



Amite River and Tributaries East of the Mississippi River, Louisiana



Appendix C: Cost Engineering December 2023

CONTENTS

Section 1—AMITE RIVER & TRIBUTARIES COST – FINAL ARRAY OF ALTERNATIVES.....	1
1.1 Nonstructural Measures – Raising, Dry Floodproofing, Wet Floodproofing.....	1
1.1.1 Cost Estimate Development	2
1.1.2 Estimate Structure	2
1.1.3 Bid Competition	5
1.1.4 Contract Acquisitions Strategy.....	5
1.1.5 Labor Shortages	5
1.1.6 Labor Rate	6
1.1.7 Materials	6
1.1.8 Quantities.....	6
1.1.9 Equipment.....	6
1.1.10 Fuels	6
1.1.11 Crews.....	6
1.1.12 Unit Prices.....	7
1.1.13 Relocation Costs.....	7
1.1.14 Mobilization.....	7
1.1.15 Field Office Overhead.....	7
1.1.16 Home Office Overhead	7
1.1.17 Taxes	7
1.1.18 Bond.....	7
1.1.19 Real Estate Costs	7
1.1.20 Environmental Costs.....	8
1.1.21 Cultural Resources Costs	8
1.1.22 Planning, Engineering and Design (PED)	8
1.1.23 Supervision and Administration (S&A)	8
1.1.24 Contingencies	8
1.1.25 Escalation	8
1.1.26 Hazardous, Toxic, and Radioactive Waste (HTRW)	9
1.1.27 Schedule.....	9
1.1.28 Cost Estimates.....	9
1.1.29 Total Project Cost Summary.....	12
Section 2—AMITE RIVER & TRIBUTARIES COST – FOCUSED ARRAY OF ALTERNATIVES	13
2.1 General.....	13
2.1.1 Cost Estimate Development	13
2.1.2 Estimate Structure	13
2.1.3 Bid Competition	13

2.1.4	Contract Acquisition Strategy.....	13
2.1.5	Labor Shortages.....	13
2.1.6	Labor Rate.....	14
2.1.7	Materials.....	14
2.1.8	Quantities.....	14
2.1.9	Equipment.....	14
2.1.10	Severe and Rental Rates.....	15
2.1.11	Fuels.....	15
2.1.12	Crews.....	15
2.1.13	Unit Prices.....	15
2.1.14	Relocation Costs.....	15
2.1.15	Mobilization.....	16
2.1.16	Field Office Overhead.....	16
2.1.17	Overhead Assumptions.....	16
2.1.18	Home Office Overhead.....	16
2.1.19	Taxes.....	17
2.1.20	Bond.....	17
2.1.21	Real Estate Costs.....	17
2.1.22	Environmental Costs.....	17
2.1.23	Cultural Resources Costs.....	17
2.1.24	Planning, Engineering, and Design (PED).....	17
2.1.25	Supervision and Administration (S&A).....	17
2.1.26	Contingencies.....	18
2.1.27	Escalation.....	18
2.1.28	Hazardous, Toxic, and Radioactive Waste (HTRW).....	18
2.1.29	Schedule.....	18
2.1.30	Cost Estimates.....	18

LIST OF ATTACHMENTS

Attachment 1: TSP – Total Project Cost Summary (TPCS).....	22
Attachment 2: TSP - MII Cost Estimate Output.....	24
Attachment 3: TSP - Project Schedule.....	25

LIST OF TABLES

Table C:1-1. Plan 2: Nonstructural NED Plan (18%PED, 10%S&A).....	9
Table C:1-2. Plan 2: Nonstructural NED Plan (10%PED, 10%S&A).....	10

Table C:1-3. Plan 3: Nonstructural NED Plan + OSE Increment 1(18%PED, 10%S&A)	10
Table C:1-4. Plan 3: Nonstructural NED Plan + OSE Increment 1(10%PED, 10%S&A)	10
Table C:1-5. Plan 4: Nonstructural NED Plan + OSE Increment 2(18%PED, 10%S&A)	11
Table C:1-6. Plan 4: Nonstructural NED Plan + OSE Increment 2(10%PED, 10%S&A)	11
Table C:2-1. Darlington Dam – Reduced Wet	19
Table C:2-2. Darlington Dam - Dry.....	19
Table C:2-3. Sandy Creek Dry Dam	19
Table C:2-4. Three Tributary Dry Dams.....	20
Table C:2-5. Darlington Dry Dam With 0.04 AEP Elevations & Floodproofing	21

SECTION 1

AMITE RIVER & TRIBUTARIES COST – FINAL ARRAY OF ALTERNATIVES

1.1 NONSTRUCTURAL MEASURES – RAISING, DRY FLOODPROOFING, WET FLOODPROOFING

With the removal of the Dry Dam alternative from further consideration, the next highest NED alternative and likely the only economically justified one was the Nonstructural Plan. The following four plans were included in the final array of alternatives:

Plan 1: No Action Alternative – Under this alternative, no Federal action would be taken to reduce flooding risk to the properties within the study areas. Implementation of the No Action Alternative (NAA) would result in the Future Without Project condition. The NAA serves as a baseline against which the proposed alternatives can be evaluated. Evaluation of the NAA involves assessing the economic and environmental effects that would result over the period of analysis if the proposed action did not take place.

Plan 2: Nonstructural NED Plan – NED Plan identified the number of structures in the 0.1, 0.04, and 0.02 AEP floodplain then a plan was chosen by identifying the highest net benefits floodplain event within 57 aggregates (0.1- 46 aggregates, 0.04 – 5 aggregates, 0.02 – 6 aggregates) floodplain to 0.01 AEP BFE for a total of 3,117 structures. Aggregates were arranged based on several factors (See Appendix G: Economic and Social Consideration). Plan 2 would include the elevation of 2,748 residential structures and Dry/Wet floodproofing of 369 nonresidential structures.

Plan 3: Nonstructural NED Plan + OSE Increment 1 – NED Plan expansion to include Socially Vulnerable sub aggregations that have positive net benefits in addition to the eligible structures included in Plan 2. Increased eligibility of structures by 72. Plan 3 would include the elevation of 2,815 residential structures and Dry/Wet floodproofing of 374 nonresidential structures.

Plan 4: Nonstructural NED Plan + OSE Increment 2 – NED Plan expansion to include all the additional Socially Vulnerable sub aggregations with the next highest aggregation regardless of economic justification on a reach level with residential structures considered for elevation and nonresidential structures considered for floodproofing. These additional sub aggregations to the NED Plan increased eligibility of structures by 181. Plan 4 would include the elevation of 2,918 residential structures and Dry/Wet floodproofing of 380 nonresidential structures.

1.1.1 Cost Estimate Development

The cost estimates for the final array of alternatives were prepared based on readily available USACE data and quantities provided by the project delivery team (PDT) and were developed using MCACES MII cost estimating software. The cost estimates used the standard approaches for a feasibility estimate structure regarding labor, equipment, materials, crews, unit prices, quotes, and sub and prime contractor markups. This philosophy was taken wherever practical within the time constraints. It was supplemented with estimating information from other sources, where necessary, such as quotes, bid data, Architect-Engineer (A-E) estimates and previously approved similar studies such as South Central Coastal. The estimates assume a typical application of tiered subcontractors. All the construction work (e.g., floodproofing, house raising.) is common to the Gulf Coast region. The construction sites are accessible from land and access is easily provided from various local highways.

The goals of cost engineering for the Amite River & Tributaries Feasibility Study are to present a Total Project Cost for the Tentatively Selected Plan (TSP) at the current price level to be used for project justification/authorization and to project costs forward in time for budgeting purposes. In addition, the costing efforts are intended to provide or convey a “fair and reasonable” estimate that depicts the local market conditions.

Composite costs were calculated for individual residential structures by type: slab and pier foundation, one- and two-story configuration, and for mobile home. See Appendix G: Economics and Social Consideration, Table G:4-1 for Nonstructural Elevation Costs for Residential Structures (FY23, \$/Sq. ft). The cost per square foot to raise an eligible residential structure to the target height was multiplied by the footprint square footage of each structure to compute the costs to elevate the structure. Costs for floodproofing Commercial and Warehouses were derived by using the New Orleans District 2012 Donaldsonville to the Gulf study and escalating to 2023 costs. See Appendix G, Table G:4-2 Nonstructural Floodproofing Costs for Non-residential Structures (FY23). The structural inventories for the Nonstructural Alternatives were fully developed as an output of the HEC-FDA economic analysis model. The description of this model, and the way the per-square foot unit costs are applied can be found in Appendix: G Economics Appendix and Main Report.

1.1.2 Estimate Structure

The estimate was structured to develop the unit costs in Mii representing the standard “achitype” nonstructural work being performed. The Mii unit cost for the average structure of each type were applied to the voluminous quantities of structures to be raised or floodproofed in an Excel summary spreadsheet that was transferred to TPCS. All work activities and corresponding levels of effort were based upon conversations with Davies Shoring, LLC, Orleans Shoring in 2015.

Residential Elevation Projects were grouped according to these categories:

- Mobile Home, Low Lift - This includes manufactured homes raised a minimum of 2'-6" and a maximum of 6'-0" above the lowest adjacent grade. For the purpose of this estimate the average footprint square footage for sectional trailers was assumed to be 1254 sq.ft.
- Mobile Home, High Lift - This includes manufactured homes raised a minimum of 6'-6" and a maximum of 13'-0" above the lowest adjacent grade. For the purpose of this estimate the average footprint square footage for sectional trailers was assumed to be 1254 sq.ft.
- Pier-supported Frame House, Low Lift - This includes wood frame houses built on a pier and beam foundation raised a minimum of 2'-6" and a maximum of 6'-0" above the lowest adjacent grade. For the purpose of this estimate the average footprint square footage for a single-story home was assumed to be 1866 sq.ft. and two-story home was assumed to be 2239 sq.ft.
- Pier-supported Frame House, High Lift - This includes wood frame houses built on a pier and beam foundation raised a minimum of 6'-6" and a maximum of 13'-0" above the lowest adjacent grade. For the purpose of this estimate the average footprint square footage for a single-story home was assumed to be 1866 sq.ft. and two-story home was assumed to be 2239 sq.ft.
- Slab-supported Frame House, Low Lift - This includes wood frame houses built on a concrete slab raised a minimum of 2'-6" and a maximum of 6'-0" above the lowest adjacent grade. For the purpose of this estimate the average footprint square footage for a single-story home was assumed to be 1866 sq.ft. and two-story home was assumed to be 2239 sq.ft.
- Slab-supported Frame House, High Lift - This includes wood frame houses built on a concrete slab raised a minimum of 6'-6" and a maximum of 13'-0" above the lowest adjacent grade. For the purpose of this estimate the average footprint square footage for a single-story home was assumed to be 1866 sq.ft. and two-story home was assumed to be 2239 sq.ft.

The work process for Mobile Homes and Pier-supported frame houses was as follows:

1. Individual homeowner completes program application and USACE determines eligibility.
2. Government selects contractor and enters into design build agreement.
3. Contractor prepares and submits for approval Guide Plans and Specifications, and Estimate on individual structure
4. Government approves of guide plans, specification, and estimate and approves for a start work.
5. Contractor obtains all necessary permits and Mobilize to the site.
6. Residents temporarily relocate.
7. Disconnect utilities.
8. Place Jacks and Cribbing.
9. Insert Steels.
10. Elevate Structure.
11. Install Piers.
12. Set Structure on Piers.

13. Anchor Structure.
14. For High Lifts, pour grade beams between piers and slab-on-grade.
15. Reconnect Utilities.
16. Install elevated landings and stairs.
17. Demobilization and Closeout.

The work process for Slab-supported houses was:

1. Individual homeowner completes program application and USACE determines eligibility.
2. Government selects contractor and enters into design build agreement.
3. Contractor prepares and submits for approval Guide Plans and Specifications and Estimate on individual structure.
4. Government approves of guide plans, specification, and estimate and approves for a start work.
5. Contractor obtains all necessary permits and mobilizes to site.
6. Residents temporarily relocate.
7. Disconnect utilities.
8. Excavate at perimeter and tunnels under slab on 8' centers.
9. Place Jacks and Cribbing.
10. Push segmented piles to refusal.
11. Elevate Structure.
12. Install Piers.
13. Anchor Structure.
14. For lower lifts, demo existing driveway and install new driveway adjusted to garage floor elevation.
15. For High Lifts, pour grade beams between piers and slab-on-grade.
16. Reconnect Utilities.
17. For Low Lifts, install Perimeter Enclosure.
18. Install elevated landings and stairs.
19. Demobilization and Closeout.

Commercial Floodproofing Projects were group according to the following categories:

- Commercial Dry Floodproofing – This includes protecting the lower 3' of the structure from floodwater inundation. The average square footage was estimated according to occupancy type and ranged from 2,885 SF for a Multi-purpose facility to 76,758 SF for professional office space.
- Warehouse Wet Floodproofing – This includes retrofitting the building so that water may enter the building without causing any major damage. The square footage ranged from 376 SF to 36,667 SF. Work process is assumed to be the same for warehouse and fabrication commercial buildings.

The work process for dry floodproofing was as follows:

1. Individual owner completes program application and USACE determines eligibility.
2. Government selects contractor and enters into design build agreement.

3. Contractor prepares and submits for approval Guide Plans and Specifications, and Estimate on individual structure
4. Government approves of guide plans, specification, and estimate and approves for a start work.
5. Contractor obtains all necessary permits and mobilizes to site.
6. Demolition
7. Construct Flood Barrier
8. Construct Brick Veneer
9. Install Self Closing Flood Barriers for entrances

The work process for wet floodproofing was as follows:

1. Individual owner completes program application and USACE determines eligibility.
2. Government selects contractor and enters into design build agreement.
3. Contractor prepares and submits for approval Guide Plans and Specifications, and Estimate on individual structure
4. Government approves of guide plans, specification and estimate and approves for a start work.
5. Contractor obtains all necessary permits and mobilizes to site.
6. Electrical Work
7. Wet floodproofing
8. Protective coatings
9. Install flood vents

1.1.3 Bid Competition

It is assumed that there will not be an economically saturated market and that there will be bidding competition.

1.1.4 Contract Acquisitions Strategy

The project will use the traditional method of implementation. The “traditional method” of implementation is generally described in publications of the USACE National Floodproofing Committee and Flood Risk Management Planning Center of Expertise. Under the traditional method, the USACE District utilizes a federal procurement to obtain design and construction contractors for the various floodproofing and elevation measures. The Government will procure contracts that will allow a contractor to perform floodproofing work on multiple structures through a series of one or more task orders and who will be responsible for all work associated with flood risk mitigation approval of the engineering plans for each structure to final inspection. Additional implementation eligibility criteria and process descriptions are provided in Appendix I: Implementation Plan

1.1.5 Labor Shortages

It is assumed there will be a normal labor market pulled from the regional gulf coast region.

1.1.6 Labor Rate

Local labor market wages are above the local Davis-Bacon Wage Determination, so actual rates have been used. This is based on local information and payroll data received from MVN District construction representatives and estimators with experiences in past years.

1.1.7 Materials

Cost quotes are used on major construction items when available. Material price quotes were also taken from previous job, historical data and the Mii Cost Book. It was assumed that materials will be purchased as part of the contract. The estimate does not anticipate government furnished materials. Prices include delivery of materials.

1.1.8 Quantities

A structure inventory of residential and non-residential structures for the study area was obtained through the National Structure Inventory (NSI) version 2022. Economics estimated the number of square feet per total structure, along with other characteristics, such as one or two-story, slab or pier foundations, etc. For more information on how structures were selected for each alternative see Appendix F: Economics and Social Consideration.

1.1.9 Equipment

Rates used are based on the latest USACE Engineer Pamphlet (EP)-1110-1-8, Region III. Adjustments are made for fuel, filters, oil, and grease (FOG) prices and Facility Capital Cost of Money (FCCM). Judicious use of owned verses rental rates was considered based on typical contractor usage and local equipment availability. Only a few select pieces of marine/marsh equipment are considered rental. Full FCCM/Cost of Money rate is latest available; MII program takes the EP recommended discount, no other adjustments have been made to the FCCM. Equipment was chosen based on historical knowledge of similar projects.

1.1.10 Fuels

Fuels (gasoline, on and off-road diesel) were based on local market averages for on-road and off-road for the Gulf Coast area. Historic data gathered in the Greater New Orleans area over the last 10 years shows fuel cost have risen and fallen at irregular rates; therefore, an average fuel cost was assumed.

1.1.11 Crews

Major crew and productivity rates were developed and studied by ARADIS engineers in conjunction with local professionals familiar with the type of work. All the work is typical to the Louisiana area. The crews and productivities were checked by local MVN senior cost estimators, discussions with contractors and comparisons with historical cost data. Crew work hours are assumed to be 8 hours 5 days per week, which is typical to the area and type of work.

1.1.12 Unit Prices

The unit prices found within the various project estimates will fluctuate within a range between similar construction units such as Residential Structures and Commercial Structures. Variances are a result of low lift, high lift, type of commercial structure, small and large business markups, subcontracted items, designs and estimates by others.

1.1.13 Relocation Costs

Not applicable.

1.1.14 Mobilization

Contractor mobilization and demobilization (mob/demob) are based on the assumption that most of the contractors will be coming from within the Gulf Coast/Southern region. Minimal equipment is required for the nonstructural work.

1.1.15 Field Office Overhead

The estimate used a field office overhead rate based on the average of relevant jobs. The reason this was done is because similar work is being done and the job office overhead should also be similar.

1.1.16 Home Office Overhead

Estimate percentages range based upon consideration of 8(a), small business, and unrestricted prime contractors. The rates are based upon estimating and negotiating experience, and consultation with local construction representatives. Different percent are used when considering the contract acquisition strategy regarding small business 8(a), competitive small business and large business, high to low respectively. This project will assume an acquisition strategy of small business and assume a Home Office overhead of 7 percent.

1.1.17 Taxes

Local taxes will be applied based on the parishes that contain the work. Reference the tax rate website for Louisiana: <http://www.salestaxstates.com>.

1.1.18 Bond

Bond is assumed 0.83 percent applied against the prime contractor, assuming large contracts. No differentiation was made between large and small businesses.

1.1.19 Real Estate Costs

Real Estate (RE) costs were developed and provided by the Realty Specialist and placed in WBS-02 Lands and Damages. The RE cost for each alternative includes land costs, acquisition costs and 25 percent for contingencies.

1.1.20 Environmental Costs

Not applicable.

1.1.21 Cultural Resources Costs

Cultural Resources (CR) costs were provided by the Archaeologist, Natural/Cultural Resources Analyst and placed in WBS-13 Cultural Resources Preservation. The CR costs for each alternative include Cultural Surveys and mitigation of resources if required.

1.1.22 Planning, Engineering and Design (PED)

Some itemized line-item costs are included in the direct costs for specific implementation/administrative steps (Gov't and contractor) of each of the projects (Non-Real Estate portion). Additional more PED costs have been included in PED Account 30 for more overall programmatic efforts such as Project Management, Planning & Environmental Compliance, Contracting, Planning During Construction and Project Operations. Account 30 PED assumed a range of 10-18 percent until implementation is further defined during TSP feasibility design phase.

1.1.23 Supervision and Administration (S&A)

Some itemized line-item costs are included in the direct costs for specific implementation/administrative steps for Government administration of each of the projects (Non-Real Estate portion). Additional more S&A costs have been included in S&A Account 31 for more overall programmatic Construction Management efforts. It is assumed Account 31 S&A is 10 percent until implementation is further defined during TSP feasibility design phase. It is anticipated the government will utilize a MATOC contract mechanism and have multiple contractors responsible for multiple structures.

1.1.24 Contingencies

Nonstructural Alternatives only differed in number of eligible structures. Contingencies for the final array of Nonstructural Alternatives were assumed to be similar in scope and regional area to South Central Coastal Nonstructural Project, therefore in lieu of performing the USACE Abbreviated Cost Risk Analysis (ARA) the same contingency approved for South Central Coastal Project of 32 percent was applied to all alternatives. South Central Coastal contingencies were developed using the USACE Cost and Schedule Risk Analysis (CSRA) process and the Crystal Ball Software that evaluates schedule and cost related risks. A separate CSRA will be performed on the recommended plan during the feasibility design phase.

1.1.25 Escalation

Escalation used is based upon the latest version of the USACE Engineering Manual (EM) 1110-2-1304 Civil Works Construction Cost Index System (CWCCIS).

1.1.26 Hazardous, Toxic, and Radioactive Waste (HTRW)

The cost estimate does not include cost for any Hazardous, Toxic, and Radioactive Waste (HTRW) mitigation. The estimate does include survey costs to detect any potential (HTRW). A Phase I Environmental Site Assessment will be conducted prior to structure being approved for floodproofing or house raising. Appendix I: Implementation Plan describes the eligibility criteria, process, and responsibility related to HTRW concerns.

1.1.27 Schedule

The project schedule was developed based on the construction of the individual features of work to include all residential and commercial buildings chosen by the PDT.

1.1.28 Cost Estimates

Tables C:1-1 through C:1-6 show the baseline Project First Cost for each Final Array alternatives using the minimum and maximum range in %PED. Cost estimates for the Final Array of alternatives were developed at 2023 prices.

Table C:1-1. Plan 2: Nonstructural NED Plan (18%PED, 10%S&A)

Feature	Cost	Contingency	Total
01 Lands & Damages	\$84,481,000	\$12,120,000	\$105,601,000
18 Cultural Resources Preservation	\$6,741,000	\$2,157,000	\$8,898,000
19 Buildings, Grounds & Utilities	\$854,529,000	\$273,449,000	\$1,127,978,000
30 PED	\$155,029,000	\$49,609,000	\$204,638,000
31 Construction Management	\$86,127,000	\$27,561,000	\$113,688,000
TOTAL	\$1,186,906,000	\$373,896,000	\$1,560,803,000

Table C:1-2. Plan 2: Nonstructural NED Plan (10%PED, 10%S&A)

Feature	Cost	Contingency	Total
01 Lands & Damages	\$84,481,000	\$21,120,000	\$105,601,000
18 Cultural Resources Preservation	\$6,741,000	\$2,157,000	\$8,898,000
19 Buildings, Grounds & Utilities	\$854,529,000	\$273,449,000	\$1,127,978,000
30 PED	\$86,127,000	\$27,561,000	\$113,688,000
31 Construction Management	\$86,127,000	\$27,561,000	\$113,688,000
TOTAL	\$1,118,005,000	\$351,848,000	\$1,469,853,000

Table C:1-3. Plan 3: Nonstructural NED Plan + OSE Increment 1(18%PED, 10%S&A)

Feature	Cost	Contingency	Total
01 Lands & Damages	\$86,445,000	\$21,611,000	\$108,056,000
18 Cultural Resources Preservation	\$6,886,000	\$2,204,000	\$9,090,000
19 Buildings, Grounds & Utilities	\$878,418,000	\$281,094,000	\$1,159,512,000
30 PED	\$159,335,000	\$50,994,000	\$210,348,000
31 Construction Management	\$88,530,000	\$28,330,000	\$116,860,000
TOTAL	\$1,219,634,000	\$384,232,000	\$1,603,866,000

Table C:1-4. Plan 3: Nonstructural NED Plan + OSE Increment 1(10%PED, 10%S&A)

Feature	Cost	Contingency	Total
01 Lands & Damages	\$86,445,000	\$21,611,000	\$108,056,000
18 Cultural Resources Preservation	\$6,886,000	\$2,204,000	\$9,090,000
19 Buildings, Grounds & Utilities	\$878,418,000	\$281,094,000	\$1,159,512,000
30 PED	\$88,530,000	\$28,330,000	\$116,860,000
31 Construction Management	\$88,530,000	\$28,330,000	\$116,860,000
TOTAL	\$1,148,810,000	\$361,568,000	\$1,510,378,000

Table C:1-5. Plan 4: Nonstructural NED Plan + OSE Increment 2(18%PED, 10%S&A)

Feature	Cost	Contingency	Total
01 Lands & Damages	\$89,423,000	\$22,356,000	\$111,779,000
18 Cultural Resources Preservation	\$7,104,000	\$2,273,000	\$9,377,000
19 Buildings, Grounds & Utilities	\$908,017,000	\$290,565,000	\$1,198,582,000
30 PED	\$164,722,000	\$52,711,000	\$217,433,000
31 Construction Management	\$91,512,000	\$29,284,000	\$120,796,000
TOTAL	\$1,260,778,000	\$397,189,000	\$1,657,967,000

Table C:1-6. Plan 4: Nonstructural NED Plan + OSE Increment 2(10%PED, 10%S&A)

Feature	Cost	Contingency	Total
01 Lands & Damages	\$89,423,000	\$22,356,000	\$111,779,000
18 Cultural Resources Preservation	\$7,104,000	\$2,273,000	\$9,377,000
19 Buildings, Grounds & Utilities	\$908,017,000	\$290,565,000	\$1,198,582,000
30 PED	\$91,512,000	\$29,284,000	\$120,796,000
31 Construction Management	\$91,512,000	\$29,284,000	\$120,796,000
TOTAL	\$1,187,568,000	\$373,762,000	\$1,561,331,000

The NED Plan selected is “Plan 2: Nonstructural NED Plan” which presently has a Benefit Cost Ratio (BCR) range of 1.03-0.97 and includes Dry/Wet floodproofing or elevation of 3,117 structures located in the 0.1 (46 aggregates), 0.02 (5 aggregates) or 0.04 (6 aggregates) floodplain to 0.01 AEP BFE.

Flood risk and residual risk to those structures caused by coastal storm flooding were estimated to be reduced to:

- 2,748 residential structures,
- 369 nonresidential structures.

The TSP selected is “Plan 4: Nonstructural NED Plan + OSE Increment 2” which presently has a BCR range of 0.995 to 0.94 and includes floodproofing or elevation of 3,298 structures (NED Plan + 181 structures for Socially Vulnerable areas).

The New Orleans District is presently pursuing a policy exception for the following USACE Policy: ER 1105-2-100 2-3(f)(1) stating: “The National Economic Development (NED)Plan. For all project purposes except ecosystem restoration, the alternative plan that reasonably maximizes net economic benefits consistent with protecting the Nation’s environment, the

NED plan, shall be selected. The ASA CW may grant an exception when there are overriding reasons for selecting another plan based upon comprehensive benefits or other Federal, State, local and international concerns.” If the policy exception is not granted, the TSP will default to “Plan 2: Nonstructural NED Plan”.

See Appendix G: Economics and Social Consideration, Tables G:5-1 thru 5-3 Annual Costs and Benefits Summary to see the BCR for all the alternatives.

1.1.29 Total Project Cost Summary

The Total Project Cost Summary (TPCS) addresses the inflation through project completion; accomplished by escalation to the mid-point of construction per CWCCIS as required by ER 1110-2-1302 and ETL 1110-2-573. The TPCS includes Federal and non-Federal costs for all construction features of the project, lands and damages, as well as PED and S&A, along with the appropriate contingencies and escalation associated with these activities. The TPCS is formatted according to the CWWBS. The TPCS was prepared using the MCACES/MII cost estimate, contingencies developed, the project design and construction schedule, and estimates of PED and S&A. The TPCS is provided as Attachment 1 for “TSP - Total Project Cost Summary (TPCS)” which includes Plan 4: Nonstructural NED Plan + OSE Increment 2 showing two Tables for Total Project cost, one using maximum 18%PED and the other using minimum 10%PED.

SECTION 2

AMITE RIVER & TRIBUTARIES COST – FOCUSED ARRAY OF ALTERNATIVES

2.1 GENERAL

2.1.1 Cost Estimate Development

Cost estimates for Structural Alternatives were developed at a Class 4 Level of effort utilizing Parametric costs, Historical costs, or the latest MCACES MII cost estimating software. The cost estimates used the standard approaches for a feasibility estimate structure regarding labor, equipment, materials, crews, unit prices, quotes, and sub and prime contractor markups. This philosophy was taken wherever practical within the time constraints. It was supplemented with estimating information from other sources, where necessary, such as quotes, bid data, and Architect-Engineer (A-E) estimates. The intent was to provide or convey a “fair and reasonable” estimate that depicts the local market conditions. The estimates assume a typical application of tiered subcontractors. All of the construction work (e.g., dam structure, dredging, excavation, dewatering, pilings, rock, etc.) is common to the Gulf Coast region. The construction sites are accessible from land and access is easily provided from various local highways.

The cost estimates for the Non-Structural Alternatives were developed by the US Army Corps of Engineers, Mississippi Valley Division, New Orleans District (MVN) Economist, and are discussed in the Appendix: F Economics and Main Report.

2.1.2 Estimate Structure

The estimates are structured to reflect the projects performed. The estimates have been subdivided by alternative and US Army Corps of Engineers (USACE) feature codes.

2.1.3 Bid Competition

It is assumed that there will not be an economically saturated market and that there will be bidding competition.

2.1.4 Contract Acquisition Strategy

There is no declared contract acquisition plan/types at this time. It is assumed that the contract acquisition strategy will be similar to past projects with large, unrestricted, design/bid/build contracts.

2.1.5 Labor Shortages

It is assumed there will be a normal labor market pulled from the regional gulf coast region.

2.1.6 Labor Rate

Local labor market wages are above the local Davis-Bacon Wage Determination, so actual rates have been used. Local payroll information was not available; therefore, regional gulf coast information was used from MVN construction representatives and estimators with experiences in past years.

2.1.7 Materials

Cost quotes are used on major construction items when available. Recent cost quotes may include concrete, steel sheet piling, rock, gravel, and sand. The assumption is that materials will be purchased as part of the construction contract. The estimate does not anticipate government furnished materials, except for borrow materials. Prices include delivery of materials.

All borrow material is assumed government furnished. Specific sources for borrow material have not yet been established. The non-Federal local sponsor has assisted with researching possible sources and stated there is very likely acceptable borrow for random fill within a 5 mile radius of the project and within a 20 mile radius of the project for clay fill. An assumed average one-way haul distance of 5 miles was used for random fill and an average one way haul distance of 20 miles for clay fill was used, until a borrow source has been confirmed. Haul speeds are estimated using a 40 mph speed average, given the rural access roads and highways.

The borrow quantity calculations followed the MVN Geotechnical guidance:

Hauled Levee: 10 BCY (bank cubic yards) of borrow material = 12 LCY (loose cubic yards) hauled = 8 ECY (embankment cubic yards) compacted.

Soil compaction factors can vary considerably with soil material gradation and moisture content. As borrow data was not available at this time materials obtained for fill were assumed to mimic Bonnet Carre Spillway borrow materials.

2.1.8 Quantities

Quantities for dam alternatives were provided by civil and structural designers for the various alternatives.

2.1.9 Equipment

Rates used are based from the latest USACE Engineer Pamphlet (EP)-1110-1-8, Region III. Adjustments are made for fuel, filters, oil, and grease (FOG) prices and Facility Capital Cost of Money (FCCM). Judicious use of owned verses rental rates was considered based on typical contractor usage and local equipment availability. Only a few select pieces of marine/marsh equipment are considered rental. Full FCCM/Cost of Money rate is latest available; MII program takes the EP recommended discount, no other adjustments have been made to the FCCM. Equipment was chosen based on historical knowledge of similar projects.

2.1.10 Severe and Rental Rates

Severe equipment rates were used, where applicable, for various pieces of equipment in the hydraulic dredging crews where they may come in contact with any harsh environment.

Rental rates were used, where applicable, for various pieces of marine and marsh equipment, where rental is typical, such as marsh backhoes.

2.1.11 Fuels

Fuels (gasoline, on and off-road diesel) were based on local market averages for on-road and off-road for the Gulf Coast area. Historic data gathered in the Greater New Orleans area over the last 10 years shows fuel cost have risen and fallen at irregular rates; therefore, an average fuel cost was assumed.

2.1.12 Crews

Major crew and productivity rates were developed and studied by senior USACE estimators familiar with the type of work. All of the work is typical to the Gulf Coast area and MVN Cost Engineers. The crews and productivities were checked by local MVN estimators, discussions with contractors and comparisons with historical cost data. Major crews include haul, earthwork, piling, concrete, and hydraulic dredging.

Most crew work hours are assumed to be 10 hours, 6 days/week, which is typical to the area. Marine based bucket excavation/dredging operators are assumed to work two 12 hours shifts, 7 days/week.

A 10 percent markup on labor for weather delay is selectively applied to the labor in major earthwork placing detail items and associated items that would be affected by weather making it unsafe or difficult to place (trying to run dump trucks on a wet levee) or be detrimental/non-compliant to the work being done (trying to place/compact material in the rain). The 10 percent markup is to cover the common practice of paying for labor arriving to the job site and then being sent home due to minor weather, which is part of known average weather impacts as reflected within the standard contract specifications. The markup was not applied to small quantities where this can be scheduled around.

2.1.13 Unit Prices

The unit prices found within the various project estimates will fluctuate within a range between similar construction units such as floodwall concrete, earthwork, and piling. Variances are a result of differing haul distances (trucked or barged), small or large business markups, subcontracted items, designs, and estimates by others.

2.1.14 Relocation Costs

Relocation costs are defined as the relocation of public roads, bridges, railroads, and utilities required for project purposes. In cases where potential significant impacts were known, costs were included within the cost estimate.

2.1.15 Mobilization

Contractor mobilization and demobilization (mob/demob) are based on the assumption that most of the contractors will be coming from within the Gulf Coast/Southern region. Mob/demob costs are based on historical studies of detailed Government estimate mob/demob, which are in the range of approximately 3 to 5 percent of the construction costs. With undefined acquisition strategies and assumed individual project limits, the estimate utilizes a slightly more comprehensive, approximate 4 percent value (min) applied at each contract rather than risking minimizing mob/demob costs by detailing costs based on an assumed number of contracts. This value also matches well with values previously prescribed by USACE Walla Walla District, which has studied historical rates.

2.1.16 Field Office Overhead

The estimate used a field office overhead rate of 12 percent for the prime contractors at budget level development. Based on historical studies and experience, USACE Walla Walla District has recommended typical rates ranging from 9 percent to 11 percent for large civil works projects; however, the 9-11 percent rate does not consider possible incentives such as camps, allowances, travel trailers, meals, etc., which have been used previously to facilitate large or remote projects. With undefined acquisition strategies and assumed individual project limits, the estimate utilizes a more comprehensive percentage based approach applied at each contract rather than risking minimizing overhead costs by detailing costs based on an assumed number of contracts. The applied rates were previously discussed among numerous USACE Cost Engineers including Walla Walla, Vicksburg, Norfolk, Huntington, St. Paul, and New Orleans Districts.

2.1.17 Overhead Assumptions

Overhead assumptions may include superintendent, office manager, pickups, periodic travel, costs, communications, temporary offices (contractor and government), office furniture, office supplies, computers and software, as-built drawings and minor designs, tool trailers, staging setup, camp/facility/kitchen maintenance and utilities, utility service, toilets, safety equipment, security and fencing, small hand and power tools, project signs, traffic control, surveys, temp fuel tank station, generators, compressors, lighting, and minor miscellaneous.

2.1.18 Home Office Overhead

Estimate percentages range based upon consideration of 8(a), small business, and unrestricted prime contractors. The rates are based upon estimating and negotiating experience, and consultation with local construction representatives. Different percent are used when considering the contract acquisition strategy regarding small business 8(a), competitive small business and large business, high to low respectively. The applied rates were previously discussed among numerous USACE Cost Engineers including Walla Walla, Vicksburg, Norfolk, Huntington, St. Paul, and New Orleans Districts.

2.1.19 Taxes

Local taxes will be applied based on the parishes that contain the work. Reference the tax rate website for Louisiana: <http://www.salestaxstates.com>.

2.1.20 Bond

Bond is assumed 1 percent applied against the prime contractor, assuming large contracts. No differentiation was made between large and small businesses.

2.1.21 Real Estate Costs

Real Estate (RE) costs were developed and provided by the Realty Specialist and placed in WBS-02 Lands and Damages. The RE cost for each alternative includes land costs, acquisition costs (including acquisition of agricultural land for borrow) and 25% for contingencies.

2.1.22 Environmental Costs

Environmental costs were provided by the Environmentalist and placed in Work Breakdown Structure WBS-06 Fish and Wildlife Facilities. The Environmental costs for each alternative include only mitigation of the flood protection alignment footprint.

2.1.23 Cultural Resources Costs

Cultural Resources (CR) costs were provided by the Archaeologist, Natural/Cultural Resources Analyst and placed in WBS-13 Cultural Resources Preservation. The CR costs for each alternative include Cultural Surveys and mitigation of resources if required. For borrow sites, known or identified cultural resource sites will be avoided.

2.1.24 Planning, Engineering, and Design (PED)

The PED cost includes such costs as project management, engineering, planning, designs, investigations, studies, reviews, value engineering and Engineering During Construction (EDC). Historically, a rate of approximately 12 percent for Engineering and Design (E&D) plus small percentages for other support features is applied against the estimated construction costs. Other USACE civil works districts such as St. Paul, Memphis, and St. Louis have reported values ranging from 10-15 percent for E&D. Additional support features might include project management, engineering, planning, designs, investigations, studies, reviews, and value engineering. An E&D rate of 12 percent was applied.

2.1.25 Supervision and Administration (S&A)

Historically, a range from 5 percent to 15 percent, depending on project size and type, was applied against the estimated construction costs. Other USACE civil works districts such as St. Paul, Memphis, and St. Louis report values ranging from 7.5-10 percent. Consideration includes that a portion of the S&A effort could be performed by contractors. S&A costs are percentage based. An S&A rate of 11 percent was applied.

2.1.26 Contingencies

Contingencies for the focused array of Structural Alternatives were developed using the USACE Abbreviated Cost Risk Analysis (ARA) program. An ARA is a qualitative approach used by PDT to address key risk concerns for major features of work and their impact to cost and schedule drivers such as Project Scope Growth, Acquisition Strategy, Construction Elements, Quantities, Specialty Fabrication or Equipment, Cost Estimate Assumptions, and External Project Risks. A separate ARA was prepared for each alternative to differentiate between the alternatives. Each alternative had very similar features of work and similar risk concerns, but the Sandy Creek Dry Dam and the three Tributary Dams had higher risk contingencies due of lack of geotechnical and Hydrological data and historical information in the area of these smaller dams and design scaled down some quantities of the larger Darlington Dam to minimize design effort at this phase.

2.1.27 Escalation

Escalation used is based upon the latest version of the USACE Engineering Manual (EM) 1110-2-1304 Civil Works Construction Cost Index System (CWCCIS).

2.1.28 Hazardous, Toxic, and Radioactive Waste (HTRW)

The estimate does not include costs for any potential Hazardous, Toxic, and Radioactive Waste (HTRW). A Phase I Environmental Site Assessment will be conducted prior to the Final IFR and EIS. The final report will include any estimated costs to address potential HTRW.

2.1.29 Schedule

The project schedule for each alternative was developed based on the construction line items for each feature of work.

For the Darlington Dam – Reduced Wet and Dry Dam Alternatives, it was assumed Engineering and Design (E&D), Cultural Resources Surveys and Cultural Mitigation, Environmental T&E Species and Habitat Mitigation, and Real Estate acquisition would start in 2021 and construction would begin in 2022. The construction duration for each alternative would be 4 years, with completion in 2026.

For Sandy Creek Dry Dam and the three Tributary Dry Dam Alternatives it was assumed E&D, Cultural Resources Surveys and Cultural Mitigation, Environmental T&E Species Investigation and Habitat Mitigation, and Real Estate acquisition would start in 2021 and construction would begin in 2024. The construction duration for each alternative would be for 2 years, with completion by 2026.

2.1.30 Cost Estimates

Tables C:2-1 through C:2-4 show the baseline project First Cost for each focused array alternative. Cost estimates for the focused array of alternatives were developed at 2019 price levels.

Table C:2-1. Darlington Dam – Reduced Wet

Feature	Cost	Contingency	Total
01 Lands & Damages	\$133,490,000	\$30,785,000	\$164,275,000
02 Relocations	\$3,034,000	\$1,466,000	\$4,500,000
04 Dams	\$448,369,000	\$178,595,000	\$626,964,000
06 Fish & Wildlife Facilities	\$569,050,000	\$112,762,000	\$681,812,000
18 Cultural Resources Preservation	\$83,445,000	\$28,624,000	\$112,069,000
30 PED	\$92,538,000	\$36,912,000	\$129,450,000
31 Construction Management	\$49,654,000	\$19,807,000	\$69,461,000
TOTAL	\$1,379,580,000	\$408,951,000	\$1,788,531,000

Table C:2-2. Darlington Dam - Dry

Feature	Cost	Contingency	Total
01 Lands & Damages	\$133,299,000	\$30,722,000	\$164,021,000
02 Relocations	\$3,034,000	\$1,466,000	\$4,500,000
04 Dams	\$441,389,000	\$175,260,000	\$616,649,000
06 Fish & Wildlife Facilities	\$159,894,000	\$31,684,000	\$191,578,000
18 Cultural Resources Preservation	\$78,506,000	\$27,607,000	\$106,113,000
30 PED	\$91,107,000	\$36,229,000	\$127,336,000
31 Construction Management	\$48,887,000	\$19,439,000	\$68,326,000
TOTAL	\$956,116,000	\$322,407,000	\$1,278,523,000

Table C:2-3. Sandy Creek Dry Dam

Feature	Cost	Contingency	Total
01 Lands & Damages	\$12,568,000	\$3,395,000	\$15,963,000
02 Relocations	\$416,000	\$921,000	\$1,337,000
04 Dams	\$80,773,000	\$39,709,000	\$120,482,000
06 Fish & Wildlife Facilities	\$29,681,000	\$5,881,000	\$35,562,000
18 Cultural Resources Preservation	\$41,947,000	\$17,313,000	\$59,260,000
30 PED	\$16,644,000	\$8,329,000	\$24,973,000
31 Construction Management	\$8,931,000	\$4,469,000	\$13,400,000
TOTAL	\$190,960,000	\$80,017,000	\$270,977,000

Table C:2-4. Three Tributary Dry Dams

Feature	Cost	Contingency	Total
01 Lands & Damages	\$15,366,000	\$3,662,000	\$19,028,000
02 Relocations	\$7,720,000	\$4,257,000	\$11,977,000
04 Dams	\$99,105,000	\$47,604,000	\$146,709,000
06 Fish & Wildlife Facilities	\$33,696,000	\$6,677,000	\$40,373,000
18 Cultural Resources Preservation	\$57,464,000	\$24,443,000	\$81,907,000
30 PED	\$21,899,000	\$10,632,000	\$32,531,000
31 Construction Management	\$11,751,000	\$5,704,000	\$17,455,000
TOTAL	\$247,001,000	\$102,979,000	\$349,980,000

Additionally, there were two nonstructural alternatives that were included in the Focused Array of Alternatives which were assessments of all residential and non-residential structures located within the 0.04 and 0.02 AEP flood plains of the study area. The cost estimates for the 0.04 and 0.02 AEP nonstructural features were developed based on the cost of reducing risk of damage to the structures in the year 2026 respective flood plains. Details of these costs and their development are presented in Appendix F.

- Nonstructural 0.04 AEP Alternative - First Cost - \$1,335,282,000
- Nonstructural 0.02 AEP Alternative - First Cost - \$2,160,836,000

Based on the economic analysis alone of the focused array the National Economic Development (NED) plan was preliminarily determined to be the Darlington Dry Dam, which was also the PDT's Tentatively Selected Plan (TSP). To further evaluate possible inclusion of nonstructural features into the TSP, Economics performed additional preliminary analysis of the flood risk that remains in the floodplain after the proposed alternative is implemented. This is known as the residual flood risk and nonstructural measures can be used to reduce the residual risk associated with the TSP. The preliminary analysis found a total of 3,252 residential structures and an additional 314 non-residential structures in the 0.04 AEP floodplain that were considered eligible for acquisition, elevation and flood proofing conditional to certain criteria as described in Appendix F. The baseline project cost for the preliminary TSP/NED plan which includes the Darlington Dry Dam combined with the nonstructural measures is shown in Table C:2-5.

Table C:2-5. Darlington Dry Dam With 0.04 AEP Elevations & Floodproofing

Feature	Cost	Contingency	Total
01 Lands & Damages	\$133,299,000	\$30,722,000	\$164,021,000
02 Relocations	\$3,034,000	\$1,466,000	\$4,500,000
04 Dams	\$441,389,000	\$175,260,000	\$616,649,000
06 Fish & Wildlife Facilities	\$159,894,000	\$31,684,000	\$191,578,000
18 Cultural Resources Preservation	\$78,506,000	\$27,607,000	\$106,113,000
30 PED	\$91,107,000	\$36,229,000	\$127,336,000
31 Construction Management	\$48,887,000	\$19,439,000	\$68,326,000
Nonstructural 0.04 AEP - First Cost	\$761,485,000	\$262,713,000	\$1,024,198,000
TOTAL	\$1,717,601,000	\$585,120,000	\$2,302,721,000

Further details of how the Nonstructural 0.04 AEP - First Cost was developed can be found in Appendix F.

After further TSP Public, Policy and Technical Reviews and additional detailed re-evaluation and discoveries it led to mounting concerns the preliminary selected Dry Dam alternative did not meet USACE tolerable risk guidelines due to economic risk/cost effectiveness, potential societal life risk, and environmental acceptability. For these reasons the Dry Dam alternative ([including Sandy Creek Dry Dam](#)) have been removed from further consideration consistent with USACE policy of acceptability and implement ability in accordance with ER 1105-2-100. See Main Report Section 4.6 2019 TSP PUBLIC, POLICY AND TECHNICAL REVIEWS AND ADDITIONAL DETAILED EVALUATION for details of 2019 evaluation of the Dry Dam alternative which led to it being screened out.

Focusing on the one remaining alternative, the Nonstructural alternative would be further evaluated under PB 2019-03 guidance utilizing a sub aggregation method for the study area in determining the Final Array of Nonstructural alternatives.

Attachment 1: TSP – Total Project Cost Summary (TPCS)

PROJECT: Amite River & Trib., Plan 4 - NED + OSE Increment 2, 18%PED,10%SA
PROJECT NO: P2.xxxxxx
LOCATION: Various Parishes

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

PREPARED: 12/7/2023

This Estimate reflects the scope and schedule in report: Supplemental Second Draft Report - December 2023

Civil Works Work Breakdown Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)					TOTAL PROJECT COST (FULLY FUNDED)				
WBS NUMBER A	Civil Works Feature & Sub-Feature Description B	COST (\$K) C	CNTG (\$K) D	CNTG (%) E	TOTAL (\$K) F	Program Year (Budget EC): Effective Price Level Date:				Spent Thru: 1-Oct-23 (\$K) K	TOTAL FIRST COST (\$K) K	INFLATED (%) L	COST (\$K) M	CNTG (\$K) N	FULL (\$K) O
						ESC (%) G	COST (\$K) H	CNTG (\$K) I	TOTAL (\$K) J						
18	CULTURAL RESOURCE PRESERVATION	\$7,104	\$2,273	32.0%	\$9,377	0.0%	\$7,104	\$2,273	\$9,377	\$0	\$9,377	22.2%	\$8,678	\$2,777	\$11,456
19	BUILDINGS, GROUNDS & UTILITIES	\$908,017	\$290,565	32.0%	\$1,198,582	0.0%	\$908,017	\$290,565	\$1,198,582	\$0	\$1,198,582	22.2%	\$1,109,265	\$354,985	\$1,464,230
	#N/A	\$0	\$0 -		\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
	#N/A	\$0	\$0 -		\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
	#N/A	\$0	\$0 -		\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
	#N/A	\$0	\$0 -		\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
	#N/A	\$0	\$0 -		\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
	#N/A	\$0	\$0 -		\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
	CONSTRUCTION ESTIMATE TOTALS:	\$915,121	\$292,839		\$1,207,960	0.0%	\$915,121	\$292,839	\$1,207,960	\$0	\$1,207,960	22.2%	\$1,117,944	\$357,742	\$1,475,686
01	LANDS AND DAMAGES	\$89,423	\$22,366	25.0%	\$111,779	0.0%	\$89,423	\$22,366	\$111,779	\$0	\$111,779	18.9%	\$106,362	\$26,590	\$132,952
30	PLANNING, ENGINEERING & DESIGN	\$164,722	\$52,711	32.0%	\$217,433	0.0%	\$164,722	\$52,711	\$217,433	\$0	\$217,433	27.1%	\$209,366	\$66,997	\$276,364
31	CONSTRUCTION MANAGEMENT	\$91,512	\$29,284	32.0%	\$120,796	0.0%	\$91,512	\$29,284	\$120,796	\$0	\$120,796	27.1%	\$116,315	\$37,221	\$153,535
PROJECT COST TOTALS:		\$1,260,778	\$307,189	31.5%	\$1,657,967		\$1,260,778	\$307,189	\$1,657,967	\$0	\$1,657,967	23.0%	\$1,540,988	\$488,550	\$2,038,537

- _____ CHIEF, COST ENGINEERING, xxx
- _____ PROJECT MANAGER, xxx
- _____ CHIEF, REAL ESTATE, xxx
- _____ CHIEF, PLANNING, xxx
- _____ CHIEF, ENGINEERING, xxx
- _____ CHIEF, OPERATIONS, xxx
- _____ CHIEF, CONSTRUCTION, xxx
- _____ CHIEF, CONTRACTING,xxx
- _____ CHIEF, PM-PB, xxx
- _____ CHIEF, DPM, xxx

ESTIMATED TOTAL PROJECT COST: \$2,038,537

TSP – Plan 4: Nonstructural NED Plan + OSE Increment 2(18%PED and 10%S&A).

PROJECT: Amite River & Trib. Plan4 - NED + OSE Increment 2, 10%PED, 10%SA
PROJECT NO: P2 xxxxxx
LOCATION: Various Parishes

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

PREPARED: 12/7/2023

This Estimate reflects the scope and schedule in report; Supplemental Second Draft Report - December 2023

Civil Works Work Breakdown Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)					TOTAL PROJECT COST (FULLY FUNDED)				
WBS NUMBER A	Civil Works Feature & Sub-Feature Description B	COST (\$K) C	CNTG (\$K) D	CNTG (%) E	TOTAL (\$K) F	ESC (%) G	COST (\$K) H	CNTG (\$K) I	TOTAL (\$K) J	Program Year (Budget EC): Effective Price Level Date: 2024 1 OCT 23		INFLATED (%) L	COST (\$K) M	CNTG (\$K) N	FULL (\$K) O
										Spent Thru: 1-Oct-23 (\$K) K	TOTAL FIRST COST (\$K) K				
18	CULTURAL RESOURCE PRESERVATION	\$7,104	\$2,273	32.0%	\$9,377	0.0%	\$7,104	\$2,273	\$9,377	\$0	\$9,377	22.2%	\$8,678	\$2,777	\$11,456
19	BUILDINGS, GROUNDS & UTILITIES	\$908,017	\$290,565	32.0%	\$1,198,582	0.0%	\$908,017	\$290,565	\$1,198,582	\$0	\$1,198,582	22.2%	\$1,109,265	\$354,965	\$1,464,230
	#N/A	\$0	\$0	-	\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
	#N/A	\$0	\$0	-	\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
	#N/A	\$0	\$0	-	\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
	#N/A	\$0	\$0	-	\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
	#N/A	\$0	\$0	-	\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
	#N/A	\$0	\$0	-	\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
	CONSTRUCTION ESTIMATE TOTALS:	\$915,121	\$292,839		\$1,207,960	0.0%	\$915,121	\$292,839	\$1,207,960	\$0	\$1,207,960	22.2%	\$1,117,944	\$357,742	\$1,475,686
01	LANDS AND DAMAGES	\$89,423	\$22,356	25.0%	\$111,779	0.0%	\$89,423	\$22,356	\$111,779	\$0	\$111,779	18.9%	\$106,362	\$26,590	\$132,952
30	PLANNING, ENGINEERING & DESIGN	\$91,512	\$29,284	32.0%	\$120,796	0.0%	\$91,512	\$29,284	\$120,796	\$0	\$120,796	27.1%	\$116,315	\$37,221	\$153,536
31	CONSTRUCTION MANAGEMENT	\$91,512	\$29,284	32.0%	\$120,796	0.0%	\$91,512	\$29,284	\$120,796	\$0	\$120,796	27.1%	\$116,315	\$37,221	\$153,536
	PROJECT COST TOTALS:	\$1,187,568	\$373,762	31.5%	\$1,561,330		\$1,187,568	\$373,762	\$1,561,330	\$0	\$1,561,330	22.7%	\$1,456,935	\$458,774	\$1,915,709

CHIEF, COST ENGINEERING, xxx

ESTIMATED TOTAL PROJECT COST: \$1,915,708

PROJECT MANAGER, xxx

CHIEF, REAL ESTATE, xxx

CHIEF, PLANNING, xxx

CHIEF, ENGINEERING, xxx

CHIEF, OPERATIONS, xxx

CHIEF, CONSTRUCTION, xxx

CHIEF, CONTRACTING, xxx

CHIEF, PM-PB, xxx

CHIEF, DPM, xxx

TSP – Plan 4: Nonstructural NED Plan + OSE Increment 2(10%PED and 10%S&A).

Attachment 2: TSP - MII Cost Estimate Output

Amite and Tributaries Feasibility Study					
Plan 4 - NED + OSE Increment 2					
Floodproofing Measures					
Category	Number of Structures	Extended Direct Costs	Temporary Housing	Implementation Admin	Total
Mobile Homes - Raised	142	\$22,682,846	\$0	\$3,270,828	\$25,953,673.63
1 STY Pier - Raised	28	\$4,989,831	\$0	\$644,952	\$5,634,783.03
2 STY Pier - Raised	39	\$6,181,990	\$0	\$898,326	\$7,080,315.91
1 STY Slab - Raised	1662	\$502,059,389	\$0	\$38,282,508	\$540,341,896.67
2 STY Slab - Raised	1047	\$231,915,891	\$0	\$24,116,598	\$256,032,488.94
Commercial - Dry FP	217	\$38,475,446	\$0	\$4,998,378	\$43,473,824.40
Warehouses - Wet FP	163	\$25,745,074	\$0	\$3,754,542	\$29,499,615.91
Warehouses - Fabrication - Wet FP	0	\$0	\$0	\$0	\$0.00
		\$0		\$0	\$0.00
Subtotal	3,298	\$832,050,466	\$0.00	\$75,966,132	\$908,016,598.48

