

ROCKAWAY RIVER AND DEN BROOK  
DENVILLE TOWNSHIP  
MORRIS COUNTY, NEW JERSEY  
CAP SECTION 205  
FLOOD RISK MANAGEMENT STUDY

APPENDIX F  
COST ENGINEERING

**September 2023**



U.S. Army Corps of Engineers  
North Atlantic Division – New York and Baltimore Districts  
In partnership with the New Jersey Department of Environmental Protection

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## DENVILLE FLOOD RISK MANAGEMENT STUDY COST NARRATIVE

### Summary of Scope of Work:

For 25-years flood damage reduction study, the Structural Plan was not selected because it exceeded the CAP Program limit of \$15 million by about \$11.3 million in 2020 price level. Therefore the Recommended Plan is to use Nonstructural plan for the Denville Project. The nonstructural estimate is now updated to FY23 price level which includes the following civil works feature accounts:

- Account 19. Buildings, Grounds, & Utilities. The proposed project alignment includes nonstructural measures for multiple areas which were parametrically estimated by Baltimore District based on the GIS data, past nonstructural studies, local market survey, and in consideration for best areas with most economic benefits. The nonstructural measures for properties in selected area include Raising Exterior Utilities, Construction of Utilities, Flood Louvers, Slab Elevation, Basement Wet Flood Proofing, Basement Elevation, Split Level Elevation, and Commercial Dry Flood Proofing. All properties in the area are sorted by their structural types and by their recommended nonstructural treatments. For every type of property, the MII estimate includes a representative cost for it. These costs are tabulated in a Pivot Table shown as a tab in TPCS Excel. MII nonstructural costs for all types of properties are matching to each property for all clusters or areas of consideration. However, not all properties within an area are selected, and not all areas are selected. For example, a few of properties in Hinchman Snyder area and in South area are not selected because of their low economic values. The costs for selected properties are included in the Total Project Cost Summary (TPCS) for final Benefit Cost Ratio (BCR) calculation. Backup cost data is included as tab called “Clusters” in TPCS Excel, showing cost for each property based on MII estimate and indicating which areas (or clusters) of properties are included in Recommended Plan. Note: The 2023 recommended clusters are different than those in 2021.
- Account 18. Cultural Resource Preservation. Per team’s discussion, cultural preservation appears to be unlikely needed. However, per team’s input, there should be some cost just in case. As a general rule of estimating based on past similar studies, it is included at 2% of nonstructural cost for now.
- Account 1. Land and Damages. Real estate administration costs, real estate relocation costs, and easement costs are estimated by Real Estate Division based on selected properties for nonstructural measures.
- Account 30. Planning Engineering and Design. It is calculated as percentage of construction cost based on discussion with project team using the TPCS Input guidance to come up with project specific percentages for possible applicable tasks or submissions.
- Account 31. Construction Management. It is calculated as percentage of construction cost based on discussion with project team using the TPCS Input guidance to come up with project specific percentages for possible applicable tasks or submissions.

## **Construction Cost Estimate for Nonstructural Measures:**

The following methodology is used in the preparation of the nonstructural cost estimate for Denville Flood Damage Reduction 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 1<sup>st</sup> Quarter of FY2023.
- d. Nonstructural costs developed by Estimating and Specifications Section, Engineering Division, Baltimore District with the help of Huntington District Cost Engineering are based on available types of properties in the area which are grouped according to their structural types and their needed nonstructural treatments. The MII estimate was done for each type of properties. Final groups (or clusters) of properties are selected based on their best economic values in the area per project team's discussion. Unit costs are developed using the M-CACES Second Generation (MII) software containing the 2022 English Cost Book Library which was used as a starting point. Past cost data based on similar nonstructural studies and allowances based on FEMA's Hazard Mitigation Grant Program are used for parametric estimating, and local sub bid quotes were used in considerations of overall nonstructural cost for each property. 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 National Labor Library which is updated with latest Davis Bacon wage rates for Morris County, NJ.
- f. Bid competition: No contracting plan is done at this point. Bidding competition is assumed to be small business competitive since the amount work of the project will likely draw many local contractors to bid on the project.
- g. Contract Acquisition Strategy: Acquisition strategy is not yet determined at this point. However, based on the market survey and a local contractor's quotes for this type of work, Prime Contractor is likely to self-perform most work and will sub-contract out remaining work which is assumed to be utilities work.
- h. Labor Shortages: It is assumed that labor shortage is likely minimal since Denville and surrounding towns with decent population are less likely to have many construction jobs that would run out of workers. Plus, this project is likely to be awarded in multiple contracts with groups of properties till all properties in consideration are awarded.
- i. Materials: Most material costs are from the Cost Book Library. Assumptions include:
  1. No government furnished materials are assumed.
  2. Materials will be 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.
- 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 non-road and off-road fuels. 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 considered typical civil work to the Baltimore District. The crews and productivities were checked by local Baltimore District estimators, discussions with contractors, and comparisons with historical cost data. Major crews include earthwork, paving, hauling, stonework, and planting.
- m. 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.
- n. 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. Mob and demob cost is detail estimated in General Requirements.
- o. Field Office Overhead: Field office overhead is itemized in General Requirements and includes typical costs such as 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.
- p. Home Office Overhead: Due to relatively small size of project a little higher than typical percentage was used (10%) for HOOH. The rates are based upon estimating and negotiating experience, and consultation with local construction representatives.
- q. Profit: Profit Weighted Guide Line was used for Prime contractor and 1% for Subcontractors.

- r. Sales Tax: Only State sales tax was applied. No local sales tax was included in the estimate.
- s. Bond: Bond is based Table Bond B calculation for the Prime contractor.
- t. Contingency: Contingencies are from the outcome of the Abbreviated Risk Analysis completed by team (33% for account 19, 22.3% for account 18, 11.5% for Planning Engineering Design, and 13.4% for Construction Management).
- u. Escalation: No escalation to midpoint of construction is included in the MII estimate. Escalation will only be included in the Total Project Cost Summary (TPCS) to avoid duplication. Per team's discussion, for all groups or clusters of properties, midpoint of construction is tentatively in first quarter of 2027, and midpoint of design is tentatively in first quarter of 2025.
- v. HTRW: The estimate includes no costs for Hazardous, Toxic, and Radioactive Waste (HTRW) since there is no potential concern for HTRW.

## Recommended Plan Total Project Cost Summary (TPCS)

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Updated in FY2023 Price Level

PROJECT: Denville Feasibility Study - Selected Nonstructural Measures 25 Years  
PROJECT NO: P2 446023  
LOCATION: Denville, NJ

DISTRICT: NAB District  
POC: CHIEF, Estimating and Specs Section, Mark Buehn  
PREPARED: 11/15/2022

RECOMMENDED PLAN

This Estimate reflects the scope and schedule in report; FS Report (underway)

Civil Works Work Breakdown Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)						TOTAL PROJECT COST (FULLY FUNDED)			
						Program Year (Budget EC): 2023 Effective Price Level Date: 1 OCT 22									
WBS NUMBER	Civil Works Feature & Sub-Feature Description	COST (\$K)	CNTG (\$K)	CNTG (%)	TOTAL (\$K)	ESC (%)	COST (\$K)	CNTG (\$K)	TOTAL (\$K)	Spent Thru: 1-Oct-22 (\$K)	TOTAL FIRST COST (\$K)	INFLATED (%)	COST (\$K)	CNTG (\$K)	FULL (\$K)
A	B	C	D	E	F	G	H	I	J		K	L	M	N	O
19	BUILDINGS, GROUNDS & UTILITIES	\$8,527	\$2,811	33.0%	\$11,338	0.0%	\$8,527	\$2,811	\$11,338	\$0	\$11,338	11.1%	\$9,473	\$3,123	\$12,596
18	CULTURAL RESOURCE PRESERVATION	\$171	\$38	22.3%	\$209	0.0%	\$171	\$38	\$209	\$0	\$209	11.1%	\$189	\$42	\$232
CONSTRUCTION ESTIMATE TOTALS:		\$8,697	\$2,850		\$11,547	0.0%	\$8,697	\$2,850	\$11,547	\$0	\$11,547	11.1%	\$9,662	\$3,166	\$12,828
01	LANDS AND DAMAGES	\$4,835	\$207	4.3%	\$5,042	0.0%	\$4,835	\$207	\$5,042	\$0	\$5,042	5.5%	\$5,103	\$218	\$5,321
30	PLANNING, ENGINEERING & DESIGN	\$1,326	\$153	11.5%	\$1,479	0.0%	\$1,326	\$153	\$1,479	\$0	\$1,479	5.5%	\$1,400	\$161	\$1,561
31	CONSTRUCTION MANAGEMENT	\$826	\$111	13.4%	\$937	0.0%	\$826	\$111	\$937	\$0	\$937	9.8%	\$907	\$122	\$1,028
PROJECT COST TOTALS:		\$15,685	\$3,320	21.2%	\$19,005		\$15,685	\$3,320	\$19,005	\$0	\$19,005	9.1%	\$17,072	\$3,666	\$20,738

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- CHIEF, Estimating and Specs Section, Mark Buehn
- 
- PROJECT MANAGER, Bethany Mcclanahan (NAN)
- 
- CHIEF, REAL ESTATE, Craig Homesley
- 
- CHIEF, PLANNING, Amy M. Guise
- 
- CHIEF, ENGINEERING, Mary P. Foutz
- 
- CHIEF, OPERATIONS, William Seib
- 
- CHIEF, CONSTRUCTION, Kevin Coleman
- 
- CHIEF, CONTRACTING, Paula M. Beck
- 
- CHIEF, PP-C, Charles Leasure
- 
- CHIEF, DPM, David B. Morrow

ESTIMATED TOTAL PROJECT COST:		\$20,738
ESTIMATED FEDERAL COST:		37.5% \$7,777
ESTIMATED NON-FEDERAL COST:		62.5% \$12,961
22 - FEASIBILITY STUDY (CAP studies):		\$1,137
ESTIMATED FEDERAL COST:		50% \$586
ESTIMATED NON-FEDERAL COST:		50% \$551
ESTIMATED FEDERAL COST OF PROJECT		\$8,363



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

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\*\*\*\* CONTRACT COST SUMMARY \*\*\*\*

PROJECT: Denville Feasibility Study - Selected Nonstructural Measures 25 Years  
LOCATION: Denville, NJ  
This Estimate reflects the scope and schedule in report; FS Report (underway)

DISTRICT: NAB District  
POC: CHIEF, Estimating and Specs Section, Mark Buehn  
PREPARED: 11/15/2022

Civil Works Work Breakdown Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)				TOTAL PROJECT COST (FULLY FUNDED)				
		Estimate Prepared: 15-Nov-22 Effective Price Level: 1-Oct-22				Program Year (Budget EC): 2023 Effective Price Level Date: 1 OCT 22								
WBS NUMBER	Civil Works Feature & Sub-Feature Description	COST (\$K)	CNTG (\$K)	CNTG (%)	TOTAL (\$K)	ESC (%)	COST (\$K)	CNTG (\$K)	TOTAL (\$K)	Mid-Point Date	INFLATED (%)	COST (\$K)	CNTG (\$K)	FULL (\$K)
A	B	C	D	E	F	G	H	I	J	P	L	M	N	O
North Area														
19	BUILDINGS, GROUNDS & UTILITIES	\$2,271	\$749	33.0%	\$3,020	0.0%	\$2,271	\$749	\$3,020	2027Q1	11.1%	\$2,523	\$832	\$3,355
18	CULTURAL RESOURCE PRESERVATION	\$45	\$10	22.3%	\$56	0.0%	\$45	\$10	\$56	2027Q1	11.1%	\$50	\$11	\$62
CONSTRUCTION ESTIMATE TOTALS:		\$2,316	\$759	32.8%	\$3,075		\$2,316	\$759	\$3,075			\$2,573	\$843	\$3,416
01	LANDS AND DAMAGES	\$1,439	\$62	4.3%	\$1,500	0.0%	\$1,439	\$62	\$1,500	2025Q1	5.5%	\$1,519	\$65	\$1,584
30	PLANNING, ENGINEERING & DESIGN													
2.5%	Project Management	\$58	\$7	11.5%	\$65	0.0%	\$58	\$7	\$65	2025Q1	5.1%	\$61	\$7	\$68
1.0%	Planning & Environmental Compliance	\$23	\$3	11.5%	\$26	0.0%	\$23	\$3	\$26	2025Q1	5.1%	\$24	\$3	\$27
8.0%	Engineering & Design	\$185	\$21	11.5%	\$207	0.0%	\$185	\$21	\$207	2025Q1	5.1%	\$195	\$22	\$217
1.3%	Reviews, ATRs, IEPRs, VE	\$29	\$3	11.5%	\$32	0.0%	\$29	\$3	\$32	2025Q1	5.1%	\$30	\$3	\$34
1.0%	Life Cycle Updates (cost, schedule, risks)	\$23	\$3	11.5%	\$26	0.0%	\$23	\$3	\$26	2025Q1	5.1%	\$24	\$3	\$27
0.0%	Contracting & Reprographics	\$0	\$0	11.5%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
1.0%	Engineering During Construction	\$23	\$3	11.5%	\$26	0.0%	\$23	\$3	\$26	2027Q1	9.8%	\$25	\$3	\$28
0.5%	Planning During Construction	\$12	\$1	11.5%	\$13	0.0%	\$12	\$1	\$13	2027Q1	9.8%	\$13	\$1	\$14
0.0%	Adaptive Management & Monitoring	\$0	\$0	11.5%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
0.0%	Project Operations	\$0	\$0	11.5%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
31	CONSTRUCTION MANAGEMENT													
7.5%	Construction Management	\$174	\$23	13.4%	\$197	0.0%	\$174	\$23	\$197	2027Q1	9.8%	\$191	\$26	\$216
0.0%	Project Operation:	\$0	\$0	13.4%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
2.0%	Project Management	\$46	\$6	13.4%	\$53	0.0%	\$46	\$6	\$53	2027Q1	9.8%	\$51	\$7	\$58
CONTRACT COST TOTALS:		\$4,329	\$891		\$5,219		\$4,329	\$891	\$5,219			\$4,706	\$983	\$5,690

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

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\*\*\*\* CONTRACT COST SUMMARY \*\*\*\*

PROJECT: Denville Feasibility Study - Selected Nonstructural Measures 25 Years  
LOCATION: Denville, NJ  
This Estimate reflects the scope and schedule in report; FS Report (underway)

DISTRICT: NAB District  
POC: CHIEF, Estimating and Specs Section, Mark Buehn  
PREPARED: 11/15/2022

Civil Works Work Breakdown Structure			ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)				TOTAL PROJECT COST (FULLY FUNDED)				
			Estimate Prepared:		15-Nov-22	Program Year (Budget EC):		2023		FULLY FUNDED PROJECT ESTIMATE					
			Effective Price Level:		1-Oct-22	Effective Price Level Date:		1 OCT 22							
WBS NUMBER	Civil Works Feature & Sub-Feature Description	COST (\$K)	CNTG (\$K)	CNTG (%)	TOTAL (\$K)	ESC (%)	COST (\$K)	CNTG (\$K)	TOTAL (\$K)	Mid-Point Date	INFLATED (%)	COST (\$K)	CNTG (\$K)	FULL (\$K)	
A	B	C	D	E	F	G	H	I	J	P	L	M	N	O	
North Riverside Dr Area															
19	BUILDINGS, GROUNDS & UTILITIES	\$3,035	\$1,001	33.0%	\$4,036	0.0%	\$3,035	\$1,001	\$4,036	2027Q1	11.1%	\$3,372	\$1,112	\$4,484	
18	CULTURAL RESOURCE PRESERVATION	\$61	\$14	22.3%	\$74	0.0%	\$61	\$14	\$74	2027Q1	11.1%	\$67	\$15	\$82	
CONSTRUCTION ESTIMATE TOTALS:		\$3,096	\$1,014	32.8%	\$4,110		\$3,096	\$1,014	\$4,110			\$3,439	\$1,127	\$4,566	
01	LANDS AND DAMAGES	\$1,574	\$67	4.3%	\$1,641	0.0%	\$1,574	\$67	\$1,641	2025Q1	5.5%	\$1,661	\$71	\$1,732	
30	PLANNING, ENGINEERING & DESIGN														
2.5%	Project Management	\$77	\$9	11.5%	\$86	0.0%	\$77	\$9	\$86	2025Q1	5.1%	\$81	\$9	\$91	
1.0%	Planning & Environmental Compliance	\$31	\$4	11.5%	\$35	0.0%	\$31	\$4	\$35	2025Q1	5.1%	\$33	\$4	\$36	
8.0%	Engineering & Design	\$248	\$28	11.5%	\$276	0.0%	\$248	\$28	\$276	2025Q1	5.1%	\$260	\$30	\$290	
1.3%	Reviews, ATRs, IEPRs, VE	\$39	\$4	11.5%	\$43	0.0%	\$39	\$4	\$43	2025Q1	5.1%	\$41	\$5	\$45	
1.0%	Life Cycle Updates (cost, schedule, risks)	\$31	\$4	11.5%	\$35	0.0%	\$31	\$4	\$35	2025Q1	5.1%	\$33	\$4	\$36	
0.0%	Contracting & Reprographics	\$0	\$0	11.5%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0	
1.0%	Engineering During Construction	\$31	\$4	11.5%	\$35	0.0%	\$31	\$4	\$35	2027Q1	9.8%	\$34	\$4	\$38	
0.5%	Planning During Construction	\$15	\$2	11.5%	\$17	0.0%	\$15	\$2	\$17	2027Q1	9.8%	\$17	\$2	\$19	
0.0%	Adaptive Management & Monitoring	\$0	\$0	11.5%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0	
0.0%	Project Operations	\$0	\$0	11.5%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0	
31	CONSTRUCTION MANAGEMENT														
7.5%	Construction Management	\$232	\$31	13.4%	\$263	0.0%	\$232	\$31	\$263	2027Q1	9.8%	\$255	\$34	\$289	
0.0%	Project Operation:	\$0	\$0	13.4%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0	
2.0%	Project Management	\$62	\$8	13.4%	\$70	0.0%	\$62	\$8	\$70	2027Q1	9.8%	\$68	\$9	\$77	
CONTRACT COST TOTALS:		\$5,436	\$1,175		\$6,611		\$5,436	\$1,175	\$6,611			\$5,921	\$1,298	\$7,220	

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

\*\*\*\* CONTRACT COST SUMMARY \*\*\*\*

PROJECT: Denville Feasibility Study - Selected Nonstructural Measures 25 Years  
LOCATION: Denville, NJ  
This Estimate reflects the scope and schedule in report; FS Report (underway)

DISTRICT: NAB District  
POC: CHIEF, Estimating and Specs Section, Mark Buehn  
PREPARED: 11/15/2022

Civil Works Work Breakdown Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)				TOTAL PROJECT COST (FULLY FUNDED)				
		Estimate Prepared: Effective Price Level:		15-Nov-22 1-Oct-22		Program Year (Budget EC): Effective Price Level Date:		2023 1 OCT 22		FULLY FUNDED PROJECT ESTIMATE				
WBS NUMBER	Civil Works Feature & Sub-Feature Description	COST (\$K)	CNTG (\$K)	CNTG (%)	TOTAL (\$K)	ESC (%)	COST (\$K)	CNTG (\$K)	TOTAL (\$K)	Mid-Point Date	INFLATED (%)	COST (\$K)	CNTG (\$K)	FULL (\$K)
A	B	C	D	E	F	G	H	I	J	P	L	M	N	O
Southwest Area														
19	BUILDINGS, GROUNDS & UTILITIES	\$3,221	\$1,062	33.0%	\$4,283	0.0%	\$3,221	\$1,062	\$4,283	2027Q1	11.1%	\$3,578	\$1,180	\$4,758
18	CULTURAL RESOURCE PRESERVATION	\$64	\$14	22.3%	\$79	0.0%	\$64	\$14	\$79	2027Q1	11.1%	\$72	\$16	\$88
CONSTRUCTION ESTIMATE TOTALS:		\$3,285	\$1,076	32.8%	\$4,362		\$3,285	\$1,076	\$4,362			\$3,650	\$1,196	\$4,845
01	LANDS AND DAMAGES	\$1,823	\$78	4.3%	\$1,900	0.0%	\$1,823	\$78	\$1,900	2025Q1	5.5%	\$1,923	\$82	\$2,006
30	PLANNING, ENGINEERING & DESIGN													
2.5%	Project Management	\$82	\$9	11.5%	\$92	0.0%	\$82	\$9	\$92	2025Q1	5.1%	\$86	\$10	\$96
1.0%	Planning & Environmental Compliance	\$33	\$4	11.5%	\$37	0.0%	\$33	\$4	\$37	2025Q1	5.1%	\$35	\$4	\$38
8.0%	Engineering & Design	\$263	\$30	11.5%	\$293	0.0%	\$263	\$30	\$293	2025Q1	5.1%	\$276	\$32	\$308
1.3%	Reviews, ATRs, IEPRs, VE	\$41	\$5	11.5%	\$46	0.0%	\$41	\$5	\$46	2025Q1	5.1%	\$43	\$5	\$48
1.0%	Life Cycle Updates (cost, schedule, risks)	\$33	\$4	11.5%	\$37	0.0%	\$33	\$4	\$37	2025Q1	5.1%	\$35	\$4	\$38
0.0%	Contracting & Reprographics	\$0	\$0	11.5%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
1.0%	Engineering During Construction	\$33	\$4	11.5%	\$37	0.0%	\$33	\$4	\$37	2027Q1	9.8%	\$36	\$4	\$40
0.5%	Planning During Construction	\$16	\$2	11.5%	\$18	0.0%	\$16	\$2	\$18	2027Q1	9.8%	\$18	\$2	\$20
0.0%	Adaptive Management & Monitoring	\$0	\$0	11.5%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
0.0%	Project Operations	\$0	\$0	11.5%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
31	CONSTRUCTION MANAGEMENT													
7.5%	Construction Management	\$246	\$33	13.4%	\$279	0.0%	\$246	\$33	\$279	2027Q1	9.8%	\$270	\$36	\$307
0.0%	Project Operation:	\$0	\$0	13.4%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
2.0%	Project Management	\$66	\$9	13.4%	\$75	0.0%	\$66	\$9	\$75	2027Q1	9.8%	\$72	\$10	\$82
CONTRACT COST TOTALS:		\$5,921	\$1,254		\$7,175		\$5,921	\$1,254	\$7,175			\$6,444	\$1,385	\$7,829

## MII Cost Estimate

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Cost Report

Title Page

Estimate Basis of Assumption:

Based on discussion with a Prime contractor in the area who did contracted floodproofing work for local authorities, the majority of the work would be done by Prime, except for utilities work which is most likely to be subbed out.

On 9 Nov 2022, this budgetary estimate is updated with 2022 Cost Book and Morris County NJ labor rates, regional 01, Equipment rate 2022 with most current 9 Nov 2022 fuel rates, Cost of Money rate, and escalated material cost to FY22 based on 9/30/2022 CWCCIS for account 19 from 2nd quarter 2021 to 1st quarter 2023, which is 27.25% (for USR items), excluding EQ rates since it's updated with latest fuel rates and Cost of Money rate. Since Cost Book items (RSM &HNC) are in Jan 2022 price level, those items are escalated with 9.74% from 2022 Q1 to 2023Q1, account 19. For 2020 sf cost (2020 Q1), escalating to 2023 Q1 is 44.35% for account 19.

This cost estimate develops the program unit costs for different Floodproofing measures. Unit costs transferred to an Excel summary sheet for TOTAL cost to include on TPCS.

For purpose of calculating FOOH, 35 representative properties with different types and elevation done in an assumed group of 4 with 45 days per group, it's about 12 months construction duration.

Estimated by USACE - LRH

Designed by

Prepared by Bryan Akins, updated by Luan Ngo

Preparation Date 11/9/2022

Effective Date of Pricing 11/9/2022

Estimated Construction Time 365 Days

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Description	Quantity	UOM	ContractCost
<b>Cost Summary</b>			<b>8,207,595.17</b>
<b>1 Denville Nonstructural Baseline Cost Estimates</b>	<b>1.0000</b>	<b>LS</b>	<b>8,207,595.17</b>
<b>1.1 Multi-Floor Split Level Structures (50% Slab on Grade, 50% Basement)</b>	<b>1.0000</b>	<b>LS</b>	<b>1,644,581.13</b>
1.1.1 6 Foot Elevation	1,200.0000	SF	203,514.91
1.1.2 5 Foot Elevation	1,000.0000	SF	187,015.99
1.1.3 4 Foot Elevation	2,200.0000	SF	247,388.83
1.1.4 4 Foot Elevation	1,200.0000	SF	183,027.10
1.1.5 3 Foot Elevation	1,800.0000	SF	212,507.25
1.1.6 3 Foot Elevation	1,200.0000	SF	174,183.88
1.1.7 2 Foot Elevation	2,600.0000	SF	262,953.47
1.1.8 2 Foot Elevation	1,400.0000	SF	173,989.71
<b>1.2 Single Floor Slab on Grade</b>	<b>1.0000</b>	<b>LS</b>	<b>389,820.76</b>
1.2.1 6 Foot Elevation	1,100.0000	SF	192,517.39
1.2.2 2 Foot Elevation	1,900.0000	SF	197,303.37
<b>1.3 Dry FloodProofing</b>	<b>1.0000</b>	<b>LS</b>	<b>1,777,475.18</b>
1.3.1 Slab on Grade 1000 Square Feet	1.0000	LS	296,245.86
1.3.2 Slab on Grade 2000 Square Feet	1.0000	LS	296,245.86
1.3.3 Slab on Grade 3000 Square Feet	1.0000	LS	296,245.86
1.3.4 Slab on Grade 4000 Square Feet	1.0000	LS	296,245.86
1.3.5 Slab on Grade 5000 Square Feet	1.0000	LS	296,245.86
1.3.6 Slab on Grade 6000 Square Feet	1.0000	LS	296,245.86
<b>1.4 Multi-Floor Slab on Grade</b>	<b>1.0000</b>	<b>LS</b>	<b>1,126,122.10</b>
1.4.1 6 Foot Elevation	1,200.0000	SF	190,837.21
1.4.2 4 Foot Elevation	2,700.0000	SF	335,760.55
1.4.3 4 Foot Elevation	1,600.0000	SF	205,053.73
1.4.4 3 Foot Elevation	1,900.0000	SF	211,571.49
1.4.5 2 Foot Elevation	1,600.0000	SF	182,899.12
<b>1.5 Single Floor Basement Foundation</b>	<b>1.0000</b>	<b>LS</b>	<b>1,089,502.57</b>
1.5.1 6 Foot Lift	1,400.0000	SF	234,175.18
1.5.2 5 Foot Lift	1,200.0000	SF	212,246.80
1.5.3 4 Foot Lift	1,300.0000	SF	208,987.28
1.5.4 2 Foot Lift	2,200.0000	SF	249,293.01
1.5.5 2 Foot Lift	1,200.0000	SF	184,800.30
<b>1.6 Fill Basement &amp; Add Utility Room</b>	<b>1.0000</b>	<b>LS</b>	<b>290,811.08</b>
1.6.1 2600 Square Foot Structure	2,600.0000	SF	172,634.78
1.6.2 1200 Square Foot Structure	1,200.0000	SF	118,176.30
<b>1.7 Multi-Floor Basement Foundation</b>	<b>1.0000</b>	<b>LS</b>	<b>1,889,282.36</b>
1.7.1 5 Foot Lift	1,900.0000	SF	269,245.70
1.7.2 4 Foot Lift	2,300.0000	SF	281,008.82
1.7.3 4 Foot Lift	1,400.0000	SF	215,028.26
1.7.4 3 Foot Lift	4,300.0000	SF	414,259.97
1.7.5 3 Foot Lift	1,700.0000	SF	227,509.11
1.7.6 2 Foot Lift	2,600.0000	SF	297,430.19
1.7.7 2 Foot Lift	1,200.0000	SF	184,800.30

CLUSTER TABLE

Struc_Name	Cluster	Reach	Struc_Address	Station	Stream_Name	Cat_Name	Cost Type	Foundation Type	Nonstructural Cost	RE Costs (admin + relocation + easement)
302Floodproof	North	Reach2	20 GARDNER RD	31982	Upper Rockaway	Residential	XXVIII	Single Floor Crawl Space		
304Floodproof	North	Reach2	12 GARDNER RD	31982	Upper Rockaway	Residential	XXVIII	Multi-Floor Crawl Space		
346Floodproof	North	Reach2	69 RIVERSIDE DR	31982	Upper Rockaway	Residential	XXVIII	Single Floor Crawl Space		
1 348Floodproof	North	Reach2	69 HINCHMAN AVE	31440	Upper Rockaway	Residential	XXVIII	Single Floor Crawl Space	118,176.30	173,750.00
352Floodproof	North	Reach2	65 RIVERSIDE DR	31982	Upper Rockaway	Residential	XXVIII	Multi-Floor Crawl Space		
2 297Raise	North	Reach2	57 HINCHMAN AVE	31440	Upper Rockaway	Residential	XXXIII	Milti-Floor Slab on Grade	227,509.11	130,250.00
3 310Raise	North	Reach2	59 HINCHMAN AVE	31440	Upper Rockaway	Residential	XXXIII	Multi-Floor Crawl Space	227,509.11	130,250.00
4 316Raise	North	Reach2	61 HINCHMAN AVE	31440	Upper Rockaway	Residential	XXXI	Milti-Floor Slab on Grade	215,028.26	130,250.00
5 321Raise	North	Reach2	63 HINCHMAN AVE	31440	Upper Rockaway	Residential	VIII	Single Floor Slab on Grade	173,989.71	130,250.00
6 328Raise	North	Reach2	65 HINCHMAN AVE	31440	Upper Rockaway	Residential	I	Multi-Floor Crawl Space	203,514.91	101,175.00
7 330Raise	North	Reach2	24 COREY RD	32459	Upper Rockaway	Residential	IV	Milti-Floor Slab on Grade	183,027.10	127,175.00
8 336Raise	North	Reach2	77 RIVERSIDE DR	31982	Upper Rockaway	Residential	VI	Milti-Floor Slab on Grade	174,183.88	101,175.00
9 337Raise	North	Reach2	67 HINCHMAN AVE	31440	Upper Rockaway	Residential	XXXV	Multi-Floor Crawl Space	184,800.30	78,175.00
10 340Raise	North	Reach2	75 RIVERSIDE DR	31982	Upper Rockaway	Residential	XXXI	Milti-Floor Slab on Grade	215,028.26	107,175.00
11 342Raise	North	Reach2	73 RIVERSIDE DR	31982	Upper Rockaway	Residential	VIII	Multi-Floor Crawl Space	173,989.71	112,675.00
12 343Raise	North	Reach2	71 RIVERSIDE DR	31982	Upper Rockaway	Residential	VI	Milti-Floor Slab on Grade	174,183.88	116,675.00
349Raise	North	Reach2	67 RIVERSIDE DR	31982	Upper Rockaway	Residential	XXXV	Single Floor Crawl Space		
									Total for North	Sub Total RE
									2,270,941	1,438,975

	Struc_Name	Cluster	Reach	Struc_Address	Station	Stream_Name	Cat_Name	Cost Type	Foundation Type	Nonstructural Cost	RE Costs (admin + relocation + easement)
	324Floodproof	NorthRiversideDr	Reach2	34 RIVERSIDE DR	30872	Upper Rockaway	NonResidential	XI	Single Floor Slab on Grade	296,245.86	
13	367Floodproof	NorthRiversideDr	Reach2	74 RIVERSIDE DR	32459	Upper Rockaway	Residential	XXVIII	Multi-Floor Crawl Space	118,176.30	161,210.00
14	139Raise	NorthRiversideDr	Reach2	2 SNYDER AVE	29983	Upper Rockaway	Residential	VII	Milti-Floor Slab on Grade	262,953.47	163,590.00
15	209Raise	NorthRiversideDr	Reach2	10 RIVERSIDE DR	30872	Upper Rockaway	Residential	IV	Milti-Floor Slab on Grade	183,027.10	110,750.00
16	217Raise	NorthRiversideDr	Reach2	12 RIVERSIDE DR	30872	Upper Rockaway	Residential	IV	Milti-Floor Slab on Grade	183,027.10	103,750.00
17	225Raise	NorthRiversideDr	Reach2	14 RIVERSIDE DR	30872	Upper Rockaway	Residential	IV	Milti-Floor Slab on Grade	183,027.10	75,175.00
	281Raise	NorthRiversideDr	Reach2	26 RIVERSIDE DR	30872	Upper Rockaway	Residential	VI	Multi-Floor Crawl Space		
18	291Raise	NorthRiversideDr	Reach2	28 RIVERSIDE DR	30872	Upper Rockaway	Residential	VI	Multi-Floor Crawl Space	174,183.88	110,175.00
	306Raise	NorthRiversideDr	Reach2	30 RIVERSIDE DR	30872	Upper Rockaway	Residential	VI	Multi-Floor Crawl Space		
19	314Raise	NorthRiversideDr	Reach2	32 RIVERSIDE DR	30872	Upper Rockaway	Residential	VI	Single Floor Slab on Grade	174,183.88	120,175.00
20	334Raise	NorthRiversideDr	Reach2	36 RIVERSIDE DR	31440	Upper Rockaway	Residential	II	Multi-Floor Crawl Space	187,015.99	101,675.00
21	344Raise	NorthRiversideDr	Reach2	38 RIVERSIDE DR	31440	Upper Rockaway	Residential	II	Multi-Floor Crawl Space	187,015.99	102,675.00
22	353Raise	NorthRiversideDr	Reach2	40 RIVERSIDE DR	31440	Upper Rockaway	Residential	XX	Milti-Floor Slab on Grade	211,571.49	89,675.00
23	359Raise	NorthRiversideDr	Reach2	42 RIVERSIDE DR	31440	Upper Rockaway	Residential	XXXI	Milti-Floor Slab on Grade	215,028.26	84,175.00
24	364Raise	NorthRiversideDr	Reach2	44 RIVERSIDE DR	31440	Upper Rockaway	Residential	XXXIII	Milti-Floor Slab on Grade	227,509.11	87,175.00
	365Raise	NorthRiversideDr	Reach2	76 RIVERSIDE DR	32459	Upper Rockaway	Residential	XXX	Milti-Floor Slab on Grade		
25	366Raise	NorthRiversideDr	Reach2	50 RIVERSIDE DR	31440	Upper Rockaway	Residential	XXV	Single Floor Slab on Grade	249,293.01	118,195.00
	368Raise	NorthRiversideDr	Reach2	52 RIVERSIDE DR	31440	Upper Rockaway	Residential	XXXIV	Milti-Floor Slab on Grade		
26	369Raise	NorthRiversideDr	Reach2	56 RIVERSIDE DR	31982	Upper Rockaway	Residential	XXI	Multi-Floor Crawl Space	182,899.12	145,395.00
	370Raise	NorthRiversideDr	Reach2	64 RIVERSIDE DR	31982	Upper Rockaway	Residential	XIX	Multi-Floor Crawl Space		
	Total for NorthRiversideDr									3,035,158	Sub Total RE 1,573,790



Struc_Name		Cluster	Reach	Struc_Address	Station	Stream_Name	Cat_Name	Cost Type	Foundation Type	Nonstructural Cost	RE Costs (admin + relocation + easement)
27	84Floodproof	Southwest	Reach2	45 WEST MAIN ST	31440	Upper Rockaway	NonResidential	XI	Single Floor Slab on Grade	296,245.86	104,275.00
28	96Floodproof	Southwest	Reach2	30 WEST MAIN ST	31440	Upper Rockaway	NonResidential	XII	Single Floor Slab on Grade	296,245.86	302,250.00
	115Floodproof	Southwest	Reach2	7 HINCHMAN AVE	31440	Upper Rockaway	Residential	XXVIII	Milti-Floor Slab on Grade		
29	117Floodproof	Southwest	Reach2	26 RIGHTER AVE	31440	Upper Rockaway	NonResidential	XIV	Single Floor Slab on Grade	296,245.86	231,800.00
30	122Floodproof	Southwest	Reach2	24 RIGHTER AVE	31440	Upper Rockaway	NonResidential	XI	Single Floor Slab on Grade	296,245.86	135,925.00
31	127Floodproof	Southwest	Reach2	40 RIGHTER AVE	31440	Upper Rockaway	NonResidential	XIII	Milti-Floor Slab on Grade	296,245.86	148,675.00
32	133Floodproof	Southwest	Reach2	46 RIGHTER AVE	31440	Upper Rockaway	NonResidential	XIV	Single Floor Slab on Grade	296,245.86	372,800.00
	134Floodproof	Southwest	Reach2	15 HINCHMAN AVE	31440	Upper Rockaway	Residential	XXVIII	Milti-Floor Slab on Grade		
	138Floodproof	Southwest	Reach2	17 HINCHMAN AVE	31440	Upper Rockaway	Residential	XXVII	Milti-Floor Slab on Grade		
	146Floodproof	Southwest	Reach2	8 HEWETSON RD	31440	Upper Rockaway	Residential	XXVIII	Single Floor Slab on Grade		
33	106Raise	Southwest	Reach2	10 Righter Ave	31440	Upper Rockaway	Residential	XXVII	Milti-Floor Slab on Grade	190,837.21	15,175.00
	109Raise	Southwest	Reach2	5 HINCHMAN AVE	31440	Upper Rockaway	Residential	XI	Single Floor Slab on Grade		
	112Raise	Southwest	Reach2	16 RIGHTER AVE	31440	Upper Rockaway	NonResidential	XXXII	Milti-Floor Slab on Grade		
34	121Raise	Southwest	Reach2	18 RIGHTER AVE	31440	Upper Rockaway	Residential	XVIII	Milti-Floor Slab on Grade	335,760.55	15,175.00
35	126Raise	Southwest	Reach2	30 RIGHTER AVE	31440	Upper Rockaway	NonResidential	IX	Single Floor Slab on Grade	192,517.39	139,675.00
	129Raise	Southwest	Reach2	7 HEWETSON RD	31440	Upper Rockaway	Residential	XXXV	Milti-Floor Slab on Grade		
36	137Raise	Southwest	Reach2	11 HEWETSON RD	31440	Upper Rockaway	NonResidential	XXX	Milti-Floor Slab on Grade	281,008.82	139,955.00
37	150Raise	Southwest	Reach2	19 HEWETSON RD	31440	Upper Rockaway	Residential	XXII	Single Floor Slab on Grade	234,175.18	107,175.00
	151Raise	Southwest	Reach2	10 HEWETSON RD	31440	Upper Rockaway	Residential	XXXV	Multi-Floor Crawl Space		
	152Raise	Southwest	Reach2	8 MYERS AVE	31440	Upper Rockaway	NonResidential	XXII	Milti-Floor Slab on Grade		
	157Raise	Southwest	Reach2	12 HEWETSON RD	31440	Upper Rockaway	Residential	VIII	Single Floor Crawl Space		
	162Raise	Southwest	Reach2	14 HEWETSON RD	31440	Upper Rockaway	Residential	VII	Milti-Floor Slab on Grade		
38	169Raise	Southwest	Reach2	18 HEWETSON RD	31440	Upper Rockaway	Residential	XXIV	Milti-Floor Slab on Grade	208,987.28	109,675.00
	171Raise	Southwest	Reach2	20 HEWETSON RD	31440	Upper Rockaway	Residential	XXXV	Milti-Floor Slab on Grade		
Total for Southwest										3,220,762	Sub Total RE 1,822,555
Total Nonstructural for All Areas										Total RE for All Areas	
										8,526,860	4,835,320

Abbreviated Risk Analysis

Project (less than \$40M): **Denville Nonstructural Alternative**  
Project Development Stage/Alternative: **Feasibility (Recommended Plan)**  
Risk Category: **Moderate Risk: Typical Project Construction Type**

Alternative: **Recommended Plan**

Updated Date: **1/16/2022**

Total Estimated Construction Contract Cost = **\$ 8,697,397**

CWWBS		Feature of Work	Estimated Cost	% Contingency	\$ Contingency	Total
	01	LANDS AND DAMAGES	Real Estate	\$ 4,806,245	3.8%	\$ 184,210 \$ 4,990,455
3	19 BUILDINGS, GROUNDS, AND UTILITIES		Nonstructural Measures	\$ 8,526,860	33.0%	\$ 2,811,494 \$ 11,338,354
7	18 CULTURAL RESOURCE PRESERVATION		Cultural Resource Preservation	\$ 170,537	22.3%	\$ 38,062 \$ 208,599
8				\$ -	0%	\$ - \$ -
9				\$ -	0%	\$ - \$ -
10				\$ -	0%	\$ - \$ -
11				\$ -	0%	\$ - \$ -
12					0%	\$ - \$ -
13	30	PLANNING, ENGINEERING, AND DESIGN	Planning, Engineering, & Design	\$ 1,326,353	11.5%	\$ 152,516 \$ 1,478,869
14	31	CONSTRUCTION MANAGEMENT	Construction Management	\$ 826,253	13.4%	\$ 110,739 \$ 936,992
XX	FIXED DOLLAR RISK ADD (EQUALLY DISPERSED TO ALL, MUST INCLUDE JUSTIFICATION SEE BELOW)				\$ -	

Totals								
	Real Estate	\$	4,806,245	3.8%	\$	184,210	\$	4,990,455.21
	Total Construction Estimate	\$	8,697,397	32.76%	\$	2,849,556	\$	11,546,953
	Total Planning, Engineering & Design	\$	1,326,353	11%	\$	152,516	\$	1,478,869
	Total Construction Management	\$	826,253	13%	\$	110,739	\$	936,992
	Total Excluding Real Estate	\$	10,850,003	29%	\$	3,112,810	\$	13,962,813

Confidence Level Range Estimate (\$000's)	Base	50%	80%
	\$10,850k	\$12,718k	\$13,963k

\* 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.

## Total Project Cost Summary (TPCS)

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Comparing Structural and Nonstructural  
in FY2021 Price Level

## Total Project Cost Summary (TPCS)

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Nonstructural in FY2021 Price Level

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

PROJECT: Denville Feasibility Study - Selected Nonstructural Measures 25 Years  
PROJECT NO: P2 446023  
LOCATION: Denville, NJ

DISTRICT: NAB District  
POC: CHIEF, Estimating and Specs Section, Parris J. McGhee-Bey

PREPARED: 4/16/2021

This Estimate reflects the scope and schedule in report; FS Report (underway)

Civil Works Work Breakdown Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)						TOTAL PROJECT COST (FULLY FUNDED)			
						Program Year (Budget EC): 2022 Effective Price Level Date: 1 OCT 21									
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	Spent Thru: 1-Oct-20 (\$K)	TOTAL FIRST COST (\$K) K	INFLATED (%) L	COST (\$K) M	CNTG (\$K) N	FULL (\$K) O
19	BUILDINGS, GROUNDS & UTILITIES	\$9,778	\$3,224	33.0%	\$13,002	3.0%	\$10,068	\$3,320	\$13,388	\$0	\$13,388	10.6%	\$11,131	\$3,670	\$14,801
18	CULTURAL RESOURCE PRESERVATION	\$98	\$22	22.3%	\$120	3.0%	\$101	\$22	\$123	\$0	\$123	10.6%	\$111	\$25	\$136
CONSTRUCTION ESTIMATE TOTALS:		\$9,876	\$3,246		\$13,122	3.0%	\$10,169	\$3,342	\$13,511	\$0	\$13,511	10.6%	\$11,242	\$3,695	\$14,937
01	LANDS AND DAMAGES	\$186	\$37	20.0%	\$223	3.0%	\$192	\$38	\$230	\$0	\$230	2.9%	\$197	\$39	\$236
30	PLANNING, ENGINEERING & DESIGN	\$1,506	\$166	11.0%	\$1,672	4.0%	\$1,566	\$172	\$1,738	\$0	\$1,738	4.7%	\$1,640	\$180	\$1,820
31	CONSTRUCTION MANAGEMENT	\$938	\$122	13.0%	\$1,060	4.0%	\$976	\$127	\$1,103	\$0	\$1,103	13.6%	\$1,108	\$144	\$1,252
PROJECT COST TOTALS:		\$12,506	\$3,570	28.5%	\$16,077		\$12,902	\$3,679	\$16,582	\$0	\$16,582	10.0%	\$14,187	\$4,059	\$18,246

CHIEF, Estimating and Specs Section, Parris J. McGhee-Bey

PROJECT MANAGER, Bethany Mcclanahan (NAN)

CHIEF, REAL ESTATE, Susan Lewis

CHIEF, PLANNING, Amy M. Guise

CHIEF, ENGINEERING, Mary P. Foutz

CHIEF, OPERATIONS, William Seib

CHIEF, CONSTRUCTION, Jeff J. Werner

CHIEF, CONTRACTING, Paula M. Beck

CHIEF, PP-C, Justin Callahan

CHIEF, DPM, David B. Morrow

ESTIMATED TOTAL PROJECT COST: \$18,246

ESTIMATED FEDERAL COST: 38% \$6,842  
ESTIMATED NON-FEDERAL COST: 63% \$11,404

22 - FEASIBILITY STUDY (CAP studies):

ESTIMATED FEDERAL COST: 50%  
ESTIMATED NON-FEDERAL COST: 50%

ESTIMATED FEDERAL COST OF PROJECT \$6,842

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

\*\*\*\* CONTRACT COST SUMMARY \*\*\*\*

PROJECT: Denville Feasibility Study - Selected Nonstructural Measures 25 Years  
LOCATION: Denville, NJ  
This Estimate reflects the scope and schedule in report; FS Report (underway)

DISTRICT: NAB District  
POC: CHIEF, Estimating and Specs Section, Parris J. McGhee-Bey  
PREPARED: 4/16/2021

Civil Works Work Breakdown Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)				TOTAL PROJECT COST (FULLY FUNDED)				
		Estimate Prepared: 19-Mar-21 Effective Price Level: 1-Oct-20				Program Year (Budget EC): 2022 Effective Price Level Date: 1 OCT 21								
WBS NUMBER	Civil Works Feature & Sub-Feature Description	COST (\$K)	CNTG (\$K)	CNTG (%)	TOTAL (\$K)	ESC (%)	COST (\$K)	CNTG (\$K)	TOTAL (\$K)	Mid-Point Date	INFLATED (%)	COST (\$K)	CNTG (\$K)	FULL (\$K)
A	B	C	D	E	F	G	H	I	J	P	L	M	N	O
Center Area														
19	BUILDINGS, GROUNDS & UTILITIES	\$1,940	\$640	33.0%	\$2,580	3.0%	\$1,998	\$659	\$2,656	2025Q3	10.6%	\$2,208	\$728	\$2,936
18	CULTURAL RESOURCE PRESERVATION	\$19	\$4	22.3%	\$24	3.0%	\$20	\$4	\$24	2025Q3	10.6%	\$22	\$5	\$27
CONSTRUCTION ESTIMATE TOTALS:		\$1,959	\$644	32.9%	\$2,603		\$2,018	\$663	\$2,681			\$2,230	\$733	\$2,963
01	LANDS AND DAMAGES	\$39	\$8	20.0%	\$46	3.0%	\$40	\$8	\$48	2023Q1	2.9%	\$41	\$8	\$49
30	PLANNING, ENGINEERING & DESIGN													
2.5%	Project Management	\$49	\$5	11.0%	\$54	4.0%	\$51	\$6	\$57	2023Q1	3.7%	\$53	\$6	\$59
1.0%	Planning & Environmental Compliance	\$20	\$2	11.0%	\$22	4.0%	\$20	\$2	\$23	2023Q1	3.7%	\$21	\$2	\$23
8.0%	Engineering & Design	\$157	\$17	11.0%	\$174	4.0%	\$163	\$18	\$181	2023Q1	3.7%	\$169	\$19	\$188
1.3%	Reviews, ATRs, IEPRs, VE	\$24	\$3	11.0%	\$27	4.0%	\$25	\$3	\$28	2023Q1	3.7%	\$26	\$3	\$29
1.0%	Life Cycle Updates (cost, schedule, risks)	\$20	\$2	11.0%	\$22	4.0%	\$20	\$2	\$23	2023Q1	3.7%	\$21	\$2	\$23
0.0%	Contracting & Reprographics	\$0	\$0	11.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
1.0%	Engineering During Construction	\$20	\$2	11.0%	\$22	4.0%	\$20	\$2	\$23	2025Q3	13.6%	\$23	\$3	\$26
0.5%	Planning During Construction	\$10	\$1	11.0%	\$11	4.0%	\$10	\$1	\$11	2025Q3	13.6%	\$12	\$1	\$13
0.0%	Adaptive Management & Monitoring	\$0	\$0	11.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
0.0%	Project Operations	\$0	\$0	11.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
31	CONSTRUCTION MANAGEMENT													
7.5%	Construction Management	\$147	\$19	13.0%	\$166	4.0%	\$153	\$20	\$173	2025Q3	13.6%	\$174	\$23	\$196
0.0%	Project Operation:	\$0	\$0	13.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
2.0%	Project Management	\$39	\$5	13.0%	\$44	4.0%	\$41	\$5	\$46	2025Q3	13.6%	\$46	\$6	\$52
CONTRACT COST TOTALS:		\$2,483	\$709		\$3,192		\$2,562	\$730	\$3,292			\$2,817	\$806	\$3,622

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

\*\*\*\* CONTRACT COST SUMMARY \*\*\*\*

PROJECT: Denville Feasibility Study - Selected Nonstructural Measures 25 Years  
LOCATION: Denville, NJ  
This Estimate reflects the scope and schedule in report; FS Report (underway)

DISTRICT: NAB District  
POC: CHIEF, Estimating and Specs Section, Parris J. McGhee-Bey  
PREPARED: 4/16/2021

Civil Works Work Breakdown Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)				TOTAL PROJECT COST (FULLY FUNDED)				
		Estimate Prepared:		19-Mar-21		Program Year (Budget EC):		2022						
		Effective Price Level:		1-Oct-20		Effective Price Level Date:		1 OCT 21						
WBS NUMBER	Civil Works Feature & Sub-Feature Description	COST (\$K)	CNTG (\$K)	CNTG (%)	TOTAL (\$K)	ESC (%)	COST (\$K)	CNTG (\$K)	TOTAL (\$K)	Mid-Point Date	INFLATED (%)	COST (\$K)	CNTG (\$K)	FULL (\$K)
A	B	C	D	E	F	G	H	I	J	P	L	M	N	O
North Area														
19	BUILDINGS, GROUNDS & UTILITIES	\$1,856	\$612	33.0%	\$2,468	3.0%	\$1,911	\$630	\$2,541	2025Q3	10.6%	\$2,112	\$696	\$2,809
18	CULTURAL RESOURCE PRESERVATION	\$19	\$4	22.3%	\$23	3.0%	\$19	\$4	\$23	2025Q3	10.6%	\$21	\$5	\$26
CONSTRUCTION ESTIMATE TOTALS:		\$1,874	\$616	32.9%	\$2,490		\$1,930	\$634	\$2,564			\$2,134	\$701	\$2,835
01	LANDS AND DAMAGES	\$42	\$8	20.0%	\$51	3.0%	\$44	\$9	\$52	2023Q1	2.9%	\$45	\$9	\$54
30	PLANNING, ENGINEERING & DESIGN													
2.5%	Project Management	\$47	\$5	11.0%	\$52	4.0%	\$49	\$5	\$54	2023Q1	3.7%	\$51	\$6	\$56
1.0%	Planning & Environmental Compliance	\$19	\$2	11.0%	\$21	4.0%	\$19	\$2	\$22	2023Q1	3.7%	\$20	\$2	\$22
8.0%	Engineering & Design	\$150	\$16	11.0%	\$166	4.0%	\$156	\$17	\$173	2023Q1	3.7%	\$162	\$18	\$180
1.3%	Reviews, ATRs, IEPRs, VE	\$23	\$3	11.0%	\$26	4.0%	\$24	\$3	\$27	2023Q1	3.7%	\$25	\$3	\$28
1.0%	Life Cycle Updates (cost, schedule, risks)	\$19	\$2	11.0%	\$21	4.0%	\$19	\$2	\$22	2023Q1	3.7%	\$20	\$2	\$22
0.0%	Contracting & Reprographics	\$0	\$0	11.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
1.0%	Engineering During Construction	\$19	\$2	11.0%	\$21	4.0%	\$19	\$2	\$22	2025Q3	13.6%	\$22	\$2	\$25
0.5%	Planning During Construction	\$9	\$1	11.0%	\$10	4.0%	\$10	\$1	\$11	2025Q3	13.6%	\$11	\$1	\$12
0.0%	Adaptive Management & Monitoring	\$0	\$0	11.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
0.0%	Project Operations	\$0	\$0	11.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
31	CONSTRUCTION MANAGEMENT													
7.5%	Construction Management	\$141	\$18	13.0%	\$159	4.0%	\$146	\$19	\$165	2025Q3	13.6%	\$166	\$22	\$188
0.0%	Project Operation:	\$0	\$0	13.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
2.0%	Project Management	\$37	\$5	13.0%	\$42	4.0%	\$39	\$5	\$44	2025Q3	13.6%	\$44	\$6	\$50
CONTRACT COST TOTALS:		\$2,381	\$679		\$3,060		\$2,456	\$700	\$3,156			\$2,700	\$772	\$3,472

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

Printed:1/24/2023  
Page 5 of 8

\*\*\*\* CONTRACT COST SUMMARY \*\*\*\*

PROJECT: Denville Feasibility Study - Selected Nonstructural Measures 25 Years  
LOCATION: Denville, NJ  
This Estimate reflects the scope and schedule in report; FS Report (underway)

DISTRICT: NAB District  
POC: CHIEF, Estimating and Specs Section, Parris J. McGhee-Bey  
PREPARED: 4/16/2021

Civil Works Work Breakdown Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)				TOTAL PROJECT COST (FULLY FUNDED)				
		Estimate Prepared: Effective Price Level:		19-Mar-21 1-Oct-20		Program Year (Budget EC): Effective Price Level Date:		2022 1 OCT 21		FULLY FUNDED PROJECT ESTIMATE				
WBS NUMBER	Civil Works Feature & Sub-Feature Description	COST (\$K)	CNTG (\$K)	CNTG (%)	TOTAL (\$K)	ESC (%)	COST (\$K)	CNTG (\$K)	TOTAL (\$K)	Mid-Point Date	INFLATED (%)	COST (\$K)	CNTG (\$K)	FULL (\$K)
A	B	C	D	E	F	G	H	I	J	P	L	M	N	O
North Riverside Dr Area														
19	BUILDINGS, GROUNDS & UTILITIES	\$2,471	\$815	33.0%	\$3,285	3.0%	\$2,544	\$839	\$3,383	2025Q3	10.6%	\$2,812	\$927	\$3,740
18	CULTURAL RESOURCE PRESERVATION	\$25	\$6	22.3%	\$30	3.0%	\$25	\$6	\$31	2025Q3	10.6%	\$28	\$6	\$34
CONSTRUCTION ESTIMATE TOTALS:		\$2,495	\$820	32.9%	\$3,315		\$2,569	\$844	\$3,414			\$2,841	\$934	\$3,774
01	LANDS AND DAMAGES	\$50	\$10	20.0%	\$60	3.0%	\$52	\$10	\$62	2023Q1	2.9%	\$53	\$11	\$64
30	PLANNING, ENGINEERING & DESIGN													
2.5%	Project Management	\$62	\$7	11.0%	\$69	4.0%	\$65	\$7	\$72	2023Q1	3.7%	\$67	\$7	\$75
1.0%	Planning & Environmental Compliance	\$25	\$3	11.0%	\$28	4.0%	\$26	\$3	\$29	2023Q1	3.7%	\$27	\$3	\$30
8.0%	Engineering & Design	\$200	\$22	11.0%	\$222	4.0%	\$208	\$23	\$230	2023Q1	3.7%	\$215	\$24	\$239
1.3%	Reviews, ATRs, IEPRs, VE	\$31	\$3	11.0%	\$35	4.0%	\$32	\$4	\$36	2023Q1	3.7%	\$34	\$4	\$37
1.0%	Life Cycle Updates (cost, schedule, risks)	\$25	\$3	11.0%	\$28	4.0%	\$26	\$3	\$29	2023Q1	3.7%	\$27	\$3	\$30
0.0%	Contracting & Reprographics	\$0	\$0	11.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
1.0%	Engineering During Construction	\$25	\$3	11.0%	\$28	4.0%	\$26	\$3	\$29	2025Q3	13.6%	\$29	\$3	\$33
0.5%	Planning During Construction	\$12	\$1	11.0%	\$14	4.0%	\$13	\$1	\$14	2025Q3	13.6%	\$15	\$2	\$16
0.0%	Adaptive Management & Monitoring	\$0	\$0	11.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
0.0%	Project Operations	\$0	\$0	11.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
31	CONSTRUCTION MANAGEMENT													
7.5%	Construction Management	\$187	\$24	13.0%	\$211	4.0%	\$195	\$25	\$220	2025Q3	13.6%	\$221	\$29	\$250
0.0%	Project Operation:	\$0	\$0	13.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
2.0%	Project Management	\$50	\$6	13.0%	\$56	4.0%	\$52	\$7	\$59	2025Q3	13.6%	\$59	\$8	\$67
CONTRACT COST TOTALS:		\$3,163	\$903		\$4,066		\$3,263	\$930	\$4,194			\$3,588	\$1,026	\$4,614



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

Printed:1/24/2023  
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\*\*\*\* CONTRACT COST SUMMARY \*\*\*\*

PROJECT: Denville Feasibility Study - Selected Nonstructural Measures 25 Years  
LOCATION: Denville, NJ  
This Estimate reflects the scope and schedule in report; FS Report (underway)

DISTRICT: NAB District  
POC: CHIEF, Estimating and Specs Section, Parris J. McGhee-Bey  
PREPARED: 4/16/2021

Civil Works Work Breakdown Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)				TOTAL PROJECT COST (FULLY FUNDED)				
		Estimate Prepared: Effective Price Level:		19-Mar-21 1-Oct-20		Program Year (Budget EC): Effective Price Level Date:		2022 1 OCT 21		FULLY FUNDED PROJECT ESTIMATE				
WBS NUMBER	Civil Works Feature & Sub-Feature Description	COST (\$K)	CNTG (\$K)	CNTG (%)	TOTAL (\$K)	ESC (%)	COST (\$K)	CNTG (\$K)	TOTAL (\$K)	Mid-Point Date	INFLATED (%)	COST (\$K)	CNTG (\$K)	FULL (\$K)
A	B	C	D	E	F	G	H	I	J	P	L	M	N	O
Southeast Area														
19	BUILDINGS, GROUNDS & UTILITIES	\$931	\$307	33.0%	\$1,238	3.0%	\$959	\$316	\$1,275	2025Q3	10.6%	\$1,060	\$349	\$1,410
18	CULTURAL RESOURCE PRESERVATION	\$9	\$2	22.3%	\$11	3.0%	\$10	\$2	\$12	2025Q3	10.6%	\$11	\$2	\$13
CONSTRUCTION ESTIMATE TOTALS:		\$941	\$309	32.9%	\$1,250		\$968	\$318	\$1,287			\$1,071	\$352	\$1,423
01	LANDS AND DAMAGES	\$0	\$0	20.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
30	PLANNING, ENGINEERING & DESIGN													
2.5%	Project Management	\$24	\$3	11.0%	\$26	4.0%	\$24	\$3	\$27	2023Q1	3.7%	\$25	\$3	\$28
1.0%	Planning & Environmental Compliance	\$9	\$1	11.0%	\$10	4.0%	\$10	\$1	\$11	2023Q1	3.7%	\$10	\$1	\$11
8.0%	Engineering & Design	\$75	\$8	11.0%	\$84	4.0%	\$78	\$9	\$87	2023Q1	3.7%	\$81	\$9	\$90
1.3%	Reviews, ATRs, IEPRs, VE	\$12	\$1	11.0%	\$13	4.0%	\$12	\$1	\$14	2023Q1	3.7%	\$13	\$1	\$14
1.0%	Life Cycle Updates (cost, schedule, risks)	\$9	\$1	11.0%	\$10	4.0%	\$10	\$1	\$11	2023Q1	3.7%	\$10	\$1	\$11
0.0%	Contracting & Reprographics	\$0	\$0	11.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
1.0%	Engineering During Construction	\$9	\$1	11.0%	\$10	4.0%	\$10	\$1	\$11	2025Q3	13.6%	\$11	\$1	\$12
0.5%	Planning During Construction	\$5	\$1	11.0%	\$5	4.0%	\$5	\$1	\$5	2025Q3	13.6%	\$6	\$1	\$6
0.0%	Adaptive Management & Monitoring	\$0	\$0	11.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
0.0%	Project Operations	\$0	\$0	11.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
31	CONSTRUCTION MANAGEMENT													
7.5%	Construction Management	\$71	\$9	13.0%	\$80	4.0%	\$73	\$10	\$83	2025Q3	13.6%	\$83	\$11	\$94
0.0%	Project Operation:	\$0	\$0	13.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
2.0%	Project Management	\$19	\$2	13.0%	\$21	4.0%	\$20	\$3	\$22	2025Q3	13.6%	\$22	\$3	\$25
CONTRACT COST TOTALS:		\$1,173	\$336		\$1,510		\$1,211	\$347	\$1,557			\$1,332	\$383	\$1,715

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

\*\*\*\* CONTRACT COST SUMMARY \*\*\*\*

PROJECT: Denville Feasibility Study - Selected Nonstructural Measures 25 Years  
LOCATION: Denville, NJ  
This Estimate reflects the scope and schedule in report; FS Report (underway)

DISTRICT: NAB District  
POC: CHIEF, Estimating and Specs Section, Parris J. McGhee-Bey  
PREPARED: 4/16/2021

Civil Works Work Breakdown Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)				TOTAL PROJECT COST (FULLY FUNDED)				
		Estimate Prepared: Effective Price Level:		19-Mar-21 1-Oct-20		Program Year (Budget EC): Effective Price Level Date:		2022 1 OCT 21		FULLY FUNDED PROJECT ESTIMATE				
WBS NUMBER	Civil Works Feature & Sub-Feature Description	COST (\$K)	CNTG (\$K)	CNTG (%)	TOTAL (\$K)	ESC (%)	COST (\$K)	CNTG (\$K)	TOTAL (\$K)	Mid-Point Date	INFLATED (%)	COST (\$K)	CNTG (\$K)	FULL (\$K)
A	B	C	D	E	F	G	H	I	J	P	L	M	N	O
Southwest Area														
19	BUILDINGS, GROUNDS & UTILITIES	\$2,580	\$851	33.0%	\$3,431	3.0%	\$2,657	\$876	\$3,533	2025Q3	10.6%	\$2,937	\$968	\$3,906
18	CULTURAL RESOURCE PRESERVATION	\$26	\$6	22.3%	\$32	3.0%	\$27	\$6	\$33	2025Q3	10.6%	\$29	\$7	\$36
CONSTRUCTION ESTIMATE TOTALS:		\$2,606	\$857	32.9%	\$3,463		\$2,684	\$882	\$3,566			\$2,967	\$975	\$3,942
01	LANDS AND DAMAGES	\$55	\$11	20.0%	\$66	3.0%	\$56	\$11	\$68	2023Q1	2.9%	\$58	\$12	\$70
30	PLANNING, ENGINEERING & DESIGN													
2.5%	Project Management	\$65	\$7	11.0%	\$72	4.0%	\$68	\$7	\$75	2023Q1	3.7%	\$70	\$8	\$78
1.0%	Planning & Environmental Compliance	\$26	\$3	11.0%	\$29	4.0%	\$27	\$3	\$30	2023Q1	3.7%	\$28	\$3	\$31
8.0%	Engineering & Design	\$209	\$23	11.0%	\$231	4.0%	\$217	\$24	\$241	2023Q1	3.7%	\$225	\$25	\$250
1.3%	Reviews, ATRs, IEPRs, VE	\$33	\$4	11.0%	\$36	4.0%	\$34	\$4	\$38	2023Q1	3.7%	\$35	\$4	\$39
1.0%	Life Cycle Updates (cost, schedule, risks)	\$26	\$3	11.0%	\$29	4.0%	\$27	\$3	\$30	2023Q1	3.7%	\$28	\$3	\$31
0.0%	Contracting & Reprographics	\$0	\$0	11.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
1.0%	Engineering During Construction	\$26	\$3	11.0%	\$29	4.0%	\$27	\$3	\$30	2025Q3	13.6%	\$31	\$3	\$34
0.5%	Planning During Construction	\$13	\$1	11.0%	\$14	4.0%	\$14	\$1	\$15	2025Q3	13.6%	\$15	\$2	\$17
0.0%	Adaptive Management & Monitoring	\$0	\$0	11.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
0.0%	Project Operations	\$0	\$0	11.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
31	CONSTRUCTION MANAGEMENT													
7.5%	Construction Management	\$195	\$25	13.0%	\$221	4.0%	\$203	\$26	\$230	2025Q3	13.6%	\$231	\$30	\$261
0.0%	Project Operation:	\$0	\$0	13.0%	\$0	0.0%	\$0	\$0	\$0	0	0.0%	\$0	\$0	\$0
2.0%	Project Management	\$52	\$7	13.0%	\$59	4.0%	\$54	\$7	\$61	2025Q3	13.6%	\$62	\$8	\$70
CONTRACT COST TOTALS:		\$3,306	\$943		\$4,250		\$3,411	\$972	\$4,383			\$3,750	\$1,072	\$4,822

## Total Project Cost Summary (TPCS)

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Structural (Not Selected)

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

PROJECT: Denville Feasibility Study 100 yrs - Alt 1A - 10 Closures  
PROJECT NO: P2 xxxxxx  
LOCATION: Denville, NJ

DISTRICT: NAB District  
POC: CHIEF, Estimating and Specs Section, Parris J. McGhee-Bey  
PREPARED: 11/8/2019

This Estimate reflects the scope and schedule in report; FS Report (underway)

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: 2021 1 OCT 20					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	Spent Thru: 1-Oct-19 (\$K)					
02	RELOCATIONS	\$0	\$0 -		\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
11	LEVEES & FLOODWALLS	\$41,337	\$8,267	20.0%	\$49,604	3.2%	\$42,661	\$8,532	\$51,194	\$0	\$51,194	10.9%	\$47,324	\$9,465	\$56,789
15	FLOODWAY CONTROL & DIVERSION STRU	\$8,797	\$1,759	20.0%	\$10,556	3.2%	\$9,079	\$1,816	\$10,894	\$0	\$10,894	10.9%	\$10,071	\$2,014	\$12,085
CONSTRUCTION ESTIMATE TOTALS:		\$50,134	\$10,027		\$60,160	3.2%	\$51,740	\$10,348	\$62,088	\$0	\$62,088	10.9%	\$57,395	\$11,479	\$68,874
01	LANDS AND DAMAGES	\$0	\$0 -		\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
30	PLANNING, ENGINEERING & DESIGN	\$13,912	\$1,391	10.0%	\$15,303	3.8%	\$14,444	\$1,444	\$15,889	\$0	\$15,889	3.4%	\$14,939	\$1,494	\$16,433
31	CONSTRUCTION MANAGEMENT	\$5,013	\$501	10.0%	\$5,515	3.8%	\$5,205	\$521	\$5,726	\$0	\$5,726	14.1%	\$5,938	\$594	\$6,532
PROJECT COST TOTALS:		\$69,059	\$11,919	17.3%	\$80,979		\$71,389	\$12,313	\$83,702	\$0	\$83,702	9.7%	\$78,272	\$13,567	\$91,839

CHIEF, Estimating and Specs Section, Parris J. McGhee-Bey

PROJECT MANAGER, Zachary Noordhoff

CHIEF, REAL ESTATE, Susan K. Lev

CHIEF, PLANNING, Amy M. Guise

CHIEF, ENGINEERING, Ronald J. Maj

CHIEF, OPERATIONS, Patrick G. Findlay

CHIEF, CONSTRUCTION, Jeff J. Werner

CHIEF, CONTRACTING, Paula M. Beck

CHIEF, PP-C, Christopher M. Nolta

CHIEF, DPM, David B. Morrow

ESTIMATED TOTAL PROJECT COST: \$91,839

ESTIMATED FEDERAL COST: 38% \$34,440  
ESTIMATED NON-FEDERAL COST: 63% \$57,399

22 - FEASIBILITY STUDY (CAP studies):

ESTIMATED FEDERAL COST: 50%  
ESTIMATED NON-FEDERAL COST: 50%

ESTIMATED FEDERAL COST OF PROJECT \$34,440

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

PROJECT: Denville Feasibility Study 100 yrs - Alt 1B  
PROJECT NO: P2 xxxxxx  
LOCATION: Denville, NJ

DISTRICT: NAB District  
POC: CHIEF, Estimating and Specs Section, Parris J. McGhee-Bey  
PREPARED: 11/8/2019

This Estimate reflects the scope and schedule in report; FS Report (underway)

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: 2021 1 OCT 20					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	Spent Thru:					
										1-Oct-19 (\$K)					
02	RELOCATIONS	\$0	\$0 -		\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
11	LEVEES & FLOODWALLS	\$41,460	\$8,292	20.0%	\$49,752	3.2%	\$42,788	\$8,558	\$51,346	\$0	\$51,346	10.9%	\$47,465	\$9,493	\$56,958
15	FLOODWAY CONTROL & DIVERSION STRU	\$7,158	\$1,432	20.0%	\$8,590	3.2%	\$7,387	\$1,477	\$8,865	\$0	\$8,865	10.9%	\$8,195	\$1,639	\$9,834
CONSTRUCTION ESTIMATE TOTALS:		\$48,618	\$9,724		\$58,342	3.2%	\$50,176	\$10,035	\$60,211	\$0	\$60,211	10.9%	\$55,660	\$11,132	\$66,792
01	LANDS AND DAMAGES	\$0	\$0 -		\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
30	PLANNING, ENGINEERING & DESIGN	\$13,492	\$1,349	10.0%	\$14,841	3.8%	\$14,007	\$1,401	\$15,408	\$0	\$15,408	3.4%	\$14,487	\$1,449	\$15,936
31	CONSTRUCTION MANAGEMENT	\$4,862	\$486	10.0%	\$5,348	3.8%	\$5,048	\$505	\$5,553	\$0	\$5,553	14.1%	\$5,759	\$576	\$6,334
PROJECT COST TOTALS:		\$66,971	\$11,559	17.3%	\$78,530		\$69,231	\$11,941	\$81,171	\$0	\$81,171	9.7%	\$75,906	\$13,157	\$89,062

CHIEF, Estimating and Specs Section, Parris J. McGhee-Bey

PROJECT MANAGER, Zachary Noordhoff

CHIEF, REAL ESTATE, Susan K. Lev

CHIEF, PLANNING, Amy M. Guise

CHIEF, ENGINEERING, Ronald J. Maj

CHIEF, OPERATIONS, Patrick G. Findlay

CHIEF, CONSTRUCTION, Jeff J. Werner

CHIEF, CONTRACTING, Paula M. Beck

CHIEF, PP-C, Christopher M. Nolta

CHIEF, DPM, David B. Morrow

ESTIMATED TOTAL PROJECT COST: \$89,062

ESTIMATED FEDERAL COST: 38% \$33,398  
ESTIMATED NON-FEDERAL COST: 63% \$55,664

22 - FEASIBILITY STUDY (CAP studies):

ESTIMATED FEDERAL COST: 50%  
ESTIMATED NON-FEDERAL COST: 50%

ESTIMATED FEDERAL COST OF PROJECT \$33,398

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

PROJECT: Denville Feasibility Study 50 yrsm - Alt 1C  
PROJECT NO: P2 xxxxxx  
LOCATION: Denville, NJ

DISTRICT: NAB District  
POC: CHIEF, Estimating and Specs Section, Parris J. McGhee-Bey  
PREPARED: 11/8/2019

This Estimate reflects the scope and schedule in report; FS Report (underway)

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: 2021 1 OCT 20					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	Spent Thru: 1-Oct-19 (\$K)					
02	RELOCATIONS	\$0	\$0 -		\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
11	LEVEES & FLOODWALLS	\$34,624	\$6,925	20.0%	\$41,549	3.2%	\$35,733	\$7,147	\$42,880	\$0	\$42,880	10.9%	\$39,639	\$7,928	\$47,567
15	FLOODWAY CONTROL & DIVERSION STRU	\$8,363	\$1,673	20.0%	\$10,036	3.2%	\$8,631	\$1,726	\$10,357	\$0	\$10,357	10.9%	\$9,574	\$1,915	\$11,489
CONSTRUCTION ESTIMATE TOTALS:		\$42,987	\$8,597		\$51,585	3.2%	\$44,364	\$8,873	\$53,237	\$0	\$53,237	10.9%	\$49,213	\$9,843	\$59,056
01	LANDS AND DAMAGES	\$0	\$0 -		\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
30	PLANNING, ENGINEERING & DESIGN	\$11,929	\$1,193	10.0%	\$13,122	3.8%	\$12,385	\$1,239	\$13,624	\$0	\$13,624	3.4%	\$12,809	\$1,281	\$14,090
31	CONSTRUCTION MANAGEMENT	\$4,299	\$430	10.0%	\$4,729	3.8%	\$4,463	\$446	\$4,909	\$0	\$4,909	14.1%	\$5,092	\$509	\$5,601
PROJECT COST TOTALS:		\$59,215	\$10,220	17.3%	\$69,435		\$61,213	\$10,558	\$71,770	\$0	\$71,770	9.7%	\$67,114	\$11,633	\$78,747

CHIEF, Estimating and Specs Section, Parris J. McGhee-Bey

PROJECT MANAGER, Zachary Noordhoff

CHIEF, REAL ESTATE, Susan K. Lev

CHIEF, PLANNING, Amy M. Guise

CHIEF, ENGINEERING, Ronald J. Maj

CHIEF, OPERATIONS, Patrick G. Findlay

CHIEF, CONSTRUCTION, Jeff J. Werner

CHIEF, CONTRACTING, Paula M. Beck

CHIEF, PP-C, Christopher M. Nolta

CHIEF, DPM, David B. Morrow

ESTIMATED TOTAL PROJECT COST: \$78,747

ESTIMATED FEDERAL COST: 38% \$29,530  
ESTIMATED NON-FEDERAL COST: 63% \$49,217

22 - FEASIBILITY STUDY (CAP studies):

ESTIMATED FEDERAL COST: 50%  
ESTIMATED NON-FEDERAL COST: 50%

ESTIMATED FEDERAL COST OF PROJECT \$29,530

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

Printed:1/24/2023  
Page 1 of 2

PROJECT: Denville Feasibility Study 50 yrs - Alt 1D  
PROJECT NO: P2 xxxxxx  
LOCATION: Denville, NJ

DISTRICT: NAB District  
POC: CHIEF, Estimating and Specs Section, Parris J. McGhee-Bey  
PREPARED: 11/8/2019

This Estimate reflects the scope and schedule in report; FS Report (underway)

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: 2021 1 OCT 20					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	Spent Thru: 1-Oct-19 (\$K)					
02	RELOCATIONS	\$0	\$0 -		\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
11	LEVEES & FLOODWALLS	\$34,749	\$6,950	20.0%	\$41,699	3.2%	\$35,862	\$7,172	\$43,035	\$0	\$43,035	10.9%	\$39,782	\$7,956	\$47,739
15	FLOODWAY CONTROL & DIVERSION STRU	\$6,825	\$1,365	20.0%	\$8,190	3.2%	\$7,044	\$1,409	\$8,453	\$0	\$8,453	10.9%	\$7,814	\$1,563	\$9,376
CONSTRUCTION ESTIMATE TOTALS:		\$41,574	\$8,315		\$49,889	3.2%	\$42,906	\$8,581	\$51,488	\$0	\$51,488	10.9%	\$47,596	\$9,519	\$57,115
01	LANDS AND DAMAGES	\$0	\$0 -		\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
30	PLANNING, ENGINEERING & DESIGN	\$11,537	\$1,154	10.0%	\$12,691	3.8%	\$11,978	\$1,198	\$13,176	\$0	\$13,176	3.4%	\$12,388	\$1,239	\$13,627
31	CONSTRUCTION MANAGEMENT	\$4,157	\$416	10.0%	\$4,573	3.8%	\$4,316	\$432	\$4,748	\$0	\$4,748	14.1%	\$4,924	\$492	\$5,417
PROJECT COST TOTALS:		\$57,269	\$9,884	17.3%	\$67,153		\$59,201	\$10,211	\$69,412	\$0	\$69,412	9.7%	\$64,909	\$11,250	\$76,159

CHIEF, Estimating and Specs Section, Parris J. McGhee-Bey

PROJECT MANAGER, Zachary Noordhoff

CHIEF, REAL ESTATE, Susan K. Lev

CHIEF, PLANNING, Amy M. Guise

CHIEF, ENGINEERING, Ronald J. Maj

CHIEF, OPERATIONS, Patrick G. Findlay

CHIEF, CONSTRUCTION, Jeff J. Werner

CHIEF, CONTRACTING, Paula M. Beck

CHIEF, PP-C, Christopher M. Nolta

CHIEF, DPM, David B. Morrow

ESTIMATED TOTAL PROJECT COST: \$76,159

ESTIMATED FEDERAL COST: 38% \$28,560  
ESTIMATED NON-FEDERAL COST: 63% \$47,600

22 - FEASIBILITY STUDY (CAP studies):

ESTIMATED FEDERAL COST: 50%  
ESTIMATED NON-FEDERAL COST: 50%

ESTIMATED FEDERAL COST OF PROJECT \$28,560

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

Printed:1/24/2023  
Page 1 of 2

PROJECT: Denville Feasibility Study 25 yrs w 8 Closures - Alt 1E  
PROJECT NO: P2 xxxxxx  
LOCATION: Denville, NJ

DISTRICT: NAB District  
POC: CHIEF, Estimating and Specs Section, Parris J. McGhee-Bey  
PREPARED: 12/6/2019

This Estimate reflects the scope and schedule in report; FS Report (underway)

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: 2021 1 OCT 20					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	Spent Thru: 1-Oct-19 (\$K)					
02	RELOCATIONS	\$0	\$0 -		\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
11	LEVEES & FLOODWALLS	\$27,685	\$5,537	20.0%	\$33,222	3.2%	\$28,572	\$5,714	\$34,286	\$0	\$34,286	10.9%	\$31,695	\$6,339	\$38,034
15	FLOODWAY CONTROL & DIVERSION STRU	\$9,513	\$1,903	20.0%	\$11,416	3.2%	\$9,818	\$1,964	\$11,782	\$0	\$11,782	10.9%	\$10,891	\$2,178	\$13,070
CONSTRUCTION ESTIMATE TOTALS:		\$37,198	\$7,440		\$44,638	3.2%	\$38,390	\$7,678	\$46,068	\$0	\$46,068	10.9%	\$42,586	\$8,517	\$51,103
01	LANDS AND DAMAGES	\$0	\$0 -		\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
30	PLANNING, ENGINEERING & DESIGN	\$10,323	\$1,032	10.0%	\$11,355	3.8%	\$10,717	\$1,072	\$11,789	\$0	\$11,789	3.4%	\$11,084	\$1,108	\$12,193
31	CONSTRUCTION MANAGEMENT	\$3,720	\$372	10.0%	\$4,092	3.8%	\$3,862	\$386	\$4,248	\$0	\$4,248	14.1%	\$4,406	\$441	\$4,847
PROJECT COST TOTALS:		\$51,241	\$8,844	17.3%	\$60,085		\$52,969	\$9,136	\$62,105	\$0	\$62,105	9.7%	\$58,077	\$10,066	\$68,143

CHIEF, Estimating and Specs Section, Parris J. McGhee-Bey

PROJECT MANAGER, Zachary Noordhoff

CHIEF, REAL ESTATE, Susan K. Lev

CHIEF, PLANNING, Amy M. Guise

CHIEF, ENGINEERING, Ronald J. Maj

CHIEF, OPERATIONS, Patrick G. Findlay

CHIEF, CONSTRUCTION, Jeff J. Werner

CHIEF, CONTRACTING, Paula M. Beck

CHIEF, PP-C, Christopher M. Nolta

CHIEF, DPM, David B. Morrow

ESTIMATED TOTAL PROJECT COST: \$68,143

ESTIMATED FEDERAL COST: 38% \$25,554  
ESTIMATED NON-FEDERAL COST: 63% \$42,589

22 - FEASIBILITY STUDY (CAP studies):

ESTIMATED FEDERAL COST: 50%  
ESTIMATED NON-FEDERAL COST: 50%

ESTIMATED FEDERAL COST OF PROJECT \$25,554



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

Printed:1/24/2023  
Page 1 of 2

PROJECT: Denville Feasibility Study 25 yrs Alt 1F-4 Closures  
PROJECT NO: P2 xxxxxx  
LOCATION: Denville, NJ

DISTRICT: NAB District  
POC: CHIEF, Estimating and Specs Section, Parris J. McGhee-Bey  
PREPARED: 12/6/2019

This Estimate reflects the scope and schedule in report; FS Report (underway)

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:				2021 1 OCT 20	TOTAL FIRST COST (\$K)	INFLATED (%)	COST (\$K)	CNTG (\$K)	FULL (\$K)
						ESC (%)	COST (\$K)	CNTG (\$K)	TOTAL (\$K)						
A	B	C	D	E	F	G	H	I	J		K	L	M	N	O
02	RELOCATIONS	\$0	\$0	-	\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
11	LEVEES & FLOODWALLS	\$27,819	\$5,564	20.0%	\$33,383	3.2%	\$28,710	\$5,742	\$34,452	\$0	\$34,452	10.9%	\$31,849	\$6,370	\$38,218
15	FLOODWAY CONTROL & DIVERSION STRU	\$7,991	\$1,598	20.0%	\$9,589	3.2%	\$8,247	\$1,649	\$9,896	\$0	\$9,896	10.9%	\$9,148	\$1,830	\$10,978
CONSTRUCTION ESTIMATE TOTALS:		\$35,810	\$7,162		\$42,972	3.2%	\$36,957	\$7,391	\$44,349	\$0	\$44,349	10.9%	\$40,997	\$8,199	\$49,196
01	LANDS AND DAMAGES	\$0	\$0	-	\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
30	PLANNING, ENGINEERING & DESIGN	\$9,937	\$994	10.0%	\$10,931	3.8%	\$10,317	\$1,032	\$11,349	\$0	\$11,349	3.4%	\$10,671	\$1,067	\$11,738
31	CONSTRUCTION MANAGEMENT	\$3,581	\$358	10.0%	\$3,939	3.8%	\$3,718	\$372	\$4,090	\$0	\$4,090	14.1%	\$4,242	\$424	\$4,666
PROJECT COST TOTALS:		\$49,328	\$8,514	17.3%	\$57,842		\$50,993	\$8,795	\$59,788	\$0	\$59,788	9.7%	\$55,909	\$9,691	\$65,600

CHIEF, Estimating and Specs Section, Parris J. McGhee-Bey

PROJECT MANAGER, Zachary Noordhoff

CHIEF, REAL ESTATE, Susan K. Lev

CHIEF, PLANNING, Amy M. Guise

CHIEF, ENGINEERING, Ronald J. Maj

CHIEF, OPERATIONS, Patrick G. Findlay

CHIEF, CONSTRUCTION, Jeff J. Werner

CHIEF, CONTRACTING, Paula M. Beck

CHIEF, PP-C, Christopher M. Nolta

CHIEF, DPM, David B. Morrow

ESTIMATED TOTAL PROJECT COST: \$65,600

ESTIMATED FEDERAL COST: 38% \$24,600  
ESTIMATED NON-FEDERAL COST: 63% \$41,000

22 - FEASIBILITY STUDY (CAP studies):  
ESTIMATED FEDERAL COST: 50%  
ESTIMATED NON-FEDERAL COST: 50%

ESTIMATED FEDERAL COST OF PROJECT \$24,600

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

Printed:1/24/2023  
Page 1 of 2

PROJECT: Denville Feasibility Study Alternative 2A - 25 yrs w 4 Closures  
PROJECT NO: P2 xxxxxx  
LOCATION: Denville, NJ

DISTRICT: NAB District  
POC: CHIEF, Estimating and Specs Section, Parris J. McGhee-Bey  
PREPARED: 12/6/2019

This Estimate reflects the scope and schedule in report; FS Report (underway)

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: 2021 1 OCT 20					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	Spent Thru: 1-Oct-19 (\$K)					
02	RELOCATIONS	\$0	\$0 -		\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
11	LEVEES & FLOODWALLS	\$11,464	\$2,293	20.0%	\$13,757	3.2%	\$11,831	\$2,366	\$14,197	\$0	\$14,197	10.9%	\$13,124	\$2,625	\$15,749
15	FLOODWAY CONTROL & DIVERSION STRU	\$1,735	\$347	20.0%	\$2,082	3.2%	\$1,790	\$358	\$2,148	\$0	\$2,148	10.9%	\$1,986	\$397	\$2,383
CONSTRUCTION ESTIMATE TOTALS:		\$13,198	\$2,640		\$15,838	3.2%	\$13,621	\$2,724	\$16,346	\$0	\$16,346	10.9%	\$15,110	\$3,022	\$18,132
01	LANDS AND DAMAGES	\$0	\$0 -		\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
30	PLANNING, ENGINEERING & DESIGN	\$3,663	\$366	10.0%	\$4,029	3.8%	\$3,803	\$380	\$4,183	\$0	\$4,183	3.4%	\$3,933	\$393	\$4,326
31	CONSTRUCTION MANAGEMENT	\$1,320	\$132	10.0%	\$1,452	3.8%	\$1,370	\$137	\$1,507	\$0	\$1,507	14.1%	\$1,563	\$156	\$1,720
PROJECT COST TOTALS:		\$18,181	\$3,138	17.3%	\$21,319		\$18,794	\$3,242	\$22,036	\$0	\$22,036	9.7%	\$20,606	\$3,572	\$24,178

CHIEF, Estimating and Specs Section, Parris J. McGhee-Bey

PROJECT MANAGER, Zachary Noordhoff

CHIEF, REAL ESTATE, Susan K. Lev

CHIEF, PLANNING, Amy M. Guise

CHIEF, ENGINEERING, Ronald J. Maj

CHIEF, OPERATIONS, Patrick G. Findlay

CHIEF, CONSTRUCTION, Jeff J. Werner

CHIEF, CONTRACTING, Paula M. Beck

CHIEF, PP-C, Christopher M. Nolta

CHIEF, DPM, David B. Morrow

ESTIMATED TOTAL PROJECT COST: \$24,178

ESTIMATED FEDERAL COST: 38% \$9,067  
ESTIMATED NON-FEDERAL COST: 63% \$15,111

22 - FEASIBILITY STUDY (CAP studies):

ESTIMATED FEDERAL COST: 50%  
ESTIMATED NON-FEDERAL COST: 50%

ESTIMATED FEDERAL COST OF PROJECT \$9,067

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

PROJECT: Denville Feasibility Study Alternative 2B - 25 yrs w 2 Closures  
PROJECT NO: P2 xxxxxx  
LOCATION: Denville, NJ

DISTRICT: NAB District  
POC: CHIEF, Estimating and Specs Section, Parris J. McGhee-Bey  
PREPARED: 12/6/2019

This Estimate reflects the scope and schedule in report; FS Report (underway)

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: 2021 1 OCT 20					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	Spent Thru: 1-Oct-19 (\$K)					
02	RELOCATIONS	\$0	\$0 -		\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
11	LEVEES & FLOODWALLS	\$14,458	\$2,892	20.0%	\$17,349	3.2%	\$14,921	\$2,984	\$17,905	\$0	\$17,905	10.9%	\$16,552	\$3,310	\$19,862
15	FLOODWAY CONTROL & DIVERSION STRU	\$1,025	\$205	20.0%	\$1,230	3.2%	\$1,058	\$212	\$1,270	\$0	\$1,270	10.9%	\$1,174	\$235	\$1,409
CONSTRUCTION ESTIMATE TOTALS:		\$15,483	\$3,097		\$18,580	3.2%	\$15,979	\$3,196	\$19,175	\$0	\$19,175	10.9%	\$17,726	\$3,545	\$21,271
01	LANDS AND DAMAGES	\$0	\$0 -		\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
30	PLANNING, ENGINEERING & DESIGN	\$4,297	\$430	10.0%	\$4,726	3.8%	\$4,461	\$446	\$4,907	\$0	\$4,907	3.4%	\$4,614	\$461	\$5,075
31	CONSTRUCTION MANAGEMENT	\$1,548	\$155	10.0%	\$1,703	3.8%	\$1,608	\$161	\$1,768	\$0	\$1,768	14.1%	\$1,834	\$183	\$2,017
PROJECT COST TOTALS:		\$21,328	\$3,681	17.3%	\$25,009		\$22,047	\$3,803	\$25,850	\$0	\$25,850	9.7%	\$24,173	\$4,190	\$28,363

CHIEF, Estimating and Specs Section, Parris J. McGhee-Bey

PROJECT MANAGER, Zachary Noordhoff

CHIEF, REAL ESTATE, Susan K. Lev

CHIEF, PLANNING, Amy M. Guise

CHIEF, ENGINEERING, Ronald J. Maj

CHIEF, OPERATIONS, Patrick G. Findlay

CHIEF, CONSTRUCTION, Jeff J. Werner

CHIEF, CONTRACTING, Paula M. Beck

CHIEF, PP-C, Christopher M. Nolta

CHIEF, DPM, David B. Morrow

ESTIMATED TOTAL PROJECT COST: \$28,363

ESTIMATED FEDERAL COST: 38% \$10,636  
ESTIMATED NON-FEDERAL COST: 63% \$17,727

22 - FEASIBILITY STUDY (CAP studies):

ESTIMATED FEDERAL COST: 50%  
ESTIMATED NON-FEDERAL COST: 50%

ESTIMATED FEDERAL COST OF PROJECT \$10,636

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

PROJECT: Denville Feasibility Study Alt 2B Sensitivity 25 yrs w 2 Closures  
PROJECT NO: P2 xxxxxx  
LOCATION: Denville, NJ

DISTRICT: NAB District  
POC: CHIEF, Estimating and Specs Section, Parris J. McGhee-Bey  
PREPARED: 12/6/2019

This Estimate reflects the scope and schedule in report; FS Report (underway)

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: 2021 1 OCT 20					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	Spent Thru: 1-Oct-19 (\$K)					
02	RELOCATIONS	\$0	\$0 -		\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
11	LEVEES & FLOODWALLS	\$14,340	\$2,868	20.0%	\$17,208	3.2%	\$14,800	\$2,960	\$17,760	\$0	\$17,760	10.9%	\$16,417	\$3,283	\$19,701
15	FLOODWAY CONTROL & DIVERSION STRU	\$1,028	\$206	20.0%	\$1,234	3.2%	\$1,061	\$212	\$1,273	\$0	\$1,273	10.9%	\$1,177	\$235	\$1,412
CONSTRUCTION ESTIMATE TOTALS:		\$15,368	\$3,074		\$18,442	3.2%	\$15,861	\$3,172	\$19,033	\$0	\$19,033	10.9%	\$17,594	\$3,519	\$21,113
01	LANDS AND DAMAGES	\$0	\$0 -		\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
30	PLANNING, ENGINEERING & DESIGN	\$4,265	\$426	10.0%	\$4,691	3.8%	\$4,428	\$443	\$4,871	\$0	\$4,871	3.4%	\$4,579	\$458	\$5,037
31	CONSTRUCTION MANAGEMENT	\$1,537	\$154	10.0%	\$1,691	3.8%	\$1,596	\$160	\$1,755	\$0	\$1,755	14.1%	\$1,820	\$182	\$2,002
PROJECT COST TOTALS:		\$21,170	\$3,654	17.3%	\$24,824		\$21,884	\$3,774	\$25,659	\$0	\$25,659	9.7%	\$23,994	\$4,159	\$28,153

CHIEF, Estimating and Specs Section, Parris J. McGhee-Bey

PROJECT MANAGER, Zachary Noordhoff

CHIEF, REAL ESTATE, Susan K. Lev

CHIEF, PLANNING, Amy M. Guise

CHIEF, ENGINEERING, Ronald J. Maj

CHIEF, OPERATIONS, Patrick G. Findlay

CHIEF, CONSTRUCTION, Jeff J. Werner

CHIEF, CONTRACTING, Paula M. Beck

CHIEF, PP-C, Christopher M. Nolta

CHIEF, DPM, David B. Morrow

ESTIMATED TOTAL PROJECT COST: \$28,153

ESTIMATED FEDERAL COST: 38% \$10,557  
ESTIMATED NON-FEDERAL COST: 63% \$17,596

22 - FEASIBILITY STUDY (CAP studies):

ESTIMATED FEDERAL COST: 50%  
ESTIMATED NON-FEDERAL COST: 50%

ESTIMATED FEDERAL COST OF PROJECT \$10,557

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

PROJECT: Denville Feasibility Study Alternative 3  
PROJECT NO: P2 xxxxxx  
LOCATION: Denville, NJ

DISTRICT: NAB District  
POC: CHIEF, Estimating and Specs Section, Parris J. McGhee-Bey  
PREPARED: 12/6/2019

This Estimate reflects the scope and schedule in report; FS Report (underway)

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: 2021 1 OCT 20					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	Spent Thru: 1-Oct-19 (\$K)					
02	RELOCATIONS	\$0	\$0 -		\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
11	LEVEES & FLOODWALLS	\$0	\$0 -		\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
15	FLOODWAY CONTROL & DIVERSION STRU	\$35,185	\$7,037	20.0%	\$42,221	3.2%	\$36,312	\$7,262	\$43,574	\$0	\$43,574	10.9%	\$40,281	\$8,056	\$48,337
CONSTRUCTION ESTIMATE TOTALS:		\$35,185	\$7,037		\$42,221	3.2%	\$36,312	\$7,262	\$43,574	\$0	\$43,574	10.9%	\$40,281	\$8,056	\$48,337
01	LANDS AND DAMAGES	\$0	\$0 -		\$0	-	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0	\$0
30	PLANNING, ENGINEERING & DESIGN	\$9,764	\$976	10.0%	\$10,740	3.8%	\$10,137	\$1,014	\$11,151	\$0	\$11,151	3.4%	\$10,484	\$1,048	\$11,533
31	CONSTRUCTION MANAGEMENT	\$3,518	\$352	10.0%	\$3,870	3.8%	\$3,653	\$365	\$4,018	\$0	\$4,018	14.1%	\$4,167	\$417	\$4,584
PROJECT COST TOTALS:		\$48,467	\$8,365	17.3%	\$56,832		\$50,102	\$8,641	\$58,743	\$0	\$58,743	9.7%	\$54,933	\$9,521	\$64,454

CHIEF, Estimating and Specs Section, Parris J. McGhee-Bey

PROJECT MANAGER, Zachary Noordhoff

CHIEF, REAL ESTATE, Susan K. Lev

CHIEF, PLANNING, Amy M. Guise

CHIEF, ENGINEERING, Ronald J. Maj

CHIEF, OPERATIONS, Patrick G. Findlay

CHIEF, CONSTRUCTION, Jeff J. Werner

CHIEF, CONTRACTING, Paula M. Beck

CHIEF, PP-C, Christopher M. Nolta

CHIEF, DPM, David B. Morrow

ESTIMATED TOTAL PROJECT COST: \$64,454

ESTIMATED FEDERAL COST: 38% \$24,170  
ESTIMATED NON-FEDERAL COST: 63% \$40,284

22 - FEASIBILITY STUDY (CAP studies):

ESTIMATED FEDERAL COST: 50%  
ESTIMATED NON-FEDERAL COST: 50%

ESTIMATED FEDERAL COST OF PROJECT \$24,170