

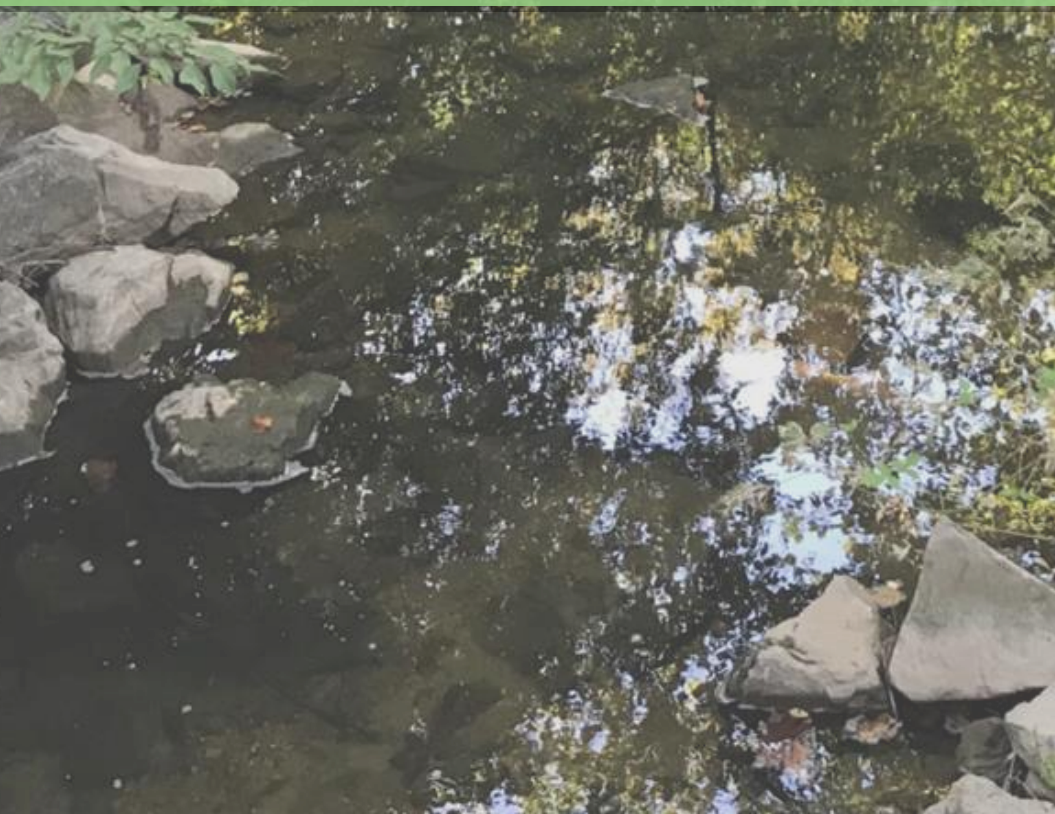


**US Army Corps
of Engineers**

**ANACOSTIA WATERSHED RESTORATION
MONTGOMERY COUNTY, MARYLAND
CONTINUING AUTHORITIES PROGRAM SECTION 206
AQUATIC ECOSYSTEM RESTORATION FEASIBILITY STUDY**

**DRAFT INTEGRATED FEASIBILITY REPORT AND
ENVIRONMENTAL ASSESSMENT**

APPENDIX D: COST ENGINEERING



MARCH 2025

**ANACOSTIA WATERSHED RESTORATION
MONTGOMERY COUNTY, MARYLAND
CONTINUING AUTHORITIES PROGRAM SECTION 206
AQUATIC ECOSYSTEM RESTORATION FEASIBILITY
STUDY**

COST ENGINEERING APPENDIX

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MONTGOMERY COUNTY STREAM RESTORATION COST NARRATIVE

Summary of Scope of Work:

The proposed actions include stream restoration at Bel Pre Creek and Lamberton Creek. This plan will have the greatest impact on habitat improvement in the Anacostia Watershed. Work previously identified for stream restoration in Sligo Creek/Colt Terrace is being implemented by M-NCPPC in coordination with the Washington Sanitary Sewer Commission (WSSC) and is separate from the proposed project. Both sites, Bel Pre Creek and Lamberton Creek, have the same types of work. Quantities for each site vary depending on the hydrology of the site. Construction work for each site typically includes site clearing, cut and fill, in-stream structures such as cross vanes, j-hooks, miscellaneous stones for bank protection, log structures, damaged path restoration, topsoil, seed and mulch, forest planting, erosion control measures, access roads, and some sites, small pedestrian bridge relocation.

Construction Cost Estimate:

The following methodology is used in the preparation of the cost estimate for Montgomery County Stream Restoration Project:

- a. The estimate is in accordance with the guidance contained in ER 1110-2-1302, Civil Works Cost Engineering.
- b. The estimate is presented in Civilworks Work Breakdown Structure.
- c. The price level for the estimate is in 1st Quarter of FY2025.
- d. Construction costs developed by Estimating and Specifications Section are based on the design and quantities developed by NAB Engineering team. Unit costs are developed using the M-CACES Second Generation (MII) software containing the 2024 English Cost Book Library which was used as a starting point. Historical cost models from similar stream restoration projects are used to compare, and vendor quotes are used to update material unit costs. The estimate is documented with notes to explain the assumed construction methods, crews, productivity, and other specific information. The intent is to provide or convey a “fair and reasonable” estimate that which depicts the local market conditions.
- e. Labor costs are based on the 2025 MD prevailing wage rates.
- f. Bid competition: The estimate is set up with all work is subbed out. Bidding competition is assumed to be limited and reflected in the Abbreviated Risk Analysis.
- g. Contract Acquisition Strategy: Undetermined at this point. Either small business competitive or 8A sole source can be the acquisition strategy as it was done in the past

for this type of project. The estimate is set up with Prime Contractor who is assumed to perform minimal work such as contract management and will sub-contract out all remaining work.

h. Labor Shortages: With construction work being ebb and flow in various areas in Montgomery County as well as other areas in the state of Maryland, it is difficult to predict if labor shortage may occur at time of bids. From past historical trends, earthwork and civilwork do not seem to have labor shortage effect. For estimating purposes, it is assumed that there will be a normal labor market at time of project advertisement.

i. Materials: Most recent vendor quotes such as armor stones are used in the estimate. Assumptions include:

1. Materials will be purchased as part of the construction contract. No government furnished materials are assumed. When lack of delivery charge, hauling cost is estimated.
2. Materials will be purchased from local nearest available sources.
3. Hauling: most hauling will be done by trucks. For trucking, it is assumed that the average speed is 30 mph factoring traffic hours in often congested major routes.
4. For the following materials, it is assumed as follows:
 - Seeding item. There should not be anything out of ordinary about this activity. A typical Cost Book item should cover it.
 - Mulch will have a very minimal price change. No Specs is available at current design, but in general mulch for seed and mulch item will be straw mulch and mulch for mulch access road will be wood chips (9" thick mulch road). These items are not very expensive in general and will not have price differences from year to year.
 - Armor stones are updated on Jan 2025 with a quote from Vulcan Materials
 - Silt Fence. There should not be anything out of ordinary about this activity. A typical Cost Book item should cover it.

j. Equipment: Rates used are based from the latest USACE EP-1110-1-8, Region II. Adjustments are made for fuel 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. Full FCCM/Cost of Money rate is latest available; MII program takes EP recommended discount, no other adjustments have been made to the FCCM.

k. Fuels (gasoline, on and off-road diesel) were based on local market averages for on-road and off-road for the PG County area. Since fuels fluctuate irrationally, an average was used.

l. 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 Baltimore District. The crews and productivities were checked by local NAB estimators, discussions with contractors and comparisons with historical cost data. Major crews include hauling, stonework, and planting.

m. Production Rates. Crews for typical earthwork items can be from Cost Book. No need for creating new crews. However, the production rate for each site is revised and was based on best judgment, visual inspection, and past work on similar sites.

- Bel Pre earthwork has 70% productivity. Site access and stream size may pose a slight issue like Northwest Branch work that productivity is deviated from the norm.

- Lamberton Creek 80%. Site access and stream size may pose a slight issue like Northwest Branch work that productivity is slightly deviated from the norm. However, it is noted that the issue may be not as challenging as Bel Pre since less stonework is involved.

n. Development of cost items that have major contribution to the estimate:

- Mob and demob was detail developed to include mobilizing equipment and labor. There are several scenarios that could happen to this item depending on the size of the company of the contractor, whether he sub out most of his work or not, where he may be coming from and where he's going to after the job is done. The estimate is developed with a conservative approach that Prime contractor is a small business that will sub out most of the work and may need to take 8 hrs to move equipment and workers to project site and 8 hrs to demobilize them to another location. This is more conservative than estimating a few truck drivers hauling equipment to site and a superintendent. However, per reviewer's suggestion, mob and demob is revised with a few truck drivers hauling equipment to site and a superintendent who may be from out of town.

- Cycle hauling. This is the hauling cost for fill materials which may already be accounted for in the fill material unit cost depending on where material is coming from. Typically common earth fill materials can be hauled from local construction jobs nearby the project but for a FS level, the MII estimate was developed with a conservative approach that extra miles may be required in case a source location is a little further out. It is best to leave this item as is.

- Fill from stockpile. This is just a cost to spread the excavated materials to be reused as fill. It may take less than 300' haul with a front end loader crawler, but it's included just in case. Plus, there's lower productivity rate applied to be on the safe side. It is best to leave this item as is.

- Rigid Piping. This is for pumping around, aka stream diversion. This is a budgetary price for what was used in the past in a similar project nearby. It's an all inclusive cost for pipes and fittings. Pipe size needed is depending on the flow of the stream (mostly slow flow) but specifically unknown at the moment. Material cost is expected to be the same. For a FS estimate, the same budgetary cost was used. With ARA contingency at 35% applied to all items, the estimated cost for this item is considered well-covered.

- Relocate Rigid Piping. This is a labor cost to relocate the stream diversion pipe. For a FS estimate, it is conservatively estimated using the same cost as Rigid Piping. The unit cost will probably be less than anticipated, but included with same unit cost just

in case. With ARA contingency at 35% applied to all items, the estimated cost for this item is considered well-covered.

- 10" Pump, 2 pumps. This is a cost to pump the water around for an estimated 180 days in 1 location of a site. It's based on knowledge from a similar project nearby (Northwest Branch) and it is anticipated that this cost will have a minimal change, if any. Number of pumping days are on conservative side per discussion with in-house HH Engineer based on his best judgment. With ARA contingency at 35% applied to all items, the estimated cost for this item is considered well-covered.

- Willow stakes. It's a cost to plant willow stakes (material and labor). Cost is borrowed from Northwest Branch project. Willow stake material cost is very minimal and has been shown to be the same from year to year at \$2.10/ea (http://www.pinelandsnursery.com/search/label/Trees_and_Shrubs). Labor cost may be high considering the estimated production rate for this task being conservative at 14 stakes per hour. With ARA contingency at 36.4% applied to all items, the estimated cost for this item is considered well-covered.

- Orange Construction Fence. Home Depot sells this fence without posts for \$0.30 per lf. Cost was borrowed from the Northwest Branch estimate. Unit material price is expected to be the same. Installation cost may be a little higher. To be on the safe side, this item is replaced with "temporary fencing, plastic safety fence, 4' high, light duty, posts at 10'."

- o. Most crew work hours are assumed to be 8 hrs 5 days/week which is typical to the area. It is anticipated that no overtime is required for reasons such as time of year restriction because there is none.

- p. Mobilization and demobilization: Contractor mobilization and demobilization are based on the assumption that most of the contractors will take about one 8 hrs day to mobilize and one 8 hrs day to demobilize.

- q. Field Office Overhead: Detail calculation was done for Job Office Overhead. 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 and 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.

- r. Home Office Overhead: A typical 10% was used. The rates are based upon the fact that most small businesses have high home office overhead and was based on estimating and past negotiating experience, and consultation with local construction representatives.

- s. Profit: Since the Construction Cost Estimate is currently in a Feasibility Study phase, profit is included at 9% for Prime and 9% Prime's Profit on Sub's work. These are typical average profit rates. Sub-contractors' profit is 10% because subs are assumed doing most of the work.

- t. Sales Tax: Only State sales tax was applied. No local sales tax was included in the estimate.
- u. Bond: Bond is assumed at 1.5% applied against the prime contractor.
- v. Contingency: Contingency is based the outcome of the Abbreviated Risk Analysis for Recommended Plan which was done in April 2024 and updated in Mar 2025.
- w. Escalation: No escalation to midpoint of construction according to tentative construction start dates is included in the estimate but will be included in the Total Project Cost Summary (TPCS) to avoid duplicates.
- x. Adaptive Management. It is an administrative cost and professional hours to monitor the site. Estimated cost is from Table 6 of Appendix H - MONITORING AND ADAPTIVE MANAGEMENT PLAN. This cost is added to TPCS instead of including in MII estimate.
- y. Operations and Maintenance. This is an estimated annual sponsor cost to maintain the project after it was built. It includes annual inspection, post storm inspection, and tree and debris removal. It is a separate estimate for economic calculation purpose only and is not part of initial construction cost nor consideration in the ARA.
- z. Monitoring. This is not included and is an estimated annual sponsor cost to monitor the project to see if it meets the environmental goals. It is a separate estimate based on historical costs and based on consultation with the appropriate disciplines of the project delivery team.
- aa. HTRW: The estimate includes no costs for Hazardous, Toxic, and Radioactive Waste (HTRW) since there is no potential concern for HTRW.

Total Project Cost Summary (TPCS)

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

PROJECT: **Anacostia Watershed Restoration, Montgomery County - Selected Sites**
PROJECT NO: **466073**
LOCATION: **Montgomery County, MD**

DISTRICT: **NAB District**

POC: **CHIEF, Estimating and Specs Section, Mark Buehn**

PREPARED: **3/28/2025**

This Estimate reflects the scope and schedule in report; Draft Integrated Feasibility Report and Environmental Assessment March 2025

Civil Works Work Breakdown Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)						TOTAL PROJECT COST (FULLY FUNDED)			
WBS NUMBER	Civil Works Feature & Sub-Feature Description	COST (\$K)	CNTG (\$K)	CNTG (%)	TOTAL (\$K)	Program Year (Budget EC): Effective Price Level Date:				2026 1-Oct- 25	TOTAL FIRST COST (\$K)	ESC (%)	COST (\$K)	CNTG (\$K)	FULL (\$K)
						ESC (%)	COST (\$K)	CNTG (\$K)	REMAINING COST (\$K)	Spent Thru: 30-Sep-24 (\$K)					
16	BANK STABILIZATION	\$8,675	\$4,141	48%	\$12,816	2.7%	\$8,910	\$4,252	\$13,162		\$13,162	14.3%	\$10,181	\$4,859	\$15,040
				-		-						-			
				-		-						-			
				-		-						-			
	CONSTRUCTION ESTIMATE TOTALS:	\$8,675	\$4,141		\$12,816	2.7%	\$8,910	\$4,252	\$13,162		\$13,162	14.3%	\$10,181	\$4,859	\$15,040
01	LANDS AND DAMAGES	\$1,076	\$215	20%	\$1,291	2.7%	\$1,105	\$221	\$1,326		\$1,326	6.7%	\$1,178	\$236	\$1,414
30	PLANNING, ENGINEERING & DESIGN	\$3,101	\$483	16%	\$3,584	3.1%	\$3,197	\$498	\$3,695		\$3,695	9.8%	\$3,511	\$546	\$4,057
31	CONSTRUCTION MANAGEMENT	\$1,085	\$122	11%	\$1,207	3.1%	\$1,119	\$126	\$1,245		\$1,245	17.1%	\$1,309	\$148	\$1,457
	PROJECT COST TOTALS:	\$13,937	\$4,961	36%	\$18,898		\$14,330	\$5,097	\$19,428		\$19,428	13.1%	\$16,179	\$5,789	\$21,968

- CHIEF, Estimating and Specs Section, Mark Buehn
- STUDY MANAGER, Luis Santiago
- CHIEF, REAL ESTATE, Stanley H. Graham
- CHIEF, PLANNING, Amy M. Guise
- CHIEF, ENGINEERING, Mary Foutz
- CHIEF, OPERATIONS, William Seib
- CHIEF, CONSTRUCTION, Kevin Coleman
- CHIEF, CONTRACTING, Paula M. Beck
- CHIEF, PM-PB, Charles Leasure
- CHIEF, DPM, David B. Morrow

ESTIMATED TOTAL PROJECT COST:		\$21,968
ESTIMATED FEDERAL COST:	65%	\$14,279
ESTIMATED NON-FEDERAL COST:	35%	\$7,689
22 - FEASIBILITY STUDY (CAP studies):		\$850
ESTIMATED FEDERAL COST:	50%	\$425
ESTIMATED NON-FEDERAL COST:	50%	\$425
ESTIMATED FEDERAL COST OF PROJECT		\$14,704

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

**** CONTRACT COST SUMMARY ****

PROJECT: Anacostia Watershed Restoration, Montgomery County - Selected Sites
LOCATION: Montgomery County, MD
This Estimate reflects the scope and schedule in report; Draft Integrated Feasibility Report and Environmental Assessment March 2025

DISTRICT: NAB District
POC: CHIEF, Estimating and Specs Section, Mark Buehn
PREPARED: 3/28/2025

WBS Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)				TOTAL PROJECT COST (FULLY FUNDED)				
		Estimate Prepared: 28-Mar-25 Estimate Price Level: 1-Oct-24				Program Year (Budget EC): 2026 Effective Price Level Date: 1 -Oct-25								
WBS NUMBER A	Civil Works Feature & Sub-Feature Description B	RISK BASED												
		COST (\$K) C	CNTG (\$K) D	CNTG (%) E	TOTAL (\$K) F	ESC (%) G	COST (\$K) H	CNTG (\$K) I	TOTAL (\$K) J	Mid-Point Date P	ESC (%) L	COST (\$K) M	CNTG (\$K) N	FULL (\$K) O
16	Lamberton Creek Tributary BANK STABILIZATION	\$2,008	\$959	47.7%	\$2,967	2.7%	\$2,062	\$984	\$3,047	2031Q1	13.7%	\$2,345	\$1,119	\$3,464
CONSTRUCTION ESTIMATE TOTALS:		\$2,008	\$959	47.7%	\$2,967		\$2,062	\$984	\$3,047			\$2,345	\$1,119	\$3,464
01	LANDS AND DAMAGES	\$161	\$32	20.0%	\$193	2.7%	\$165	\$33	\$198	2028Q3	6.7%	\$176	\$35	\$211
30	PLANNING, ENGINEERING & DESIGN													
2.5%	Project Management	\$50	\$7	14.7%	\$57	3.1%	\$52	\$8	\$59	2028Q3	7.9%	\$56	\$8	\$64
1.0%	Planning & Environmental Compliance	\$20	\$3	14.7%	\$23	3.1%	\$21	\$3	\$24	2028Q3	7.9%	\$22	\$3	\$26
15.0%	Engineering & Design	\$301	\$44	14.7%	\$345	3.1%	\$310	\$46	\$356	2028Q3	7.9%	\$335	\$49	\$384
1.0%	Reviews, ATRs, IEPRs, VE	\$20	\$3	14.7%	\$23	3.1%	\$21	\$3	\$24	2028Q3	7.9%	\$22	\$3	\$26
1.0%	Life Cycle Updates (cost, schedule, risks)	\$20	\$3	14.7%	\$23	3.1%	\$21	\$3	\$24	2028Q3	7.9%	\$22	\$3	\$26
1.0%	Contracting & Reprographics	\$20	\$3	14.7%	\$23	3.1%	\$21	\$3	\$24	2031Q1	16.4%	\$24	\$4	\$28
3.0%	Engineering During Construction	\$60	\$9	14.7%	\$69	3.1%	\$62	\$9	\$71	2031Q1	16.4%	\$72	\$11	\$83
2.0%	Planning During Construction	\$40	\$6	14.7%	\$46	3.1%	\$41	\$6	\$47	2028Q3	7.9%	\$45	\$7	\$51
	Adaptive Management & Monitoring	\$64	\$9	14.7%	\$74	3.1%	\$66	\$10	\$76	2031Q1	16.4%	\$77	\$11	\$89
	Project Operations			14.7%										
	Real Estate (All Federal Labor)	\$77	\$15	20.0%	\$93	3.1%	\$80	\$16	\$96	2028Q3	7.9%	\$86	\$17	\$103
31	CONSTRUCTION MANAGEMENT													
10.0%	Construction Management	\$201	\$23	11.3%	\$224	3.1%	\$207	\$23	\$231	2031Q1	16.4%	\$241	\$27	\$268
2.5%	Project Operation: Project Management	\$50	\$6	11.3%	\$56	3.1%	\$52	\$6	\$57	2031Q1	16.4%	\$60	\$7	\$67
CONTRACT COST TOTALS:		\$3,092	\$1,122		\$4,214		\$3,180	\$1,153	\$4,333			\$3,583	\$1,305	\$4,888

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

**** CONTRACT COST SUMMARY ****

PROJECT: Anacostia Watershed Restoration, Montgomery County - Selected Sites
LOCATION: Montgomery County, MD
This Estimate reflects the scope and schedule in report; Draft Integrated Feasibility Report and Environmental Assessment March 2025

DISTRICT: NAB District
POC: CHIEF, Estimating and Specs Section, Mark Buehn
PREPARED: 3/28/2025

WBS Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)				TOTAL PROJECT COST (FULLY FUNDED)				
		Estimate Prepared: 1-Oct-24 Estimate Price Level:				Program Year (Budget EC): 2026 Effective Price Level Date: 1 -Oct-25								
		RISK BASED												
WBS NUMBER A	Civil Works Feature & Sub-Feature Description B	COST (\$K) C	CNTG (\$K) D	CNTG (%) E	TOTAL (\$K) F	ESC (%) G	COST (\$K) H	CNTG (\$K) I	TOTAL (\$K) J	Mid-Point Date P	ESC (%) L	COST (\$K) M	CNTG (\$K) N	FULL (\$K) O
Bel Pre Creek Tributary														
16	BANK STABILIZATION	\$6,667	\$3,182	47.7%	\$9,849	2.7%	\$6,847	\$3,268	\$10,115	2031Q2	14.4%	\$7,836	\$3,740	\$11,576
CONSTRUCTION ESTIMATE TOTALS:		\$6,667	\$3,182	47.7%	\$9,849		\$6,847	\$3,268	\$10,115			\$7,836	\$3,740	\$11,576
01	LANDS AND DAMAGES	\$915	\$183	20.0%	\$1,098	2.7%	\$940	\$188	\$1,128	2028Q3	6.7%	\$1,003	\$201	\$1,203
30	PLANNING, ENGINEERING & DESIGN													
2.5%	Project Management	\$167	\$25	14.7%	\$192	3.1%	\$172	\$25	\$197	2028Q3	7.9%	\$186	\$27	\$213
1.0%	Planning & Environmental Compliance	\$67	\$10	14.7%	\$77	3.1%	\$69	\$10	\$79	2028Q3	7.9%	\$75	\$11	\$86
15.0%	Engineering & Design	\$1,000	\$147	14.7%	\$1,147	3.1%	\$1,031	\$151	\$1,182	2028Q3	7.9%	\$1,113	\$164	\$1,276
1.0%	Reviews, ATRs, IEPRs, VE	\$67	\$10	14.7%	\$77	3.1%	\$69	\$10	\$79	2028Q3	7.9%	\$75	\$11	\$86
1.0%	Life Cycle Updates (cost, schedule, risks)	\$67	\$10	14.7%	\$77	3.1%	\$69	\$10	\$79	2028Q3	7.9%	\$75	\$11	\$86
1.0%	Contracting & Reprographics	\$67	\$10	14.7%	\$77	3.1%	\$69	\$10	\$79	2031Q2	17.3%	\$81	\$12	\$93
3.0%	Engineering During Construction	\$200	\$29	14.7%	\$229	3.1%	\$206	\$30	\$236	2031Q2	17.3%	\$242	\$36	\$277
2.0%	Planning During Construction	\$133	\$20	14.7%	\$153	3.1%	\$137	\$20	\$157	2028Q3	7.9%	\$148	\$22	\$170
	Adaptive Management & Monitoring	\$226	\$33	14.7%	\$259	3.1%	\$233	\$34	\$267	2031Q2	17.3%	\$273	\$40	\$313
	Project Operations			14.7%										
	Real Estate (All Federal Labor)	\$434	\$87	20.0%	\$521	3.1%	\$448	\$90	\$537	2028Q3	7.9%	\$483	\$97	\$580
31	CONSTRUCTION MANAGEMENT													
10.0%	Construction Management	\$667	\$75	11.3%	\$742	3.1%	\$688	\$78	\$765	2031Q2	17.3%	\$806	\$91	\$897
	Project Operation:													
2.5%	Project Management	\$167	\$19	11.3%	\$186	3.1%	\$172	\$19	\$192	2031Q2	17.3%	\$202	\$23	\$225
CONTRACT COST TOTALS:		\$10,845	\$3,839		\$14,684		\$11,151	\$3,945	\$15,095			\$12,596	\$4,484	\$17,080

MII Cost Estimate

Costs for accounts 30 and 31 are accounted for in the TPCS. The estimate is price upgraded to 2025 with Cost Book 2024 and with new 2025 quoted material prices (Vulcan Materials) Equipment 2024 with latest Jan 2025 fuel rates, and latest prevailing labor wage rates for MD.

Escalation to Present is included at 2.4% from ENR Material Index
No Escalation of Equipment to Present bc the ENR CCI rate is less than 1%.

Escalation to midpoint is applied in TPCS.

Estimated by CENAB-EN-DT
Designed by CENAB-EN
Prepared by Luan Ngo
Preparation Date 3/13/2025
Effective Date of Pricing 3/13/2025
Estimated Construction Time 365 Days
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Description		Quantity	UOM	ContractCost
Cost Summary				8,675,140.90
1 Bel Pre		13,016.0000	LF	6,666,961.60
1.1 Bank Stabilization		1.0000	EA	6,666,961.60
1.1.1 Stream Restoration		1.0000	EA	6,666,961.60
1.1.1.1 Mob, Demob & Preparatory Work		1.0000	EA	233,933.45
1.1.1.2 Earthwork		1.0000	EA	123,777.22
1.1.1.3 Associated General Items		1.0000	EA	6,309,250.93
2 Lamberton		3,893.0000	LF	2,008,179.30
2.1 Bank Stabilization		1.0000	EA	2,008,179.30
2.1.1 Stream Restoration		1.0000	EA	2,008,179.30
2.1.1.1 Mob, Demob & Preparatory Work		1.0000	EA	256,442.67
2.1.1.2 Earthwork		1.0000	EA	26,656.90
2.1.1.3 Associated General Items		1.0000	EA	1,725,079.73

Abbreviated Risk Analysis (ARA)

Abbreviated Risk Analysis

Project (less than \$40M): **Anacostia Watershed Restoration, Montgomery County**
Project Development Stage/Alternative: **Feasibility (Alternatives)**
Risk Category: **Moderate Risk: Typical Project Construction Type**

Alternative:

Meeting Date: **3/13/2025**

Total Estimated Construction Contract Cost = **\$ 2,008,179**

	<u>CWWBS</u>	<u>Feature of Work</u>	<u>Estimated Cost</u>	<u>% Contingency</u>	<u>\$ Contingency</u>	<u>Total</u>
	01 LANDS AND DAMAGES	Real Estate	\$ 237,840	20%	\$ 47,568	\$ 285,408
1	16 BANK STABILIZATION	Lamberton Creek Tributary	\$ 2,008,179	48%	\$ 958,504	\$ 2,966,684
12	All Other	Remaining Construction Items	0.0%	0%	\$ -	\$ -
13	30 PLANNING, ENGINEERING, AND DESIGN	Planning, Engineering, & Design	\$ 595,400	15%	\$ 87,613	\$ 683,013
14	31 CONSTRUCTION MANAGEMENT	Construction Management	\$ 251,000	11%	\$ 28,300	\$ 279,300
XX	FIXED DOLLAR RISK ADD (EQUALLY DISPERSED TO ALL, MUST INCLUDE JUSTIFICATION SEE BELOW)				\$ -	

Totals						
	Real Estate	\$	237,840	20%	\$ 47,568	\$ 285,408.00
	Total Construction Estimate	\$	2,008,179	48%	\$ 958,504	\$ 2,966,684
	Total Planning, Engineering & Design	\$	595,400	15%	\$ 87,613	\$ 683,013
	Total Construction Management	\$	251,000	11%	\$ 28,300	\$ 279,300
	Total Excluding Real Estate	\$	2,854,579	38%	\$ 1,074,418	\$ 3,928,997

Confidence Level Range Estimate (\$000's)	Base	50%	80%
	\$2,855k	\$3,499k	\$3,929k

* 50% based on base is at 5% CL.

Fixed Dollar Risk Add: (Allows for additional risk to be added to the risk analysis. Must include justification. Does not allocate to Real Estate.

Abbreviated Risk Analysis

Project (less than \$40M): **Anacostia Watershed Restoration, Montgomery County**
Project Development Stage/Alternative: **Feasibility (Alternatives)**
Risk Category: **Moderate Risk: Typical Project Construction Type**

Alternative:

Meeting Date: **3/13/2025**

Total Estimated Construction Contract Cost = **\$ 6,666,962**

	<u>CWWBS</u>	<u>Feature of Work</u>	<u>Estimated Cost</u>	<u>% Contingency</u>	<u>\$ Contingency</u>	<u>Total</u>
	01 LANDS AND DAMAGES	Real Estate	\$ 1,349,645	20%	\$ 269,929	\$ 1,619,574
1	16 BANK STABILIZATION	Bel Pre Tributary	\$ 6,666,962	48%	\$ 3,182,000	\$ 9,848,962
12	All Other	Remaining Construction Items	0.0%	0%	\$ -	\$ -
13	30 PLANNING, ENGINEERING, AND DESIGN	Planning, Engineering, & Design	\$ 1,994,000	15%	\$ 293,000	\$ 2,287,000
14	31 CONSTRUCTION MANAGEMENT	Construction Management	\$ 834,000	11%	\$ 94,000	\$ 928,000
XX	FIXED DOLLAR RISK ADD (EQUALLY DISPERSED TO ALL, MUST INCLUDE JUSTIFICATION SEE BELOW)				\$ -	

Totals						
	Real Estate	\$	1,349,645	20%	\$ 269,929	\$ 1,619,574.00
	Total Construction Estimate	\$	6,666,962	48%	\$ 3,182,000	\$ 9,848,962
	Total Planning, Engineering & Design	\$	1,994,000	15%	\$ 293,000	\$ 2,287,000
	Total Construction Management	\$	834,000	11%	\$ 94,000	\$ 928,000
	Total Excluding Real Estate	\$	9,494,962	38%	\$ 3,569,000	\$ 13,063,962

Confidence Level Range Estimate (\$000's)	Base	50%	80%
	\$9,495k	\$11,636k	\$13,064k

* 50% based on base is at 5% CL.

Fixed Dollar Risk Add: (Allows for additional risk to be added to the risk analysyis. Must include justification. Does not allocate to Real Estate.