

# C PROJECT COST ESTIMATE ASSUMPTIONS AND EXCLUSIONS

In support of the alternatives development process, preliminary cost estimates were prepared for each of the three Candidate Build Alternatives included in the original Environmental Assessment. The cost estimates were based upon the conceptual level designs developed for the preliminary alignments and associated typical sections. The same estimating process was used for the Preferred Alternative 3 Modified.

The project limits were identified as Military Road at the south end to Western Avenue at the north end – a length of approximately 9,000 feet or 1.7 miles. The proposed improvements do not seek to increase capacity; therefore, each of the alternatives retained the existing two-lane configuration. All roadway improvements were restricted to the DDOT-owned right-of-way and additional acquisition will not be required. Construction easements would be necessary for the installation of erosion and sediment control measures, and in and around the areas near existing outfalls within NPS property to minimize erosion and to create safe access points for future maintenance.

Costs were developed at this conceptual level for both “TOTAL CONSTRUCTION COST” for the construction effort under a traditional Design-Bid-Build approach, and “TOTAL PROJECT COST”, which includes funding for design, construction management, construction claims, change orders, and owner’s reserve of 10% of the total construction cost.

The following table summarizes these estimated costs for the Preferred Alternative and the three other Candidate Build Alternatives. Detailed breakdown of quantities and unit costs are presented Tables C-2 through C-5. During design, DDOT will further analyze areas where the lengths and heights of the retaining walls can be reduced. This may result in reduction in total cost of the project. During design, DDOT will also investigate areas of the roadway where complete reconstruction is not needed and minor to moderate reconstruction can be done for the project. This may also result in reduced costs.

**Table C-1. Conceptual Level Cost Estimate**

ALTERNATIVE	TOTAL CONSTRUCTION COST	DDOT PROGRAM MANAGEMENT COST*	TOTAL PROJECT COST
Alternative 3 Modified	\$ 18,100,000	\$ 9,050,000	\$27,150,000
Alternative 2	\$15,600,000	\$7,800,000	\$23,400,000
Alternative 3	\$20,300,000	\$10,150,000	\$30,450,000
Alternative 4	\$23,500,000	\$11,750,000	\$35,250,000

\*DDOT Program Management Cost estimated to be 50% of the Total Construction Cost, broken down as follows: 1% for Public Relations/Agency Coordination/Misc.; 6% for Construction Escalation (2 years at 3% per year); 12% Final Design Fee; 8% Construction Management; 5% Construction Claims; 8% Change Orders; and 10% Owner’s Reserve.

## **ASSUMPTIONS**

The following assumptions were made in support of the construction cost estimates:

### ROADWAY

1. Complete reconstruction of the roadway with the following:
  - a. Travel Lanes and Bike Lanes – 2" Superpave AC Surface Course, 5" Superpave AC Base Course, 6" Graded Aggregate Base Course (GAB)
  - b. Bus Pads – 12" Reinforced PCC, 6" GAB
  - c. Curb and Curb & Gutter – 8" wide mountable PCC curb, Combined 8" wide mountable PCC curb and 12" wide PCC gutter
  - d. Driveways – Concrete Driveway - 7" PCC; Asphalt Driveway 4" AC , 4" GAB
2. Sidewalk, Shared Use Path, Bike Lanes with the following :
  - a. Shared Use Path – 1-1/2" Superpave AC Surface Course, 2-1/2" Superpave AC Base Course, 4" GAB
  - b. Bike Lanes - 2" Superpave AC Surface Course, 5" Superpave AC Base Course, 6" Graded Aggregate Base Course (GAB)
  - c. Sidewalk – 4" PCC, 4" GAB

### UTILITIES

1. DC Water – Water and Sewer Relocations: Based on communications with DC Water design staff, the water and sewer lines are considered for relocation if the existing line falls within 1foot of the curb/curb & gutter line; if the line falls within swale/ditch alignment; if the depth of cover is reduced to less than 3 feet; if the line falls underneath the wheelchair/bicycle ramp; or if the line falls within the footprint of other utilities.
2. PEPCO, VERIZON, and COMCAST – It is assumed that all overhead lines are on joint-use PEPCO poles and if PEPCO lines are impacted then they all need to be relocated. PEPCO lines are considered for relocation if the existing poles fall within the footprint of the roadway or excavation takes place within 1 foot. Some of the existing poles are outside of the right-of-way and they will remain as they are.
3. WASHINGTON GAS – Gas lines are considered for relocation if the existing line falls within 1foot of the curb/curb & gutter line; if the line falls within swale/ditch alignment; if the depth of cover is reduced to less than 3 feet; the line falls underneath the wheelchair/bicycle ramp; or within the foot print of other utilities.
4. DC STREETLIGHT - Existing street lights are assumed to be DC-owned, leased lights on PEPCO poles. All existing old type light fixtures and arms will be replaced with new 250 Watt High Pressure Sodium Luminaries cut-off type fixtures with 8-, 12- or 14-foot arms.

### STORMWATER / DRAINAGE

1. In general, the roadway will have a cross slope toward the west and runoff will be directed toward the drainage system to be installed on the west side of the roadway.

Water collected in the system will be directed to existing outfall locations along the east side of the roadway.

2. The underground drainage system will include Low Impact Development techniques. These include a “treatment train” concept which incorporates:
  - a. inlets along the edge of the roadway to collect surface runoff (spaced at about 200 to 300 feet); these inlets would include water quality structures to filter debris and particles prior to entering downstream parts of the system,
  - b. infiltration trenches under the sidewalk or vegetated swale area; these consist of a large diameter (48 inch), perforated pipe surrounded by aggregate and geotextile filter material which would occur for about 25% of the project length, the downstream outlet end of this pipe would include a weir to enable retention of 1.2 inches of runoff from the roadway,
  - c. the infiltration trench would be connected to culverts under Oregon Avenue which also collect upstream storm sewers from the neighborhoods to the west,
  - d. headwalls would be replaced or repaired at the outfalls on the east side of the roadway,
  - e. channels downstream of the new headwalls would be stabilized using sand seepage berms.
3. For Alternatives 3 and 4, a vegetated swale would be added to the above system.
4. Infiltration trenches would not be combined to the combined sewer systems.
5. It was assumed that the existing soil layers adjacent to the roadway are sufficiently pervious to accommodate the planned infiltration.
6. Given the rolling topography, it was assumed that sufficient grades were available to enable new systems to outfall at the existing outfall inverts.
7. The northernmost outfall near Western Avenue would incorporate drainage features to eliminate concentrated flow and transition the flows to non-erosive sheet flow conditions.
8. An optional rain garden can be provided near Nebraska Avenue.

## **EXCLUSIONS**

The following items were not included in the construction cost estimates:

1. Unforeseen subsurface condition
2. Stream stabilization
3. Right-of-way acquisition including temporary construction easements
4. Accuracy of the survey
5. Location of existing utilities

**Table C-2. Conceptual Construction Cost Estimate – Preferred Alternative 3 Modified**

ITEM NO.	ITEM DESCRIPTION	UNITS	QUANTITY	UNIT COST	AMOUNT
<b>GRAD</b>	<b>GRADING</b>				
	COMMON EXCAVATION	CY	9,800	\$30	\$294,000
	BORROW EMBANKMENT	CY	1,205	\$35	\$42,175
	STRUCTURAL EXCAVATION	CY	445	\$50	\$22,250
	UNDERCUT	CY	13,462	\$50	\$673,110
	SUBGRADE STABILIZATION	CY	13,462	\$40	\$538,488
<b>RDWY</b>	<b>ROADWAY</b>				
	FULL-DEPTH ASPHALT PAVEMENT ( 2" HMA SURFACE COURSE+5" HMA BASE COURSE+6" GAB)	SY	22,437	\$58	\$1,301,346
	ASPHALT DRIVEWAY (4" HMA + 4" GAB)	SY	635	\$47	\$29,845
	7" PCC DRIVEWAY	SY	251	\$90	\$22,590
	PCC SIDEWALK (4" PCC +4" GAB)	SY	4,930	\$75	\$369,750
	PCC WHEELCHAIR RAMPS 7" PCC)	EA	35	\$400	\$14,000
	PCC CURB	CY	530	\$270	\$143,100
	PCC CURB AND GUTTER	CY	543	\$350	\$190,050
	PCC BUS STOP PADS	CY	133	\$350	\$46,667
<b>STWM</b>	<b>STORMWATER</b>				
	TRIPLE CATCH BASIN	EA	73	\$9,000	\$657,000
	DOUBLE THROAT WATER QUALITY BASIN	EA	41	\$12,000	\$492,000
	CLOSED STORM DRAIN SYSTEM	LF	7,421	\$150	\$1,113,150
	OPEN STORM DRAIN SYSTEM	LF	977	\$95	\$92,815
	OUTFALL IMPROVEMENTS	EA	8	\$750	\$6,000
	MANHOLE	EA	98	\$6,000	\$588,000
	CULVERT (OREGON AVENUE CROSSING)	EA	8	\$12,000	\$96,000
	PCC HEADWALL	EA	6	\$3,000	\$18,000
	RAIN GARDEN	SY	950	\$160	\$152,000
	NON-EROSIVE OUTFALLS	EA	3	\$25,000	\$75,000
<b>STRU</b>	<b>STRUCTURES</b>				
	COPING WALL 8" to 18" HEIGHT	LF	198	\$35	\$6,930
	RETAINING WALL 1-6" to 5' HEIGHT W/ SAFETY RAILING	LF	485	\$300	\$145,500
	RETAINING WALL 5' to 10' HEIGHT W/ SAFETY RAILING	LF	275	\$465	\$127,875
	PINEHURST RUN CULVERT REPLACEMENT (BRIDGE STRUCTURE)	LS	1	\$300,000	\$300,000
<b>UTIL</b>	<b>UTILITIES</b>				
	8" WATERMAIN REPLACEMENT	LF	0	\$300	\$0
	12" WATERMAIN REPLACEMENT	LF	1,100	\$400	\$440,000
	10" SANITARY SEWER REPLACEMENT	LF	500	\$350	\$175,000
	12" SANITARY SEWER REPLACEMENT	LF	750	\$450	\$337,500
	2" GASLINE REPLACEMENT	LF	0	\$160	\$0
	4" GASLINE REPLACEMENT	LF	300	\$170	\$51,000
	STREET LIGHT UPGRADING	LF	9,000	\$10	\$90,000
	PEPCO RELOCATIONS	LF	5,500	\$50	\$275,000
	VERIZON RELOCATIONS	LF	5,500	\$40	\$220,000

Project Cost Estimate Assumptions and Exclusions

ITEM NO.	ITEM DESCRIPTION	UNITS	QUANTITY	UNIT COST	AMOUNT
	COMCAST RELOCATION	LF	5,500	\$20	\$110,000
<b>LASP</b>	<b>LANDSCAPING</b>				
	TREE REMOVAL	EA	65	\$300	\$19,500
	NEW TREE - 2" DBH	EA	260	\$400	\$104,000
	TREE PRUNING	EA	31	\$100	\$3,100
	SEEDING/SODDING	SY	1,810	\$6	\$10,860
<b>PMSG</b>	<b>PAVEMENT MARKINGS AND SIGNING</b>				
	ROADWAY PAVEMENT MARKINGS	LF	31,184	\$4	\$124,736
	TRAFFIC SIGNS	SF	900	\$50	\$45,000
	TRAFFIC SIGN SUPPORTS	LF	1,064	\$5	\$5,320
				<b>SUBTOTAL</b>	<b>\$9,568,657</b>
	MAINTENANCE OF TRAFFIC (25% of Subtotal)				\$2,392,164
	MOBILIZATION (10% of Subtotal)				\$956,866
	EROSION AND SEDIMENT CONTROL (10% of Subtotal)				\$956,866
				<b>NEW SUBTOTAL</b>	<b>\$13,874,552</b>
	CONTINGENCY (30% of New Subtotal)				\$4,162,366
				<b>TOTAL</b>	<b>\$18,036,918</b>
	<b>TOTAL CONSTRUCTION COST</b>				<b>\$18,100,000</b>

**Table C-3. Conceptual Construction Cost Estimate – Alternative 2**

ITEM NO.	ITEM DESCRIPTION	UNITS	QUANTITY	UNIT COST	AMOUNT
<b>GRAD</b>	<b>GRADING</b>				
	COMMON EXCAVATION	CY	9,930	\$30	\$297,900
	BORROW EMBANKMENT	CY	720	\$35	\$25,200
	STRUCTURAL EXCAVATION	CY	445	\$50	\$22,250
	UNDERCUT	CY	13,387	\$50	\$669,330
	SUBGRADE STABILIZATION	CY	13,387	\$40	\$535,464
<b>RDWY</b>	<b>ROADWAY</b>				
	FULL-DEPTH ASPHALT PAVEMENT ( 2" HMA SURFACE COURSE+5" HMA BASE COURSE+6" GAB)	SY	22,311	\$58	\$1,294,038
	ASPHALT DRIVEWAY (4" HMA + 4" GAB)	SY	522	\$47	\$24,534
	7" PCC DRIVEWAY	SY	316	\$90	\$28,440
	PCC SIDEWALK (4" PCC +4" GAB)	SY	4,320	\$75	\$324,000
	PCC WHEELCHAIR RAMPS 7" PCC)	EA	33	\$400	\$13,200
	SHARED PATH (4" HMA + 4" GAB)	SY	0	\$47	\$0
	MOUNTABLE CURB	CY	312	\$270	\$84,240
	MOUNTABLE CURB AND GUTTER	CY	405	\$350	\$141,750
	PCC BUS STOP PADS	CY	133	\$350	\$46,667
<b>STWM</b>	<b>STORMWATER</b>				
	CDS (INLET, CONTINUOUS DEFLECTIVE SEPARATOR)	EA	30	\$10,500	\$315,000
	CLOSED STORM DRAIN SYSTEM	LF	6,720	\$150	\$1,008,000
	OPEN STORM DRAIN SYSTEM	LF	895	\$95	\$85,025
	48" PERFORATED CMP W/ PERVIOUS FILL	LF	2,300	\$140	\$322,000
	OUTFALL IMPROVEMENTS	EA	8	\$750	\$6,000
	MANHOLE	EA	15	\$6,000	\$90,000
	CULVERT (OREGON AVENUE CROSSING)	EA	8	\$12,000	\$96,000
	CULVERT (DRIVEWAY CROSSING)	EA	12	\$5,500	\$66,000
	PCC HEADWALL	EA	6	\$3,000	\$18,000
	RAIN GARDEN	SY	750	\$160	\$120,000
	LEVEL SPREADER	EA	3	\$25,000	\$75,000
<b>STRU</b>	<b>STRUCTURES</b>				
	COPING WALL 8" to 18" HEIGHT	LF	396	\$35	\$13,860
	RETAINING WALL 1-6" to 5' HEIGHT W/ SAFETY RAILING	LF	672	\$300	\$201,600
	RETAINING WALL 5' to 10' HEIGHT W/ SAFETY RAILING	LF	0	\$465	\$0
	PINEHURST RUN CULVERT REPLACEMENT (BRIDGE STRUCTURE)	LS	1	\$275,000	\$275,000
<b>UTIL</b>	<b>UTILITIES</b>				
	8" WATERMAIN REPLACEMENT	LF	0	\$300	\$0
	12" WATERMAIN REPLACEMENT	LF	1,100	\$400	\$440,000
	10" SANITARY SEWER REPLACEMENT	LF	500	\$350	\$175,000
	12" SANITARY SEWER REPLACEMENT	LF	750	\$450	\$337,500
	2" GASLINE REPLACEMENT	LF	0	\$160	\$0
	4" GASLINE REPLACEMENT	LF	300	\$170	\$51,000
	STREET LIGHT UPGRADING	LF	9,000	\$10	\$90,000

Project Cost Estimate Assumptions and Exclusions

ITEM NO.	ITEM DESCRIPTION	UNITS	QUANTITY	UNIT COST	AMOUNT
	PEPCO RELOCATIONS	LF	5,500	\$50	\$275,000
	VERIZON RELOCATIONS	LF	5,500	\$40	\$220,000
	COMCAST RELOCATION	LF	5,500	\$20	\$110,000
<b>LASP</b>	<b>LANDSCAPING</b>				
	TREE REMOVAL	EA	62	\$300	\$18,500
	NEW TREE - 2" DBH	EA	190	\$400	\$76,000
	TREE PRUNING	EA	50	\$100	\$5,000
	SEEDING/SODDING	SY	15,000	\$6	\$90,000
<b>PMSG</b>	<b>PAVEMENT MARKINGS AND SIGNING</b>				
	ROADWAY PAVEMENT MARKINGS	LF	31,102	\$4	\$124,408
	TRAFFIC SIGNS	SF	900	\$50	\$45,000
	TRAFFIC SIGN SUPPORTS	LF	1,064	\$5	\$5,320
		<b>SUBTOTAL</b>			<b>\$8,261,326</b>
	MAINTENANCE OF TRAFFIC (25% of Subtotal)				\$2,065,331
	MOBILIZATION (10% of Subtotal)				\$826,133
	EROSION AND SEDIMENT CONTROL (10% of Subtotal)				\$826,133
		<b>NEW SUBTOTAL</b>			<b>\$11,978,922</b>
	CONTINGENCY (30% of New Subtotal)				\$3,593,677
		<b>TOTAL</b>			<b>\$15,572,599</b>
	<b>TOTAL CONSTRUCTION COST</b>				<b>\$15,600,000</b>

**Table C-4. Conceptual Construction Cost Estimate – Alternative 3**

ITEM NO.	ITEM DESCRIPTION	UNITS	QUANTITY	UNIT COST	AMOUNT
<b>GRAD</b>	<b>GRADING</b>				
	COMMON EXCAVATION	CY	16,943	\$30	\$508,281
	BORROW EMBANKMENT	CY	779	\$35	\$27,258
	STRUCTURAL EXCAVATION	CY	445	\$50	\$22,250
	UNDERCUT	CY	13,822	\$50	\$691,080
	SUBGRADE STABILIZATION	CY	13,822	\$40	\$552,864
<b>RDWY</b>	<b>ROADWAY</b>				
	FULL-DEPTH ASPHALT PAVEMENT ( 2" HMA SURFACE COURSE+5" HMA BASE COURSE+6" GAB)	SY	23,036	\$58	\$1,336,088
	ASPHALT DRIVEWAY (4" HMA + 4" GAB)	SY	725	\$47	\$34,075
	7" PCC DRIVEWAY	SY	415	\$90	\$37,350
	PCC SIDEWALK (4" PCC +4" GAB)	SY	0	\$75	\$0
	PCC WHEELCHAIR RAMPS 7" PCC)	EA	33	\$400	\$13,200
	SHARED PATH (4" HMA + 4" GAB)	SY	5,121	\$47	\$240,687
	MOUNTABLE CURB	CY	312	\$270	\$84,240
	MOUNTABLE CURB AND GUTTER	CY	154	\$350	\$53,900
	PCC BUS STOP PADS	CY	133	\$350	\$46,667
<b>STWM</b>	<b>STORMWATER</b>				
	CDS (INLET, CONTINUOUS DEFLECTIVE SEPARATOR)	EA	30	\$10,500	\$315,000
	CLOSED STORM DRAIN SYSTEM	LF	5,400	\$150	\$810,000
	OPEN STORM DRAIN SYSTEM	LF	5,300	\$95	\$503,500
	48" PERFORATED CMP W/ PERVIOUS FILL	LF	2,300	\$140	\$322,000
	OUTFALL IMPROVEMENTS	EA	8	\$750	\$6,000
	MANHOLE	EA	15	\$6,000	\$90,000
	CULVERT (OREGON AVENUE CROSSING)	EA	8	\$12,000	\$96,000
	CULVERT (DRIVEWAY CROSSING)	EA	42	\$5,500	\$231,000
	PCC HEADWALL	EA	6	\$3,000	\$18,000
	RAIN GARDEN	SY	750	\$160	\$120,000
	LEVEL SPREADER	EA	3	\$25,000	\$75,000
<b>STRU</b>	<b>STRUCTURES</b>				
	COPING WALL 8" to 18" HEIGHT	LF	396	\$35	\$13,860
	RETAINING WALL 1-6" to 5' HEIGHT W/ SAFETY RAILING	LF	1,007	\$300	\$302,100
	RETAINING WALL 5' to 10' HEIGHT W/ SAFETY RAILING	LF	155	\$465	\$72,075
	PINEHURST RUN CULVERT REPLACEMENT (BRIDGE STRUCTURE)	LS	1	\$300,000	\$300,000
<b>UTIL</b>	<b>UTILITIES</b>				
	8" WATERMAIN REPLACEMENT	LF	1,900	\$300	\$570,000
	12" WATERMAIN REPLACEMENT	LF	3,000	\$400	\$1,200,000
	10" SANITARY SEWER REPLACEMENT	LF	2,500	\$350	
	12" SANITARY SEWER REPLACEMENT	LF	750	\$450	\$337,500
	2" GASLINE REPLACEMENT	LF	500	\$160	
	4" GASLINE REPLACEMENT	LF	2,300	\$170	\$391,000
	STREET LIGHT UPGRADING	LF	9,000	\$10	\$90,000



*Project Cost Estimate Assumptions and Exclusions*

<b>ITEM NO.</b>	<b>ITEM DESCRIPTION</b>	<b>UNITS</b>	<b>QUANTITY</b>	<b>UNIT COST</b>	<b>AMOUNT</b>
	PEPCO RELOCATIONS	LF	7,500	\$50	\$375,000
	VERIZON RELOCATIONS	LF	7,500	\$40	\$300,000
	COMCAST RELOCATION	LF	7,500	\$20	\$150,000
<b>LASP</b>	<b>LANDSCAPING</b>				
	TREE REMOVAL	EA	85	\$300	\$25,500
	NEW TREE - 2" DBH	EA	260	\$400	\$104,000
	TREE PRUNING	EA	50	\$100	\$5,000
	SEEDING/SODDING	SY	20,000	\$6	\$120,000
<b>PMSG</b>	<b>PAVEMENT MARKINGS AND SIGNING</b>				
	ROADWAY PAVEMENT MARKINGS	LF	31,184	\$4	\$124,736
	TRAFFIC SIGNS	SF	900	\$50	\$45,000
	TRAFFIC SIGN SUPPORTS	LF	1,064	\$5	\$5,320
				<b>SUBTOTAL</b>	<b>\$10,765,531</b>
	MAINTENANCE OF TRAFFIC (25% of Subtotal)				\$2,691,383
	MOBILIZATION (10% of Subtotal)				\$1,076,553
	EROSION AND SEDIMENT CONTROL (10% of Subtotal)				\$1,076,553
				<b>NEW SUBTOTAL</b>	<b>\$15,610,019</b>
	CONTINGENCY (30% of New Subtotal)				\$4,683,006
				<b>TOTAL</b>	<b>\$20,293,025</b>
	<b>TOTAL CONSTRUCTION COST</b>				<b>\$20,300,000</b>

**Table C-5. Conceptual Construction Cost Estimate – Alternative 4**

ITEM NO.	ITEM DESCRIPTION	UNITS	QUANTITY	UNIT COST	AMOUNT
<b>GRAD</b>	<b>GRADING</b>				
	COMMON EXCAVATION	CY	18,830	\$30	\$564,912
	BORROW EMBANKMENT	CY	742	\$35	\$25,956
	STRUCTURAL EXCAVATION	CY	445	\$50	\$22,250
	UNDERCUT	CY	15,934	\$50	\$796,710
	SUBGRADE STABILIZATION	CY	15,934	\$40	\$637,368
<b>RDWY</b>	<b>ROADWAY</b>				
	FULL-DEPTH ASPHALT PAVEMENT ( 2" HMA SURFACE COURSE+5" HMA BASE COURSE+6" GAB)	SY	26,557	\$58	\$1,540,306
	ASPHALT DRIVEWAY (4" HMA + 4" GAB)	SY	587	\$47	\$27,589
	7" PCC DRIVEWAY	SY	351	\$90	\$31,590
	PCC SIDEWALK (4" PCC +4" GAB)	SY	4,229	\$75	\$317,175
	PCC WHEELCHAIR RAMPS 7" PCC)	EA	33	\$400	\$13,200
	SHARED PATH (4" HMA + 4" GAB)	SY	0	\$47	\$0
	MOUNTABLE CURB	CY	312	\$270	\$84,240
	MOUNTABLE CURB AND GUTTER	CY	154	\$350	\$53,900
	PCC BUS STOP PADS	CY	133	\$350	\$46,667
<b>STWM</b>	<b>STORMWATER</b>				
	CDS (INLET, CONTINUOUS DEFLECTIVE SEPARATOR)	EA	30	\$10,500	\$315,000
	CLOSED STORM DRAIN SYSTEM	LF	5,400	\$150	\$810,000
	OPEN STORM DRAIN SYSTEM	LF	5,300	\$95	\$503,500
	48" PERFORATED CMP W/ PERVIOUS FILL	LF	2,300	\$140	\$322,000
	OUTFALL IMPROVEMENTS	EA	8	\$750	\$6,000
	MANHOLE	EA	15	\$6,000	\$90,000
	CULVERT (OREGON AVENUE CROSSING)	EA	8	\$12,000	\$96,000
	CULVERT (DRIVEWAY CROSSING)	EA	42	\$5,500	\$231,000
	PCC HEADWALL	EA	6	\$3,000	\$18,000
	RAIN GARDEN	SY	750	\$160	\$120,000
	LEVEL SPREADER	EA	3	\$25,000	\$75,000
<b>STRU</b>	<b>STRUCTURES</b>				
	COPING WALL 8" to 18" HEIGHT	LF	396	\$35	\$13,860
	RETAINING WALL 1-6" to 5' HEIGHT W/ SAFETY RAILING	LF	1,375	\$300	\$412,500
	RETAINING WALL 5' to 10' HEIGHT W/ SAFETY RAILING	LF	323	\$465	\$150,195
	PINEHURST RUN CULVERT REPLACEMENT (BRIDGE STRUCTURE)	LS	1	\$325,000	\$325,000
<b>UTIL</b>	<b>UTILITIES</b>				
	8" WATERMAIN REPLACEMENT	LF	1,900	\$300	\$570,000
	12" WATERMAIN REPLACEMENT	LF	3,000	\$400	\$1,200,000
	10" SANITARY SEWER REPLACEMENT	LF	2,500	\$350	\$875,000
	12" SANITARY SEWER REPLACEMENT	LF	750	\$450	\$337,500
	2" GASLINE REPLACEMENT	LF	500	\$160	\$80,000
	4" GASLINE REPLACEMENT	LF	2,300	\$170	\$391,000
	STREET LIGHT UPGRADING	LF	9,000	\$10	\$90,000

Project Cost Estimate Assumptions and Exclusions

ITEM NO.	ITEM DESCRIPTION	UNITS	QUANTITY	UNIT COST	AMOUNT
	PEPCO RELOCATIONS	LF	7,500	\$50	\$375,000
	VERIZON RELOCATIONS	LF	7,500	\$40	\$300,000
	COMCAST RELOCATION	LF	7,500	\$20	\$150,000
<b>LASP</b>	<b>LANDSCAPING</b>				
	TREE REMOVAL	EA	85	\$300	\$25,500
	NEW TREE - 2" DBH	EA	260	\$400	\$104,000
	TREE PRUNING	EA	50	\$100	\$5,000
	SEEDING/SODDING	SY	20,000	\$6	\$120,000
<b>PMSG</b>	<b>PAVEMENT MARKINGS AND SIGNING</b>				
	ROADWAY PAVEMENT MARKINGS	LF	31,511	\$4	\$126,044
	TRAFFIC SIGNS	SF	900	\$50	\$45,000
	TRAFFIC SIGN SUPPORTS	LF	1,064	\$5	\$5,320
				<b>SUBTOTAL</b>	<b>\$12,449,282</b>
	MAINTENANCE OF TRAFFIC (25% of Subtotal)				\$3,112,320
	MOBILIZATION (10% of Subtotal)				\$1,244,928
	EROSION AND SEDIMENT CONTROL (10% of Subtotal)				\$1,244,928
				<b>NEW SUBTOTAL</b>	<b>\$18,051,458</b>
	CONTINGENCY (30% of New Subtotal)				\$5,415,438
				<b>TOTAL</b>	<b>\$23,466,896</b>
	<b>TOTAL CONSTRUCTION COST</b>				<b>\$23,500,000</b>