	\$47	\$16	\$63	\$63	\$78	
	Total	\$672	\$227	\$899	\$899	\$1,087	

 Table 4 - Alternative 5 - Total Project Cost Summary

1.6 Alternative 6: Bend Widener and Turning Basin Expansion

Alternative 6 is a combination of the bend widener and the turning basin expansion. Alternative 6 includes the 205,000 cubic yards of material at the bend widener and the 346,000 cubic yards of material at the turning basin expansion for a total of approximately 551,000 cubic yards of material. Disposal options are the same as Alternatives 2 and 3.

 Table 5 - Alternative 6 – Total Project Cost Summary

Brunswick Harbor Modification Study - ALT 6								
	Alternative 6, BW + TB							
CWBS	Feature	Construction	Contingency	Total	First Cost	Total Cost		
09	Channels and Canals	\$8,113	\$2,758	\$10,871	\$10,871	\$12,819		
18	Cultural Resource Preservation	\$1,001	\$340	\$1,341	\$1,341	\$1,629		
	SubTotal	\$9,114	\$3,099	\$12,213	\$12,213	\$14,449		
01	Lands and Damages	\$13	\$3	\$16	\$16	\$17		
30	Preconstruction Engineering and Design	\$822	\$279	\$1,101	\$1,101	\$1,289		
31	Construction Management	\$775	\$264	\$1,039	\$1,039	\$1,289		
	Total	\$10,724	\$3,645	\$14,368	\$14,368	\$17,032		

	Brunswick Harbor Modification Study - ALT 6 w O&M								
	Bend Wi	dener and Tu	rning Basin E	xpansion					
CWBS	Feature	Construction	Contingency	Total	First Cost	Total Cost			
09	Channels and Canals	\$15,611	\$5,308	\$20,919	\$20,919	\$34,058			
18	Cultural Resource Preservation	\$1,001	\$340	\$1,341	\$1,341	\$1,629			
	SubTotal	\$16,612	\$5,648	\$22,260	\$22,260	\$35,687			
01	Lands and Damages	\$13	\$3	\$16	\$16	\$17			
30	Preconstruction Engineering and Design	\$1,499	\$510	\$2,009	\$2,009	\$3,663			
31	Construction Management	\$1,413	\$480	\$1,039	\$1,893	\$3,663			
	Total	\$19,537	\$6,641	\$26,178	\$26,178	\$42,958			

1.7 Alternative 7: Bend Widener, Turning Basin Expansion, and Meeting Area West of Sidney Lanier Bridge

Alternative 7 is a combination of the bend widener, turning basin expansion, and meeting are west of the Sidney Lanier Bridge. Alternative 7 includes the 205,000 cubic yards of material at the bend widener, 346,000 cubic yards at the turning basin expansion, and 800,000 cubic yards at the meeting area west of the Sidney Lanier Bridge for a total of approximately 1,352,000 cubic yards of dredged material. Disposal options are the same as Alternatives 2 and 3.

	Brunswick Harbor Modification Study - ALT 7								
	Bend Widener, Turning Basin Ex	kpansion, and	d Meeting Are	ea West of Si	dney Lanier	Bridge			
CWBS	Feature	Construction	Contingency	Total	First Cost	Total Cost			
09	Channels and Canals	\$19,006	\$6,462	\$25,468	\$25,468	\$30,032			
18	Cultural Resource Preservation	\$1,262	\$429	\$1,691	\$1,691	\$2,054			
	SubTotal	\$20,268	\$6,891	\$27,159	\$27,159	\$32,086			
01	Lands and Damages	\$13	\$3	\$16	\$16	\$17			
30	Preconstruction Engineering and Design	\$1,826	\$621	\$2,447	\$2,447	\$2,865			
31	Construction Management	\$1,723	\$586	\$2,309	\$2,309	\$2,865			
	Total	\$23,830	\$8,101	\$31,930	\$31,930	\$37,807			

Table 6 - Alternative 7 - Total Project Cost Summary

	Brunswick Harbor Modification Study - ALT 7 w O&M							
	Bend Widener, Turning Basin Ex	pansion, and	d Meeting Are	a West of Si	dney Lanier	Bridge		
CWBS	Feature	Construction	Contingency	Total	First Cost	Total Cost		
09	Channels and Canals	\$26,504	\$9,011	\$35,515	\$35,515	\$51,270		
18	Cultural Resource Preservation	\$1,262	\$429	\$1,691	\$1,691	\$2,054		
	SubTotal	\$27,766	\$9,440	\$37,206	\$37,206	\$53,324		
01	Lands and Damages	\$13	\$3	\$16	\$16	\$17		
30	Preconstruction Engineering and Design	\$2,503	\$851	\$3,354	\$3,354	\$5,238		
31	Construction Management	\$2,361	\$803	\$2,309	\$3,164	\$5,238		
	Total	\$32,643	\$11,097	\$43,740	\$43,740	\$63,733		

1.8 Alternative 8: Bend Widener, Turning Basin Expansion, and Meeting Area at St. Simon's Sound

Alternative 8 is a combination of the bend widener, turning basin expansion, and meeting area at St. Simon's Sound. Alternative 8 includes the 205,000 cubic yards of material at the bend widener, 346,000 cubic yards at the turning basin expansion, and 0 cubic yards at the meeting area at St. Simon's Sound for a total of approximately 551,000 cubic yards of dredged material. Disposal options are the same as Alternatives 2 and 3.

	Brunswic	Brunswick Harbor Modification Study - ALT 8													
	Bend Widener, Turning Basin Expansion, and Meeting Area at St. Simon's Sound														
CWBS	Feature	Construction	Contingency	Total	First Cost	Total Cost									
09	Channels and Canals	\$8,453	\$2,874	\$11,327	\$11,327	\$13,357									
18	Cultural Resource Preservation	I Resource Preservation \$1,262 \$429		\$1,691	\$1,691	\$2,054									
	SubTotal	\$9,715	\$3,303	\$13,018	\$13,018	\$15,411									
01	Lands and Damages	\$13	\$3	\$16	\$16	\$17									
30	Preconstruction Engineering and Design	\$875	\$298	\$1,173	\$1,173	\$1,373									
31	Construction Management	\$825	\$281	\$1,106	\$1,106	\$1,373									
	Total	\$11,428	\$3,884	\$15,312	\$15,312	\$18,160									

	Brunswick Ha	rbor Modifica	ation Study -	ALT 8 w O&N	1	
	Bend Widener, Turning Bas	in Expansion	, and Meeting	g Area at St.	Simon's Sou	nd
CWBS	Feature	Construction	Contingency	Total	First Cost	Total Cost
09	Channels and Canals	\$15,951	\$5,423	\$21,374	\$21,374	\$34,595
18	Cultural Resource Preservation	\$1,262	\$429	\$1,691	\$1,691	\$2,054
	SubTotal	\$17,213	\$5,852	\$23,065	\$23,065	\$36,649
01	Lands and Damages	\$13	\$3	\$16	\$16	\$17
30	Preconstruction Engineering and Design	\$1,552	\$528	\$2,080	\$2,080	\$3,746
31	Construction Management	\$1,463	\$497	\$1,106	\$1,960	\$3,746
	Total	\$20,241	\$6,881	\$27,121	\$27,121	\$44,086

1.9 Alternative 9: Bend Widener, Turning Basin Expansion, Meeting Area West of Sidney Lanier Bridge and Meeting Area at St. Simon's Sound

Alternative 9 includes the 551,000 cubic yards of dredging to occur at the bend widener and turning basin plus creation of a RO/RO vessel meeting area upstream of the Sidney Lanier Bridge to the turning basin at the Colonel's Island facility and creation of a meeting area at St. Simon's Sound, as described in the previous alternatives. The total dredging amount for Alternative 5 is approximately 1,352,000 cubic yards. Disposal options are the same as Alternatives 2 and 3.

	Brunswic	k Harbor Moc	lification Stud	ly - ALT 9										
	Bend Widener, Turning Basin Expar	nsion, Meeting	g Area West o	of Sidney Lan	lier Bridge ar	nd Meeting								
	Area at St. Simon's Sound													
CWBS	Feature	Construction	Contingency	Total	First Cost	Total Cost								
09	Channels and Canals	\$19,006	\$6,462	\$25,468	\$25,468	\$30,032								
18	Cultural Resource Preservation	\$1,323	\$450	\$1,773	\$1,773	\$2,153								
	SubTotal	\$20,329	\$6,912	\$27,241	\$27,241	\$32,185								
01	Lands and Damages	\$13	\$3	\$16	\$16	\$17								
30	Preconstruction Engineering and Design	\$1,832	\$623	\$2,455	\$2,455	\$2,874								
31	Construction Management	\$1,728	\$588	\$2,316	\$2,316	\$2,874								
	Total	\$23,902	\$8,125	\$32,027	\$32,027	\$37,924								

	Brunswick H	arbor Modific	ation Study -	ALT 9 w O&N	1									
	Bend Widener, Turning Basin Expar	nsion, Meeting	g Area West o	of Sidney Lar	nier Bridge ar	nd Meeting								
	Area at St. Simon's Sound													
CWBS	Feature	Construction	Contingency	Total	First Cost	Total Cost								
09	Channels and Canals	\$26,504	\$9,011	\$35,515	\$35,515	\$51,270								
18	Cultural Resource Preservation	\$1,323	\$450	\$1,773	\$1,773	\$2,153								
	SubTotal	\$27,827	\$9,461	\$37,288	\$37,288	\$53,423								
01	Lands and Damages	\$13	\$3	\$16	\$16	\$17								
	5	, -		+ · •										
30	Preconstruction Engineering and Design	\$2,509	\$853	\$3,362	\$3,362	\$5,248								
31	Construction Management	\$2,366	\$804	\$2,316	\$3,170	\$5,248								
	Total	\$32,715	\$11,122	\$43,836	\$43,836	\$63,850								

2.0 Basis of Estimate

2.1 Basis of Design

The level of design developed for this report is approximately 15%. Given this level of design, the estimate falls into a Class 4 category per ER 1110-2-1302. In general, costs were derived using corollary data from similar projects completed recently and scaled up or down to the projected design. For the corollary cost data, recent projects in close geographic proximity with similar scope were used when possible to give the most reasonable similar costs. Refer to the Engineering Design Appendix for further details on the basis of design and plan drawings.

2.2 Basis of Quantities

- a) The quantity takeoffs were developed by the technical team. Composition of dredged materials were approximated from a singular cross section provided by the Geotechnical Engineer and are assumed to be representative of the entire area to be dredged. See the Geotechnical Engineering Report for more information. As additional information is obtained pertaining to the composition of the dredged material, the estimate will be refined.
- b) Estimated new work quantities were calculated for each individual navigational feature using Autodesk Civil 3d. The quantities for each navigational feature were calculated to -36 ft MLLW and -38 ft MLLW using the June/July 2019 bathymetric

data. -36 ft MLLW represents the current authorized project depth and -38 ft MLLW represents the allowable overdepth during dredging.

Table 9 – Quantities from Engineering Appendix

Navigational Feature	Depth (ft MLLW)	Cut (CY)
Bend Widener	-38	205,159
Turning Basin 1	-38	458,087
Turning Basin 2	-38	693,488
Turning Basin 3	-38	623,948
Turning Basin 4	-38	346,462
Sidney Lanier Meeting Area	-38	800,074
St. Simon's Sound Meeting Area	-38	0

Estimated Dredging Quantities per Navigational Feature

3.0 Estimate

The design was refined and a cost estimate was developed for each alternative. First Cost includes all costs in FY2020 dollars, Total Project Cost includes escalation to the mid-point of construction and contingency.

3.1 General Assumptions

- a) No (hard) rock excavation is included. Sections indicate "weathered limestone". Assume that this can be dredged using the same dredging equipment. No blasting is included.
- b) All dredged material is assumed to be disposed of on Andrews Island. An alternative disposal site for beneficial use is Bird Island.
- c) Operations and maintenance costs are assumed to be directly related to surface area of navigation areas. That is, the incremental increase in cost for O&M costs is parametrically related to existing costs, based on surface area (square feet of navigation channel).
- d) Water from effluent filter cells will be discharged into the waterway. No additional treatment is needed.
- e) No environmental mitigation is included.
- f) Contractor staging area is assumed to be at area TBD. This is the same area that will be used for annual maintenance dredging.
- g) Quantities include two (2) feet for allowance dredging of over-dig for non-pay is included for all dredged areas and alternates.

- h) Dredging areas are computed from plans utilizing software. A dredging prism was not provided. Bank heights were calculated (approximated) using dredging volumes and surface areas.
- i) Pipeline distances are approximated using Google Earth images. Pipelines are measured from the middle of the dredged area.
- j) Material composition provided by Geotechnical Engineering. Compositions are as follows:

Location	Dredge Volume	Surface Area	1,200 GR/L	1,300 GR/L	1,400 GR/L	1,700 GR/L	1,900 GR/L	2,000 GR/L	2,000 GR/L	2,300 GR/L	2,400 GR/L	2,000 GR/L
			Mud&Silt	Mud&Silt	Mud&Silt	Loose Sand	Loose Sand	Comp Sand	Stiff Clay	Comp Shell	Soft Rock	Blast Rock
Bend Widener	205,159 CY	564,881 SF	23.2%	0.0%	7.7%	3.1%	6.5%	17.6%	8.0%	0.0%	33.7%	0
Turning Basin	346,462 CY	530,096 SF	5.7%	2.5%	3.4%	30.7%	26.4%	8.4%	10.1%	0.0%	12.8%	0.0%
Channel Widener (Sidney Lanier)	800,074 CY	2,361,796 SF	2.6%	0.0%	1.9%	25.1%	15.0%	4.9%	21.0%	0.0%	29.6%	0.0%
St. Simon's Sound Meeting Area	0 CY	100,000 SF	100.0%									

Table 10 – Material Composition

4.0 Construction Schedule

A formal construction schedule was not developed for the project. The estimate assumes that dredged materials financial resources and other commodities will be available as needed to complete the project efficiently. Since field office overhead is estimated as a percentage of the construction cost, the duration will not have an impact on the estimates. However, the duration does have an impact on the estimates once escalation is applied.

5.0 Risk Assessment

An abbreviated risk analysis (ARA) was performed for the project. A contingency was developed for each major construction feature. A weighted average was calculated for each estimate using these contingencies.

6.0 Real Estate Costs

Real estate costs were provided by the PDT and are included in the estimate.

7.0 References

U.S. Army Corps of Engineers, 1993, *Engineering and Design Cost Engineering Policy and General Requirements, Engineering Regulation 1110-1-1300,* Department of the Army, Washington D.C., 26 March 1993.

U.S. Army Corps of Engineers, 1999, *Engineering and Design for Civil Works Projects, Engineering Regulation 1110-2-1150*, Department of the Army, Washington D.C., 31 August 1999.

U.S. Army Corps of Engineers, 2008, *Civil Works Cost Engineering, Engineering Regulation*

1110-2-1302, Department of the Army, Washington D.C., 15 September 2008.

U.S. Army Corps of Engineers, 2008, *Construction Cost Estimating Guide For Civil Works,*

Engineering Technical Letter 1110-2-573, Department of the Army, Washington D.C., 30 September 2008.

U.S. Army Corps of Engineers, 2014, *Civil Works Construction Cost Index System, Engineering Manual 110-2-1304,* Department of the Army, Washington D.C., 31 March 2014.

PROJECT: Brunswick Harbor Modification Study - ALT 2 PROJECT NO: 465055 LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report;

Report Name and date

Civ	il Works Work Breakdown Structure		ESTIMATE	D COST					OJECT FIRST (nstant Dollar B				TOTAL PROJE	ECT COST FUNDED)	(FULLY
WBS <u>NUMBER</u>	Civil Works Feature & Sub-Feature Description	COST _(\$K)_	CNTG _(\$K)_	CNTG _(%)_	TOTAL _(\$K)_	ESC _(%)_		ffective Pric	(Budget EC): ce Level Date: REMAINING COST _(\$K)_	2020 1-Oct- 19 Spent Thru: 1-Oct-15 <u>(\$K)</u>	TOTAL FIRST COST _(\$K)_	ESC _(%)_	COST _(\$K)_	CNTG _(\$K)	FULL _(\$K)_
09 18	CHANNELS & CANALS CULTURAL RESOURCE PRESERVATION	\$5,424 \$562	\$1,844 \$191 -	34% 34%	\$7,268 \$753	-	\$5,424 \$562	\$1,844 \$191	\$7,268 \$753		\$7,268 \$753	17.9% 21.5% - -	\$6,396 \$683	\$2,175 \$232	\$8,571 \$915
	CONSTRUCTION ESTIMATE TOTALS:	\$5,986	\$2,035	-	\$8,021	-	\$5,986	\$2,035	\$8,021		\$8,021	18.3%	\$7,079	\$2,407	\$9,485
01	LANDS AND DAMAGES	\$13	\$3	25%	\$16		\$13	\$3	\$16		\$16	6.3%	\$13	\$3	\$17
30	PLANNING, ENGINEERING & DESIGN	\$542	\$184	34%	\$726		\$542	\$184	\$726		\$726	17.1%	\$635	\$216	\$850
31	CONSTRUCTION MANAGEMENT	\$509	\$173	34%	\$682	0.0%	\$509	\$173	\$682		\$682	23.0%	\$626	\$213	\$839
	PROJECT COST TOTALS:	\$7,050	\$2,396	34%	\$9,445	-	\$7,050	\$2,396	\$9,445		\$9,445	18.5%	\$8,353	\$2,839	\$11,191
		CHIEF, COS	T ENGINEEF	RING, Paul S	Smith										
		PROJECT M	ANAGER, Je	eff Schwinda	man							DTAL PROJECT COST: ATED FEDERAL COST: 65%			\$11,191 \$7,274
		CHIEF, REA	ESTATE R	alph Werthr	nann						ESTIMATED	NON-FED	ERAL COST:	35%	\$3,917
		CHIEF, PLAN		·		22 - FEASIBILITY STUDY (CAP studies ESTIMATED FEDERAL COS							50%	\$2	
		-									ESTIMATED			50%	\$1 \$1
	CHIEF, ENGINEERING, Tracey Hendren									ESTIN	MATED FEDERA	L COST C	F PROJECT		\$7,275
		CHIEF, OPE													
		CHIEF, CON			-										
		CHIEF, CON		-	inger										
		CHIEF, PM-													
		CHIEF, DPM	, Erik Blechir	nger											

DISTRICT: Savannah

PREPARED: 2/3/2020

PROJECT: Brunswick Harbor Modification Study - ALT 2

LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report; Report Name and date

DISTRICT: Savannah POC: CHIEF. CO

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	WBS Structure		ESTIMATE	D COST		PROJEC	T FIRST COST Dollar B		(Constant	
			nate Prepareo ate Price Lev		3-Feb-20 1-Oct-19		m Year (Budge ve Price Level		2020 1 -Oct-19	
			F	RISK BASED						
WBS	Civil Works	COST	CNTG	CNTG	TOTAL	ESC	COST	CNTG	TOTAL	Mid-Point
NUMBER	Feature & Sub-Feature Description	<u>(\$K)</u>	<u>(\$K)</u>	<u>(%)</u>	<u>(\$K)</u>	<u>(%)</u>	<u>(\$K)</u>	<u>(\$K)</u>	<u>(\$K)</u>	Date
Α	B Bend Widener	С	D	E	F	G	Н	I	J	P
09	CHANNELS & CANALS	\$5,424	\$1,844	34.0%	\$7,268		\$5,424	\$1,844	\$7,268	2025Q3
18	CULTURAL RESOURCE PRESERVATION	\$562	\$191	34.0%	\$753		\$562	\$191	\$753	2026Q3
			,	0.1070	.			4 . 0 .	Ţ	
	CONSTRUCTION ESTIMATE TOTALS:	 \$5,986	\$2,035	34.0%	\$8,021	_	\$5,986	\$2,035	\$8,021	
		<i>+-,</i>	+_,		<i>•••••</i>		<i></i>	<i>~_,</i>	<i>+ - ,</i>	
01	LANDS AND DAMAGES	\$13	\$3	25.0%	\$16		\$13	\$3	\$16	2022Q1
30	PLANNING, ENGINEERING & DESIGN									
0.5%	Project Management	\$30	\$10	34.0%	\$40		\$30	\$10	\$40	2023Q3
0.0%	Planning & Environmental Compliance	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3
5.2%	Engineering & Design	\$311	\$106	34.0%	\$417		\$311	\$106	\$417	2023Q3
0.0%	Reviews, ATRs, IEPRs, VE	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3
0.3%	Life Cycle Updates (cost, schedule, risks)	\$15	\$5	34.0%	\$20		\$15	\$5	\$20	2023Q3
	Contracting & Reprographics	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2025Q3
3.0%	Engineering During Construction	\$180	\$61	34.0%	\$241		\$180	\$61	\$241	2025Q3
0.0%	Planning During Construction	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3
0.0%	Adaptive Management & Monitoring	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3
0.0%	Project Operations	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3
31	CONSTRUCTION MANAGEMENT									
8.0%	Construction Management	\$479	\$163	34.0%	\$642		\$479	\$163	\$642	2025Q3
0.3%	Project Operation:	\$15	\$5	34.0%	\$20		\$15	\$5	\$20	2025Q3
0.3%	Project Management	\$15	\$5	34.0%	\$20		\$15	\$5	\$20	2025Q3
	CONTRACT COST TOTALS:	\$7,050	\$2,396		\$9,445	_	\$7,050	\$2,396	\$9,445	

PREPARED: 2/3/2020

TOTAL PROJECT CO	ST (FULLY FUNI	DED)	
ESC 	COST _ <u>(\$K)_</u> <i>M</i>	CNTG <u>(\$K)</u> N	FULL _(\$K) <i>O</i>
17.9% 21.5%	\$6,396 \$683	\$2,175 \$232	\$8,571 \$915
	\$7,079	\$2,407	\$9,485
6.3%	\$13	\$3	\$17
14.1%	\$34	\$12	\$46
14.1%	\$1	\$0	\$2
14.1%	\$355	\$121	\$475
14.1%	\$1	\$0	\$2
14.1%	\$17	\$6	\$23
23.0%	\$1	\$0	\$2
23.0%	\$221	\$75	\$297
14.1%	\$1	\$0	\$2
14.1%	\$1	\$0	\$2
14.1%	\$1	\$0	\$2
23.0%	\$589	\$200	\$790
23.0%	\$18	\$6	\$25
23.0%	\$18	\$6	\$25
	\$8,353	\$2,839	\$11,191

Brunswick Harbor Modification Study - ALT 2 w O&M PROJECT: PROJECT NO: 465055 LOCATION: Brunswick, Georgia

Report Name and date This Estimate reflects the scope and schedule in report;

Civi	Civil Works Work Breakdown Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)						TOTAL PROJECT COST FUNDED)		
WBS	Civil Works	COST	CNTG	CNTG	TOTAL	ESC		fective Price	Budget EC): E Level Date: REMAINING COST	2020 1-Oct- 19 Spent Thru: 1-Oct-15	TOTAL FIRST COST	ESC	COST	CNTG	FULL
<u>NUMBER</u>	Feature & Sub-Feature Description	<u>(\$K)</u>	<u>(\$K)</u>	<u>(%)</u>	<u>(\$K)</u>	<u>(%)</u>	<u>(\$K)</u>	<u>(\$K)</u>	<u>(\$K)</u>	<u>(\$K)</u>	<u>(\$K)</u>	<u>(%)</u>	<u>(\$K)</u>	<u>(\$K)</u>	<u>(\$K)</u>
09 18	CHANNELS & CANALS CULTURAL RESOURCE PRESERVATION	\$6,056 \$562	\$2,059 \$191	34% 34% -	\$8,115 \$753	-	\$6,056 \$562	\$2,059 \$191	\$8,115 \$753		\$8,115 \$753	27.7% 21.5% - -	\$7,732 \$683	\$2,629 \$232	\$10,361 \$915
	CONSTRUCTION ESTIMATE TOTALS:	\$6,618	\$2,250	-	\$8,868	-	\$6,618	\$2,250	\$8,868		\$8,868	27.1%	\$8,414	\$2,861	\$11,275
01	LANDS AND DAMAGES	\$13	\$3	25%	\$16		\$13	\$3	\$16		\$16	6.3%	\$13	\$3	\$17
30	PLANNING, ENGINEERING & DESIGN	\$599	\$204	34%	\$803		\$599	\$204	\$803		\$803	30.8%	\$784	\$266	\$1,050
31	CONSTRUCTION MANAGEMENT	\$564	\$192	34%	\$682	10.8%	\$564	\$192	\$756		\$756	37.4%	\$775	\$264	\$1,039
	PROJECT COST TOTALS:	\$7,794	\$2,649	34%	\$10,442	_	\$7,794	\$2,649	\$10,442	l 	\$10,442	28.1%	\$9,986	\$3,394	\$13,381

 CHIEF, COST ENGINEERING, Paul Smith
 PROJECT MANAGER, Jeff Schwindaman
 CHIEF, REAL ESTATE, Ralph Werthmann
 CHIEF, PLANNING, Kimberly Garvey
 CHIEF, ENGINEERING, Tracey Hendren
 CHIEF, OPERATIONS, Michael Montone
 CHIEF, CONSTRUCTION, Kenneth Gray
 CHIEF, CONTRACTING, Paige Blechinger
 CHIEF, PM-PB, Thomas Woodie
 CHIEF, DPM, Erik Blechinger

DISTRICT: Savannah

PREPARED: 2/3/2020

POC: CHIEF, COST ENGINEERING, Paul Smith

ESTIMATED TOTAL PROJECT COST:		\$13,381
ESTIMATED FEDERAL COST:	65%	\$8,697
ESTIMATED NON-FEDERAL COST:	35%	\$4,683
22 - FEASIBILITY STUDY (CAP studies):		\$2
ESTIMATED FEDERAL COST:	50%	\$1
ESTIMATED FEDERAL COST: ESTIMATED NON-FEDERAL COST:	50% 50%	\$1 \$1

ESTIMATED FEDERAL COST OF PROJECT \$8,698

PROJECT: Brunswick Harbor Modification Study - ALT 2 w O&M LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report; Report Name and date

DISTRICT: Savannah

	WBS Structure		ESTIMATE	D COST		PROJEC	T FIRST COST Dollar F		(Constant		TOTAL PROJECT (COST (FULLY FUNI	OST (FULLY FUNDED)					
			ate Prepared ate Price Leve		3-Feb-20 1-Oct-19		am Year (Budge ive Price Level		2020 1 -Oct-19									
			R	RISK BASED														
WBS	Civil Works	COST	CNTG	CNTG	TOTAL	ESC	COST	CNTG	TOTAL	Mid-Point	ESC	COST	CNTG	FULL				
NUMBER	Feature & Sub-Feature Description	<u>(\$K)</u>	<u>(\$K)</u>	<u>(%)</u> E	<u>(\$K)</u>	<u>(%)</u>	<u>(\$K)</u>	<u>(\$K)</u>	<u>(\$K)</u>	<u>Date</u>	<u>(%)</u>	<u>(\$K)</u>	<u>(\$K)</u>	<u>(\$K)</u>				
	<i>B</i> Bend Widener and Turning Basin Expansion	С	D	E	F	G	Н	I	J	Р	L	М	N	0				
	CHANNELS & CANALS	\$5,424	\$1,844	34.0%	\$7,268		\$5,424	\$1,844	\$7,268	2025Q3	17.9%	\$6,396	\$2,175	\$8,571				
18	CULTURAL RESOURCE PRESERVATION	\$562	\$191	34.0%	\$753		\$562	\$191	\$753	2026Q3	21.5%	\$683	\$232	\$915				
	CONSTRUCTION ESTIMATE TOTALS:	\$5,986	\$2,035	34.0%	\$8,021	_	\$5,986	\$2,035	\$8,021	-		\$7,079	\$2,407	\$9,485				
01	LANDS AND DAMAGES	\$13	\$3	25.0%	\$16		\$13	\$3	\$16	2022Q1	6.3%	\$13	\$3	\$17				
30	PLANNING, ENGINEERING & DESIGN																	
0.5%	Project Management	\$30	\$10	34.0%	\$40		\$30	\$10	\$40	2023Q3	14.1%	\$34	\$12	\$46				
0.0%	Planning & Environmental Compliance	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3	14.1%	\$1	\$0	\$2				
5.2%	Engineering & Design	\$311	\$106	34.0%	\$417		\$311	\$106	\$417	2023Q3	14.1%	\$355	\$121	\$475				
0.0%	Reviews, ATRs, IEPRs, VE	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3	14.1%	\$1	\$0	\$2				
0.3%	Life Cycle Updates (cost, schedule, risks)	\$15	\$5	34.0%	\$20		\$15	\$5	\$20	2023Q3	14.1%	\$17	\$6	\$23				
0.0%	Contracting & Reprographics	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2025Q3	23.0%	\$1	\$0	, \$2				
3.0%	Engineering During Construction	\$180	\$61	34.0%	\$241		\$180	\$61	\$241	2025Q3	23.0%	\$221	\$75	\$297				
0.0%	Planning During Construction	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3	14.1%	\$1	\$0	\$2				
0.0%	Adaptive Management & Monitoring	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3	14.1%	\$1	\$0	\$2				
0.0%	Project Operations	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3	14.1%	\$1	\$0	\$2				
31	CONSTRUCTION MANAGEMENT																	
8.0%	Construction Management	\$479	\$163	34.0%	\$642		\$479	\$163	\$642	2025Q3	23.0%	\$589	\$200	\$790				
0.3%	Project Operation:	\$15	\$5	34.0%	\$20		\$15	\$5	\$20	2025Q3	23.0%	\$18	\$6	\$25				
0.3%	Project Management	\$15	\$5	34.0%	\$20		\$15	\$5	\$20	2025Q3	23.0%	\$18	\$6	\$25				
=	CONTRACT COST TOTALS:	\$7,050	\$2,396		\$9,445	=	\$7,050	\$2,396	\$9,445			\$8,353	\$2,839	\$11,19				

PREPARED: 2/3/2020

PROJECT: Brunswick Harbor Modification Study - ALT 2 w O&M LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report; Report Name and date DISTRICT: Savannah

	WBS Structure		ESTIMATE	D COST		PROJEC	T FIRST COST Dollar E		(Constant		TOTAL PROJECT COST (FULLY FUNDED)					
		Estimate Prepared: Estimate Price Level: 1-Oct-19					am Year (Budge tive Price Level		2020 1 -Oct-19							
WBS <u>NUMBER</u> A	Civil Works <u>Feature & Sub-Feature Description</u> B O&M Costs	COST _ <u>(\$K)</u> C	CNTG <u>(\$K)</u> D	RISK BASED CNTG (%) E	TOTAL _ <u>(\$K)</u> <i>F</i>	ESC _(%) G	COST _ <u>(\$K)</u> <i>H</i>	CNTG (<u>\$K)</u> /	TOTAL _ <u>(\$K)_</u> _J	Mid-Point <u>Date</u> P	ESC _(%) _L	COST _ <u>(\$K)_</u> <i>M</i>	CNTG (\$K) N	FULL (\$K) 0		
09	CHANNELS & CANALS Total 50-Yr O&M Costs	\$632	\$215	34.0%	\$847		\$632	\$215	\$847	2045Q2	111.4%	\$1,336	\$454	\$1,790		
	CONSTRUCTION ESTIMATE TOTALS:	\$632	\$215	34.0%	\$847	_	\$632	\$215	\$847	-		\$1,336	\$454	\$1,790		
01	LANDS AND DAMAGES			25.0%												
30 0.5% 0.0%	, ,	\$3	\$1	34.0% 34.0%	\$4		\$3	\$1	\$4	2044Q1	157.1%	\$8	\$3	\$10		
5.2% 0.0%	Engineering & Design	\$33	\$11	34.0% 34.0%	\$44		\$33	\$11	\$44	2044Q1	157.1%	\$85	\$29	\$114		
0.3% 0.0%	Contracting & Reprographics	\$2	\$1	34.0% 34.0%	\$3		\$2	\$1	\$3	2044Q1	157.1%	\$5	\$2	\$7		
3.0% 0.0% 0.0% 0.0%	Planning During Construction Adaptive Management & Monitoring	\$19	\$6	34.0% 34.0% 34.0% 34.0%	\$25		\$19	\$6	\$25	2045Q2	170.7%	\$51	\$17	\$69		
31	CONSTRUCTION MANAGEMENT															
8.0%	Construction Management	\$51	\$17	34.0%	\$68		\$51	\$17	\$68	2045Q2	170.7%	\$138	\$47	\$185		
0.3% 0.3%		\$2 \$2	\$1 \$1	34.0% 34.0%	\$3 \$3		\$2 \$2	\$1 \$1	\$3 \$3	2045Q2 2045Q2	170.7% 170.7%	\$5 \$5	\$2 \$2	\$7 \$7		
	CONTRACT COST TOTALS:	\$744	\$253		\$997	=	\$744	\$253	\$997			\$1,634	\$556	\$2,18		

PREPARED: 2/3/2020

Brunswick Harbor Modification Study - ALT 3 PROJECT: PROJECT NO: 465055 LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report; Report Name and date

Civ	il Works Work Breakdown Structure		ESTIMATE	D COST					JECT FIRST C stant Dollar Ba			TOTAL PROJECT COST FUNDED)			
WBS <u>NUMBER</u>	Civil Works Feature & Sub-Feature Description	COST _(\$K)	CNTG (\$K)	CNTG _(%)_	TOTAL _(\$K)	ESC (%)		fective Price	(Budget EC): e Level Date: REMAINING COST _(\$K)_	2020 1-Oct- 19 Spent Thru: 1-Oct-15 <u>(\$K)</u>	TOTAL FIRST COST _(\$K)_	ESC _(%)	COST _(\$K)	CNTG _(\$K)	FULL _(\$K)
09 18	CHANNELS & CANALS CULTURAL RESOURCE PRESERVATION	\$4,800 \$562	\$1,632 \$191 -	34% 34%	\$6,432 \$753		\$4,800 \$562	\$1,632 \$191	\$6,432 \$753		\$6,432 \$753	17.9% 21.5% - -	\$5,660 \$683	\$1,924 \$232	\$7,585 \$915
	CONSTRUCTION ESTIMATE TOTALS:	\$5,362	\$1,823	-	\$7,185	-	\$5,362	\$1,823	\$7,185		\$7,185	18.3%	\$6,343	\$2,157	\$8,499
01	LANDS AND DAMAGES	\$13	\$3	25%	\$16		\$13	\$3	\$16		\$16	6.3%	\$13	\$3	\$17
30	PLANNING, ENGINEERING & DESIGN	\$486	\$165	34%	\$651		\$486	\$165	\$651		\$651	17.1%	\$569	\$193	\$762
31	CONSTRUCTION MANAGEMENT	\$455	\$155	34%	\$610	0.0%	\$455	\$155	\$610		\$610	23.0%	\$560	\$190	\$750
	PROJECT COST TOTALS:	\$6,316	\$2,146	34%	\$8,462	-	\$6,316	\$2,146	\$8,462		\$8,462	18.5%	\$7,485	\$2,544	\$10,028

 CHIEF, COST ENGINEERING, Paul Smith
 PROJECT MANAGER, Jeff Schwindaman
 CHIEF, REAL ESTATE, Ralph Werthmann
 CHIEF, PLANNING, Kimberly Garvey
 CHIEF, ENGINEERING, Tracey Hendren
 CHIEF, OPERATIONS, Michael Montone
 CHIEF, CONSTRUCTION, Kenneth Gray
 CHIEF, CONTRACTING, Paige Blechinger
 CHIEF, PM-PB, Thomas Woodie
 CHIEF, DPM, Erik Blechinger

22

DISTRICT: Savannah

PREPARED: 2/3/2020

POC: CHIEF, COST ENGINEERING, Paul Smith

ESTIMATED TOTAL PROJECT COST:		\$10,028
ESTIMATED FEDERAL COST:	65%	\$6,518
ESTIMATED NON-FEDERAL COST:	35%	\$3,510
- FEASIBILITY STUDY (CAP studies):		\$2
- FEASIBILITY STUDY (CAP studies): ESTIMATED FEDERAL COST:	50%	\$2 \$1
	50% 50%	•

ESTIMATED FEDERAL COST OF PROJECT \$6,519

PROJECT: Brunswick Harbor Modification Study - ALT 3

LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report; Report Name and date DISTRICT: Savannah

	WBS Structure		ESTIMATE	D COST		PROJECT	FIRST COST Dollar E		(Constant	
			nate Prepareo ate Price Lev		3-Feb-20 1-Oct-19	II ~	Year (Budge e Price Level	,	2020 1 -Oct-19	
			F	RISK BASED						
WBS	Civil Works	COST	CNTG	CNTG	TOTAL	ESC	COST	CNTG	TOTAL	Mid-Point
NUMBER	Feature & Sub-Feature Description	<u>(\$K)</u>	<u>(\$K)</u>	<u>(%)</u>	<u>(\$K)</u>	<u>_(%)</u>	<u>(\$K)</u>	<u>(\$K)</u>	<u>(\$K)</u>	Date
А	<i>B</i> Turning Basin	С	D	E	F	G	Н	1	J	Р
	CHANNELS & CANALS	\$4,800	\$1,632	34.0%	\$6,432		\$4,800	\$1,632	\$6,432	2025Q3
	CULTURAL RESOURCE PRESERVATION	\$562	\$191	34.0%	\$753		\$562	\$191	\$753	2026Q3
10	COLTONAL RESCORCE PRESERVATION	φ302	ψισι	34.070	ψ 1 55		ψ302	φισι	ψ/ 33	2020Q3
	CONSTRUCTION ESTIMATE TOTALS:	\$5,362	\$1,823	34.0%	\$7,185		\$5,362	\$1,823	\$7,185	
01	LANDS AND DAMAGES	\$13	\$3	25.0%	\$16		\$13	\$3	\$16	2022Q1
30	PLANNING, ENGINEERING & DESIGN									
0.5%	Project Management	\$27	\$9	34.0%	\$36		\$27	\$9	\$36	2023Q3
0.0%	Planning & Environmental Compliance	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3
5.2%	Engineering & Design	\$279	\$95	34.0%	\$374		\$279	\$95	\$374	2023Q3
0.0%	Reviews, ATRs, IEPRs, VE	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3
0.3%	Life Cycle Updates (cost, schedule, risks)	\$13	\$4	34.0%	\$17		\$13	\$4	\$17	2023Q3
0.0%	Contracting & Reprographics	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2025Q3
3.0%	Engineering During Construction	\$161	\$55	34.0%	\$216		\$161	\$55	\$216	2025Q3
0.0%	Planning During Construction	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3
0.0%	Adaptive Management & Monitoring	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3
0.0%	Project Operations	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3
31	CONSTRUCTION MANAGEMENT									
8.0%	Construction Management	\$429	\$146	34.0%	\$575		\$429	\$146	\$575	2025Q3
0.3%	Project Operation:	\$13	\$4	34.0%	\$17		\$13	\$4	\$17	2025Q3
0.3%	Project Management	\$13	\$4	34.0%	\$17		\$13	\$4	\$17	2025Q3
=	CONTRACT COST TOTALS:	\$6,316	\$2,146		\$8,462		\$6,316	\$2,146	\$8,462	

PREPARED: 2/3/2020

TOTAL PROJECT CO	OST (FULLY FUN	DED)	
ESC (%) <i>L</i>	COST <u>(\$K)</u> <i>M</i>	CNTG (\$K)	FULL _(\$K) <i>O</i>
17.9% 21.5%	\$5,660 \$683	\$1,924 \$232	\$7,585 \$915
	\$6,343	\$2,157	\$8,499
6.3%	\$13	\$3	\$17
14.1%	\$31	\$10	\$41
14.1%	\$1	\$0	\$2
14.1%	\$318	\$108	\$427
14.1%	\$1	\$0	\$2
14.1%	\$15	\$5	\$20
23.0%	\$1	\$0	\$2 \$2
23.0%	\$198	\$67	\$265
14.1%	\$1	\$0	\$2
14.1%	\$1	\$0	\$2
14.1%	\$1	\$0	\$2
23.0%	\$528	\$179	\$707
23.0%	\$16	\$5	\$21
23.0%	\$16	\$5	\$21
	\$7,485	\$2,544	\$10,028

Brunswick Harbor Modification Study - ALT 3 w O&M PROJECT: PROJECT NO: 465055 LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report;

Report Name and date

Civi	I Works Work Breakdown Structure		ESTIMATE	D COST					DJECT FIRST (nstant Dollar B				TOTAL PROJE	ECT COST FUNDED)	(FULLY
WBS <u>NUMBER</u>	Civil Works Feature & Sub-Feature Description	COST _(\$K)_	CNTG _(\$K)_	CNTG _(%)_	TOTAL _(\$K)_	ESC _(%)_		ffective Pric	r (Budget EC): ce Level Date: REMAINING COST _(\$K)_	2020 1-Oct- 19 Spent Thru: 1-Oct-15 <u>(\$K)</u>	TOTAL FIRST COST _(\$K)_	ESC _(%)_	COST _(\$K)_	CNTG _(\$K)	FULL _(\$K)_
09 18	CHANNELS & CANALS CULTURAL RESOURCE PRESERVATION	\$11,666 \$562	\$3,966 \$191 -	34% 34%	\$15,632 \$753	-	\$11,666 \$562	\$3,966 \$191	\$15,632 \$753		\$15,632 \$753	72.9% 21.5% - -	\$20,174 \$683	\$6,859 \$232	\$27,033 \$915
	CONSTRUCTION ESTIMATE TOTALS:	\$12,228	\$4,158	-	\$16,385	-	\$12,228	\$4,158	\$16,385		\$16,385	70.6%	\$20,856	\$7,091	\$27,947
01	LANDS AND DAMAGES	\$13	\$3	25%	\$16		\$13	\$3	\$16		\$16	6.3%	\$13	\$3	\$17
30	PLANNING, ENGINEERING & DESIGN	\$1,106	\$376	34%	\$1,482		\$1,106	\$376	\$1,482		\$1,482	98.1%	\$2,191	\$745	\$2,936
31	CONSTRUCTION MANAGEMENT	\$1,038	\$353	34%	\$610	128.1%	\$1,038	\$353	\$1,391		\$1,391	105.9%	\$2,138	\$727	\$2,865
	PROJECT COST TOTALS:	\$14,384	\$4,890	34%	\$19,274	-	\$14,384	\$4,890	\$19,274		\$19,274	75.2%	\$25,198	\$8,566	\$33,765
		CHIEF, COS	T ENGINEEF	RING, Paul S	Smith										
		PROJECT M	IANAGER, Je	eff Schwinda	man						ESTIMATED TO ESTIMA		ERAL COST:	65%	\$33,765 \$21,947
		CHIEF, REA	I ESTATE R	alnh Warthr	mann						ESTIMATED	NON-FED	ERAL COST:	35%	\$11,818
										22	- FEASIBILITY	•	-		\$2
		CHIEF, PLAN	NNING, Kimb	erly Garvey							ESTIMA ESTIMATED		ERAL COST: ERAL COST:	50% 50%	\$1 \$1
		CHIEF, ENG	INEERING, 1	Fracey Hend	ren					ESTI	MATED FEDERA				\$21,948
		CHIEF, OPE	RATIONS, M	lichael Monto	one					Lorn					Ψ ΖΙ , 940
		CHIEF, CON	STRUCTION	I, Kenneth G	Bray										
		CHIEF, CON	TRACTING,	Paige Blech	inger										
		CHIEF, PM-	PB, Thomas	Woodie											
		CHIEF, DPM	, Erik Blechir	nger											

DISTRICT: Savannah

PREPARED: 2/3/2020

PROJECT: Brunswick Harbor Modification Study - ALT 3 w O&M LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report; Report Name and date

DISTRICT: Savannah

	WBS Structure		ESTIMATE	COST		PROJEC	T FIRST COST Dollar E		(Constant		TOTAL PROJECT	COST (FULLY FUNI	ULLY FUNDED)					
			nate Prepared ate Price Leve		3-Feb-20 1-Oct-19		am Year (Budge ive Price Level		2020 1 -Oct-19									
			R	ISK BASED														
WBS	Civil Works	COST	CNTG	CNTG	TOTAL	ESC	COST	CNTG	TOTAL	Mid-Point	ESC	COST	CNTG	FULL				
NUMBER	Feature & Sub-Feature Description	<u>(\$K)</u>	<u>(\$K)</u>	<u>(%)</u> E	<u>(\$K)</u>	(%)	<u>(\$K)</u>	(\$K)	<u>(\$K)</u>	<u>Date</u>	(%)	<u>(\$K)</u>	<u>(\$K)</u>	<u>(\$K)</u>				
	<i>B</i> Bend Widener and Turning Basin Expansion	С	D	E	F	G	Н	I	J	Р	L	М	N	0				
	CHANNELS & CANALS	\$4,800	\$1,632	34.0%	\$6,432		\$4,800	\$1,632	\$6,432	2025Q3	17.9%	\$5,660	\$1,924	\$7,585				
18	CULTURAL RESOURCE PRESERVATION	\$562	\$191	34.0%	\$753		\$562	\$191	\$753	2026Q3	21.5%	\$683	\$232	\$915				
	CONSTRUCTION ESTIMATE TOTALS:	\$5,362	\$1,823	34.0%	\$7,185	_	\$5,362	\$1,823	\$7,185	-		\$6,343	\$2,157	\$8,499				
0 1																		
01	LANDS AND DAMAGES	\$13	\$3	25.0%	\$16		\$13	\$3	\$16	2022Q1	6.3%	\$13	\$3	\$17				
30	PLANNING, ENGINEERING & DESIGN																	
0.5%	Project Management	\$27	\$9	34.0%	\$36		\$27	\$9	\$36	2023Q3	14.1%	\$31	\$10	\$41				
0.0%	Planning & Environmental Compliance	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3	14.1%	\$1	\$0	\$2				
5.2%	Engineering & Design	\$279	\$95	34.0%	\$374		\$279	\$95	\$374	2023Q3	14.1%	\$318	\$108	\$ 4 27				
0.0%	Reviews, ATRs, IEPRs, VE	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3	14.1%	\$1	\$0	\$2				
0.3%	Life Cycle Updates (cost, schedule, risks)	\$13	\$4	34.0%	\$17		\$13	\$4	\$17	2023Q3	14.1%	\$15	\$5	\$20				
0.0%	Contracting & Reprographics	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2025Q3	23.0%	\$1	\$0	\$2				
3.0%	Engineering During Construction	\$161	\$55	34.0%	\$216		\$161	\$55	\$216	2025Q3	23.0%	\$198	\$67	\$265				
0.0%	Planning During Construction	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3	14.1%	\$1	\$0	\$2				
0.0%	Adaptive Management & Monitoring	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3	14.1%	\$1	\$0	\$2				
0.0%	Project Operations	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3	14.1%	\$1	\$0	\$2				
31	CONSTRUCTION MANAGEMENT																	
8.0%	Construction Management	\$429	\$146	34.0%	\$575		\$429	\$146	\$575	2025Q3	23.0%	\$528	\$179	\$707				
0.3%	Project Operation:	\$13	\$4	34.0%	\$17		\$13	\$4	\$17	2025Q3	23.0%	\$16	\$5	\$21				
0.3%	Project Management	\$13	\$4	34.0%	\$17		\$13	\$4	\$17	2025Q3	23.0%	\$16	\$5	\$21				
=	CONTRACT COST TOTALS:	\$6,316	\$2,146		\$8,462	=	\$6,316	\$2,146	\$8,462			\$7,485	\$2,544	\$10,02				

PREPARED: 2/3/2020

PROJECT: Brunswick Harbor Modification Study - ALT 3 w O&M LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report; Report Name and date

DISTRICT: Savannah

	WBS Structure		ESTIMATE	D COST		PROJEC	T FIRST COST Dollar E		(Constant		TOTAL PROJECT (COST (FULLY FUN	DED)	
			nate Prepareo ate Price Lev		1-Oct-19		am Year (Budge tive Price Level		2020 1 -Oct-19					
09	Civil Works <u>Feature & Sub-Feature Description</u> B O&M Costs CHANNELS & CANALS Total 50-Yr O&M Costs	COST _(\$K)_ C \$6,866	F CNTG <u>(\$K)</u> D \$2,334	RISK BASED CNTG (%) <i>E</i> 34.0%	TOTAL _ <u>(\$K)</u> <i>F</i> \$9,200	ESC (%) G	COST _ <u>(\$K)</u> <i>H</i> \$6,866	CNTG <u>(\$K)</u> <i>I</i> \$2,334	TOTAL _ <u>(\$K)_</u> J \$9,200	Mid-Point <u>Date</u> P 2045Q2	ESC (%) 111.4%	COST <u>(\$K)</u> M \$14,514	CNTG <u>(\$K)</u> N \$4,935	FULL <u>(\$K)</u> 0 \$19,448
01	CONSTRUCTION ESTIMATE TOTALS: LANDS AND DAMAGES	\$6,866	\$2,334	34.0% 25.0%	\$9,200	_	\$6,866	\$2,334	\$9,200	-		\$14,514	\$4,935	\$19,448
30	PLANNING, ENGINEERING & DESIGN													
0.5%	Project Management	\$34	\$12	34.0%	\$46		\$34	\$12	\$46	2044Q1	157.1%	\$87	\$30	\$117
0.0%	Planning & Environmental Compliance	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2044Q1	157.1%	\$3	\$1	\$3
5.2%	Engineering & Design	\$357	\$121	34.0%	\$478		\$357	\$121	\$478	2044Q1	157.1%	\$918	\$312	\$1,230
0.0%	Reviews, ATRs, IEPRs, VE	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2044Q1	157.1%	\$3	\$1	\$3
0.3%	Life Cycle Updates (cost, schedule, risks)	\$17	\$6	34.0%	\$23		\$17	\$6	\$23	2044Q1	157.1%	\$44	\$15	\$59
0.0%	Contracting & Reprographics	\$1	\$0	34.0%	¢20 \$1		\$1	\$0	\$1	2045Q2	170.7%	\$3	\$1	\$4
3.0%	Engineering During Construction	\$206	\$70	34.0%	\$276		\$206	\$70	\$276	2045Q2	170.7%	\$558	\$190	\$747
0.0%	Planning During Construction	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2044Q1	157.1%	\$3	\$1	\$ 3
0.0%	Adaptive Management & Monitoring	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2044Q1	157.1%	\$3	\$1	\$3
0.0%	Project Operations	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2044Q1	157.1%	\$3	\$1	\$3
31	CONSTRUCTION MANAGEMENT													
8.0%	Construction Management	\$549	\$187	34.0%	\$736		\$549	\$187	\$736	2045Q2	170.7%	\$1,486	\$505	\$1,991
0.3%	Project Operation:	\$17	\$6	34.0%	\$23		\$17	\$6	\$23	2045Q2	170.7%	\$46	\$16	\$62
0.3%	Project Management	\$17	\$6	34.0%	\$23		\$17	\$6	\$23	2045Q2	170.7%	\$46	\$16	\$62
•	CONTRACT COST TOTALS:	\$8,069	\$2,743		\$10,812	=	\$8,069	\$2,743	\$10,812			\$17,714	\$6,023	\$23,736

PREPARED: 2/3/2020

PROJECT: Brunswick Harbor Modification Study - ALT 2 PROJECT NO: 465055 LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report;

Report Name and date

Civi	I Works Work Breakdown Structure		ESTIMATE	D COST					DJECT FIRST (Instant Dollar B				TOTAL PROJE	ECT COST FUNDED)	(FULLY
								fective Pric	(Budget EC): e Level Date: REMAINING	2020 1-Oct- 19 Spent Thru:	TOTAL FIRST				
WBS <u>NUMBER</u>	Civil Works Feature & Sub-Feature Description	COST _(\$K)	CNTG _(\$K)_	CNTG _(%)_	TOTAL _(\$K)	ESC _(%)_	COST _(\$K)	CNTG <u>(\$K)</u>	COST _(\$K)_	1-Oct-15 _(\$K)_	COST _(\$K)_	ESC _(%)_	COST _(\$K)_	CNTG <u>(\$K)</u>	FULL _(\$K)
09 18	CHANNELS & CANALS CULTURAL RESOURCE PRESERVATION	\$12,493 \$562	\$4,248 \$191 -	34% 34%	\$16,741 \$753		\$12,493 \$562	\$4,248 \$191	\$16,741 \$753		\$16,741 \$753	17.9% 21.5% - -	\$14,732 \$683	\$5,009 \$232	\$19,740 \$915
	CONSTRUCTION ESTIMATE TOTALS:	\$13,055	\$4,439	-	\$17,494	-	\$13,055	\$4,439	\$17,494		\$17,494	18.1%	\$15,414	\$5,241	\$20,655
01	LANDS AND DAMAGES	\$13	\$3	25%	\$16		\$13	\$3	\$16		\$16	6.3%	\$13	\$3	\$17
30	PLANNING, ENGINEERING & DESIGN	\$1,173	\$399	34%	\$1,572		\$1,173	\$399	\$1,572		\$1,572	17.1%	\$1,373	\$467	\$1,840
31	CONSTRUCTION MANAGEMENT	\$1,110	\$377	34%	\$1,487		\$1,110	\$377	\$1,487		\$1,487	23.0%	\$1,366	\$464	\$1,830
	PROJECT COST TOTALS:	\$15,351	\$5,218	34%	\$20,569	-	\$15,351	\$5,218	\$20,569		\$20,569	18.3%	\$18,167	\$6,175	\$24,342
		CHIEF, COS PROJECT M										TED FED	ERAL COST:	65%	\$24,342 \$15,822
		CHIEF, REA	L ESTATE, F	Ralph Werthr	mann						ESTIMATED			35%	\$8,520
		CHIEF, PLAN	NNING, Kimb	erly Garvey						22		TED FED	ERAL COST:	50%	\$2 \$1
		CHIEF, ENG	INEERING, 1	Tracey Hend	Iren					FOTIN				50%	\$1
		CHIEF, OPE	RATIONS, M	lichael Monte	one					ESTIN	ATED FEDERA	L COST C	IF PROJECT		\$15,823
		CHIEF, CON	ISTRUCTION	I, Kenneth G	Gray										
		inger													
		CHIEF, PM-	PB, Thomas	Woodie											

DISTRICT: Savannah

PREPARED: 2/3/2020

PROJECT: Brunswick Harbor Modification Study - ALT 2

LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report; Report Name and date

DISTRICT: Savannah POC: CHIEF, CO

PROJECT FIRST COST (Constant **WBS Structure ESTIMATED COST** Dollar Basis) Estimate Prepared: 3-Feb-20 Program Year (Budget EC): 2020 Estimate Price Level: 1-Oct-19 Effective Price Level Date: 1 -Oct-19 RISK BASED WBS Civil Works COST CNTG CNTG TOTAL ESC COST CNTG TOTAL Mid-Point NUMBER Feature & Sub-Feature Description (\$K) (\$K) (%) (\$K) (%) <u>(\$K)</u> <u>(\$K)</u> (\$K) Date C F G Н Ε Ρ Α В D 1 J Sidney Lane Channel Widener 09 **CHANNELS & CANALS** 2025Q3 \$12,493 \$4,248 34.0% \$16,741 \$12,493 \$4,248 \$16,741 18 CULTURAL RESOURCE PRESERVATION \$562 \$191 34.0% \$753 \$562 \$191 \$753 2026Q3 CONSTRUCTION ESTIMATE TOTALS: \$13,055 \$4,439 \$13,055 \$4,439 34.0% \$17,494 \$17,494 LANDS AND DAMAGES 01 \$13 \$3 25.0% \$16 \$13 \$3 \$16 2022Q1 30 PLANNING, ENGINEERING & DESIGN 2023Q3 0.5% Project Management \$65 \$22 34.0% \$87 \$65 \$22 \$87 0.0% Planning & Environmental Compliance \$1 \$0 34.0% \$1 \$1 \$0 \$1 2023Q3 \$910 5.2% Engineering & Design \$679 \$231 34.0% \$910 \$679 \$231 2023Q3 0.0% Reviews, ATRs, IEPRs, VE \$0 34.0% \$1 \$1 \$0 \$1 2023Q3 \$1 0.3% Life Cycle Updates (cost, schedule, risks) \$33 \$11 34.0% \$44 \$33 \$11 \$44 2023Q3 0.0% Contracting & Reprographics \$1 \$0 34.0% \$1 \$1 \$0 \$1 2025Q3 3.0% Engineering During Construction \$392 \$133 34.0% \$525 \$392 \$133 \$525 2025Q3 2023Q3 0.0% Planning During Construction \$1 \$0 34.0% \$1 \$1 \$0 \$1 0.0% Adaptive Management & Monitoring 34.0% 0.0% Project Operations 34.0% 31 CONSTRUCTION MANAGEMENT 2025Q3 \$1,044 \$355 34.0% \$355 8.0% **Construction Management** \$1,399 \$1,044 \$1,399 0.3% Project Operation: \$33 \$11 34.0% \$44 \$33 \$11 \$44 2025Q3 0.3% Project Management \$33 \$11 34.0% \$44 \$33 \$11 \$44 2025Q3 CONTRACT COST TOTALS: \$15,351 \$20,569 \$15,351 \$5,218 \$20,569 \$5,218

PREPARED: 2/3/2020

TOTAL PROJECT CO	OST (FULLY FUN	DED)	
ESC (%) 	COST <u>(\$K)</u> <i>M</i>	CNTG <u>(\$K)</u> N	FULL _ <u>(\$K)_</u> 0
17.9% 21.5%	\$14,732 \$683	\$5,009 \$232	
	\$15,414	\$5,241	\$20,655
6.3%	\$13	\$3	\$17
14.1%	\$74	\$25	\$99
14.1%	\$1	¢25 \$0	\$2
14.1%	\$775	\$263	\$1,038
14.1%	\$1	\$0	\$2
14.1%	\$38	\$13	\$50
23.0%	\$30 \$1	¢13 \$0	\$30 \$2
23.0%	\$482	\$164	\$646
14.1%	\$1	\$0	\$2
23.0%	\$1,284	\$437	\$1,721
23.0%	\$41	\$14	\$54
23.0%	\$41	\$14	\$54
	\$18,167	\$6,175	\$24,342

Brunswick Harbor Modification Study - ALT 5 PROJECT: PROJECT NO: 465055 LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report;

Report Name and date

CHIEF, DPM, Erik Blechinger

Civi	I Works Work Breakdown Structure		ESTIMATE	D COST					OJECT FIRST C				TOTAL PROJE	ECT COST FUNDED)	(FULLY
								-	r (Budget EC): ce Level Date:	2020 1-Oct- 19					
WBS <u>NUMBER</u>	Civil Works Feature & Sub-Feature Description	COST _(\$K)	CNTG _(\$K)	CNTG (%)	TOTAL _(\$K)	ESC _(%)	COST _(\$K)	CNTG _(\$K)	REMAINING COST <u>(\$K)</u>	Spent Thru: 1-Oct-15 _(\$K)_	TOTAL FIRST COST _(\$K)_	ESC _(%)	COST _(\$K)	CNTG (\$K)	FULL (\$K)
09	CHANNELS & CANALS														
18	CULTURAL RESOURCE PRESERVATION	\$562	\$191	- 34% -	\$753	-	\$562	\$191	\$753		\$753	- 21.5% -	\$683	\$232	\$915
				-		-						-			
	CONSTRUCTION ESTIMATE TOTALS:	\$562	\$191	-	\$753	-	\$562	\$191	\$753		\$753	21.5%	\$683	\$232	\$915
01	LANDS AND DAMAGES	\$13	\$3	25%	\$16		\$13	\$3	\$16		\$16	6.3%	\$13	\$3	\$17
30	PLANNING, ENGINEERING & DESIGN	\$50	\$17	34%	\$67		\$50	\$17	\$67		\$67	17.1%	\$59	\$20	\$78
31	CONSTRUCTION MANAGEMENT	\$47	\$16	34%	\$63		\$47	\$16	\$63		\$63	23.0%	\$58	\$20	\$77
	PROJECT COST TOTALS:	\$672	\$227	34%	\$899	-	\$672	\$227	\$899		\$899	21.0%	\$812	\$275	\$1,087
		CHIEF, COS	T ENGINEEI	RING, Paul S	Smith						ESTIMATED TO		JECT COST		\$1,087
		PROJECT M	ANAGER, Je	eff Schwinda	man						ESTIMA	TED FED	ERAL COST:	65%	\$707
		CHIEF, REAI	L ESTATE, F	Ralph Werthr	nann						ESTIMATED	NON-FEL	ERAL COST:	35%	\$381
		CHIEF, PLAN	NNING, Kimb	erly Garvey						22	- FEASIBILITY	•	CAP studies): DERAL COST:	50%	\$2 \$1
		CHIEF, ENG	INEERING,	Tracey Hend	ren						ESTIMATED	NON-FED	ERAL COST:	50%	\$1
		CHIEF, OPE	RATIONS, M	lichael Monto	one					ESTIN	MATED FEDERA	L COST (OF PROJECT		\$708
		CHIEF, CON	STRUCTION	I, Kenneth G	iray										
		CHIEF, CON	TRACTING,	Paige Blech	inger										
		CHIEF, PM-	PB, Thomas	Woodie											

DISTRICT: Savannah

PREPARED: 2/3/2020

PROJECT: Brunswick Harbor Modification Study - ALT 5

LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report; Report Name and date

DISTRICT: Savannah POC[.] CHIFF CO

	WBS Structure		ESTIMATE	D COST		PROJE	CT FIRST COST Dollar I		(Constant		TOTAL PROJECT	COST (FULLY FUNI	DED)	
			nate Prepare ate Price Lev		3-Feb-20 1-Oct-19		am Year (Budge tive Price Level		2020 1 -Oct-19					
	Civil Works <u>Feature & Sub-Feature Description</u> <i>B</i> St. Simons Meeting Area CHANNELS & CANALS	COST _ <u>(\$K)</u> C	F CNTG <u>(\$K)</u> D	RISK BASED CNTG (%) <i>E</i> 34.0%	TOTAL _(\$K) <i>F</i>	ESC _(%) 	COST _(\$K)	CNTG _(\$K) _/	TOTAL _ <u>(\$K)_</u> J	Mid-Point <u>Date</u> P	ESC _(%) 	COST _(\$K)	CNTG (\$K)	FULL <u>(\$K)</u> O
	CULTURAL RESOURCE PRESERVATION	\$562	\$191	34.0%	\$753		\$562	\$191	\$753	2026Q3	21.5%	\$683	\$232	\$915
	CONSTRUCTION ESTIMATE TOTALS:	\$562	\$191	34.0%	\$753	-	\$562	\$191	\$753	-		\$683	\$232	\$915
01	LANDS AND DAMAGES	\$13	\$3	25.0%	\$16		\$13	\$3	\$16	2022Q1	6.3%	\$13	\$3	\$17
30 0.5%	PLANNING, ENGINEERING & DESIGN Project Management	\$3	\$1	34.0%	\$4		\$3	\$1	\$4	2023Q3	14.1%	\$3	\$1	\$5
0.0% 5.2% 0.0%	Planning & Environmental Compliance Engineering & Design Reviews, ATRs, IEPRs, VE	\$29	\$10	34.0% 34.0% 34.0%	\$39		\$29	\$10	\$39	2023Q3	14.1%	\$33	\$11	\$44
0.0%	Life Cycle Updates (cost, schedule, risks) Contracting & Reprographics	\$1	\$0	34.0% 34.0%	\$1		\$1	\$0	\$1	2023Q3	14.1%	\$1	\$0	\$2
3.0% 0.0% 0.0% 0.0%	Engineering During Construction Planning During Construction Adaptive Management & Monitoring Project Operations	\$17	\$6	34.0% 34.0% 34.0% 34.0%	\$23		\$17	\$6	\$23	2025Q3	23.0%	\$21	\$7	\$28
	CONSTRUCTION MANAGEMENT	¢ 4 E	<u> </u>	24.00/	ዮድር		¢л Е	¢ላ⊑	¢60	202502	22.00/	¢EF	£10	ተግላ
8.0% 0.3% 0.3%	Construction Management Project Operation: Project Management	\$45 \$1 \$1	\$15 \$0 \$0	34.0% 34.0% 34.0%	\$60 \$1 \$1		\$45 \$1 \$1	\$15 \$0 \$0	\$60 \$1 \$1	2025Q3 2025Q3 2025Q3	23.0% 23.0% 23.0%	\$55 \$1 \$1	\$19 \$0 \$0	\$74 \$2 \$2
=	CONTRACT COST TOTALS:	\$672	\$227		\$899	=	\$672	\$227	\$899			\$812	\$275	\$1,087

PREPARED: 2/3/2020

PROJECT: Brunswick Harbor Modification Study - ALT 6 PROJECT NO: 465055 LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report;

Report Name and date

Civi	il Works Work Breakdown Structure		ESTIMATE	D COST					OJECT FIRST (nstant Dollar B				TOTAL PROJE	ECT COST FUNDED)	(FULLY
								-	· (Budget EC): ce Level Date:	2020 1-Oct- 19					
WBS <u>NUMBER</u>	Civil Works Feature & Sub-Feature Description	COST _(\$K)	CNTG _(\$K)	CNTG _(%)_	TOTAL _(\$K)	ESC _(%)	COST _(\$K)	CNTG _(\$K)	REMAINING COST <u>(\$K)</u>	Spent Thru: 1-Oct-15 <u>(\$K)</u>	TOTAL FIRST COST <u>(\$K)</u>	ESC _(%)_	COST _(\$K)	CNTG <u>(\$K)</u>	FULL _(\$K)_
09 18	CHANNELS & CANALS CULTURAL RESOURCE PRESERVATION	\$8,113 \$1,001	\$2,758 \$340 -	34% 34%	\$10,871 \$1,341	-	\$8,113 \$1,001	\$2,758 \$340			\$10,871 \$1,341	17.9% 21.5% - -	\$9,567 \$1,216	\$3,253 \$413	\$12,819 \$1,629
	CONSTRUCTION ESTIMATE TOTALS:	\$9,114	\$3,099	-	\$12,213	-	\$9,114	\$3,099	\$12,213		\$12,213	18.3%	\$10,783	\$3,666	\$14,449
01	LANDS AND DAMAGES	\$13	\$3	25%	\$16		\$13	\$3	\$16		\$16	6.3%	\$13	\$3	\$17
30	PLANNING, ENGINEERING & DESIGN	\$822	\$279	34%	\$1,101		\$822	\$279	\$1,101		\$1,101	17.1%	\$962	\$327	\$1,289
31	CONSTRUCTION MANAGEMENT	\$775	\$264	34%	\$1,039		\$775	\$264	\$1,039		\$1,039	23.0%	\$954	\$324	\$1,278
	PROJECT COST TOTALS:	\$10,724	\$3,645	34%	\$14,368	-	\$10,724	\$3,645	\$14,368		\$14,368	18.5%	\$12,712	\$4,321	\$17,032
		CHIEF, COS	T ENGINEEF	RING, Paul S	Smith						ESTIMATED TO				¢17.022
		PROJECT M	ANAGER, Je	eff Schwinda	man						ESTIMA	TED FED	ERAL COST:	65%	\$17,032 \$11,071
		CHIEF, REAI	LESTATE, R	alph Werthr	nann						ESTIMATED	NON-FED	ERAL COST:	35%	\$5,961
		CHIEF, PLAN	NNING, Kimb	erly Garvey						22	- FEASIBILITY	•	AP studies): ERAL COST:	50%	\$2 \$1
		CHIEF, ENG									ESTIMATED			50%	\$1
		CHIEF, OPE		-						ESTIN	ATED FEDERA	L COST C	OF PROJECT		\$11,072
		CHIEF, CON													
		CHIEF, CONTRACTING, Paige Blechinger													
		CHIEF, PM-I		-	J										

DISTRICT: Savannah

PREPARED: 2/3/2020

PROJECT: Brunswick Harbor Modification Study - ALT 6

LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report; Report Name and date

DISTRICT: Savannah POC[.] CHIFF CO

	WBS Structure		ESTIMATE	D COST		PROJECT	FIRST COST Dollar I		(Constant	
			nate Prepare ate Price Lev		3-Feb-20 1-Oct-19		n Year (Budge e Price Level	,	2020 1 -Oct-19	
			F	RISK BASED						
WBS	Civil Works	COST	CNTG	CNTG	TOTAL	ESC	COST	CNTG	TOTAL	Mid-Point
NUMBER	Feature & Sub-Feature Description	<u>(\$K)</u>	<u>(\$K)</u>	(%)	<u>(\$K)</u>	(%)	<u>(\$K)</u>	(\$K)	<u>(\$K)</u>	<u>Date</u>
A	<i>B</i> Alternative 6, BW + TB	С	D	E	F	G	Н	I	J	Р
09	CHANNELS & CANALS	\$8,113	\$2,758	34.0%	\$10,871		\$8,113	\$2,758	\$10,871	2025Q3
18	CULTURAL RESOURCE PRESERVATION	\$0,113 \$1,001	\$340	34.0%	\$1,341		\$0,113 \$1,001	\$340	\$1,341	2025Q3 2026Q3
10		ψ1,001	φυτυ	54.070	ψ1,041		ψ1,001	ψ0+0	Ψ1,0+1	202000
	CONSTRUCTION ESTIMATE TOTALS:	\$9,114	\$3,099	34.0%	\$12,213		\$9,114	\$3,099	\$12,213	
01	LANDS AND DAMAGES	\$13	\$3	25.0%	\$16		\$13	\$3	\$16	2022Q1
30	PLANNING, ENGINEERING & DESIGN									
0.5%	Project Management	\$46	\$16	34.0%	\$62		\$46	\$16	\$62	2023Q3
0.0%	Planning & Environmental Compliance	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3
5.2%	Engineering & Design	\$474	\$161	34.0%	\$635		\$474	\$161	\$635	2023Q3
0.0%	Reviews, ATRs, IEPRs, VE	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3
0.3%	Life Cycle Updates (cost, schedule, risks)	\$23	\$8	34.0%	\$31		\$23	\$8	\$31	2023Q3
0.0%	· · · · · · · · · · · · · · · · · · ·	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2025Q3
3.0%		\$273	\$93	34.0%	\$366		\$273	\$93	\$366	2025Q3
0.0%	0 0 0	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3
0.0%	Adaptive Management & Monitoring	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3
0.0%	Project Operations	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3
31	CONSTRUCTION MANAGEMENT									
8.0%	Construction Management	\$729	\$248	34.0%	\$977		\$729	\$248	\$977	2025Q3
0.3%	-	\$23	\$8	34.0%	\$31		\$23	\$8	\$31	2025Q3
0.3%	2 .	\$23	\$8	34.0%	\$31		\$23	\$8	\$31	2025Q3
	CONTRACT COST TOTALS:	\$10,724	\$3,645		\$14,368	-	\$10,724	\$3,645	\$14,368	

PREPARED: 2/3/2020

TOTAL PROJECT CO	ST (FULLY FUNI	DED)	
ESC (%) <i>L</i>	COST _(\$K)	CNTG (\$K) N	FULL _(\$K) <i>O</i>
17.9% 21.5%	\$9,567 \$1,216	\$3,253 \$413	\$12,819 \$1,629
	\$10,783	\$3,666	\$14,449
6.3%	\$13	\$3,000 \$3	\$17
14.1%	\$52	\$18	\$70
14.1%	\$1	\$0	\$2
14.1%	\$541	\$184	\$725
14.1%	\$1	\$0	\$2
14.1%	\$26	\$9	\$35
23.0%	\$1	\$0	\$2
23.0%	\$336	\$114	\$450
14.1%	\$1	\$0	\$2
14.1%	\$1	\$0	\$2
14.1%	\$1	\$0	\$2
23.0%	\$897	\$305	\$1,202
23.0%	\$28	\$10	\$38
23.0%	\$28	\$10	\$38
	\$12,712	\$4,321	\$17,032

Brunswick Harbor Modification Study - ALT 6 w O&M PROJECT: PROJECT NO: 465055 LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report; Report Name and date

Civ	il Works Work Breakdown Structure		ESTIMATE	D COST					JECT FIRST C stant Dollar Ba				TOTAL PROJE	ECT COST FUNDED)	(FULLY
							Pro	gram Year (Budget EC):	2020					
							Ef	fective Price	e Level Date:	1-Oct- 19	1				
									REMAINING	Spent Thru:	TOTAL FIRST				
WBS	Civil Works	COST	CNTG	CNTG	TOTAL	ESC	COST	CNTG	COST	1-Oct-15	COST	ESC	COST	CNTG	FULL
<u>NUMBER</u>	Feature & Sub-Feature Description	<u>(\$K)</u>	<u>(\$K)</u>	(%)	<u>(\$K)</u>	<u>(%)</u>	<u>(\$K)</u>	<u>(\$K)</u>	<u>(\$K)</u>	<u>(\$K)</u>	<u>(\$K)</u>	<u>(%)</u>	<u>(\$K)</u>	<u>(\$K)</u>	<u>(\$K)</u>
09	CHANNELS & CANALS	\$15,611	\$5,308	34%	\$20,919		\$15,611	\$5,308	\$20,919		\$20,919	62.8%	\$25,416	\$8,642	\$34,058
18	CULTURAL RESOURCE PRESERVATION	\$1,001	\$340	34%	\$1,341		\$1,001	\$340	\$1,341		\$1,341	21.5%	\$1,216	\$413	\$1,629
-			-		. ,	-		-				-		·	
			-			-						-			
			<u>.</u>	_	<u></u>	_								<u> </u>	
	CONSTRUCTION ESTIMATE TOTALS:	\$16,612	\$5,648		\$22,260		\$16,612	\$5,648	\$22,260		\$22,260	60.3%	\$26,632	\$9,055	\$35,687
01	LANDS AND DAMAGES	\$13	\$3	25%	\$16		\$13	\$3	\$16		\$16	6.3%	\$13	\$3	\$17
01	LANDS AND DAWAGES	φισ	φΟ	2370	φισ		φ1 5	φΟ	\$10		φισ	0.370	CIΦ	φΟ	φ17
30	PLANNING, ENGINEERING & DESIGN	\$1,499	\$510	34%	\$2,009		\$1,499	\$510	\$2,009		\$2,009	82.4%	\$2,734	\$929	\$3,663
31	CONSTRUCTION MANAGEMENT	\$1,413	\$480	34%	\$1,039	82.3%	\$1,413	\$480	\$1,893		\$1,893	89.7%	\$2,680	\$911	\$3,592
										I	I				
	PROJECT COST TOTALS:	\$19,537	\$6,641	34%	\$26,178	_	\$19,537	\$6,641	\$26,178		\$26,178	64.1%	\$32,059	\$10,899	\$42,958
		CHIEF, COS	T ENGINEEF	RING, Paul S	Smith										
											ESTIMATED TO		JECT COST: ERAL COST:		\$42,958
		PROJECT MANAGER, Jeff Schwindaman												65% 25%	\$27,923

CHIEF, REAL ESTATE, Ralph Werthmann

CHIEF, PLANNING, Kimberly Garvey

CHIEF, ENGINEERING, Tracey Hendren

CHIEF, OPERATIONS, Michael Montone

CHIEF, CONSTRUCTION, Kenneth Gray

CHIEF, CONTRACTING, Paige Blechinger

CHIEF, PM-PB, Thomas Woodie

CHIEF, DPM, Erik Blechinger

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Attachment - Page 17

DISTRICT: Savannah

PREPARED: 2/3/2020

POC: CHIEF, COST ENGINEERING, Paul Smith

ESTIMATED TOTAL PROJECT COST:		\$42,958
ESTIMATED FEDERAL COST:	65%	\$27,923
ESTIMATED NON-FEDERAL COST:	35%	\$15,035
- FEASIBILITY STUDY (CAP studies):		\$2
ESTIMATED FEDERAL COST:	50%	\$1
ESTIMATED FEDERAL COST: ESTIMATED NON-FEDERAL COST:	50% 50%	\$1 \$1

ESTIMATED FEDERAL COST OF PROJECT \$27,924

PROJECT: Brunswick Harbor Modification Study - ALT 6 w O&M LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report; Report Name and date

DISTRICT: Savannah

	WBS Structure		ESTIMATE	D COST		PROJEC	T FIRST COST Dollar B		(Constant		TOTAL PROJECT (COST (FULLY FUNI	DED)	
			nate Prepared ate Price Leve		3-Feb-20 1-Oct-19		am Year (Budge ive Price Level	,	2020 1 -Oct-19					
			R	RISK BASED										
WBS	Civil Works	COST	CNTG	CNTG	TOTAL	ESC	COST	CNTG	TOTAL	Mid-Point	ESC	COST	CNTG	FULL
NUMBER	Feature & Sub-Feature Description	<u>(\$K)</u>	<u>(\$K)</u>	<u>(%)</u> E	<u>(\$K)</u>	(%)	<u>(\$K)</u>	(\$K)	<u>(\$K)</u>	<u>Date</u>	(%)	<u>(\$K)</u>	<u>(\$K)</u>	<u>(\$K)</u>
	<i>B</i> Bend Widener and Turning Basin Expansion	С	D	E	F	G	Н	I	J	Р	L	М	N	0
	CHANNELS & CANALS	\$8,113	\$2,758	34.0%	\$10,871		\$8,113	\$2,758	\$10,871	2025Q3	17.9%	\$9,567	\$3,253	\$12,819
18	CULTURAL RESOURCE PRESERVATION	\$1,001	\$340	34.0%	\$1,341		\$1,001	\$340	\$1,341	2026Q3	21.5%	\$1,216	\$413	\$1,629
	CONSTRUCTION ESTIMATE TOTALS:	\$9,114	 \$3,099	34.0%	\$12,213	_	\$9,114	\$3,099	\$12,213	-		\$10,783	\$3,666	\$14,449
01	LANDS AND DAMAGES	\$13	\$3	25.0%	\$16		\$13	\$3	\$16	2022Q1	6.3%	\$13	\$3	\$17
30	PLANNING, ENGINEERING & DESIGN													
0.5%	Project Management	\$46	\$16	34.0%	\$62		\$46	\$16	\$62	2023Q3	14.1%	\$52	\$18	\$70
0.0%	Planning & Environmental Compliance	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3	14.1%	\$1	\$0	\$2
5.2%	Engineering & Design	\$474	\$161	34.0%	\$635		\$474	\$161	\$635	2023Q3	14.1%	\$541	\$184	\$725
0.0%	Reviews, ATRs, IEPRs, VE	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3	14.1%	\$1	\$0	\$2
0.3%	Life Cycle Updates (cost, schedule, risks)	\$23	\$8	34.0%	\$31		\$23	\$8	\$31	2023Q3	14.1%	\$26	\$9	\$35
0.0%	Contracting & Reprographics	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2025Q3	23.0%	\$1	\$0	\$2
3.0%	Engineering During Construction	\$273	\$93	34.0%	\$366		\$273	\$93	\$366	2025Q3	23.0%	\$336	\$114	\$450
0.0%	Planning During Construction	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3	14.1%	\$1	\$0	\$2
0.0%	Adaptive Management & Monitoring	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3	14.1%	\$1	\$0	\$2
0.0%	Project Operations	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3	14.1%	\$1	\$0	\$2
31	CONSTRUCTION MANAGEMENT													
8.0%	Construction Management	\$729	\$248	34.0%	\$977		\$729	\$248	\$977	2025Q3	23.0%	\$897	\$305	\$1,202
0.3%	Project Operation:	\$23	\$8	34.0%	\$31		\$23	\$8	\$31	2025Q3	23.0%	\$28	\$10	\$38
0.3%	Project Management	\$23	\$8	34.0%	\$31		\$23	\$8	\$31	2025Q3	23.0%	\$28	\$10	\$38
:	CONTRACT COST TOTALS:	\$10,724	\$3,645		\$14,368	=	\$10,724	\$3,645	\$14,368			\$12,712	\$4,321	\$17,032

PREPARED: 2/3/2020

PROJECT: Brunswick Harbor Modification Study - ALT 6 w O&M LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report; Report Name and date

DISTRICT: Savannah

	WBS Structure		PROJEC	T FIRST COST Dollar E		(Constant		TOTAL PROJECT (COST (FULLY FUN	DED)				
			nate Prepareo ate Price Lev		1-Oct-19		am Year (Budge tive Price Level		2020 1 -Oct-19					
09	Civil Works <u>Feature & Sub-Feature Description</u> B O&M Costs CHANNELS & CANALS Total 50-Yr O&M Costs	COST <u>(\$K)</u> C \$7,498	F CNTG <u>(\$K)</u> D \$2,549	RISK BASED CNTG <u>(%)</u> E 34.0%	TOTAL _ <u>(\$K)</u> <i>F</i> \$10,047	ESC <u>(%)</u> G	COST _ <u>(\$K)</u> <i>H</i> \$7,498	CNTG <u>(\$K)</u> <i>I</i> \$2,549	TOTAL _ <u>(\$K)</u> J \$10,047	Mid-Point <u>Date</u> P 2045Q2	ESC <u>(%)</u> <i>L</i> 111.4%	COST <u>(\$K)</u> M \$15,850	CNTG <u>(\$K)</u> N \$5,389	FULL _ <u>(\$K)</u> O \$21,238
01	CONSTRUCTION ESTIMATE TOTALS: LANDS AND DAMAGES	\$7,498	\$2,549	34.0% 25.0%	\$10,047	-	\$7,498	\$2,549	\$10,047	-		\$15,850	\$5,389	\$21,238
30	PLANNING, ENGINEERING & DESIGN													
0.5%	Project Management	\$37	\$13	34.0%	\$50		\$37	\$13	\$50	2044Q1	157.1%	\$95	\$32	\$127
0.0%	Planning & Environmental Compliance	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2044Q1	157.1%	\$3	\$1	\$3
5.2%	Engineering & Design	\$390	\$133	34.0%	\$523		\$390	\$133	\$523	2044Q1	157.1%	\$1,003	\$341	\$1,344
0.0%	Reviews, ATRs, IEPRs, VE	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2044Q1	157.1%	\$3	\$1	\$3
0.3%	Life Cycle Updates (cost, schedule, risks)	\$19	\$6	34.0%	\$25		\$19	\$6	\$25	2044Q1	157.1%	\$49	\$17	\$65
0.0%	Contracting & Reprographics	\$1	\$0	34.0%	¢20 \$1		¢18 \$1	\$0	¢20 \$1	2045Q2	170.7%	\$3	\$1	\$05 \$4
3.0%	Engineering During Construction	\$225	\$77	34.0%	\$302		\$225	\$77	\$302	2045Q2	170.7%	\$609	\$207	\$816
0.0%	Planning During Construction	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2044Q1	157.1%	\$3	· \$1	\$ 3
0.0%	Adaptive Management & Monitoring	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2044Q1	157.1%	\$3	\$1	\$3
0.0%	Project Operations	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2044Q1	157.1%	\$3	\$1	\$3
31	CONSTRUCTION MANAGEMENT													
8.0%	Construction Management	\$600	\$204	34.0%	\$804		\$600	\$204	\$804	2045Q2	170.7%	\$1,624	\$552	\$2,176
0.3%	Project Operation:	\$19	\$6	34.0%	\$25		\$19	\$6	\$25	2045Q2	170.7%	\$51	\$17	\$69
0.3%	Project Management	\$19	\$6	34.0%	\$25		\$19	\$6	\$25	2045Q2	170.7%	\$51	\$17	\$69
:	CONTRACT COST TOTALS:	\$8,813	\$2,996		\$11,809	=	\$8,813	\$2,996	\$11,809			\$19,348	\$6,578	\$25,926

PREPARED: 2/3/2020

PROJECT: Brunswick Harbor Modification Study - ALT 7 PROJECT NO: 465055 LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report; Report Name and date

								PRC	JECT FIRST (COST			TOTAL PROJE	ECT COST	(FULLY
Civ	il Works Work Breakdown Structure		ESTIMATE	D COST					stant Dollar B					FUNDED)	(. • • • • •
								-	(Budget EC): e Level Date:	2020 1-Oct- 19					
WBS <u>NUMBER</u>	Civil Works Feature & Sub-Feature Description	COST _(\$K)	CNTG _(\$K)	CNTG _(%)_	TOTAL _(\$K)	ESC _(%)_	COST <u>(\$K)</u>	CNTG _(\$K)	REMAINING COST <u>(\$K)</u>	Spent Thru: 1-Oct-15 _(\$K)_	TOTAL FIRST COST _(\$K)_	ESC _(%)_	COST _(\$K)	CNTG <u>(\$K)</u>	FULL _(\$K)
09 18	CHANNELS & CANALS CULTURAL RESOURCE PRESERVATION	\$19,006 \$1,262	\$6,462 \$429 -	34% 34%	\$25,468 \$1,691	-	\$19,006 \$1,262	\$6,462 \$429	\$25,468 \$1,691		\$25,468 \$1,691	17.9% 21.5% - -	\$22,412 \$1,533	\$7,620 \$521	\$30,032 \$2,054
	CONSTRUCTION ESTIMATE TOTALS:	\$20,268	\$6,891	-	\$27,159	-	\$20,268	\$6,891	\$27,159		\$27,159	18.1%	\$23,944	\$8,141	\$32,086
01	LANDS AND DAMAGES	\$13	\$3	25%	\$16		\$13	\$3	\$16		\$16	6.3%	\$13	\$3	\$17
30	PLANNING, ENGINEERING & DESIGN	\$1,826	\$621	34%	\$2,447		\$1,826	\$621	\$2,447		\$2,447	17.1%	\$2,138	\$727	\$2,865
31	CONSTRUCTION MANAGEMENT	\$1,723	\$586	34%	\$2,309		\$1,723	\$586	\$2,309		\$2,309	23.0%	\$2,120	\$721	\$2,841
	PROJECT COST TOTALS:	\$23,830	\$8,101	34%	\$31,930	-	\$23,830	\$8,101	\$31,930	I 	\$31,930	18.4%	\$28,215	\$9,592	\$37,807
		CHIEF, COS PROJECT M	IANAGER, Je	eff Schwinda	iman						ESTIMATED TO ESTIMA ESTIMATED	ATED FED	ERAL COST:	<mark>65%</mark> 35%	\$37,807 \$24,575 \$13,233
		CHIEF, REA		-						22	- FEASIBILITY ESTIMA ESTIMATED	ATED FED	ERAL COST:	50% 50%	\$2 \$1 \$1
		CHIEF, ENG	INEERING,	Tracey Hend	ren					ESTIN				5070	۹۱ \$24,576
		CHIEF, OPE	RATIONS, M	lichael Monto	one										<i>+_ ,,., .</i>
		CHIEF, CON			-										
		Paige Blech	inger												

CHIEF, DPM, Erik Blechinger

CHIEF, PM-PB, Thomas Woodie

DISTRICT: Savannah

PREPARED: 2/3/2020

PROJECT: Brunswick Harbor Modification Study - ALT 7

LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report; Report Name and date

DISTRICT: Savannah POC: CHIEF, COS

	WBS Structure	ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)				TOTAL PROJECT COST (FULLY FUNDED)					
			nate Prepareo ate Price Lev		3-Feb-20 1-Oct-19	-	am Year (Budge tive Price Level	,	2020 1 -Oct-19						
			F	RISK BASED											
WBS	Civil Works	COST	CNTG	CNTG	TOTAL	ESC	COST	CNTG	TOTAL	Mid-Point	ESC	COST	CNTG	FULL	
<u>NUMBER</u>	Feature & Sub-Feature Description	<u>(\$K)</u>	<u>(\$K)</u>	(%)	<u>(\$K)</u>	(%)	<u>(\$K)</u>	<u>(\$K)</u>	<u>(\$K)</u>	Date	(%)	<u>(\$K)</u>	<u>(\$K)</u>	<u>(\$K)</u>	
	<i>B</i> Bend Widener, Turning Basin Expansion, and Meeting Area West of Sidney Lanier Bridge	С	D	E	F	G	Н	1	J	Р	L	М	N	0	
09	CHANNELS & CANALS	\$19,006	\$6,462	34.0%	\$25,468		\$19,006	\$6,462	\$25,468	2025Q3	17.9%	\$22,412	\$7,620	\$30,032	
18	CULTURAL RESOURCE PRESERVATION	\$1,262	\$429	34.0%	\$1,691		\$1,262	\$429	\$1,691	2026Q3	21.5%	\$1,533	\$521	\$2,054	
	CONSTRUCTION ESTIMATE TOTALS:	\$20,268	\$6,891	34.0%	\$27,159	-	\$20,268	\$6,891	\$27,159	-		\$23,944	\$8,141	\$32,086	
01	LANDS AND DAMAGES	\$13	\$3	25.0%	\$16		\$13	\$3	\$16	2022Q1	6.3%	\$13	\$3	\$17	
30	PLANNING, ENGINEERING & DESIGN														
0.5%	Project Management	\$101	\$34	34.0%	\$135		\$101	\$34	\$135	2023Q3	14.1%	\$115	\$39	\$154	
0.0%	Planning & Environmental Compliance	\$2	\$1	34.0%	\$3		\$2	\$1	\$3	2023Q3	14.1%	\$2	\$1	\$3	
5.2%	Engineering & Design	\$1,054	\$358	34.0%	\$1,412		\$1,054	\$358	\$1,412	2023Q3	14.1%	\$1,202	\$409	\$1,611	
0.0%	Reviews, ATRs, IEPRs, VE	\$2	\$1	34.0%	\$3		\$2	\$1	\$3	2023Q3	14.1%	\$2	\$1	\$3	
0.3%	Life Cycle Updates (cost, schedule, risks)	\$51	\$17	34.0%	\$68		\$51	\$17	\$68	2023Q3	14.1%	\$58	\$20	\$78	
0.0%	Contracting & Reprographics	\$2	\$1	34.0%	\$3		\$2	\$1	\$3	2025Q3	23.0%	\$2	\$1	\$3	
3.0%	Engineering During Construction	\$608	\$207	34.0%	\$815		\$608	\$207	\$815	2025Q3	23.0%	\$748	\$254	\$1,002	
0.0%	Planning During Construction	\$2	\$1	34.0%	\$3		\$2	\$1	\$3	2023Q3	14.1%	\$2	\$1	\$3	
0.0%	Adaptive Management & Monitoring	\$2	\$1	34.0%	\$3		\$2	\$1	\$3	2023Q3	14.1%	\$2	\$1	\$3	
0.0%	Project Operations	\$2	\$1	34.0%	\$3		\$2	\$1	\$3	2023Q3	14.1%	\$2	\$1	\$3	
31	CONSTRUCTION MANAGEMENT														
8.0%	Construction Management	\$1,621	\$551	34.0%	\$2,172		\$1,621	\$551	\$2,172	2025Q3	23.0%	\$1,994	\$678	\$2,672	
0.3%	Project Operation:	\$51	\$17	34.0%	\$68		\$51	\$17	\$68	2025Q3	23.0%	\$63	\$21	\$84	
0.3%	Project Management	\$51	\$17	34.0%	\$68		\$51	\$17	\$68	2025Q3	23.0%	\$63	\$21	\$84	
•	CONTRACT COST TOTALS:	\$23,830	\$8,101		\$31,930	=	\$23,830	\$8,101	\$31,930			\$28,215	\$9,592	\$37,807	

PREPARED: 2/3/2020

PROJECT: Brunswick Harbor Modification Study - ALT 7

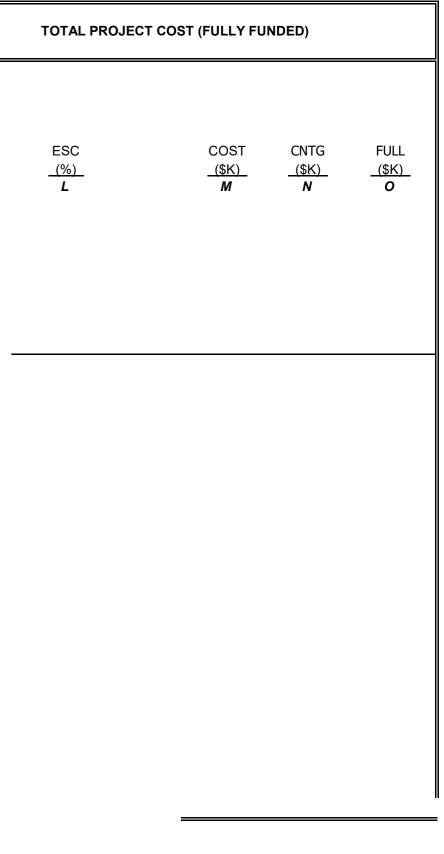
LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report; Report Name and date

DISTRICT: Savannah

	WBS Structure		ESTIMAT	ED COST		PROJEC	CT FIRST CO Dolla	ST Ir Basis)	(Constant	
			timate Prepar mate Price Le		1-Oct-19	Program Year (Budget EC): Effective Price Level Date:			2020 1 -Oct-19	
WBS <u>NUMBER</u> A 09	Civil Works <u>Feature & Sub-Feature Description</u> B O&M Costs CHANNELS & CANALS Total 50-Yr O&M Costs	COST <u>(\$K)</u> C	CNTG <u>(\$K)</u> D	RISK BASED CNTG (%) E 34.0% 34.0%	TOTAL _ <u>(\$K)</u> <i>F</i>	ESC (%) G	COST <u>(\$K)</u> <i>H</i>	CNTG <u>(\$K)</u> /	TOTAL _ <u>(\$K)</u> _ <i>J</i>	Mid-Point <u>Date</u> P
	CONSTRUCTION ESTIMATE TOTALS:					-				
01	LANDS AND DAMAGES			25.0%						
30	PLANNING, ENGINEERING & DESIGN									
0.5%	, ,			34.0%						
0.0%	Planning & Environmental Compliance			34.0%						
5.2%	0 0 0			34.0%						
0.0%	Reviews, ATRs, IEPRs, VE			34.0%						
0.3%	Life Cycle Updates (cost, schedule, risks)			34.0%						
0.0%				34.0%						
3.0%				34.0%						
0.0%	Planning During Construction			34.0%						
0.0%	Adaptive Management & Monitoring			34.0%						
0.0%	Project Operations			34.0%						
31	CONSTRUCTION MANAGEMENT									
8.0%	Construction Management			34.0%						
0.3%	-			34.0%						
0.3%				34.0%						
	CONTRACT COST TOTALS:					=				

PREPARED: 2/3/2020



PROJECT: Brunswick Harbor Modification Study - ALT 7 w O&M PROJECT NO: 465055 LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report; Report Name and date

Civil Works Work Breakdown Structure			ESTIMATE	D COST		PROJECT FIRST COST (Constant Dollar Basis)							TOTAL PROJECT COST FUNDED)		
						<u> </u>		•	(Budget EC): e Level Date:	2020 1-Oct- 19					
WBS NUMBER	Civil Works Feature & Sub-Feature Description	COST _(\$K)_	CNTG _(\$K)_	CNTG _(%)_	TOTAL _(\$K)	ESC _(%)_	COST _(\$K)_	CNTG _(\$K)	REMAINING COST _(\$K)_	Spent Thru: 1-Oct-15 _(\$K)_	TOTAL FIRST COST _(\$K)_	ESC _(%)_	COST _(\$K)	CNTG _(\$K)	FULL _(\$K)_
09 18	CHANNELS & CANALS CULTURAL RESOURCE PRESERVATION	\$26,504 \$1,262	\$9,011 \$429	34% 34%	\$35,515 \$1,691	_	\$26,504 \$1,262	\$9,011 \$429	\$35,515 \$1,691		\$35,515 \$1,691	44.4% 21.5% -	\$38,261 \$1,533	\$13,009 \$521	\$51,27 \$2,05
	CONSTRUCTION ESTIMATE TOTALS:	\$27,766	\$9,440	_	\$37,206	-	\$27,766	\$9,440	\$37,206		\$37,206	- 43.3%			\$53,32
01	LANDS AND DAMAGES	\$13	\$3	25%	\$16		\$13	\$3	\$16		\$16	6.3%	\$13	\$3	\$1
30	PLANNING, ENGINEERING & DESIGN	\$2,503	\$851	34%	\$3,354		\$2,503	\$851	\$3,354		\$3,354	56.2%	\$3,909	\$1,329	\$5,23
31	CONSTRUCTION MANAGEMENT	\$2,361	\$803	34%	\$2,309	37.0%	\$2,361	\$803	\$3,164		\$3,164	62.9%	\$3,847	\$1,308	\$5,1
	PROJECT COST TOTALS:	\$32,643	\$11,097	34%	\$43,740	-	\$32,643	\$11,097	\$43,740		\$43,740	45.7%	\$47,563	\$16,170	\$63,7
CHIEF, COST ENGINEERING, Paul Smith PROJECT MANAGER, Jeff Schwindaman CHIEF, REAL ESTATE, Ralph Werthmann CHIEF, PLANNING, Kimberly Garvey CHIEF, ENGINEERING, Tracey Hendren CHIEF, OPERATIONS, Michael Montone CHIEF, CONSTRUCTION, Kenneth Gray										22	ESTIMATED	ATED FED NON-FED STUDY (C ATED FED NON-FED	ERAL COST: ERAL COST: CAP studies): ERAL COST: ERAL COST:	65% 35% 50% 50%	\$63,73 \$41,42 \$22,30 \$ \$ \$ 41,42

CHIEF, DPM, Erik Blechinger

CHIEF, PM-PB, Thomas Woodie

DISTRICT: Savannah

PREPARED: 2/3/2020

PROJECT: Brunswick Harbor Modification Study - ALT 7 w O&M LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report; Report Name and date

DISTRICT: Savannah POC: CHIEF COS

	WBS Structure		ESTIMATE	D COST		PROJEC	T FIRST COST Dollar B		(Constant		TOTAL PROJECT	COST (FULLY FUN	DED)	
			nate Prepare ate Price Lev		3-Feb-20 1-Oct-19		am Year (Budge tive Price Level	,	2020 1 -Oct-19					
			F	RISK BASED										
WBS	Civil Works	COST	CNTG	CNTG	TOTAL	ESC	COST	CNTG	TOTAL	Mid-Point	ESC	COST	CNTG	FULL
UMBER	Feature & Sub-Feature Description	<u>(\$K)</u>	<u>(\$K)</u>	(%)	<u>(\$K)</u>	(%)	<u>(\$K)</u>	<u>(\$K)</u>	<u>(\$K)</u>	<u>Date</u>	(%)	<u>(\$K)</u>	<u>(\$K)</u>	<u>(\$K)</u>
A	<i>B</i> Bend Widener, Turning Basin Expansion, and Meeting Area West of Sidney Lanier Bridge	С	D	E	F	G	н	I	J	P	L	М	N	0
09	CHANNELS & CANALS	\$19,006	\$6,462	34.0%	\$25,468		\$19,006	\$6,462	\$25,468	2025Q3	17.9%	\$22,412	\$7,620	\$30,03
18	CULTURAL RESOURCE PRESERVATION	\$1,262	\$429	34.0%	\$1,691		\$1,262	\$429	\$1,691	2026Q3	21.5%	\$1,533	\$521	\$2,05 <u>4</u>
	CONSTRUCTION ESTIMATE TOTALS:	\$20,268	\$6,891	34.0%	\$27,159	-	\$20,268	\$6,891	\$27,159	-		\$23,944	\$8,141	\$32,08
									. ,					
01	LANDS AND DAMAGES	\$13	\$3	25.0%	\$16		\$13	\$3	\$16	2022Q1	6.3%	\$13	\$3	\$17
30	PLANNING, ENGINEERING & DESIGN													
0.5%	Project Management	\$101	\$34	34.0%	\$135		\$101	\$34	\$135	2023Q3	14.1%	\$115	\$39	\$154
0.0%	Planning & Environmental Compliance	\$2	\$1	34.0%	\$3		\$2	\$1	\$3	2023Q3	14.1%	\$2	\$1	\$3
5.2%	Engineering & Design	\$1,054	\$358	34.0%	\$1,412		\$1,054	\$358	\$1,412	2023Q3	14.1%	\$1,202	\$409	\$1,61
0.0%	Reviews, ATRs, IEPRs, VE	\$2	\$1	34.0%	\$3		\$2	\$1	\$3	2023Q3	14.1%	\$2	\$1	\$3
0.3%	Life Cycle Updates (cost, schedule, risks)	\$51	\$17	34.0%	\$68		\$51	\$17	\$68	2023Q3	14.1%	\$58	\$20	\$78
0.0%		\$2	\$1	34.0%	\$3		\$2	\$1	\$3	2025Q3	23.0%	\$2	+=• \$1	\$3
3.0%		\$608	\$207	34.0%	\$815		\$608	\$207	\$815	2025Q3	23.0%	\$748	\$254	\$1,00
0.0%		\$2	\$1	34.0%	\$3		\$2	\$1	\$3	2023Q3	14.1%	\$2	\$1	\$3
0.0%	Adaptive Management & Monitoring	\$2	\$1	34.0%	\$3		\$2	\$1	\$3	2023Q3	14.1%	\$2	\$1	\$3
0.0%		\$2	\$1	34.0%	\$3		\$2	\$1	\$3	2023Q3	14.1%	\$2	\$1	\$3
31	CONSTRUCTION MANAGEMENT													
8.0%	-	\$1,621	\$551	34.0%	\$2,172		\$1,621	\$551	\$2,172	2025Q3	23.0%	\$1,994	\$678	\$2,67
0.3%		\$51	\$17	34.0%	\$68		\$51	\$17	\$68	2025Q3	23.0%	\$63	\$21	\$84
0.3%	Project Management	\$51	\$17	34.0%	\$68		\$51	\$17	\$68	2025Q3	23.0%	\$63	\$21	\$84
	CONTRACT COST TOTALS:	\$23,830	\$8,101		\$31,930	=	\$23,830	\$8,101	\$31,930			\$28,215	\$9,592	\$37,8

PREPARED: 2/3/2020

PROJECT:Brunswick Harbor Modification Study - ALT 7 w O&MLOCATION:Brunswick, Georgia

This Estimate reflects the scope and schedule in report; Report Name and date

DISTRICT: Savannah POC: CHIEF. COS

	WBS Structure		ESTIMATE	D COST		PROJECT	T FIRST COST Dollar E		(Constant		TOTAL PROJECT	COST (FULLY FUND	DED)	
			nate Prepareo ate Price Lev		1-Oct-19		m Year (Budge ve Price Level I		2020 1 -Oct-19					
	Civil Works <u>Feature & Sub-Feature Description</u> B O&M Costs CHANNELS & CANALS	COST _ <u>(\$K)</u> C \$7,498	F CNTG <u>(\$K)</u> D \$2,549	RISK BASED CNTG (%) <i>E</i> 34.0%	TOTAL _ <u>(\$K)</u> <i>F</i> \$10,047	ESC (%) G	COST <u>(\$K)</u> <i>H</i> \$7,498	CNTG _(\$K)/ _/ \$2,549	TOTAL _ <u>(\$K)_</u> J \$10,047	Mid-Point <u>Date</u> P 2045Q2	ESC (%) <i>L</i> 111.4%	COST <u>(\$K)</u> M \$15,850	CNTG (\$K) N \$5,389	FULL _ <u>(\$K)</u> 0 \$21,238
	Total 50-Yr O&M Costs	<i>Q</i> 1 ,100	φ2,010	34.0%	ф10,011		¢1,100	φ2,010	¢10,011	201042		\$10,000	φ υ /υυυ	<i>421/200</i>
	CONSTRUCTION ESTIMATE TOTALS:	\$7,498	\$2,549	34.0%	\$10,047	_	\$7,498	\$2,549	\$10,047	-		\$15,850	\$5,389	\$21,238
01	LANDS AND DAMAGES			25.0%										
30	PLANNING, ENGINEERING & DESIGN													
0.5%	Project Management	\$37	\$13	34.0%	\$50		\$37	\$13	\$50	2044Q1	157.1%	\$95	\$32	\$127
0.0%	Planning & Environmental Compliance	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2044Q1	157.1%	\$3	\$1	\$3
5.2%	Engineering & Design	\$390	\$133	34.0%	\$523		\$390	\$133	\$523	2044Q1	157.1%	\$1,003	\$341	\$1,344
0.0%	Reviews, ATRs, IEPRs, VE	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2044Q1	157.1%	\$3	\$1	\$3
0.3%	Life Cycle Updates (cost, schedule, risks)	\$19	\$6	34.0%	\$25		\$19	\$6	\$25	2044Q1	157.1%	\$49	\$17	\$65
0.0%	Contracting & Reprographics	\$1	\$0	34.0%	¢ <u>−</u> 0 \$1		\$1	\$0	\$1	2045Q2	170.7%	\$3	\$1	\$4
3.0%	Engineering During Construction	\$225	\$77	34.0%	\$302		\$225	\$77	\$302	2045Q2	170.7%	\$609	\$207	\$816
0.0%	Planning During Construction	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2044Q1	157.1%	\$3	\$1	\$3
0.0%	Adaptive Management & Monitoring	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2044Q1	157.1%	\$3	\$1	\$3
0.0%	Project Operations	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2044Q1	157.1%	\$3	\$1	\$3
31	CONSTRUCTION MANAGEMENT													
8.0%	Construction Management	\$600	\$204	34.0%	\$804		\$600	\$204	\$804	2045Q2	170.7%	\$1,624	\$552	\$2,176
0.3%	Project Operation:	\$19	¢204 \$6	34.0%	\$25		\$19	¢204 \$6	\$25	2045Q2	170.7%	\$51	\$17	\$69
0.3%	Project Management	\$19	\$6	34.0%	\$25		\$19	\$6	\$25	2045Q2	170.7%	\$51	\$17 \$17	\$69
-	CONTRACT COST TOTALS:	\$8,813	\$2,996		\$11,809		\$8,813	\$2,996	\$11,809			\$19,348	\$6,578	\$25,926

PREPARED: 2/3/2020

PROJECT: Brunswick Harbor Modification Study - ALT 8 PROJECT NO: 465055 LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report; Report Name and date

Civi	il Works Work Breakdown Structure		ESTIMATE	D COST				-	DJECT FIRST C				TOTAL PROJE	CT COST FUNDED)	(FULLY
								-	(Budget EC):	2020					
							E		e Level Date:	1-Oct- 19	1				
WBS	Civil Works	COST	CNTG	CNTG	TOTAL	ESC	COST	CNTG	REMAINING COST	Spent Thru: 1-Oct-15	TOTAL FIRST COST	ESC	COST	CNTG	FULL
NUMBER	Feature & Sub-Feature Description	<u>(\$K)</u>	<u>(\$K)</u>	<u>(%)</u>	<u>(\$K)</u>	<u>(%)</u>	<u>(\$K)</u>	<u>(\$K)</u>	<u>(\$K)</u>	<u>(\$K)</u>	<u>(\$K)</u>	<u>(%)</u>	<u>(\$K)</u>	<u>(\$K)</u>	(\$K)
09	CHANNELS & CANALS	\$8,453	\$2,874	34%	\$11,327		\$8,453	\$2,874	\$11,327		\$11,327	17.9%	\$9,968	\$3,389	\$13,357
18	CULTURAL RESOURCE PRESERVATION	\$0,433 \$1,262	\$429	34 % 34%	\$1,691		\$0,455 \$1,262	\$429	\$1,691		\$1,691	21.5%	\$9,900 \$1,533	\$5,309 \$521	\$13,337 \$2,054
		. , -	-	-		-		• -				-	. ,		
	CONSTRUCTION ESTIMATE TOTALS:	\$9,715	\$3,303	-	\$13,018	-	\$9,715	\$3,303	\$13,018		\$13,018	18.4%	\$11,500	\$3,910	\$15,411
01	LANDS AND DAMAGES	\$13	\$3	25%	\$16		\$13	\$3	\$16		\$16	6.3%	\$13	\$3	\$17
30	PLANNING, ENGINEERING & DESIGN	\$875	\$298	34%	\$1,173		\$875	\$298	\$1,173		\$1,173	17.1%	\$1,024	\$348	\$1,373
31	CONSTRUCTION MANAGEMENT	\$825	\$281	34%	\$1,106	0.0%	\$825	\$281	\$1,106		\$1,106	23.0%	\$1,015	\$345	\$1,360
	PROJECT COST TOTALS:	\$11,428	\$3,884	34%	\$15,312	-	\$11,428	\$3,884	\$15,312		\$15,312	18.6%	\$13,553	\$4,607	\$18,160
		CHIEF, COS	T ENGINEEI	RING, Paul S	Smith						ESTIMATED TO	TAL PRO.	IFCT COST:		\$18,160

 CHIEF, COST ENGINEERING, Paul Smith			
	ESTIMATED TOTAL PROJECT COST:		\$18,160
PROJECT MANAGER, Jeff Schwindaman	ESTIMATED FEDERAL COST:	65%	\$11,804
	ESTIMATED NON-FEDERAL COST:	35%	\$6,356
 CHIEF, REAL ESTATE, Ralph Werthmann			
	22 - FEASIBILITY STUDY (CAP studies):		\$2
 CHIEF, PLANNING, Kimberly Garvey	ESTIMATED FEDERAL COST:	50%	\$1
	ESTIMATED NON-FEDERAL COST:	50%	\$1
 CHIEF, ENGINEERING, Tracey Hendren			
 CHIEF, OPERATIONS, Michael Montone	ESTIMATED FEDERAL COST OF PROJECT		\$11,805
 CHIEF, CONSTRUCTION, Kenneth Gray			
 CHIEF, CONTRACTING, Paige Blechinger			
 CHIEF, PM-PB, Thomas Woodie			
 CHIEF, DPM, Erik Blechinger			

DISTRICT: Savannah

PREPARED: 2/3/2020

PROJECT: Brunswick Harbor Modification Study - ALT 8

LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report; Report Name and date

DISTRICT: Savannah POC: CHIEF. COS

	WBS Structure		ESTIMATE	D COST		PROJE	CT FIRST COST Dollar E		(Constant		TOTAL PROJECT	COST (FULLY FUNI	DED)	
		11	nate Prepareo ate Price Lev		3-Feb-20 1-Oct-19	-	am Year (Budge tive Price Level	,	2020 1 -Oct-19					
			F	RISK BASED										
WBS	Civil Works	COST	CNTG	CNTG	TOTAL	ESC	COST	CNTG	TOTAL	Mid-Point	ESC	COST	CNTG	FULL
NUMBER	Feature & Sub-Feature Description	<u>(\$K)</u>	<u>(\$K)</u>	<u>(%)</u> E	<u>(\$K)</u>	(%)	<u>(\$K)</u>	<u>(\$K)</u>	<u>(\$K)</u>	Date	(%)	<u>(\$K)</u>	<u>(\$K)</u>	<u>(\$K)</u>
Α	В	С	D	E	F	G	н	I	J	Р	L	М	N	0
	Bend Widener, Turning Basin Expansion, and Meeting Area at St. Simon's Sound													
09	CHANNELS & CANALS	\$8,453	\$2,874	34.0%	\$11,327		\$8,453	\$2,874	\$11,327	2025Q3	17.9%	\$9,968	\$3,389	\$13,357
18	CULTURAL RESOURCE PRESERVATION	\$1,262	\$429	34.0%	\$1,691		\$1,262	\$429	\$1,691	2026Q3	21.5%	\$1,533	\$521	\$2,054
	CONSTRUCTION ESTIMATE TOTALS:	\$9,715	\$3,303	34.0%	\$13,018	-	\$9,715	\$3,303	\$13,018	-		\$11,500	\$3,910	\$15,411
01	LANDS AND DAMAGES	\$13	\$3	25.0%	\$16		\$13	\$3	\$16	2022Q1	6.3%	\$13	\$3	\$17
30	PLANNING, ENGINEERING & DESIGN													
0.5%	Project Management	\$49	\$17	34.0%	\$66		\$49	\$17	\$66	2023Q3	14.1%	\$56	\$19	\$75
0.0%	Planning & Environmental Compliance	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3	14.1%	\$1	\$0	\$2
5.2%	Engineering & Design	\$505	\$172	34.0%	\$677		\$505	\$172	\$677	2023Q3	14.1%	\$576	\$196	\$772
0.0%	Reviews, ATRs, IEPRs, VE	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3	14.1%	\$1	\$0	\$2
0.3%	Life Cycle Updates (cost, schedule, risks)	\$24	\$8	34.0%	\$32		\$24	\$8	\$32	2023Q3	14.1%	\$27	\$9	\$37
0.0%	Contracting & Reprographics	φ24 \$1	\$0 \$0	34.0%	ψ52 \$1		ψ24 \$1	\$0 \$0	ψ52 \$1	2025Q3	23.0%	φ27 \$1	پ \$0	\$37 \$2
3.0%	Engineering During Construction	\$291	\$99	34.0%	\$390		\$291	\$99	\$390	2025Q3	23.0%	\$358	\$122	\$480
0.0%	Planning During Construction	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3	14.1%	\$1	\$ 0	\$2
0.0%	Adaptive Management & Monitoring	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3	14.1%	\$1	\$0	\$2
0.0%	Project Operations	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3	14.1%	\$1	\$0	\$2
31	CONSTRUCTION MANAGEMENT													
8.0%	Construction Management	\$777	\$264	34.0%	\$1,041		\$777	\$264	\$1,041	2025Q3	23.0%	\$956	\$325	\$1,281
0.3%	Project Operation:	\$24	\$8	34.0%	\$32		\$24	\$8	\$32	2025Q3	23.0%	\$30	\$10	\$40
0.3%	Project Management	\$24	\$8	34.0%	\$32		\$24	\$8	\$32	2025Q3	23.0%	\$30	\$10	\$40
=	CONTRACT COST TOTALS:	\$11,428	\$3,884		\$15,312	=	\$11,428	\$3,884	\$15,312			\$13,553	\$4,607	\$18,160

PREPARED: 2/3/2020

PROJECT: Brunswick Harbor Modification Study - ALT 8

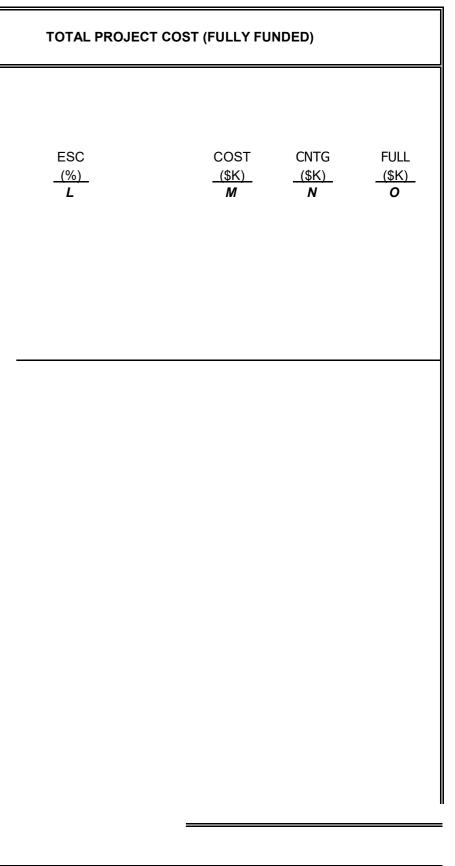
LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report; Report Name and date

DISTRICT: Savannah POC: CHIEF. COS

	WBS Structure		ESTIMAT	ED COST		PROJEC	CT FIRST CO Dolla	ST r Basis)	(Constant	
			imate Prepar mate Price Le		1-Oct-19		am Year (Bud tive Price Lev		2020 1 -Oct-19	
WBS <u>NUMBER</u> A 09	Civil Works <u>Feature & Sub-Feature Description</u> B O&M Costs CHANNELS & CANALS Total 50-Yr O&M Costs	COST <u>(\$K)</u> <i>C</i>	CNTG <u>(\$K)</u> D	RISK BASED CNTG (%) E 34.0%	TOTAL _ <u>(\$K)</u> <i>F</i>	ESC (%) G	COST <u>(\$K)</u> <i>H</i>	CNTG <u>(\$K)</u> /	TOTAL _ <u>(\$K)</u> _J	Mid-Point <u>Date</u> P
	CONSTRUCTION ESTIMATE TOTALS:					_				
01	LANDS AND DAMAGES			25.0%						
30	PLANNING, ENGINEERING & DESIGN									
0.5%	Project Management			34.0%						
0.0%	Planning & Environmental Compliance			34.0%						
5.2%	Engineering & Design			34.0%						
0.0%	Reviews, ATRs, IEPRs, VE			34.0%						
0.3%	Life Cycle Updates (cost, schedule, risks)			34.0%						
0.0%	Contracting & Reprographics			34.0%						
3.0%	Engineering During Construction			34.0%						
0.0%	Planning During Construction			34.0%						
0.0%	Adaptive Management & Monitoring			34.0%						
0.0%	Project Operations			34.0%						
31	CONSTRUCTION MANAGEMENT									
8.0%	Construction Management			34.0%						
0.3%	Project Operation:			34.0%						
0.3%	Project Management			34.0%						
	CONTRACT COST TOTALS:	<u> </u>				=				

PREPARED: 2/3/2020



PROJECT: Brunswick Harbor Modification Study - ALT 8 w O&M PROJECT NO: 465055 LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report; Report Name and date

Civ	il Works Work Breakdown Structure		ESTIMATE	D COST					DJECT FIRST C				TOTAL PROJE	ECT COST FUNDED)	(FULLY
								ffective Pric	(Budget EC): e Level Date:	2020 1-Oct- 19 Spent Thru:					
WBS <u>NUMBER</u>	Civil Works Feature & Sub-Feature Description	COST _(\$K)_	CNTG _(\$K)	CNTG _(%)_	TOTAL _(\$K)_	ESC _(%)_	COST _(\$K)	CNTG _(\$K)_	REMAINING COST <u>(\$K)</u>	1-Oct-15 (\$K)	TOTAL FIRST COST 	ESC _(%)_	COST _(\$K)	CNTG <u>(\$K)</u>	FULL _(\$K)_
09 18	CHANNELS & CANALS CULTURAL RESOURCE PRESERVATION	\$9,085 \$1,262	\$3,089 \$429 -	34% 34%	\$12,174 \$1,691	-	\$9,085 \$1,262	\$3,089 \$429	\$12,174 \$1,691		\$12,174 \$1,691	24.4% 21.5% - -	\$11,304 \$1,533	\$3,843 \$521	\$15,147 \$2,054
	CONSTRUCTION ESTIMATE TOTALS:	\$10,347	\$3,518	-	\$13,865	-	\$10,347	\$3,518	\$13,865		\$13,865	24.1%	\$12,836	\$4,364	\$17,201
01	LANDS AND DAMAGES	\$13	\$3	25%	\$16		\$13	\$3	\$16		\$16	6.3%	\$13	\$3	\$17
30	PLANNING, ENGINEERING & DESIGN	\$932	\$317	34%	\$1,249		\$932	\$317	\$1,249		\$1,249	25.9%	\$1,173	\$399	\$1,572
31	CONSTRUCTION MANAGEMENT	\$880	\$299	34%	\$1,106	6.7%	\$880	\$299	\$1,179		\$1,179	32.3%	\$1,164	\$396	\$1,560
	PROJECT COST TOTALS:	\$12,172	\$4,137	34%	\$16,309	-	\$12,172	\$4,137	\$16,309	·	\$16,309	24.8%	\$15,187	\$5,162	\$20,349
		CHIEF, COS	T ENGINEE	RING, Paul S	Smith										
		PROJECT M		off Sobwinds	man						ESTIMATED TO		JECT COST: ERAL COST:	65%	\$20,349 \$13,227
		FROJECTIV	ANAGER, J								ESTIMATED			35%	\$13,227 \$7,122
		CHIEF, REA	L ESTATE, F	Ralph Werth	mann					22	- FEASIBILITY	פדווחע (כ	AD studios):		\$2
		CHIEF, PLA	NNING, Kimb	erly Garvey	,					22		•	ERAL COST:	50%	\$1
		CHIEF, ENG	INEERING.	Tracey Hend	lren						ESTIMATED	NON-FED	ERAL COST:	50%	\$1
		, -	,	-						FOTI					A12 220

CHIEF, OPERATIONS, Michael Montone

CHIEF, CONSTRUCTION, Kenneth Gray

CHIEF, CONTRACTING, Paige Blechinger

CHIEF, PM-PB, Thomas Woodie

CHIEF, DPM, Erik Blechinger

DISTRICT: Savannah

PREPARED: 2/3/2020

POC: CHIEF, COST ENGINEERING, Paul Smith

ESTIMATED FEDERAL COST OF PROJECT \$13,228

PROJECT:Brunswick Harbor Modification Study - ALT 8 w O&MLOCATION:Brunswick, GeorgiaThis Estimate reflects the scope and schedule in report;Report Name and date

DISTRICT: Savannah POC: CHIEF. COS

	WBS Structure		ESTIMATE	D COST		PROJE	CT FIRST COST Dollar E		(Constant		TOTAL PROJECT	COST (FULLY FUNI	DED)	
		11	nate Prepareo ate Price Lev		3-Feb-20 1-Oct-19	-	am Year (Budge tive Price Level	,	2020 1 -Oct-19					
			F	RISK BASED										
WBS	Civil Works	COST	CNTG	CNTG	TOTAL	ESC	COST	CNTG	TOTAL	Mid-Point	ESC	COST	CNTG	FULL
NUMBER	Feature & Sub-Feature Description	<u>(\$K)</u>	<u>(\$K)</u>	<u>(%)</u> E	<u>(\$K)</u>	(%)	<u>(\$K)</u>	<u>(\$K)</u>	<u>(\$K)</u>	Date	(%)	<u>(\$K)</u>	<u>(\$K)</u>	<u>(\$K)</u>
Α	В	С	D	E	F	G	н	I	J	Р	L	М	N	0
	Bend Widener, Turning Basin Expansion, and Meeting Area at St. Simon's Sound													
09	CHANNELS & CANALS	\$8,453	\$2,874	34.0%	\$11,327		\$8,453	\$2,874	\$11,327	2025Q3	17.9%	\$9,968	\$3,389	\$13,357
18	CULTURAL RESOURCE PRESERVATION	\$1,262	\$429	34.0%	\$1,691		\$1,262	\$429	\$1,691	2026Q3	21.5%	\$1,533	\$521	\$2,054
	CONSTRUCTION ESTIMATE TOTALS:	\$9,715	\$3,303	34.0%	\$13,018	-	\$9,715	\$3,303	\$13,018	-		\$11,500	\$3,910	\$15,411
01	LANDS AND DAMAGES	\$13	\$3	25.0%	\$16		\$13	\$3	\$16	2022Q1	6.3%	\$13	\$3	\$17
30	PLANNING, ENGINEERING & DESIGN													
0.5%	Project Management	\$49	\$17	34.0%	\$66		\$49	\$17	\$66	2023Q3	14.1%	\$56	\$19	\$75
0.0%	Planning & Environmental Compliance	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3	14.1%	\$1	\$0	\$2
5.2%	Engineering & Design	\$505	\$172	34.0%	\$677		\$505	\$172	\$677	2023Q3	14.1%	\$576	\$196	\$772
0.0%	Reviews, ATRs, IEPRs, VE	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3	14.1%	\$1	\$0	\$2
0.3%	Life Cycle Updates (cost, schedule, risks)	\$24	\$8	34.0%	\$32		\$24	\$8	\$32	2023Q3	14.1%	\$27	\$9	\$37
0.0%	Contracting & Reprographics	φ24 \$1	\$0 \$0	34.0%	ψ52 \$1		ψ24 \$1	\$0 \$0	ψ52 \$1	2025Q3	23.0%	φ27 \$1	پ \$0	\$37 \$2
3.0%	Engineering During Construction	\$291	\$99	34.0%	\$390		\$291	\$99	\$390	2025Q3	23.0%	\$358	\$122	\$480
0.0%	Planning During Construction	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3	14.1%	\$1	\$ 0	\$2
0.0%	Adaptive Management & Monitoring	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3	14.1%	\$1	\$0	\$2
0.0%	Project Operations	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2023Q3	14.1%	\$1	\$0	\$2
31	CONSTRUCTION MANAGEMENT													
8.0%	Construction Management	\$777	\$264	34.0%	\$1,041		\$777	\$264	\$1,041	2025Q3	23.0%	\$956	\$325	\$1,281
0.3%	Project Operation:	\$24	\$8	34.0%	\$32		\$24	\$8	\$32	2025Q3	23.0%	\$30	\$10	\$40
0.3%	Project Management	\$24	\$8	34.0%	\$32		\$24	\$8	\$32	2025Q3	23.0%	\$30	\$10	\$40
=	CONTRACT COST TOTALS:	\$11,428	\$3,884		\$15,312	=	\$11,428	\$3,884	\$15,312			\$13,553	\$4,607	\$18,160

PREPARED: 2/3/2020

PROJECT: Brunswick Harbor Modification Study - ALT 8 w O&M LOCATION: Brunswick, Georgia This Estimate reflects the scope and schedule in report;

Report Name and date

DISTRICT: Savannah

	WBS Structure		ESTIMATE	D COST		PROJECT	FIRST COST Dollar E		(Constant		TOTAL PROJECT	COST (FULLY FUNI	DED)	
			nate Prepareo ate Price Lev		1-Oct-19		n Year (Budge /e Price Level I	,	2020 1 -Oct-19					
	Civil Works <u>Feature & Sub-Feature Description</u> B O&M Costs CHANNELS & CANALS	COST <u>(\$K)</u> C \$632	F CNTG <u>(\$K)</u> D \$215	RISK BASED CNTG (%) E 34.0%	TOTAL _ <u>(\$K)_</u> <i>F</i> \$847	ESC (%) G	COST <u>(\$K)</u> <i>H</i> \$632	CNTG <u>(\$K)</u> <i>I</i> \$215	TOTAL _ <u>(\$K)_</u> _ J \$847	Mid-Point <u>Date</u> P 2045Q2	ESC (%) <i>L</i> 111.4%	COST <u>(\$K)</u> <i>M</i> \$1,336	CNTG <u>(\$K)</u> N \$454	FULL <u>(\$K)</u> 0 \$1,790
	Total 50-Yr O&M Costs													
	CONSTRUCTION ESTIMATE TOTALS:	\$632	\$215	34.0%	\$847		\$632	\$215	\$847	-		\$1,336	\$454	\$1,790
01	LANDS AND DAMAGES			25.0%										
30	PLANNING, ENGINEERING & DESIGN													
0.5% 0.0%	Project Management Planning & Environmental Compliance	\$3	\$1	34.0% 34.0%	\$4		\$3	\$1	\$4	2044Q1	157.1%	\$8	\$3	\$10
5.2% 0.0%	Engineering & Design Reviews, ATRs, IEPRs, VE	\$33	\$11	34.0% 34.0%	\$44		\$33	\$11	\$44	2044Q1	157.1%	\$85	\$29	\$114
0.3% 0.0%	Life Cycle Updates (cost, schedule, risks) Contracting & Reprographics	\$2	\$1	34.0% 34.0%	\$3		\$2	\$1	\$3	2044Q1	157.1%	\$5	\$2	\$7
3.0% 0.0% 0.0% 0.0%	Engineering During Construction Planning During Construction Adaptive Management & Monitoring Project Operations	\$19	\$6	34.0% 34.0% 34.0% 34.0%	\$25		\$19	\$6	\$25	2045Q2	170.7%	\$51	\$17	\$69
31	CONSTRUCTION MANAGEMENT													
8.0%	Construction Management	\$51	\$17	34.0%	\$68		\$51	\$17	\$68	2045Q2	170.7%	\$138	\$47	\$185
0.3% 0.3%	Project Operation: Project Management	\$2 \$2	\$1 \$1	34.0% 34.0%	\$3 \$3		\$2 \$2	\$1 \$1	\$3 \$3	2045Q2 2045Q2	170.7% 170.7%	\$5 \$5	\$2 \$2	\$7 \$7
-	CONTRACT COST TOTALS:	\$744	\$253		\$997	_	\$744	\$253	\$997			\$1,634	\$556	\$2,189

PREPARED: 2/3/2020

Brunswick Harbor Modification Study - ALT 9 PROJECT: PROJECT NO: 465055 LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report;

Report Name and date

Civ	il Works Work Breakdown Structure		ESTIMATE	D COST					DJECT FIRST (Instant Dollar B				TOTAL PROJE	ECT COST FUNDED)	(FULLY
								fective Pric	(Budget EC): e Level Date: REMAINING	2020 1-Oct- 19 Spent Thru:	TOTAL FIRST				
WBS <u>NUMBER</u>	Civil Works Feature & Sub-Feature Description	COST <u>(\$K)</u>	CNTG _(\$K)_	CNTG <u>(%)</u>	TOTAL _(\$K)	ESC _(%)_	COST _(\$K)	CNTG <u>(\$K)</u>	COST _(\$K)_	1-Oct-15 _(\$K)_	COST _(\$K)_	ESC _(%)_	COST _(\$K)	CNTG <u>(\$K)</u>	FULL <u>(\$K)</u>
09 18	CHANNELS & CANALS CULTURAL RESOURCE PRESERVATION	\$19,006 \$1,323	\$6,462 \$450	34% 34%	\$25,468 \$1,773	-	\$19,006 \$1,323	\$6,462 \$450	\$25,468 \$1,773		\$25,468 \$1,773	17.9% 21.5% - -	\$22,412 \$1,607	\$7,620 \$546	\$30,032 \$2,153
	CONSTRUCTION ESTIMATE TOTALS:	\$20,329	\$6,912	-	\$27,241	-	\$20,329	\$6,912	\$27,241		\$27,241	18.1%	\$24,019	\$8,166	\$32,185
01	LANDS AND DAMAGES	\$13	\$3	25%	\$16		\$13	\$3	\$16		\$16	6.3%	\$13	\$3	\$17
30	PLANNING, ENGINEERING & DESIGN	\$1,832	\$623	34%	\$2,455		\$1,832	\$623	\$2,455		\$2,455	17.1%	\$2,145	\$729	\$2,874
31	CONSTRUCTION MANAGEMENT	\$1,728	\$588	34%	\$2,316	0.0%	\$1,728	\$588	\$2,316		\$2,316	23.0%	\$2,126	\$723	\$2,849
	PROJECT COST TOTALS:	\$23,902	\$8,125	34%	\$32,027	-	\$23,902	\$8,125	\$32,027		\$32,027	18.4%	\$28,303	\$9,622	\$37,924
		CHIEF, COS	T ENGINEE	RING, Paul S	Smith						ESTIMATED TO				\$37,924
		PROJECT M	IANAGER, Je	eff Schwinda	aman								ERAL COST:	65%	\$24,651
		CHIEF, REA	I ESTATE F	Ralph Werthr	mann						ESTIMATED	NON-FED	ERAL COST:	35%	\$13,273
		-		·						22	- FEASIBILITY	•			\$2
		CHIEF, PLAI	NNING, Kimb	erly Garvey							ESTIMA		ERAL COST: ERAL COST:	50% 50%	\$1 \$1
		CHIEF, ENG	SINEERING,	Tracey Hend	Iren					ESTI	MATED FEDERA	LCOST	F PROJECT		\$24,652
		CHIEF, OPE	RATIONS, M	lichael Mont	one										+= ,,
		CHIEF, CON	ISTRUCTION	I, Kenneth G	Gray										
		CHIEF, CON	ITRACTING,	Paige Blech	inger										
		CHIEF, PM-	PB, Thomas	Woodie											
		CHIEF, DPM	l, Erik Blechir	nger											

DISTRICT: Savannah

PREPARED: 2/3/2020

PROJECT: Brunswick Harbor Modification Study - ALT 9

LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report; Report Name and date

DISTRICT: Savannah POC[.] CHIFF CO

	WBS Structure		ESTIMATE	D COST		PROJEC	T FIRST COST Dollar E		(Constant		TOTAL PROJECT (COST (FULLY FUN	DED)	
			nate Prepareo ate Price Lev		3-Feb-20 1-Oct-19		m Year (Budge ive Price Level I		2020 1 -Oct-19					
			F	RISK BASED										
WBS	Civil Works	COST	CNTG	CNTG	TOTAL	ESC	COST	CNTG	TOTAL	Mid-Point	ESC	COST	CNTG	FULL
NUMBER	Feature & Sub-Feature Description	<u>(\$K)</u>	(\$K)	<u>(%)</u> E	<u>(\$K)</u>	(%)	<u>(\$K)</u>	(\$K)	<u>(\$K)</u>	Date	(%)	<u>(\$K)</u>	<u>(\$K)</u>	<u>(\$K)</u>
	<i>B</i> Bend Widener, Turning Basin Expansion, Meeting Area West of Sidney Lanier Bridge and Meeting Area at St. Simon's Sound	С	D	E	F	G	Н	I	J	Р	L	М	N	0
09	CHANNELS & CANALS	\$19,006	\$6,462	34.0%	\$25,468		\$19,006	\$6,462	\$25,468	2025Q3	17.9%	\$22,412	\$7,620	\$30,032
18	CULTURAL RESOURCE PRESERVATION	\$1,323	\$450	34.0%	\$1,773		\$1,323	\$450	\$1,773	2026Q3	21.5%	\$1,607	\$546	\$2,153
	CONSTRUCTION ESTIMATE TOTALS:	\$20,329	\$6,912	34.0%	\$27,241	_	\$20,329	\$6,912	\$27,241	-		\$24,019	\$8,166	\$32,185
01	LANDS AND DAMAGES	\$13	\$3	25.0%	\$16		\$13	\$3	\$16	2022Q1	6.3%	\$13	\$3	\$17
30	PLANNING, ENGINEERING & DESIGN													
0.5%	Project Management	\$102	\$35	34.0%	\$137		\$102	\$35	\$137	2023Q3	14.1%	\$116	\$40	\$156
0.0%	Planning & Environmental Compliance	\$2	\$1	34.0%	\$3		\$2	\$1	\$3	2023Q3	14.1%	\$2	\$1	\$3
5.2%	5 5 5	\$1,057	\$359	34.0%	\$1,416		\$1,057	\$359	\$1,416	2023Q3	14.1%	\$1,206	\$410	\$1,616
0.0%	Reviews, ATRs, IEPRs, VE	\$2	\$1	34.0%	\$3		\$2	\$1	\$3	2023Q3	14.1%	\$2	\$1	\$3
0.3%	Life Cycle Updates (cost, schedule, risks)	\$51	\$17	34.0%	\$68		\$51	\$17	\$68	2023Q3	14.1%	\$58	\$20	\$78
0.0%		\$2	\$1	34.0%	\$3		\$2	\$1	\$3	2025Q3	23.0%	\$2	\$1	\$3
3.0%	Engineering During Construction	\$610	\$207	34.0%	\$817		\$610	\$207	\$817	2025Q3	23.0%	\$751	\$255	\$1,006
0.0%	Planning During Construction	\$2	\$1	34.0%	\$3		\$2	\$1	\$3	2023Q3	14.1%	\$2	\$1	\$3
0.0%	Adaptive Management & Monitoring	\$2	\$1	34.0%	\$3		\$2	\$1	\$3	2023Q3	14.1%	\$2	\$1	\$3
0.0%	Project Operations	\$2	\$1	34.0%	\$3		\$2	\$1	\$3	2023Q3	14.1%	\$2	\$1	\$3
31	CONSTRUCTION MANAGEMENT													
8.0%	Construction Management	\$1,626	\$553	34.0%	\$2,179		\$1,626	\$553	\$2,179	2025Q3	23.0%	\$2,001	\$680	\$2,681
0.3%	Project Operation:	\$51	\$17	34.0%	\$68		\$51	\$17	\$68	2025Q3	23.0%	\$63	\$21	\$84
0.3%	Project Management	\$51	\$17	34.0%	\$68		\$51	\$17	\$68	2025Q3	23.0%	\$63	\$21	\$84
	CONTRACT COST TOTALS:	\$23,902	\$8,125		\$32,027		\$23,902	\$8,125	\$32,027			\$28,303	\$9,622	\$37,924

PREPARED: 2/3/2020

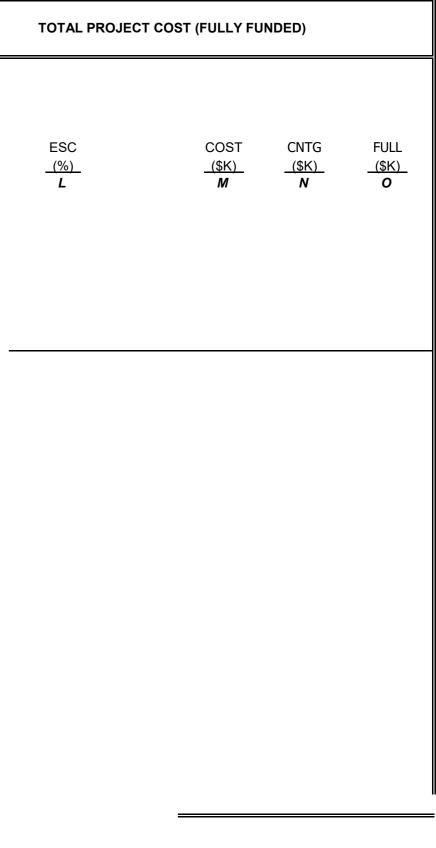
PROJECT: Brunswick Harbor Modification Study - ALT 9

LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report; Report Name and date DISTRICT: Savannah

	WBS Structure		ESTIMAT	ED COST		PROJE	CT FIRST CO Dolla	ST ır Basis)	(Constant	
			imate Prepar mate Price Le		1-Oct-19		ram Year (Bud ctive Price Lev		2020 1 -Oct-19	
09	Civil Works <u>Feature & Sub-Feature Description</u> B O&M Costs CHANNELS & CANALS Total 50-Yr O&M Costs	COST <u>(\$K)</u> C	CNTG <u>(\$K)</u> D	RISK BASED CNTG <u>(%)</u> E 34.0%	TOTAL _ <u>(\$K)</u> <i>F</i>	ESC (%) G	COST <u>(\$K)</u> <i>H</i>	CNTG <u>(\$K)</u> /	TOTAL _ <u>(\$K)</u> J	Mid-Point <u>Date</u> P
	CONSTRUCTION ESTIMATE TOTALS:					-				
01	LANDS AND DAMAGES			25.0%						
30	PLANNING, ENGINEERING & DESIGN									
0.5%	Project Management			34.0%						
0.0%	Planning & Environmental Compliance			34.0%						
5.2%	Engineering & Design			34.0%						
0.0%	Reviews, ATRs, IEPRs, VE			34.0%						
0.3%	Life Cycle Updates (cost, schedule, risks)			34.0%						
0.0%	Contracting & Reprographics			34.0%						
3.0%	Engineering During Construction			34.0%						
0.0%	Planning During Construction			34.0%						
0.0%	Adaptive Management & Monitoring			34.0%						
0.0%	Project Operations			34.0%						
31	CONSTRUCTION MANAGEMENT									
8.0%	Construction Management			34.0%						
0.3%	Project Operation:			34.0%						
0.3%	Project Management			34.0%						
	CONTRACT COST TOTALS:					=				

PREPARED: 2/3/2020



Brunswick Harbor Modification Study - ALT 9 w O&M PROJECT: PROJECT NO: 465055 LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report; Report Name and date

Civi	I Works Work Breakdown Structure		ESTIMATE	D COST		PROJECT FIRST COST (Constant Dollar Basis)							TOTAL PROJECT COST FUNDED)		
								fective Pric	(Budget EC): e Level Date:	2020 1-Oct- 19 Spent Thru:					
WBS	Civil Works	COST	CNTG	CNTG	TOTAL	ESC	COST	CNTG	REMAINING COST	1-Oct-15	TOTAL FIRST COST	ESC	COST	CNTG	FULL
NUMBER	Feature & Sub-Feature Description	_(\$K)_	<u>(\$K)</u>	<u>(%)</u>	<u>(\$K)</u>	_(%)	_(\$K)	<u>(\$K)</u>	_(\$K)_	_(\$K)_	(\$K)	<u>(%)</u>	<u>(\$K)</u>	<u>(\$K)</u>	(\$K)
09 18	CHANNELS & CANALS CULTURAL RESOURCE PRESERVATION	\$26,504 \$1,323	\$9,011 \$450 - -	34% 34%	\$35,515 \$1,773		\$26,504 \$1,323	\$9,011 \$450	\$35,515 \$1,773		\$35,515 \$1,773	44.4% 21.5% - -	\$38,261 \$1,607	\$13,009 \$546	\$51,270 \$2,153
	CONSTRUCTION ESTIMATE TOTALS:	\$27,827	\$9,461		\$37,288		\$27,827	\$9,461	\$37,288		\$37,288	43.3%	\$39,868	\$13,555	\$53,423
01	LANDS AND DAMAGES	\$13	\$3	25%	\$16		\$13	\$3	\$16		\$16	6.3%	\$13	\$3	\$17
30	PLANNING, ENGINEERING & DESIGN	\$2,509	\$853	34%	\$3,362		\$2,509	\$853	\$3,362		\$3,362	56.1%	\$3,916	\$1,331	\$5,248
31	CONSTRUCTION MANAGEMENT	\$2,366	\$804	34%	\$2,316	36.9%	\$2,366	\$804	\$3,170		\$3,170	62.8%	\$3,853	\$1,310	\$5,163
	PROJECT COST TOTALS:	\$32,715	\$11,122	34%	\$43,836	-	\$32,715	\$11,122	\$43,836		\$43,836	45.7%	\$47,650	\$16,200	\$63,850
		CHIEF, COS	T ENGINEEF	RING, Paul S	Smith						ESTIMATED TO	TAL PRO	JECT COST:		\$63,850

	ESTIMATED TOTAL PROJECT COST:		\$63,850
 PROJECT MANAGER, Jeff Schwindaman	ESTIMATED FEDERAL COST:	65%	\$41,503
	ESTIMATED NON-FEDERAL COST:	35%	\$22,348
 CHIEF, REAL ESTATE, Ralph Werthmann			
	22 - FEASIBILITY STUDY (CAP studies):		\$2
 CHIEF, PLANNING, Kimberly Garvey	ESTIMATED FEDERAL COST:	50%	\$1
	ESTIMATED NON-FEDERAL COST:	50%	\$1
 CHIEF, ENGINEERING, Tracey Hendren			
	ESTIMATED FEDERAL COST OF PROJECT		\$41,504
 CHIEF, OPERATIONS, Michael Montone			
CHIEF, CONSTRUCTION, Kenneth Gray			
 CHIEF, CONTRACTING, Paige Blechinger			
CHIEF, PM-PB, Thomas Woodie			
 CHIEF, DPM, Erik Blechinger			

DISTRICT: Savannah

PREPARED: 2/3/2020

PROJECT: Brunswick Harbor Modification Study - ALT 9 w O&M LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report; Report Name and date

DISTRICT: Savannah

	WBS Structure		ESTIMATE	D COST		PROJEC	T FIRST COST Dollar E		(Constant	TOTAL PROJECT COST (FULLY FUNDED)					
			nate Prepareo ate Price Lev		3-Feb-20 1-Oct-19		m Year (Budge ve Price Level I		2020 1 -Oct-19						
			F	RISK BASED											
WBS	Civil Works	COST	CNTG	CNTG	TOTAL	ESC	COST	CNTG	TOTAL	Mid-Point	ESC	COST	CNTG	FULL	
NUMBER	Feature & Sub-Feature Description	<u>(\$K)</u>	(\$K)	<u>(%)</u> E	<u>(\$K)</u>	(%)	<u>(\$K)</u>	(\$K)	<u>(\$K)</u>	Date	(%)	<u>(\$K)</u>	<u>(\$K)</u>	<u>(\$K)</u>	
Α	<i>B</i> Bend Widener, Turning Basin Expansion, Meeting Area West of Sidney Lanier Bridge and Meeting Area at St. Simon's Sound	С	D	E	F	G	Н	I	J	Р	L	М	N	0	
09	CHANNELS & CANALS	\$19,006	\$6,462	34.0%	\$25,468		\$19,006	\$6,462	\$25,468	2025Q3	17.9%	\$22,412	\$7,620	\$30,032	
18	CULTURAL RESOURCE PRESERVATION	\$1,323	\$450	34.0%	\$1,773		\$1,323	\$450	\$1,773	2026Q3	21.5%	\$1,607	\$546	\$2,153	
	CONSTRUCTION ESTIMATE TOTALS:	\$20,329	\$6,912	34.0%	\$27,241	_	\$20,329	\$6,912	\$27,241	-		\$24,019	\$8,166	\$32,185	
01	LANDS AND DAMAGES	\$13	\$3	25.0%	\$16		\$13	\$3	\$16	2022Q1	6.3%	\$13	\$3	\$17	
30	PLANNING, ENGINEERING & DESIGN														
0.5%	Project Management	\$102	\$35	34.0%	\$137		\$102	\$35	\$137	2023Q3	14.1%	\$116	\$40	\$156	
0.0%	Planning & Environmental Compliance	\$2	\$1	34.0%	\$3		\$2	\$1	\$3	2023Q3	14.1%	\$2	\$1	\$3	
5.2%	0 0 0	\$1,057	\$359	34.0%	\$1,416		\$1,057	\$359	\$1,416	2023Q3	14.1%	\$1,206	\$410	\$1,616	
0.0%	Reviews, ATRs, IEPRs, VE	\$2	\$1	34.0%	\$3		\$2	\$1	\$3	2023Q3	14.1%	\$2	\$1	\$3	
0.3%	Life Cycle Updates (cost, schedule, risks)	\$51	\$17	34.0%	\$68		\$51	\$17	\$68	2023Q3	14.1%	\$58	\$20	\$78	
0.0%		\$2	۹1 <i>7</i> \$1	34.0%	φ00 \$3		\$2	\$17 \$1	φ00 \$3	2025Q3	23.0%	\$30 \$2	پر \$1	\$3	
3.0%		\$610	\$207	34.0%	\$817		\$610	\$207	\$817	2025Q3	23.0%	\$751	\$255	\$1,006	
0.0%		\$2	\$1	34.0%	\$3		\$2	\$1	\$3	2023Q3	14.1%	\$2	¢_=== \$1	\$3	
0.0%	Adaptive Management & Monitoring	\$2	\$1	34.0%	\$3		\$2	\$1	\$3	2023Q3	14.1%	\$2	\$1	\$3	
0.0%		\$2	\$1	34.0%	\$3		\$2	\$1	\$3	2023Q3	14.1%	\$2	\$1	\$3	
31	CONSTRUCTION MANAGEMENT														
8.0%	Construction Management	\$1,626	\$553	34.0%	\$2,179		\$1,626	\$553	\$2,179	2025Q3	23.0%	\$2,001	\$680	\$2,681	
0.3%	Project Operation:	\$51	\$17	34.0%	\$68		\$51	\$17	\$68	2025Q3	23.0%	\$63	\$21	\$84	
0.3%	Project Management	\$51	\$17	34.0%	\$68		\$51	\$17	\$68	2025Q3	23.0%	\$63	\$21	\$84	
	CONTRACT COST TOTALS:	\$23,902	\$8,125		\$32,027		\$23,902	\$8,125	\$32,027			\$28,303	\$9,622	\$37,924	

PREPARED: 2/3/2020

PROJECT: Brunswick Harbor Modification Study - ALT 9 w O&M LOCATION: Brunswick, Georgia

This Estimate reflects the scope and schedule in report; Report Name and date

DISTRICT: Savannah

	WBS Structure	ESTIMATED COST					PROJECT FIRST COST (Constant Dollar Basis)				TOTAL PROJECT COST (FULLY FUNDED)					
			nate Prepareo ate Price Lev		1-Oct-19		am Year (Budge tive Price Level		2020 1 -Oct-19							
09	Civil Works <u>Feature & Sub-Feature Description</u> B O&M Costs CHANNELS & CANALS Total 50-Yr O&M Costs	COST <u>(\$K)</u> C \$7,498	F CNTG <u>(\$K)</u> D \$2,549	RISK BASED CNTG <u>(%)</u> E 34.0%	TOTAL _ <u>(\$K)</u> <i>F</i> \$10,047	ESC <u>(%)</u> G	COST _ <u>(\$K)</u> <i>H</i> \$7,498	CNTG <u>(\$K)</u> <i>I</i> \$2,549	TOTAL _ <u>(\$K)</u> J \$10,047	Mid-Point <u>Date</u> P 2045Q2	ESC <u>(%)</u> <i>L</i> 111.4%	COST <u>(\$K)</u> M \$15,850	CNTG <u>(\$K)</u> <i>N</i> \$5,389	FULL _ <u>(\$K)</u> O \$21,238		
01	CONSTRUCTION ESTIMATE TOTALS: LANDS AND DAMAGES	\$7,498	\$2,549	34.0% 25.0%	\$10,047	_	\$7,498	\$2,549	\$10,047	-		\$15,850	\$5,389	\$21,238		
30	PLANNING, ENGINEERING & DESIGN															
0.5%	Project Management	\$37	\$13	34.0%	\$50		\$37	\$13	\$50	2044Q1	157.1%	\$95	\$32	\$127		
0.0%	Planning & Environmental Compliance	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2044Q1	157.1%	\$3	\$1	\$3		
5.2%	Engineering & Design	\$390	\$133	34.0%	\$523		\$390	\$133	\$523	2044Q1	157.1%	\$1,003	\$341	\$1,344		
0.0%	Reviews, ATRs, IEPRs, VE	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2044Q1	157.1%	\$3	\$1	\$3		
0.3%	Life Cycle Updates (cost, schedule, risks)	\$19	\$6	34.0%	\$25		\$19	\$6	\$25	2044Q1	157.1%	\$49	\$17	\$65		
0.0%	Contracting & Reprographics	\$1	\$0	34.0%	¢20 \$1		\$1 \$1	\$0	¢20 \$1	2045Q2	170.7%	\$3	\$1	\$4		
3.0%		\$225	\$77	34.0%	\$302		\$225	\$77	\$302	2045Q2	170.7%	\$609	\$207	\$816		
0.0%	Planning During Construction	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2044Q1	157.1%	\$3	· \$1	\$3		
0.0%	Adaptive Management & Monitoring	\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2044Q1	157.1%	\$3	\$1	\$3		
0.0%		\$1	\$0	34.0%	\$1		\$1	\$0	\$1	2044Q1	157.1%	\$3	\$1	\$3		
31	CONSTRUCTION MANAGEMENT															
8.0%	Construction Management	\$600	\$204	34.0%	\$804		\$600	\$204	\$804	2045Q2	170.7%	\$1,624	\$552	\$2,176		
0.3%	Project Operation:	\$19	\$6	34.0%	\$25		\$19	\$6	\$25	2045Q2	170.7%	\$51	\$17	\$69		
0.3%	Project Management	\$19	\$6	34.0%	\$25		\$19	\$6	\$25	2045Q2	170.7%	\$51	\$17	\$69		
=	CONTRACT COST TOTALS:	\$8,813	\$2,996		\$11,809	=	\$8,813	\$2,996	\$11,809			\$19,348	\$6,578	\$25,926		

PREPARED: 2/3/2020

U.S. Army Corps of Engineers Project : BHMS_CH_PIPE_CEDEP_MII

Time 10:56:26

Title Page

New Report

This report presents the U.S. Army Corps of Engineers (USACE), Savannah District (CESAS), plan to examine harbor modifications to reduce transportation cost inefficiencies experienced by the largest ship type (roll-on/roll-off) utilizing Brunswick Harbor. The purpose of the study is to investigate existing conditions in the Brunswick Harbor and propose modifications with the purpose of contributing to national economic development while protecting the nation's environment and considering improved safety for navigating vessels. This estimate is in the alternatives phase. The project is in Brunswick, Georgia in Glynn County. Alternatives generated by the study include four different dredging scenarios involving four areas and potentially two different disposal sites. The sites all include deepening and/or widening of the existing navigation channel. The areas include the following:

•Cedar Hammock Range Bend

Turning Basin

•Sidney Lanier Bridge

•St. Simon's Channel Widener

All baseline costs are calculated using the existing Andrews Island as a disposal area. The navigation channel has historically been maintained using a suction cutter head dredge with materials being disposed of on Andrews Island.

Estimated by CELRC Designed by CESAS Prepared by George Chartouni Preparation Date 1/30/2020 Effective Date of Pricing 1/30/2020 Estimated Construction Time Days

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ALTERNATIVE SUMMARY Page 1

Description	Quantity	иом	Project Cost
ALTERNATIVE SUMMARY			
ALT 02 Bend Widener Only	205,000	CY	5,985
09 Channels and Canals	1 6	EA	5,424
18 Cultural Resource Preservation	1 6	EA	562
ALT 03 Turning Basin Only	436,000	CY	5,362
09 Channels and Canals	1 6	EA	4,800
18 Cultural Resource Preservation	1 8	EA	562
ALT 04 Sidney Lane Channel Widener Only	800,000	CY	13,055
09 Channels and Canals	1 6	EA	12,493
18 Cultural Resource Preservation	1 6	EA	562
ALT 05 St. Simon's Meeting Area Only	1 (CY	562
18 Cultural Resource Preservation	1 6	EA	562
ALT 06 Bend Widener and Turning Basin Expansion	551,000 (CY	9,285
09 Channels and Canals	1 6	EA	8,283
18 Cultural Resource Preservation	1 8	EA	1,001
ALT 07 Bend Widener, Turning Basin Expansion, and Meeting Area West of Sidney Lanier Bridge	1,352,000	CY	20,269
09 Channels and Canals	1 6	EA	19,006
18 Cultural Resource Preservation	1 8	EA	1,262
ALT 08 Bend Widener, Turning Basin Expansion, and Meeting Area at St. Simon's Sound	551,000 (CY	9,716
09 Channels and Canals	1 6	EA	8,453
18 Cultural Resource Preservation	1 8	EA	1,262
ALT 9 Bend Widener, Turning Basin Expansion, Meeting Area West of Sidney Lanier Bridge and Meeting Area at St. Simon's Sound	1,352,000	CY	20,329
09 Channels and Canals	1 6	EA	19,006
18 Cultural Resource Preservation	1 6	EA	1,323

	0	Task Mode	Task Name	Start	Actual Start	Finish	Actual Finish	Resource Names	Duration	019 Half 2, 2019 Half 1, 2020 Half 2, 2020 M A M J J A S O N D J F M A M J J A S
	~		Feasibility Cost-Sharing Agreement Execution	Thu 4/11/19	Thu 4/11/19	Thu 4/11/19	Thu 4/11/19		0 days	• 4/11
2		→	TOTAL TIME TO AMM	Fri 4/12/19	Fri 4/12/19	Tue 9/10/19	NA		108 days	
3	 	→	Receive Federal Funds	Mon 4/15/19	Mon 4/15/19	Thu 4/18/19	Thu 4/18/19	PM	4 days	⊳ _PM
4	 Image: A start of the start of	→	Receive Non-Federal Funds	Fri 4/12/19	Fri 4/12/19	Mon 4/22/19	Mon 4/22/19	PM	7 days	PM
5	 	→	Initial Scoping	Wed 5/1/19	Wed 5/1/19	Wed 5/15/19	Wed 5/15/19	PLAN	11 days	LAN PLAN
6	 	- >	Planning Charrette	Thu 5/16/19	Thu 5/16/19	Fri 5/17/19	Fri 5/17/19	PLAN	2 days	. PLAN
7	ŧ.	- >	NEPA Scoping	Mon 6/3/19	Mon 6/3/19	Wed 7/31/19	NA	ENV	43 days	ENV
8	i.	- >	USFWS Consultation	Mon 6/3/19	Mon 6/3/19	Wed 7/31/19	NA	ENV	43 days	ENV
9	~	- >	Alternatives Formulation	Mon 6/3/19	Mon 6/3/19	Wed 7/24/19	Wed 7/24/19	PLAN	38 days	PLAN
10		*	Briefing to PM-P/C Chief and Leads	Mon 6/10/19	Mon 6/10/19	Mon 6/10/19	Mon 6/10/19	PLAN	1 day	PLAN
11	/		Review Plan	Fri 6/7/19	Fri 6/7/19	Tue 9/10/19	Tue 9/10/19		68 days	
12	/	- >	Review Plan PCX Endorsement	Fri 6/7/19	Fri 6/7/19	Wed 7/10/19	Wed 7/10/19	PLAN	24 days	PLAN
13			Review Plan SAD Review	Thu 7/11/19	Thu 7/11/19	Fri 8/30/19	Fri 8/30/19	PLAN	37 days	PLAN
14	· /		Review Plan Approval by SAD	Sat 8/31/19	Sat 8/31/19	Sat 8/31/19	Sat 8/31/19	PLAN	0 days	8/31
15	· ·		Post Review Plan (CW035) 6/25/201		Tue 9/10/19	Tue 9/10/19	Tue 9/10/19	PLAN	1 day	PLAN
16			Project Management Plan	Mon 5/20/19	Mon 5/20/19	Fri 7/19/19	Fri 7/19/19		45 days	
17		-5	Feedback from PDT	Mon 5/20/19	Mon 5/20/19	Tue 6/4/19	Tue 6/4/19	PM	12 days	PM
18			PDT Review	Wed 6/5/19	Wed 6/5/19	Fri 6/7/19	Fri 6/7/19	PM	3 days	PM
19	× ./		Manager Review	Mon 6/10/19	Mon 6/10/19	Mon 6/17/19	Mon 6/17/19	PM	6 days	PM
20	× ./		-	Tue 6/18/19	Tue 6/18/19	Thu 7/18/19	Thu 7/18/19	PM	23 days	PM
20	×	→ 	PMP Approval (CW040) 6/25/2019		Fri 7/19/19	Fri 7/19/19	Fri 7/19/19	PM	1 day	PM
22	× ./	→ 	AMM Deliverables	Mon 5/27/19	Mon 5/27/19	Fri 6/14/19	Fri 6/14/19	• •	15 days	
22	× ./	→ 	Decision Log	Wed 6/5/19	Wed 6/5/19	Fri 6/14/19	Fri 6/14/19	PLAN	7 days	
	×	-> 	Risk Register	Mon 5/27/19	Mon 5/27/19	Fri 6/14/19	Fri 6/14/19	PLAN	14 days	PLAN
24	×		Decision Management Plan	Wed 6/5/19	Wed 6/5/19	Fri 6/14/19	Fri 6/14/19	PLAN	8 days	– PLAN
25	×	->			Mon 5/27/19		Fri 6/14/19	PLAN		PLAN
26	×	→	Report Summary	Mon 5/27/19		Fri 6/14/19			15 days	PLAN PLAN
27	×	- >	Slides	Mon 5/27/19	Mon 5/27/19	Fri 6/14/19	Fri 6/14/19	PLAN	15 days	
28	×	- >	Project Checklist	Tue 6/4/19	Tue 6/4/19	Fri 6/14/19	Fri 6/14/19	PLAN	9 days	– PLAN
29	<u> </u>	→	Section 1002 Letter to NFS	Mon 6/3/19	Mon 6/3/19	Fri 7/5/19	Fri 7/5/19	514	25 days	
30	<	→	Draft Letter	Mon 6/3/19	Mon 6/3/19	Fri 6/14/19	Fri 6/14/19	PM	10 days	- PM
31		→	Out for Signatures	Tue 6/18/19	Tue 6/18/19	Wed 7/3/19	Wed 7/3/19	PM	12 days	PM
32		→	Section 1002 Letter to NFS 7/10/20		Tue 7/2/19	Fri 7/5/19	Fri 7/5/19	PM	4 days	₽РМ
33		*	IPR with DQC/SAD/ATR Team	Tue 6/18/19	Tue 6/18/19	Tue 6/18/19	Tue 6/18/19	PLAN	1 day	PLAN
34		→	DQC	Thu 6/13/19	Thu 6/13/19	Mon 6/24/19	Mon 6/24/19	PLAN	6 days	PLAN
35		⇒	DQC - Incorporate and Respond	Tue 6/25/19	Tue 6/25/19	Wed 6/26/19	Wed 6/26/19	PLAN	2 days	PLAN
36		→	Submit Read-Aheads	Wed 6/26/19	Wed 6/26/19	Fri 6/28/19	Fri 6/28/19	PLAN	0 days	6/28
37		*	Alternatives Milestone Meeting (CW261) 7/15/2019	Mon 7/15/19	Mon 7/15/19	Mon 7/15/19	Mon 7/15/19	PLAN	1 day	T PLAN
38		- 	TOTAL TIME TO TSP	Mon 6/17/19	Mon 6/17/19	Thu 4/9/20	NA		213 days	
39	\checkmark	→	AMM MFR	Tue 7/16/19	Tue 7/16/19	Fri 8/2/19	Fri 8/2/19	PLAN	14 days	LAN_PLAN_
40		- >	NED Analysis	Mon 8/5/19	NA	Fri 10/25/19	NA	ECON	60 days	ECON
41		→	Begin Draft Integrated Report	Mon 8/5/19	Mon 8/5/19	Fri 1/10/20	NA		115 days	n
42		- >	Cultural Resources	Mon 8/5/19	Mon 8/5/19	Fri 1/10/20	NA		115 days	r1
43	ŧ.	- >	Impacts Analysis	Mon 8/5/19	Mon 8/5/19	Fri 1/10/20	NA	CULT	115 days	CULT
44	ŧ.	→	Develop Programmatic Agreement	Mon 8/5/19	NA	Fri 1/10/20	NA	CULT	115 days	CULT
45		- >	Environmental Assessment	Mon 8/5/19	NA	Fri 1/10/20	NA	ENV	115 days	
46		- \$	Climate Change Analysis	Mon 10/28/19	NA	Fri 11/22/19	NA		4 wks	
roiect	: BH	MS Scheo	Task dule v3	Summar	y F		Inactive Milestone	۰ I	Duration-only	Start-only E External M
		1/21/19	Split	Project S	Summary I	0	Inactive Summary		Manual Summary Rol	
			Milestone 🔶	Inactive	Task		Manual Task		Manual Summary	External Tasks Progress

20				Half	1, 2	021				На	lf 2, 2	021				Half	1, 20)22			
S	0	N	D	Half J	F	M	A	М	J	J	lf 2, 2 A	s	0	Ν	D	J	F	м	Α	М	J
Mile	estor	ne		\diamond					Ma	nual	Prog	ress		_							
				÷					u		. Sgi										
				·				_													

0	Task Mode	Task Name	Start	Actual Start	Finish	Actual Finish	Resource Names		019 Half 2, 2019	Half 1, 2020	Half 2, 202
,	Mode	Sediments Analysis	Mon 8/5/19	NA	Fri 8/30/19	NA	ENG	4 wks	M A M J J A S O	N D J F M A	AJJA
3	-5	Beneficial Use Analysis	Mon 8/5/19	NA	Fri 9/13/19	NA		6 wks	↓		
)		Critical Path	Mon 6/17/19	Mon 6/17/19	Wed 2/19/20	NA		177.5 days			
)	*	Bathymetry Survey	Mon 6/17/19	Mon 6/17/19	Tue 6/25/19	NA	ENG	7 days	ENG		
•	*	Data Collection	Mon 7/8/19	NA	Fri 7/19/19	NA	ENG	10 days	ENG		
2	~	Hydrodynamic Modeling		NA	Fri 10/11/19	NA	ENG	13 wks		ENG	
	_	ERDC Ship Simulation	Mon 10/14/19		Fri 12/6/19	NA	ENG	8 wks	, I I I I I I I I I I I I I I I I I I I	ENG	
•	*	Ship Simulation - in-person		NA	Fri 12/6/19	NA	ENG	5 days	ſ	ENG	
T	~ =>	HarborSym	Mon 10/28/19		Fri 1/3/20	NA	ECON	10 wks	i l	ECON	
; ; 🕴		Conceptual Design		NA	Wed 12/18/19		ENG	1.5 wks	,	ENG	
, <u> </u>		Conceptual Cost Estimate	Wed 12/18/19		Fri 1/3/20	NA	ENG	2.5 wks		ENG	
3		Cost ATR on Measures	Mon 1/6/20	NA	Fri 1/31/20	NA	ENG	4 wks		ENG	
, <mark>T</mark>)	→ 	NED Analysis Cost Inclusion and Re		NA	Wed 2/19/20	NA	ECON	2.5 wks		ECON	
)	→ 	Select TSP 12/20/2019	Wed 2/19/20	NA	Wed 2/19/20	NA	PLAN	0 days		2/19	
	→ 	Appendices Finalization Draft	Mon 11/25/19		Wed 2/15/20 Wed 3/11/20	NA		77.5 days			
2	→ 	Environmental Appendix		NA	Wed 3/11/20 Wed 3/11/20	NA	ENV	3 wks			
		Climate Change Appendix	Mon 11/25/19		Fri 12/20/19	NA		4 wks			
3	→	Real Estate Appendix		NA	Wed 3/4/20	NA	RE	2 wks		RE	
•	→				Wed 3/4/20 Wed 1/22/20	NA	ENG	2 wks 5 wks			
5	->	Engineering Appendix	Wed 12/18/19							ECON	
5	->	Economics Appendix		NA	Wed 3/4/20	NA	ECON	2 wks			
′ 📍	-\$	Cost Appendix	Wed 1/22/20	NA	Wed 2/19/20	NA	ENG	4 wks		ENG	
3	->	Deliverables	Wed 3/11/20	NA	Wed 3/25/20	NA	DI ANI	10 days			
•	->	Draft Feasibility Report		NA	Wed 3/25/20	NA	PLAN	2 wks			
)	->	Decision Log	Wed 3/11/20	NA	Wed 3/25/20	NA	PLAN	2 wks			
	->	Risk Register	Wed 3/11/20	NA	Wed 3/25/20	NA	PLAN	2 wks		PLA	
2		Decision Management Plan		NA	Wed 3/25/20	NA	PLAN	2 wks		PLA	
;	-5	Report Summary	Wed 3/11/20	NA	Wed 3/25/20	NA	PLAN	2 wks		PLA	N
i 🛉	->	Slides	Wed 3/11/20	NA	Wed 3/25/20	NA	PLAN	2 wks		▼ PLA	N
5 †	->	Project Checklist	Wed 3/11/20	NA	Wed 3/25/20	NA	PLAN	2 wks		♥_ PLA	N
; 🛉	- >	DQC of RAH Package	Wed 3/25/20	NA	Wed 4/1/20	NA	PLAN	1 wk		PL A	N
' 🛉	-5	Submit Read-Aheads	Wed 4/1/20	NA	Thu 4/2/20	NA	PLAN	1 eday		PL/	NN N
3	*	TSP Milestone (CW262) 4/9/2020	Thu 4/9/20	NA	Thu 4/9/20	NA	PLAN	0 days		X 4/	'9
)	- \$	TIME TO DRAFT RELEASE	Thu 4/9/20	NA	Thu 6/11/20	NA		46 days		r	
) 🛉	- \$	TSP MFR	Thu 4/9/20	NA	Wed 4/22/20	NA	PLAN	10 days		F	PLAN
i i		DQC	Thu 4/9/20	NA	Wed 4/15/20	NA	PLAN	5 days		PI	LAN
2	- >	DQC - Incorporate and Respond	Thu 4/16/20	NA	Wed 4/22/20	NA	PLAN	5 days		F	PLAN
3	- 5	Legal Review	Thu 4/23/20	NA	Wed 5/13/20	NA	OC	15 days		+	OC
ļ	- >	Incorporate Legal Review	Thu 5/14/20	NA	Wed 5/27/20	NA	PLAN	10 days			
5		Finalize Draft Report	Thu 5/28/20	NA	Wed 6/10/20	NA	PLAN	10 days			
5	*	Draft Feasibility Release (CW250)	Thu 6/11/20	NA	Thu 6/11/20	NA	PLAN	1 day			
		6/11/2020									
,	-5	TIME TO ADM	Thu 6/11/20	NA	Thu 10/15/20	NA		90 days			r
3	- >	Public Review	Thu 6/11/20	NA	Fri 7/24/20	NA		43 edays			Г Т п
)		ATR	Thu 6/11/20	NA	Fri 7/24/20	NA		43 edays			†
)	*	Resource Agency Review	Thu 6/11/20	NA	Fri 7/24/20	NA		43 edays			
, i		Section 404(b)(1) Evaluation	Thu 6/11/20	NA	Fri 7/24/20	NA	ENV	43 edays			ENV
2	⇒	Water Quality Certification	Thu 6/11/20	NA	Fri 7/24/20	NA	ENV	43 edays			ENV
		Task	Summar			Inactive Milestone	•	Duration-only	Start-only	Γ.	External
-	MS Schee	dule v3			n n	Inactive Summary	-	Manual Summary Rollu		-	Deadline
e: Thu	11/21/19		,		Ш	2		2		,	
		Milestone 🔶	Inactive	I ask		Manual Task		Manual Summary	External T	Lasks	Progress

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<i>F</i>	Attachment	3 - Project Schedule											
	Task Mode	Task Name	Start	Actual Start	Finish	Actual Finish	Resource Names	Duration	019 M A M	Half 2, 2019	Half 1, 2020 N D J F M		Half 2, 2020 J A S
93 🛉	->	Coastal Zone Consistency	Thu 6/11/20	NA	Fri 7/24/20	NA	ENV	43 edays					ENV
94	- 5	Incorporate and Respond to Comments	Mon 7/27/20	NA	Fri 9/4/20	NA	PLAN	30 days	_				P
95	- >	Optimized TSP Analysis	Fri 6/12/20	NA	Fri 9/4/20	NA	ECON	61 days				*	E
96	- 5	Geotech for Feasibility Level Design	Fri 6/12/20	NA	Thu 10/15/20	NA		90 days				r	
97	- 5	Boring Location Identification	Fri 6/12/20	NA	Thu 6/18/20	NA	ENG	1 wk				1 E	ENG
98	-5	Cultural 106 Consolations for Borings	s Fri 6/19/20	NA	Thu 7/23/20	NA	CULT	5 wks				*	CULT
99 🕴	- 5	Borings (Task Order)	Fri 6/26/20	NA	Thu 10/15/20	NA	ENG	16 wks	_				
100	- >	Deliverables	Mon 9/7/20	NA	Fri 9/18/20	NA		10 days	_				
101 🕴	- >	Feasibility Report	Mon 9/7/20	NA	Fri 9/18/20	NA	PLAN	10 days	_				
102 🕴	- >	Decision Log	Mon 9/7/20	NA	Fri 9/18/20	NA	PLAN	10 days					
103 🕴	- >	Risk Register (Planning)	Mon 9/7/20	NA	Fri 9/18/20	NA	PLAN	10 days					
104 🕴	- 5	Decision Management Plan	Mon 9/7/20	NA	Fri 9/18/20	NA	PLAN	10 days	_				
105 🕴	- 5	Report Summary	Mon 9/7/20	NA	Fri 9/18/20	NA	PLAN	10 days					
106 🛉	- 5	Slides	Mon 9/7/20	NA	Fri 9/18/20	NA	PLAN	10 days					
107 🕴	-5	Project Checklist	Mon 9/7/20	NA	Fri 9/18/20	NA	PLAN	10 days					
108	-5	Prepare and send documents for ADM	Mon 9/21/20	NA	Fri 10/2/20	NA	PLAN	10 days					
109	-5	Send ADM Package	Fri 10/2/20	NA	Fri 10/2/20	NA	PLAN	0 days					
110	*	Agency Decision Milestone (CW263) 10/9/2020	Fri 10/9/20	NA	Fri 10/9/20	NA	PLAN	0 days					
111	- 	TIME TO FINAL REPORT	Mon 10/5/20	NA	Fri 6/11/21	NA		179 days	_				
112	- 5	ADM MFR	Fri 10/9/20	NA	Thu 10/22/20	NA	PLAN	10 days					
113	- 5	Execute Programmatic Agreement	Mon 10/5/20	NA	Fri 2/19/21	NA	CULT	100 days					
114 🕴	- 5	Feasibility Level Design	Fri 10/9/20	NA	Thu 12/3/20	NA	ENG	8 wks					
115	-5	Design Appendix Complete	Fri 12/4/20	NA	Thu 12/10/20	NA	ENG	1 wk					
116	-5	Cost/Schedule Risk Register Update	Fri 12/11/20	NA	Thu 12/17/20	NA	ENG	1 wk					
117 🍦	*	Cost Estimate	Fri 1/1/21	NA	Thu 1/14/21	NA	ENG	2 wks					
118	÷	Cost and Schedule Risk Analysis (incl risk model)	Fri 12/18/20	NA	Thu 12/24/20	NA	ENG	1 wk					
119 🕴	*	Total Project Cost Summary & Cost App	p Fri 1/8/21	NA	Thu 1/21/21	NA	ENG	2 wks					
120 🕴	- 	Cost Certification	Wed 1/13/21	NA	Tue 2/9/21	NA	ENG	4 wks					
121	- 	Update Economics BCR Ratio	Wed 2/10/21	NA	Tue 3/2/21	NA	ECON	3 wks					
122	- 	Update Report	Wed 3/3/21	NA	Tue 3/16/21	NA	PLAN	2 wks					
123	- 	DQC	Wed 3/17/21	NA	Tue 3/30/21	NA	PLAN	2 wks					
124	- 5	DQC - Incorporate and Respond	Wed 3/31/21	NA	Tue 4/6/21	NA	PLAN	1 wk					
125	- 5	ATR	Wed 4/7/21	NA	Tue 4/27/21	NA	PLAN	3 wks					
126	-5	ATR - Incorporate and Respond	Wed 4/28/21	NA	Tue 5/11/21	NA	PLAN	2 wks					
127	-5	Final Legal Review	Wed 5/12/21	NA	Tue 5/25/21	NA	PLAN	2 wks					
128	->	Finalize Report	Wed 5/26/21	NA	Tue 6/8/21	NA	PLAN	2 wks					
129	*	Final Report Complete (CW160) 6/11/	2Fri 6/11/21	NA	Fri 6/11/21	NA	PLAN	0 days	_				
130	- >	TIME TO FINAL REPORT TRANSMITTA	L Fri 6/11/21	NA	Wed 8/11/21	NA		43 days					
131	->	Prepare Final Report Transmittal Packa	ųFri 6/11/21	NA	Thu 8/5/21	NA	PLAN	8 wks					
132	*	Final Report Transmittal (CW260) 8/11/2021	Wed 8/11/21	NA	Wed 8/11/21	NA	PLAN	0 days					
133	*	TIME TO CHIEF'S REPORT	Wed 8/11/21	NA	Fri 3/11/22	NA		153 days					
134	→	State and Agency Review, Final Policy Review	Wed 8/11/21	NA	Tue 9/21/21	NA		30 days					
135 🏢	->	Signed Chief's Report	Tue 10/5/21	NA	Fri 3/11/22	NA		114 days					
136	*	Signed Chief's Report (CW270) 4/11/2	2 Fri 3/11/22	NA	Fri 3/11/22	NA		0 days					
		Task	Summa	ry		Inactive Milestone	*	Duration-only		Start-only	C		External Mil
5	HMS Sche	dule v3 Split		Summary	0 N	Inactive Summary		Manual Summary Ro	ollup	Finish-only	3		Deadline
Jate: Thu	11/21/19	Milestone	Inactive			Manual Task		Manual Summary		External Tasl			Progress

Manual Task

Attachment 3 - Project Schedule

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Inactive Task

Milestone

Manual Summary

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External Tasks

