WADE AVENUE SIDEWALK GAP REPORT

Wade Avenue from Crawford Drive to Edmonston Drive

Twinbrook Safe Routes to School and Transit Access Feasibility Studies
City of Rockville Contract No. BCS 2017-01H

December 2024

Prepared For:

City of Rockville
111 Maryland Ave,
Rockville, Maryland 20850

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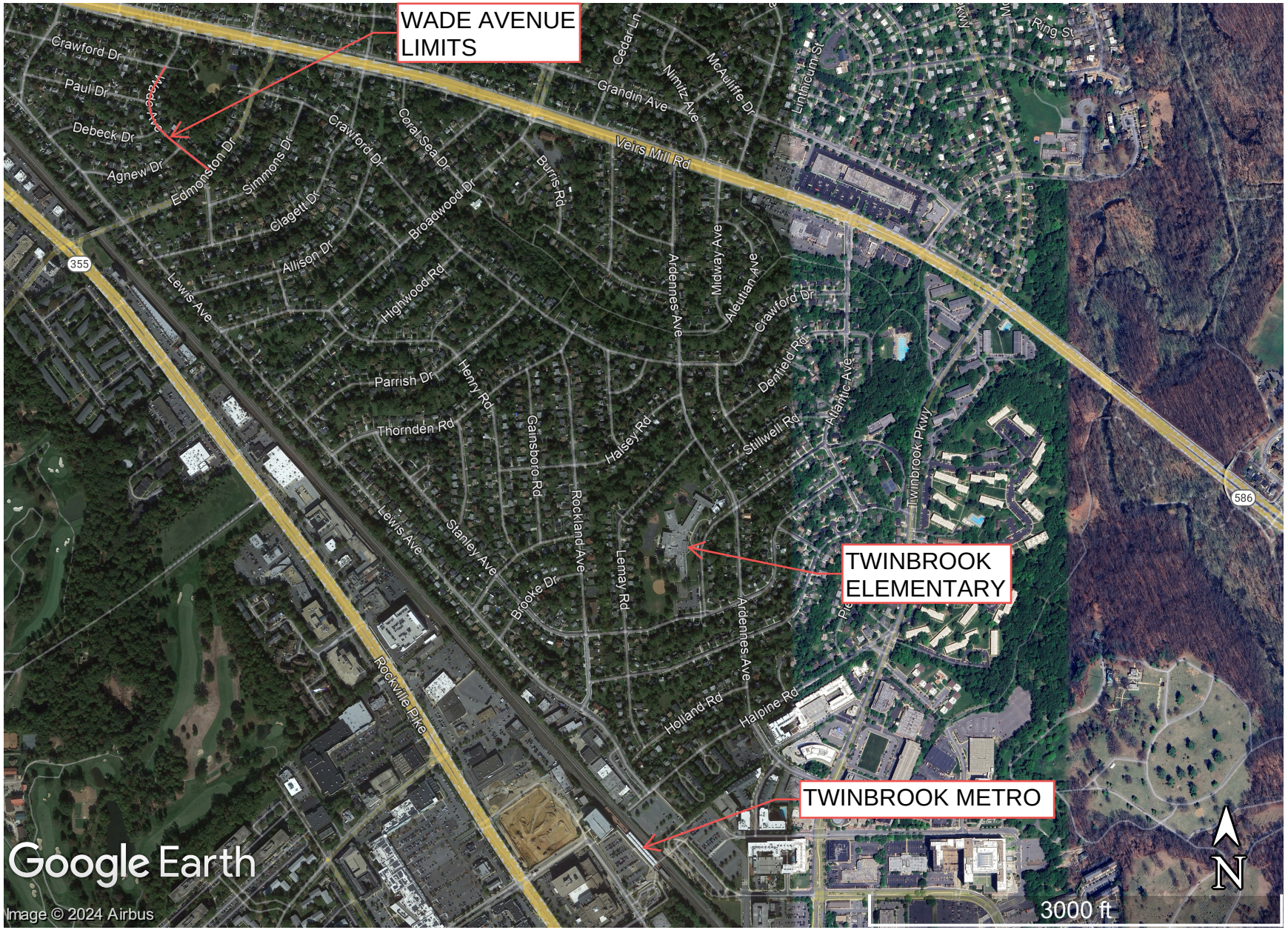
TABLE OF CONTENTS



WADE AVENUE
FIGURE 1: LOCATION MAP

I. PROJECT INTRODUCTION

This report has been prepared for the City of Rockville as one of their Vision Zero Projects. Vision Zero is a priority initiative of the Mayor and Council to create safe and livable neighborhoods. The Twinbrook Safe Routes to School and Transit Access feasibility study focuses on improving multimodal access and mobility in the Twinbrook neighborhood in Rockville. The goal of this project is to evaluate the feasibility of constructing new sidewalks along roads and identify opportunities to improve intersection safety for all modes of transportation, especially for trips to and from Twinbrook Elementary School and the Twinbrook Metro Station.

The following sidewalk segments were studied:

1. Brooke Drive between Lewis Avenue and Rockland Avenue
2. Crawford Drive between Rockcrest Circle and Hillcrest Park
3. Crawford Drive between Atlantic Avenue and Ardennes Avenue
4. Halsey Road between Henry Road and Ardennes Avenue
5. Lemay Road between Vandegrift Avenue and Ardennes Avenue
6. Midway Avenue between Crawford Dive and Stillwell Road
7. Wade Avenue between Edmonston Drive and Crawford Drive

The intersections studied included:

1. Ardennes Avenue and Crawford Drive
2. Ardennes Avenue and Halsey Road
3. Ardennes Avenue and Halpine Road
4. Ardennes Avenue and Ridgway Avenue
5. Ardennes Avenue and Wainwright Avenue
6. Chapman Avenue and Bouic Avenue
7. Chapman Avenue and Twinbrook Parkway
8. Lemay Road and Ridgway Avenue

This project was funded by a Maryland Department of Transportation (MDOT) Transportation Alternatives (TA) Program grant, and the improvements and cost estimate are proposed by the project team consisting of Mercado Consultants and AECOM.

II. PROJECT DESCRIPTION

This report discusses the feasibility of sidewalk improvements along both sides of Wade Avenue between Crawford Drive and Edmonston Drive. Please see Appendix A for the sidewalk options and cost estimate.

III. DESIGN CRITERIA AND ASSUMPTIONS

The design criteria used for the proposed sidewalks comes from the ADA Standards for Accessible Design and the recently adopted Public Right-of-Way Accessibility Guidelines. A 5-foot minimum width sidewalk is proposed to meet this standard. The running slopes on the ramps are 12:1 maximum, and the proposed landing pads are a minimum of 5-foot x 5-foot with a 48:1 maximum cross-slope. The depressed landing pads located at crossings contain a 2-foot wide minimum detectable warning surface.

The buffer between the proposed sidewalk and back of curb is a minimum 2-foot but may vary to avoid impacts with utilities or trees. Proposed sidewalk must also tie into adjacent existing sidewalk where applicable.

It is assumed the sidewalk is also proposed entirely within the City of Rockville's right-of-way. Temporary construction easements will only be necessary for driveway reconstruction to tie-in to existing driveway grades. Driveways will be reconstructed in-kind. Impacted fences, mailboxes, and other resident belongings located within the City of Rockville's right-of-way are to be relocated. Impacted steps or resident walkways are to be reconstructed to tie into the proposed sidewalk. The study looked at shifting sidewalk to avoid moving utilities such as inlets, fire hydrants, and utility poles. At a time of more detailed design, the City of Rockville should coordinate with Pepco about moving utility poles.

Retaining walls or knee walls are to be proposed at locations with steep slope adjacent to the proposed sidewalk.

Marked crosswalks are proposed at intersections along the proposed sidewalk. Proposed marked crosswalks are to include advanced warning signage and stop bars at stop-controlled intersections. The MD MUTCD is to be followed for crosswalk placement. Per the MD MUTCD marked crosswalks are to be 6-foot wide minimum.

The Fire Department Access Performance-Based Design Guide also dictates the roadway clear width to be 20-feet minimum for emergency vehicles. The curb radius recommended at intersections is 25-feet minimum and was used to upgrade curb radii throughout the site. Intersections used specific AASHTO design vehicles proposed by the City of Rockville.

IV. EXISTING CONDITIONS

Wade Avenue is an undivided two-way road, classified as a secondary residential street. The northernmost limits of the study, the intersection of Wade Avenue and Crawford Drive, is located 1.7 miles from the Twinbrook Metro Station and 1.3 miles from Twinbrook Elementary. The southernmost limits of the study, the intersection of Wade Avenue and Edmonston Drive, is located 1.5 miles from the Twinbrook Metro Station and 1.4 miles from Twinbrook Elementary School.

The proposed sidewalk gap on Wade Avenue extends from Crawford Drive to Edmonston Drive and measures approximately 980 linear feet. The limits of Wade Avenue are intersected by five streets, Crawford Avenue, Paul Drive, Debeck Drive, Agnew Drive, and Edmonston Drive. Only Edmonston Drive has existing sidewalk to tie into. Crawford Drive has a feasibility study for proposed sidewalk on either the north or south side which would tie into Wade Avenue.

Existing utilities poles are located on the east side of Wade Avenue for the entire study limits, except for one pole located on the west side at the intersection of Debeck Drive. There are existing fire hydrants on the west side of Wade Avenue at each intersection, except the Edmonston Drive intersection. The roadway clear width is approximately 25-feet along Wade Avenue. Although most residents along Wade Avenue have a driveway, there are multiple cars parking along the street.

Please see Appendix B for existing site photos.

V. CRASH DATA

There were no police-reported crashes at this location during the 2018-2022 study period.

VI. ALTERNATIVES CONSIDERED

Two alternatives, one per side, were considered for the sidewalk gap along Wade Avenue. Both alternatives were designed using the criteria mentioned in the Design Criteria and Assumptions section. The alternative on the west side, Option 1, was designed with a 2-foot buffer throughout the sidewalk gap limits, except where it increases up to 5-feet to avoid an existing fire hydrant at the intersection of Agnew Drive or when it decreases to 0-feet to avoid impacting a tree at Debeck Drive. Option 1 also requires a 170-foot knee wall between Paul Drive and Debeck Drive. Option 1 impacts include tree removal (1), bush removal (3), driveway impact (4), and easements required (0).

The alternative on the east side of Wade Avenue, Option 2, was also designed with a 2-foot buffer across most of the sidewalk gap's limits, except where it decreases to 0-feet to avoid an existing utility post near Edmonston Drive. This option also requires relocating an existing utility post that cannot be avoided. This option also requires a 510-foot knee wall along most of the study limits due to the steep slopes behind the proposed sidewalk. Several of the existing driveways along the east side of Wade Avenue are very steep and regrading the driveway with a sidewalk addition may not be possible. Other impacts of Option 2 include tree removal (1), bush removal (4), driveways impact (9), and easements required (1).

VII. PUBLIC INPUT

Residents and the Study Team participated in the walk the block meeting for Wade Avenue sidewalk gap on May 21st. The primary concerns were related to the proximity of the sidewalk to the right-of-way, and if the sidewalk would require property impacts. Residents also were concerned with how the proposed sidewalk would tie into their driveways. Some residents were also concerned with shoveling snow off their sidewalk. Another concern that was brought up was poor sight distances and how heavily both sides of the road are used for on-street parking. No written resident comments were received for this location.

VIII. RECOMMENDATIONS

The study team recommends proceeding with Option 1 as the most feasible option for construction. The study team came to this conclusion based on several factors. Option 1 has a much lower cost for construction due to requiring a shorter knee wall throughout the study limits. Option 1 also has better sight distances for pedestrian safety. Option 1 also received more support during the walk the block meeting.

A. IMPACTS:

Option 1 impacts include:
- Tree removal: 1
- Bush removal: 3
- Driveways impacted: 9
- Easements required: 1

Option 2 impacts include:
- Tree removal: 1
- Bush removal: 4
- Driveways impacted: 3
- Easements required: 0

B. COST ESTIMATE:

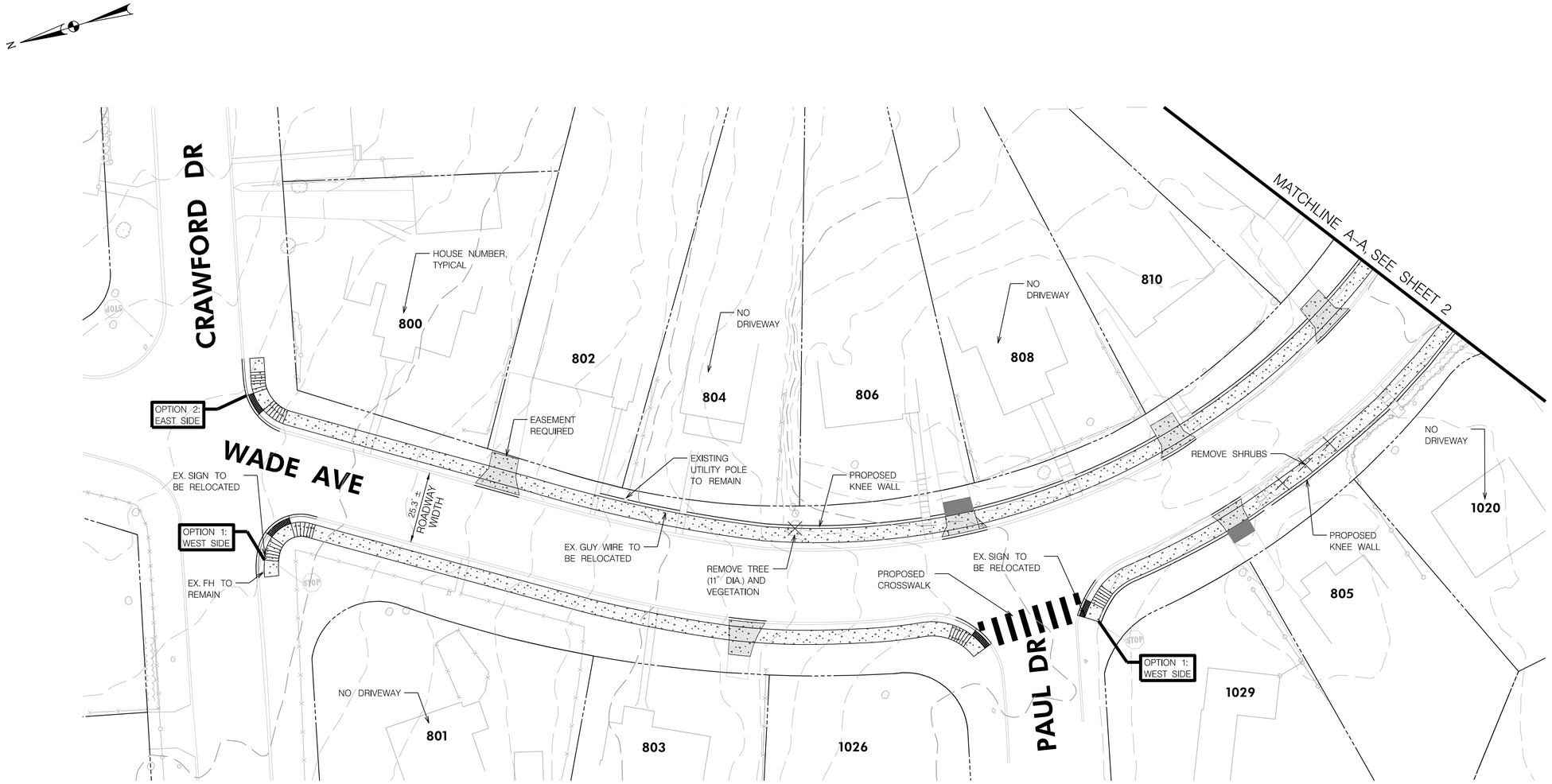
Project cost was estimated using the unit cost method plus an overall 40% contingency to reflect the current level of study. Unit costs were gathered for proposed items in each option and quantities were gathered. The unit costs used were derived from similar projects within Montgomery County. The approximate cost for constructing Option 1 is $276,000 and for Option 2 is $478,000. Please see Appendix A for cost estimate breakdown.

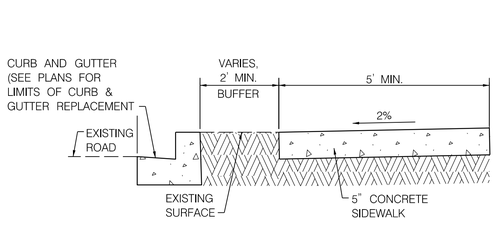
IX. SUMMARY

Construction of the sidewalk on Wade Avenue is deemed feasible. Sidewalks may be constructed on either side (east of west) of Wade Avenue but Option 1 is the more feasible option. Option 1 has a much lower construction cost since it requires a shorter knee wall than Option 2. Option 1 also received support from the residents during the walk the block meeting for Wade Avenue. Option 1 also impacts less trees and bushes than Option 2.

APPENDIX A:

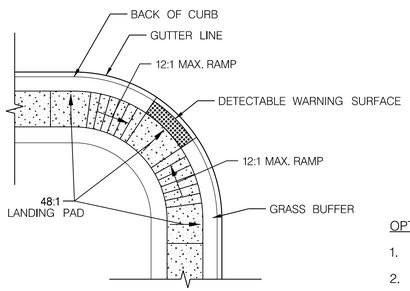
PLAN SHEET(S) AND ESTIMATE





DETAIL FOR SIDEWALK CONSTRUCTION

NOT TO SCALE



LEGEND

- 5 INCH CONCRETE SIDEWALK
- CONCRETE REMOVAL
- 8 INCH PORTLAND CEMENT CONCRETE DRIVEWAY
- 8 INCH ASPHALT DRIVEWAY
- DETECTABLE WARNING SURFACE
- NEW CURB
- APPROX. RIGHT OF WAY
- ADA RAMP

NOTES:

1. DIRECTION OF 2% CROSS SLOPE WILL BE CONSISTENT WITH EXISTING DRAINAGE CONDITIONS.
2. A CURB SHALL BE ADDED TO THE BACK OF THE SIDEWALK WHERE NEEDED TO PROTECT EXISTING LANDCAPE AND WHERE THE SLOPE BEHIND THE SIDEWALK IS GREATER THAN 10 PERCENT.
3. EXISTING MULCH BEDS SHALL RETURN TO MULCH BEDS IF DISTURBED.

OPTION 1 NOTES:

1. TREES TO BE REMOVED: 1
2. BUSHES/HEDGES TO BE REMOVED: 3
3. DRIVEWAYS IMPACTED: 4
4. EASEMENT REQUIRED: 1

OPTION 2 NOTES:

1. TREES TO BE REMOVED: 1
2. BUSHES/HEDGES TO BE REMOVED: 4
3. DRIVEWAYS IMPACTED: 9
4. EASEMENT REQUIRED: 1

DRAFT

MERCADO CONSULTANTS, INC.

DEPARTMENT OF PUBLIC WORKS
CITY OF
ROCKVILLE
111 MARYLAND AVE. ROCKVILLE, MARYLAND

NOTE: TOPOGRAPHY BASED ON MOBILE LIDAR SCAN

20' 0 20' 40'
SCALE: 1" = 20'

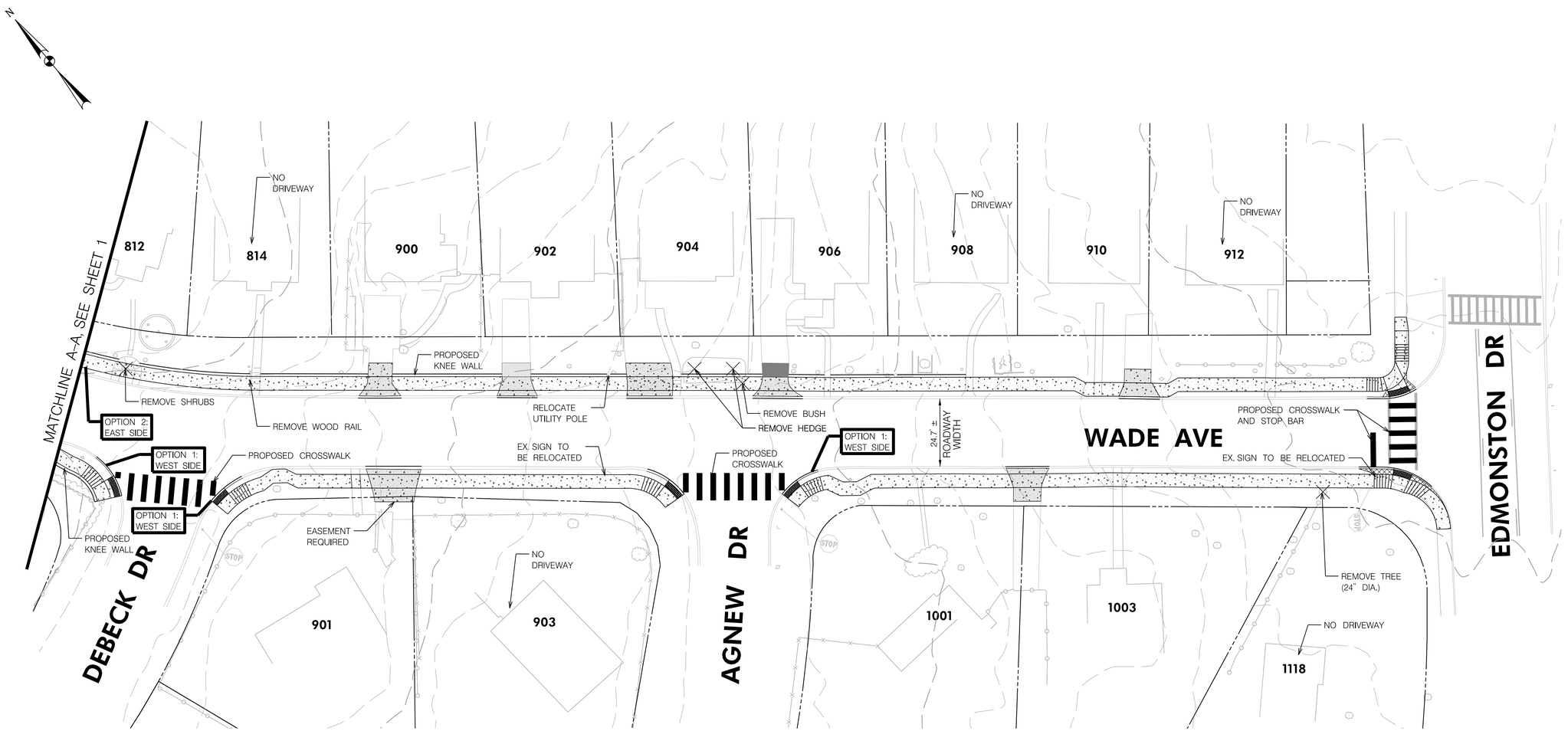
SIDEWALK GAP PLANS
WADE AVE FROM CRAWFORD DR TO EDMONSTON DR - OPTIONS 1 AND 2

TWINBROOK SAFE ROUTES TO SCHOOL AND TRANSIT ACCESS FEASIBILITY STUDIES
City of Rockville, Maryland

DATE SUBMITTED: 10/07/2024
CONTRACT NO. BCS 2017-01H

SCALE 1"=20'

SHEET NO. 1 OF 2



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SCALE 1"=20'

SHEET NO. 2 OF 2

MERCADO CONSULTANTS. INC.

Engineer's Cost Estimate

Contract No. BCS 2017-01H
Twinbrook Safe Routes to School and
Transit Access Feasibility Studies
Wade Avenue - Option 1
December 30, 2024

ITEM NO.	CATEGORY CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
	CATEGORY 1					
		TREE REMOVAL	EA	1	$1,000.00	1,000.00
		BUSH REMOVAL	EA	3	$250.00	750.00
					CATEGORY 1 TOTAL	**$1,750.00**
	CATEGORY 2					
		CLASS 1 EXCAVATION	CY	80	$60.00	$4,800.00
					CATEGORY 2 TOTAL	**$4,800.00**
	CATEGORY 3					
		STEPS OR PATH RELOCATION (SET)	EA	7	$500.00	$3,500.00
		KNEE WALL	LF	170	$350.00	$59,500.00
					CATEGORY 3 TOTAL	**$63,000.00**
	CATEGORY 4					
					CATEGORY 4 TOTAL	**$0.00**
	CATEGORY 5					
		HOT ASPHALT MIX FOR DRIVEWAY	TON	1	$175.00	$175.00
		PAVEMENT MARKINGS FOR CROSSWALK	LF	260	$5.00	$1,300.00
		PAVEMENT MARKINGS FOR STOP BAR	LF	13	$5.00	$65.00
					CATEGORY 5 TOTAL	**$1,540.00**
	CATEGORY 6					
		5 INCH CONCRETE FOR SIDEWALK	CY	66	$1,000.00	$66,000.00
		7 INCH CONCRETE FOR DRIVEWAY	CY	12	$1,500.00	$18,000.00
		TYPE A COMBINATION CURB AND GUTTER ANY HEIGHT OR DEPTH	LF	276	$150.00	$41,400.00
					CATEGORY 6 TOTAL	**$125,400.00**
	CATEGORY 7					
					CATEGORY 7 TOTAL	**$0.00**
	CATEGORY 8					
					CATEGORY 8 TOTAL	**$0.00**
					SUBTOTAL	**$196,490.00**
					40% CONTINGENCY	**$78,596.00**
					TOTAL	**$275,086.00**

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CONSULTANTS, INC.

Engineer's Cost Estimate

Contract No. BCS 2017-01H
Twinbrook Safe Routes to School and
Transit Access Feasibility Studies
Wade Avenue - Option 2
December 30, 2024

ITEM NO.	CATEGORY CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
	CATEGORY 1					
		TREE REMOVAL	EA	1	$1,000.00	1,000.00
		BUSH REMOVAL	EA	4	$250.00	1,000.00
					CATEGORY 1 TOTAL	**$2,000.00**
	CATEGORY 2					
		CLASS 1 EXCAVATION	CY	94	$60.00	$5,640.00
					CATEGORY 2 TOTAL	**$5,640.00**
	CATEGORY 3					
		STEPS OR PATH RELOCATION (SET)	EA	14	$500.00	$7,000.00
		KNEE WALL	LF	510	$350.00	$178,500.00
					CATEGORY 3 TOTAL	**$185,500.00**
	CATEGORY 4					
					CATEGORY 4 TOTAL	**$0.00**
	CATEGORY 5					
		HOT ASPHALT MIX FOR DRIVEWAY	TON	2	$175.00	$350.00
					CATEGORY 5 TOTAL	**$350.00**
	CATEGORY 6					
		5 INCH CONCRETE FOR SIDEWALK	CY	66	$1,000.00	$66,000.00
		7 INCH CONCRETE FOR DRIVEWAY	CY	25	$1,500.00	$37,500.00
		TYPE A COMBINATION CURB AND GUTTER ANY HEIGHT OR DEPTH	LF	194	$150.00	$29,100.00
					CATEGORY 6 TOTAL	**$132,600.00**
	CATEGORY 7					
					CATEGORY 7 TOTAL	**$0.00**
	CATEGORY 8					
		UTILITY RELOCATION	EA	1	$15,000.00	15,000.00
					CATEGORY 8 TOTAL	**$15,000.00**
					SUBTOTAL	**$341,090.00**
					40% CONTINGENCY	**$136,436.00**
					TOTAL	**$477,526.00**

APPENDIX B:

SITE PHOTOS

Wade Avenue – Looking Southwest from Crawford Drive

Wade Avenue – Looking Northeast toward Crawford Drive

Wade Avenue – Looking South toward Paul Drive

Wade Avenue – Looking North toward Paul Drive

Wade Avenue – Looking Southeast toward Debeck Drive

Wade Avenue – Looking Northwest toward Debeck Drive

Wade Avenue – Looking Southeast toward Agnew Drive

Wade Avenue – Looking Northwest toward Agnew Drive

Wade Avenue – Looking Southeast toward Edmonston Drive

Wade Avenue – Looking Northwest from Edmonston Drive