

Appendix V: Cost Estimate Worksheets

**US 29 MOBILITY STUDY
MONTGOMERY COUNTY
Managed Lane Conceptual Construction Cost Estimate Assumptions & Impacts**

OVERALL

- Estimates assembled using guidance provided in the *MDOT SHA 2017 Highway Construction Cost Estimating Manual* and the *MDOT SHA January 2019 Price Index*.
- Existing right-of-way established using GIS.
- Proposed right-of-way offset 5 feet from outermost proposed feature.
 - \$1M/Acre assumed based on recent property sales in corridor appearing on Zillow.
 - Where 5 feet offset significantly alters a property's operations, total property acquisition is proposed.
- Design speeds = Posted speed limits
- Proposed Full Depth Pavement Depths
 - US 29
 - 2 Inch Asphalt Surface
 - 13 Inch Asphalt Base
 - 12 Inch Graded Aggregate Base Course
 - County Roadways
 - 2 Inch Asphalt Surface
 - 6 Inch Asphalt Base
 - 12 Inch Graded Aggregate Base Course
 - Shared Use/Bike Paths
 - 2 Inch Asphalt Surface
 - 2 Inch Asphalt Base
 - 6 Inch Graded Aggregate Base Course
- Proposed Lane Widths
 - Managed Lane
 - US 29 North of MD 650 = 12 Feet
 - US 29 South of MD 650 = 11 Feet
 - Median Bus Lane
 - 10 feet Minimum
- Impacted Traffic Barrier W-Beam to be replaced in kind. Length-of-need will need to be verified in later phases of design.
- Realignment of lanes:
 - Assumes fine milling/resurfacing of the existing roadway surface to remove existing and establish proposed pavement markings.
 - May ultimately require existing point of crown to be relocated using Asphalt Wedge/Level in later phases of design.
- Impacted Overhead Sign Structures assumed to be removed and replaced.
- Traffic signal modifications assumed at all signalized intersections with proposed lane reconfigurations/modifications.
- Lighting improvements are assumed wherever widening is proposed along the outside of the roadway.
- Where applicable, Overhead Lane Management Signals are proposed every 2,500 feet or after the introduction of new traffic at each intersection in each direction.

**US 29 MOBILITY STUDY
MONTGOMERY COUNTY
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LOCATION S1a – US 29 FROM MUSGROVE ROAD TO STEWART LANE

- Existing US 29 shoulders are not traffic bearing
 - Reconstruction of the outside shoulder will require lanes to be temporarily narrowed during construction for temporary concrete traffic barriers which will require fine milling/resurfacing of the existing roadway to remove existing and establish proposed pavement markings.
 - Widening required where existing median shoulder is not 12 feet wide.
- Proposed signing, marking, and overhead lane management signals required for usage of Bus Managed Lanes/HOV/Hard Running Shoulders
- Proposed general purpose lanes match existing travel lanes except in the vicinity of the bridge over Paint Branch where the travel lanes will be shifted.
 - Assumes existing bridge over Paint Branch can accommodate loads of four travel lanes
 - Assumes the bridge deck will be replaced to accommodate lane shifts
- Proposed acceleration lanes require widening to accommodate peak hour lane usage.
- Existing Stations recently constructed at Tech Road will be utilized

LOCATION S1b – US 29 FROM MD 650 TO SOUTHWOOD AVENUE (SB LIMIT) / BURNT MILLS AVENUE (NB LIMIT)

- Proposed signing, markings, and overhead lane management signals required for usage of Bus Managed Lanes/HOV/Hard Running Shoulders
- Proposed general purpose lanes match existing travel lanes

LOCATION S1c – US 29 FROM DALE DRIVE TO SPRING STREET

- Assumes proposed Bus Managed Lane/HOV lane configurations can be accommodated by replacing two Overhead LED Blank-out Signs on each existing overhead lane management signal.
- No geometric changes are anticipated to be needed.

LOCATION S2 – US 29 AT GREENCASTLE ROAD

- The cost estimate for the proposed improvements at this location assumes adjacent proposed improvements of Location S1a constructed simultaneously. If constructed independently, additional costs are anticipated for:
 - Maintenance of Traffic
 - Earthwork
 - Drainage
 - Traffic Signal
 - Traffic Barrier W Beam Median Barrier & End Treatments

**US 29 MOBILITY STUDY
MONTGOMERY COUNTY
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LOCATION S3 – US 29 AT TECH ROAD

- The cost estimate for the proposed improvements at this location assumes adjacent proposed improvements of Location S1a constructed simultaneously. If constructed independently, additional costs are anticipated for:
 - Maintenance of Traffic
 - Earthwork
 - Drainage
 - Traffic Signal
- Outermost southbound US 29 lane will become a through/right-turn lane at all times.

LOCATION S4 – US 29 AT STEWART LANE

- The cost estimate for the proposed improvements at this location assumes adjacent proposed improvements of Location S1a constructed simultaneously. If constructed independently, additional costs are anticipated for:
 - Maintenance of Traffic
 - Earthwork
 - Drainage
 - Traffic Signal

LOCATION S5 – US 29 AT MD 650 (NEW HAMPSHIRE AVENUE)

- The cost estimate for the proposed improvements at this location assumes adjacent proposed improvements of Location S1b constructed simultaneously. However, if constructed independently, there are no significant additional costs anticipated.

LOCATION S6 – US 29 AT BURNT MILLS BRT STATION / BURNT MILLS SHOPPING CENTER

- Hillwood Drive to become dead end, cul-de-sac not needed due to location of shopping center entrance.
- Proposed Traffic Signal/Crosswalk to provide pedestrians access to right -hand boarding located in the median
- Northbound widening will impact office of Burnt Mills Auto Body. Entire property acquisition assumed.

LOCATION S7 – US 29 AT SOUTHWOOD DRIVE

- No geometric changes proposed.
- No costs estimated to change signal timing/phasing

LOCATION S8 – US 29 AT MD 193 BRT STATION

- Southbound station located in the median. Proposed shift/widening of northbound lanes will be required to accommodate right-hand boarding in median.
- Northbound station located along the outside edge of US 29

**US 29 MOBILITY STUDY
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LOCATION S9 – US 29 AT I-495

- Widening of US 29 ramp proposed on inside to avoid disturbance to existing right-of-way, existing retaining wall, and Sutherland Road.

LOCATION S10 – US 29 AT SLIGO CREEK PARKWAY

- St Andrews Way leg will eventually be signed or gated, no geometric changes included for closing it.
- Additional westbound through lane proposed:
 - To extend to Ellsworth Drive
 - To extend 350' beyond the intersection

**US 29 MOBILITY STUDY
MONTGOMERY COUNTY
Concept Construction Cost Estimate**

7/15/2020

LOCATION S1a - US 29 FROM MUSGROVE ROAD TO STEWART LANE					
ITEM NO.	DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
CATEGORY 1 - PRELIMINARY					
1001	CATEGORY 1= 40% OF CATEGORIES 2, 4, 5, & 6	1	LS	40%	\$ 4,039,000.00
	CATEGORY 1=				\$ 4,039,000.00
CATEGORY 2 - GRADING					
2001	EARTHWORK	29,000	CY	\$ 40.00	\$ 1,160,000.00
	CATEGORY 2=				\$ 1,160,000.00
CATEGORY 3 - DRAINAGE					
3001	CATEGORY 3= 35% OF CATEGORIES 2, 4, 5, & 6	1	LS	35%	\$ 3,534,000.00
	CATEGORY 3=				\$ 3,534,000.00
CATEGORY 4 - STRUCTURES					
4001	NEW BRIDGE CONSTRUCTION	0	SF	\$ 260.00	\$ -
4002	BRIDGE DECK REPLACEMENT	35,100	SF	\$ 50.00	\$ 1,755,000.00
4003	RETAINING WALL	0	SF	\$ 300.00	\$ -
	CATEGORY 4=				\$ 1,755,000.00
CATEGORY 5 - PAVING					
5001	ASPHALT FOR 2 INCH SURFACE COURSE	18,400	TON	\$ 100.00	\$ 1,840,000.00
5002	ASPHALT FOR 2 INCH BASE COURSE (SHARED USE PATH)	0	TON	\$ 110.00	\$ -
5003	ASPHALT FOR 6 INCH BASE COURSE (COUNTY ROAD)	0	TON	\$ 110.00	\$ -
5004	ASPHALT FOR 13 INCH BASE COURSE (STATE ROAD)	25,400	TON	\$ 110.00	\$ 2,794,000.00
5005	PAYMENT ADJUSTMENT FOR PAVEMENT DENSITY	162,200	EA	\$ 1.00	\$ 162,200.00
5006	PAYMENT ADJUSTMENT FOR ASPHALT MIXTURE	162,200	EA	\$ 1.00	\$ 162,200.00
5007	FINE MILLING ASPHALT PAVEMENT 0 INCH TO 2 INCH DEPTH	111,500	SY	\$ 7.50	\$ 836,250.00
5008	6 INCH GRADED AGGREGATE BASE COURSE	60,500	SY	\$ 20.00	\$ 1,210,000.00
	CATEGORY 5=				\$ 7,004,650.00
CATEGORY 6 - SHOULDERS					
6001	TYPE A COMBINATION CURB AND GUTTER ANY HEIGHT OR DEPTH	300	LF	\$ 35.00	\$ 10,500.00
6002	MONOLITHIC CONCRETE MEDIAN VARIABLE WIDTH - TYPE A1	0	LF	\$ 100.00	\$ -
6003	5 INCH CONCRETE SIDEWALK	300	SF	\$ 8.00	\$ 2,400.00
6004	TRAFFIC BARRIER W BEAM	1,250	LF	\$ 25.00	\$ 31,250.00
6005	TRAFFIC BARRIER W BEAM MEDIAN BARRIER	2,875	LF	\$ 35.00	\$ 100,625.00
6006	TYPE C TRAFFIC BARRIER END TREATMENT	1	EA	\$ 3,000.00	\$ 3,000.00
6007	TRAFFIC BARRIER W BEAM ANCHORAGE AT STRUCTURE	2	EA	\$ 1,000.00	\$ 2,000.00
6008	TYPE K TRAFFIC BARRIER END TREATMENT, ANY OPTION	1	EA	\$ 900.00	\$ 900.00
6009	TYPE E TRAFFIC BARRIER END TREATMENT	1	EA	\$ 10,000.00	\$ 10,000.00
6010	REMOVAL AND DISPOSAL OF EXISTING TRAFFIC BARRIER W BEAM	4,175	LF	\$ 4.00	\$ 16,700.00
6011	BUS STATIONS	0	EA	\$ 500,000.00	\$ -
	CATEGORY 6=				\$ 177,375.00
CATEGORY 7 - LANDSCAPING					
7001	CATEGORY 7= 7% OF CATEGORIES 2, 4, 5, & 6	1	LS	7%	\$ 707,000.00
	CATEGORY 7=				\$ 707,000.00
CATEGORY 8 - TRAFFIC					
8001	SIGNING	1	LS	\$ 150,000.00	\$ 150,000.00
8002	OVERHEAD SIGN STRUCTURES	2	EA	\$ 250,000.00	\$ 500,000.00
8003	OVERHEAD LANE MANAGEMENT SIGNAL	13	EA	\$ 160,000.00	\$ 2,080,000.00
8004	OVERHEAD LED BLACKOUT SIGN REPLACEMENT	0	EA	\$ 5,000.00	\$ -
8005	PAVEMENT MARKINGS	1	LS	\$ 190,000.00	\$ 190,000.00
8006	LIGHTING	1	LS	\$ 170,000.00	\$ 170,000.00
8007	TRAFFIC SIGNAL*	1	EA	\$ 250,000.00	\$ 250,000.00
	CATEGORY 8=				\$ 3,340,000.00
SUBTOTAL					\$ 21,717,025.00
CONTINGENCY				40.0%	\$ 8,686,810.00
UTILITIES = 15% OF SUBTOTAL				15.0%	\$ 3,257,553.75
SUBTOTAL (NEAT CONSTRUCTION)					\$ 33,661,388.75
OVERHEAD & ADMINISTRATION				12.3%	\$ 4,140,351.00
RIGHT OF WAY			2.2	ACRE	\$ 1,000,000.00
TOTAL PROJECT COST					\$ 40,001,739.75

*NOTE: TRAFFIC SIGNAL MODIFICATION FOR TECH ROAD STEWART LANE INTERSECTIONS INCLUDED IN CONCEPT CONSTRUCTION COST ESTIMATES FOR LOCATION S3 - US 29 AT TECH ROAD & LOCATION S4 - US 29 AT STEWART LANE

**US 29 MOBILITY STUDY
MONTGOMERY COUNTY
Concept Construction Cost Estimate**

7/15/2020

LOCATION S1b - US 29 FROM MD 650 TO SOUTHWOOD AVENUE (SB LIMIT) / BURNT MILLS AVENUE (NB LIMIT)						
ITEM NO.	DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST	
CATEGORY 1 - PRELIMINARY						
1001	CATEGORY 1= 40% OF CATEGORIES 2, 4, 5, & 6	1	LS	40%	\$	-
	CATEGORY 1=				\$	-
CATEGORY 2 - GRADING						
2001	EARTHWORK	0	CY	\$ 40.00	\$	-
	CATEGORY 2=				\$	-
CATEGORY 3 - DRAINAGE						
3001	CATEGORY 3= 35% OF CATEGORIES 2, 4, 5, & 6	1	LS	35%	\$	-
	CATEGORY 3=				\$	-
CATEGORY 4 - STRUCTURES						
4001	NEW BRIDGE CONSTRUCTION	0	SF	\$ 260.00	\$	-
4002	BRIDGE DECK REPLACEMENT	0	SF	\$ 50.00	\$	-
4003	RETAINING WALL	0	SF	\$ 300.00	\$	-
	CATEGORY 4=				\$	-
CATEGORY 5 - PAVING						
5001	ASPHALT FOR 2 INCH SURFACE COURSE	0	TON	\$ 100.00	\$	-
5002	ASPHALT FOR 2 INCH BASE COURSE (SHARED USE PATH)	0	TON	\$ 110.00	\$	-
5003	ASPHALT FOR 6 INCH BASE COURSE (COUNTY ROAD)	0	TON	\$ 110.00	\$	-
5004	ASPHALT FOR 13 INCH BASE COURSE (STATE ROAD)	0	TON	\$ 110.00	\$	-
5005	PAYMENT ADJUSTMENT FOR PAVEMENT DENSITY	0	EA	\$ 1.00	\$	-
5006	PAYMENT ADJUSTMENT FOR ASPHALT MIXTURE	0	EA	\$ 1.00	\$	-
5007	FINE MILLING ASPHALT PAVEMENT 0 INCH TO 2 INCH DEPTH	0	SY	\$ 7.50	\$	-
5008	6 INCH GRADED AGGREGATE BASE COURSE	0	SY	\$ 20.00	\$	-
	CATEGORY 5=				\$	-
CATEGORY 6 - SHOULDERS						
6001	TYPE A COMBINATION CURB AND GUTTER ANY HEIGHT OR DEPTH	0	LF	\$ 35.00	\$	-
6002	MONOLITHIC CONCRETE MEDIAN VARIABLE WIDTH - TYPE A1	0	LF	\$ 100.00	\$	-
6003	5 INCH CONCRETE SIDEWALK	0	SF	\$ 8.00	\$	-
6004	TRAFFIC BARRIER W BEAM	0	LF	\$ 25.00	\$	-
6005	TRAFFIC BARRIER W BEAM MEDIAN BARRIER	0	LF	\$ 35.00	\$	-
6006	TYPE C TRAFFIC BARRIER END TREATMENT	0	EA	\$ 3,000.00	\$	-
6007	TRAFFIC BARRIER W BEAM ANCHORAGE AT STRUCTURE	0	EA	\$ 1,000.00	\$	-
6008	TYPE K TRAFFIC BARRIER END TREATMENT, ANY OPTION	0	EA	\$ 900.00	\$	-
6009	TYPE E TRAFFIC BARRIER END TREATMENT	0	EA	\$ 10,000.00	\$	-
6010	REMOVAL AND DISPOSAL OF EXISTING TRAFFIC BARRIER W BEAM	0	LF	\$ 4.00	\$	-
6011	BUS STATIONS	0	EA	\$ 500,000.00	\$	-
	CATEGORY 6=				\$	-
CATEGORY 7 - LANDSCAPING						
7001	CATEGORY 7= 7% OF CATEGORIES 2, 4, 5, & 6	1	LS	7%	\$	-
	CATEGORY 7=				\$	-
CATEGORY 8 - TRAFFIC						
8001	SIGNING	1	LS	\$ 80,000.00	\$	80,000.00
8002	OVERHEAD SIGN STRUCTURES	0	EA	\$ 250,000.00	\$	-
8003	OVERHEAD LANE MANAGEMENT SIGNAL	14	EA	\$ 160,000.00	\$	2,240,000.00
8004	OVERHEAD LED BLACKOUT SIGN REPLACEMENT	0	EA	\$ 5,000.00	\$	-
8005	PAVEMENT MARKINGS	1	LS	\$ 30,000.00	\$	30,000.00
8006	LIGHTING	1	LS	\$ -	\$	-
8007	TRAFFIC SIGNAL*	0	EA	\$ 250,000.00	\$	-
	CATEGORY 8=				\$	2,350,000.00
SUBTOTAL					\$	2,350,000.00
CONTINGENCY				40.0%	\$	940,000.00
UTILITIES = 15% OF SUBTOTAL				15.0%	\$	352,500.00
SUBTOTAL (NEAT CONSTRUCTION)					\$	3,642,500.00
OVERHEAD & ADMINISTRATION				12.3%	\$	448,028.00
RIGHT OF WAY			0.0	ACRE	\$ 1,000,000.00	\$ -
TOTAL PROJECT COST					\$	4,090,528.00

**US 29 MOBILITY STUDY
MONTGOMERY COUNTY
Concept Construction Cost Estimate**

7/15/2020

LOCATION S1c - US 29 FROM DALE DRIVE TO SPRING STREET						
ITEM NO.	DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST	
CATEGORY 1 - PRELIMINARY						
1001	CATEGORY 1= 40% OF CATEGORIES 2, 4, 5, & 6	1	LS	40%	\$	-
	CATEGORY 1=				\$	-
CATEGORY 2 - GRADING						
2001	EARTHWORK	0	CY	\$ 40.00	\$	-
	CATEGORY 2=				\$	-
CATEGORY 3 - DRAINAGE						
3001	CATEGORY 3= 35% OF CATEGORIES 2, 4, 5, & 6	1	LS	35%	\$	-
	CATEGORY 3=				\$	-
CATEGORY 4 - STRUCTURES						
4001	NEW BRIDGE CONSTRUCTION	0	SF	\$ 260.00	\$	-
4002	BRIDGE DECK REPLACEMENT	0	SF	\$ 50.00	\$	-
4003	RETAINING WALL	0	SF	\$ 300.00	\$	-
	CATEGORY 4=				\$	-
CATEGORY 5 - PAVING						
5001	ASPHALT FOR 2 INCH SURFACE COURSE	0	TON	\$ 100.00	\$	-
5002	ASPHALT FOR 2 INCH BASE COURSE (SHARED USE PATH)	0	TON	\$ 110.00	\$	-
5003	ASPHALT FOR 6 INCH BASE COURSE (COUNTY ROAD)	0	TON	\$ 110.00	\$	-
5004	ASPHALT FOR 13 INCH BASE COURSE (STATE ROAD)	0	TON	\$ 110.00	\$	-
5005	PAYMENT ADJUSTMENT FOR PAVEMENT DENSITY	0	EA	\$ 1.00	\$	-
5006	PAYMENT ADJUSTMENT FOR ASPHALT MIXTURE	0	EA	\$ 1.00	\$	-
5007	FINE MILLING ASPHALT PAVEMENT 0 INCH TO 2 INCH DEPTH	0	SY	\$ 7.50	\$	-
5008	6 INCH GRADED AGGREGATE BASE COURSE	0	SY	\$ 20.00	\$	-
	CATEGORY 5=				\$	-
CATEGORY 6 - SHOULDERS						
6001	TYPE A COMBINATION CURB AND GUTTER ANY HEIGHT OR DEPTH	0	LF	\$ 35.00	\$	-
6002	MONOLITHIC CONCRETE MEDIAN VARIABLE WIDTH - TYPE A1	0	LF	\$ 100.00	\$	-
6003	5 INCH CONCRETE SIDEWALK	0	SF	\$ 8.00	\$	-
6004	TRAFFIC BARRIER W BEAM	0	LF	\$ 25.00	\$	-
6005	TRAFFIC BARRIER W BEAM MEDIAN BARRIER	0	LF	\$ 35.00	\$	-
6006	TYPE C TRAFFIC BARRIER END TREATMENT	0	EA	\$ 3,000.00	\$	-
6007	TRAFFIC BARRIER W BEAM ANCHORAGE AT STRUCTURE	0	EA	\$ 1,000.00	\$	-
6008	TYPE K TRAFFIC BARRIER END TREATMENT, ANY OPTION	0	EA	\$ 900.00	\$	-
6009	TYPE E TRAFFIC BARRIER END TREATMENT	0	EA	\$ 10,000.00	\$	-
6010	REMOVAL AND DISPOSAL OF EXISTING TRAFFIC BARRIER W BEAM	0	LF	\$ 4.00	\$	-
6011	BUS STATIONS	0	EA	\$ 500,000.00	\$	-
	CATEGORY 6=				\$	-
CATEGORY 7 - LANDSCAPING						
7001	CATEGORY 7= 7% OF CATEGORIES 2, 4, 5, & 6	1	LS	7%	\$	-
	CATEGORY 7=				\$	-
CATEGORY 8 - TRAFFIC						
8001	SIGNING	1	LS	\$ -	\$	-
8002	OVERHEAD SIGN STRUCTURES	0	EA	\$ 250,000.00	\$	-
8003	OVERHEAD LANE MANAGEMENT SIGNAL	0	EA	\$ 160,000.00	\$	-
8004	OVERHEAD LED BLACKOUT SIGN REPLACEMENT	10	EA	\$ 5,000.00	\$	50,000.00
8005	PAVEMENT MARKINGS	1	LS	\$ -	\$	-
8006	LIGHTING	1	LS	\$ -	\$	-
8007	TRAFFIC SIGNAL*	0	EA	\$ 250,000.00	\$	-
	CATEGORY 8=				\$	50,000.00
SUBTOTAL					\$	50,000.00
CONTINGENCY				40.0%	\$	20,000.00
UTILITIES = 15% OF SUBTOTAL				15.0%	\$	7,500.00
SUBTOTAL (NEAT CONSTRUCTION)					\$	77,500.00
OVERHEAD & ADMINISTRATION				12.3%	\$	9,533.00
RIGHT OF WAY			0.0	ACRE	\$ 1,000,000.00	\$ -
TOTAL PROJECT COST					\$	87,033.00

**US 29 MOBILITY STUDY
MONTGOMERY COUNTY**

6/21/2019

Concept Construction Cost Estimate

LOCATION S2 - US 29 AT GREENCASTLE ROAD					
ITEM NO.	DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
CATEGORY 1 - PRELIMINARY					
1001	CATEGORY 1= 40% OF CATEGORIES 2, 4, 5, & 6	1	LS	40%	\$ 271,000.00
	CATEGORY 1=				\$ 271,000.00
CATEGORY 2 - GRADING					
2001	EARTHWORK	4,000	CY	\$ 40.00	\$ 160,000.00
	CATEGORY 2=				\$ 160,000.00
CATEGORY 3 - DRAINAGE					
3001	CATEGORY 3= 35% OF CATEGORIES 2, 4, 5, & 6	1	LS	35%	\$ 237,000.00
	CATEGORY 3=				\$ 237,000.00
CATEGORY 4 - STRUCTURES					
4001	NEW BRIDGE CONSTRUCTION	0	SF	\$ 260.00	\$ -
4002	BRIDGE DECK REPLACEMENT	0	SF	\$ 50.00	\$ -
4003	RETAINING WALL	0	SF	\$ 300.00	\$ -
	CATEGORY 4=				\$ -
CATEGORY 5 - PAVING					
5001	ASPHALT FOR 2 INCH SURFACE COURSE	1,300	TON	\$ 100.00	\$ 130,000.00
5002	ASPHALT FOR 2 INCH BASE COURSE (SHARED USE PATH)	200	TON	\$ 110.00	\$ 22,000.00
5003	ASPHALT FOR 6 INCH BASE COURSE (COUNTY ROAD)	900	TON	\$ 110.00	\$ 99,000.00
5004	ASPHALT FOR 13 INCH BASE COURSE (STATE ROAD)	0	TON	\$ 110.00	\$ -
5005	PAYMENT ADJUSTMENT FOR PAVEMENT DENSITY	4,600	EA	\$ 1.00	\$ 4,600.00
5006	PAYMENT ADJUSTMENT FOR ASPHALT MIXTURE	4,600	EA	\$ 1.00	\$ 4,600.00
5007	FINE MILLING ASPHALT PAVEMENT 0 INCH TO 2 INCH DEPTH	6,400	SY	\$ 7.50	\$ 48,000.00
5008	6 INCH GRADED AGGREGATE BASE COURSE	6,400	SY	\$ 20.00	\$ 128,000.00
	CATEGORY 5=				\$ 436,200.00
CATEGORY 6 - SHOULDERS					
6001	TYPE A COMBINATION CURB AND GUTTER ANY HEIGHT OR DEPTH	1,900	LF	\$ 35.00	\$ 66,500.00
6002	MONOLITHIC CONCRETE MEDIAN VARIABLE WIDTH - TYPE A1	0	LF	\$ 100.00	\$ -
6003	5 INCH CONCRETE SIDEWALK	1,300	SF	\$ 8.00	\$ 10,400.00
6004	TRAFFIC BARRIER W BEAM	63	LF	\$ 25.00	\$ 1,575.00
6005	TRAFFIC BARRIER W BEAM MEDIAN BARRIER	0	LF	\$ 35.00	\$ -
6006	TYPE C TRAFFIC BARRIER END TREATMENT	0	EA	\$ 3,000.00	\$ -
6007	TRAFFIC BARRIER W BEAM ANCHORAGE AT STRUCTURE	0	EA	\$ 1,000.00	\$ -
6008	TYPE K TRAFFIC BARRIER END TREATMENT, ANY OPTION	1	EA	\$ 900.00	\$ 900.00
6009	TYPE E TRAFFIC BARRIER END TREATMENT	0	EA	\$ 10,000.00	\$ -
6010	REMOVAL AND DISPOSAL OF EXISTING TRAFFIC BARRIER W BEAM	63	LF	\$ 4.00	\$ 252.00
6011	BUS STATIONS	0	EA	\$ 500,000.00	\$ -
	CATEGORY 6=				\$ 79,627.00
CATEGORY 7 - LANDSCAPING					
7001	CATEGORY 7= 7% OF CATEGORIES 2, 4, 5, & 6	1	LS	7%	\$ 48,000.00
	CATEGORY 7=				\$ 48,000.00
CATEGORY 8 - TRAFFIC					
8001	SIGNING	1	LS	\$ 10,000.00	\$ 10,000.00
8002	OVERHEAD SIGN STRUCTURES	0	EA	\$ 250,000.00	\$ -
8003	OVERHEAD LANE MANAGEMENT SIGNAL	0	EA	\$ 160,000.00	\$ -
8004	OVERHEAD LED BLACKOUT SIGN REPLACEMENT	0	EA	\$ 5,000.00	\$ -
8005	PAVEMENT MARKINGS	1	LS	\$ 20,000.00	\$ 20,000.00
8006	LIGHTING	1	LS	\$ 100,000.00	\$ 100,000.00
8007	TRAFFIC SIGNAL*	1	EA	\$ 250,000.00	\$ 250,000.00
	CATEGORY 8=				\$ 380,000.00
SUBTOTAL					\$ 1,611,827.00
CONTINGENCY				40.0%	\$ 644,730.80
UTILITIES = 15% OF SUBTOTAL				15.0%	\$ 241,774.05
SUBTOTAL (NEAT CONSTRUCTION)					\$ 2,498,331.85
OVERHEAD & ADMINISTRATION				12.3%	\$ 307,295.00
RIGHT OF WAY			0.8	ACRE	\$ 1,000,000.00
TOTAL PROJECT COST					\$ 3,605,626.85

**US 29 MOBILITY STUDY
MONTGOMERY COUNTY
Concept Construction Cost Estimate**

6/21/2019

LOCATION S3 - US 29 AT TECH ROAD					
ITEM NO.	DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
CATEGORY 1 - PRELIMINARY					
1001	CATEGORY 1= 40% OF CATEGORIES 2, 4, 5, & 6	1	LS	40%	\$ 131,000.00
	CATEGORY 1=				\$ 131,000.00
CATEGORY 2 - GRADING					
2001	EARTHWORK	2,000	CY	\$ 40.00	\$ 80,000.00
	CATEGORY 2=				\$ 80,000.00
CATEGORY 3 - DRAINAGE					
3001	CATEGORY 3= 35% OF CATEGORIES 2, 4, 5, & 6	1	LS	35%	\$ 115,000.00
	CATEGORY 3=				\$ 115,000.00
CATEGORY 4 - STRUCTURES					
4001	NEW BRIDGE CONSTRUCTION	0	SF	\$ 260.00	\$ -
4002	BRIDGE DECK REPLACEMENT	0	SF	\$ 50.00	\$ -
4003	RETAINING WALL	0	SF	\$ 300.00	\$ -
	CATEGORY 4=				\$ -
CATEGORY 5 - PAVING					
5001	ASPHALT FOR 2 INCH SURFACE COURSE	500	TON	\$ 100.00	\$ 50,000.00
5002	ASPHALT FOR 2 INCH BASE COURSE (SHARED USE PATH)	0	TON	\$ 110.00	\$ -
5003	ASPHALT FOR 6 INCH BASE COURSE (COUNTY ROAD)	200	TON	\$ 110.00	\$ 22,000.00
5004	ASPHALT FOR 13 INCH BASE COURSE (STATE ROAD)	500	TON	\$ 110.00	\$ 55,000.00
5005	PAYMENT ADJUSTMENT FOR PAVEMENT DENSITY	3,700	EA	\$ 1.00	\$ 3,700.00
5006	PAYMENT ADJUSTMENT FOR ASPHALT MIXTURE	3,700	EA	\$ 1.00	\$ 3,700.00
5007	FINE MILLING ASPHALT PAVEMENT 0 INCH TO 2 INCH DEPTH	2,700	SY	\$ 7.50	\$ 20,250.00
5008	6 INCH GRADED AGGREGATE BASE COURSE	2,100	SY	\$ 20.00	\$ 42,000.00
	CATEGORY 5=				\$ 196,650.00
CATEGORY 6 - SHOULDERS					
6001	TYPE A COMBINATION CURB AND GUTTER ANY HEIGHT OR DEPTH	400	LF	\$ 35.00	\$ 14,000.00
6002	MONOLITHIC CONCRETE MEDIAN VARIABLE WIDTH - TYPE A1	0	LF	\$ 100.00	\$ -
6003	5 INCH CONCRETE SIDEWALK	1,800	SF	\$ 8.00	\$ 14,400.00
6004	TRAFFIC BARRIER W BEAM	0	LF	\$ 25.00	\$ -
6005	TRAFFIC BARRIER W BEAM MEDIAN BARRIER	300	LF	\$ 35.00	\$ 10,500.00
6006	TYPE C TRAFFIC BARRIER END TREATMENT	0	EA	\$ 3,000.00	\$ -
6007	TRAFFIC BARRIER W BEAM ANCHORAGE AT STRUCTURE	0	EA	\$ 1,000.00	\$ -
6008	TYPE K TRAFFIC BARRIER END TREATMENT, ANY OPTION	0	EA	\$ 900.00	\$ -
6009	TYPE E TRAFFIC BARRIER END TREATMENT	1	EA	\$ 10,000.00	\$ 10,000.00
6010	REMOVAL AND DISPOSAL OF EXISTING TRAFFIC BARRIER W BEAM	300	LF	\$ 4.00	\$ 1,200.00
6011	BUS STATIONS	0	EA	\$ 500,000.00	\$ -
	CATEGORY 6=				\$ 50,100.00
CATEGORY 7 - LANDSCAPING					
7001	CATEGORY 7= 7% OF CATEGORIES 2, 4, 5, & 6	1	LS	7%	\$ 23,000.00
	CATEGORY 7=				\$ 23,000.00
CATEGORY 8 - TRAFFIC					
8001	SIGNING	1	LS	\$ 10,000.00	\$ 10,000.00
8002	OVERHEAD SIGN STRUCTURES	0	EA	\$ 250,000.00	\$ -
8003	OVERHEAD LANE MANAGEMENT SIGNAL	0	EA	\$ 160,000.00	\$ -
8004	OVERHEAD LED BLACKOUT SIGN REPLACEMENT	0	EA	\$ 5,000.00	\$ -
8005	PAVEMENT MARKINGS	1	LS	\$ 10,000.00	\$ 10,000.00
8006	LIGHTING	1	LS	\$ 30,000.00	\$ 30,000.00
8007	TRAFFIC SIGNAL*	1	EA	\$ 250,000.00	\$ 250,000.00
	CATEGORY 8=				\$ 300,000.00
SUBTOTAL					\$ 895,750.00
CONTINGENCY				40.0%	\$ 358,300.00
UTILITIES = 15% OF SUBTOTAL				15.0%	\$ 134,362.50
SUBTOTAL (NEAT CONSTRUCTION)					\$ 1,388,412.50
OVERHEAD & ADMINISTRATION				12.3%	\$ 170,775.00
RIGHT OF WAY			0.4 ACRE	\$ 1,000,000.00	\$ 400,000.00
TOTAL PROJECT COST					\$ 1,959,187.50

**US 29 MOBILITY STUDY
MONTGOMERY COUNTY**

6/21/2019

Concept Construction Cost Estimate

LOCATION S4 - US 29 AT STEWART LANE					
ITEM NO.	DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
CATEGORY 1 - PRELIMINARY					
1001	CATEGORY 1= 40% OF CATEGORIES 2, 4, 5, & 6	1	LS	40%	\$ 188,000.00
	CATEGORY 1=				\$ 188,000.00
CATEGORY 2 - GRADING					
2001	EARTHWORK	3,000	CY	\$ 40.00	\$ 120,000.00
	CATEGORY 2=				\$ 120,000.00
CATEGORY 3 - DRAINAGE					
3001	CATEGORY 3= 35% OF CATEGORIES 2, 4, 5, & 6	1	LS	35%	\$ 165,000.00
	CATEGORY 3=				\$ 165,000.00
CATEGORY 4 - STRUCTURES					
4001	NEW BRIDGE CONSTRUCTION	0	SF	\$ 260.00	\$ -
4002	BRIDGE DECK REPLACEMENT	0	SF	\$ 50.00	\$ -
4003	RETAINING WALL	0	SF	\$ 300.00	\$ -
	CATEGORY 4=				\$ -
CATEGORY 5 - PAVING					
5001	ASPHALT FOR 2 INCH SURFACE COURSE	300	TON	\$ 100.00	\$ 30,000.00
5002	ASPHALT FOR 2 INCH BASE COURSE (SHARED USE PATH)	0	TON	\$ 110.00	\$ -
5003	ASPHALT FOR 6 INCH BASE COURSE (COUNTY ROAD)	0	TON	\$ 110.00	\$ -
5004	ASPHALT FOR 13 INCH BASE COURSE (STATE ROAD)	1,500	TON	\$ 110.00	\$ 165,000.00
5005	PAYMENT ADJUSTMENT FOR PAVEMENT DENSITY	6,900	EA	\$ 1.00	\$ 6,900.00
5006	PAYMENT ADJUSTMENT FOR ASPHALT MIXTURE	6,900	EA	\$ 1.00	\$ 6,900.00
5007	FINE MILLING ASPHALT PAVEMENT 0 INCH TO 2 INCH DEPTH	0	SY	\$ 7.50	\$ -
5008	6 INCH GRADED AGGREGATE BASE COURSE	4,200	SY	\$ 20.00	\$ 84,000.00
	CATEGORY 5=				\$ 292,800.00
CATEGORY 6 - SHOULDERS					
6001	TYPE A COMBINATION CURB AND GUTTER ANY HEIGHT OR DEPTH	1,400	LF	\$ 35.00	\$ 49,000.00
6002	MONOLITHIC CONCRETE MEDIAN VARIABLE WIDTH - TYPE A1	0	LF	\$ 100.00	\$ -
6003	5 INCH CONCRETE SIDEWALK	400	SF	\$ 8.00	\$ 3,200.00
6004	TRAFFIC BARRIER W BEAM	25	LF	\$ 25.00	\$ 625.00
6005	TRAFFIC BARRIER W BEAM MEDIAN BARRIER	0	LF	\$ 35.00	\$ -
6006	TYPE C TRAFFIC BARRIER END TREATMENT	1	EA	\$ 3,000.00	\$ 3,000.00
6007	TRAFFIC BARRIER W BEAM ANCHORAGE AT STRUCTURE	0	EA	\$ 1,000.00	\$ -
6008	TYPE K TRAFFIC BARRIER END TREATMENT, ANY OPTION	0	EA	\$ 900.00	\$ -
6009	TYPE E TRAFFIC BARRIER END TREATMENT	0	EA	\$ 10,000.00	\$ -
6010	REMOVAL AND DISPOSAL OF EXISTING TRAFFIC BARRIER W BEAM	75	LF	\$ 4.00	\$ 300.00
6011	BUS STATIONS	0	EA	\$ 500,000.00	\$ -
	CATEGORY 6=				\$ 56,125.00
CATEGORY 7 - LANDSCAPING					
7001	CATEGORY 7= 7% OF CATEGORIES 2, 4, 5, & 6	1	LS	7%	\$ 33,000.00
	CATEGORY 7=				\$ 33,000.00
CATEGORY 8 - TRAFFIC					
8001	SIGNING	1	LS	\$ 10,000.00	\$ 10,000.00
8002	OVERHEAD SIGN STRUCTURES	0	EA	\$ 250,000.00	\$ -
8003	OVERHEAD LANE MANAGEMENT SIGNAL	0	EA	\$ 160,000.00	\$ -
8004	OVERHEAD LED BLACKOUT SIGN REPLACEMENT	0	EA	\$ 5,000.00	\$ -
8005	PAVEMENT MARKINGS	1	LS	\$ 10,000.00	\$ 10,000.00
8006	LIGHTING	1	LS	\$ 50,000.00	\$ 50,000.00
8007	TRAFFIC SIGNAL*	2	EA	\$ 250,000.00	\$ 500,000.00
	CATEGORY 8=				\$ 570,000.00
SUBTOTAL					\$ 1,424,925.00
CONTINGENCY				40.0%	\$ 569,970.00
UTILITIES = 15% OF SUBTOTAL				15.0%	\$ 213,738.75
SUBTOTAL (NEAT CONSTRUCTION)					\$ 2,208,633.75
OVERHEAD & ADMINISTRATION				12.3%	\$ 271,662.00
RIGHT OF WAY			0.2	ACRE	\$ 1,000,000.00
TOTAL PROJECT COST					\$ 2,680,295.75

**US 29 MOBILITY STUDY
MONTGOMERY COUNTY**

7/10/2019

Concept Construction Cost Estimate

LOCATION S5 - US 29 AT MD 650 (NEW HAMPSHIRE AVENUE)					
ITEM NO.	DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
CATEGORY 1 - PRELIMINARY					
1001	CATEGORY 1= 40% OF CATEGORIES 2, 4, 5, & 6	1	LS	40%	\$ 557,000.00
	CATEGORY 1=				\$ 557,000.00
CATEGORY 2 - GRADING					
2001	EARTHWORK	4,000	CY	\$ 40.00	\$ 160,000.00
	CATEGORY 2=				\$ 160,000.00
CATEGORY 3 - DRAINAGE					
3001	CATEGORY 3= 35% OF CATEGORIES 2, 4, 5, & 6	1	LS	35%	\$ 488,000.00
	CATEGORY 3=				\$ 488,000.00
CATEGORY 4 - STRUCTURES					
4001	NEW BRIDGE CONSTRUCTION	0	SF	\$ 260.00	\$ -
4002	BRIDGE DECK REPLACEMENT	0	SF	\$ 50.00	\$ -
4003	RETAINING WALL	2,400	SF	\$ 300.00	\$ 720,000.00
	CATEGORY 4=				\$ 720,000.00
CATEGORY 5 - PAVING					
5001	ASPHALT FOR 2 INCH SURFACE COURSE	600	TON	\$ 100.00	\$ 60,000.00
5002	ASPHALT FOR 2 INCH BASE COURSE (SHARED USE PATH)	0	TON	\$ 110.00	\$ -
5003	ASPHALT FOR 6 INCH BASE COURSE (COUNTY ROAD)	0	TON	\$ 110.00	\$ -
5004	ASPHALT FOR 13 INCH BASE COURSE (STATE ROAD)	2,200	TON	\$ 110.00	\$ 242,000.00
5005	PAYMENT ADJUSTMENT FOR PAVEMENT DENSITY	10,600	EA	\$ 1.00	\$ 10,600.00
5006	PAYMENT ADJUSTMENT FOR ASPHALT MIXTURE	10,600	EA	\$ 1.00	\$ 10,600.00
5007	FINE MILLING ASPHALT PAVEMENT 0 INCH TO 2 INCH DEPTH	1,700	SY	\$ 7.50	\$ 12,750.00
5008	6 INCH GRADED AGGREGATE BASE COURSE	5,800	SY	\$ 20.00	\$ 116,000.00
	CATEGORY 5=				\$ 451,950.00
CATEGORY 6 - SHOULDERS					
6001	TYPE A COMBINATION CURB AND GUTTER ANY HEIGHT OR DEPTH	1,500	LF	\$ 35.00	\$ 52,500.00
6002	MONOLITHIC CONCRETE MEDIAN VARIABLE WIDTH - TYPE A1	0	LF	\$ 100.00	\$ -
6003	5 INCH CONCRETE SIDEWALK	100	SF	\$ 8.00	\$ 800.00
6004	TRAFFIC BARRIER W BEAM	100	LF	\$ 25.00	\$ 2,500.00
6005	TRAFFIC BARRIER W BEAM MEDIAN BARRIER	0	LF	\$ 35.00	\$ -
6006	TYPE C TRAFFIC BARRIER END TREATMENT	1	EA	\$ 3,000.00	\$ 3,000.00
6007	TRAFFIC BARRIER W BEAM ANCHORAGE AT STRUCTURE	0	EA	\$ 1,000.00	\$ -
6008	TYPE K TRAFFIC BARRIER END TREATMENT, ANY OPTION	1	EA	\$ 900.00	\$ 900.00
6009	TYPE E TRAFFIC BARRIER END TREATMENT	0	EA	\$ 10,000.00	\$ -
6010	REMOVAL AND DISPOSAL OF EXISTING TRAFFIC BARRIER W BEAM	150	LF	\$ 4.00	\$ 600.00
6011	BUS STATIONS	0	EA	\$ 500,000.00	\$ -
	CATEGORY 6=				\$ 60,300.00
CATEGORY 7 - LANDSCAPING					
7001	CATEGORY 7= 7% OF CATEGORIES 2, 4, 5, & 6	1	LS	7%	\$ 98,000.00
	CATEGORY 7=				\$ 98,000.00
CATEGORY 8 - TRAFFIC					
8001	SIGNING	1	LS	\$ 10,000.00	\$ 10,000.00
8002	OVERHEAD SIGN STRUCTURES	3	EA	\$ 250,000.00	\$ 750,000.00
8003	OVERHEAD LANE MANAGEMENT SIGNAL	0	EA	\$ 160,000.00	\$ -
8004	OVERHEAD LED BLACKOUT SIGN REPLACEMENT	0	EA	\$ 5,000.00	\$ -
8005	PAVEMENT MARKINGS	1	LS	\$ 10,000.00	\$ 10,000.00
8006	LIGHTING	1	LS	\$ 80,000.00	\$ 80,000.00
8007	TRAFFIC SIGNAL*	0	EA	\$ 250,000.00	\$ -
	CATEGORY 8=				\$ 850,000.00
SUBTOTAL					\$ 3,385,250.00
CONTINGENCY				40.0%	\$ 1,354,100.00
UTILITIES = 15% OF SUBTOTAL				15.0%	\$ 507,787.50
SUBTOTAL (NEAT CONSTRUCTION)					\$ 5,247,137.50
OVERHEAD & ADMINISTRATION				12.3%	\$ 645,398.00
RIGHT OF WAY			0.6	ACRE	\$ 1,000,000.00
TOTAL PROJECT COST					\$ 6,492,535.50

**US 29 MOBILITY STUDY
MONTGOMERY COUNTY
Concept Construction Cost Estimate**

5/19/2020

LOCATION S6 - US 29 AT BURNT MILLS BRT STATION / BURNT MILLS SHOPPING CENTER					
ITEM NO.	DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
CATEGORY 1 - PRELIMINARY					
1001	CATEGORY 1= 40% OF CATEGORIES 2, 4, 5, & 6	1	LS	40%	\$ 1,265,000.00
	CATEGORY 1=				\$ 1,265,000.00
CATEGORY 2 - GRADING					
2001	EARTHWORK	4,000	CY	\$ 40.00	\$ 160,000.00
	CATEGORY 2=				\$ 160,000.00
CATEGORY 3 - DRAINAGE					
3001	CATEGORY 3= 35% OF CATEGORIES 2, 4, 5, & 6	1	LS	35%	\$ 1,107,000.00
	CATEGORY 3=				\$ 1,107,000.00
CATEGORY 4 - STRUCTURES					
4001	NEW BRIDGE CONSTRUCTION	0	SF	\$ 260.00	\$ -
4002	BRIDGE DECK REPLACEMENT	0	SF	\$ 50.00	\$ -
4003	RETAINING WALL	4,100	SF	\$ 300.00	\$ 1,230,000.00
	CATEGORY 4=				\$ 1,230,000.00
CATEGORY 5 - PAVING					
5001	ASPHALT FOR 2 INCH SURFACE COURSE	1,300	TON	\$ 100.00	\$ 130,000.00
5002	ASPHALT FOR 2 INCH BASE COURSE (SHARED USE PATH)	0	TON	\$ 110.00	\$ -
5003	ASPHALT FOR 6 INCH BASE COURSE (COUNTY ROAD)	0	TON	\$ 110.00	\$ -
5004	ASPHALT FOR 13 INCH BASE COURSE (STATE ROAD)	1,100	TON	\$ 110.00	\$ 121,000.00
5005	PAYMENT ADJUSTMENT FOR PAVEMENT DENSITY	8,800	EA	\$ 1.00	\$ 8,800.00
5006	PAYMENT ADJUSTMENT FOR ASPHALT MIXTURE	8,800	EA	\$ 1.00	\$ 8,800.00
5007	FINE MILLING ASPHALT PAVEMENT 0 INCH TO 2 INCH DEPTH	8,300	SY	\$ 7.50	\$ 62,250.00
5008	6 INCH GRADED AGGREGATE BASE COURSE	5,200	SY	\$ 20.00	\$ 104,000.00
	CATEGORY 5=				\$ 434,850.00
CATEGORY 6 - SHOULDERS					
6001	TYPE A COMBINATION CURB AND GUTTER ANY HEIGHT OR DEPTH	5,500	LF	\$ 35.00	\$ 192,500.00
6002	MONOLITHIC CONCRETE MEDIAN VARIABLE WIDTH - TYPE A1	0	LF	\$ 100.00	\$ -
6003	5 INCH CONCRETE SIDEWALK	17,800	SF	\$ 8.00	\$ 142,400.00
6004	TRAFFIC BARRIER W BEAM	50	LF	\$ 25.00	\$ 1,250.00
6005	TRAFFIC BARRIER W BEAM MEDIAN BARRIER	0	LF	\$ 35.00	\$ -
6006	TYPE C TRAFFIC BARRIER END TREATMENT	0	EA	\$ 3,000.00	\$ -
6007	TRAFFIC BARRIER W BEAM ANCHORAGE AT STRUCTURE	0	EA	\$ 1,000.00	\$ -
6008	TYPE K TRAFFIC BARRIER END TREATMENT, ANY OPTION	0	EA	\$ 900.00	\$ -
6009	TYPE E TRAFFIC BARRIER END TREATMENT	0	EA	\$ 10,000.00	\$ -
6010	REMOVAL AND DISPOSAL OF EXISTING TRAFFIC BARRIER W BEAM	50	LF	\$ 4.00	\$ 200.00
6011	BUS STATIONS	2	EA	\$ 500,000.00	\$ 1,000,000.00
	CATEGORY 6=				\$ 1,336,350.00
CATEGORY 7 - LANDSCAPING					
7001	CATEGORY 7= 7% OF CATEGORIES 2, 4, 5, & 6	1	LS	7%	\$ 222,000.00
	CATEGORY 7=				\$ 222,000.00
CATEGORY 8 - TRAFFIC					
8001	SIGNING	1	LS	\$ 20,000.00	\$ 20,000.00
8002	OVERHEAD SIGN STRUCTURES	0	EA	\$ 250,000.00	\$ -
8003	OVERHEAD LANE MANAGEMENT SIGNAL	0	EA	\$ 160,000.00	\$ -
8004	OVERHEAD LED BLACKOUT SIGN REPLACEMENT	0	EA	\$ 5,000.00	\$ -
8005	PAVEMENT MARKINGS	1	LS	\$ 10,000.00	\$ 10,000.00
8006	LIGHTING	1	LS	\$ 240,000.00	\$ 240,000.00
8007	TRAFFIC SIGNAL*	1	EA	\$ 250,000.00	\$ 250,000.00
	CATEGORY 8=				\$ 520,000.00
SUBTOTAL					\$ 6,275,200.00
CONTINGENCY				40.0%	\$ 2,510,080.00
UTILITIES = 15% OF SUBTOTAL				15.0%	\$ 941,280.00
SUBTOTAL (NEAT CONSTRUCTION)					\$ 9,726,560.00
OVERHEAD & ADMINISTRATION				12.3%	\$ 1,196,367.00
RIGHT OF WAY			1.5	ACRE \$ 1,000,000.00	\$ 1,500,000.00
TOTAL PROJECT COST					\$ 12,422,927.00

**US 29 MOBILITY STUDY
MONTGOMERY COUNTY
Concept Construction Cost Estimate**

5/19/2020

LOCATION S8 - US 29 AT MD 193 BRT STATION						
ITEM NO.	DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST	
CATEGORY 1 - PRELIMINARY						
1001	CATEGORY 1= 40% OF CATEGORIES 2, 4, 5, & 6	1	LS	40%	\$	639,000.00
	CATEGORY 1=				\$	639,000.00
CATEGORY 2 - GRADING						
2001	EARTHWORK	3,000	CY	\$ 40.00	\$	120,000.00
	CATEGORY 2=				\$	120,000.00
CATEGORY 3 - DRAINAGE						
3001	CATEGORY 3= 35% OF CATEGORIES 2, 4, 5, & 6	1	LS	35%	\$	559,000.00
	CATEGORY 3=				\$	559,000.00
CATEGORY 4 - STRUCTURES						
4001	NEW BRIDGE CONSTRUCTION	0	SF	\$ 260.00	\$	-
4002	BRIDGE DECK REPLACEMENT	0	SF	\$ 50.00	\$	-
4003	RETAINING WALL	0	SF	\$ 300.00	\$	-
	CATEGORY 4=				\$	-
CATEGORY 5 - PAVING						
5001	ASPHALT FOR 2 INCH SURFACE COURSE	700	TON	\$ 100.00	\$	70,000.00
5002	ASPHALT FOR 2 INCH BASE COURSE (SHARED USE PATH)	0	TON	\$ 110.00	\$	-
5003	ASPHALT FOR 6 INCH BASE COURSE (COUNTY ROAD)	0	TON	\$ 110.00	\$	-
5004	ASPHALT FOR 13 INCH BASE COURSE (STATE ROAD)	1,000	TON	\$ 110.00	\$	110,000.00
5005	PAYMENT ADJUSTMENT FOR PAVEMENT DENSITY	6,300	EA	\$ 1.00	\$	6,300.00
5006	PAYMENT ADJUSTMENT FOR ASPHALT MIXTURE	6,300	EA	\$ 1.00	\$	6,300.00
5007	FINE MILLING ASPHALT PAVEMENT 0 INCH TO 2 INCH DEPTH	3,900	SY	\$ 7.50	\$	29,250.00
5008	6 INCH GRADED AGGREGATE BASE COURSE	3,500	SY	\$ 20.00	\$	70,000.00
	CATEGORY 5=				\$	291,850.00
CATEGORY 6 - SHOULDERS						
6001	TYPE A COMBINATION CURB AND GUTTER ANY HEIGHT OR DEPTH	2,500	LF	\$ 35.00	\$	87,500.00
6002	MONOLITHIC CONCRETE MEDIAN VARIABLE WIDTH - TYPE A1	0	LF	\$ 100.00	\$	-
6003	5 INCH CONCRETE SIDEWALK	12,200	SF	\$ 8.00	\$	97,600.00
6004	TRAFFIC BARRIER W BEAM	0	LF	\$ 25.00	\$	-
6005	TRAFFIC BARRIER W BEAM MEDIAN BARRIER	0	LF	\$ 35.00	\$	-
6006	TYPE C TRAFFIC BARRIER END TREATMENT	0	EA	\$ 3,000.00	\$	-
6007	TRAFFIC BARRIER W BEAM ANCHORAGE AT STRUCTURE	0	EA	\$ 1,000.00	\$	-
6008	TYPE K TRAFFIC BARRIER END TREATMENT, ANY OPTION	0	EA	\$ 900.00	\$	-
6009	TYPE E TRAFFIC BARRIER END TREATMENT	0	EA	\$ 10,000.00	\$	-
6010	REMOVAL AND DISPOSAL OF EXISTING TRAFFIC BARRIER W BEAM	0	LF	\$ 4.00	\$	-
6011	BUS STATIONS	2	EA	\$ 500,000.00	\$	1,000,000.00
	CATEGORY 6=				\$	1,185,100.00
CATEGORY 7 - LANDSCAPING						
7001	CATEGORY 7= 7% OF CATEGORIES 2, 4, 5, & 6	1	LS	7%	\$	112,000.00
	CATEGORY 7=				\$	112,000.00
CATEGORY 8 - TRAFFIC						
8001	SIGNING	1	LS	\$ 10,000.00	\$	10,000.00
8002	OVERHEAD SIGN STRUCTURES	1	EA	\$ 250,000.00	\$	250,000.00
8003	OVERHEAD LANE MANAGEMENT SIGNAL	0	EA	\$ 160,000.00	\$	-
8004	OVERHEAD LED BLACKOUT SIGN REPLACEMENT	0	EA	\$ 5,000.00	\$	-
8005	PAVEMENT MARKINGS	1	LS	\$ 10,000.00	\$	10,000.00
8006	LIGHTING	1	LS	\$ 120,000.00	\$	120,000.00
8007	TRAFFIC SIGNAL*	1	EA	\$ 250,000.00	\$	250,000.00
	CATEGORY 8=				\$	640,000.00
SUBTOTAL					\$	3,546,950.00
CONTINGENY				40.0%	\$	1,418,780.00
UTILITIES = 15% OF SUBTOTAL				15.0%	\$	532,042.50
SUBTOTAL (NEAT CONSTRUCTION)					\$	5,497,772.50
OVERHEAD & ADMINISTRATION				12.3%	\$	676,226.00
RIGHT OF WAY			1.2	ACRE	\$ 1,000,000.00	\$ 1,200,000.00
TOTAL PROJECT COST					\$	7,373,998.50

**US 29 MOBILITY STUDY
MONTGOMERY COUNTY
Concept Construction Cost Estimate**

7/15/2020

LOCATION S9 - US 29 AT I-495					
ITEM NO.	DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
CATEGORY 1 - PRELIMINARY					
1001	CATEGORY 1= 40% OF CATEGORIES 2, 4, 5, & 6	1	LS	40%	\$ 143,000.00
	CATEGORY 1=				\$ 143,000.00
CATEGORY 2 - GRADING					
2001	EARTHWORK	2,000	CY	\$ 40.00	\$ 80,000.00
	CATEGORY 2=				\$ 80,000.00
CATEGORY 3 - DRAINAGE					
3001	CATEGORY 3= 35% OF CATEGORIES 2, 4, 5, & 6	1	LS	35%	\$ 126,000.00
	CATEGORY 3=				\$ 126,000.00
CATEGORY 4 - STRUCTURES					
4001	NEW BRIDGE CONSTRUCTION	0	SF	\$ 260.00	\$ -
4002	BRIDGE DECK REPLACEMENT	0	SF	\$ 50.00	\$ -
4003	RETAINING WALL	500	SF	\$ 300.00	\$ 150,000.00
	CATEGORY 4=				\$ 150,000.00
CATEGORY 5 - PAVING					
5001	ASPHALT FOR 2 INCH SURFACE COURSE	100	TON	\$ 100.00	\$ 10,000.00
5002	ASPHALT FOR 2 INCH BASE COURSE (SHARED USE PATH)	0	TON	\$ 110.00	\$ -
5003	ASPHALT FOR 6 INCH BASE COURSE (COUNTY ROAD)	0	TON	\$ 110.00	\$ -
5004	ASPHALT FOR 13 INCH BASE COURSE (STATE ROAD)	500	TON	\$ 110.00	\$ 55,000.00
5005	PAYMENT ADJUSTMENT FOR PAVEMENT DENSITY	2,300	EA	\$ 1.00	\$ 2,300.00
5006	PAYMENT ADJUSTMENT FOR ASPHALT MIXTURE	2,300	EA	\$ 1.00	\$ 2,300.00
5007	FINE MILLING ASPHALT PAVEMENT 0 INCH TO 2 INCH DEPTH	0	SY	\$ 7.50	\$ -
5008	6 INCH GRADED AGGREGATE BASE COURSE	1,400	SY	\$ 20.00	\$ 28,000.00
	CATEGORY 5=				\$ 97,600.00
CATEGORY 6 - SHOULDERS					
6001	TYPE A COMBINATION CURB AND GUTTER ANY HEIGHT OR DEPTH	800	LF	\$ 35.00	\$ 28,000.00
6002	MONOLITHIC CONCRETE MEDIAN VARIABLE WIDTH - TYPE A1	0	LF	\$ 100.00	\$ -
6003	5 INCH CONCRETE SIDEWALK	200	SF	\$ 8.00	\$ 1,600.00
6004	TRAFFIC BARRIER W BEAM	0	LF	\$ 25.00	\$ -
6005	TRAFFIC BARRIER W BEAM MEDIAN BARRIER	0	LF	\$ 35.00	\$ -
6006	TYPE C TRAFFIC BARRIER END TREATMENT	0	EA	\$ 3,000.00	\$ -
6007	TRAFFIC BARRIER W BEAM ANCHORAGE AT STRUCTURE	0	EA	\$ 1,000.00	\$ -
6008	TYPE K TRAFFIC BARRIER END TREATMENT, ANY OPTION	0	EA	\$ 900.00	\$ -
6009	TYPE E TRAFFIC BARRIER END TREATMENT	0	EA	\$ 10,000.00	\$ -
6010	REMOVAL AND DISPOSAL OF EXISTING TRAFFIC BARRIER W BEAM	0	LF	\$ 4.00	\$ -
6011	BUS STATIONS	0	EA	\$ 500,000.00	\$ -
	CATEGORY 6=				\$ 29,600.00
CATEGORY 7 - LANDSCAPING					
7001	CATEGORY 7= 7% OF CATEGORIES 2, 4, 5, & 6	1	LS	7%	\$ 26,000.00
	CATEGORY 7=				\$ 26,000.00
CATEGORY 8 - TRAFFIC					
8001	SIGNING	1	LS	\$ 10,000.00	\$ 10,000.00
8002	OVERHEAD SIGN STRUCTURES	1	EA	\$ 250,000.00	\$ 250,000.00
8003	OVERHEAD LANE MANAGEMENT SIGNAL	0	EA	\$ 160,000.00	\$ -
8004	OVERHEAD LED BLACKOUT SIGN REPLACEMENT	0	EA	\$ 5,000.00	\$ -
8005	PAVEMENT MARKINGS	1	LS	\$ 10,000.00	\$ 10,000.00
8006	LIGHTING	1	LS	\$ 60,000.00	\$ 60,000.00
8007	TRAFFIC SIGNAL*	0	EA	\$ 250,000.00	\$ -
	CATEGORY 8=				\$ 330,000.00
SUBTOTAL					\$ 982,200.00
CONTINGENCY				40.0%	\$ 392,880.00
UTILITIES = 15% OF SUBTOTAL				15.0%	\$ 147,330.00
SUBTOTAL (NEAT CONSTRUCTION)					\$ 1,522,410.00
OVERHEAD & ADMINISTRATION				12.3%	\$ 187,256.00
RIGHT OF WAY			0.0	ACRE	\$ 1,000,000.00
TOTAL PROJECT COST					\$ 1,709,666.00

**US 29 MOBILITY STUDY
MONTGOMERY COUNTY**

7/10/2019

Concept Construction Cost Estimate

LOCATION S10 - US 29 AT SLIGO CREEK PARKWAY					
ITEM NO.	DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
CATEGORY 1 - PRELIMINARY					
1001	CATEGORY 1= 40% OF CATEGORIES 2, 4, 5, & 6	1	LS	40%	\$ 319,000.00
	CATEGORY 1=				\$ 319,000.00
CATEGORY 2 - GRADING					
2001	EARTHWORK	2,000	CY	\$ 40.00	\$ 80,000.00
	CATEGORY 2=				\$ 80,000.00
CATEGORY 3 - DRAINAGE					
3001	CATEGORY 3= 35% OF CATEGORIES 2, 4, 5, & 6	1	LS	35%	\$ 279,000.00
	CATEGORY 3=				\$ 279,000.00
CATEGORY 4 - STRUCTURES					
4001	NEW BRIDGE CONSTRUCTION	0	SF	\$ 260.00	\$ -
4002	BRIDGE DECK REPLACEMENT	0	SF	\$ 50.00	\$ -
4003	RETAINING WALL	1,900	SF	\$ 300.00	\$ 570,000.00
	CATEGORY 4=				\$ 570,000.00
CATEGORY 5 - PAVING					
5001	ASPHALT FOR 2 INCH SURFACE COURSE	300	TON	\$ 100.00	\$ 30,000.00
5002	ASPHALT FOR 2 INCH BASE COURSE (SHARED USE PATH)	0	TON	\$ 110.00	\$ -
5003	ASPHALT FOR 6 INCH BASE COURSE (COUNTY ROAD)	400	TON	\$ 110.00	\$ 44,000.00
5004	ASPHALT FOR 13 INCH BASE COURSE (STATE ROAD)	0	TON	\$ 110.00	\$ -
5005	PAYMENT ADJUSTMENT FOR PAVEMENT DENSITY	1,100	EA	\$ 1.00	\$ 1,100.00
5006	PAYMENT ADJUSTMENT FOR ASPHALT MIXTURE	1,100	EA	\$ 1.00	\$ 1,100.00
5007	FINE MILLING ASPHALT PAVEMENT 0 INCH TO 2 INCH DEPTH	1,400	SY	\$ 7.50	\$ 10,500.00
5008	6 INCH GRADED AGGREGATE BASE COURSE	1,900	SY	\$ 20.00	\$ 38,000.00
	CATEGORY 5=				\$ 124,700.00
CATEGORY 6 - SHOULDERS					
6001	TYPE A COMBINATION CURB AND GUTTER ANY HEIGHT OR DEPTH	400	LF	\$ 35.00	\$ 14,000.00
6002	MONOLITHIC CONCRETE MEDIAN VARIABLE WIDTH - TYPE A1	0	LF	\$ 100.00	\$ -
6003	5 INCH CONCRETE SIDEWALK	800	SF	\$ 8.00	\$ 6,400.00
6004	TRAFFIC BARRIER W BEAM	0	LF	\$ 25.00	\$ -
6005	TRAFFIC BARRIER W BEAM MEDIAN BARRIER	0	LF	\$ 35.00	\$ -
6006	TYPE C TRAFFIC BARRIER END TREATMENT	0	EA	\$ 3,000.00	\$ -
6007	TRAFFIC BARRIER W BEAM ANCHORAGE AT STRUCTURE	0	EA	\$ 1,000.00	\$ -
6008	TYPE K TRAFFIC BARRIER END TREATMENT, ANY OPTION	0	EA	\$ 900.00	\$ -
6009	TYPE E TRAFFIC BARRIER END TREATMENT	0	EA	\$ 10,000.00	\$ -
6010	REMOVAL AND DISPOSAL OF EXISTING TRAFFIC BARRIER W BEAM	0	LF	\$ 4.00	\$ -
6011	BUS STATIONS	0	EA	\$ 500,000.00	\$ -
	CATEGORY 6=				\$ 20,400.00
CATEGORY 7 - LANDSCAPING					
7001	CATEGORY 7= 7% OF CATEGORIES 2, 4, 5, & 6	1	LS	7%	\$ 56,000.00
	CATEGORY 7=				\$ 56,000.00
CATEGORY 8 - TRAFFIC					
8001	SIGNING	1	LS	\$ 10,000.00	\$ 10,000.00
8002	OVERHEAD SIGN STRUCTURES	0	EA	\$ 250,000.00	\$ -
8003	OVERHEAD LANE MANAGEMENT SIGNAL	0	EA	\$ 160,000.00	\$ -
8004	OVERHEAD LED BLACKOUT SIGN REPLACEMENT	0	EA	\$ 5,000.00	\$ -
8005	PAVEMENT MARKINGS	1	LS	\$ 10,000.00	\$ 10,000.00
8006	LIGHTING	1	LS	\$ 60,000.00	\$ 60,000.00
8007	TRAFFIC SIGNAL*	1	EA	\$ 250,000.00	\$ 250,000.00
	CATEGORY 8=				\$ 330,000.00
SUBTOTAL					\$ 1,779,100.00
CONTINGENCY				40.0%	\$ 711,640.00
UTILITIES = 15% OF SUBTOTAL				15.0%	\$ 266,865.00
SUBTOTAL (NEAT CONSTRUCTION)					\$ 2,757,605.00
OVERHEAD & ADMINISTRATION				12.3%	\$ 339,185.00
RIGHT OF WAY			0.0	ACRE	\$ 1,000,000.00
TOTAL PROJECT COST					\$ 3,096,790.00

**US 29 (Columbia Pike) Median Bus Lane Concept
Bus Rapid Transit
Construction Cost Estimate - CONCEPT**

ITEM NO.	DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
CATEGORY 1 - PRELIMINARY					
1001	CATEGORY 1= 40% OF CATEGORIES 2, 4, 5, & 6	1	LS	40%	\$ 10,448,000.00
	CATEGORY 1=				\$ 10,448,000.00
CATEGORY 2 - GRADING					
2001	EARTHWORK	55,000	CY	\$ 40.00	\$ 2,200,000.00
	CATEGORY 2=				\$ 2,200,000.00
CATEGORY 3 - DRAINAGE					
3001	CATEGORY 3= 35% OF CATEGORIES 2, 4, 5, & 6	1	LS	35%	\$ 9,142,000.00
	CATEGORY 3=				\$ 9,142,000.00
CATEGORY 4 - STRUCTURES					
4001	NEW BRIDGE CONSTRUCTION	11,700	SF	\$ 260.00	\$ 3,042,000.00
4002	BRIDGE DECK REPLACEMENT	8,700	SF	\$ 50.00	\$ 435,000.00
4003	RETAINING WALL	8,400	SF	\$ 300.00	\$ 2,520,000.00
	CATEGORY 4=				\$ 5,997,000.00
CATEGORY 5 - PAVING					
5001	ASPHALT FOR 2 INCH SURFACE COURSE	19,000	TON	\$ 100.00	\$ 1,900,000.00
5002	ASPHALT FOR 13 INCH BASE COURSE	30,000	TON	\$ 110.00	\$ 3,300,000.00
5003	PAYMENT ADJUSTMENT FOR PAVEMENT DENSITY	182,000	EA	\$ 1.00	\$ 182,000.00
5004	PAYMENT ADJUSTMENT FOR ASPHALT MIXTURE	182,000	EA	\$ 1.00	\$ 182,000.00
5005	FINE MILLING ASPHALT PAVEMENT 0 INCH TO 2 INCH DEPTH	110,700	SY	\$ 7.50	\$ 830,250.00
5006	6 INCH GRADED AGGREGATE BASE COURSE	148,200	SY	\$ 20.00	\$ 2,964,000.00
	CATEGORY 5=				\$ 9,358,250.00
CATEGORY 6 - SHOULDERS					
6001	TYPE A COMBINATION CURB AND GUTTER ANY HEIGHT OR DEPTH	45,000	LF	\$ 35.00	\$ 1,575,000.00
6002	MONOLITHIC CONCRETE MEDIAN VARIABLE WIDTH - TYPE A1	24,900	LF	\$ 100.00	\$ 2,490,000.00
6003	5 INCH CONCRETE SIDEWALK	139,300	SF	\$ 8.00	\$ 1,114,400.00
6004	TRAFFIC BARRIER W BEAM	50	LF	\$ 25.00	\$ 1,250.00
6005	TRAFFIC BARRIER W BEAM MEDIAN BARRIER	8,475	LF	\$ 35.00	\$ 296,625.00
6006	TYPE C TRAFFIC BARRIER END TREATMENT	1	EA	\$ 3,000.00	\$ 3,000.00
6007	TRAFFIC BARRIER W BEAM ANCHORAGE AT STRUCTURE	8	EA	\$ 1,000.00	\$ 8,000.00
6008	TYPE K TRAFFIC BARRIER END TREATMENT, ANY OPTION	1	EA	\$ 900.00	\$ 900.00
6009	TYPE E TRAFFIC BARRIER END TREATMENT	4	EA	\$ 10,000.00	\$ 40,000.00
6010	REMOVAL AND DISPOSAL OF EXISTING TRAFFIC BARRIER W BEAM	8,575	LF	\$ 4.00	\$ 34,300.00
6011	BUS STATIONS	6	EA	\$ 500,000.00	\$ 3,000,000.00
	CATEGORY 6=				\$ 8,563,475.00
CATEGORY 7 - LANDSCAPING					
7001	CATEGORY 7= 7% OF CATEGORIES 2, 4, 5, & 6	1	LS	7%	\$ 1,829,000.00
	CATEGORY 7=				\$ 1,829,000.00
CATEGORY 8 - TRAFFIC					
8001	SIGNING	1	LS	\$ 320,000.00	\$ 320,000.00
8002	OVERHEAD SIGN STRUCTURES	3	EA	\$ 250,000.00	\$ 750,000.00
8003	PAVEMENT MARKINGS	1	LS	\$ 180,000.00	\$ 180,000.00
8004	LIGHTING	1	LS	\$ 970,000.00	\$ 970,000.00
8005	TRAFFIC SIGNAL	22	EA	\$ 250,000.00	\$ 5,500,000.00
	CATEGORY 8=				\$ 7,720,000.00
SUBTOTAL					\$ 55,257,725.00
CONTINGENCY				40.0%	\$ 22,103,090.00
UTILITIES = 15% OF SUBTOTAL				15.0%	\$ 8,288,658.75
SUBTOTAL (NEAT CONSTRUCTION)					\$ 85,649,473.75
OVERHEAD & ADMINISTRATION				12.3%	\$ 10,534,885.00
RIGHT OF WAY				9.8 ACRE	\$ 9,800,000.00
TOTAL PROJECT COST					\$ 105,984,358.75