



WELLS + ASSOCIATES

# WILGUS PROPERTY – WEST

## LOCAL AREA TRANSPORTATION REVIEW

October 19, 2018



WILGUS PROPERTY  
LOCAL AREA TRANSPORTATION REVIEW  
MONTGOMERY COUNTY, MARYLAND

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**WILGUS PROPERTY  
LOCAL AREA TRANSPORTATION REVIEW  
MONTGOMERY COUNTY, MARYLAND**

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## INTRODUCTION

This report presents the results of a Local Area Transportation Review (LATR) for the Sketch Plan application for that portion of the Wilgus Property – West (area of Wilgus not within the White Flint Special Taxing District) located in the North Bethesda Policy Area of Montgomery County, Maryland. The Wilgus Property - West site is located south of Montrose Road, east of East Jefferson Street and north of Montrose Parkway. Figure 1 shows the site location with respect to the local and regional road network.

The proposed development includes 68 townhomes (the “Project”). There is a previously approved Preliminary Plan No. 199029A (the “Preliminary Plan”) for this site. We understand that an extension of the APFO approval for the Preliminary Plan has been applied for and is pending, but the applicant has agreed to review how the project would conform to the 2017 LATR Guidelines and Subdivision Staging Policy without prejudice to the extension request at this time. If approved trips from Preliminary Plan are not applied to these townhomes, the Project would generate 50 or more peak hour person trips, as shown in Table 1. This study was prepared in accordance with the Maryland-National Capital Park and Planning Commission (M-NCPPC) Local Area Transportation Review Guidelines, Fall 2017. The scope of this LATR traffic study was established in consultation with M-NCPPC staff. The Scope of Work Agreement is included in Appendix A.

Following is a description of the various multi-modal tests for determining transportation adequacy per the Fall 2017 LATR guidelines and the Subdivision Staging Policy:

Motor vehicle adequacy analysis is required if the proposed development generates 50 or more peak hour person trips. Sites located within Orange policy areas such as North Bethesda evaluate intersection capacity based on Highway Capacity Manual methodology. The congestion standard for signalized study intersections in the North Bethesda policy area is an overall average vehicle delay of 71 seconds per vehicle.

Pedestrian system adequacy analysis is required for projects that generate 50 peak hour pedestrian trips or more. This analysis first requires checking if the ADA non-compliance issues identified within 500 feet of the site are met. Restoration or funding of the ADA non-compliance issues shall be conducted if necessary. It is required to establish an LOS D or better for crosswalk pedestrian delay at the study intersections within 500 feet of the site area or within a Road Code Urban Area/Bicycle Pedestrian Priority Area. These measures can be met by reducing the crosswalk distances and utilizing efficient signal timing methodology. The Project does not exceed 50 pedestrian trips and therefore is not subject to the pedestrian system adequacy test.

Bicycle System adequacy analysis is required if 50 peak hour non-motorized trips or more are generated by proposed development and it is within a quarter mile of educational institution or existing or planned bikeshare station. Adequacy is measured by the LTS (Level of Traffic Stress).

The stress is determined on the comfort or skill level of a bicyclist in reference to a roadway. The appropriate adequacy for a bicycle system provides a LTS – 2. Mitigation involves the applicant providing necessary adjustments to promote low level of traffic stress that facilitates LTS – 2 conditions within 750 feet of a development site boundary. The Project does not exceed 50 non-motorized trips and therefore this analysis is not required.

In general, transit system adequacy analysis is required if 50 peak hour transit trips or more are generated by proposed development. Development sites that are within 1,000 feet from a Metrorail station entrance are exempt from the transit system adequacy analysis. Should the proposed development exceed the 50 transit trips threshold, an inventory of transit stations and stops within 1000 feet of the site and the peak load for each route should be identified. The subject site is greater than 1,000 feet from the White Flint Metro station; however, the Project will generate fewer than 50 peak hour transit trips. Therefore, the transit system adequacy analysis is not required.

Based on the criteria in the Subdivision Staging Policy and the LATR Guidelines and the number of peak hour trips by each mode shown in Table 1, an evaluation of only motor vehicle adequacy is required by this LATR.

Tasks undertaken in this study included the following:

- Coordination with M-NCPPC staff to identify the necessary scope and analyses to be included in the LATR study.
- Performed a field reconnaissance of existing roadways and pedestrian infrastructure, intersection geometrics, traffic controls and speed limits.
- Collection of vehicle turning movement counts at the study intersections on a typical weekday during both the AM and PM peak periods based on the M-NCPPC LATR Guidelines, and input from M-NCPPC staff.
- Collection of pedestrian and bicycle counts at the study intersections concurrent with the vehicle turning movement counts.
- Identification of the AM and PM peak hours to be analyzed in the study.
- Forecast background future traffic volumes by adding the existing peak hour traffic volumes and the traffic forecasted to be added to study intersections by nine (9) area pipeline projects that are currently approved and planned for development.
- Estimation of the number of weekday AM and PM peak hour vehicle trips that will be generated by the proposed site using Institute of Transportation Engineers Trip Generation, 10<sup>th</sup> Edition, and the LATR Guidelines.
- Forecast total future traffic volumes by combining the projected traffic that will be added by the proposed site with the background traffic forecasts.

- Preparation of a pedestrian and bicycle impact statement in accordance with M-NCPPC's LATR Guidelines.

Sources of data for this study include: Montgomery County, the M-NCPPC, the Institute of Transportation Engineers (ITE), the Maryland State Highway Administration, Array Architects, VIKA Maryland, Kaiser Permanente, and the files of Wells + Associates, Inc.

The conclusions of this study are as follows:

1. All study intersections currently operate within their respective Policy Area congestion standard delay threshold during AM and PM peak hours.
2. Nine (9) background projects will generate 4,293 new AM peak hour trips and 6,143 new PM peak hour trips. However, not all of these trips will use each of the study intersections.
3. With the addition of traffic generated by the background developments, all of the study intersections would operate within their respective congestion standard during the AM and PM peak hours, with the exception of Montrose Parkway/E. Jefferson Street.
4. This study considers the development of 68 townhomes. Based on ITE trip generation rates and the LATR Guidelines, the Project would generate 50 AM peak hour person trips, and 65 PM peak hour person trips. The Project would add 27 AM peak hour vehicular trips and 35 PM peak hour vehicular trips to the adjacent road network.
5. With the proposed project all of the study intersections would continue to operate within their respective Policy Area congestion standard delay threshold during the AM and PM peak hours with the exception of Montrose Parkway/E. Jefferson Street while maintaining the existing signal timing. If signal timing is optimized to reflect the future shifts in traffic patterns this intersection would also operate within the North Bethesda Policy Area standard.
6. The Project passes the Motor Vehicle System Adequacy test.



**Figure 1**  
Site Map

 NORTH  
Wilgus Property  
North Bethesda, Maryland



**Table 1**  
 Wilco's Property  
 Trip Generation

Proposed Townhomes	Land Use	LUC	Amount	Unit	ITE Trip Generation				SSP 2015-2020 Trip Generation													
					AM Peak Hour		PM Peak Hour		Auto Driver	Auto Passenger	Transit	Non- Motorized	Pedestrian	Person Trips	Auto Driver	Auto Passenger	Transit	Non- Motorized	Pedestrian	Person Trips		
					In	Out	In	Out													Total	Total
		220	68	DU	8	25	33	26	16	42	27	12	4	6	10	50	35	16	5	8	13	65

Notes:

1. Trip generation based on ITE Trip Generation Manual 10th Edition
2. North Bethesda Policy Area

## BACKGROUND DATA

### OVERVIEW

This section presents the following background information for the LATR:

- Description of the planned development.
- Description of the proposed vehicular access.
- Definition of the study area.
- Description of the study area public road network and transportation facilities.
- Existing vehicular, pedestrian and bicycle traffic counts.

### PLANNED SITE DEVELOPMENT

This study considers the development of 68 townhomes. The full site includes the development of 145 townhomes, a 126 dwelling-unit mid-rise apartment building, and two 250 dwelling-unit high-rise apartment buildings. However, the parcels of the site east of Stonehenge Place are located in the White Flint Special Taxing District and are, therefore, exempt from LATR requirements. The potential development on the exempt portion of the site within the White Flint Policy Area has been considered as background development for this report.

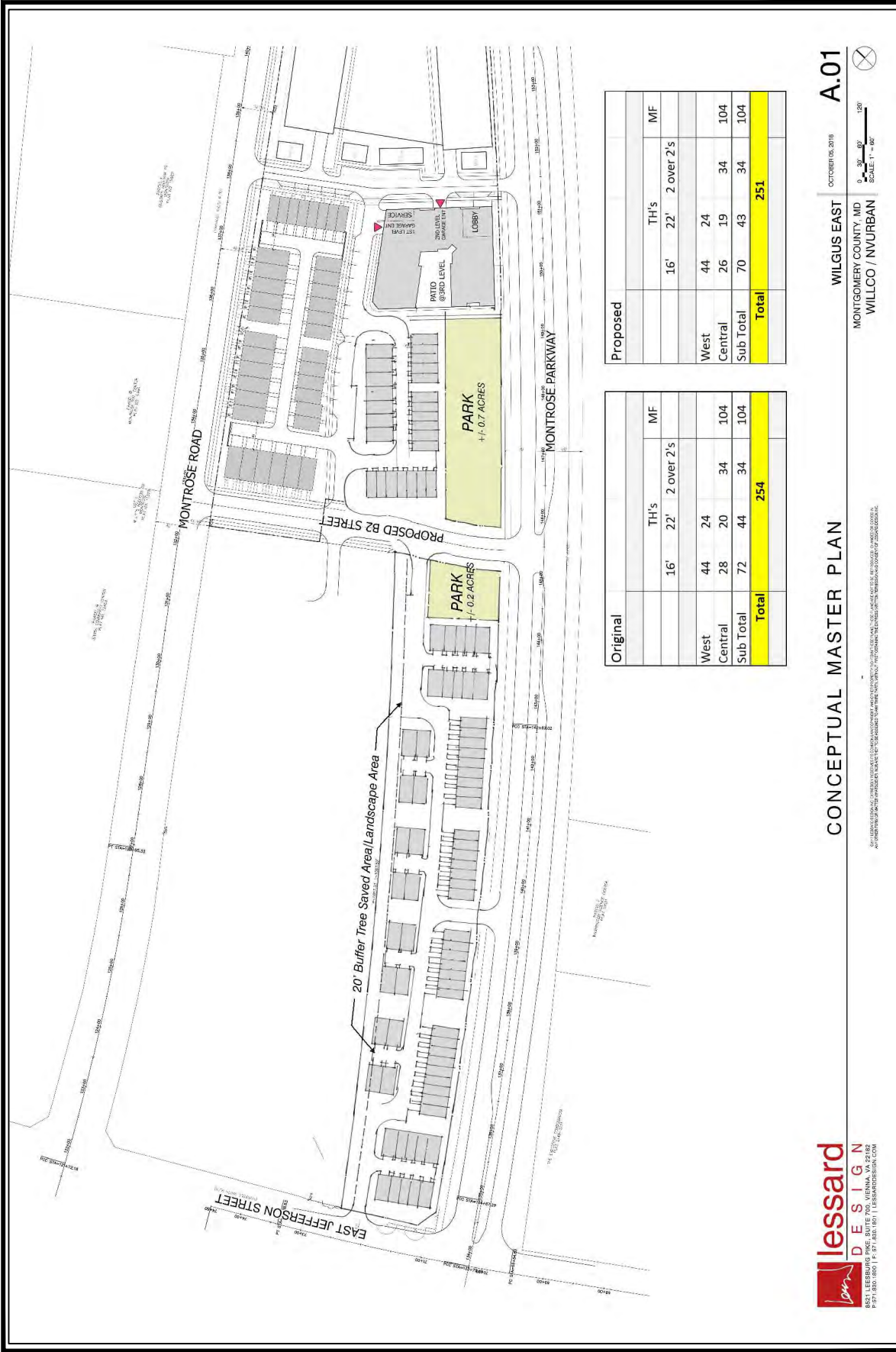
### VEHICULAR ACCESS

The Wilgus Property – West is located within the North Bethesda Policy Area. Site access will be provided along East Jefferson Street and Stonehenge Place. A copy of the proposed site plan is shown in Figure 2.

### STUDY AREA DEFINITION

The study area for this LATR study was established through consultation with M-NCPPC Staff and is outlined in the scoping agreement contained in Appendix A. Based on this scoping agreement the following study intersections were included in the analysis.

1. Montrose Road/East Jefferson Street
2. Montrose Road/Towne Road
3. Montrose Parkway/East Jefferson Street
4. Montrose Parkway/Stonehenge Place
5. Montrose Parkway/Towne Road
6. East Jefferson Street/New Access Drive



**Figure 2**  
 Conceptual Site Plan



Wilgus Property  
 North Bethesda, Maryland



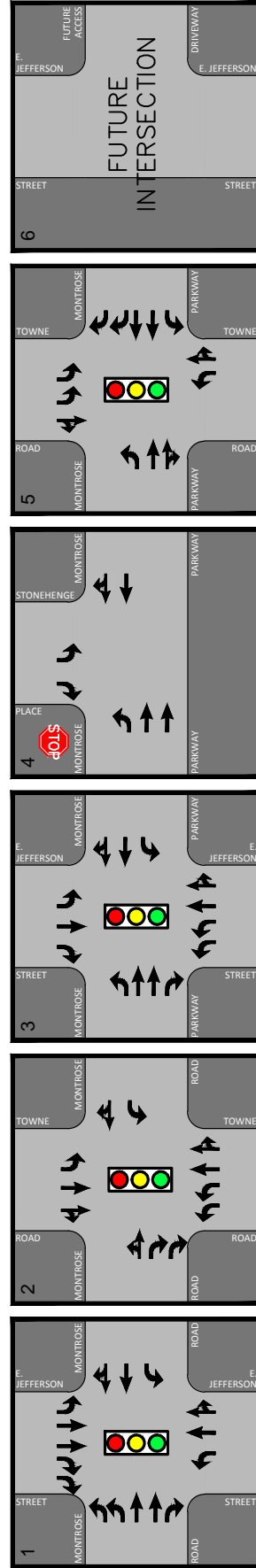
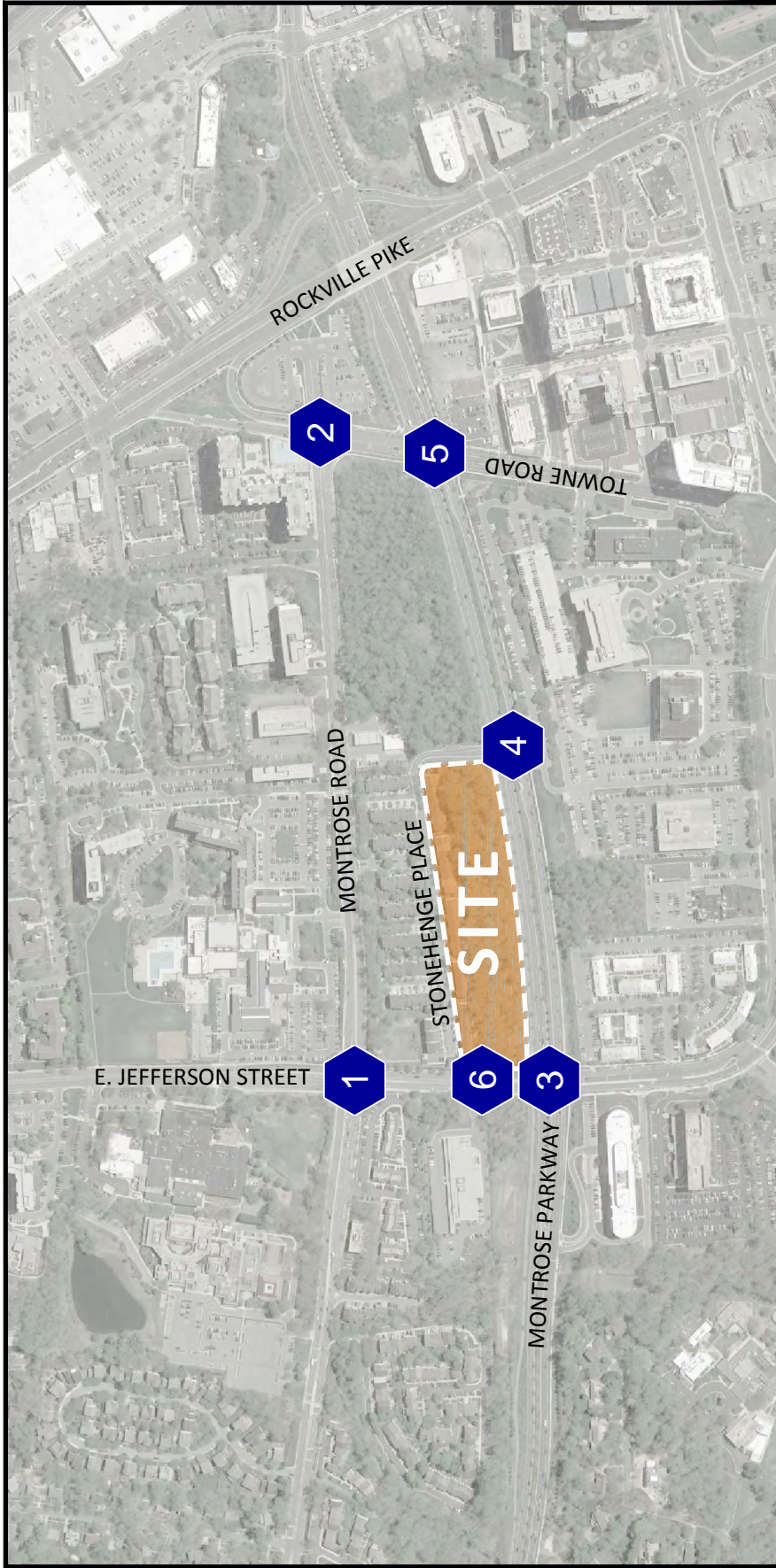


Figure 3

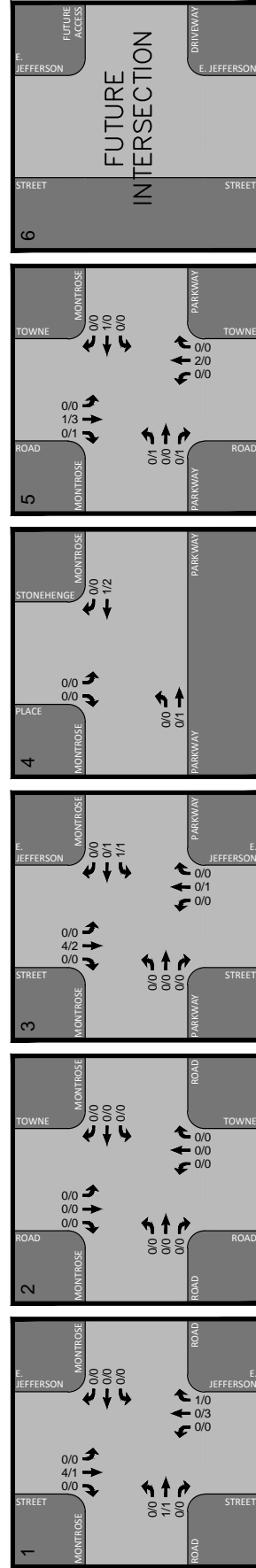
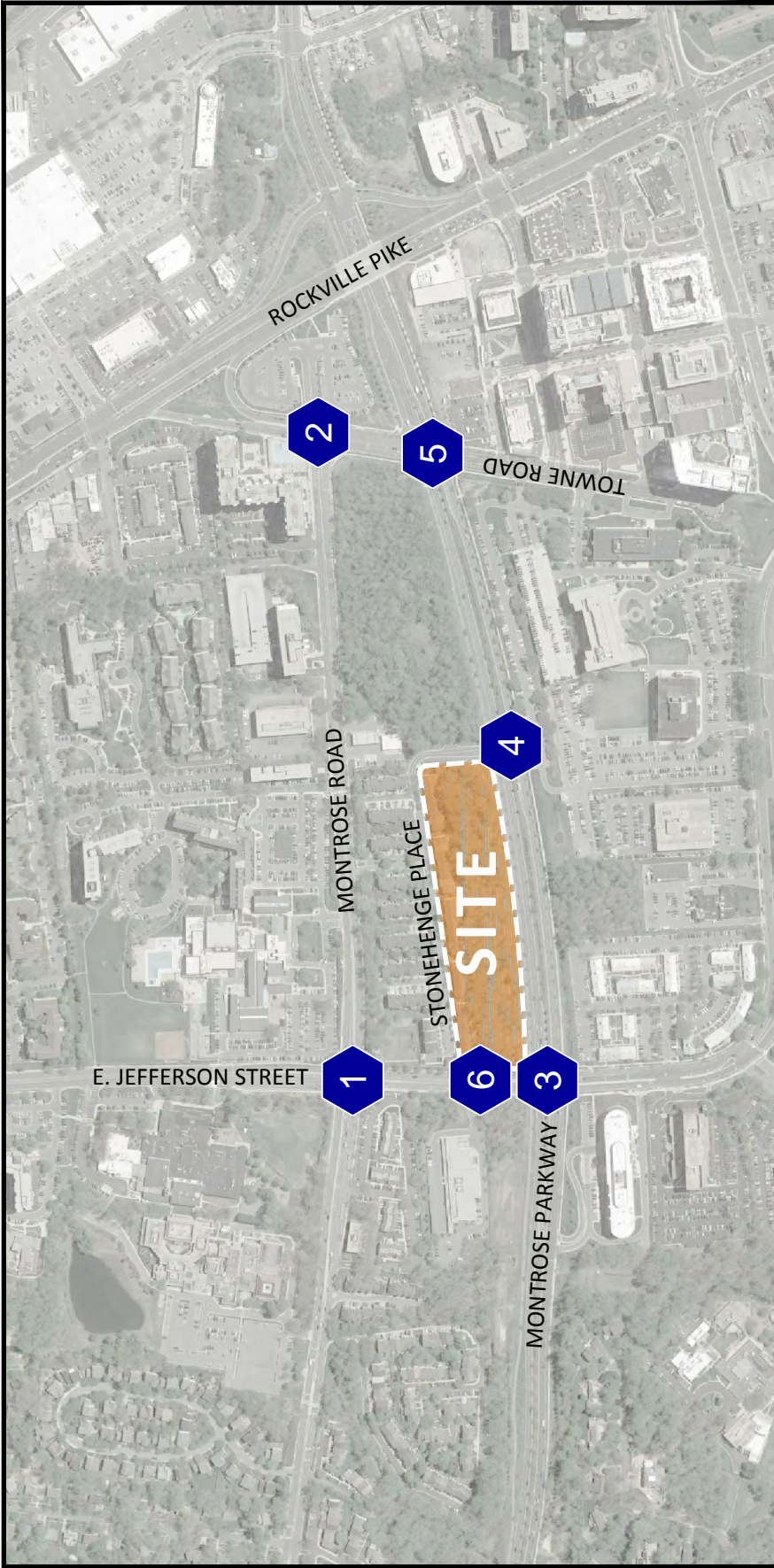
Existing Lane Use and Traffic Control

Represents One Travel Lane  
 Signalized Intersection  
 Stop Sign

NORTH  
 Wilgus Property  
 North Bethesda, Maryland

### **EXISTING TRAFFIC COUNTS**

Existing AM and PM peak hour bicycle, pedestrian, and vehicular traffic counts were conducted by Wells + Associates at each of the study intersections on a typical weekday from 6:30 AM to 9:30 AM and from 4:00 PM to 7:00 PM. The counts were collected on Thursday, May 17, 2018, a non-holiday weekday when Montgomery County public schools were in session. The peak hour bicycle, pedestrian, and vehicular peak hour volumes are summarized on Figures 4, 5 and 6, respectively. The detailed count data is provided in Appendix B.



**Figure 4**  
Bicycle Peak Hour Volumes

AM PEAK HOUR  
PM PEAK HOUR  
000 / 000

**Figure 4**  
Bicycle Peak Hour Volumes

**Figure 4**  
Bicycle Peak Hour Volumes

AM PEAK HOUR  
PM PEAK HOUR  
000 / 000

**Figure 4**  
Bicycle Peak Hour Volumes

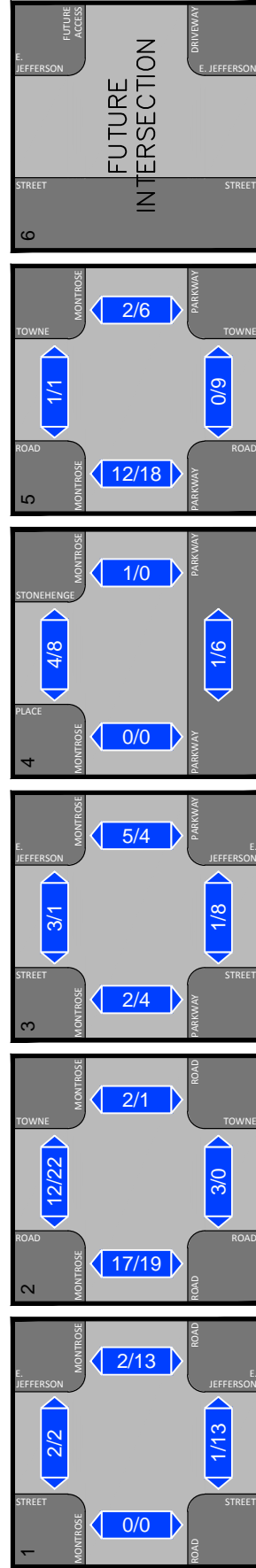
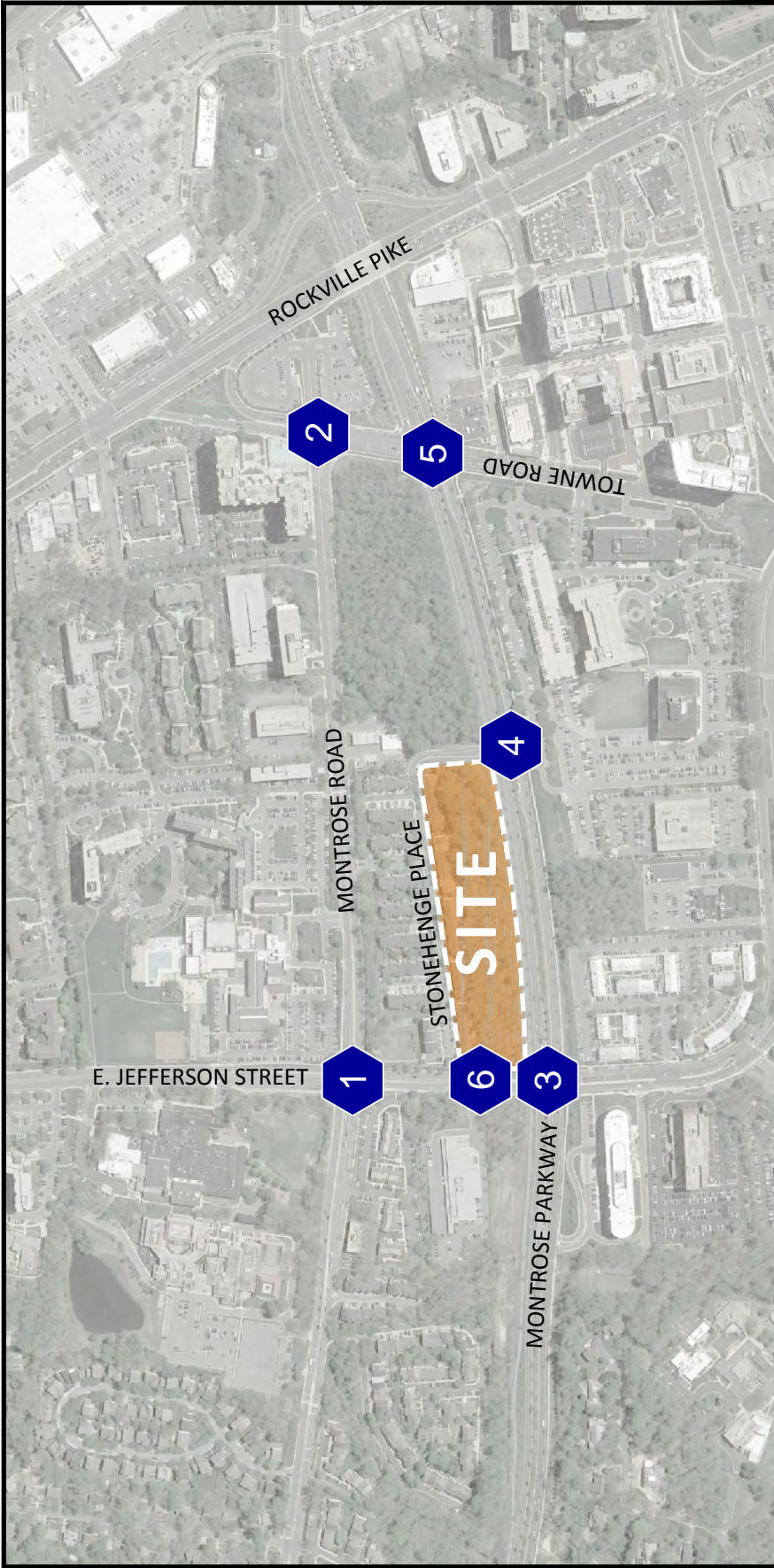
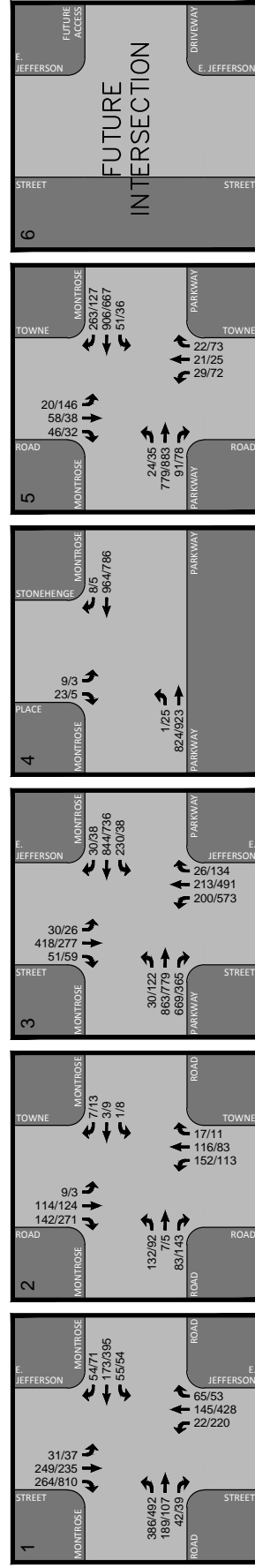
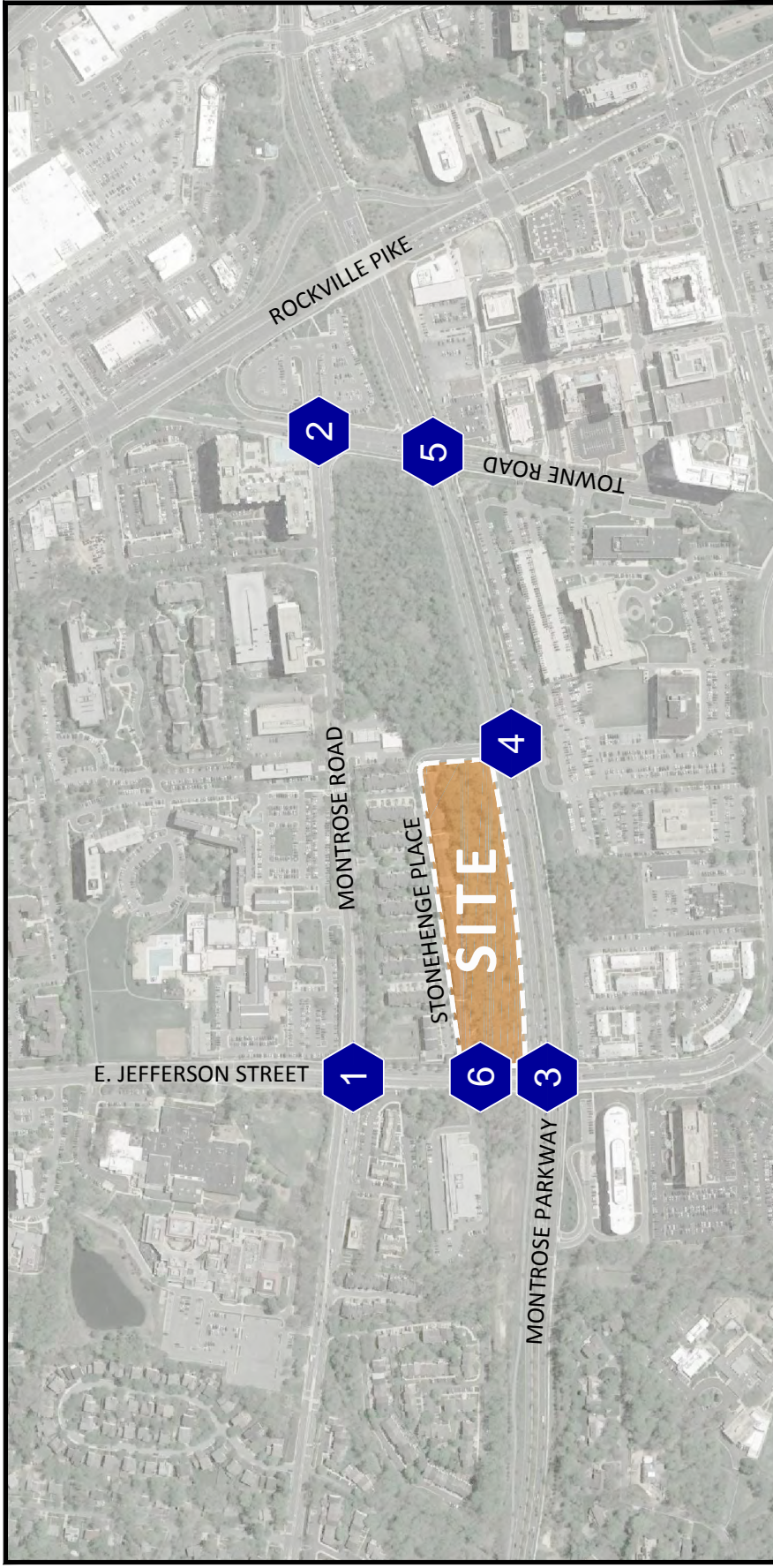



Figure 5  
Pedestrian Peak Hour Volumes

← NORTH  
Wilgus Property  
North Bethesda, Maryland





 NORTH  
 Wilgus Property  
 North Bethesda, Maryland

 AM PEAK HOUR  
 PM PEAK HOUR  
 000 / 000

**Figure 6**  
Existing Peak Hour Traffic Volumes

## LOCAL AREA TRANSPORTATION REVIEW (LATR)

### OVERVIEW

The LATR analysis has been conducted in accordance with the 2017 LATR Guidelines. It includes: a listing of applicable congestion standards; method of analysis based on policy area; adjustment factors for trip generation; and mode split assumptions associated with the North Bethesda policy area. There is requirement for adequacy tests on the different modes which include motor vehicle, pedestrian, bicycle, and transit. Analysis is required for the corresponding mode should it exceed the threshold of 50 trips. As shown in Table 1, trips with each mode are below 50 with the exception of person trips. Therefore, only motor vehicle adequacy analysis is required. The site is within an orange policy area that requires analysis using the Highway Capacity Manual (HCM) methodology.

### CONGESTION STANDARD

As detailed in M-NCPPC's LATR Guidelines, the adequacy of each intersection analyzed in a LATR study is assessed based on the congestion standard established for the Montgomery County Policy Area in which the intersection is located.

The subject site and 2 of the 5 study intersections are located within the North Bethesda Policy Area. The remaining intersections are in the White Flint Policy Area. The policy area and congestion standard for each study intersection is listed below:

Study Intersection	Montgomery County Policy Area	Congestion Standard (Delay)
1) Montrose Road/East Jefferson Street	North Bethesda	71 s
2) Montrose Road/Towne Road	White Flint	120 s
3) Montrose Parkway/East Jefferson Street	North Bethesda	71 s
4) Montrose Parkway/Stonehenge Place	White Flint	120 s
5) Montrose Parkway/Towne Road	White Flint	120 s
6) East Jefferson Street/New Access Drive	North Bethesda	71 s

## EXISTING CONDITIONS

### Operational Analysis

Existing peak hour delays were estimated at the study intersections based on: the existing lane use and traffic control shown on Figure 3; existing traffic signal phasing/timing obtained from Montgomery County Department of Transportation (MCDOT); the existing bicycle, pedestrian, and vehicular peak hour traffic volumes shown on Figures 4, 5, and 6; and the Highway Capacity Manual (HCM) 2000 methodologies, using Synchro 9. The existing results are presented in Appendix C and summarized in Table 2, respectively.

As shown in Table 2, based on the criteria established for the North Bethesda policy area, the study intersections currently operate below their respective congestion standard during the AM and PM, peak hours.

## BACKGROUND FUTURE CONDITIONS

### Pipeline Developments

The following nine (9) pipeline developments (currently approved and/or pending approval within the area surrounding the site) were identified by the M-NCPPC during the scoping process for inclusion in this LATR study:

1. **Mid Pike Plaza (Pike & Rose)**
  - Preliminary Plan No. 120120020
  - Located west of MD 355 (Rockville Pike), north of Old Georgetown Road
  - 264,633 SF Retail
  - 1,155,688 SF Office
  - 1,107 DU Apartments
2. **North Bethesda Town Center/LCOR**
  - Pre-Preliminary Plan No. 720040010
  - Located west of Citadel Avenue and north of Marinelli Road
  - 697 DU Apartments
  - 795,378 SF Office
  - 140,791 SF Retail
3. **Gables at White Flint**
  - Preliminary Plan No. 120150010
  - Located on south section, intersection of existing Old Georgetown Road and existing Executive Boulevard
  - 476 DU Apartments
  - 31,000 SF Retail

**Table 2**  
Wilgus Property  
Intersection Delays Summary

Intersection	Intersection Control	Movement	Congestion Standard	Existing		Background		Total Future	
				AM	PM	AM	PM	AM	PM
1: Montrose Road/E. Jefferson Street	Signalized	Overall	71s	44.9	50.7	43.6	54.3	43.7	54.3
2: Montrose Road/Towne Road	Signalized	Overall	120s	28.4	26.7	28.2	27.9	28.2	27.9
3: Montrose Parkway/E. Jefferson Street w/ Signal Optimization	Signalized	Overall	71s	42.2	43.5	53.1	76.0	54.3	77.3 57.6
4: Montrose Parkway/Stonehenge Drive	Stop Control	SB EBL	120s	10.5 9.8	11.1 9.1	10.8 10.3	14.3 10.9	10.9 10.3	14.9 11.0
5: Montrose Parkway/Towne Road	Signalized	Overall	120s	18.8	29.4	31.8	100.5	32.1	100.3
6: E. Jefferson Street/Future Access Driveway	Stop	WB	71s	N/A	N/A	N/A	N/A	8.5	9.0

Notes:

(1) Delay is presented in units of seconds.

(2) Synchro 9 (build 909, rev 20) was used to determine vehicle delays.

**4. Saul Center White Flint**

- Preliminary Plan No. 120160080
- Located on the SW quadrant of the intersection of Rockville Pike and Marinelli Road
- 655 DU Apartments
- 175,000 SF Office
- 29,000 SF Retail

**5. Twinbrook Quarter**

- Located on the NE quadrant of the intersection of Rockville Pike and Halpine Road
- 1,865 DU Apartments
- 431,440 SF Office
- 472,950 SF Retail

**6. 6000 Executive Boulevard & Washington Science Center**

- Site Plan Nos. 320180140 and 81973005C
- Located on the SW quadrant, intersection of existing Old Georgetown Road and existing Executive Boulevard
- 324 DU Apartments
- 418,480 SF Office
- 9,400 SF Retail

**7. North Bethesda Market II**

- Preliminary Plan No. 12012006A
- Located on the SW quadrant of the intersection of Rockville Pike and Nicholson Lane
- 470 DU Apartments
- 44,840 SF Office
- 190,188 SF Retail
- 13,500 SF Restaurants

**8. Rock Terrace School/Tilden Middle School**

- Mandatory Referral No. 2017014
- Located on the SW quadrant of the intersection of Marcliff Road and Tilden Lane
- Expansion from 797 to 1,600 Students

**9. Wilgus Property - White Flint**

- Site Plan No. Pending
- 81 DU Townhouses
- 626 DU Apartments

### Pipeline Development Trip Generation

Trip generation for the nine (9) pipeline developments was determined based on M-NCPPC and ITE trip generation rates. The nine (9) pipeline developments are forecast to add 4,293 AM peak hour trips and 6,143 PM peak hour trips to the area road network at full build-out and occupancy. A summary of the trip generation totals for each pipeline development is provided on Table 3. Consistent with the White Flint Sector Plan, trip generation for all background developments within the White Flint boundary was reduced by fifty percent.

### Pipeline Development Trip Assignments

The peak hour trip distributions for each of the nine (9) pipeline developments were developed based on the trip distribution for residential and commercial uses from previously approved studies. The trips anticipated to be generated by the individual development projects were then assigned to the roadway network based on these distributions. The individual traffic assignments for each of the above listed approved development projects are shown in the traffic forecasting worksheets and graphics contained in Appendix D.

### Background Traffic Forecasts

Background traffic forecasts represent future conditions without the development of the proposed site. Background traffic forecasts were calculated by adding the combined pipeline traffic assignments to the existing peak hour traffic counts shown on Figure 6. The resulting background future traffic forecasts are summarized on Figure 7.

### Operational Analysis

The background peak hour delays without the proposed development were estimated at the study intersections based on: the background traffic forecasts without the proposed development; the future lane use and traffic controls as shown on Figure 8; and existing traffic signal phasing/timings obtained from MCDOT; and the Highway Capacity Manual (HCM) 2000 methodologies, using Synchro 9. The future peak hour delays without the proposed development are presented in Appendix E and summarized in Table 2.

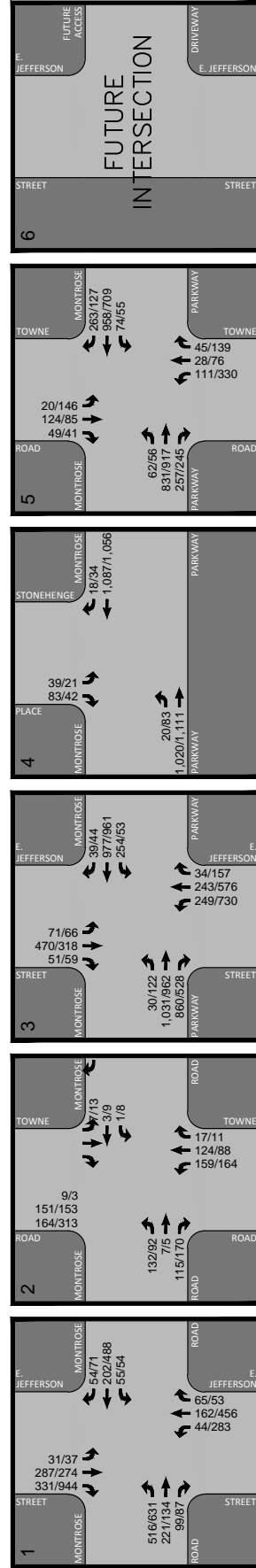
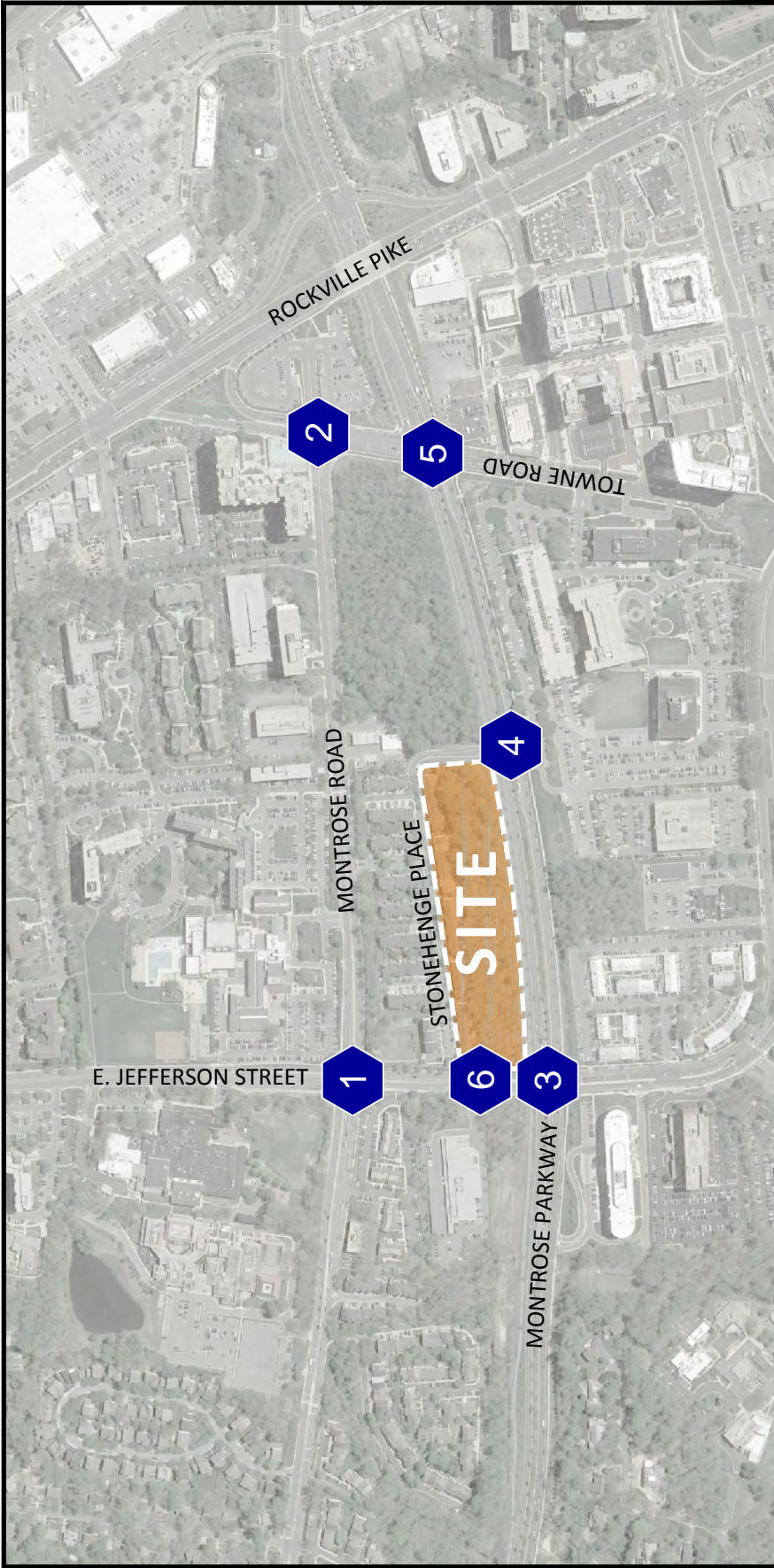
As shown in Table 2, with the addition of pipeline development, the study intersections would operate within their respective congestion standards, during the AM and PM peak hours with the exception of Montrose Parkway/E. Jefferson Street which will operate with 77.3 seconds of delay during the PM peak hour, in excess of the North Bethesda Policy area standard of 71 seconds, using existing signal timing and phasing.

**Table 3**  
 Wilgus Property  
 Pipeline Trip Generation Summary

Land Use	Size	Units	AM Peak Hour			PM Peak Hour		
			IN	OUT	TOTAL	IN	OUT	TOTAL
<b>1. Mid Pike Plaza (Pike &amp; Rose)<sup>3</sup></b>								
Office	1,155,688 SF		1,193	163	1,356	233	1,140	1,373
Apartments	1,107 DU		109	437	546	408	219	627
Hotel	150 RM		47	33	80	46	44	90
Retail	264,633 SF		<u>157</u>	<u>97</u>	<u>254</u>	<u>552</u>	<u>598</u>	<u>1,150</u>
Mid Pike Plaza Subtotal			1,506	730	2,236	1,239	2,001	3,240
Less 50% Traffic Mitigation			753	365	1,118	620	1,001	1,620
<b>2. North Bethesda Town Center / LCOR<sup>5</sup></b>								
Apartments	697 DU		71	284	355	281	151	432
Less 50% Traffic Mitigation - Residential			36	142	178	141	76	216
Office	795,378 SF		884	121	1,005	201	984	1,185
Retail	140,791 SF		<u>82</u>	<u>53</u>	<u>135</u>	<u>361</u>	<u>392</u>	<u>753</u>
Commercial subtotal			966	174	1,140	562	1,376	1,938
Less 50% Traffic Mitigation - Commercial			483	87	570	281	688	969
North Bethesda Town Center / LCOR subtotal			519	229	748	422	764	1,185
<b>3. Gables at White Flint</b>								
Apartment	476 DU		39	155	193	148	76	225
Less 50% Traffic Mitigation - Apartment			20	78	97	74	38	113
Retail	31,000 SF		50	46	96	199	184	383
Less 50% Traffic Mitigation - Retail			25	23	48	100	92	192
Gables at White Flint Subtotal			45	101	145	174	130	305
<b>4. Saul Center White Flint West</b>								
Mid-rise residential	655 DU		26	74	100	36	23	59
Less 50% Traffic Mitigation - Residential			13	37	50	18	12	30
Office	175,000 SF		126	19	145	23	113	136
Retail	29,000 SF		<u>13</u>	<u>13</u>	<u>27</u>	<u>56</u>	<u>51</u>	<u>107</u>
Commercial subtotal			139	32	172	79	164	243
Less 50% Traffic Mitigation - Commercial			70	16	86	40	82	122
Saul Center West Side Subtotal			83	53	136	58	94	152
<b>5. Twinbrook Quarter</b>								
Office	431,440 SF		352	48	400	62	303	365
High Rise Apartment	1,865 DU		91	273	364	259	166	425
Retail	472,950 SF		281	173	454	815	882	1697
Less Existing Retail	<u>246,000 SF</u>		98	61	159	285	309	594
Net Increase Retail	226,950 SF		183	112	295	350	378	728
Twinbrook Quarter Subtotal			626	433	1,059	722	855	1,577
<b>6. 6000 Executive Boulevard &amp; Washington Science Center</b>								
Mid-rise apartments	364 DU		34	97	131	98	62	160
Office	418,480 SF		361	59	420	71	373	444
Retail	9,400 SF		<u>6</u>	<u>3</u>	<u>9</u>	<u>45</u>	<u>49</u>	<u>94</u>
6000 Executive Subtotal			401	159	560	214	484	698
Less 50% Traffic Mitigation			201	80	280	107	242	349
<b>7. North Bethesda Market II</b>								
Mid Rise Apartments	470 DU		44	125	169	126	81	207
Less 50% Traffic Mitigation - Residential			22	63	85	63	41	104
Retail	203,688 SF		119	73	191	442	478	920
Office	44,840 SF		<u>59</u>	<u>10</u>	<u>69</u>	<u>9</u>	<u>45</u>	<u>53</u>
Commercial subtotal			178	83	260	451	523	973
Less 50% Traffic Mitigation - Commercial			89	42	130	226	262	487
North Bethesda Market II Subtotal			111	105	215	289	303	591
<b>8. Rock Terrace School/Tilden Middle School</b>								
Tilden Middle School existing enrollment	797 Students		292	224	516	105	140	245
Tilden & Rock Terrace combined enrollment	1,600 Students		592	448	1,040	208	288	496
Existing site trips			28	23	51	20	9	29
Net new trips			272	201	473	83	139	222
<b>9. Wilgus Property - White Flint<sup>3</sup></b>								
Low-rise residential	81 DU		9	30	39	31	18	49
Mid-rise residential	126 DU		12	33	45	34	21	55
High-rise residential	<u>500 DU</u>		<u>37</u>	<u>116</u>	<u>153</u>	<u>109</u>	<u>70</u>	<u>179</u>
Total residential	707 DU		58	179	237	174	109	283
Less 50% Traffic Mitigation			29	90	119	87	55	142
<b>Total Pipeline Development Trips</b>			<b>2,639</b>	<b>1,657</b>	<b>4,293</b>	<b>2,562</b>	<b>3,583</b>	<b>6,143</b>

Notes:

1. Trip generation based on previously approved traffic impact studies, statements, or staff reports.
2. Trip generation for projects located within the White Flint Sector Plan Area assumed to meet the 50% traffic mitigation goal.
3. The portion of the Wilgus Property inside the White Flint Sector Plan area boundary is exempt from traffic study, but is included as background for the western portion of the site in order to correctly account for the full future impact of the site.



 NORTH  
 Wilgus Property  
 North Bethesda, Maryland

 AM PEAK HOUR  
 PM PEAK HOUR  
 000 / 000

**Figure 7**  
Background Peak Hour Traffic Volumes



## TOTAL FUTURE CONDITIONS

### Site Trip Generation

The development of the planned 68 townhomes on this site will generate 27 AM peak hour vehicular trips and 35 PM peak hour vehicular trips based on ITE trip generation rates and the LATR guidelines, as shown in Table 4.

### Site Trip Assignments

The peak hour distribution of the site auto driver vehicle trips was developed based on the LATR trip distribution tables for office development, and through consultation with M-NCPPC staff. Peak hour trip assignments at each of the study intersections are shown on Figure 9. The trips anticipated to be generated by the site were distributed to the roadway network based on the following percentages:

<u>To/From</u>	<u>Percent</u>
North via East Jefferson Street/MD 355	20%
South via Old Georgetown Road/MD 355	36%
East via Montrose Parkway/Randolph Rd	14%
<u>West via Montrose Parkway/Montrose Road</u>	<u>30%</u>
Total	100%

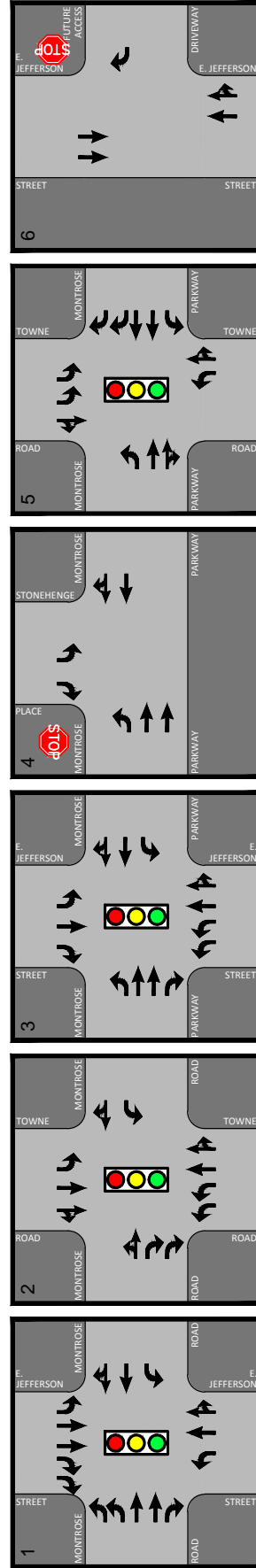
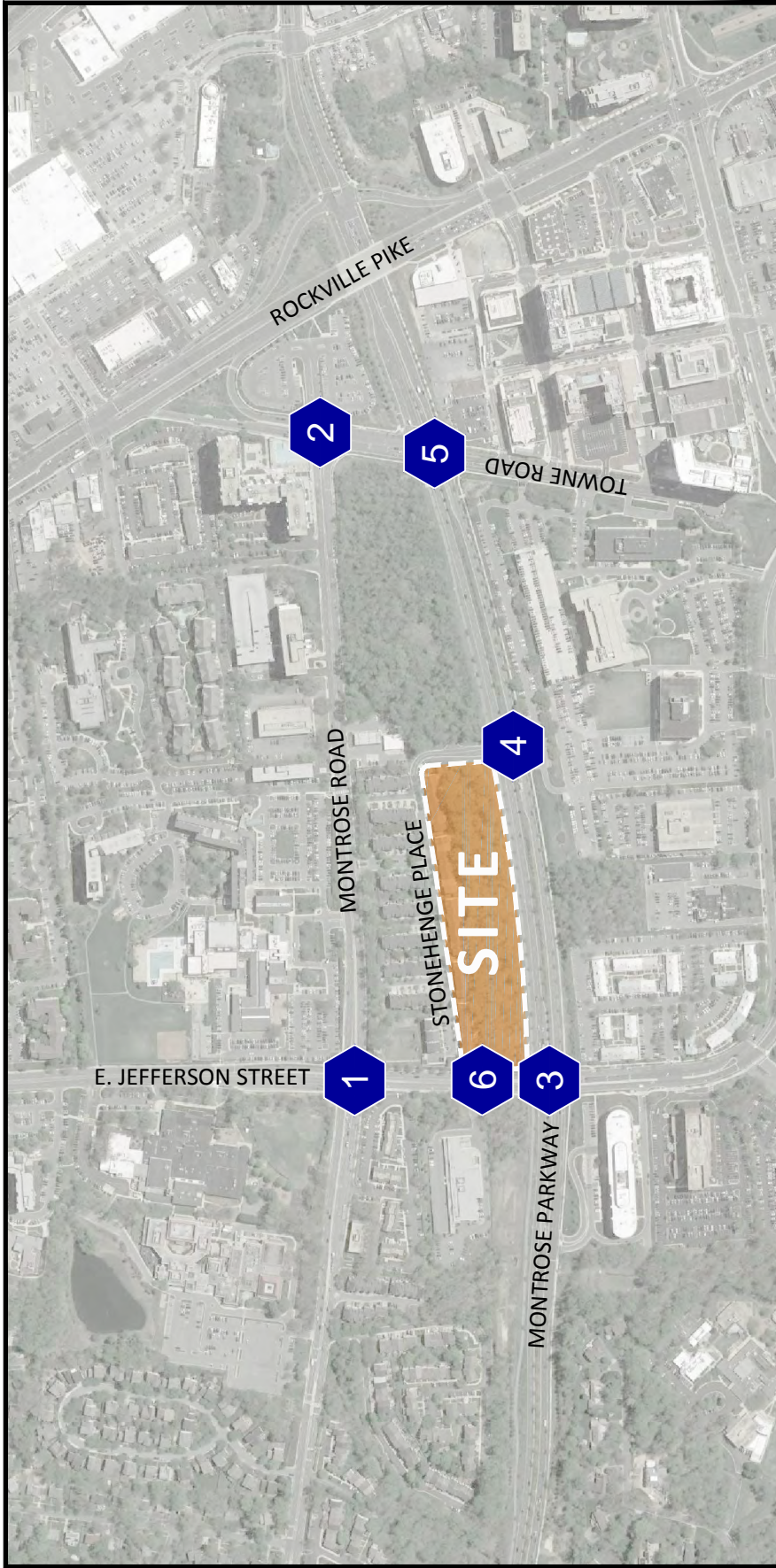
### Total Future Traffic Forecasts

The total future traffic forecasts were derived from the background traffic forecasts shown on Figure 7 and the site trip assignments (construction of 68 townhomes) shown on Figure 9. The resultant total future traffic forecasts are shown on Figure 10.

### Operational Analysis

The future peak hour levels of service delays with the proposed development were estimated at the study intersections based on: the total future traffic forecasts; the future lane use and traffic controls; and existing traffic signal phasing/timing obtained from MCDOT; and the Highway Capacity Manual (HCM) 2000 methodologies, using Synchro 9. The future peak hour delays with the proposed development are presented in Appendix F and summarized in Table 2.

As shown in Table 2, with the proposed development, all study intersections would continue to operate with an overall delay within their respective congestion standard during the AM and PM peak hours with the exception of Montrose Parkway/E Jefferson Street. However, with adjustments to optimize the signal timings to accommodate the projected volumes, the intersection of Montrose Parkway/E. Jeffers will operate with 57.6 seconds of delay during the PM peak hour, which is within the North Bethesda congestion standard. Since all intersections are projected to operate with acceptable delay, the Site Plan for the expansion of the Wilgus Property passes the Motor Vehicle System Adequacy test.



**Figure 8**  
Total Future Lane Use and Traffic Control

← Represents One Travel Lane  
 Signalized Intersection  
 Stop Sign

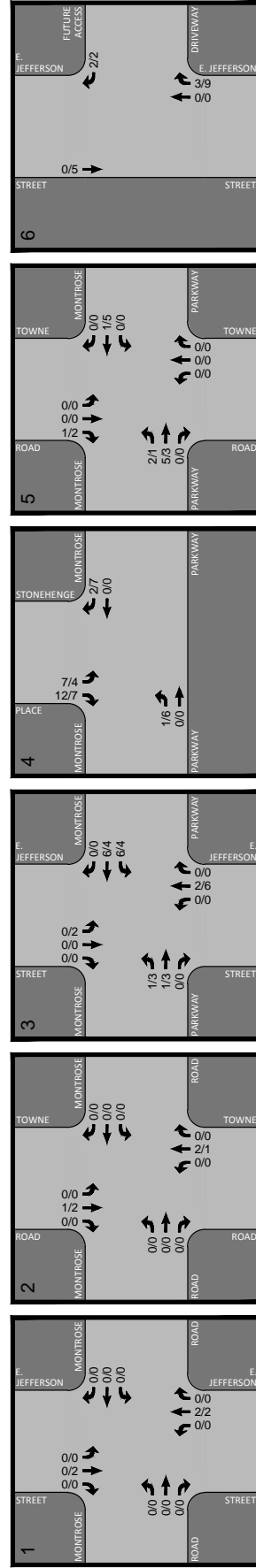
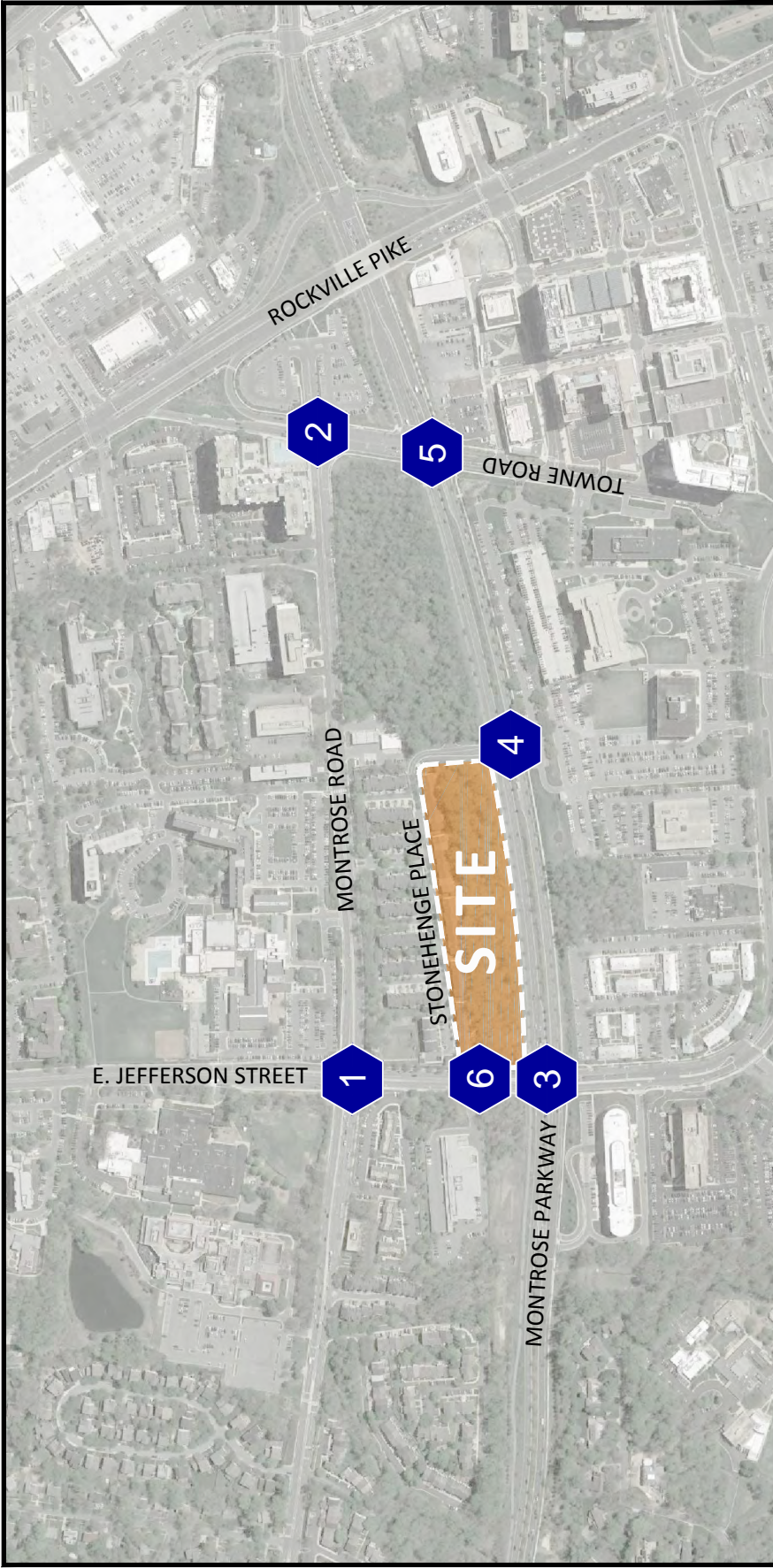
**NORTH** ←  
 Wilgus Property  
 North Bethesda, Maryland

**Table 4**  
 Wiligus Property  
 Trip Generation <sup>1,2</sup>

	Land Use	LUC	Amount	Unit	Auto Driver					
					AM Peak Hour		PM Peak Hour		Total	
					In	Out	In	Out	In	Out
<u>Proposed Site Plan</u> Townhomes	Low Rise Residential	220	68	DU	6	21	22	13	27	35

Notes:

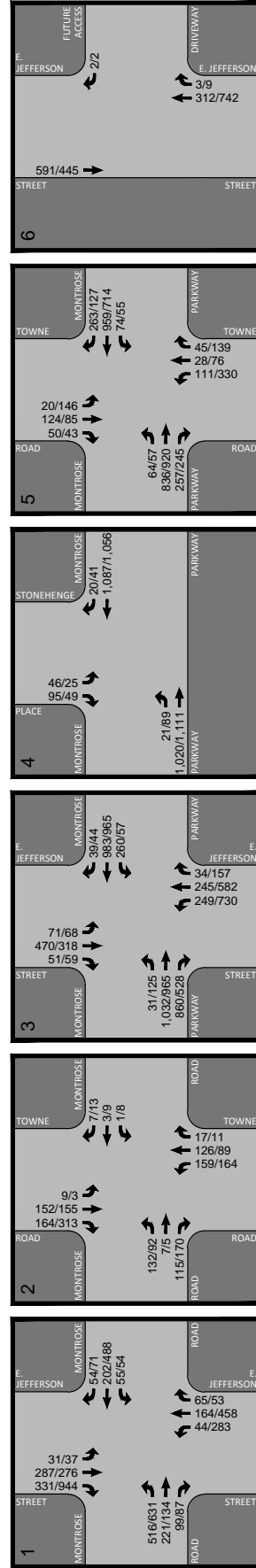
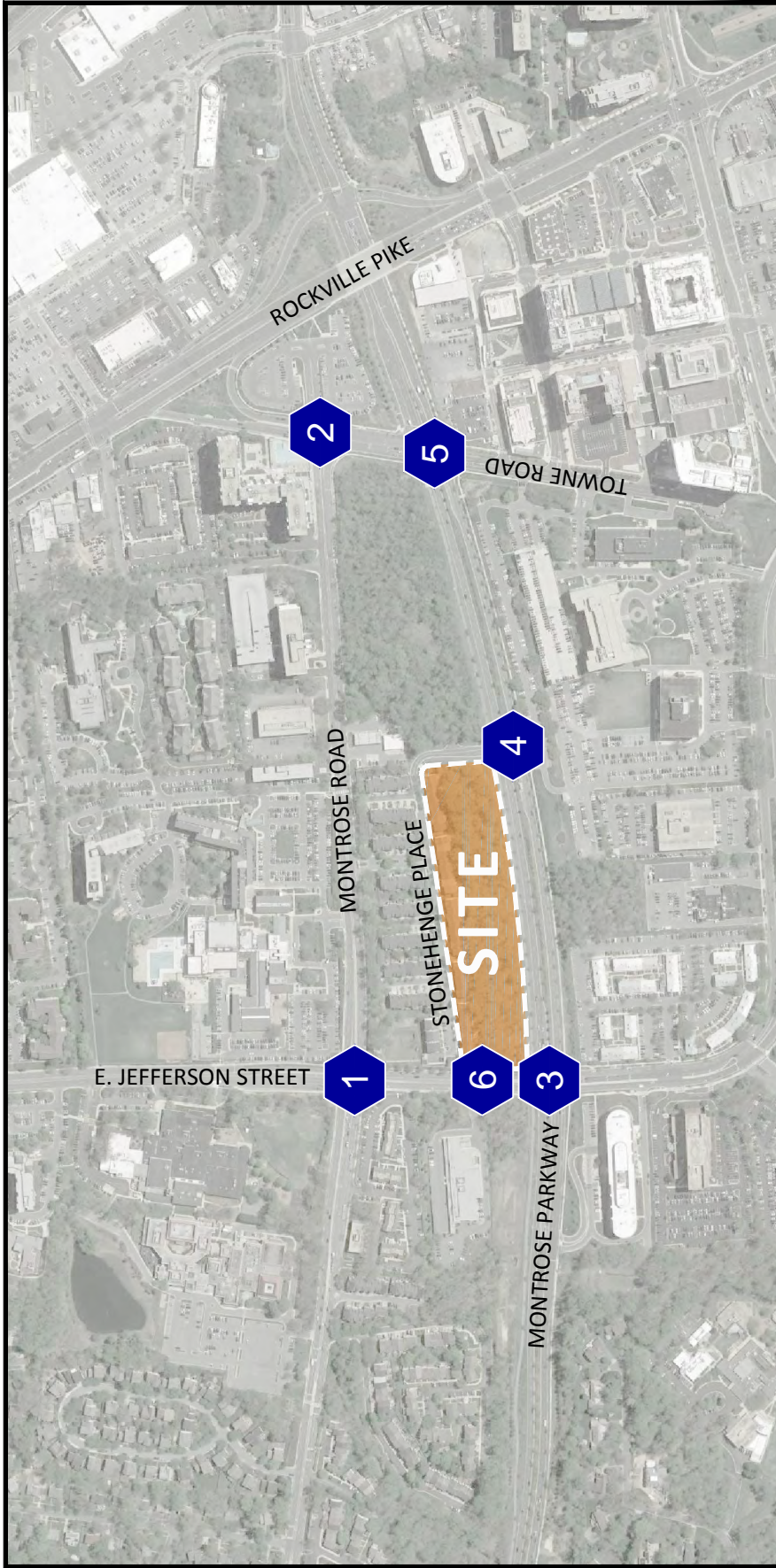
1. Trip generation based on ITE Trip Generation Manual 10th Edition
2. North Bethesda Policy Area



**Figure 9**  
Site Assignments

**NORTH**  
Wilgus Property  
North Bethesda, Maryland

AM PEAK HOUR  
PM PEAK HOUR  
000 / 000



**Figure 10**  
Total Future Peak Hour Traffic Volumes



## PEDESTRIAN AND BICYCLE IMPACT STATEMENT

This pedestrian and bicycle statement provides information on the pedestrian, bicycle access, and transit options in the study area. An inventory of Pedestrian, Bicycle, and Transit facilities is discussed below. Figure 11 shows the location of sidewalks, pedestrian signal heads, accessible ramps, and bus stops, within the study area.

### Sidewalks

Within the study area, sidewalks exist on both sides of E. Jefferson Street, Executive Boulevard, Montrose Parkway, and Towne Road. Sidewalks also exist on both sides of Montrose Road, until past the intersection with Towne Road. Sidewalks on the east side of East Jefferson Street are approximately six (6) feet wide, sidewalks on the west side of East Jefferson are approximately seven (7) feet wide and both are constructed with concrete. The sidewalks are generally provided with a landscape buffer between the sidewalk and roadway.

Montrose Parkway has a shared use path on the north side of the street and a sidewalk on the south side. The shared use path is approximately 10 feet in width and the sidewalk is approximately five (5) feet in width. They both have landscape buffers.

### Transit Facilities

In the immediate vicinity of the site, bus service is provided along East Jefferson Street and Montrose Road via "Ride On" Bus Route 5, 26, 42, and 81. The schedules can be found in Appendix G. There is also a park-and-ride lot near the intersection of Montrose and Towne Road with access to a Ride On 46 Bus stop.

#### Ride-On Bus Route 5

- Service between Twinbrook Metro Station & Silver Spring Station.
- From Twinbrook to Silver Spring
  - Monday through Friday - 5:40 AM to 1:05 AM
  - Saturday – 6:14 AM to 1:05 AM
  - Sunday – 6:14 AM to 1:05 AM
- From Silver Spring to Twinbrook
  - Monday through Friday – 5:00 AM to 12:20 AM
  - Saturday – 5:30 AM to 12:20 AM
  - Sunday – 5:30 AM to 12:20 AM

### Ride-On Bus Route 26

- Service between Glenmont (Metrorail Station) & Montgomery Mall Transit Center.
- From Glenmont to Montgomery Mall Transit Center
  - Monday through Friday – 4:56AM to 12:10 AM
  - Saturday – 5:12 AM to 12:08 AM
  - Sunday – 5:12 AM to 12:09 AM
- From Montgomery Mall Transit Center to Glenmont
  - Monday through Friday – 4:27 AM to 1:16 AM
  - Saturday – 6:15 AM to 1:15 AM
  - Sunday – 6:15 AM to 1:15 AM

### Ride-On Bus Route 42

- Service between White Flint (Metrorail Station) & Montgomery Mall Transit Center.
- From Glenmont to Montgomery Mall Transit Center
  - Monday through Friday – 5:42 AM to 8:13 PM
  - Saturday – 8:12 AM to 7:13 PM
- From Montgomery Mall Transit Center to Glenmont
  - Monday through Friday – 5:36 AM to 8:52 PM
  - Saturday – 8:37 AM to 7:52 PM

### Ride-On Bus Route 46

- Service between Montgomery College & Medical Center (Metrorail Station).
- From Montgomery College to Medical Center
  - Monday through Friday – 4:59 AM to 1:09 AM
  - Saturday – 5:15 AM to 12:26 AM
  - Sunday – 5:11 AM to 12:07 AM
- From Medical Center to Montgomery College
  - Monday through Friday – 5:41 AM to 1:41 AM
  - Saturday – 5:59 AM to 1:08 AM
  - Sunday – 6:00 AM to 12:42 AM

### Ride-On Bus Route 81

- Service between Rockville (Metrorail Station) & White Flint (Metrorail Station).
- From Rockville to White Flint
  - Monday through Friday – 6:00 AM to 7:08 PM
- From White Flint to Rockville
  - Monday through Friday – 6:05 AM to 7:36 PM

### Pedestrian Crossings

Of the six (6) study intersections, four (4) are signalized. Evaluations of the pedestrian crossing times at the signalized study intersections with crosswalks were undertaken based on the existing intersection geometry and traffic signal timing information provided by MCDOT. A summary of the results of the evaluation is discussed below.

Montrose Road/East Jefferson Street - Pedestrian crossings are provided on all legs of this intersection. Pedestrian refuge islands are provided between channelized right turn lanes for the eastbound and southbound right turning movements. All crosswalk markings are visible and pedestrian signals are provided in each direction. There are ADA ramps located at each sidewalk access point.

Montrose Road/Towne Road - Pedestrian crossings are provided on all legs of this intersection. Pedestrian refuge islands are provided between channelized right turn lanes for the eastbound and southbound right turning movements. All crosswalk markings are visible and pedestrian signals and push buttons are provided. There are ADA ramps located at each sidewalk access point.

Montrose Parkway/East Jefferson Street - Pedestrian crossings are provided on all legs of this intersection. Pedestrian refuge islands are provided between channelized right turn lanes for the eastbound and southbound right turning movements. All crosswalk markings are visible and pedestrian push buttons are provided. There are ADA ramps located at each sidewalk access point.

Montrose Parkway/Towne Road - Pedestrian crossings are provided on all legs of this intersection. Pedestrian refuge islands are provided between channelized right turn lanes for the eastbound and southbound right turning movements. All crosswalk markings are visible and pedestrian signals and push buttons are provided. There are ADA ramps located at each sidewalk access point.

The crossing times were reviewed for the “walk” and “flashing don’t walk” indicators. The “don’t walk” indicator illuminates when the respective green cycle changes to amber. The pedestrian then has the amber phase of the cycle to complete the crossing (an additional 5.5 to 7 seconds.)

As shown in Table 5, sufficient time is provided to cross all legs within the marked crosswalks at based on existing pedestrian timings and a walking speed of 3.5 feet per second for the four (4) signalized intersections.

### Streetlight Inventory

Street lights are provided at several locations along the local roads extending to close proximity of study site area. East Jefferson Street, Montrose Road and Montrose Parkway both have



street lights along the roads. Street lighting will be provided throughout the proposed development in accordance with the current Montgomery County lighting standards.

### Bicycle Facilities

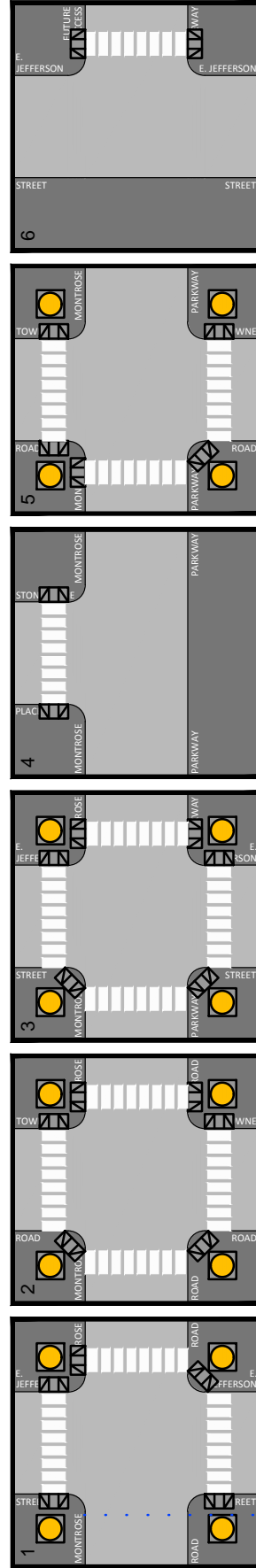
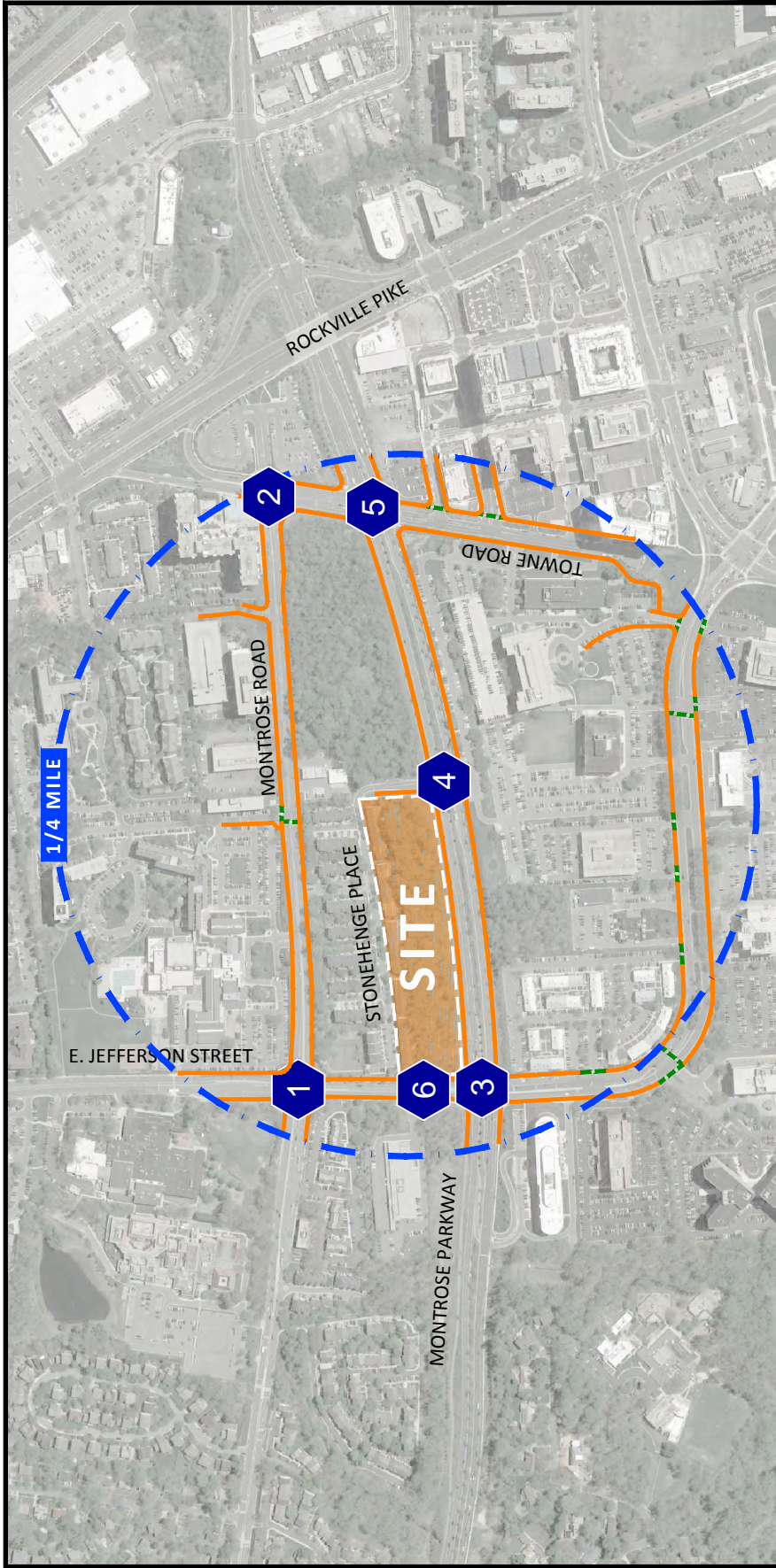
Based on information obtained from the M-NCPPC website, the Montgomery Countywide Bikeways Master Plan designates several existing bikeway facilities within the vicinity of the site. A paved off-road trail exists westbound along Montrose Parkway and a separated bikeway exists along Montrose Parkway from Tildenwood Drive to past Randolph Road, on Bou Avenue, and on an exit ramp from Rockville Pike to Montrose Parkway. Separated bikeways are planned on Montrose Road, East Jefferson Street, Executive Boulevard, Towne Road, Rockville Pike, Old Georgetown Road, Marinelli Road, and a connection between Marinelli Road and Old Georgetown Road. See Figure 12 for approximate locations of existing bikeway facilities.

**Table 5**  
Willigis Property  
Pedestrian Crossing Time Evaluation (1)

Pedestrian Crossing	Leg of Intersection	Distance of Pedestrian Crossing <sup>2</sup> (feet)	Time needed for 3.5 feet/second	Clearance Time Reduction (seconds)	Net Crossing Time Required <sup>3</sup> (seconds)	Walk (second)	Flash Don't Walk (seconds)	Total Walk Time <sup>4</sup> (seconds)	Adequate time provided at rate of 3.5 feet/second? at rate of 3.5 feet/second? With respect to Walk + Flash Don't Walk	Adequate time provided at rate of 3.5 feet/second? With respect to Flash Don't Walk
<b>1: Montrose Road/East Jefferson Street</b>	North	105	30.0	6	24.0	7	29	36	Yes	Yes
	South	60	17.0	6	11.0	7	29	36	Yes	Yes
	East	70	20.0	6	14.0	7	17	24	Yes	Yes
	North	80	23.0	7	16.0	7	15	22	Yes	No
	South	75	21.0	7	14.0	7	15	22	Yes	Yes
	East	50	14.0	6	8.0	7	24	31	Yes	Yes
	West	45	13.0	6	7.0	7	24	31	Yes	Yes
	North	65	19.0	6	13.0	7	16	23	Yes	Yes
	South	75	21.0	6	15.0	7	16	23	Yes	Yes
<b>2: Montrose Road/Towne Road</b>	East	80	23.0	6.5	16.5	7	18	25	Yes	Yes
	West	80	23.0	6.5	16.5	7	18	25	Yes	Yes
	North	105	30.0	6.5	23.5	7	24	31	Yes	Yes
<b>3: Montrose Parkway/East Jefferson Street</b>	South	60	17.0	6.5	10.5	7	12	19	Yes	Yes
	West	105	30.0	8	22.0	7	24	31	Yes	Yes
	North	105	30.0	8	22.0	7	24	31	Yes	Yes
<b>5: Montrose Parkway/Towne Road</b>	South	60	17.0	6.5	10.5	7	12	19	Yes	Yes
	West	105	30.0	8	22.0	7	24	31	Yes	Yes
	North	105	30.0	8	22.0	7	24	31	Yes	Yes

**Notes:**

- Based on existing signal timings obtained from the State Highway Administration or field observations
- Distance from curb to far edge of traveled lane.
- Net Crossing Time Required = Time needed for Crossing - Clearance Time
- Total Walk = Walk + Flash Do Not Walk Time
- No pedestrian timing in the data provided by Montgomery County DOT
- Crosswalk distance measured in reference to the median refuge



NORTH  
 Wilgus Property  
 North Bethesda, Maryland

- PEDESTRIAN CROSSWALK
- SIDEWALK
- PEDESTRIAN CROSSWALK
- ADA RAMP
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD W/ PUSH BUTTON

**Figure 11**  
Pedestrian Infrastructure

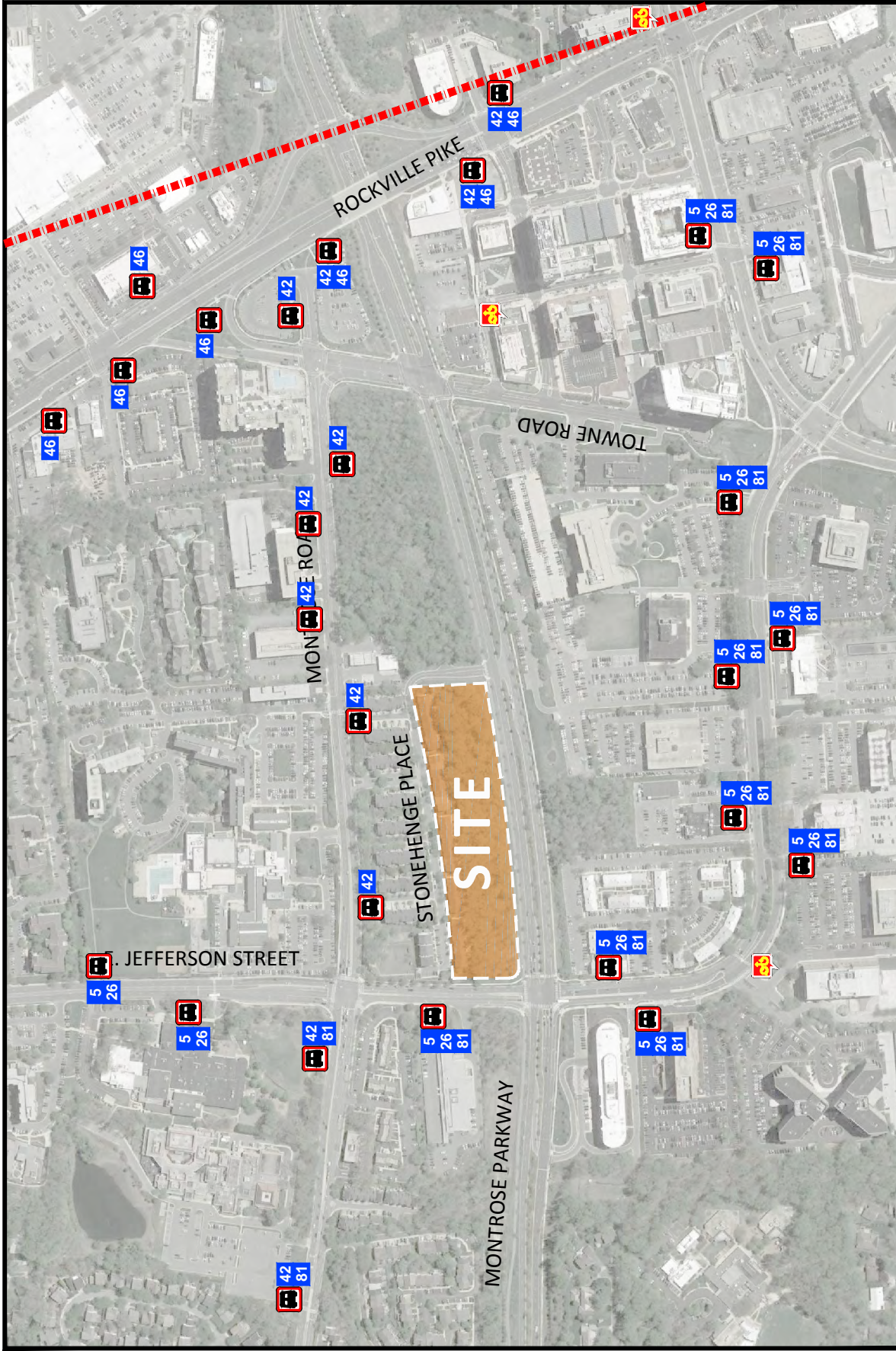


Figure 12  
Non-Auto Transportation Facilities

← NORTH  
Wiligus Property  
North Bethesda, Maryland

## CONCLUSIONS

The conclusions of this study are as follows:

1. All study intersections currently operate within their respective Policy Area congestion standard delay threshold during AM and PM peak hours.
2. Nine (9) background projects will generate 4,293 new AM peak hour trips and 6,143 new PM peak hour trips. However, not all of these trips will use each of the study intersections.
3. With the addition of traffic generated by the background developments, all of the study intersections would operate within their respective congestion standard during the AM and PM peak hours with the exception of Montrose Parkway/E. Jefferson Street, which will exceed the policy area standard with existing signal timings.
4. This study considers the development of 68 townhomes. Based on ITE trip generation rates and the LATR Guidelines, the Project would add 27 AM peak hour vehicular trips and 35 PM peak hour vehicular trips to the adjacent road network.
5. With the Project all of the study intersections would continue to operate within their respective Policy Area congestion standard delay threshold during the AM and PM peak hours with the exception of Montrose Parkway/E. Jefferson Street. With adjustment of the signal timings to reflect the shifts in future traffic patterns this intersection will operate within the Policy Area standard.
6. The proposed Project passes the Motor Vehicle System Adequacy test.

**APPENDIX A**  
**SCOPING LETTER AGREEMENT**



Local Area Transportation Review

TRANSPORTATION IMPACT STUDY SCOPE OF WORK AGREEMENT

Contact Information				
Transportation Consultant (company, contact name, email, and phone number)	Wells + Associates, LLC Barbara Mosier, <a href="mailto:bjmosier@wellsandassociates.com">bjmosier@wellsandassociates.com</a> , 301.971.3425 Nancy Randall, <a href="mailto:amrandall@wellsandassociates.com">amrandall@wellsandassociates.com</a> , 301.971.3415			
Name of Applicant / Developer	Willco Construction Company, Inc.			
Project Information <i>Include Tables/Graphics, As Needed</i>				
Project Name (include plan no. if known)	Wilgus Property East			
Project Location (include address if known)	7811 Montrose Road			
Policy Area(s) (subdivision staging policy map)	North Bethesda	Master Plan(s) / Sector Plan Area(s)	North Bethesda/Garrett Park White Flint 2 Sector Plan	
Application Type(s)	<input checked="" type="checkbox"/> Preliminary Plan	<input type="checkbox"/> Site Plan	<input type="checkbox"/> Sketch/Concept/Pre-Preliminary (Optional)	<input checked="" type="checkbox"/> Amendment
	<input type="checkbox"/> Conditional Use (formerly special exception)	<input type="checkbox"/> Local Map Amendment	<input type="checkbox"/> APF at Building Permit	<input type="checkbox"/> Other: _____
Project Description & Previous Approvals  (proposed land uses, zoning, no. of units, square footage, construction phasing, prior approvals and proposals, existing uses, site operations, year built, status of Adequate Public Facilities [APF], other relevant info)	The applicant proposes to construct 64 townhomes for a residential development. The property is bounded by E. Jefferson Street to the west, Stonehenge Place to the north and east and Montrose parkway to the south in the North Bethesda area of Montgomery County, Maryland.			
1.Site Access  (proposed access location(s), existing/adjacent/opposite curb cuts, interparcel connections, access configurations and restrictions, internal circulation, private roads, parking/loading areas, other relevant info)	Access to the property will be provided at two access points which are located on East Jefferson Street and Stonehenge Place north of Montrose Parkway.			

<b>2. Transportation Analysis Requirement</b>	<input checked="" type="checkbox"/> <b>Transportation Impact Study</b> Generates <u>50 or more</u> total weekday peak hour person trips (vehicular, transit, bicycle, and/or pedestrian) with no reductions other than a credit for existing developments over 12 years old, <u>AND</u> is outside of the White Flint and White Oak Policy Areas. Fill out remainder of this form and include in transportation impact study appendix.		<input type="checkbox"/> <b>Transportation Study Exemption Statement</b> Generates <u>49 or fewer</u> total weekday peak hour person trips (vehicular, transit, bicycle, and/or pedestrian) with no reductions other than a credit for existing developments over 12 years old, <u>OR</u> within White Flint and White Oak Policy Areas. Fill out PAR and trip generation sections below, and include with exemption statement.		
<b>3. Policy Area Review (PAR)</b>  Only for projects filed before 1/1/17	<input type="checkbox"/> <b>TPAR</b> (1/1/13 – 12/31/16) 0, 25, 50%: _____ (TPAR = Transportation Policy Area Review)	<input type="checkbox"/> <b>PAMR</b> (11/15/07 - 12/31/12) 0-50%: _____ (PAMR = Policy Area Mobility Review)	<input checked="" type="checkbox"/> <b>Exempt</b> (no square footage increase or fewer than 3 new trips) <b>or</b> 1/1/17 or later) <input type="checkbox"/> <b>No PAR</b> (7/1/03 – 11/14/07) <input type="checkbox"/> <b>PATR</b> (before 6/30/03) (PATR = Policy Area Transportation Review)		
<b>4. Transportation Mitigation Agreement (TMAg) Required?</b>	<input type="checkbox"/> No	<input checked="" type="checkbox"/> <b>Yes</b> (25+ Employees and in Transportation Management District [TMD])		<input type="checkbox"/> <b>Amend Existing TMAg</b>	
<b>5. Established Transportation Management District (TMD)?</b>	<input type="checkbox"/> No	<input checked="" type="checkbox"/> <b>Yes</b> TMD Name: North Bethesda			
<b>Transportation Impact Study Assumptions</b> <i>Include Tables/Graphics, As Needed</i>					
<b>6. Study Years / Phases</b>	Existing Year: 2018		Phases / Build-out Year(s): Not Yet Known		
<b>7. Study Periods</b>	<input checked="" type="checkbox"/> AM <input checked="" type="checkbox"/> PM <input type="checkbox"/> Mid-day <input type="checkbox"/> Saturday <input type="checkbox"/> Sunday <input type="checkbox"/> Other: _____				
<b>8. Study Intersections</b> (For projects generating 50 or more person trips, list all signalized & significant unsignalized intersections, and site driveways traffic counts <b>must be collected within 12-months of completed and accepted application</b> )	# of tiers of intersections to study (refer current LATR Guidelines): 1 _____ <i>For the purpose of determining the number of tiers of study intersections, trip calculation for the subject site should also include nearby unbuilt properties in common ownership. No trip reductions should be taken in this calculation other than a credit for existing developments over 12 years old.</i>				
1) Montrose Road/E. Jefferson Street		7)			
2) Montrose Road/Town Road (formally Hoya Street)		8)			
3) Montrose Parkway/E. Jefferson Street		9)			
4) Montrose Parkway/Stonehenge Place		10)			
5) Montrose Parkway/Town Road (formally Hoya Street)		11)			
6)		add more rows if necessary			
<b>9. Trip Generation</b>  (clearly cite sources and methodology including use of average rates vs. equation; include trip generation for existing site, current approvals, proposed uses, and net changes)	<b>Total Person Trips</b>  48/61 Total	<b>Vehicle Trips*</b> (Auto Driver)  26/33	<b>Transit Trips*</b>  4/5	<b>Walking Trips*</b> (non-motorized + transit)  10/13	<b>Bicycling Trips*</b> (non-motorized)  6/8
<i>* Only required if total peak hour person trips are 50 or more in either the AM or PM peak hour. Sum</i>					



	<i>of all vehicle, transit, and non-motorized trips shall be the equivalent of total person trips. Use table at the end of the form to show all calculations and assumptions for mode breakout.</i>													
<b>10. Trip Reductions</b> (include justification and supporting documentation for internal capture, pass-by, diverted, Transportation Demand Management)	N/A													
<b>11. Trip Distribution %</b> (include a map of the proposed project in addition to a list or table)	<table border="0"> <thead> <tr> <th colspan="2">To/From</th> </tr> </thead> <tbody> <tr> <td>North via E Jefferson Street/MD 355</td> <td>20%</td> </tr> <tr> <td>South via Old Georgetown Road/MD 355</td> <td>36%</td> </tr> <tr> <td>East via Montrose Parkway/Randolph Rd</td> <td>14%</td> </tr> <tr> <td>West via Montrose Parkway/Montrose Road</td> <td><u>30%</u></td> </tr> <tr> <td></td> <td>100%</td> </tr> </tbody> </table>		To/From		North via E Jefferson Street/MD 355	20%	South via Old Georgetown Road/MD 355	36%	East via Montrose Parkway/Randolph Rd	14%	West via Montrose Parkway/Montrose Road	<u>30%</u>		100%
To/From														
North via E Jefferson Street/MD 355	20%													
South via Old Georgetown Road/MD 355	36%													
East via Montrose Parkway/Randolph Rd	14%													
West via Montrose Parkway/Montrose Road	<u>30%</u>													
	100%													
<b>12. Pipeline Developments to be considered as background traffic</b> (include name, plan #, land uses, and sizes for approved but unbuilt developments or concurrently pending applications; info can be obtained from the M-NCPPC Pipeline website: - website is updated quarterly)	Pike & Rose Phase II – 820130120 North Bethesda Town Center (LCOR) Gables White Flint-120150010 Saul Center White Flint West-81995036G Twinbrook Quarter (City of Rockville) 6000 Executive Blvd - 81973005C North Bethesda Market II-120120060  See attached for quantities.													
<b>13. Pipeline Transportation Projects to be considered as background condition</b> (fully funded for construction in County Capital Improvement Program, State Consolidated Transportation Program, developer projects, etc. within the next 6 years)	The intersection of Executive Boulevard/Old Georgetown Road is planned to be realigned and connect to a new road, Towne Road, as part of the White Flint Sector Plan with a proposed construction in 12-18 months.													

Preliminary Mitigation Analysis		<i>*Refer to the LATR Guidelines for details on how to mitigate</i>	
14.Vehicular Analysis	x Vehicular Analysis Anticipated (Vehicular mitigation to be determined after study)	<ul style="list-style-type: none"> <li>• TEST: HCM Analysis is required to be provided for all intersections analyzed in studies for: 1) "Red &amp; Orange" policy areas, and 2) intersections with a CLV of more than 1,350 in "Yellow &amp; Green" policy areas. 3) <b>CLV analysis required for all intersections regardless of policy area. CLV assessment and signal timing worksheets are to be included in the study appendix.</b></li> <li>• MITIGATION: Required if HCM delay analyses exceed policy area standard</li> </ul>	
15.Pedestrian Analysis	<input type="checkbox"/> Pedestrian Mitigation Anticipated	<ul style="list-style-type: none"> <li>• TEST: If the plan generates 50 or more pedestrian peak hour trips, mitigation of surrounding pedestrian conditions is required</li> <li>• MITIGATION: Required if ADA non-compliance issues within 500 foot radius of site boundary and if pedestrian crosswalk delay at LATR intersections within 500 feet of site boundary is lower than Level of Service (LOS) D</li> </ul>	
16.Bicycle Analysis	<input type="checkbox"/> Bicycle Mitigation Anticipated	<ul style="list-style-type: none"> <li>• TEST: If the plan generates 50 or more bicycle peak hour trips and is within 0.25 miles of an existing educational institution or existing/planned bikeshare station, mitigation of surrounding bicycle conditions is required</li> <li>• MITIGATION: Required to make improvements to provide a low Level of Traffic Stress to any existing similar facility within 750 feet of the site boundary; Alternatively, project may provide a master planned improvement that provides an equivalent improvement in the level of traffic stress for cyclists</li> </ul>	
17.Transit Analysis	<input type="checkbox"/> Transit Mitigation Anticipated	<ul style="list-style-type: none"> <li>• TEST: If the plan generates 50 or more transit peak hour trips and the peak load of bus routes at bus stops within 1,000 feet of site boundary exceeds (or is worse than) peak load of LOS D (1.25 transit riders per seat during the peak period in the peak direction), mitigation of transit conditions is required</li> <li>• MITIGATION: Required to provide or fund improvements that would mitigate the trips exceeding the standard that are attributable to the development</li> </ul>	
Additional Analysis or Software Required	<input type="checkbox"/> Queuing Analysis <input type="checkbox"/> Signal Warrant Analysis <input type="checkbox"/> Weaving/Merge Analysis	<input type="checkbox"/> Accident Analysis x Synchro <input type="checkbox"/> SIDRA	<input type="checkbox"/> VISSIM <input type="checkbox"/> CORSIM <input type="checkbox"/> Other _____

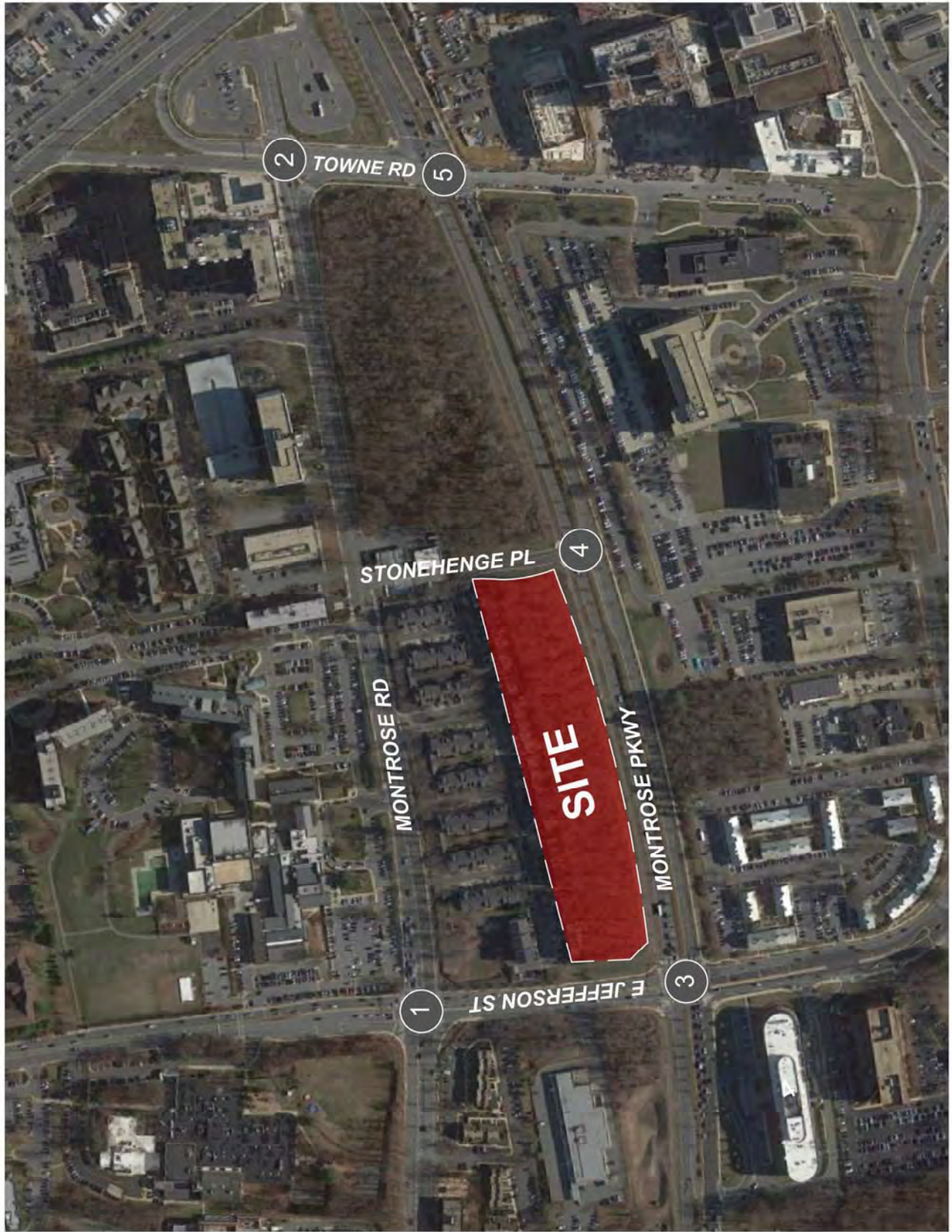
### **M-NCPPC Clarifications**

- Transportation impact study will comply with all other requirements of the LATR Guidelines not listed on this form.
- If physical improvements are proposed as mitigation, the transportation impact study will demonstrate feasibility with regards to right-of-way and utility relocation (at a minimum).
- In the event that the development proposal significantly changes after this transportation impact study scope has been agreed to, the Applicant will work with M-NCPPC staff to amend the scope to accurately reflect the new proposal.
- A receipt from MCDOT showing that the transportation impact study review fee has been paid will be provided to M-NCPPC DARC at the time the development application is submitted.
- Minimum of seven paper copies (more if near the County line or an incorporated City) and two PDF copies of the transportation impact study and appendices will be provided.

### **Additional Assumptions / Special Circumstances for Discussion**

<b>Site Trip Generation Estimate Worksheet</b>				
<b>Step 1: Vehicle Trips – Residential (proposed)</b>				
ITE Land use Code	220			
Development Size	64			
ITE trip generation estimate formula/rate* AM	$\text{Ln}(T)=0.95 * \text{Ln}(64)-0.51$	Total AM Vehicle Trips	31	
ITE Trip generation estimate formula/rate* PM	$\text{Ln}(T)=0.89 * \text{Ln}(64)-0.02$	Total PM Vehicle Trips	40	
<b>Step 2: Policy Area Conversion</b>				
Policy Area # & Name	22 – North Bethesda	Trip Adjustment Factor	__83__%	
Applied Policy Area Adjusted Value AM	26			
Applied Policy Area Adjusted Value PM	33			
<b>Step 3: Mode Split</b>				
			AM	PM
Auto Driver	__53.8__%	Results	26	33
Auto Passenger	__25.9__%	Results	12	15
Transit	__8.00__%	Results	4	5
Walking (transit + non-motorized)	__NA__%	Results	10	13
Bicycling (non-motorized)	__12.3__%	Results	6	8

Complete one of these tables for EACH use included in the application. Enter results into "Transportation Impacts Analysis" section of the form.



Wilgus Property  
 Pipeline Development Quantities

---

Pipeline Development	Land Use	Amount Units
1 Mid Pike Plaza (Pike & Rose) <sup>3</sup>	Office	955,688 SF
	Apartments	1,107 DU
	Hotel	150 RM
	Retail	264,633 SF
2 North Bethesda Town Center / LCOR <sup>5</sup>	Apartments	697 DU
	Office	795,378 SF
	Retail	140,791 SF
3 Gables at White Flint	Apartment	476 DU
	Retail	31,000 SF
4 Saul Center White Flint	Apartment	655 DU
	Office	175,000 SF
	Retail	29,000 SF
5 Twinbrook Quarter	Office	431,440 SF
	High Rise Apartment	1,865 DU
	Retail	472,950 SF
	<i>Less Existing Retail</i>	<u>246,000 SF</u>
	Net Increase Retail	226,950 SF
6 East Village at North Bethesda Gateway	Apartments	614 DU
	Retail	30,572 SF
7 6000 Executive Boulevard	Active Adult Residential	324 DU
	Office	292,473 SF
	Retail	9,400 SF

---

## Barbara J. Mosier

---

**From:** Axler, Ed <ed.axler@montgomeryplanning.org>  
**Sent:** Tuesday, July 10, 2018 4:34 PM  
**To:** Barbara J. Mosier  
**Cc:** Sanders, Carrie; Yearwood, Nkosi; Butler, Patrick; Freer, Walker  
**Subject:** FW: Wilgus Property - Scope Form  
**Attachments:** LATR Scope Form - Wilgus Property 7.3.2018.pdf; Wilgus background -- Tilden Middle School traffic study.pdf

Barbara

Thank you for the proposed traffic study scope. I reviewed the scope and have the following comments:

As a site located in the North Bethesda Transportation Management District, a traffic mitigation agreement is required to participate in the North Bethesda Transportation Management District because the 64 townhouses will be part of a larger mixed-used development extending to the east along Montrose Parkway with 25 or more employees.

The proposed "trip distribution %" north of 20% is too high given the two-lane streets in NW quadrant of Montrose Road & MD 355, while the 30% west towards I-270 is too low. I suggest reducing the 20% north to 15% and increasing the 30% west to 35%.

Please note the updated background/pipeline developments:

1. Pike & Rose/Mid Pike Plaza (Preliminary Plan #120120020):

- 1,107 apts. unbuilt (& 486 apts. built) with of the approved 1,603 midrise apts.,
- 1,155,688 sq. ft. unbuilt & (approx. 200,000 sq. ft. built) of the approved general office,
- 35,800 sq. ft. unbuilt ( 27,000 sq. ft. built) of the approved 62,800 sq. ft. restaurant,
- unbuilt/approved 90,000 sq. ft. hotel,
- Built the movie theater that is part of the approved 61,700 sq. ft. cultural/entertainment/recreation,
- Built the approved 46,500 sq. ft. health club,
- Built 71,167 sq. ft. with 228,833 sq. ft. unbuilt of the approved 300,000 sq. ft. general retail,

2. "LCOR"/North Bethesda Town Center, APF review at Pre-Preliminary Plan 720040010: 697 apts. unbuilt of the approved 1,350 midrise apts., 795,378 sq. ft. unbuilt of approved ## sq. ft. general office, & 140,791 sq. ft. unbuilt of the approved # sq. ft. of general retail.

3. Gables at White Flint (Preliminary Plan #120150010): 476 mid-rise apts. & 31,000 sq. ft. retail

4. Saul Center White Flint West (Preliminary Plan #120160080): 655 mid-rise apts. & 175,000 sq. ft. office & 29,000 sq. ft. (reduction from existing 38,050 sq. ft.) retail

5. Twinbrook Quarter: (confirm with City of Rockville)

6. East Village at North Bethesda Gateway (Preliminary Plan #120140240): 614 mid-rise apts. & 35,000 sq. ft. retail (do not include as background development because this site is located on east side of MD 355)

7. 6000 Executive Boulevard (320180140) & Washington Science Center (Site Plan #81973005C): unbuilt 364 senior/adult multi-family mid-rise apts. & up to 547,052 sq. ft. office & 9,400 sq. ft. retail except 128,572 sf. Ft. of built office

**Plus:**

8. North Bethesda Market II (Preliminary Plan #12012006A): 470 mid-rise apts., 190,188 sq. ft. retail, 13,500 sq. ft. restaurants, & 44,840 sq. ft. office (located on the north side of Executive Boulevard between MD 355 & Woodglen Drive)

9. Rock Terrace School/Tilden Middle School (Mandatory Referral #2017014): Redevelopment temporary “holding” school site in the SW corner of Tilden Road/Marcliff Road & relocate the existing Tilden Middle School (on Old Georgetown Road) for an increase from 797 to 1,600 students.

Note that all the pipeline developments except No. 1 (LCOR) & No. 9 (Tilden Middle School) were approved under the 2010 White Flint Sector Plan and has or will pay the White Flint Special Tax in lieu of submitting a traffic study to satisfy the LATR test in White Flint Policy Area. Refer to the attached relevant pages from the traffic study for the Tilden Middle School.

Feel free to contact me with any questions.

Ed  
Ed Axler  
Transportation Master Planner  
Area 2 Division, Montgomery County Planning Department, M-NCPPC  
8787 Georgia Ave, Silver Spring, MD 20910-3760  
voice=301-495-4536

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**From:** Barbara J. Mosier [<mailto:bjmosier@wellsandassociates.com>]

**Sent:** Tuesday, July 03, 2018 4:43 PM

**To:** Axler, Ed <[ed.axler@montgomeryplanning.org](mailto:ed.axler@montgomeryplanning.org)>

**Subject:** Wilgus Property - Scope Form

Good Afternoon Ed,

Please find attached a scope form and supporting documents for the Wilgus Property, in the North Bethesda policy area, just outside of the White Flint boundary for your review.

Please feel free to call or email me if you have any questions or need any additional information.

I hope you have a pleasant 4<sup>th</sup> of July.

Thanks,

Barbara

**Barbara J. Mosier, P.E., PTOE | Senior Associate**

**WELLS + ASSOCIATES**

1110 Bonifant Street, Suite 210 | Silver Spring, MD 20910

D: 301.971.3425 | M: 412.478.6437 | O: 301.448.1333

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**LOCAL AREA TRANSPORTATION REVIEW  
ROCK TERRACE SCHOOL/TILDEN MIDDLE SCHOOL  
MONTGOMERY COUNTY, MARYLAND**

—————

**Prepared For:  
Montgomery County Public Schools**

**RECEIVED**

MAY - 1 2017

Montgomery County  
Planning Department

**April 24, 2017**

**Project Manager: David A. Nelson, P.E., P.T.O.E.  
Mike Nalepa - Street Traffic Studies, Ltd.**

**STS Job No.: 6410**

## SITE TRAFFIC ANALYSIS

The existing Tilden Middle School located along Old Georgetown Road near Tuckerman Lane will be relocated to a new facility at the Tilden Lane/Marcliff Road intersection. The new school will replace the existing Tilden Holding Center and consist of the Tilden Middle School with a core capacity of 1500 students and the Rock Terrace School with a capacity for 80 to 120 special needs students for a total capacity of 1600 students.

Access to the site will be provided via directional access points on Tilden Lane which will serve as the primary access points for the Tilden Middle School and two full movement access points on Marcliff Road. One of the Marcliff Road access points will serve primarily as the bus loop access, while the second access will serve the Rock Terrace School and staff parking.

### Trip Generation Analysis

Since the Rock Terrace School and Tilden Middle School does not currently exist at this location, a trip generation study was conducted at the existing Tilden Middle School along Old Georgetown Road. In addition, driveway counts were conducted at the existing Tilden Holding Center to determine how many trips are currently generated by the site.

The next step taken was to derive trip generation factors for the site based on the available data. The proposed Rock Terrace School/Tilden Middle School will have a core capacity of 1600 students. The school will replace the existing Tilden Middle School and maintain the existing school boundaries. The existing Tilden Middle School has a current enrollment of 797 students so this proposal will increase the student capacity by 803 students. Further, the proposed school will replace the existing Tilden Holding Center facility. The existing access points to the Tilden Middle School and the Tilden Center were counted and the trips generated by the existing uses are shown in Table 5.

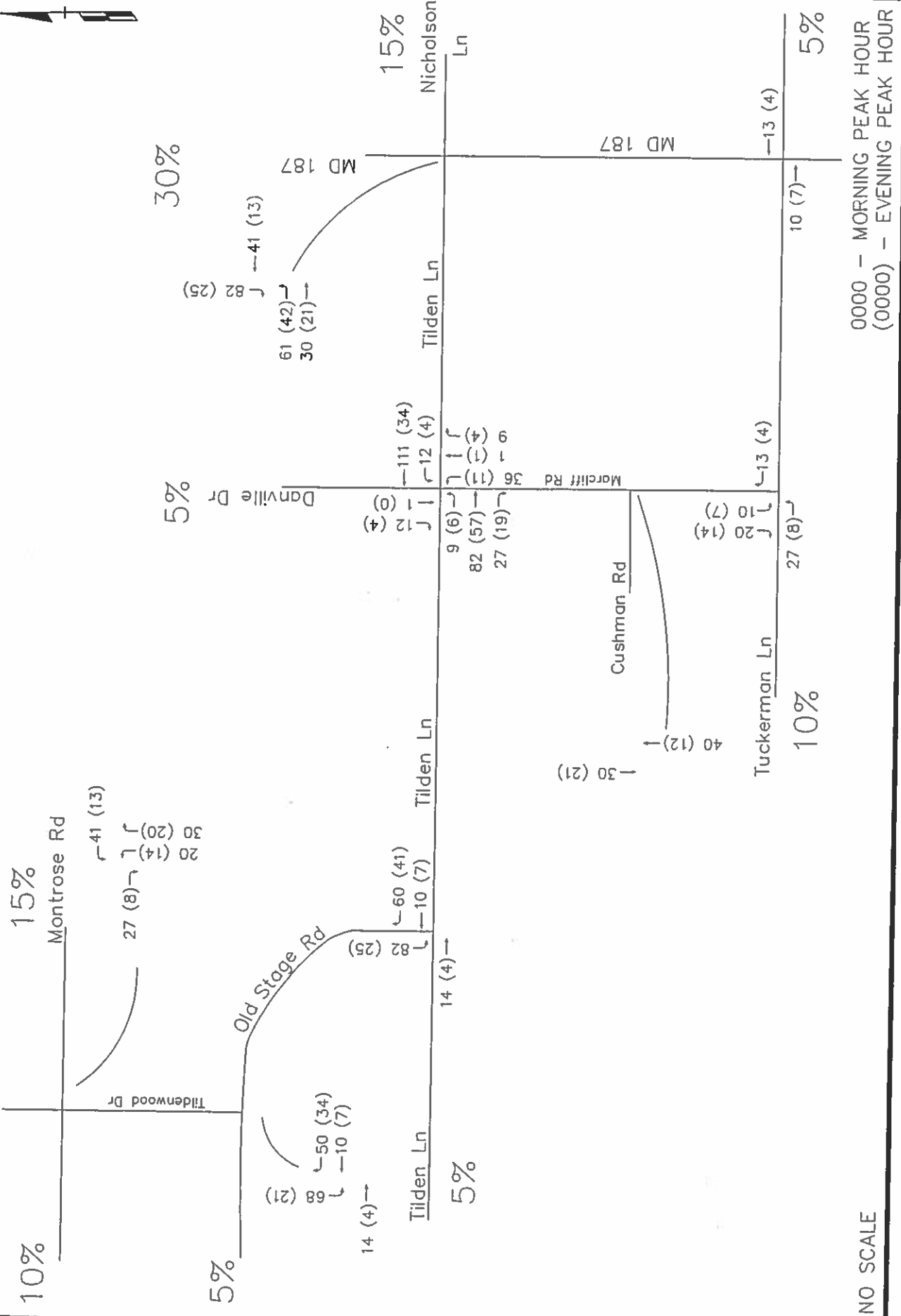
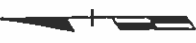
**TABLE 5  
TRIP GENERATION  
EXISTING TILDEN MIDDLE SCHOOL/TILDEN HOLDING CENTER**

<u>LAND USE</u>	<u>MORNING PEAK HOUR</u>			<u>EVENING PEAK HOUR</u>		
	<u>IN</u>	<u>OUT</u>	<u>TOTAL</u>	<u>IN</u>	<u>OUT</u>	<u>TOTAL</u>
Existing MS Trips						
Trips/797 Students	292	224	516	105	140	245
Trips/Student	0.37	0.28	0.65	0.13	0.18	0.31
Trips/1600 Students	592	448	1040	208	288	496
Existing Tilden Ctr Trips	28	23	- 51	20	9	29
Analyzed Trips	564	425	989	188	279	467
Net New Trips	272	201	473	83	139	222

The above trips were generated during the peak hours analyzed for this use, 7:30 to 8:30 AM and 2:30 to 3:30PM. Since the trips to the Tilden Holding Center will be removed once the proposed school is constructed the above trips were subtracted from the trips generated by the proposed school.

The new site generated trips were assigned to the road network based on the school boundary map contained in Appendix C. The New Site Generated Trips are shown in Exhibit 6. The existing trips generated by the Tilden Middle School were reassigned to the road network based on the existing trip distributions at the school driveways and the school boundary map. These adjustments are shown in Exhibit 7.

For the purposes of the Transit and Pedestrian/Bicyclist Analyses the Net New Trips were used in those calculations. The counts conducted at both the Tilden Middle School and the Tilden Training Center are contained in Appendix A.



NO SCALE

0000 - MORNING PEAK HOUR  
 (0000) - EVENING PEAK HOUR

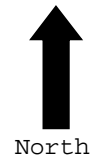
EXHIBIT 6  
 NEW SITE GENERATED TRIPS

**APPENDIX B**  
**VEHICLE, PEDESTRIAN, & BICYCLE COUNT DATA**

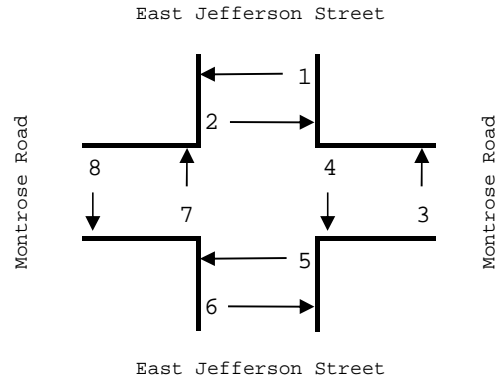


Wells & Associates, Inc  
 McLean, Virginia

Pedestrian Volume Survey



Project Name: Bethesda  
 Project Number: 10690  
 Location: Montgomery County, MD  
 Intersection: Montrose Rd. & East Jefferson St  
 Weather: rain  
 Date: 5/17/2018  
 Surveyor: Amar, Mure, Andrea & Jo



TIME	Movement							
	1	2	3	4	5	6	7	8
AM								
6:30-6:45	1				1			
6:45-7:00	1		1	1				
7:00-7:15								
7:15-7:30								
7:30-7:45				1				
7:45-8:00	1							
8:00-8:15								
8:15-8:30								
8:30-8:45								
8:45-9:00	1							
9:00-9:15								
9:15-9:30		1						
PM								
4:00-4:15	1		1	2	1	1		
4:15-4:30			2	2	6	1		
4:30-4:45	1		2			1		
4:45-5:00			2	2	2	1		
5:00-5:15	2		2	1	1			
5:15-5:30			1	2				
5:30-5:45			1	1				
5:45-6:00			2					
6:00-6:15	1		3			1		
6:15-6:30			1	4				
6:30-6:45			1					
6:45-7:00				2				

# Wells & Associates, Inc

McLean, Virginia

## Existing Traffic Count

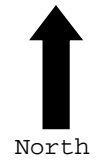
Time Period	Turning Movements																Total	PHF	Time Period					
	Southbound East Jefferson Street				Westbound Montrose Road				Northbound East Jefferson Street				Eastbound Montrose Road							North & South	East & West			
	1 Right	2 Thru	3 Left	Total	4 Right	5 Thru	6 Left	Total	7 Right	8 Thru	9 Left	Total	10 Right	11 Thru	12 Left	Total								
<b>AM</b>																								
6:30-6:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6:30-6:45
6:45-7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6:45-7:00
7:00-7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7:00-7:15
7:15-7:30	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	7:15-7:30
7:30-7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7:30-7:45
7:45-8:00	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	7:45-8:00
8:00-8:15	0	1	0	1	0	0	0	0	0	1	0	0	1	0	1	0	1	2	1	3	2	1	3	8:00-8:15
8:15-8:30	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	0	0	1	8:15-8:30
8:30-8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8:30-8:45
8:45-9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8:45-9:00
9:00-9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9:00-9:15
9:15-9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9:15-9:30
<b>3 Hour Totals</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>6</b>	<b>1</b>	<b>7</b>				<b>7</b>	
<b>1 Hour Totals</b>																								
6:30-7:30	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0.25	0	2	6:30-7:30
6:45-7:45	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0.25	0	2	6:45-7:45
7:00-8:00	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0.38	0	3	7:00-8:00
7:15-8:15	0	4	0	4	0	0	0	0	0	1	0	0	1	0	1	0	1	5	1	6	0.50	1	6	7:15-8:15
7:30-8:30	0	2	0	2	0	0	0	0	0	1	1	0	2	0	1	0	1	4	1	5	0.42	1	5	7:30-8:30
7:45-8:45	0	2	0	2	0	0	0	0	0	1	1	0	2	0	1	0	1	4	1	5	0.42	1	5	7:45-8:45
8:00-9:00	0	1	0	1	0	0	0	0	0	1	1	0	2	0	1	0	1	3	1	4	0.33	1	4	8:00-9:00
8:15-9:15	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	0.25	0	1	8:15-9:15
8:30-9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0	0	8:30-9:30
<b>AM Peak 7:15-8:15</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>1</b>	<b>6</b>	<b>0.50</b>		<b>6</b>	<b>AM Peak 7:15-8:15</b>	
<b>PM</b>																								
4:00-4:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4:00-4:15
4:15-4:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4:15-4:30
4:30-4:45	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	4:30-4:45
4:45-5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4:45-5:00
5:00-5:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5:00-5:15
5:15-5:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5:15-5:30
5:30-5:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5:30-5:45
5:45-6:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5:45-6:00
6:00-6:15	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	6:00-6:15
6:15-6:30	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	1	1	2	0	0	2	6:15-6:30
6:30-6:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6:30-6:45
6:45-7:00	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2	0	2	0	0	2	6:45-7:00
<b>3 Hour Totals</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>1</b>	<b>6</b>			<b>6</b>	
<b>1 Hour Totals</b>																								
4:00-5:00	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.25	0	1	4:00-5:00
4:15-5:15	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.25	0	1	4:15-5:15
4:30-5:30	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.25	0	1	4:30-5:30
4:45-5:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0	0	4:45-5:45
5:00-6:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0	0	5:00-6:00
5:15-6:15	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.25	0	1	5:15-6:15
5:30-6:30	0	1	0	1	0	0	0	0	0	0	1	0	1	0	1	0	1	2	1	3	0.38	1	3	5:30-6:30
5:45-6:45	0	1	0	1	0	0	0	0	0	0	1	0	1	0	1	0	1	2	1	3	0.38	1	3	5:45-6:45
6:00-7:00	0	1	0	1	0	0	0	0	0	0	3	0	3	0	1	0	1	4	1	5	0.63	1	5	6:00-7:00
<b>PM Peak 6:00-7:00</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>4</b>	<b>1</b>	<b>5</b>	<b>0.63</b>		<b>5</b>	<b>PM Peak 6:00-7:00</b>



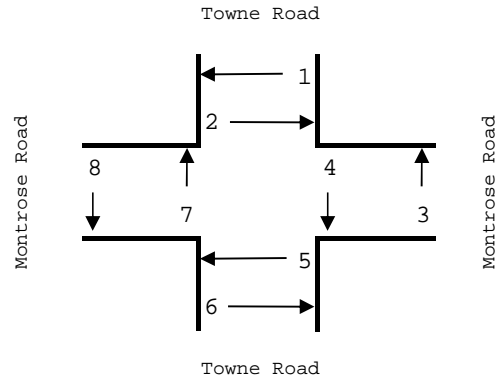


Wells & Associates, Inc  
 McLean, Virginia

Pedestrian Volume Survey



Project Name:	Wilgus Property
Project Number:	10690
Location:	Montgomery County, MD
Intersection:	Montrose Rd. & Towne Rd.
Weather:	rain
Date:	5/17/2018
Surveyor:	Majda



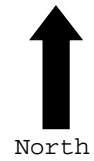
TIME	Movement							
	1	2	3	4	5	6	7	8
AM								
6:30-6:45		3						
6:45-7:00		1		1			1	
7:00-7:15		3	1					1
7:15-7:30		2						
7:30-7:45		4					1	
7:45-8:00		1						2
8:00-8:15		2					1	
8:15-8:30		2					1	
8:30-8:45		5	1	1				2
8:45-9:00		1			2	1	9	4
9:00-9:15	1	3					1	
9:15-9:30	1	1						
PM								
4:00-4:15	2	2					1	1
4:15-4:30	1	1					1	
4:30-4:45	5	2					4	1
4:45-5:00	4	1		1			1	
5:00-5:15	5						4	5
5:15-5:30	4	1					2	2
5:30-5:45	3	4					2	
5:45-6:00		1						
6:00-6:15	4				2		3	3
6:15-6:30	4	2						
6:30-6:45	5	1		1			1	
6:45-7:00	2						4	5



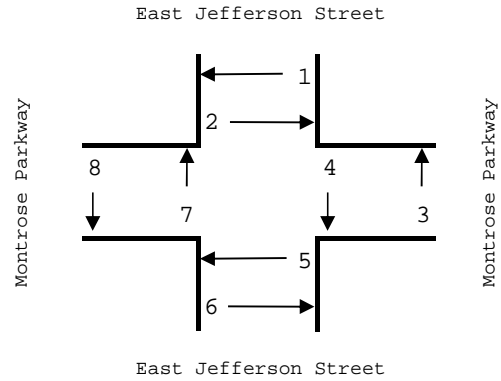


Wells & Associates, Inc  
 McLean, Virginia

Pedestrian Volume Survey



Project Name: Bethesda  
 Project Number: 10690  
 Location: Montgomery County, MD  
 Intersection: Montrose Pkwy. & East Jefferson  
 Weather: rain  
 Date: 5/17/2018  
 Surveyor: Anita, James, Inita & Maria



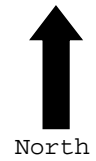
TIME	Movement							
	1	2	3	4	5	6	7	8
AM								
6:30-6:45		1						
6:45-7:00								
7:00-7:15	1		1	1			2	
7:15-7:30								
7:30-7:45		1		1	1			
7:45-8:00	1		2					
8:00-8:15					1			
8:15-8:30								
8:30-8:45	1			1	1			
8:45-9:00								
9:00-9:15	1			1	1			1
9:15-9:30					1			
PM								
4:00-4:15								
4:15-4:30								
4:30-4:45			3	1		1	1	2
4:45-5:00		1	1				3	
5:00-5:15								
5:15-5:30		1			1	3		
5:30-5:45					1	1		
5:45-6:00						1		2
6:00-6:15			3	1	3	2	2	
6:15-6:30								
6:30-6:45			1			1		
6:45-7:00	1			1				



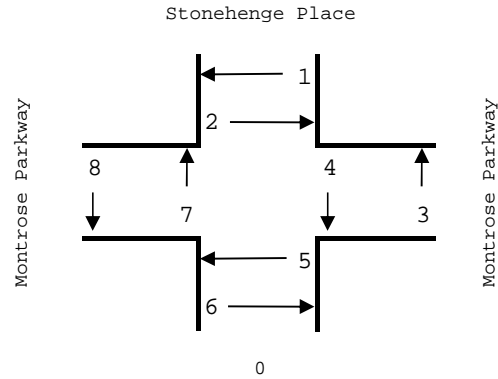


Wells & Associates, Inc  
 McLean, Virginia

Pedestrian Volume Survey



Project Name: Bethesda  
 Project Number: 10690  
 Location: Montgomery County, MD  
 Intersection: Montrose Pkwy. & Stonehenge Pl.  
 Weather: rain  
 Date: 5/17/2018  
 Surveyor: Laura & Irman



TIME	Movement							
	1	2	3	4	5	6	7	8
AM								
6:30-6:45		1						
6:45-7:00								
7:00-7:15								
7:15-7:30	1	1	1					
7:30-7:45		1						
7:45-8:00	1							
8:00-8:15					1			
8:15-8:30		1						
8:30-8:45	1							
8:45-9:00								
9:00-9:15								
9:15-9:30								
PM								
4:00-4:15								
4:15-4:30	1							
4:30-4:45						1		
4:45-5:00								
5:00-5:15		1						
5:15-5:30								
5:30-5:45					1	1		
5:45-6:00	1							
6:00-6:15					2	2		
6:15-6:30	3							
6:30-6:45		4				1		
6:45-7:00	1					1		

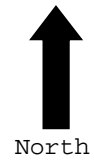




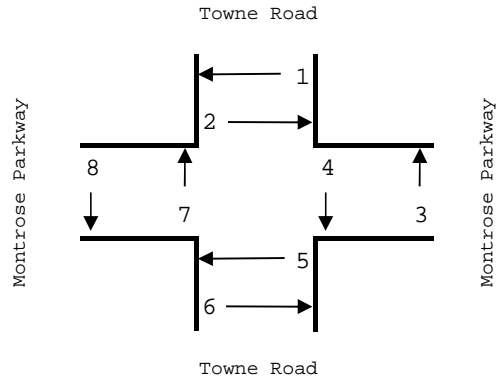


Wells & Associates, Inc  
 McLean, Virginia

Pedestrian Volume Survey



Project Name:	Bethesda
Project Number:	10690
Location:	Montgomery County, MD
Intersection:	Montrose Pkwy. & Towne Rd.
Weather:	rain
Date:	5/17/2018
Surveyor:	Admir



TIME	Movement							
	1	2	3	4	5	6	7	8
AM								
6:30-6:45		1						
6:45-7:00				1				
7:00-7:15								
7:15-7:30						1		3
7:30-7:45								1
7:45-8:00			1			1		2
8:00-8:15							1	
8:15-8:30							1	1
8:30-8:45								2
8:45-9:00	1		1	1			1	4
9:00-9:15							1	2
9:15-9:30					1			
PM								
4:00-4:15	1						2	
4:15-4:30				1				
4:30-4:45	1						2	1
4:45-5:00				1	1		2	
5:00-5:15				4	2	4	3	7
5:15-5:30				1	1	1	1	2
5:30-5:45							2	
5:45-6:00						2	2	1
6:00-6:15							3	1
6:15-6:30								
6:30-6:45	1				2	2	2	1
6:45-7:00							1	































**APPENDIX C**  
**HIGHWAY CAPACITY MANUAL (HCM) 2000 REPORTS – EXISTING**  
**CONDITIONS**

# HCM Signalized Intersection Capacity Analysis

## 1: E Jefferson Street & Montrose Road

























Existing AM.syn

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 			 			 			 	 
Traffic Volume (vph)	386	189	42	55	173	54	22	145	65	31	249	264
Future Volume (vph)	386	189	42	55	173	54	22	145	65	31	249	264
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	12	11	12	10	12	12	11	11	12
Total Lost time (s)	4.5	6.0	6.0	4.5	6.0		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	0.88
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3204	3303	1478	1770	3299		1652	3374		1711	3421	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3204	3303	1478	1770	3299		1652	3374		1711	3421	2787
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	402	197	44	57	180	56	23	151	68	32	259	275
RTOR Reduction (vph)	0	0	20	0	16	0	0	38	0	0	0	0
Lane Group Flow (vph)	402	197	24	57	220	0	23	181	0	32	259	275
Turn Type	Prot	NA	Prot	Prot	NA		Split	NA		Split	NA	pt+ov
Protected Phases	1	6	6	5	2		4	4		3	3	3 1
Permitted Phases												
Actuated Green, G (s)	27.5	80.6	80.6	6.8	59.9		16.1	16.1		24.0	24.0	51.5
Effective Green, g (s)	27.5	80.6	80.6	6.8	59.9		16.1	16.1		24.0	24.0	51.5
Actuated g/C Ratio	0.18	0.54	0.54	0.05	0.40		0.11	0.11		0.16	0.16	0.34
Clearance Time (s)	4.5	6.0	6.0	4.5	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	5.0	5.0	5.0	0.2	0.2		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	587	1774	794	80	1317		177	362		273	547	956
v/s Ratio Prot	c0.13	0.06	0.02	0.03	c0.07		0.01	c0.05		0.02	c0.08	0.10
v/s Ratio Perm												
v/c Ratio	0.68	0.11	0.03	0.71	0.17		0.13	0.50		0.12	0.47	0.29
Uniform Delay, d1	57.2	17.1	16.3	70.6	29.0		60.6	63.1		53.9	57.3	35.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.65	0.62		1.00	1.00	1.00
Incremental Delay, d2	4.2	0.1	0.1	21.9	0.3		0.7	2.2		0.9	2.9	0.3
Delay (s)	61.4	17.2	16.4	92.6	29.3		39.9	41.3		54.8	60.2	36.2
Level of Service	E	B	B	F	C		D	D		D	E	D
Approach Delay (s)		44.8			41.6			41.2			48.2	
Approach LOS		D			D			D			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			44.9			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.38									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)		22.5				
Intersection Capacity Utilization			53.3%			ICU Level of Service		A				
Analysis Period (min)			15									
c Critical Lane Group												

# HCM Signalized Intersection Capacity Analysis

## 2: Towne Road & Montrose Road























Existing AM.syn

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			 				 	 			 	
Traffic Volume (vph)	132	7	83	1	3	7	152	116	17	9	114	142
Future Volume (vph)	132	7	83	1	3	7	152	116	17	9	114	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	12	12	12	10	11	12	10	11	12
Total Lost time (s)		7.0	7.0	7.0	7.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00	0.88	1.00	1.00		0.97	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.89		1.00	0.98		1.00	0.92	
Flt Protected		0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1660	2694	1770	1660		3204	3357		1652	3137	
Flt Permitted		0.73	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1268	2694	1770	1660		3204	3357		1652	3137	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	143	8	90	1	3	8	165	126	18	10	124	154
RTOR Reduction (vph)	0	0	0	0	5	0	0	10	0	0	113	0
Lane Group Flow (vph)	0	151	90	1	6	0	165	134	0	10	165	0
Turn Type	Perm	NA	pt+ov	Prot	NA		Prot	NA		Prot	NA	
Protected Phases		8	8 5	7	4		5	2		1	6	
Permitted Phases	8											
Actuated Green, G (s)		35.0	52.7	1.6	43.6		10.7	35.5		1.9	26.7	
Effective Green, g (s)		35.0	52.7	1.6	43.6		10.7	35.5		1.9	26.7	
Actuated g/C Ratio		0.35	0.53	0.02	0.44		0.11	0.36		0.02	0.27	
Clearance Time (s)		7.0		7.0	7.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		5.0		5.0	5.0		5.0	0.2		5.0	0.2	
Lane Grp Cap (vph)		443	1419	28	723		342	1191		31	837	
v/s Ratio Prot			0.03	c0.00	0.00		c0.05	0.04		0.01	c0.05	
v/s Ratio Perm		c0.12										
v/c Ratio		0.34	0.06	0.04	0.01		0.48	0.11		0.32	0.20	
Uniform Delay, d1		24.0	11.6	48.4	16.0		42.0	21.7		48.4	28.4	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.0	0.0	1.1	0.0		2.2	0.2		12.2	0.5	
Delay (s)		25.0	11.6	49.5	16.0		44.3	21.9		60.6	28.9	
Level of Service		C	B	D	B		D	C		E	C	
Approach Delay (s)		20.0			18.8			33.8			30.0	
Approach LOS		B			B			C			C	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			28.4				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.30									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			26.0		
Intersection Capacity Utilization			42.9%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

# HCM Signalized Intersection Capacity Analysis

## 3: E Jefferson Street & Montrose Parkway

Existing AM.syn

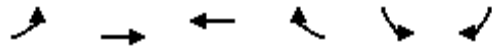
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	863	669	230	844	30	200	213	26	30	418	51
Future Volume (vph)	30	863	669	230	844	30	200	213	26	30	418	51
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	11	11	10	11	12	10	11	12	9	12	10
Total Lost time (s)	6.5	6.0	4.0	6.5	6.0		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	3421	1531	1652	3404		3204	3365		1593	1863	1478
Flt Permitted	0.22	1.00	1.00	0.14	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	368	3421	1531	237	3404		3204	3365		1593	1863	1478
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	32	918	712	245	898	32	213	227	28	32	445	54
RTOR Reduction (vph)	0	0	0	0	2	0	0	6	0	0	0	39
Lane Group Flow (vph)	32	918	712	245	928	0	213	249	0	32	445	15
Turn Type	pm+pt	NA	Free	pm+pt	NA		Prot	NA		Prot	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		Free	2								4
Actuated Green, G (s)	60.6	55.9	150.0	76.7	65.5		13.6	48.3		6.0	40.7	40.7
Effective Green, g (s)	60.6	55.9	150.0	76.7	65.5		13.6	48.3		6.0	40.7	40.7
Actuated g/C Ratio	0.40	0.37	1.00	0.51	0.44		0.09	0.32		0.04	0.27	0.27
Clearance Time (s)	6.5	6.0		6.5	6.0		6.5	6.5		6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	5.0	5.0
Lane Grp Cap (vph)	187	1274	1531	256	1486		290	1083		63	505	401
v/s Ratio Prot	0.01	0.27		c0.09	0.27		c0.07	0.07		0.02	c0.24	
v/s Ratio Perm	0.06		c0.47	c0.40								0.01
v/c Ratio	0.17	0.72	0.47	0.96	0.62		0.73	0.23		0.51	0.88	0.04
Uniform Delay, d1	28.1	40.4	0.0	29.7	32.7		66.4	37.2		70.6	52.3	40.2
Progression Factor	1.00	1.00	1.00	1.43	1.26		1.00	1.00		1.21	0.89	1.00
Incremental Delay, d2	0.4	3.5	1.0	42.4	1.9		9.3	0.1		6.1	17.1	0.1
Delay (s)	28.5	43.9	1.0	84.7	43.1		75.7	37.3		91.4	63.9	40.3
Level of Service	C	D	A	F	D		E	D		F	E	D
Approach Delay (s)		25.2			51.8			54.8			63.1	
Approach LOS		C			D			D			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			42.2				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			0.94									
Actuated Cycle Length (s)			150.0				Sum of lost time (s)			25.5		
Intersection Capacity Utilization			85.6%				ICU Level of Service			E		
Analysis Period (min)			15									
c	Critical Lane Group											



# HCM Unsignalized Intersection Capacity Analysis

## 4: Montrose Parkway & Stonehenge Place

Existing AM.syn





























Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↗↗	↖↗		↖	↗	
Traffic Volume (veh/h)	1	824	964	8	9	23	
Future Volume (Veh/h)	1	824	964	8	9	23	
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	1	896	1048	9	10	25	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type		None	None				
Median storage (veh)							
Upstream signal (ft)		1172	1063				
pX, platoon unblocked	0.84				0.86	0.84	
vC, conflicting volume	1057				1502	528	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	697				443	71	
tC, single (s)	4.1				6.8	6.9	
tC, 2 stage (s)							
tF (s)	2.2				3.5	3.3	
p0 queue free %	100				98	97	
cM capacity (veh/h)	755				467	825	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	1	448	448	699	358	10	25
Volume Left	1	0	0	0	0	10	0
Volume Right	0	0	0	0	9	0	25
cSH	755	1700	1700	1700	1700	467	825
Volume to Capacity	0.00	0.26	0.26	0.41	0.21	0.02	0.03
Queue Length 95th (ft)	0	0	0	0	0	2	2
Control Delay (s)	9.8	0.0	0.0	0.0	0.0	12.9	9.5
Lane LOS	A					B	A
Approach Delay (s)	0.0			0.0		10.5	
Approach LOS						B	
Intersection Summary							
Average Delay			0.2				
Intersection Capacity Utilization			36.9%		ICU Level of Service		A
Analysis Period (min)			15				

# HCM Signalized Intersection Capacity Analysis

## 5: Towne Road & Montrose Parkway





























Existing AM.syn

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 	 		 		 		
Traffic Volume (vph)	24	779	91	51	906	263	29	21	22	20	58	46
Future Volume (vph)	24	779	91	51	906	263	29	21	22	20	58	46
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	9	11	11	10	10	10	11	11	11
Total Lost time (s)	7.5	6.5		7.5	6.5	6.5	6.0	8.0		6.0	8.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	0.88	1.00	1.00		0.97	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.92		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1711	3368		1593	3421	2694	1652	1605		3319	1681	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1711	3368		1593	3421	2694	1652	1605		3319	1681	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	847	99	55	985	286	32	23	24	22	63	50
RTOR Reduction (vph)	0	4	0	0	0	0	0	21	0	0	21	0
Lane Group Flow (vph)	26	942	0	55	985	286	32	26	0	22	92	0
Turn Type	Prot	NA		Prot	NA	pt+ov	Prot	NA		Prot	NA	
Protected Phases	1	6		5	2	2.7	3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	6.0	87.3		10.1	91.4	106.2	6.5	16.3		8.3	18.1	
Effective Green, g (s)	6.0	87.3		10.1	91.4	106.2	6.5	16.3		8.3	18.1	
Actuated g/C Ratio	0.04	0.58		0.07	0.61	0.71	0.04	0.11		0.06	0.12	
Clearance Time (s)	7.5	6.5		7.5	6.5		6.0	8.0		6.0	8.0	
Vehicle Extension (s)	4.0	0.2		4.0	0.2		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	68	1960		107	2084	1907	71	174		183	202	
v/s Ratio Prot	0.02	0.28		c0.03	c0.29	0.11	c0.02	0.02		0.01	c0.05	
v/s Ratio Perm												
v/c Ratio	0.38	0.48		0.51	0.47	0.15	0.45	0.15		0.12	0.45	
Uniform Delay, d1	70.2	18.2		67.6	16.1	7.2	70.0	60.6		67.4	61.4	
Progression Factor	1.48	0.42		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.9	0.7		5.5	0.8	0.0	6.1	0.5		0.4	2.2	
Delay (s)	107.6	8.3		73.0	16.8	7.2	76.1	61.1		67.8	63.6	
Level of Service	F	A		E	B	A	E	E		E	E	
Approach Delay (s)		10.9			17.1			67.2			64.3	
Approach LOS		B			B			E			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			18.8				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.49									
Actuated Cycle Length (s)			150.0				Sum of lost time (s)			28.0		
Intersection Capacity Utilization			55.8%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

# HCM Signalized Intersection Capacity Analysis

## 1: E Jefferson Street & Montrose Road

























Existing PM.syn

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 			 			 			 	 
Traffic Volume (vph)	492	107	39	54	395	71	220	428	53	37	235	810
Future Volume (vph)	492	107	39	54	395	71	220	428	53	37	235	810
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	12	11	12	10	12	12	11	11	12
Total Lost time (s)	4.5	6.0	6.0	4.5	6.0		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	0.88
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3204	3303	1478	1770	3343		1652	3480		1711	3421	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3204	3303	1478	1770	3343		1652	3480		1711	3421	2787
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	507	110	40	56	407	73	227	441	55	38	242	835
RTOR Reduction (vph)	0	0	21	0	9	0	0	7	0	0	0	0
Lane Group Flow (vph)	507	110	19	56	471	0	227	489	0	38	242	835
Turn Type	Prot	NA	Prot	Prot	NA		Split	NA		Split	NA	pt+ov
Protected Phases	1	6	6	5	2		4	4		3	3	3 1
Permitted Phases												
Actuated Green, G (s)	36.2	71.7	71.7	6.7	42.2		32.1	32.1		17.0	17.0	53.2
Effective Green, g (s)	36.2	71.7	71.7	6.7	42.2		32.1	32.1		17.0	17.0	53.2
Actuated g/C Ratio	0.24	0.48	0.48	0.04	0.28		0.21	0.21		0.11	0.11	0.35
Clearance Time (s)	4.5	6.0	6.0	4.5	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	5.0	5.0	5.0	0.2	0.2		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	773	1578	706	79	940		353	744		193	387	988
v/s Ratio Prot	0.16	0.03	0.01	0.03	c0.14		0.14	c0.14		0.02	0.07	c0.30
v/s Ratio Perm												
v/c Ratio	0.66	0.07	0.03	0.71	0.50		0.64	0.66		0.20	0.63	0.85
Uniform Delay, d1	51.3	21.1	20.7	70.7	45.1		53.7	53.9		60.3	63.5	44.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.77	0.77		1.00	1.00	1.00
Incremental Delay, d2	2.7	0.1	0.1	21.0	1.9		4.7	2.5		2.3	7.4	7.4
Delay (s)	54.0	21.2	20.8	91.7	47.0		46.3	44.2		62.6	70.9	52.0
Level of Service	D	C	C	F	D		D	D		E	E	D
Approach Delay (s)		46.5			51.7			44.9			56.5	
Approach LOS		D			D			D			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			50.7				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			150.0				Sum of lost time (s)			22.5		
Intersection Capacity Utilization			68.7%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

# HCM Signalized Intersection Capacity Analysis

## 2: Towne Road & Montrose Road























Existing PM.syn

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			 				 	 			 	
Traffic Volume (vph)	92	5	143	8	9	13	113	83	11	3	124	271
Future Volume (vph)	92	5	143	8	9	13	113	83	11	3	124	271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	12	12	12	10	11	12	10	11	12
Total Lost time (s)		7.0	7.0	7.0	7.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00	0.88	1.00	1.00		0.97	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.91		1.00	0.98		1.00	0.90	
Flt Protected		0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1660	2694	1770	1700		3204	3361		1652	3069	
Flt Permitted		0.72	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1249	2694	1770	1700		3204	3361		1652	3069	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	100	5	155	9	10	14	123	90	12	3	135	295
RTOR Reduction (vph)	0	0	0	0	8	0	0	8	0	0	212	0
Lane Group Flow (vph)	0	105	155	9	16	0	123	94	0	3	218	0
Turn Type	Perm	NA	pt+ov	Prot	NA		Prot	NA		Prot	NA	
Protected Phases		8	8 5	7	4		5	2		1	6	
Permitted Phases	8											
Actuated Green, G (s)		34.0	51.3	1.6	42.6		10.3	36.7		1.7	28.1	
Effective Green, g (s)		34.0	51.3	1.6	42.6		10.3	36.7		1.7	28.1	
Actuated g/C Ratio		0.34	0.51	0.02	0.43		0.10	0.37		0.02	0.28	
Clearance Time (s)		7.0		7.0	7.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		5.0		5.0	5.0		5.0	0.2		5.0	0.2	
Lane Grp Cap (vph)		424	1382	28	724		330	1233		28	862	
v/s Ratio Prot			0.06	c0.01	0.01		c0.04	0.03		0.00	c0.07	
v/s Ratio Perm		c0.08										
v/c Ratio		0.25	0.11	0.32	0.02		0.37	0.08		0.11	0.25	
Uniform Delay, d1		23.8	12.6	48.7	16.6		41.8	20.6		48.4	27.8	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6	0.1	13.4	0.1		1.5	0.1		3.5	0.7	
Delay (s)		24.4	12.7	62.1	16.7		43.3	20.7		51.9	28.5	
Level of Service		C	B	E	B		D	C		D	C	
Approach Delay (s)		17.4			29.1			33.1			28.7	
Approach LOS		B			C			C			C	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			26.7				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.27									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)				26.0	
Intersection Capacity Utilization			44.2%				ICU Level of Service				A	
Analysis Period (min)			15									
c	Critical Lane Group											

# HCM Signalized Intersection Capacity Analysis

## 3: E Jefferson Street & Montrose Parkway

Existing PM.syn

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	779	365	38	736	38	573	491	134	26	277	59
Future Volume (vph)	122	779	365	38	736	38	573	491	134	26	277	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	11	11	10	11	12	10	11	12	9	12	10
Total Lost time (s)	6.5	6.0	4.0	6.5	6.0		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	3421	1531	1652	3396		3204	3311		1593	1863	1478
Flt Permitted	0.11	1.00	1.00	0.18	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	186	3421	1531	309	3396		3204	3311		1593	1863	1478
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	131	838	392	41	791	41	616	528	144	28	298	63
RTOR Reduction (vph)	0	0	0	0	2	0	0	16	0	0	0	49
Lane Group Flow (vph)	131	838	392	41	830	0	616	656	0	28	298	14
Turn Type	pm+pt	NA	Free	pm+pt	NA		Prot	NA		Prot	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		Free	2								4
Actuated Green, G (s)	62.2	49.9	150.0	51.0	44.3		34.6	62.2		5.7	33.3	33.3
Effective Green, g (s)	62.2	49.9	150.0	51.0	44.3		34.6	62.2		5.7	33.3	33.3
Actuated g/C Ratio	0.41	0.33	1.00	0.34	0.30		0.23	0.41		0.04	0.22	0.22
Clearance Time (s)	6.5	6.0		6.5	6.0		6.5	6.5		6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	5.0	5.0
Lane Grp Cap (vph)	192	1138	1531	165	1002		739	1372		60	413	328
v/s Ratio Prot	c0.06	c0.24		0.01	c0.24		c0.19	0.20		0.02	c0.16	
v/s Ratio Perm	0.23		0.26	0.07								0.01
v/c Ratio	0.68	0.74	0.26	0.25	0.83		0.83	0.48		0.47	0.72	0.04
Uniform Delay, d1	32.9	44.2	0.0	35.1	49.3		55.0	32.0		70.7	54.1	45.8
Progression Factor	1.00	1.00	1.00	0.81	0.96		1.00	1.00		1.27	0.55	1.00
Incremental Delay, d2	9.6	4.3	0.4	0.8	7.6		8.0	0.3		5.1	6.8	0.1
Delay (s)	42.5	48.5	0.4	29.1	54.7		63.0	32.3		94.6	36.3	45.9
Level of Service	D	D	A	C	D		E	C		F	D	D
Approach Delay (s)		34.1			53.5			47.0			42.1	
Approach LOS		C			D			D			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			43.5				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.80									
Actuated Cycle Length (s)			150.0				Sum of lost time (s)		25.5			
Intersection Capacity Utilization			80.5%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

# HCM Unsignalized Intersection Capacity Analysis

## 4: Montrose Parkway & Stonehenge Place

Existing PM.syn





























Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	25	923	786	5	3	5	
Future Volume (Veh/h)	25	923	786	5	3	5	
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	
Hourly flow rate (vph)	26	942	802	5	3	5	
<b>Pedestrians</b>							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type		None	None				
Median storage (veh)							
Upstream signal (ft)		1172	1063				
pX, platoon unblocked	0.90			0.84	0.90		
vC, conflicting volume	807			1328	404		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	574			503	127		
tC, single (s)	4.1			6.8	6.9		
tC, 2 stage (s)							
tF (s)	2.2			3.5	3.3		
p0 queue free %	97			99	99		
cM capacity (veh/h)	900			407	813		
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	26	471	471	535	272	3	5
Volume Left	26	0	0	0	0	3	0
Volume Right	0	0	0	0	5	0	5
cSH	900	1700	1700	1700	1700	407	813
Volume to Capacity	0.03	0.28	0.28	0.31	0.16	0.01	0.01
Queue Length 95th (ft)	2	0	0	0	0	1	0
Control Delay (s)	9.1	0.0	0.0	0.0	0.0	13.9	9.5
Lane LOS	A					B	A
Approach Delay (s)	0.2			0.0	11.1		
Approach LOS						B	
<b>Intersection Summary</b>							
Average Delay			0.2				
Intersection Capacity Utilization			35.5%	ICU Level of Service		A	
Analysis Period (min)			15				

# HCM Signalized Intersection Capacity Analysis

## 5: Towne Road & Montrose Parkway

Existing PM.syn

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 	 		 		 		
Traffic Volume (vph)	35	883	78	36	667	127	72	25	73	146	38	32
Future Volume (vph)	35	883	78	36	667	127	72	25	73	146	38	32
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	9	11	11	10	10	10	11	11	11
Total Lost time (s)	7.5	6.5		7.5	6.5	6.5	6.0	8.0		6.0	8.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	0.88	1.00	1.00		0.97	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.89		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1711	3380		1593	3421	2694	1652	1545		3319	1677	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1711	3380		1593	3421	2694	1652	1545		3319	1677	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	37	939	83	38	710	135	77	27	78	155	40	34
RTOR Reduction (vph)	0	3	0	0	0	0	0	72	0	0	24	0
Lane Group Flow (vph)	37	1019	0	38	710	135	77	33	0	155	50	0
Turn Type	Prot	NA		Prot	NA	pt+ov	Prot	NA		Prot	NA	
Protected Phases	1	6		5	2	2.7	3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	8.3	89.6		8.7	90.0	109.4	12.5	10.8		12.9	11.2	
Effective Green, g (s)	8.3	89.6		8.7	90.0	109.4	12.5	10.8		12.9	11.2	
Actuated g/C Ratio	0.06	0.60		0.06	0.60	0.73	0.08	0.07		0.09	0.07	
Clearance Time (s)	7.5	6.5		7.5	6.5		6.0	8.0		6.0	8.0	
Vehicle Extension (s)	4.0	0.2		4.0	0.2		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	94	2018		92	2052	1964	137	111		285	125	
v/s Ratio Prot	0.02	c0.30		c0.02	0.21	0.05	0.05	0.02		c0.05	c0.03	
v/s Ratio Perm												
v/c Ratio	0.39	0.50		0.41	0.35	0.07	0.56	0.29		0.54	0.40	
Uniform Delay, d1	68.4	17.4		68.2	15.1	5.8	66.1	66.0		65.7	66.2	
Progression Factor	1.05	1.27		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.1	0.8		4.1	0.5	0.0	6.3	2.0		2.6	2.8	
Delay (s)	74.7	22.9		72.3	15.6	5.8	72.4	68.0		68.4	69.0	
Level of Service	E	C		E	B	A	E	E		E	E	
Approach Delay (s)		24.7			16.5			69.9			68.6	
Approach LOS		C			B			E			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			29.4				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.49									
Actuated Cycle Length (s)			150.0				Sum of lost time (s)			28.0		
Intersection Capacity Utilization			52.8%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

**APPENDIX D**  
**TRAFFIC FORECAST WORKSHEETS**



I: Montrose Road/East Jefferson Street  
AM Peak Hour

Traffic Component	In	Out	Southbound			Westbound			Northbound			Eastbound		
			<u>East Jefferson Street</u>			<u>Montrose Road</u>			<u>East Jefferson Street</u>			<u>Montrose Road</u>		
			Right	Through	Left	Right	Through	Left	Right	Through	Left	Right	Through	Left
<b>Existing Traffic Volume</b>			264	249	31	54	173	55	65	145	22	42	189	386
Growth			-	-	-	-	-	-	-	-	-	-	-	-
1. Mid Pike Plaza (Pike & Rose)3	753	365	-	23	-	-	-	-	-	4	7	38	-	-
2. North Bethesda Town Center / LCOR5 - Residential	36	142	-	-	-	-	-	-	-	-	-	-	-	-
2. North Bethesda Town Center / LCOR5 - Commercial	483	87	-	-	-	-	4	-	-	-	-	-	24	-
3. Gables at White Flint - Residential	20	78	-	-	-	-	-	-	-	-	2	1	-	-
3. Gables at White Flint - Commercial	25	23	-	2	-	-	-	-	-	1	-	2	-	-
4. Saul Center White Flint West - Residential	13	37	-	-	-	-	-	-	-	-	-	-	-	-
4. Saul Center White Flint West - Commercial	70	16	-	-	-	-	1	-	-	-	-	-	4	-
5. Twinbrook Quarter - Residential	91	273	41	-	-	-	14	-	-	-	-	-	-	18
5. Twinbrook Quarter - Commercial	535	160	26	-	-	-	8	-	-	-	-	-	-	112
6. 6000 Executive Boulevard & Washington Science Cent	201	80	-	10	-	-	-	-	-	4	12	16	-	-
7. North Bethesda Market II - Residential	22	63	-	-	-	-	-	-	-	-	-	-	-	-
7. North Bethesda Market II - Commercial	89	42	-	-	-	-	2	-	-	-	-	-	4	-
8. Rock Terrace School/Tilden Middle School	272	201	-	-	-	-	-	-	-	-	-	-	-	-
9. Wilgus Property - White Flint3	29	90	-	3	-	-	-	-	-	9	-	-	-	-
Subtotal	2,639	1,657	67	38	-	-	29	-	-	17	22	57	32	130
<b>Background</b>			331	287	31	54	202	55	65	162	44	99	221	516
<b>Site Trips</b>	6	21	-	-	-	-	-	-	-	2	-	-	-	-
<b>Total Future</b>			<b>331</b>	<b>287</b>	<b>31</b>	<b>54</b>	<b>202</b>	<b>55</b>	<b>65</b>	<b>164</b>	<b>44</b>	<b>99</b>	<b>221</b>	<b>516</b>

2

I: Montrose Road/East Jefferson Street  
PM Peak Hour

Traffic Component	In	Out	Southbound			Westbound			Northbound			Eastbound		
			<u>East Jefferson Street</u>			<u>Montrose Road</u>			<u>East Jefferson Street</u>			<u>Montrose Road</u>		
			Right	Through	Left	Right	Through	Left	Right	Through	Left	Right	Through	Left
<b>Existing Traffic Volume</b>			810	235	37	71	395	54	53	428	220	39	107	492
Growth			-	-	-	-	-	-	-	-	-	-	-	-
1. Mid Pike Plaza (Pike & Rose)3	620	1,001	-	19	-	-	-	-	-	10	20	31	-	-
2. North Bethesda Town Center / LCOR5 - Residential	141	76	-	-	-	-	-	-	-	-	-	-	-	-
2. North Bethesda Town Center / LCOR5 - Commercial	281	688	-	-	-	-	34	-	-	-	-	-	14	-
3. Gables at White Flint - Residential	74	38	-	-	-	-	-	-	-	-	1	2	-	-
3. Gables at White Flint - Commercial	100	92	-	6	-	-	-	-	-	-	6	6	-	-
4. Saul Center White Flint West - Residential	18	12	-	-	-	-	-	-	-	-	-	-	-	-
4. Saul Center White Flint West - Commercial	40	82	-	-	-	-	4	-	-	-	-	-	2	-
5. Twinbrook Quarter - Residential	259	166	25	-	-	-	8	-	-	-	-	-	-	52
5. Twinbrook Quarter - Commercial	412	681	109	-	-	-	34	-	-	-	-	-	-	87
6. 6000 Executive Boulevard & Washington Science Cent	107	242	-	5	-	-	-	-	-	12	36	9	-	-
7. North Bethesda Market II - Residential	63	41	-	-	-	-	-	-	-	-	-	-	-	-
7. North Bethesda Market II - Commercial	226	262	-	-	-	-	13	-	-	-	-	-	11	-
8. Rock Terrace School/Tilden Middle School	83	139	-	-	-	-	-	-	-	-	-	-	-	-
9. Wilgus Property - White Flint3	87	55	-	9	-	-	-	-	-	6	-	-	-	-
Subtotal	2,511	3,575	134	39	-	-	93	-	-	28	63	48	27	139
<b>Background</b>			944	274	37	71	488	54	53	456	283	87	134	631
<b>Site Trips</b>	22	13	-	2	-	-	-	-	-	2	-	-	-	-
<b>Total Future</b>			<b>944</b>	<b>276</b>	<b>37</b>	<b>71</b>	<b>488</b>	<b>54</b>	<b>53</b>	<b>458</b>	<b>283</b>	<b>87</b>	<b>134</b>	<b>631</b>

Traffic Component	In	Out	Southbound Towne Road			Westbound Montrose Road			Northbound Towne Road			Eastbound Montrose Road		
			Right	Through	Left	Right	Through	Left	Right	Through	Left	Right	Through	Left
<b>Existing Traffic Volume</b>			142	114	9	7	3	1	17	116	152	83	7	132
Growth			-	-	-	-	-	-	-	-	-	-	-	-
1. Mid Pike Plaza (Pike & Rose)3	753	365	-	8	-	-	-	-	-	-	-	-	-	-
2. North Bethesda Town Center / LCOR5 - Residential	36	142	-	-	-	-	-	-	-	-	-	-	-	-
2. North Bethesda Town Center / LCOR5 - Commercial	483	87	-	-	-	-	-	-	-	4	24	-	-	-
3. Gables at White Flint - Residential	20	78	-	-	-	-	-	-	-	-	-	-	-	-
3. Gables at White Flint - Commercial	25	23	-	-	-	-	-	-	-	-	-	-	-	-
4. Saul Center White Flint West - Residential	13	37	-	-	-	-	-	-	-	-	-	-	-	-
4. Saul Center White Flint West - Commercial	70	16	-	-	-	-	-	-	-	1	4	-	-	-
5. Twinbrook Quarter - Residential	91	273	14	-	-	-	-	-	-	-	-	-	-	-
5. Twinbrook Quarter - Commercial	535	160	8	-	-	-	-	-	-	-	-	-	-	-
6. 6000 Executive Boulevard & Washington Science Cent	201	80	-	26	-	-	-	-	-	-	-	-	-	-
7. North Bethesda Market II - Residential	22	63	-	-	-	-	-	-	-	-	-	-	-	-
7. North Bethesda Market II - Commercial	89	42	-	-	-	-	-	-	-	2	4	-	-	-
8. Rock Terrace School/Tilden Middle School	272	201	-	-	-	-	-	-	-	-	-	-	-	-
9. Wilgus Property - White Flint3	29	90	-	3	-	-	-	-	8	-	-	-	-	-
Subtotal	2,639	1,657	22	37	-	-	-	-	8	7	32	-	-	-
<b>Background</b>			164	151	9	7	3	1	17	124	159	115	7	132
<b>Site Trip</b>	6	21	-	1	-	-	-	-	-	2	-	-	-	-
<b>Total Future</b>			164	152	9	7	3	1	17	126	159	115	7	132

Traffic Component	In	Out	Southbound Towne Road			Westbound Montrose Road			Northbound Towne Road			Eastbound Montrose Road		
			Right	Through	Left	Right	Through	Left	Right	Through	Left	Right	Through	Left
<b>Existing Traffic Volume</b>			271	124	3	13	9	8	11	83	113	143	5	92
Growth			-	-	-	-	-	-	-	-	-	-	-	-
1. Mid Pike Plaza (Pike & Rose)3	620	1,001	-	6	-	-	-	-	-	-	-	-	-	-
2. North Bethesda Town Center / LCOR5 - Residential	141	76	-	-	-	-	-	-	-	-	-	-	-	-
2. North Bethesda Town Center / LCOR5 - Commercial	281	688	-	-	-	-	-	-	-	34	14	-	-	-
3. Gables at White Flint - Residential	74	38	-	-	-	-	-	-	-	-	-	-	-	-
3. Gables at White Flint - Commercial	100	92	-	-	-	-	-	-	-	-	-	-	-	-
4. Saul Center White Flint West - Residential	18	12	-	-	-	-	-	-	-	-	-	-	-	-
4. Saul Center White Flint West - Commercial	40	82	-	-	-	-	-	-	-	4	2	-	-	-
5. Twinbrook Quarter - Residential	259	166	8	-	-	-	-	-	-	-	-	-	-	-
5. Twinbrook Quarter - Commercial	412	681	34	-	-	-	-	-	-	-	-	-	-	-
6. 6000 Executive Boulevard & Washington Science Cent	107	242	-	14	-	-	-	-	-	-	-	-	-	-
7. North Bethesda Market II - Residential	63	41	-	-	-	-	-	-	-	-	-	-	-	-
7. North Bethesda Market II - Commercial	226	262	-	-	-	-	-	-	-	13	11	-	-	-
8. Rock Terrace School/Tilden Middle School	83	139	-	-	-	-	-	-	-	-	-	-	-	-
9. Wilgus Property - White Flint3	87	55	-	9	-	-	-	-	5	-	-	-	-	-
Subtotal	2,511	3,575	42	29	-	-	-	-	5	51	27	-	-	-
<b>Background</b>			313	153	3	13	9	8	11	88	164	170	5	92
<b>Site Trip</b>	22	13	-	2	-	-	-	-	-	1	-	-	-	-
<b>Total Future</b>			313	155	3	13	9	8	11	89	164	170	5	92

Traffic Component	In	Out	Southbound <u>East Jefferson Street</u>			Westbound <u>Montrose Parkway</u>			Northbound <u>East Jefferson Street</u>			Eastbound <u>Montrose Parkway</u>		
			Right	Through	Left	Right	Through	Left	Right	Through	Left	Right	Through	Left
<b>Existing Traffic Volume</b>			51	418	30	30	844	230	26	213	200	669	863	30
Growth			-	-	-	-	-	-	-	-	-	-	-	-
1. Mid Pike Plaza (Pike & Rose)3	753	365	-	23	38	-	8	-	-	11	11	98	23	-
2. North Bethesda Town Center / LCOR5 - Residential	36	142	-	-	-	-	13	-	-	-	3	1	3	-
2. North Bethesda Town Center / LCOR5 - Commercial	483	87	-	-	-	-	13	-	-	-	4	24	72	-
3. Gables at White Flint - Residential	20	78	-	1	-	-	9	-	-	2	3	2	1	-
3. Gables at White Flint - Commercial	25	23	-	2	-	-	5	-	-	1	1	4	3	-
4. Saul Center White Flint West - Residential	13	37	-	-	-	-	3	-	-	-	1	-	1	-
4. Saul Center White Flint West - Commercial	70	16	-	-	-	-	2	-	-	-	1	4	11	-
5. Twinbrook Quarter - Residential	91	273	-	-	-	-	-	-	-	-	-	-	-	-
5. Twinbrook Quarter - Commercial	535	160	-	-	-	-	-	-	-	-	-	-	-	-
6. 6000 Executive Boulevard & Washington Science Cent	201	80	-	26	-	-	-	-	-	16	22	54	-	-
7. North Bethesda Market II - Residential	22	63	-	-	-	-	6	-	-	-	1	-	2	-
7. North Bethesda Market II - Commercial	89	42	-	-	-	-	6	-	-	-	2	4	13	-
8. Rock Terrace School/Tilden Middle School	272	201	-	-	-	-	41	-	-	-	-	-	30	-
9. Wilgus Property - White Flint3	29	90	-	-	3	9	27	24	8	-	-	-	9	-
Subtotal	2,639	1,657	-	52	41	9	133	24	8	30	49	191	168	-
<b>Background</b>			51	470	71	39	977	254	34	243	249	860	1,031	30
<b>Site Trips</b>	6	21	-	-	-	-	6	6	-	2	-	-	1	1
<b>Total Future</b>			<b>51</b>	<b>470</b>	<b>71</b>	<b>39</b>	<b>983</b>	<b>260</b>	<b>34</b>	<b>245</b>	<b>249</b>	<b>860</b>	<b>1,032</b>	<b>31</b>

Traffic Component	In	Out	Southbound <u>East Jefferson Street</u>			Westbound <u>Montrose Parkway</u>			Northbound <u>East Jefferson Street</u>			Eastbound <u>Montrose Parkway</u>		
			Right	Through	Left	Right	Through	Left	Right	Through	Left	Right	Through	Left
<b>Existing Traffic Volume</b>			59	277	26	38	736	38	134	491	573	365	779	122
Growth			-	-	-	-	-	-	-	-	-	-	-	-
1. Mid Pike Plaza (Pike & Rose)3	620	1,001	-	19	31	-	6	-	-	30	30	81	19	-
2. North Bethesda Town Center / LCOR5 - Residential	141	76	-	-	-	-	7	-	-	-	2	3	13	-
2. North Bethesda Town Center / LCOR5 - Commercial	281	688	-	-	-	-	103	-	-	-	34	14	42	-
3. Gables at White Flint - Residential	74	38	-	2	-	-	5	-	-	1	2	7	4	-
3. Gables at White Flint - Commercial	100	92	-	6	-	-	19	-	-	6	6	15	10	-
4. Saul Center White Flint West - Residential	18	12	-	-	-	-	1	-	-	-	-	-	2	-
4. Saul Center White Flint West - Commercial	40	82	-	-	-	-	12	-	-	-	4	2	6	-
5. Twinbrook Quarter - Residential	259	166	-	-	-	-	-	-	-	-	-	-	-	-
5. Twinbrook Quarter - Commercial	412	681	-	-	-	-	-	-	-	-	-	-	-	-
6. 6000 Executive Boulevard & Washington Science Cent	107	242	-	14	-	-	-	-	-	48	65	29	-	-
7. North Bethesda Market II - Residential	63	41	-	-	-	-	4	-	-	-	1	1	6	-
7. North Bethesda Market II - Commercial	226	262	-	-	-	-	39	-	-	-	13	11	34	-
8. Rock Terrace School/Tilden Middle School	83	139	-	-	-	-	12	-	-	-	-	-	21	-
9. Wilgus Property - White Flint3	87	55	-	-	9	6	17	15	23	-	-	-	26	-
Subtotal	2,511	3,575	-	41	40	6	225	15	23	85	157	163	183	-
<b>Background</b>			59	318	66	44	961	53	157	576	730	528	962	122
<b>Site Trips</b>	22	13	-	-	2	-	4	4	-	6	-	-	3	3
<b>Total Future</b>			<b>59</b>	<b>318</b>	<b>68</b>	<b>44</b>	<b>965</b>	<b>57</b>	<b>157</b>	<b>582</b>	<b>730</b>	<b>528</b>	<b>965</b>	<b>125</b>

4: Montrose Parkway/Stonehenge Place  
AM Peak Hour

Wilgus Property

Traffic Component	In	Out	Southbound Stonehenge Place			Westbound Montrose Parkway			Northbound NONE			Eastbound Montrose Parkway		
			Right	Through	Left	Right	Through	Left	Right	Through	Left	Right	Through	Left
<b>Existing Traffic Volume</b>			23	-	9	8	964	-	-	-	-	824	1	
Growth			-	-	-	-	-	-	-	-	-	-	-	
1. Mid Pike Plaza (Pike & Rose)3	753	365	-	-	-	-	26	-	-	-	-	60	-	
2. North Bethesda Town Center / LCOR5 - Residential	36	142	-	-	-	-	13	-	-	-	-	3	-	
2. North Bethesda Town Center / LCOR5 - Commercial	483	87	-	-	-	-	13	-	-	-	-	72	-	
3. Gables at White Flint - Residential	20	78	-	-	-	-	9	-	-	-	-	1	-	
3. Gables at White Flint - Commercial	25	23	-	-	-	-	4	-	-	-	-	3	-	
4. Saul Center White Flint West - Residential	13	37	-	-	-	-	3	-	-	-	-	1	-	
4. Saul Center White Flint West - Commercial	70	16	-	-	-	-	2	-	-	-	-	11	-	
5. Twinbrook Quarter - Residential	91	273	-	-	-	-	-	-	-	-	-	-	-	
5. Twinbrook Quarter - Commercial	535	160	-	-	-	-	-	-	-	-	-	-	-	
6. 6000 Executive Boulevard & Washington Science Cent	201	80	-	-	-	-	-	-	-	-	-	-	-	
7. North Bethesda Market II - Residential	22	63	-	-	-	-	6	-	-	-	-	2	-	
7. North Bethesda Market II - Commercial	89	42	-	-	-	-	6	-	-	-	-	13	-	
8. Rock Terrace School/Tilden Middle School	272	201	-	-	-	-	41	-	-	-	-	30	-	
9. Wilgus Property - White Flint3	29	90	60	-	30	10	-	-	-	-	-	-	19	
Subtotal	2,639	1,657	60	-	30	10	123	-	-	-	-	196	19	
<b>Background</b>			83	-	39	18	1,087	-	-	-	-	1,020	20	
<b>Site Trips</b>	6	21	12	-	7	2	-	-	-	-	-	-	1	
<b>Total Future</b>			<b>95</b>	-	<b>46</b>	<b>20</b>	<b>1,087</b>	-	-	-	-	<b>1,020</b>	<b>21</b>	

5

4: Montrose Parkway/Stonehenge Place  
PM Peak Hour

Wilgus Property

Traffic Component	In	Out	Southbound Stonehenge Place			Westbound Montrose Parkway			Northbound NONE			Eastbound Montrose Parkway		
			Right	Through	Left	Right	Through	Left	Right	Through	Left	Right	Through	Left
<b>Existing Traffic Volume</b>			5	-	3	5	786	-	-	-	-	923	25	
Growth			-	-	-	-	-	-	-	-	-	-	-	
1. Mid Pike Plaza (Pike & Rose)3	620	1,001	-	-	-	-	70	-	-	-	-	50	-	
2. North Bethesda Town Center / LCOR5 - Residential	141	76	-	-	-	-	7	-	-	-	-	13	-	
2. North Bethesda Town Center / LCOR5 - Commercial	281	688	-	-	-	-	103	-	-	-	-	42	-	
3. Gables at White Flint - Residential	74	38	-	-	-	-	5	-	-	-	-	4	-	
3. Gables at White Flint - Commercial	100	92	-	-	-	-	17	-	-	-	-	10	-	
4. Saul Center White Flint West - Residential	18	12	-	-	-	-	1	-	-	-	-	2	-	
4. Saul Center White Flint West - Commercial	40	82	-	-	-	-	12	-	-	-	-	6	-	
5. Twinbrook Quarter - Residential	259	166	-	-	-	-	-	-	-	-	-	-	-	
5. Twinbrook Quarter - Commercial	412	681	-	-	-	-	-	-	-	-	-	-	-	
6. 6000 Executive Boulevard & Washington Science Cent	107	242	-	-	-	-	-	-	-	-	-	-	-	
7. North Bethesda Market II - Residential	63	41	-	-	-	-	4	-	-	-	-	6	-	
7. North Bethesda Market II - Commercial	226	262	-	-	-	-	39	-	-	-	-	34	-	
8. Rock Terrace School/Tilden Middle School	83	139	-	-	-	-	12	-	-	-	-	21	-	
9. Wilgus Property - White Flint3	87	55	37	-	18	29	-	-	-	-	-	-	58	
Subtotal	2,511	3,575	37	-	18	29	270	-	-	-	-	188	58	
<b>Background</b>			42	-	21	34	1,056	-	-	-	-	1,111	83	
<b>Site Trips</b>	22	13	7	-	4	7	-	-	-	-	-	-	6	
<b>Total Future</b>			<b>49</b>	-	<b>25</b>	<b>41</b>	<b>1,056</b>	-	-	-	-	<b>1,111</b>	<b>89</b>	

5: Montrose Parkway/Towne Road  
AM Peak Hour

Wilgus Property

Traffic Component	In	Out	Southbound Towne Road			Westbound Montrose Parkway			Northbound Towne Road			Eastbound Montrose Parkway		
			Right	Through	Left	Right	Through	Left	Right	Through	Left	Right	Through	Left
<b>Existing Traffic Volume</b>			46	58	20	263	906	51	22	21	29	91	779	24
Growth			-	-	-	-	-	-	-	-	-	-	-	-
1. Mid Pike Plaza (Pike & Rose)3	753	365	-	8	-	-	4	23	11	-	26	60	-	-
2. North Bethesda Town Center / LCOR5 - Residential	36	142	-	-	-	-	-	-	-	-	13	3	-	-
2. North Bethesda Town Center / LCOR5 - Commercial	483	87	-	24	-	-	-	-	-	4	13	72	-	-
3. Gables at White Flint - Residential	20	78	-	-	-	-	-	-	-	-	9	1	-	-
3. Gables at White Flint - Commercial	25	23	-	-	-	-	-	-	-	-	4	3	-	-
4. Saul Center White Flint West - Residential	13	37	-	-	-	-	-	-	-	-	3	1	-	-
4. Saul Center White Flint West - Commercial	70	16	-	4	-	-	-	-	-	1	2	11	-	-
5. Twinbrook Quarter - Residential	91	273	-	-	-	-	-	-	-	-	-	-	-	-
5. Twinbrook Quarter - Commercial	535	160	-	-	-	-	-	-	-	-	-	-	-	-
6. 6000 Executive Boulevard & Washington Science Cent	201	80	-	26	-	-	-	-	12	-	-	-	-	30
7. North Bethesda Market II - Residential	22	63	-	-	-	-	-	-	-	-	6	2	-	-
7. North Bethesda Market II - Commercial	89	42	-	4	-	-	-	-	-	2	6	13	-	-
8. Rock Terrace School/Tilden Middle School	272	201	-	-	-	-	41	-	-	-	-	-	30	-
9. Wilgus Property - White Flint3	29	90	3	-	-	-	7	-	-	-	-	-	22	8
Subtotal	2,639	1,657	3	66	-	-	52	23	23	7	82	166	52	38
<b>Background</b>			49	124	20	263	958	74	45	28	111	257	831	62
<b>Site Trips</b>	6	21	1	-	-	-	1	-	-	-	-	-	5	2
<b>Total Future</b>			<b>50</b>	<b>124</b>	<b>20</b>	<b>263</b>	<b>959</b>	<b>74</b>	<b>45</b>	<b>28</b>	<b>111</b>	<b>257</b>	<b>836</b>	<b>64</b>

6

5: Montrose Parkway/Towne Road  
PM Peak Hour

Wilgus Property

Traffic Component	In	Out	Southbound Towne Road			Westbound Montrose Parkway			Northbound Towne Road			Eastbound Montrose Parkway		
			Right	Through	Left	Right	Through	Left	Right	Through	Left	Right	Through	Left
<b>Existing Traffic Volume</b>			32	38	146	127	667	36	73	25	72	78	883	35
Growth			-	-	-	-	-	-	-	-	-	-	-	-
1. Mid Pike Plaza (Pike & Rose)3	620	1,001	-	6	-	-	10	19	30	-	70	50	-	-
2. North Bethesda Town Center / LCOR5 - Residential	141	76	-	-	-	-	-	-	-	-	7	13	-	-
2. North Bethesda Town Center / LCOR5 - Commercial	281	688	-	14	-	-	-	-	-	34	103	42	-	-
3. Gables at White Flint - Residential	74	38	-	-	-	-	-	-	-	-	5	4	-	-
3. Gables at White Flint - Commercial	100	92	-	-	-	-	-	-	-	-	17	10	-	-
4. Saul Center White Flint West - Residential	18	12	-	-	-	-	-	-	-	-	1	2	-	-
4. Saul Center White Flint West - Commercial	40	82	-	2	-	-	-	-	-	4	12	6	-	-
5. Twinbrook Quarter - Residential	259	166	-	-	-	-	-	-	-	-	-	-	-	-
5. Twinbrook Quarter - Commercial	412	681	-	-	-	-	-	-	-	-	-	-	-	-
6. 6000 Executive Boulevard & Washington Science Cent	107	242	-	14	-	-	-	-	36	-	-	-	-	16
7. North Bethesda Market II - Residential	63	41	-	-	-	-	-	-	-	-	4	6	-	-
7. North Bethesda Market II - Commercial	226	262	-	11	-	-	-	-	-	13	39	34	-	-
8. Rock Terrace School/Tilden Middle School	83	139	-	-	-	-	12	-	-	-	-	-	21	-
9. Wilgus Property - White Flint3	87	55	9	-	-	-	20	-	-	-	-	-	13	5
Subtotal	2,511	3,575	9	47	-	-	42	19	66	51	258	167	34	21
<b>Background</b>			41	85	146	127	709	55	139	76	330	245	917	56
<b>Site Trips</b>	22	13	2	-	-	-	5	-	-	-	-	-	3	1
<b>Total Future</b>			<b>43</b>	<b>85</b>	<b>146</b>	<b>127</b>	<b>714</b>	<b>55</b>	<b>139</b>	<b>76</b>	<b>330</b>	<b>245</b>	<b>920</b>	<b>57</b>

6: New Access Road/East Jefferson Street  
AM Peak Hour

Wilgus Property

Traffic Component	In	Out	Southbound East Jefferson Street			Westbound New Access Road			Northbound East Jefferson Street			Eastbound New Access Road		
			Right	Through	Left	Right	Through	Left	Right	Through	Left	Right	Through	Left
<b>Existing Traffic Volume</b>			-	499	-	-	-	-	-	273	-	-	-	-
Growth			-	-	-	-	-	-	-	-	-	-	-	-
1. Mid Pike Plaza (Pike & Rose)3	753	365	-	60	-	-	-	-	-	11	-	-	-	-
2. North Bethesda Town Center / LCOR5 - Residential	36	142	-	-	-	-	-	-	-	-	-	-	-	-
2. North Bethesda Town Center / LCOR5 - Commercial	483	87	-	-	-	-	-	-	-	-	-	-	-	-
3. Gables at White Flint - Residential	20	78	-	1	-	-	-	-	-	2	-	-	-	-
3. Gables at White Flint - Commercial	25	23	-	2	-	-	-	-	-	1	-	-	-	-
4. Saul Center White Flint West - Residential	13	37	-	-	-	-	-	-	-	-	-	-	-	-
4. Saul Center White Flint West - Commercial	70	16	-	-	-	-	-	-	-	-	-	-	-	-
5. Twinbrook Quarter - Residential	91	273	-	-	-	-	-	-	-	-	-	-	-	-
5. Twinbrook Quarter - Commercial	535	160	-	-	-	-	-	-	-	-	-	-	-	-
6. 6000 Executive Boulevard & Washington Science Cent	201	80	-	26	-	-	-	-	-	16	-	-	-	-
7. North Bethesda Market II - Residential	22	63	-	-	-	-	-	-	-	-	-	-	-	-
7. North Bethesda Market II - Commercial	89	42	-	-	-	-	-	-	-	-	-	-	-	-
8. Rock Terrace School/Tilden Middle School	272	201	-	-	-	-	-	-	-	-	-	-	-	-
9. Wilgus Property - White Flint3	29	90	-	3	-	-	-	-	-	9	-	-	-	-
Subtotal	2,639	1,657	-	92	-	-	-	-	-	39	-	-	-	-
<b>Background</b>			-	591	-	-	-	-	-	312	-	-	-	-
<b>Site Trips</b>	6	21	-	-	-	2	-	-	3	-	-	-	-	-
<b>Total Future</b>			-	591	-	2	-	-	3	312	-	-	-	-

6: New Access Road/East Jefferson Street  
PM Peak Hour

Wilgus F





























Traffic Component	In	Out	Southbound East Jefferson Street			Westbound New Access Road			Northbound East Jefferson Street			Eastbound New Access Road		
			Right	Through	Left	Right	Through	Left	Right	Through	Left	Right	Through	Left
<b>Existing Traffic Volume</b>			-	362	-	-	-	-	-	651	-	-	-	-
Growth			-	-	-	-	-	-	-	-	-	-	-	-
1. Mid Pike Plaza (Pike & Rose)3	620	1,001	-	50	-	-	-	-	-	30	-	-	-	-
2. North Bethesda Town Center / LCOR5 - Residential	141	76	-	-	-	-	-	-	-	-	-	-	-	-
2. North Bethesda Town Center / LCOR5 - Commercial	281	688	-	-	-	-	-	-	-	-	-	-	-	-
3. Gables at White Flint - Residential	74	38	-	2	-	-	-	-	-	1	-	-	-	-
3. Gables at White Flint - Commercial	100	92	-	6	-	-	-	-	-	6	-	-	-	-
4. Saul Center White Flint West - Residential	18	12	-	-	-	-	-	-	-	-	-	-	-	-
4. Saul Center White Flint West - Commercial	40	82	-	-	-	-	-	-	-	-	-	-	-	-
5. Twinbrook Quarter - Residential	259	166	-	-	-	-	-	-	-	-	-	-	-	-
5. Twinbrook Quarter - Commercial	412	681	-	-	-	-	-	-	-	-	-	-	-	-
6. 6000 Executive Boulevard & Washington Science Cent	107	242	-	14	-	-	-	-	-	48	-	-	-	-
7. North Bethesda Market II - Residential	63	41	-	-	-	-	-	-	-	-	-	-	-	-
7. North Bethesda Market II - Commercial	226	262	-	-	-	-	-	-	-	-	-	-	-	-
8. Rock Terrace School/Tilden Middle School	83	139	-	-	-	-	-	-	-	-	-	-	-	-
9. Wilgus Property - White Flint3	87	55	-	9	-	-	-	-	-	6	-	-	-	-
Subtotal	2,511	3,575	-	81	-	-	-	-	-	91	-	-	-	-
<b>Background</b>			-	443	-	-	-	-	-	742	-	-	-	-
<b>Site Trips</b>	22	13	-	2	-	2	-	-	9	-	-	-	-	-
<b>Total Future</b>			-	445	-	2	-	-	9	742	-	-	-	-

**APPENDIX E**  
**HIGHWAY CAPACITY MANUAL (HCM) 2000 REPORTS – BACKGROUND**  
**CONDITIONS**

# HCM Signalized Intersection Capacity Analysis

## 1: E Jefferson Street & Montrose Road

Background AM.syn

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 			 			 			 	 
Traffic Volume (vph)	516	221	99	55	202	54	44	162	65	31	287	331
Future Volume (vph)	516	221	99	55	202	54	44	162	65	31	287	331
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	12	11	12	10	12	12	11	11	12
Total Lost time (s)	4.5	6.0	6.0	4.5	6.0		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	0.88
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3204	3303	1478	1770	3313		1652	3387		1711	3421	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3204	3303	1478	1770	3313		1652	3387		1711	3421	2787
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	538	230	103	57	210	56	46	169	68	32	299	345
RTOR Reduction (vph)	0	0	48	0	14	0	0	31	0	0	0	0
Lane Group Flow (vph)	538	230	55	57	252	0	46	206	0	32	299	345
Turn Type	Prot	NA	Prot	Prot	NA		Split	NA		Split	NA	pt+ov
Protected Phases	1	6	6	5	2		4	4		3	3	3
Permitted Phases												
Actuated Green, G (s)	34.4	79.8	79.8	6.8	52.2		16.9	16.9		24.0	24.0	58.4
Effective Green, g (s)	34.4	79.8	79.8	6.8	52.2		16.9	16.9		24.0	24.0	58.4
Actuated g/C Ratio	0.23	0.53	0.53	0.05	0.35		0.11	0.11		0.16	0.16	0.39
Clearance Time (s)	4.5	6.0	6.0	4.5	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	5.0	5.0	5.0	0.2	0.2		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	734	1757	786	80	1152		186	381		273	547	1085
v/s Ratio Prot	c0.17	0.07	0.04	0.03	c0.08		0.03	c0.06		0.02	c0.09	0.12
v/s Ratio Perm												
v/c Ratio	0.73	0.13	0.07	0.71	0.22		0.25	0.54		0.12	0.55	0.32
Uniform Delay, d1	53.5	17.7	17.1	70.6	34.5		60.7	62.9		53.9	58.0	31.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.60	0.56		1.00	1.00	1.00
Incremental Delay, d2	4.6	0.2	0.2	21.9	0.4		1.4	2.6		0.9	3.9	0.4
Delay (s)	58.1	17.8	17.2	92.6	34.9		37.7	37.8		54.8	61.9	32.3
Level of Service	E	B	B	F	C		D	D		D	E	C
Approach Delay (s)		42.7			45.1			37.8			46.4	
Approach LOS		D			D			D			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			43.6				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			0.46									
Actuated Cycle Length (s)			150.0				Sum of lost time (s)			22.5		
Intersection Capacity Utilization			58.1%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												



# HCM Signalized Intersection Capacity Analysis

## 2: Towne Road & Montrose Road

Background AM.syn



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↗	↖	↗	↖	↗	↖	↗	↖
Traffic Volume (vph)	132	7	115	1	3	7	159	124	17	9	151	164
Future Volume (vph)	132	7	115	1	3	7	159	124	17	9	151	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	12	12	12	10	11	12	10	11	12
Total Lost time (s)		7.0	7.0	7.0	7.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00	0.88	1.00	1.00		0.97	0.95		1.00	0.95	
Fr <sub>t</sub>		1.00	0.85	1.00	0.89		1.00	0.98		1.00	0.92	
Fl <sub>t</sub> Protected		0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1660	2694	1770	1660		3204	3361		1652	3154	
Fl <sub>t</sub> Permitted		0.73	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1268	2694	1770	1660		3204	3361		1652	3154	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	143	8	125	1	3	8	173	135	18	10	164	178
RTOR Reduction (vph)	0	0	0	0	5	0	0	10	0	0	130	0
Lane Group Flow (vph)	0	151	125	1	6	0	173	143	0	10	212	0
Turn Type	Perm	NA	pt+ov	Prot	NA		Prot	NA		Prot	NA	
Protected Phases		8	8 5	7	4		5	2		1	6	
Permitted Phases	8											
Actuated Green, G (s)		35.0	52.7	1.6	43.6		10.7	35.5		1.9	26.7	
Effective Green, g (s)		35.0	52.7	1.6	43.6		10.7	35.5		1.9	26.7	
Actuated g/C Ratio		0.35	0.53	0.02	0.44		0.11	0.36		0.02	0.27	
Clearance Time (s)		7.0		7.0	7.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		5.0		5.0	5.0		5.0	0.2		5.0	0.2	
Lane Grp Cap (vph)		443	1419	28	723		342	1193		31	842	
v/s Ratio Prot			0.05	c0.00	0.00		c0.05	0.04		0.01	c0.07	
v/s Ratio Perm		c0.12										
v/c Ratio		0.34	0.09	0.04	0.01		0.51	0.12		0.32	0.25	
Uniform Delay, d <sub>1</sub>		24.0	11.7	48.4	16.0		42.2	21.7		48.4	28.8	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d <sub>2</sub>		1.0	0.1	1.1	0.0		2.5	0.2		12.2	0.7	
Delay (s)		25.0	11.8	49.5	16.0		44.6	21.9		60.6	29.5	
Level of Service		C	B	D	B		D	C		E	C	
Approach Delay (s)		19.0			18.8			34.0			30.4	
Approach LOS		B			B			C			C	



























### Intersection Summary

HCM 2000 Control Delay	28.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

# HCM Signalized Intersection Capacity Analysis

## 3: E Jefferson Street & Montrose Parkway

Background AM.syn

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 		 	 				
Traffic Volume (vph)	30	1031	860	254	977	39	249	243	34	71	470	51
Future Volume (vph)	30	1031	860	254	977	39	249	243	34	71	470	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	11	11	10	11	12	10	11	12	9	12	10
Total Lost time (s)	6.5	6.0	6.0	6.5	6.0		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	3421	1531	1652	3402		3204	3359		1593	1863	1478
Flt Permitted	0.16	1.00	1.00	0.08	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	263	3421	1531	144	3402		3204	3359		1593	1863	1478
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	32	1097	915	270	1039	41	265	259	36	76	500	54
RTOR Reduction (vph)	0	0	182	0	2	0	0	7	0	0	0	40
Lane Group Flow (vph)	32	1097	733	270	1078	0	265	288	0	76	500	14
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA		Prot	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2								4
Actuated Green, G (s)	62.7	58.0	58.0	78.0	66.8		14.4	41.1		11.9	38.6	38.6
Effective Green, g (s)	62.7	58.0	58.0	78.0	66.8		14.4	41.1		11.9	38.6	38.6
Actuated g/C Ratio	0.42	0.39	0.39	0.52	0.45		0.10	0.27		0.08	0.26	0.26
Clearance Time (s)	6.5	6.0	6.0	6.5	6.0		6.5	6.5		6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	5.0	5.0
Lane Grp Cap (vph)	151	1322	591	210	1515		307	920		126	479	380
v/s Ratio Prot	0.01	0.32		c0.12	0.32		c0.08	0.09		0.05	c0.27	
v/s Ratio Perm	0.08		0.48	c0.55								0.01
v/c Ratio	0.21	0.83	1.24	1.29	0.71		0.86	0.31		0.60	1.04	0.04
Uniform Delay, d1	27.9	41.5	46.0	42.0	33.8		66.8	43.2		66.8	55.7	41.8
Progression Factor	1.00	1.00	1.00	0.66	1.13		1.00	1.00		1.22	0.83	1.00
Incremental Delay, d2	0.7	6.1	121.9	156.0	2.5		21.3	0.2		7.6	52.3	0.1
Delay (s)	28.6	47.7	167.9	183.9	40.6		88.2	43.4		89.3	98.6	41.8
Level of Service	C	D	F	F	D		F	D		F	F	D
Approach Delay (s)		101.2			69.3			64.6			92.6	
Approach LOS		F			E			E			F	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			86.2			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			1.19									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)		25.5				
Intersection Capacity Utilization			107.9%			ICU Level of Service				G		
Analysis Period (min)			15									
c Critical Lane Group												

# HCM Unsignalized Intersection Capacity Analysis

## 4: Montrose Parkway & Stonehenge Place

Background AM.syn






























Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	20	1020	1087	18	39	83	
Future Volume (Veh/h)	20	1020	1087	18	39	83	
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	22	1109	1182	20	42	90	
<b>Pedestrians</b>							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type		None	None				
Median storage (veh)							
Upstream signal (ft)		1172	1063				
pX, platoon unblocked	0.78			0.83	0.78		
vC, conflicting volume	1202			1790	601		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	702			360	0		
tC, single (s)	4.1			6.8	6.9		
tC, 2 stage (s)							
tF (s)	2.2			3.5	3.3		
p0 queue free %	97			91	89		
cM capacity (veh/h)	697			492	849		
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	22	554	554	788	414	42	90
Volume Left	22	0	0	0	0	42	0
Volume Right	0	0	0	0	20	0	90
cSH	697	1700	1700	1700	1700	492	849
Volume to Capacity	0.03	0.33	0.33	0.46	0.24	0.09	0.11
Queue Length 95th (ft)	2	0	0	0	0	7	9
Control Delay (s)	10.3	0.0	0.0	0.0	0.0	13.0	9.7
Lane LOS	B					B	A
Approach Delay (s)	0.2			0.0	10.8		
Approach LOS							B
<b>Intersection Summary</b>							
Average Delay			0.7				
Intersection Capacity Utilization			42.4%	ICU Level of Service		A	
Analysis Period (min)			15				

# HCM Signalized Intersection Capacity Analysis

## 5: Towne Road & Montrose Parkway























Background AM.syn

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 	 		 		 	 	
Traffic Volume (vph)	62	831	257	74	958	263	111	28	45	20	124	49
Future Volume (vph)	62	831	257	74	958	263	111	28	45	20	124	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	9	11	11	10	10	10	11	11	11
Total Lost time (s)	7.5	6.5		7.5	6.5	6.5	6.0	8.0		6.0	8.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	0.88	1.00	1.00		0.97	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.91		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1711	3300		1593	3421	2694	1652	1577		3319	1725	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1711	3300		1593	3421	2694	1652	1577		3319	1725	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	903	279	80	1041	286	121	30	49	22	135	53
RTOR Reduction (vph)	0	17	0	0	0	0	0	39	0	0	10	0
Lane Group Flow (vph)	67	1165	0	80	1041	286	121	40	0	22	178	0
Turn Type	Prot	NA		Prot	NA	pt+ov	Prot	NA		Prot	NA	
Protected Phases	1	6		5	2	2.7	3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	9.8	72.5		12.6	75.3	89.4	14.9	29.3		7.6	22.0	
Effective Green, g (s)	9.8	72.5		12.6	75.3	89.4	14.9	29.3		7.6	22.0	
Actuated g/C Ratio	0.07	0.48		0.08	0.50	0.60	0.10	0.20		0.05	0.15	
Clearance Time (s)	7.5	6.5		7.5	6.5		6.0	8.0		6.0	8.0	
Vehicle Extension (s)	4.0	0.2		4.0	0.2		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	111	1595		133	1717	1605	164	308		168	253	
v/s Ratio Prot	0.04	c0.35		c0.05	c0.30	0.11	c0.07	0.03		0.01	c0.10	
v/s Ratio Perm												
v/c Ratio	0.60	0.73		0.60	0.61	0.18	0.74	0.13		0.13	0.70	
Uniform Delay, d1	68.2	30.9		66.3	26.7	13.7	65.7	49.8		68.0	60.9	
Progression Factor	1.36	0.56		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.3	2.1		8.6	1.6	0.1	16.8	0.3		0.5	9.1	
Delay (s)	99.9	19.4		74.9	28.3	13.8	82.5	50.1		68.5	70.0	
Level of Service	F	B		E	C	B	F	D		E	E	
Approach Delay (s)		23.7			28.0			69.7			69.9	
Approach LOS		C			C			E			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			31.8				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			150.0				Sum of lost time (s)				28.0	
Intersection Capacity Utilization			74.3%				ICU Level of Service				D	
Analysis Period (min)			15									
c Critical Lane Group												

# HCM Signalized Intersection Capacity Analysis

## 1: E Jefferson Street & Montrose Road





















Background PM.syn

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	631	134	87	54	488	71	283	456	53	37	274	944
Future Volume (vph)	631	134	87	54	488	71	283	456	53	37	274	944
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	12	11	12	10	12	12	11	11	12
Total Lost time (s)	4.5	6.0	6.0	4.5	6.0		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	0.88
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3204	3303	1478	1770	3356		1652	3484		1711	3421	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3204	3303	1478	1770	3356		1652	3484		1711	3421	2787
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	651	138	90	56	503	73	292	470	55	38	282	973
RTOR Reduction (vph)	0	0	49	0	8	0	0	6	0	0	0	0
Lane Group Flow (vph)	651	138	41	56	568	0	292	519	0	38	282	973
Turn Type	Prot	NA	Prot	Prot	NA		Split	NA		Split	NA	pt+ov
Protected Phases	1	6	6	5	2		4	4		3	3	3
Permitted Phases												
Actuated Green, G (s)	38.8	68.1	68.1	6.7	36.0		35.7	35.7		17.0	17.0	55.8
Effective Green, g (s)	38.8	68.1	68.1	6.7	36.0		35.7	35.7		17.0	17.0	55.8
Actuated g/C Ratio	0.26	0.45	0.45	0.04	0.24		0.24	0.24		0.11	0.11	0.37
Clearance Time (s)	4.5	6.0	6.0	4.5	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	5.0	5.0	5.0	0.2	0.2		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	828	1499	671	79	805		393	829		193	387	1036
v/s Ratio Prot	0.20	0.04	0.03	0.03	c0.17		c0.18	0.15		0.02	0.08	c0.35
v/s Ratio Perm												
v/c Ratio	0.79	0.09	0.06	0.71	0.71		0.74	0.63		0.20	0.73	0.94
Uniform Delay, d1	51.7	23.3	23.0	70.7	52.2		52.9	51.2		60.3	64.3	45.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.71	0.69		1.00	1.00	1.00
Incremental Delay, d2	5.7	0.1	0.2	21.0	5.2		7.0	1.6		2.3	11.4	15.8
Delay (s)	57.5	23.5	23.2	91.7	57.3		44.3	36.8		62.6	75.7	61.3
Level of Service	E	C	C	F	E		D	D		E	E	E
Approach Delay (s)		48.6			60.4			39.5			64.5	
Approach LOS		D			E			D			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			54.3				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			150.0				Sum of lost time (s)		22.5			
Intersection Capacity Utilization			79.5%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

# HCM Signalized Intersection Capacity Analysis

## 2: Towne Road & Montrose Road

Background PM.syn

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	5	170	8	9	13	164	88	11	3	153	313
Future Volume (vph)	92	5	170	8	9	13	164	88	11	3	153	313
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	12	12	12	10	11	12	10	11	12
Total Lost time (s)		7.0	7.0	7.0	7.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00	0.88	1.00	1.00		0.97	0.95		1.00	0.95	
Fr <sub>t</sub>		1.00	0.85	1.00	0.91		1.00	0.98		1.00	0.90	
Fl <sub>t</sub> Protected		0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1660	2694	1770	1700		3204	3364		1652	3076	
Fl <sub>t</sub> Permitted		0.72	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1249	2694	1770	1700		3204	3364		1652	3076	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	100	5	185	9	10	14	178	96	12	3	166	340
RTOR Reduction (vph)	0	0	0	0	8	0	0	8	0	0	246	0
Lane Group Flow (vph)	0	105	185	9	16	0	178	100	0	3	260	0
Turn Type	Perm	NA	pt+ov	Prot	NA		Prot	NA		Prot	NA	
Protected Phases		8	8 5	7	4		5	2		1	6	
Permitted Phases	8											
Actuated Green, G (s)		34.0	51.7	1.6	42.6		10.7	36.7		1.7	27.7	
Effective Green, g (s)		34.0	51.7	1.6	42.6		10.7	36.7		1.7	27.7	
Actuated g/C Ratio		0.34	0.52	0.02	0.43		0.11	0.37		0.02	0.28	
Clearance Time (s)		7.0		7.0	7.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		5.0		5.0	5.0		5.0	0.2		5.0	0.2	
Lane Grp Cap (vph)		424	1392	28	724		342	1234		28	852	
v/s Ratio Prot			0.07	c0.01	0.01		c0.06	0.03		0.00	c0.08	
v/s Ratio Perm	c0.08											
v/c Ratio		0.25	0.13	0.32	0.02		0.52	0.08		0.11	0.31	
Uniform Delay, d <sub>1</sub>		23.8	12.5	48.7	16.6		42.2	20.7		48.4	28.6	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d <sub>2</sub>		0.6	0.1	13.4	0.1		2.7	0.1		3.5	0.9	
Delay (s)		24.4	12.6	62.1	16.7		44.9	20.8		51.9	29.5	
Level of Service		C	B	E	B		D	C		D	C	
Approach Delay (s)		16.9			29.1			35.8			29.6	
Approach LOS		B			C			D			C	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			27.9				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.31									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			26.0		
Intersection Capacity Utilization			46.9%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

# HCM Signalized Intersection Capacity Analysis

## 3: E Jefferson Street & Montrose Parkway

Background PM.syn

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	962	528	53	961	44	730	576	157	66	318	59
Future Volume (vph)	122	962	528	53	961	44	730	576	157	66	318	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	11	11	10	11	12	10	11	12	9	12	10
Total Lost time (s)	6.5	6.0	6.0	6.5	6.0		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	0.95		1.00	1.00	1.00
Fr <sub>t</sub>	1.00	1.00	0.85	1.00	0.99		1.00	0.97		1.00	1.00	0.85
Fl <sub>t</sub> Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	3421	1531	1652	3399		3204	3311		1593	1863	1478
Fl <sub>t</sub> Permitted	0.09	1.00	1.00	0.10	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	154	3421	1531	173	3399		3204	3311		1593	1863	1478
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	131	1034	568	57	1033	47	785	619	169	71	342	63
RTOR Reduction (vph)	0	0	403	0	2	0	0	16	0	0	0	50
Lane Group Flow (vph)	131	1034	165	57	1078	0	785	772	0	71	342	13
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA		Prot	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2								4
Actuated Green, G (s)	54.2	43.5	43.5	47.6	40.2		42.0	62.4		11.2	31.6	31.6
Effective Green, g (s)	54.2	43.5	43.5	47.6	40.2		42.0	62.4		11.2	31.6	31.6
Actuated g/C Ratio	0.36	0.29	0.29	0.32	0.27		0.28	0.42		0.07	0.21	0.21
Clearance Time (s)	6.5	6.0	6.0	6.5	6.0		6.5	6.5		6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	5.0	5.0
Lane Grp Cap (vph)	158	992	443	127	910		897	1377		118	392	311
v/s Ratio Prot	c0.06	c0.30		0.02	c0.32		c0.24	0.23		0.04	c0.18	
v/s Ratio Perm	0.24		0.11	0.12								0.01
v/c Ratio	0.83	1.04	0.37	0.45	1.18		0.88	0.56		0.60	0.87	0.04
Uniform Delay, d <sub>1</sub>	39.0	53.2	42.4	40.7	54.9		51.5	33.4		67.2	57.3	47.2
Progression Factor	1.00	1.00	1.00	1.10	1.14		1.00	1.00		1.27	0.62	1.00
Incremental Delay, d <sub>2</sub>	28.7	40.2	2.4	1.1	88.1		9.5	0.5		7.4	18.1	0.1
Delay (s)	67.6	93.5	44.8	46.1	150.9		61.0	33.9		92.8	53.8	47.3
Level of Service	E	F	D	D	F		E	C		F	D	D
Approach Delay (s)		75.6			145.6			47.4			58.8	
Approach LOS		E			F			D			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			81.1			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			0.98									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)			25.5			
Intersection Capacity Utilization			93.5%			ICU Level of Service				F		
Analysis Period (min)			15									
c Critical Lane Group												

# HCM Unsignalized Intersection Capacity Analysis

## 4: Montrose Parkway & Stonehenge Place

Background PM.syn





























Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↵	↑↑	↑↑		↵	↵	
Traffic Volume (veh/h)	83	1111	1056	34	21	42	
Future Volume (Veh/h)	83	1111	1056	34	21	42	
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	
Hourly flow rate (vph)	85	1134	1078	35	21	43	
<b>Pedestrians</b>							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type		None	None				
Median storage (veh)							
Upstream signal (ft)		1172	1063				
pX, platoon unblocked	0.87				0.80	0.87	
vC, conflicting volume	1113				1832	556	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	829				792	189	
tC, single (s)	4.1				6.8	6.9	
tC, 2 stage (s)							
tF (s)	2.2				3.5	3.3	
p0 queue free %	88				91	94	
cM capacity (veh/h)	694				228	714	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	85	567	567	719	394	21	43
Volume Left	85	0	0	0	0	21	0
Volume Right	0	0	0	0	35	0	43
cSH	694	1700	1700	1700	1700	228	714
Volume to Capacity	0.12	0.33	0.33	0.42	0.23	0.09	0.06
Queue Length 95th (ft)	10	0	0	0	0	8	5
Control Delay (s)	10.9	0.0	0.0	0.0	0.0	22.4	10.4
Lane LOS	B					C	B
Approach Delay (s)	0.8			0.0		14.3	
Approach LOS						B	
<b>Intersection Summary</b>							
Average Delay			0.8				
Intersection Capacity Utilization			48.2%		ICU Level of Service		A
Analysis Period (min)			15				



# HCM Signalized Intersection Capacity Analysis

## 5: Towne Road & Montrose Parkway

Background PM.syn

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 	 		 		 		
Traffic Volume (vph)	56	917	245	55	709	127	330	76	139	146	85	41
Future Volume (vph)	56	917	245	55	709	127	330	76	139	146	85	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	9	11	11	10	10	10	11	11	11
Total Lost time (s)	7.5	6.5		7.5	6.5	6.5	6.0	8.0		6.0	8.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	0.88	1.00	1.00		0.97	1.00	
Fr <sub>t</sub>	1.00	0.97		1.00	1.00	0.85	1.00	0.90		1.00	0.95	
Fl <sub>t</sub> Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1711	3313		1593	3421	2694	1652	1570		3319	1712	
Fl <sub>t</sub> Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1711	3313		1593	3421	2694	1652	1570		3319	1712	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	60	976	261	59	754	135	351	81	148	155	90	44
RTOR Reduction (vph)	0	14	0	0	0	0	0	46	0	0	13	0
Lane Group Flow (vph)	60	1223	0	59	754	135	351	183	0	155	121	0
Turn Type	Prot	NA		Prot	NA	pt+ov	Prot	NA		Prot	NA	
Protected Phases	1	6		5	2	2.7	3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	9.5	76.1		9.6	76.2	95.6	15.0	23.4		12.9	21.3	
Effective Green, g (s)	9.5	76.1		9.6	76.2	95.6	15.0	23.4		12.9	21.3	
Actuated g/C Ratio	0.06	0.51		0.06	0.51	0.64	0.10	0.16		0.09	0.14	
Clearance Time (s)	7.5	6.5		7.5	6.5		6.0	8.0		6.0	8.0	
Vehicle Extension (s)	4.0	0.2		4.0	0.2		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	108	1680		101	1737	1716	165	244		285	243	
v/s Ratio Prot	0.04	c0.37		c0.04	0.22	0.05	c0.21	c0.12		0.05	0.07	
v/s Ratio Perm												
v/c Ratio	0.56	0.73		0.58	0.43	0.08	2.13	0.75		0.54	0.50	
Uniform Delay, d <sub>1</sub>	68.2	28.9		68.3	23.3	10.4	67.5	60.5		65.7	59.4	
Progression Factor	0.80	1.10		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d <sub>2</sub>	4.2	1.6		9.8	0.8	0.0	527.1	12.6		2.6	2.2	
Delay (s)	58.6	33.3		78.1	24.1	10.4	594.6	73.0		68.4	61.6	
Level of Service	E	C		E	C	B	F	E		E	E	
Approach Delay (s)		34.4			25.5			388.7			65.2	
Approach LOS		C			C			F			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			100.5				HCM 2000 Level of Service				F	
HCM 2000 Volume to Capacity ratio			0.90									
Actuated Cycle Length (s)			150.0				Sum of lost time (s)			28.0		
Intersection Capacity Utilization			85.9%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

**APPENDIX F**  
**HIGHWAY CAPACITY MANUAL (HCM) 2000 REPORTS – TOTAL FUTURE**  
**CONDITIONS**

# HCM Signalized Intersection Capacity Analysis

## 1: E Jefferson Street & Montrose Road

09/28/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	516	221	99	55	202	54	44	164	65	31	287	331
Future Volume (vph)	516	221	99	55	202	54	44	164	65	31	287	331
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	12	11	12	10	12	12	11	11	12
Total Lost time (s)	4.5	6.0	6.0	4.5	6.0		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	0.88
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3204	3303	1478	1770	3313		1652	3388		1711	3421	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3204	3303	1478	1770	3313		1652	3388		1711	3421	2787
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	538	230	103	57	210	56	46	171	68	32	299	345
RTOR Reduction (vph)	0	0	48	0	14	0	0	31	0	0	0	0
Lane Group Flow (vph)	538	230	55	57	252	0	46	208	0	32	299	345
Turn Type	Prot	NA	Prot	Prot	NA		Split	NA		Split	NA	pt+ov
Protected Phases	1	6	6	5	2		4	4		3	3	3
Permitted Phases												
Actuated Green, G (s)	34.4	79.5	79.5	6.8	51.9		17.2	17.2		24.0	24.0	58.4
Effective Green, g (s)	34.4	79.5	79.5	6.8	51.9		17.2	17.2		24.0	24.0	58.4
Actuated g/C Ratio	0.23	0.53	0.53	0.05	0.35		0.11	0.11		0.16	0.16	0.39
Clearance Time (s)	4.5	6.0	6.0	4.5	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	5.0	5.0	5.0	0.2	0.2		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	734	1750	783	80	1146		189	388		273	547	1085
v/s Ratio Prot	c0.17	0.07	0.04	0.03	c0.08		0.03	c0.06		0.02	c0.09	0.12
v/s Ratio Perm												
v/c Ratio	0.73	0.13	0.07	0.71	0.22		0.24	0.54		0.12	0.55	0.32
Uniform Delay, d1	53.5	17.8	17.2	70.6	34.7		60.5	62.6		53.9	58.0	31.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.61	0.57		1.00	1.00	1.00
Incremental Delay, d2	4.6	0.2	0.2	21.9	0.4		1.3	2.5		0.9	3.9	0.4
Delay (s)	58.1	18.0	17.4	92.6	35.2		38.2	38.4		54.8	61.9	32.3
Level of Service	E	B	B	F	D		D	D		D	E	C
Approach Delay (s)		42.7			45.3			38.3			46.4	
Approach LOS		D			D			D			D	

### Intersection Summary

HCM 2000 Control Delay	43.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

# HCM Signalized Intersection Capacity Analysis

## 2: Towne Road & Montrose Road

09/28/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↖↗	↖	↗		↖↗	↖↗		↖	↖↗	
Traffic Volume (vph)	132	7	115	1	3	7	159	126	17	9	152	164
Future Volume (vph)	132	7	115	1	3	7	159	126	17	9	152	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	12	12	12	10	11	12	10	11	12
Total Lost time (s)		7.0	7.0	7.0	7.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00	0.88	1.00	1.00		0.97	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.89		1.00	0.98		1.00	0.92	
Flt Protected		0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1660	2694	1770	1660		3204	3362		1652	3155	
Flt Permitted		0.73	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1268	2694	1770	1660		3204	3362		1652	3155	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	143	8	125	1	3	8	173	137	18	10	165	178
RTOR Reduction (vph)	0	0	0	0	5	0	0	10	0	0	130	0
Lane Group Flow (vph)	0	151	125	1	6	0	173	145	0	10	213	0
Turn Type	Perm	NA	pt+ov	Prot	NA		Prot	NA		Prot	NA	
Protected Phases		8	8 5	7	4		5	2		1	6	
Permitted Phases	8											
Actuated Green, G (s)		35.0	52.7	1.6	43.6		10.7	35.5		1.9	26.7	
Effective Green, g (s)		35.0	52.7	1.6	43.6		10.7	35.5		1.9	26.7	
Actuated g/C Ratio		0.35	0.53	0.02	0.44		0.11	0.36		0.02	0.27	
Clearance Time (s)		7.0		7.0	7.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		5.0		5.0	5.0		5.0	0.2		5.0	0.2	
Lane Grp Cap (vph)		443	1419	28	723		342	1193		31	842	
v/s Ratio Prot			0.05	c0.00	0.00		c0.05	0.04		0.01	c0.07	
v/s Ratio Perm		c0.12										
v/c Ratio		0.34	0.09	0.04	0.01		0.51	0.12		0.32	0.25	
Uniform Delay, d1		24.0	11.7	48.4	16.0		42.2	21.7		48.4	28.8	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.0	0.1	1.1	0.0		2.5	0.2		12.2	0.7	
Delay (s)		25.0	11.8	49.5	16.0		44.6	22.0		60.6	29.5	
Level of Service		C	B	D	B		D	C		E	C	
Approach Delay (s)		19.0			18.8			33.9			30.4	
Approach LOS		B			B			C			C	

### Intersection Summary

HCM 2000 Control Delay	28.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

# HCM Signalized Intersection Capacity Analysis

## 3: E Jefferson Street & Montrose Parkway

09/28/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	1032	860	260	983	39	249	245	34	71	470	51
Future Volume (vph)	31	1032	860	260	983	39	249	245	34	71	470	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	11	11	10	11	12	10	11	12	9	12	10
Total Lost time (s)	6.5	6.0	4.0	6.5	6.0		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	3421	1531	1652	3402		3204	3359		1593	1863	1478
Flt Permitted	0.15	1.00	1.00	0.08	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	245	3421	1531	144	3402		3204	3359		1593	1863	1478
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	33	1098	915	277	1046	41	265	261	36	76	500	54
RTOR Reduction (vph)	0	0	0	0	2	0	0	7	0	0	0	40
Lane Group Flow (vph)	33	1098	915	277	1085	0	265	290	0	76	500	14
Turn Type	pm+pt	NA	Free	pm+pt	NA		Prot	NA		Prot	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		Free	2								4
Actuated Green, G (s)	63.9	58.0	150.0	78.0	65.6		14.4	41.1		11.9	38.6	38.6
Effective Green, g (s)	63.9	58.0	150.0	78.0	65.6		14.4	41.1		11.9	38.6	38.6
Actuated g/C Ratio	0.43	0.39	1.00	0.52	0.44		0.10	0.27		0.08	0.26	0.26
Clearance Time (s)	6.5	6.0		6.5	6.0		6.5	6.5		6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	5.0	5.0
Lane Grp Cap (vph)	157	1322	1531	210	1487		307	920		126	479	380
v/s Ratio Prot	0.01	0.32		c0.12	0.32		c0.08	0.09		0.05	c0.27	
v/s Ratio Perm	0.08		c0.60	c0.57								0.01
v/c Ratio	0.21	0.83	0.60	1.32	0.73		0.86	0.31		0.60	1.04	0.04
Uniform Delay, d1	27.6	41.6	0.0	42.1	34.9		66.8	43.3		66.8	55.7	41.8
Progression Factor	1.00	1.00	1.00	0.66	1.13		1.00	1.00		1.22	0.82	1.00
Incremental Delay, d2	0.7	6.2	1.7	169.5	2.8		21.3	0.2		7.6	52.3	0.1
Delay (s)	28.3	47.7	1.7	197.3	42.1		88.2	43.5		89.2	98.0	41.8
Level of Service	C	D	A	F	D		F	D		F	F	D
Approach Delay (s)		26.8			73.6			64.5			92.1	
Approach LOS		C			E			E			F	

Intersection Summary		
HCM 2000 Control Delay	54.3	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	1.22	D
Actuated Cycle Length (s)	150.0	Sum of lost time (s)
Intersection Capacity Utilization	96.0%	25.5
Analysis Period (min)	15	ICU Level of Service
c Critical Lane Group		F

# HCM Unsignalized Intersection Capacity Analysis

## 4: Montrose Parkway & Stonehenge Place

09/28/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	21	1020	1087	20	46	95	
Future Volume (Veh/h)	21	1020	1087	20	46	95	
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	23	1109	1182	22	50	103	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type		None	None				
Median storage (veh)							
Upstream signal (ft)		1172	1063				
pX, platoon unblocked	0.78				0.83	0.78	
vC, conflicting volume	1204				1794	602	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	702				359	0	
tC, single (s)	4.1				6.8	6.9	
tC, 2 stage (s)							
tF (s)	2.2				3.5	3.3	
p0 queue free %	97				90	88	
cM capacity (veh/h)	696				491	848	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	23	554	554	788	416	50	103
Volume Left	23	0	0	0	0	50	0
Volume Right	0	0	0	0	22	0	103
cSH	696	1700	1700	1700	1700	491	848
Volume to Capacity	0.03	0.33	0.33	0.46	0.24	0.10	0.12
Queue Length 95th (ft)	3	0	0	0	0	8	10
Control Delay (s)	10.3	0.0	0.0	0.0	0.0	13.2	9.8
Lane LOS	B					B	A
Approach Delay (s)	0.2			0.0		10.9	
Approach LOS						B	
Intersection Summary							
Average Delay			0.8				
Intersection Capacity Utilization			43.2%		ICU Level of Service		A
Analysis Period (min)			15				

# HCM Signalized Intersection Capacity Analysis

## 5: Towne Road & Montrose Parkway

09/28/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↗		↗	↗	
Traffic Volume (vph)	64	836	257	74	959	263	111	28	45	20	124	50
Future Volume (vph)	64	836	257	74	959	263	111	28	45	20	124	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	9	11	11	10	10	10	11	11	11
Total Lost time (s)	7.5	6.5		7.5	6.5	6.5	6.0	8.0		6.0	8.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	0.88	1.00	1.00		0.97	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.91		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1711	3301		1593	3421	2694	1652	1577		3319	1723	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1711	3301		1593	3421	2694	1652	1577		3319	1723	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	909	279	80	1042	286	121	30	49	22	135	54
RTOR Reduction (vph)	0	17	0	0	0	0	0	39	0	0	10	0
Lane Group Flow (vph)	70	1171	0	80	1042	286	121	40	0	22	179	0
Turn Type	Prot	NA		Prot	NA	pt+ov	Prot	NA		Prot	NA	
Protected Phases	1	6		5	2	2.7	3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	9.9	72.4		12.6	75.1	89.2	14.9	29.4		7.6	22.1	
Effective Green, g (s)	9.9	72.4		12.6	75.1	89.2	14.9	29.4		7.6	22.1	
Actuated g/C Ratio	0.07	0.48		0.08	0.50	0.59	0.10	0.20		0.05	0.15	
Clearance Time (s)	7.5	6.5		7.5	6.5		6.0	8.0		6.0	8.0	
Vehicle Extension (s)	4.0	0.2		4.0	0.2		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	112	1593		133	1712	1602	164	309		168	253	
v/s Ratio Prot	0.04	c0.35		c0.05	c0.30	0.11	c0.07	0.03		0.01	c0.10	
v/s Ratio Perm												
v/c Ratio	0.62	0.74		0.60	0.61	0.18	0.74	0.13		0.13	0.71	
Uniform Delay, d1	68.2	31.1		66.3	26.9	13.8	65.7	49.7		68.0	60.9	
Progression Factor	1.35	0.56		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.4	2.2		8.6	1.6	0.1	16.8	0.3		0.5	9.3	
Delay (s)	100.7	19.7		74.9	28.5	13.9	82.5	50.0		68.5	70.1	
Level of Service	F	B		E	C	B	F	D		E	E	
Approach Delay (s)		24.2			28.2			69.6			70.0	
Approach LOS		C			C			E			E	

Intersection Summary		
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service C
HCM 2000 Volume to Capacity ratio	0.72	
Actuated Cycle Length (s)	150.0	Sum of lost time (s) 28.0
Intersection Capacity Utilization	74.5%	ICU Level of Service D
Analysis Period (min)	15	
c Critical Lane Group		

# HCM Unsignalized Intersection Capacity Analysis

## 6: E Jefferson Street & Future Access Driveway

09/28/2018



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕↗			↕↗
Traffic Volume (veh/h)	0	2	312	3	0	591
Future Volume (Veh/h)	0	2	312	3	0	591
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	2	339	3	0	642
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)			255			430
pX, platoon unblocked	0.96	0.94			0.94	
vC, conflicting volume	662	171			342	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	266	0			169	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	670	1018			1320	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	2	226	116	321	321	
Volume Left	0	0	0	0	0	
Volume Right	2	0	3	0	0	
cSH	1018	1700	1700	1700	1700	
Volume to Capacity	0.00	0.13	0.07	0.19	0.19	
Queue Length 95th (ft)	0	0	0	0	0	
Control Delay (s)	8.5	0.0	0.0	0.0	0.0	
Lane LOS	A					
Approach Delay (s)	8.5	0.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			19.7%		ICU Level of Service	A
Analysis Period (min)			15			



# HCM Signalized Intersection Capacity Analysis

## 1: E Jefferson Street & Montrose Road

09/28/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑	↖	↖	↑↑		↖	↑↑		↖	↑↑	↖↗
Traffic Volume (vph)	631	134	87	54	488	71	283	458	53	37	276	944
Future Volume (vph)	631	134	87	54	488	71	283	458	53	37	276	944
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	12	11	12	10	12	12	11	11	12
Total Lost time (s)	4.5	6.0	6.0	4.5	6.0		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	0.88
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3204	3303	1478	1770	3356		1652	3484		1711	3421	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3204	3303	1478	1770	3356		1652	3484		1711	3421	2787
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	651	138	90	56	503	73	292	472	55	38	285	973
RTOR Reduction (vph)	0	0	49	0	8	0	0	6	0	0	0	0
Lane Group Flow (vph)	651	138	41	56	568	0	292	521	0	38	285	973
Turn Type	Prot	NA	Prot	Prot	NA		Split	NA		Split	NA	pt+ov
Protected Phases	1	6	6	5	2		4	4		3	3	3
Permitted Phases												
Actuated Green, G (s)	38.8	68.1	68.1	6.7	36.0		35.7	35.7		17.0	17.0	55.8
Effective Green, g (s)	38.8	68.1	68.1	6.7	36.0		35.7	35.7		17.0	17.0	55.8
Actuated g/C Ratio	0.26	0.45	0.45	0.04	0.24		0.24	0.24		0.11	0.11	0.37
Clearance Time (s)	4.5	6.0	6.0	4.5	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	5.0	5.0	5.0	0.2	0.2		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	828	1499	671	79	805		393	829		193	387	1036
v/s Ratio Prot	0.20	0.04	0.03	0.03	c0.17		c0.18	0.15		0.02	0.08	c0.35
v/s Ratio Perm												
v/c Ratio	0.79	0.09	0.06	0.71	0.71		0.74	0.63		0.20	0.74	0.94
Uniform Delay, d1	51.7	23.3	23.0	70.7	52.2		52.9	51.2		60.3	64.3	45.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.71	0.69		1.00	1.00	1.00
Incremental Delay, d2	5.7	0.1	0.2	21.0	5.2		7.0	1.6		2.3	11.8	15.8
Delay (s)	57.5	23.5	23.2	91.7	57.3		44.3	36.9		62.6	76.2	61.3
Level of Service	E	C	C	F	E		D	D		E	E	E
Approach Delay (s)		48.6			60.4			39.5			64.6	
Approach LOS		D			E			D			E	

### Intersection Summary

HCM 2000 Control Delay	54.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

# HCM Signalized Intersection Capacity Analysis

## 2: Towne Road & Montrose Road

09/28/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗↘	↖↙	↖↙		↗↘	↕		↖↙	↗↘	
Traffic Volume (vph)	92	5	170	8	9	13	164	89	11	3	155	313
Future Volume (vph)	92	5	170	8	9	13	164	89	11	3	155	313
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	12	12	12	10	11	12	10	11	12
Total Lost time (s)		7.0	7.0	7.0	7.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00	0.88	1.00	1.00		0.97	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.91		1.00	0.98		1.00	0.90	
Flt Protected		0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1660	2694	1770	1700		3204	3365		1652	3078	
Flt Permitted		0.72	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1249	2694	1770	1700		3204	3365		1652	3078	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	100	5	185	9	10	14	178	97	12	3	168	340
RTOR Reduction (vph)	0	0	0	0	8	0	0	8	0	0	246	0
Lane Group Flow (vph)	0	105	185	9	16	0	178	101	0	3	262	0
Turn Type	Perm	NA	pt+ov	Prot	NA		Prot	NA		Prot	NA	
Protected Phases		8	8 5	7	4		5	2		1	6	
Permitted Phases	8											
Actuated Green, G (s)		34.0	51.7	1.6	42.6		10.7	36.7		1.7	27.7	
Effective Green, g (s)		34.0	51.7	1.6	42.6		10.7	36.7		1.7	27.7	
Actuated g/C Ratio		0.34	0.52	0.02	0.43		0.11	0.37		0.02	0.28	
Clearance Time (s)		7.0		7.0	7.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		5.0		5.0	5.0		5.0	0.2		5.0	0.2	
Lane Grp Cap (vph)		424	1392	28	724		342	1234		28	852	
v/s Ratio Prot			0.07	c0.01	0.01		c0.06	0.03		0.00	c0.09	
v/s Ratio Perm		c0.08										
v/c Ratio		0.25	0.13	0.32	0.02		0.52	0.08		0.11	0.31	
Uniform Delay, d1		23.8	12.5	48.7	16.6		42.2	20.7		48.4	28.6	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6	0.1	13.4	0.1		2.7	0.1		3.5	0.9	
Delay (s)		24.4	12.6	62.1	16.7		44.9	20.8		51.9	29.5	
Level of Service		C	B	E	B		D	C		D	C	
Approach Delay (s)		16.9			29.1			35.8			29.6	
Approach LOS		B			C			D			C	

### Intersection Summary

HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	46.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

# HCM Signalized Intersection Capacity Analysis

## 3: E Jefferson Street & Montrose Parkway

09/28/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑		↘↗	↑↑		↘	↑	↗
Traffic Volume (vph)	125	965	528	57	965	44	730	582	157	68	318	59
Future Volume (vph)	125	965	528	57	965	44	730	582	157	68	318	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	11	11	10	11	12	10	11	12	9	12	10
Total Lost time (s)	6.5	6.0	4.0	6.5	6.0		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	3421	1531	1652	3399		3204	3312		1593	1863	1478
Flt Permitted	0.09	1.00	1.00	0.10	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	155	3421	1531	173	3399		3204	3312		1593	1863	1478
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	134	1038	568	61	1038	47	785	626	169	73	342	63
RTOR Reduction (vph)	0	0	0	0	2	0	0	16	0	0	0	50
Lane Group Flow (vph)	134	1038	568	61	1083	0	785	779	0	73	342	13
Turn Type	pm+pt	NA	Free	pm+pt	NA		Prot	NA		Prot	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		Free	2								4
Actuated Green, G (s)	54.0	43.3	150.0	47.8	40.2		42.0	62.3		11.3	31.6	31.6
Effective Green, g (s)	54.0	43.3	150.0	47.8	40.2		42.0	62.3		11.3	31.6	31.6
Actuated g/C Ratio	0.36	0.29	1.00	0.32	0.27		0.28	0.42		0.08	0.21	0.21
Clearance Time (s)	6.5	6.0		6.5	6.0		6.5	6.5		6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	5.0	5.0
Lane Grp Cap (vph)	158	987	1531	130	910		897	1375		120	392	311
v/s Ratio Prot	c0.06	0.30		0.02	c0.32		c0.24	0.24		0.05	c0.18	
v/s Ratio Perm	0.24		c0.37	0.13								0.01
v/c Ratio	0.85	1.05	0.37	0.47	1.19		0.88	0.57		0.61	0.87	0.04
Uniform Delay, d1	39.1	53.4	0.0	40.7	54.9		51.5	33.5		67.2	57.3	47.2
Progression Factor	1.00	1.00	1.00	1.10	1.14		1.00	1.00		1.27	0.62	1.00
Incremental Delay, d2	32.2	43.2	0.7	1.2	90.6		9.5	0.5		7.5	18.1	0.1
Delay (s)	71.3	96.6	0.7	46.0	153.2		61.0	34.1		92.6	53.9	47.3
Level of Service	E	F	A	D	F		E	C		F	D	D
Approach Delay (s)		63.3			147.5			47.5			58.9	
Approach LOS		E			F			D			E	

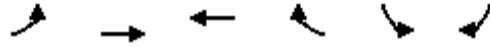
### Intersection Summary

HCM 2000 Control Delay	77.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	93.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

# HCM Unsignalized Intersection Capacity Analysis

## 4: Montrose Parkway & Stonehenge Place

09/28/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	89	1111	1056	41	25	49	
Future Volume (Veh/h)	89	1111	1056	41	25	49	
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	
Hourly flow rate (vph)	91	1134	1078	42	26	50	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type		None	None				
Median storage (veh)							
Upstream signal (ft)		1172	1063				
pX, platoon unblocked	0.87				0.80	0.87	
vC, conflicting volume	1120				1848	560	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	833				808	188	
tC, single (s)	4.1				6.8	6.9	
tC, 2 stage (s)							
tF (s)	2.2				3.5	3.3	
p0 queue free %	87				88	93	
cM capacity (veh/h)	690				221	713	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	91	567	567	719	401	26	50
Volume Left	91	0	0	0	0	26	0
Volume Right	0	0	0	0	42	0	50
cSH	690	1700	1700	1700	1700	221	713
Volume to Capacity	0.13	0.33	0.33	0.42	0.24	0.12	0.07
Queue Length 95th (ft)	11	0	0	0	0	10	6
Control Delay (s)	11.0	0.0	0.0	0.0	0.0	23.5	10.4
Lane LOS	B					C	B
Approach Delay (s)	0.8			0.0		14.9	
Approach LOS						B	
Intersection Summary							
Average Delay			0.9				
Intersection Capacity Utilization			48.8%		ICU Level of Service		A
Analysis Period (min)			15				

# HCM Signalized Intersection Capacity Analysis

## 5: Towne Road & Montrose Parkway

09/28/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↗		↗	↗	
Traffic Volume (vph)	57	920	245	55	714	127	330	76	139	146	85	43
Future Volume (vph)	57	920	245	55	714	127	330	76	139	146	85	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	9	11	11	10	10	10	11	11	11
Total Lost time (s)	7.5	6.5		7.5	6.5	6.5	6.0	8.0		6.0	8.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	0.88	1.00	1.00		0.97	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.90		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1711	3313		1593	3421	2694	1652	1570		3319	1709	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1711	3313		1593	3421	2694	1652	1570		3319	1709	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	61	979	261	59	760	135	351	81	148	155	90	46
RTOR Reduction (vph)	0	14	0	0	0	0	0	46	0	0	13	0
Lane Group Flow (vph)	61	1226	0	59	760	135	351	183	0	155	123	0
Turn Type	Prot	NA		Prot	NA	pt+ov	Prot	NA		Prot	NA	
Protected Phases	1	6		5	2	2.7	3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	9.5	76.1		9.6	76.2	95.6	15.0	23.4		12.9	21.3	
Effective Green, g (s)	9.5	76.1		9.6	76.2	95.6	15.0	23.4		12.9	21.3	
Actuated g/C Ratio	0.06	0.51		0.06	0.51	0.64	0.10	0.16		0.09	0.14	
Clearance Time (s)	7.5	6.5		7.5	6.5		6.0	8.0		6.0	8.0	
Vehicle Extension (s)	4.0	0.2		4.0	0.2		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	108	1680		101	1737	1716	165	244		285	242	
v/s Ratio Prot	0.04	c0.37		c0.04	0.22	0.05	c0.21	c0.12		0.05	0.07	
v/s Ratio Perm												
v/c Ratio	0.56	0.73		0.58	0.44	0.08	2.13	0.75		0.54	0.51	
Uniform Delay, d1	68.2	28.9		68.3	23.3	10.4	67.5	60.5		65.7	59.5	
Progression Factor	0.80	1.09		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.5	1.6		9.8	0.8	0.0	527.1	12.6		2.6	2.3	
Delay (s)	59.1	33.2		78.1	24.1	10.4	594.6	73.0		68.4	61.8	
Level of Service	E	C		E	C	B	F	E		E	E	
Approach Delay (s)		34.4			25.5			388.7			65.3	
Approach LOS		C			C			F			E	

### Intersection Summary

HCM 2000 Control Delay	100.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	86.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

# HCM Unsignalized Intersection Capacity Analysis

## 6: E Jefferson Street & Future Access Driveway

09/28/2018



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕↗			↕↗
Traffic Volume (veh/h)	0	2	742	9	0	445
Future Volume (Veh/h)	0	2	742	9	0	445
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	2	807	10	0	484
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)			275			410
pX, platoon unblocked	0.87	0.83			0.83	
vC, conflicting volume	1054	408			817	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	369	0			372	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	524	901			983	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	2	538	279	242	242	
Volume Left	0	0	0	0	0	
Volume Right	2	0	10	0	0	
cSH	901	1700	1700	1700	1700	
Volume to Capacity	0.00	0.32	0.16	0.14	0.14	
Queue Length 95th (ft)	0	0	0	0	0	
Control Delay (s)	9.0	0.0	0.0	0.0	0.0	
Lane LOS	A					
Approach Delay (s)	9.0	0.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			30.8%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis  
3: E Jefferson Street & Montrose Parkway

Optimized Splits  
09/28/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	965	528	57	965	44	730	582	157	68	318	59
Future Volume (vph)	125	965	528	57	965	44	730	582	157	68	318	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	11	11	10	11	12	10	11	12	9	12	10
Total Lost time (s)	6.5	6.0	4.0	6.5	6.0		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	3421	1531	1652	3399		3204	3312		1593	1863	1478
Flt Permitted	0.08	1.00	1.00	0.08	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	131	3421	1531	145	3399		3204	3312		1593	1863	1478
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	134	1038	568	61	1038	47	785	626	169	73	342	63
RTOR Reduction (vph)	0	0	0	0	2	0	0	16	0	0	0	51
Lane Group Flow (vph)	134	1038	568	61	1083	0	785	779	0	73	342	12
Turn Type	pm+pt	NA	Free	pm+pt	NA		Prot	NA		Prot	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		Free	2								4
Actuated Green, G (s)	61.7	51.2	150.0	55.3	48.0		37.5	54.7		11.3	28.5	28.5
Effective Green, g (s)	61.7	51.2	150.0	55.3	48.0		37.5	54.7		11.3	28.5	28.5
Actuated g/C Ratio	0.41	0.34	1.00	0.37	0.32		0.25	0.36		0.08	0.19	0.19
Clearance Time (s)	6.5	6.0		6.5	6.0		6.5	6.5		6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	5.0	5.0
Lane Grp Cap (vph)	156	1167	1531	126	1087		801	1207		120	353	280
v/s Ratio Prot	c0.06	0.30		0.02	c0.32		c0.24	0.24		0.05	c0.18	
v/s Ratio Perm	0.29		c0.37	0.15								0.01
v/c Ratio	0.86	0.89	0.37	0.48	1.00		0.98	0.65		0.61	0.97	0.04
Uniform Delay, d1	36.8	46.7	0.0	35.4	50.9		55.9	39.6		67.2	60.3	49.6
Progression Factor	1.00	1.00	1.00	1.17	1.14		1.00	1.00		1.27	0.54	1.00
Incremental Delay, d2	34.6	10.3	0.7	1.3	17.2		26.8	1.2		7.5	36.9	0.1
Delay (s)	71.3	57.0	0.7	42.8	75.4		82.7	40.8		92.6	69.5	49.7
Level of Service	E	E	A	D	E		F	D		F	E	D
Approach Delay (s)		39.7			73.7			61.6			70.4	
Approach LOS		D			E			E			E	

Intersection Summary		
HCM 2000 Control Delay	57.6	HCM 2000 Level of Service E
HCM 2000 Volume to Capacity ratio	0.98	
Actuated Cycle Length (s)	150.0	Sum of lost time (s) 25.5
Intersection Capacity Utilization	93.8%	ICU Level of Service F
Analysis Period (min)	15	
c Critical Lane Group		

Timing Report, Sorted By Phase  
 3: E Jefferson Street & Montrose Parkway

Optimized Splits  
 09/28/2018

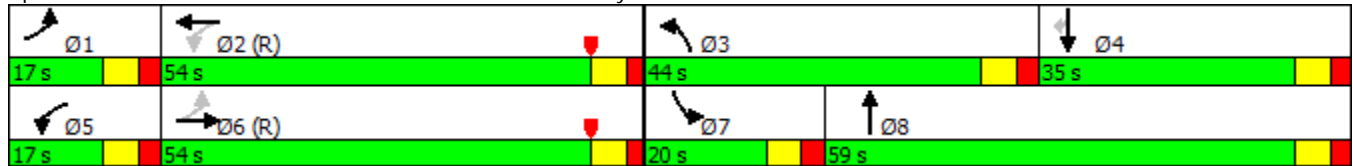


Phase Number	1	2	3	4	5	6	7	8
Movement	EBL	WBTL	NBL	SBT	WBL	EBTL	SBL	NBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	17	54	44	35	17	54	20	59
Maximum Split (%)	11.3%	36.0%	29.3%	23.3%	11.3%	36.0%	13.3%	39.3%
Minimum Split (s)	17	29	21	31.5	17	29	20	31.5
Yellow Time (s)	4	4	4	4	4	4	4	4
All-Red Time (s)	2.5	2	2.5	2.5	2.5	2	2.5	2.5
Minimum Initial (s)	3	15	3	5	3	15	3	5
Vehicle Extension (s)	3	3	3	5	3	3	3	3
Minimum Gap (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7		7		7		7
Flash Dont Walk (s)		16		18		16		18
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	98	115	19	63	98	115	19	39
End Time (s)	115	19	63	98	115	19	39	98
Yield/Force Off (s)	108.5	13	56.5	91.5	108.5	13	32.5	91.5
Yield/Force Off 170(s)	108.5	147	56.5	73.5	108.5	147	32.5	73.5
Local Start Time (s)	85	102	6	50	85	102	6	26
Local Yield (s)	95.5	0	43.5	78.5	95.5	0	19.5	78.5
Local Yield 170(s)	95.5	134	43.5	60.5	95.5	134	19.5	60.5

Intersection Summary

Cycle Length	150
Control Type	Actuated-Coordinated
Natural Cycle	140
Offset: 13 (9%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow	

Splits and Phases: 3: E Jefferson Street & Montrose Parkway





**APPENDIX G**  
**BUS ROUTE INFORMATION**

## 5 To Paul S. Sarbanes Transit Center (Silver Spring M)

### SATURDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP

1	2	3	4	5	6	7	8
6:14	6:17	6:23	6:25	6:31	6:36	6:41	6:49
6:48	6:53	7:01	7:05	7:11	7:16	7:21	7:28
7:18	7:23	7:31	7:35	7:41	7:46	7:51	7:58
7:48	7:53	8:01	8:05	8:11	8:16	8:21	8:28
8:18	8:23	8:31	8:35	8:41	8:48	8:53	9:00
8:48	8:53	9:01	9:05	9:11	9:16	9:21	9:28
9:18	9:23	9:31	9:35	9:41	9:48	9:53	10:00
9:48	9:53	10:01	10:05	10:11	10:16	10:21	10:28
10:18	10:23	10:32	10:36	10:43	10:50	10:54	11:02
10:48	10:53	11:02	11:06	11:13	11:18	11:22	11:30
11:18	11:23	11:32	11:36	11:43	11:50	11:54	12:02
11:48	11:53	12:02	12:06	12:13	12:18	12:22	12:30
12:18	12:23	12:32	12:36	12:43	12:50	12:54	1:02
12:48	12:53	1:02	1:06	1:13	1:18	1:22	1:30
1:18	1:23	1:32	1:36	1:43	1:50	1:54	2:02
1:48	1:53	2:02	2:06	2:13	2:18	2:22	2:30
2:18	2:23	2:32	2:36	2:43	2:50	2:54	3:02
2:48	2:53	3:02	3:06	3:13	3:18	3:22	3:30
3:18	3:23	3:32	3:36	3:43	3:50	3:54	4:02
3:48	3:53	4:02	4:06	4:13	4:18	4:22	4:30
4:18	4:23	4:32	4:36	4:43	4:50	4:54	5:02
4:48	4:53	5:02	5:06	5:13	5:18	5:22	5:30
5:18	5:23	5:32	5:36	5:43	5:50	5:54	6:02
5:48	5:53	6:02	6:06	6:13	6:18	6:22	6:30
6:18	6:23	6:32	6:36	6:43	6:48	6:52	7:00
6:48	6:53	7:02	7:06	7:13	7:18	7:22	7:30
7:18	7:23	7:32	7:36	7:43	7:48	7:52	8:00
7:48	7:53	8:02	8:06	8:13	8:18	8:22	8:30
8:18	8:22	8:29	8:32	8:38	8:43	8:48	8:55
8:48	8:52	8:59	9:02	9:08	9:13	9:18	9:25
9:18	9:22	9:29	9:32	9:38	9:43	9:48	9:55
9:48	9:52	9:59	10:02	10:08	10:13	10:18	10:25
10:18	10:22	10:29	10:32	10:38	10:43	10:48	10:55
10:50	10:54	11:01	11:04	11:10	11:15	11:20	11:27
11:38	11:42	11:49	11:52	11:58	12:03	12:08	12:15
12:28	12:32	12:39	12:42	12:48	12:53	12:58	1:05

NOTES: • Trip also serves Victory Forest.

AM PM

## 5 To Twinbrook M

### SATURDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP

8	7	6	5	4	3	2	1
5:30	5:36	5:40	5:46	5:49	5:53	5:59	6:02
6:00	6:06	6:10	6:16	6:19	6:23	6:29	6:32
6:30	6:37	6:41	6:48	6:52	6:57	7:03	7:07
7:00	7:07	7:11	7:18	7:22	7:27	7:33	7:37
7:30	7:37	7:41	7:48	7:52	7:57	8:03	8:07
8:00	8:07	8:11	8:18	8:22	8:27	8:33	8:37
8:30	8:37	8:41	8:48	8:52	8:57	9:03	9:07
9:00	9:07	9:11	9:20	9:24	9:29	9:35	9:39
9:30	9:37	9:41	9:48	9:52	9:57	10:03	10:07
10:00	10:08	10:13	10:22	10:27	10:33	10:39	10:44
10:30	10:38	10:43	10:50	10:55	11:01	11:07	11:12
11:00	11:08	11:13	11:22	11:27	11:33	11:39	11:44
11:30	11:38	11:43	11:50	11:55	12:01	12:07	12:12
12:00	12:08	12:13	12:22	12:27	12:33	12:39	12:44
12:30	12:38	12:43	12:50	12:55	1:01	1:07	1:12
1:00	1:08	1:13	1:22	1:27	1:33	1:39	1:44
1:30	1:38	1:43	1:50	1:55	2:01	2:07	2:12
2:00	2:08	2:13	2:22	2:27	2:33	2:39	2:44
2:30	2:38	2:43	2:50	2:55	3:01	3:07	3:12
3:00	3:08	3:13	3:22	3:27	3:33	3:39	3:44
3:30	3:38	3:43	3:50	3:55	4:01	4:07	4:12
4:00	4:08	4:13	4:22	4:27	4:33	4:39	4:44
4:30	4:38	4:43	4:50	4:55	5:01	5:07	5:12
5:00	5:08	5:13	5:22	5:27	5:33	5:39	5:44
5:30	5:38	5:43	5:50	5:55	6:01	6:07	6:12
6:00	6:07	6:12	6:18	6:22	6:27	6:32	6:37
6:30	6:37	6:42	6:48	6:52	6:57	7:02	7:07
7:00	7:07	7:12	7:18	7:22	7:27	7:32	7:37
7:30	7:37	7:42	7:48	7:52	7:57	8:02	8:07
8:00	8:06	8:11	8:16	8:20	8:24	8:28	8:32
8:30	8:36	8:41	8:46	8:50	8:54	8:58	9:02
9:00	9:06	9:11	9:16	9:20	9:24	9:28	9:32
9:30	9:36	9:41	9:46	9:50	9:54	9:58	10:02
10:10	10:16	10:21	10:26	10:30	10:34	10:38	10:42
10:55	11:01	11:06	11:11	11:15	11:19	11:23	11:27
11:48	11:54	11:59	12:04	12:08	12:12	12:16	12:20

NOTES: • Trip also serves Victory Forest.

AM PM

## 5 To Paul S. Sarbanes Transit Center (Silver Spring M)

### SUNDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP

1	2	3	4	5	6	7	8
6:14	6:17	6:23	6:25	6:31	6:36	6:41	6:49
6:48	6:51	6:57	6:59	7:05	7:10	7:15	7:23
7:18	7:23	7:31	7:35	7:41	7:46	7:51	7:58
7:48	7:53	8:01	8:05	8:11	8:16	8:21	8:28
8:18	8:23	8:31	8:35	8:41	8:48	8:53	9:00
8:48	8:53	9:01	9:05	9:11	9:16	9:21	9:28
9:18	9:23	9:31	9:35	9:41	9:48	9:53	10:00
9:48	9:53	10:01	10:05	10:11	10:16	10:21	10:28
10:18	10:23	10:31	10:35	10:41	10:48	10:53	11:00
10:48	10:53	11:02	11:06	11:13	11:18	11:22	11:30
11:18	11:23	11:32	11:36	11:43	11:50	11:54	12:02
11:48	11:53	12:02	12:06	12:13	12:18	12:22	12:30
12:18	12:23	12:32	12:36	12:43	12:50	12:54	1:02
12:48	12:53	1:02	1:06	1:13	1:18	1:22	1:30
1:18	1:23	1:32	1:36	1:43	1:50	1:54	2:02
1:48	1:53	2:02	2:06	2:13	2:18	2:22	2:30
2:18	2:23	2:32	2:36	2:43	2:50	2:54	3:02
2:48	2:53	3:02	3:06	3:13	3:18	3:22	3:30
3:18	3:23	3:32	3:36	3:43	3:50	3:54	4:02
3:48	3:53	4:02	4:06	4:13	4:18	4:22	4:30
4:18	4:23	4:32	4:36	4:43	4:50	4:54	5:02
4:48	4:53	5:02	5:06	5:13	5:18	5:22	5:30
5:18	5:23	5:32	5:36	5:43	5:50	5:54	6:02
5:48	5:53	6:02	6:06	6:13	6:18	6:22	6:30
6:18	6:23	6:32	6:36	6:43	6:48	6:52	7:00
6:48	6:53	7:02	7:06	7:13	7:18	7:22	7:30
7:18	7:22	7:29	7:32	7:38	7:43	7:48	7:55
7:48	7:52	7:59	8:02	8:08	8:13	8:18	8:25
8:18	8:22	8:29	8:32	8:38	8:43	8:48	8:55
8:48	8:52	8:59	9:02	9:08	9:13	9:18	9:25
9:18	9:22	9:29	9:32	9:38	9:43	9:48	9:55
9:48	9:52	9:59	10:02	10:08	10:13	10:18	10:25
10:18	10:22	10:29	10:32	10:38	10:43	10:48	10:55
10:50	10:54	11:01	11:04	11:10	11:15	11:20	11:27
11:38	11:42	11:49	11:52	11:58	12:03	12:08	12:15
12:28	12:32	12:39	12:42	12:48	12:53	12:58	1:05

NOTES: • Trip also serves Victory Forest.

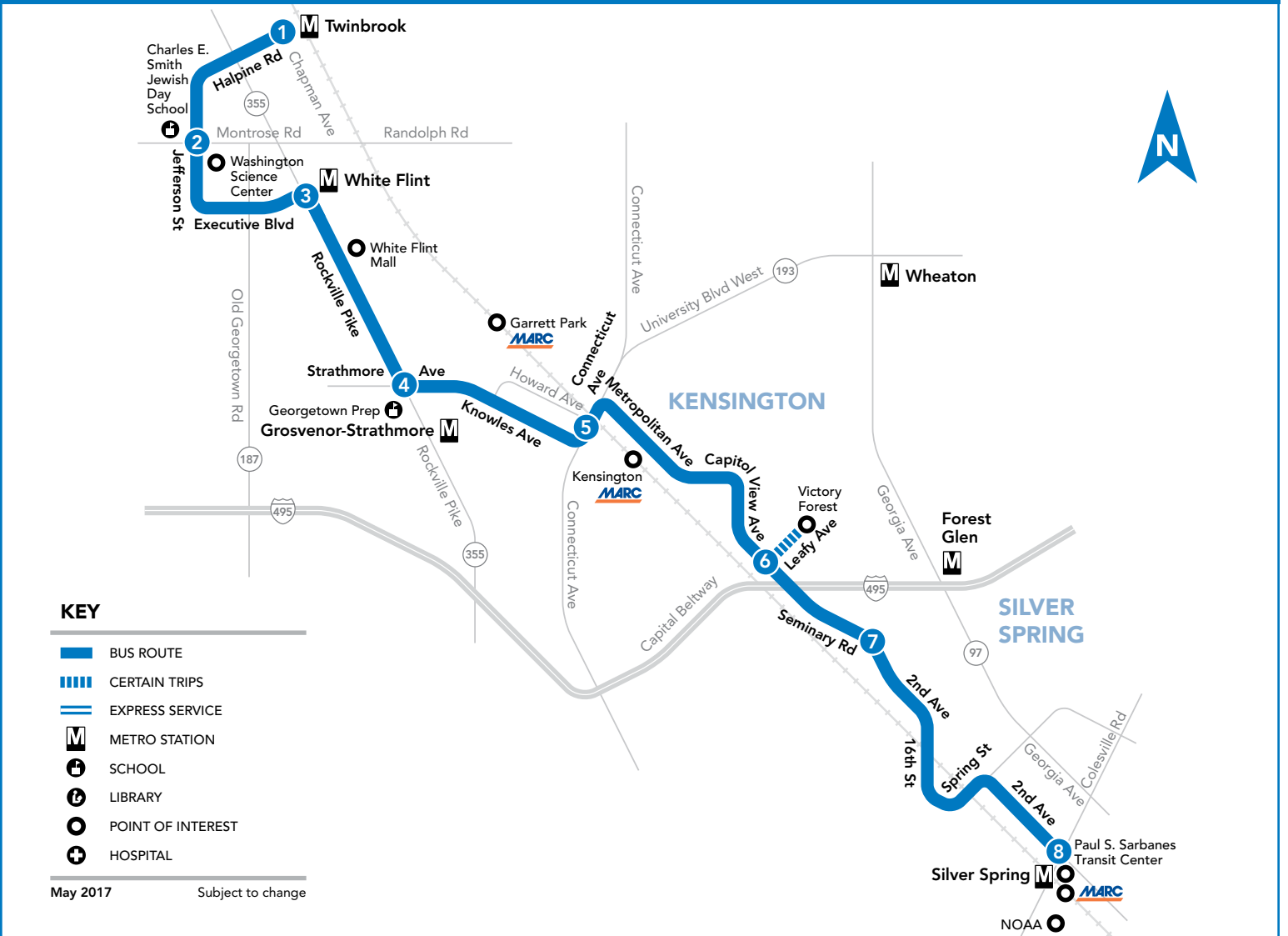
AM PM

## 5 To Twinbrook M

### SUNDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP

8	7	6	5	4	3	2	1
5:30	5:36	5:40	5:46	5:49	5:53	5:59	6:02
6:00	6:06	6:10	6:16	6:19	6:23	6:29	6:32
6:30	6:36	6:40	6:46	6:49	6:53	6:59	7:02
7:00	7:07	7:11	7:18	7:22	7:27	7:33	7:37
7:30	7:37	7:41	7:48	7:52	7:57	8:03	8:07
8:00	8:07	8:11	8:18	8:22	8:27	8:33	8:37
8:30	8:37	8:41	8:48	8:52	8:57	9:03	9:07
9:00	9:07	9:11	9:20	9:24	9:29	9:35	9:39
9:30	9:37	9:41	9:48	9:52	9:57	10:03	10:07
10:00	10:07	10:11	10:20	10:24	10:29	10:35	10:39
10:30	10:38	10:43	10:50	10:55	11:01	11:07	11:12
11:00	11:08	11:13	11:22	11:27	11:33	11:39	11:44
11:30	11:38	11:43	11:50	11:55	12:01	12:07	12:12
12:00	12:08	12:13	12:22	12:27	12:33	12:39	12:44
12:30	12:38	12:43	12:50	12:55	1:01	1:07	1:12
1:00	1:08	1:13	1:22	1:27	1:33	1:39	1:44
1:30	1:38	1:43	1:50	1:55	2:01	2:07	2:12
2:00	2:08	2:13	2:22	2:27	2:33	2:39	2:44
2:30	2:38	2:43	2:50	2:55	3:01	3:07	3:12
3:00	3:08	3:13	3:22	3:27	3:33	3:39	3:44
3:30	3:38	3:43	3:50	3:55	4:01	4:07	4:12
4:00	4:08	4:13	4:22	4:27	4:33	4:39	4:44
4:30	4:38	4:43	4:50	4:55	5:01	5:07	5:12
5:00	5:08	5:13	5:22	5:27	5:33	5:39	5:44
5:30	5:37	5:42	5:48	5:52	5:57	6:02	6:07
6:00	6:07	6:12	6:18	6:22	6:27	6:32	6:37
6:30	6:37	6:42	6:48	6:52	6:57	7:02	7:07
7:00	7:07	7:12	7:18	7:22	7:27	7:32	7:37
7:30	7:36	7:41	7:46	7:50	7:54	7:58	8:02
8:00	8:06	8:11	8:16	8:20	8:24	8:28	8:32
8:30	8:36	8:41	8:46	8:50	8:54	8:58	9:02
9:00	9:06	9:11	9:16	9:20	9:24	9:28	9:32
9:30	9:36	9:41	9:46	9:50	9:54	9:5	



**5 To Paul S. Sarbanes Transit Center (Silver Spring M)**

**MONDAY THROUGH FRIDAY**  
SEE TIMEPOINT LOCATION ON ROUTE MAP

Twinbrook M	Jefferson St & Montrose Rd	White Flint M	Rockville Pike & Strathmore Ave	Connecticut & Knowles Aves	Capitol View & Leafy Aves	Second Ave & Linden Lane	Paul S. Sarbanes TC (Silver Spring M)
5:40	5:43	5:49	5:51	5:57	6:02	6:07	6:15
6:16	6:20	6:26	6:29	6:35	6:40	6:45	6:53
6:46	6:50	6:56	6:59	7:05	7:10	7:15	7:23
7:06	7:10	7:16	7:19	7:25	7:30	7:35	7:43
7:26	7:31	7:39	7:42	7:50	7:56	8:01	8:09
7:51	7:56	8:04	8:07	8:15	8:21	8:26	8:34
8:16	8:21	8:29	8:33	8:40	8:45	8:50	8:57
8:46	8:51	8:59	9:03	9:10	9:15	9:20	9:27
9:16	9:21	9:29	9:33	9:40	9:47	9:52	9:59
9:46	9:51	9:59	10:03	10:10	10:15	10:20	10:27
10:16	10:21	10:29	10:33	10:40	10:47	10:52	10:59
10:46	10:51	10:59	11:03	11:10	11:15	11:20	11:27
11:16	11:21	11:29	11:33	11:40	11:47	11:52	11:59
11:46	11:51	11:59	12:03	12:10	12:15	12:20	12:27
12:16	12:21	12:30	12:34	12:41	12:48	12:53	1:01
12:46	12:51	1:00	1:04	1:11	1:16	1:21	1:29
1:16	1:21	1:30	1:34	1:41	1:48	1:53	2:01
1:46	1:51	2:00	2:04	2:11	2:16	2:21	2:29
2:11	2:16	2:26	2:30	2:39	2:47	2:52	3:00
2:31	2:36	2:46	2:50	2:59	3:05	3:10	3:18
2:51	2:56	3:06	3:10	3:19	3:25	3:30	3:38
3:09	3:14	3:24	3:28	3:37	3:43	3:48	3:56
3:27	3:32	3:42	3:46	3:55	4:01	4:06	4:14
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4:02	4:07	4:17	4:21	4:30	4:36	4:41	4:49
4:17	4:22	4:32	4:36	4:45	4:51	4:56	5:04
4:29	4:34	4:44	4:48	4:57	5:03	5:08	5:16
4:41	4:47	4:59	5:04	5:16	5:21	5:26	5:34
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5:05	5:11	5:23	5:28	5:40	5:45	5:50	5:58
5:20	5:26	5:38	5:43	5:55	6:00	6:05	6:13
5:35	5:40	5:49	5:53	6:02	6:07	6:12	6:20
5:52	5:57	6:06	6:10	6:19	6:24	6:29	6:37
6:10	6:15	6:24	6:28	6:37	6:42	6:47	6:55
6:32	6:37	6:46	6:50	6:59	7:04	7:09	7:17
6:55	7:00	7:07	7:11	7:18	7:23	7:28	7:35
7:20	7:25	7:32	7:36	7:43	7:48	7:53	8:00
7:48	7:53	8:00	8:04	8:11	8:16	8:21	8:28
8:18	8:23	8:30	8:34	8:41	8:46	8:51	8:58
8:48	8:53	9:00	9:04	9:11	9:16	9:21	9:28
9:18	9:23	9:30	9:34	9:41	9:46	9:51	9:58
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10:18	10:22	10:29	10:32	10:38	10:43	10:48	10:55
10:50	10:54	11:01	11:04	11:10	11:15	11:20	11:27
11:38	11:42	11:49	11:52	11:58	12:03	12:08	12:15
12:28	12:32	12:39	12:42	12:48	12:53	12:58	1:05

NOTES: • Trip also serves Victory Forest.

AM PM

**5 To Twinbrook M**

**MONDAY THROUGH FRIDAY**  
SEE TIMEPOINT LOCATION ON ROUTE MAP

Paul S. Sarbanes TC (Silver Spring M)	Second Ave & Linden Lane	Capitol View & Leafy Aves	Connecticut & Knowles Aves	Rockville Pike & Strathmore Ave	White Flint M	Jefferson St & Montrose Rd	Twinbrook M
5:00	5:06	5:10	5:16	5:19	5:23	5:30	5:33
5:30	5:36	5:40	5:46	5:49	5:53	6:00	6:03
5:55	6:02	6:07	6:14	6:18	6:24	6:31	6:35
6:15	6:22	6:27	6:34	6:38	6:44	6:51	6:55
6:30	6:37	6:42	6:50	6:55	7:01	7:08	7:12
6:45	6:52	6:57	7:05	7:10	7:16	7:23	7:27
6:59	7:06	7:11	7:19	7:24	7:30	7:37	7:41
7:11	7:18	7:23	7:31	7:36	7:42	7:49	7:53
7:23	7:30	7:35	7:43	7:48	7:54	8:01	8:05
7:35	7:43	7:48	7:56	8:02	8:08	8:15	8:20
7:47	7:55	8:00	8:08	8:14	8:20	8:27	8:32
7:59	8:07	8:12	8:20	8:26	8:32	8:39	8:44
8:11	8:19	8:24	8:32	8:38	8:44	8:51	8:56
8:23	8:31	8:36	8:44	8:50	8:56	9:03	9:08
8:35	8:43	8:48	8:56	9:02	9:08	9:15	9:20
8:53	9:01	9:06	9:14	9:20	9:26	9:33	9:38
9:13	9:20	9:24	9:32	9:37	9:42	9:48	9:53
9:38	9:45	9:49	9:55	10:00	10:05	10:11	10:16
10:03	10:10	10:14	10:22	10:27	10:32	10:38	10:43
10:28	10:35	10:39	10:45	10:50	10:55	11:01	11:06
10:58	11:05	11:09	11:17	11:22	11:27	11:33	11:38
11:28	11:35	11:39	11:45	11:50	11:55	12:01	12:06
11:58	12:05	12:09	12:17	12:22	12:27	12:33	12:38
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12:58	1:06	1:11	1:20	1:25	1:31	1:37	1:42
1:28	1:36	1:41	1:48	1:53	1:59	2:05	2:10
1:58	2:06	2:11	2:18	2:23	2:29	2:35	2:40
2:28	2:36	2:41	2:50	2:55	3:01	3:07	3:12
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3:20	3:28	3:33	3:42	3:47	3:53	3:59	4:04
3:45	3:53	3:58	4:05	4:10	4:16	4:22	4:27
4:10	4:20	4:25	4:34	4:40	4:46	4:52	4:57
4:30	4:40	4:45	4:54	5:00	5:06	5:12	5:17
4:50	5:00	5:05	5:14	5:20	5:26	5:32	5:37
5:15	5:25	5:30	5:39	5:45	5:51	5:57	6:02
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6:30	6:38	6:43	6:50	6:55	7:00	7:05	7:09
7:00	7:08	7:13	7:20	7:25	7:30	7:35	7:39
7:30	7:38	7:43	7:50	7:55	8:00	8:05	8:09
8:00	8:08	8:13	8:20	8:25	8:30	8:35	8:39
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9:00	9:08	9:13	9:20	9:25	9:30	9:35	9:39
9:30	9:38	9:43	9:50	9:55	10:00	10:05	10:09
10:10	10:16	10:21	10:26	10:30	10:34	10:38	10:42
10:55	11:01	11:06	11:11	11:15	11:19	11:23	11:27
11:48	11:54	11:59	12:04	12:08	12:12	12:16	12:20

NOTES: • Trip also serves Victory Forest.

AM PM

SEE REVERSE FOR SATURDAY SERVICE

SEE REVERSE FOR SUNDAY SERVICE

**WELCOME TO RIDE ON**

RIDE ON is a community bus service operated by the Montgomery County Department of Transportation.

RIDE ON operates over 75 routes that serve all 13 Montgomery County Metrorail stations and 7 MARC stations.

For detailed information, or to have timetables mailed, call 311.

Outside Montgomery County ..... 240-777-0311  
TTY (for hearing impaired) ..... 301-251-4850

Visit our web site at:  
[www.rideonbus.com](http://www.rideonbus.com)

Real Time information is available at:  
[www.rideonrealtime.com](http://www.rideonrealtime.com)

Regular Mailing Address:  
Montgomery County DOT  
Division of Transit Services  
101 Monroe Street, 5th Floor  
Rockville, MD 20850

**HOLIDAY SCHEDULE**

- New Year's Day..... Sunday Schedule
  - Martin Luther King, Jr. Day..... Special Schedule
  - Presidents' Day..... Special Schedule
  - Memorial Day..... Sunday Schedule
  - Independence Day..... Saturday Schedule
  - Labor Day..... Sunday Schedule
  - Columbus Day..... Weekday Schedule
  - Veterans Day..... Special Schedule
  - Thanksgiving Day..... Sunday Schedule
  - Christmas Day..... Sunday Schedule
- For special schedules, consult our website,  
[www.rideonbus.com](http://www.rideonbus.com), or call 311

- Like us on Facebook [facebook.com/rideonmct](https://www.facebook.com/rideonmct) Follow us on Twitter [twitter.com/rideonmct](https://twitter.com/rideonmct)
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- Your Tube [youtube.com/c/RideOnMCT](https://www.youtube.com/c/RideOnMCT)

Thank You for Riding with Us!



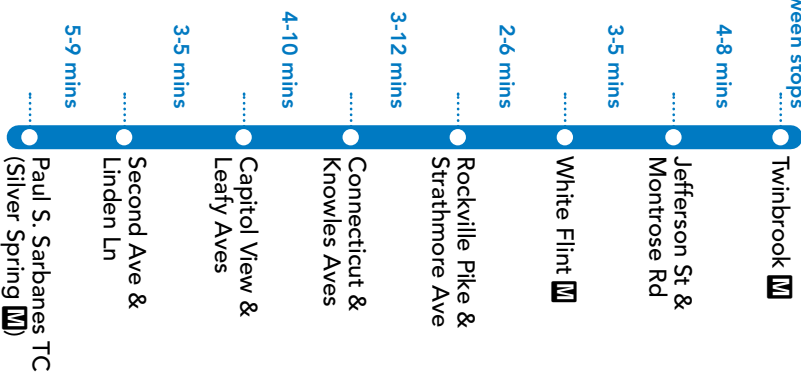
Printed on recycled paper with soy-based ink

EFFECTIVE: MAY 14, 2017



5

Approximate travel time between stops



SERVICE DAYS  
DAILY



Telephone 311  
Online at [www.rideonbus.com](http://www.rideonbus.com)  
Real Time Info at [www.rideonrealtime.com](http://www.rideonrealtime.com)

**26 To Montgomery Mall Transit Center**

**MONDAY THROUGH FRIDAY**

SEE TIMEPOINT LOCATION ON ROUTE MAP

Glenmont M  
Bel Pre & Layhill Rds  
Homcrest Rd & Longmead Xing Dr  
Connecticut & Georgia Aves  
Parkland Dr & Aspen Hill Rd  
Twinbrook Pkwy & Veirs Mill Rd  
Twinbrook (East)  
Jefferson St & Montrose Rd  
White Flint M  
Rockledge & Rock Spring Drs  
Montgomery Mall Transit Center

1	2	3	4	5	6	7	8	9	10	11
4:56	5:01	5:05	5:13	5:17	5:23	5:28	5:37	5:42	5:49	5:51
5:26	5:31	5:35	5:43	5:47	5:53	5:58	6:07	6:12	6:19	6:21
5:50	5:56	6:01	6:11	6:15	6:22	6:27	6:38	6:44	6:53	6:55
6:12	6:18	6:23	6:33	6:37	6:44	6:49	7:00	7:06	7:15	7:17
6:32	6:38	6:43	6:53	6:57	7:04	7:09	7:20	7:26	7:35	7:37
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11:17	11:22	11:27	11:34	11:37	11:43	11:47	11:56	12:01	12:08	12:10

NOTES: AM PM

**26 To Glenmont M**

**MONDAY THROUGH FRIDAY**

SEE TIMEPOINT LOCATION ON ROUTE MAP

Montgomery Mall Transit Center  
Rockledge & Rock Spring Drs  
White Flint M  
Jefferson St & Montrose Rd  
Twinbrook (East)  
Twinbrook Pkwy & Veirs Mill Rd  
Parkland Dr & Aspen Hill Rd  
Connecticut & Georgia Aves  
Homcrest Rd & Longmead Xing Dr  
Bel Pre & Layhill Rds  
Glenmont M

11	10	9	8	7	6	5	4	3	2	1
4:27	4:30	4:35	4:39	4:51	4:56	5:00	5:04	5:11	5:16	5:20
5:05	5:08	5:13	5:17	5:29	5:34	5:38	5:42	5:49	5:54	5:58
5:40	5:43	5:48	5:54	6:07	6:13	6:18	6:23	6:30	6:36	6:41
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7:00	7:04	7:12	7:19	7:33	7:39	7:46	7:51	7:59	8:05	8:11
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NOTES: AM PM

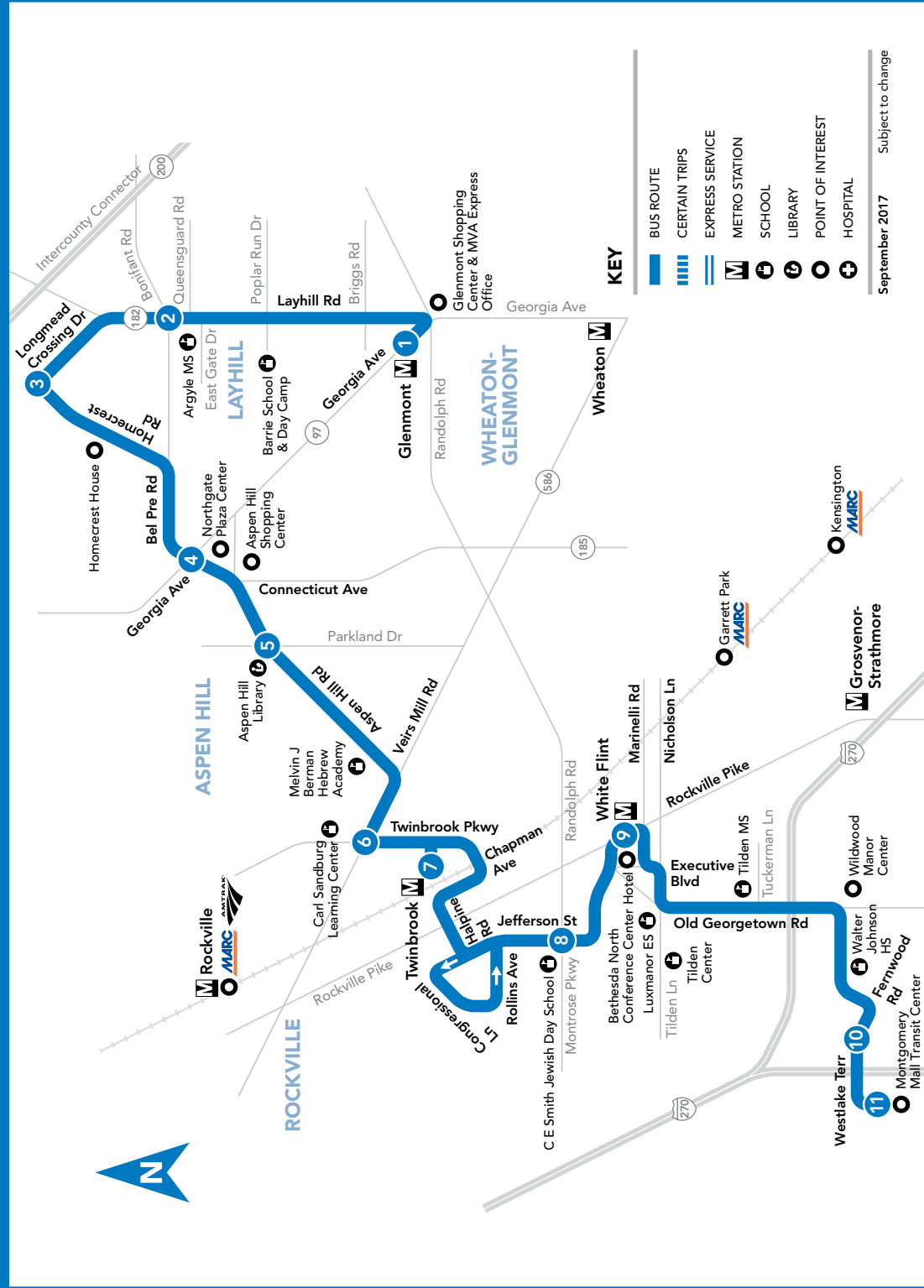
**26 To Montgomery Mall Transit Center**

**SATURDAY**

SEE TIMEPOINT LOCATION ON ROUTE MAP

Glenmont M  
Bel Pre & Layhill Rds  
Homcrest Rd & Longmead Xing Dr  
Connecticut & Georgia Aves  
Parkland Dr & Aspen Hill Rd  
Twinbrook Pkwy & Veirs Mill Rd  
Twinbrook (East)  
Jefferson St & Montrose Rd  
White Flint M  
Rockledge & Rock Spring Drs  
Montgomery Mall Transit Center

1	2	3	4	5	6	7	8	9	10	11
5:12	5:17	5:21	5:28	5:31	5:37	5:41	5:49	5:53	6:00	6:02
5:42	5:47	5:51	5:58	6:01	6:07	6:11	6:19	6:23	6:30	6:32
6:12	6:18	6:23	6:31	6:34	6:40	6:45	6:54	6:59	7:06	7:08
6:42	6:48	6:53	7:01	7:04	7:10	7:15	7:24	7:29	7:36	7:38
7:12	7:18	7:23	7:31	7:34	7:40	7:45	7:54	7:59	8:06	8:08
7:42	7:48	7:53	8:01	8:04	8:10	8:15	8:24	8:29	8:36	8:38
8:12	8:18	8:23	8:31	8:34	8:40	8:45	8:54	8:59	9:06	9:08
8:42	8:48	8:53	9:02	9:06	9:13	9:18	9:28	9:33	9:40	9:42
9:12	9:18	9:23	9:32	9:36	9:43	9:48	9:58	10:03	10:10	10:12
9:42	9:48	9:53	10:02	10:06	10:13	10:18	10:28	10:33	10:40	10:42
10:12	10:18	10:23	10:32	10:36	10:43	10:48	10:58	11:03	11:10	11:12
10:42	10:48	10:53	11:02	11:06	11:13	11:18	11:28	11:33	11:40	11:42
11:12	11:19	11:24	11:33	11:37	11:44	11:49	12:00	12:05	12:13	12:15
11:42	11:49	11:54	12:03	12:07	12:14	12:19	12:30	12:35	12:43	12:45
12:12	12:19	12:24	12:33	12:37	12:44	12:49	1:00	1:05		



**26 To Montgomery Mall Transit Center**

**SUNDAY**

SEE TIMEPOINT LOCATION ON ROUTE MAP

1	2	3	4	5	6	7	8	9	10	11
5:12	5:16	5:20	5:27	5:30	5:36	5:40	5:48	5:53	5:59	6:01
5:42	5:46	5:50	5:57	6:00	6:06	6:10	6:18	6:23	6:29	6:31
6:12	6:16	6:20	6:27	6:30	6:36	6:40	6:48	6:53	6:59	7:01
6:42	6:47	6:52	7:00	7:03	7:09	7:14	7:23	7:28	7:34	7:36
7:12	7:17	7:22	7:30	7:33	7:39	7:44	7:53	7:58	8:04	8:06
7:42	7:47	7:52	8:00	8:03	8:09	8:14	8:23	8:28	8:34	8:36
8:12	8:17	8:22	8:30	8:33	8:39	8:44	8:53	8:58	9:04	9:06
8:42	8:47	8:52	9:00	9:03	9:09	9:14	9:23	9:28	9:34	9:36
9:12	9:17	9:22	9:30	9:33	9:39	9:44	9:53	9:58	10:04	10:06
9:42	9:48	9:53	10:01	10:04	10:10	10:15	10:25	10:30	10:37	10:39
10:12	10:18	10:23	10:31	10:34	10:40	10:45	10:55	11:00	11:07	11:09
10:42	10:48	10:53	11:01	11:04	11:10	11:15	11:25	11:30	11:37	11:39
11:12	11:18	11:23	11:31	11:34	11:40	11:45	11:55	12:00	12:07	12:09
11:42	11:48	11:53	12:01	12:04	12:10	12:15	12:25	12:30	12:37	12:39
12:12	12:18	12:23	12:31	12:34	12:40	12:45	12:55	1:00	1:07	1:09
12:42	12:48	12:53	1:01	1:04	1:10	1:15	1:25	1:30	1:37	1:39
1:12	1:18	1:23	1:32	1:36	1:42	1:47	1:57	2:02	2:10	2:12
1:42	1:48	1:53	2:02	2:06	2:12	2:17	2:27	2:32	2:40	2:42
2:12	2:18	2:23	2:32	2:36	2:42	2:47	2:57	3:02	3:10	3:12
2:42	2:48	2:53	3:02	3:06	3:12	3:17	3:27	3:32	3:40	3:42
3:12	3:18	3:23	3:32	3:36	3:42	3:47	3:57	4:02	4:10	4:12
3:42	3:48	3:53	4:02	4:06	4:12	4:17	4:27	4:32	4:40	4:42
4:12	4:18	4:23	4:32	4:36	4:42	4:47	4:57	5:02	5:10	5:12
4:42	4:48	4:53	5:02	5:06	5:12	5:17	5:27	5:32	5:40	5:42
5:12	5:18	5:23	5:32	5:36	5:42	5:47	5:57	6:02	6:10	6:12
5:42	5:48	5:53	6:02	6:06	6:12	6:17	6:27	6:32	6:40	6:42
6:17	6:23	6:28	6:37	6:41	6:47	6:52	7:02	7:07	7:15	7:17
6:47	6:52	6:57	7:04	7:07	7:12	7:16	7:25	7:30	7:37	7:39
7:17	7:22	7:27	7:34	7:37	7:42	7:46	7:55	8:00	8:07	8:09
7:47	7:52	7:57	8:04	8:07	8:12	8:16	8:25	8:30	8:37	8:39
8:17	8:22	8:27	8:34	8:37	8:42	8:46	8:55	9:00	9:07	9:09
8:47	8:52	8:57	9:04	9:07	9:12	9:16	9:25	9:30	9:37	9:39
9:17	9:22	9:27	9:34	9:37	9:42	9:46	9:55	10:00	10:07	10:09
9:47	9:52	9:57	10:04	10:07	10:12	10:16	10:25	10:30	10:37	10:39
10:32	10:37	10:42	10:49	10:52	10:57	11:01	11:10	11:15	11:22	11:24
11:17	11:22	11:27	11:34	11:37	11:42	11:46	11:55	12:00	12:07	12:09

NOTES: AM PM

SEE REVERSE FOR MONDAY – FRIDAY SERVICE

SEE REVERSE FOR SATURDAY SERVICE

Please arrive at your stop several minutes ahead of your bus' scheduled arrival. Since safe service is a priority at Ride On, buses may be delayed due to traffic or weather.

**26 To Glenmont**

**SUNDAY**

SEE TIMEPOINT LOCATION ON ROUTE MAP

11	10	9	8	7	6	5	4	3	2	1
6:15	6:18	6:24	6:29	6:38	6:43	6:48	6:51	6:58	7:03	7:07
6:55	6:58	7:04	7:09	7:19	7:24	7:29	7:33	7:40	7:45	7:50
7:25	7:28	7:34	7:39	7:49	7:54	7:59	8:03	8:10	8:15	8:20
7:55	7:58	8:04	8:09	8:19	8:24	8:29	8:33	8:40	8:45	8:50
8:25	8:28	8:34	8:39	8:49	8:54	8:59	9:03	9:10	9:15	9:20
8:55	8:58	9:04	9:09	9:19	9:24	9:29	9:33	9:40	9:45	9:50
9:25	9:28	9:34	9:39	9:49	9:54	9:59	10:03	10:10	10:15	10:20
9:55	9:58	10:05	10:10	10:21	10:27	10:32	10:37	10:44	10:49	10:54
10:25	10:28	10:35	10:40	10:51	10:57	11:02	11:07	11:14	11:19	11:24
10:55	10:58	11:05	11:11	11:24	11:30	11:35	11:40	11:47	11:52	11:57
11:25	11:28	11:35	11:41	11:54	12:00	12:05	12:10	12:17	12:22	12:27
11:55	11:58	12:05	12:11	12:24	12:30	12:35	12:40	12:47	12:52	12:57
12:25	12:28	12:35	12:41	12:54	1:00	1:05	1:10	1:17	1:22	1:27
12:55	12:58	1:05	1:11	1:24	1:30	1:35	1:40	1:47	1:52	1:57
1:25	1:28	1:35	1:41	1:54	2:00	2:05	2:10	2:17	2:22	2:27
1:55	1:58	2:05	2:11	2:24	2:30	2:35	2:40	2:47	2:52	2:57
2:25	2:28	2:35	2:41	2:54	3:00	3:05	3:10	3:17	3:22	3:27
2:55	2:58	3:05	3:11	3:24	3:30	3:35	3:40	3:47	3:52	3:57
3:25	3:28	3:35	3:41	3:54	4:00	4:05	4:10	4:17	4:22	4:27
3:55	3:58	4:05	4:11	4:24	4:30	4:35	4:40	4:47	4:52	4:57
4:25	4:28	4:35	4:41	4:54	5:00	5:05	5:10	5:17	5:22	5:27
4:55	4:58	5:05	5:11	5:24	5:30	5:35	5:40	5:47	5:52	5:57
5:25	5:28	5:35	5:41	5:54	6:00	6:05	6:10	6:17	6:22	6:27
5:55	5:58	6:04	6:09	6:22	6:28	6:33	6:38	6:45	6:50	6:55
6:25	6:28	6:34	6:39	6:52	6:58	7:03	7:08	7:15	7:20	7:25
6:55	6:58	7:04	7:09	7:22	7:28	7:33	7:38	7:45	7:50	7:55
7:25	7:28	7:34	7:39	7:52	7:58	8:03	8:08	8:15	8:20	8:25
7:55	7:58	8:04	8:09	8:22	8:28	8:33	8:38	8:45	8:50	8:55
8:25	8:28	8:34	8:39	8:52	8:58	9:03	9:08	9:15	9:20	9:25
8:55	8:58	9:04	9:09	9:22	9:28	9:33	9:38	9:45	9:50	9:55
9:25	9:28	9:34	9:39	9:49	9:54	9:59	10:04	10:10	10:15	10:20
9:55	9:58	10:04	10:08	10:19	10:24	10:29	10:34	10:40	10:45	10:50
10:25	10:28	10:34	10:38	10:49	10:54	10:59	11:04	11:10	11:15	11:20
10:55	10:58	11:04	11:08	11:19	11:24	11:29	11:34	11:40	11:45	11:50
11:35	11:38	11:44	11:48	11:59	12:04	12:09	12:14	12:20	12:25	12:30
12:20	12:23	12:29	12:33	12:44	12:49	12:54	12:59	1:05	1:10	1:15

NOTES: AM PM

SEE REVERSE FOR MONDAY – FRIDAY SERVICE

SEE REVERSE FOR SATURDAY SERVICE

**WELCOME TO RIDE ON**

RIDE ON is a community bus service operated by the Montgomery County Department of Transportation.

RIDE ON operates over 75 routes that serve all 13 Montgomery County Metrorail stations and 7 MARC stations.

For detailed information, or to have timetables mailed, call 311.

Outside Montgomery County ..... 240-777-0311

Visit our web site at: [www.rideonbus.com](http://www.rideonbus.com)

Real Time information is available at: [www.rideonrealtime.com](http://www.rideonrealtime.com)

Regular Mailing Address:  
Montgomery County DOT  
Division of Transit Services  
101 Monroe Street, 5th Floor  
Rockville, MD 20850

**HOLIDAY SCHEDULE**

- New Year's Day..... Sunday Schedule
- Martin Luther King, Jr. Day..... Special Schedule
- Presidents' Day..... Special Schedule
- Memorial Day..... Sunday Schedule
- Independence Day..... Saturday Schedule
- Labor Day..... Sunday Schedule
- Columbus Day..... Weekday Schedule
- Veterans Day..... Special Schedule
- Thanksgiving Day..... Sunday Schedule
- Christmas Day..... Sunday Schedule

For special schedules, consult our website, [www.rideonbus.com](http://www.rideonbus.com), or call 311

Like us on Facebook [facebook.com/RideOnMCT](https://facebook.com/RideOnMCT) Follow us on Twitter [twitter.com/RideOnMCT](https://twitter.com/RideOnMCT)

Subscribe to email alerts at [www.montgomerycountymd.gov/govdelivery](http://www.montgomerycountymd.gov/govdelivery)

YouTube [youtube.com/c/RideOnMCT](https://youtube.com/c/RideOnMCT)

Thank You for Riding with Us!

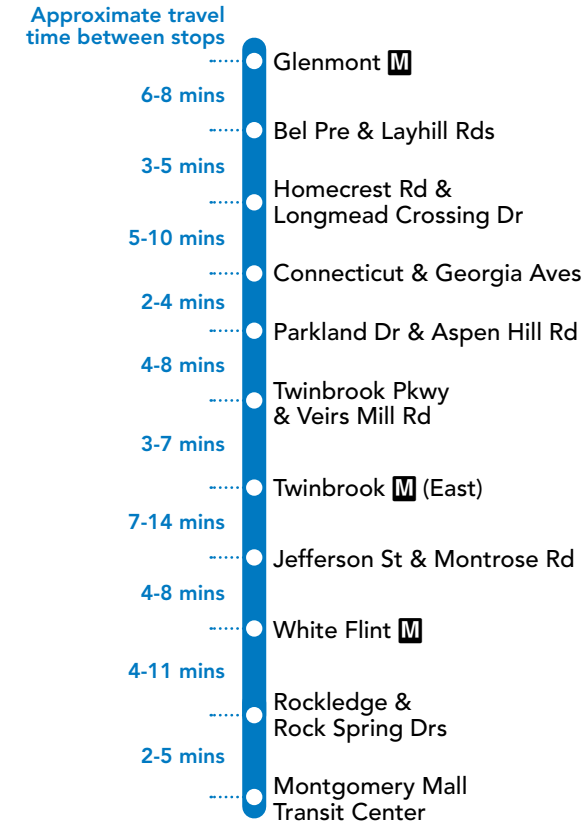


Printed on recycled paper with soy-based ink

**EFFECTIVE: SEPTEMBER 17, 2017**



**26**



**SERVICE DAYS**  
DAILY

Telephone 311  
Online at [www.rideonbus.com](http://www.rideonbus.com)  
Real Time Info at [www.rideonrealtime.com](http://www.rideonrealtime.com)

## 42 To Westfield Montgomery Mall

### Transit Center

#### MONDAY THROUGH FRIDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP

	Boiling Brook Pkwy	White Flint	Jefferson St & Montrose Rd	Park Potomac	Gainsborough Rd & Tuckerman Ln	Democracy Blvd & Seven Locks Rd	Westfield Montgomery Mall Transit Center
1	2	3	4	5	6	7	
	5:42	5:46	5:53	6:00	6:07	6:12	
	6:12	6:16	6:23	6:30	6:37	6:42	
	6:42	6:48	6:55	7:03	7:13	7:17	
	7:12	7:18	7:26	7:33	7:40	7:45	
	7:42	7:48	7:56	8:03	8:10	8:15	
	8:12	8:18	8:29	8:39	8:45	8:50	
	8:42	8:47	8:55	9:02	9:09	9:13	
	9:12	9:17	9:25	9:32	9:39	9:43	
	9:42	9:47	9:55	10:02	10:09	10:13	
	10:12	10:18	10:26	10:33	10:43	10:47	
	10:42	10:47	10:54	11:02	11:08	11:13	
	11:12	11:17	11:24	11:32	11:38	11:43	
	11:42	11:47	11:54	12:02	12:08	12:13	
	12:12	12:18	12:26	12:34	12:44	12:49	
	12:42	12:47	12:54	1:01	1:07	1:12	
	1:12	1:17	1:24	1:31	1:37	1:42	
	1:42	1:47	1:56	2:06	2:13	2:18	
	2:12	2:17	2:26	2:36	2:43	2:48	
2:35	2:42	2:48	2:56	3:06	3:13	3:18	
	3:12	3:18	3:28	3:37	3:44	3:49	
3:35	3:42	3:50	3:59	4:07	4:14	4:18	
4:05	4:12	4:20	4:29	4:37	4:44	4:48	
	4:42	4:48	4:56	5:04	5:10	5:15	
	5:12	5:18	5:26	5:34	5:40	5:45	
	5:42	5:48	5:56	6:04	6:10	6:15	
	6:12	6:18	6:26	6:34	6:40	6:45	
	6:42	6:48	6:56	7:04	7:10	7:15	
	7:12	7:18	7:25	7:32	7:38	7:43	
	7:42	7:48	7:55	8:02	8:08	8:13	

NOTES: AM PM

- Trip serves William F. Bolger Center

## 42 To White Flint

#### MONDAY THROUGH FRIDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP

Westfield Montgomery Mall Transit Center	Democracy Blvd & Seven Locks Rd	Gainsborough Rd & Tuckerman Ln	Park Potomac	Jefferson St & Montrose Rd	White Flint	Boiling Brook Pkwy
7	6	5	4	3	2	1
5:36	5:40	5:46	5:52	5:58	6:03	
6:06	6:11	6:17	6:24	6:31	6:36	
6:33	6:38	6:44	6:51	6:58	7:03	
6:52	7:01	7:07	7:13	7:19	7:25	7:32
7:33	7:38	7:44	7:51	8:00	8:05	
8:03	8:08	8:14	8:21	8:30	8:35	
8:33	8:38	8:44	8:51	9:00	9:05	
9:03	9:08	9:14	9:21	9:30	9:35	
9:36	9:41	9:47	9:54	10:03	10:08	
10:06	10:11	10:17	10:24	10:33	10:38	
10:31	10:36	10:45	10:52	11:00	11:05	
11:06	11:11	11:17	11:24	11:33	11:38	
11:36	11:41	11:47	11:54	12:03	12:08	
12:06	12:11	12:17	12:24	12:33	12:38	
12:36	12:41	12:47	12:54	1:03	1:08	
1:06	1:11	1:17	1:24	1:33	1:38	
1:30	1:34	1:43	1:50	1:58	2:03	
1:53	1:58	2:03	2:10	2:19	2:26	2:32
2:34	2:39	2:45	2:54	3:05	3:11	
2:50	2:55	3:01	3:09	3:17	3:25	3:32
3:20	3:25	3:31	3:39	3:47	3:55	4:02
3:58	4:03	4:11	4:18	4:26	4:31	
4:31	4:36	4:42	4:49	4:58	5:03	
5:01	5:06	5:12	5:19	5:28	5:33	
5:31	5:36	5:42	5:49	5:58	6:03	
6:03	6:08	6:14	6:21	6:30	6:35	
6:33	6:38	6:44	6:51	7:00	7:05	
7:03	7:08	7:14	7:21	7:30	7:35	
7:36	7:41	7:47	7:54	8:03	8:08	
8:20	8:25	8:31	8:38	8:47	8:52	

NOTES: AM PM

- Trip serves William F. Bolger Center

## 42 To Westfield Montgomery Mall

### Transit Center

#### SATURDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP

White Flint	Jefferson St & Montrose Rd	Park Potomac	Gainsborough Rd & Tuckerman Ln	Democracy Blvd & Seven Locks Rd	Westfield Montgomery Mall Transit Center
2	3	4	5	6	7
8:12	8:17	8:25	8:32	8:39	8:43
8:42	8:47	8:55	9:02	9:09	9:13
9:12	9:17	9:25	9:32	9:39	9:43
9:42	9:48	9:55	10:03	10:09	10:14
10:12	10:18	10:25	10:33	10:39	10:44
10:42	10:48	10:55	11:03	11:09	11:14
11:12	11:18	11:25	11:33	11:39	11:44
11:42	11:48	11:55	12:03	12:09	12:14
12:12	12:17	12:25	12:35	12:42	12:47
12:42	12:47	12:55	1:05	1:12	1:17
1:12	1:17	1:25	1:35	1:42	1:47
1:42	1:47	1:55	2:05	2:12	2:17
2:12	2:17	2:25	2:35	2:42	2:47
2:42	2:47	2:55	3:05	3:12	3:17
3:12	3:17	3:25	3:35	3:42	3:47
3:42	3:47	3:55	4:05	4:12	4:17
4:12	4:17	4:25	4:35	4:42	4:47
4:42	4:47	4:55	5:05	5:12	5:17
5:12	5:18	5:25	5:32	5:38	5:43
5:42	5:48	5:55	6:02	6:08	6:13
6:12	6:18	6:25	6:32	6:38	6:43
6:42	6:48	6:55	7:02	7:08	7:13

NOTES: AM PM

## 42 To White Flint

#### SATURDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP

Westfield Montgomery Mall Transit Center	Democracy Blvd & Seven Locks Rd	Gainsborough Rd & Tuckerman Ln	Park Potomac	Jefferson St & Montrose Rd	White Flint
7	6	5	4	3	2
8:37	8:42	8:48	8:55	9:02	9:07
9:07	9:12	9:18	9:25	9:32	9:37
9:36	9:41	9:47	9:54	10:03	10:08
10:06	10:11	10:17	10:24	10:33	10:38
10:36	10:41	10:47	10:54	11:03	11:08
11:06	11:11	11:17	11:24	11:33	11:38
11:34	11:39	11:45	11:52	12:01	12:06
12:04	12:09	12:15	12:24	12:33	12:39
12:34	12:39	12:45	12:54	1:03	1:09
1:04	1:09	1:15	1:24	1:33	1:39
1:34	1:39	1:45	1:54	2:03	2:09
2:04	2:09	2:15	2:24	2:33	2:39
2:34	2:39	2:45	2:54	3:03	3:09
3:04	3:09	3:15	3:24	3:33	3:39
3:34	3:39	3:45	3:54	4:03	4:09
4:04	4:09	4:15	4:24	4:33	4:39
4:34	4:39	4:45	4:54	5:03	5:09
5:07	5:12	5:18	5:25	5:34	5:39
5:37	5:42	5:48	5:55	6:04	6:09
6:07	6:12	6:18	6:25	6:34	6:39
6:37	6:42	6:48	6:55	7:04	7:09
7:20	7:25	7:31	7:38	7:47	7:52

NOTES: AM PM

## FARES

Regular Fare, Token, or SmarTrip®	\$1.75
SmarTrip® Fare Transfer from MetroRail	\$1.25
<b>Seniors and persons with disability with valid ID (including attendant-eligible) except during free periods:</b>	
Cash	\$0.85
Senior/Disabled SmarTrip®	\$0.85
Senior/Disabled SmarTrip® Transfer from Metrorail	\$0.35
Seniors age 65 years or older with a Senior SmarTrip® card or valid Metro Senior ID Card or with valid Medicare Card and Photo ID from 9:30 am - 3:00 pm, Mon-Sat	FREE
Person with disability with Metro Disabled Identification Card from 9:30 am - 3:00 pm, Mon-Sat	
Person with disability with Metro Disability ID Card - Attendant Eligible from 9:30 am - 3:00 pm, Mon-Sat Attendant rides half fare or free depending on time	FREE
MetroAccess - Certified Customer with ID MetroAccess - Companion	
<b>Children under age 5</b> Limit 2 children per paying passenger	FREE
<b>Local Bus Transfer with SmarTrip®</b>	
<b>Children 5 to 18 with a student ID or Youth Cruiser SmarTrip® Card</b> Monday to Friday, 2:00 - 8:00 pm	

## GUARANTEED RIDE HOME

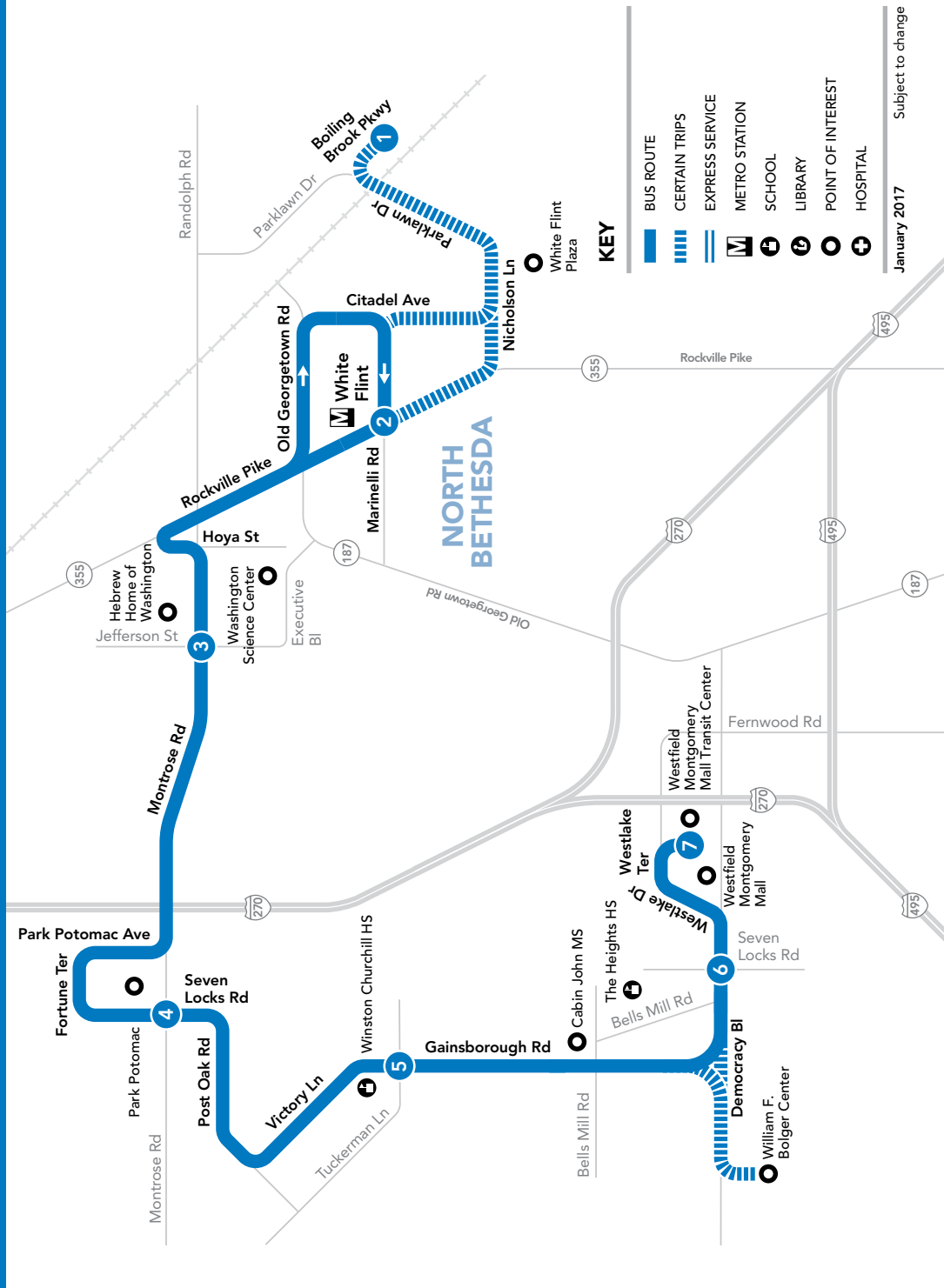
When you take Metrobus, Metrorail and Ride On to work, you are eligible to participate in the free Commuter Connections Guaranteed Ride Home Program. To register and to receive program details call: Commuter Services at **301-770-POOL(7665)**.

## METROACCESS

Alternative paratransit service to this Ride On route for people with certified disabilities is available. Call MetroAccess at **301-562-5360**.

Please arrive at your stop several minutes ahead of your bus' scheduled arrival. Since safe service is a priority at Ride On, buses may be delayed due to traffic or weather.





## HOW TO RIDE A BUS

Check schedule for timepoint nearest your location. Wait at the blue and white **RIDE ON** bus stop sign. Arrive several minutes before scheduled time. Have exact fare ready (drivers do not make change).

- Not all stops are listed on a public timetable.
- If you are unfamiliar with your stop, sit or stand behind the line near the front of the bus and ask the bus driver to notify you when your stop is approaching.
- Ask the bus driver if you are not sure if the bus goes to your stop.
- If you have internet access (at home or somewhere else, such as a public library), it may be easier for you to use an online trip planner rather than a paper timetable.
- Be mindful of changes in the schedule, for holidays or bad weather.
- Please observe the following rules for all patrons: No eating, drinking, or smoking.
- Electronic devices may be played with earphones set at *low level*.

## HOW TO READ A TIMETABLE

- Find the schedule for the day of the week and the direction you wish to ride.
- Find the timepoints closest to your origin and destination. The timepoints are shown on the route map and indicate the time the bus is scheduled to be at the particular location. Your nearest bus stop may be between timepoints.
- Read down the column to see the times when a trip will be at the given timepoint. Read the times across to the right to see when the trip reaches other timepoints. If no time is shown, that trip does not serve that timepoint.

There is **NO** Sunday service  
on this route

## WELCOME TO RIDE ON

**RIDE ON** is a community bus service operated by the Montgomery County Department of Transportation.

**RIDE ON** operates over 75 routes that serve all 13 Montgomery County Metrorail stations and 7 MARC stations.

For detailed information, or to have timetables mailed, call **311**.

Outside Montgomery County ..... **240-777-0311**  
TTY (for hearing impaired) ..... **301-251-4850**

Visit our web site at:  
[www.rideonbus.com](http://www.rideonbus.com)

Real Time information is available at:  
[www.rideonrealtime.com](http://www.rideonrealtime.com)

Regular Mailing Address:  
Montgomery County DOT  
Division of Transit Services  
101 Monroe Street, 5th Floor  
Rockville, MD 20850

## HOLIDAY SCHEDULE

New Year's Day.....	Sunday Schedule
Martin Luther King, Jr. Day.....	Special Schedule
Presidents' Day.....	Special Schedule
Memorial Day.....	Sunday Schedule
Independence Day.....	Saturday Schedule
Labor Day.....	Sunday Schedule
Columbus Day.....	Weekday Schedule
Veterans Day.....	Special Schedule
Thanksgiving Day.....	Sunday Schedule
Christmas Day.....	Sunday Schedule

For special schedules, consult our website,  
[www.rideonbus.com](http://www.rideonbus.com), or call **311**

Like us on Facebook  
[facebook.com/RideOnMCT](https://facebook.com/RideOnMCT)

Follow us on Twitter  
[twitter.com/RideOnMCT](https://twitter.com/RideOnMCT)

Subscribe to email alerts at  
[www.montgomerycountymd.gov/govdelivery](http://www.montgomerycountymd.gov/govdelivery)

YouTube  
[youtube.com/c/RideOnMCT](https://youtube.com/c/RideOnMCT)

Thank You for Riding with Us!



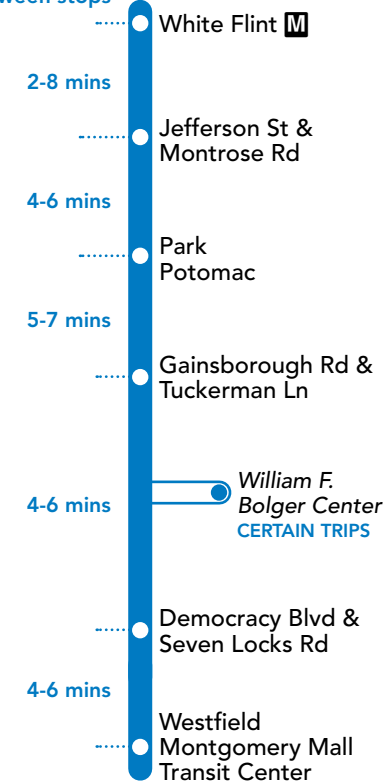
Printed on recycled paper with soy-based ink

EFFECTIVE: JANUARY 8, 2017



42

Approximate travel  
time between stops



## SERVICE DAYS

MONDAY - SATURDAY



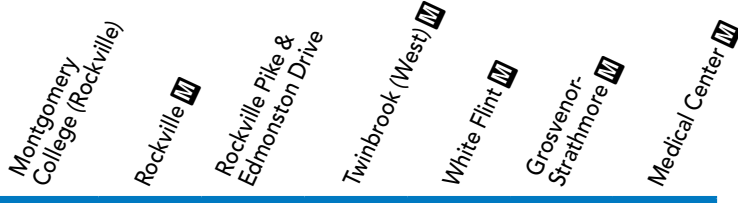
Telephone **311**

Online at [www.rideonbus.com](http://www.rideonbus.com)  
Real Time Info at [www.rideonrealtime.com](http://www.rideonrealtime.com)

**46 To Medical Center** 

**MONDAY THROUGH FRIDAY**

SEE TIMEPOINT LOCATION ON ROUTE MAP



1	2	3	4	5	6	7
4:59	5:09	5:14	5:19	5:26	5:31	5:39
5:29	5:39	5:44	5:49	5:56	6:01	6:09
5:54	6:04	6:09	6:14	6:21	6:26	6:34
6:15	6:25	6:30	6:35	6:42	6:47	6:55
6:35	6:46	6:52	6:58	7:06	7:13	7:25
6:55	7:06	7:12	7:18	7:26	7:33	7:45
7:15	7:28	7:34	7:41	7:49	7:56	8:10
7:35	7:48	7:54	8:01	8:09	8:16	8:30
7:55	8:08	8:14	8:21	8:29	8:36	8:50
8:15	8:26	8:32	8:39	8:47	8:54	9:04
8:35	8:46	8:52	8:59	9:07	9:14	9:24
8:55	9:06	9:12	9:19	9:27	9:34	9:44
9:12	9:23	9:29	9:36	9:44	9:51	10:01
9:27	9:38	9:44	9:51	9:59	10:06	10:16
9:42	9:54	10:01	10:08	10:17	10:23	10:31
9:57	10:09	10:16	10:23	10:32	10:38	10:46
10:12	10:24	10:31	10:38	10:47	10:53	11:01
10:27	10:39	10:46	10:53	11:02	11:08	11:16
10:42	10:54	11:01	11:08	11:17	11:23	11:31
10:57	11:09	11:16	11:23	11:32	11:38	11:46
11:12	11:24	11:31	11:38	11:47	11:53	12:01
11:27	11:39	11:46	11:53	12:02	12:08	12:16
11:42	11:54	12:01	12:08	12:17	12:23	12:31
11:57	12:09	12:16	12:23	12:32	12:38	12:46
12:12	12:24	12:31	12:38	12:47	12:53	1:01
12:27	12:39	12:46	12:53	1:02	1:08	1:16
12:42	12:54	1:01	1:08	1:17	1:23	1:31
12:57	1:09	1:16	1:23	1:32	1:38	1:46
1:12	1:24	1:31	1:38	1:47	1:53	2:01
1:27	1:39	1:46	1:54	2:03	2:11	2:20
1:42	1:54	2:01	2:09	2:18	2:26	2:35
1:57	2:09	2:16	2:24	2:33	2:41	2:50
2:12	2:24	2:31	2:39	2:48	2:56	3:05
2:27	2:39	2:46	2:54	3:03	3:11	3:20
2:42	2:54	3:01	3:09	3:18	3:26	3:35
2:57	3:09	3:16	3:24	3:33	3:41	3:50
3:12	3:24	3:31	3:39	3:48	3:56	4:05
3:27	3:39	3:46	3:54	4:03	4:11	4:20
3:42	3:54	4:01	4:09	4:18	4:26	4:35
3:57	4:09	4:16	4:24	4:33	4:41	4:50
4:12	4:24	4:31	4:39	4:48	4:56	5:05
4:27	4:39	4:46	4:54	5:03	5:11	5:20
4:45	4:57	5:04	5:12	5:21	5:29	5:38
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5:25	5:37	5:44	5:52	6:01	6:09	6:18
5:45	5:57	6:04	6:12	6:21	6:29	6:38
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6:35	6:46	6:53	7:00	7:09	7:16	7:25
7:00	7:11	7:18	7:25	7:34	7:41	7:50
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8:00	8:11	8:18	8:25	8:34	8:41	8:50
8:30	8:40	8:46	8:52	8:59	9:05	9:13
9:00	9:10	9:16	9:22	9:29	9:35	9:43
9:35	9:45	9:51	9:57	10:04	10:10	10:18
10:10	10:20	10:26	10:32	10:39	10:45	10:53
10:50	11:00	11:06	11:12	11:19	11:25	11:33
11:35	11:45	11:51	11:57	12:04	12:10	12:18
12:30	12:39	12:44	12:49	12:56	1:01	1:09

NOTES: AM PM

**46 To Montgomery College (Rockville)**

**MONDAY THROUGH FRIDAY**

SEE TIMEPOINT LOCATION ON ROUTE MAP



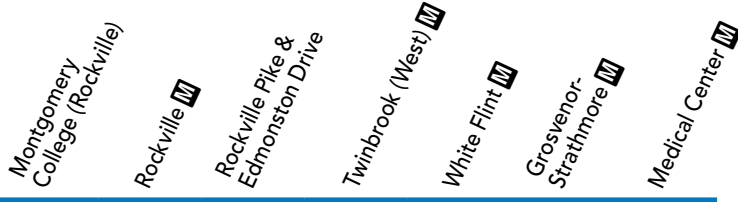
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6:15	6:21	6:25	6:30	6:35	6:39	6:51
6:40	6:49	6:53	6:59	7:05	7:10	7:22
7:05	7:14	7:18	7:24	7:30	7:35	7:47
7:30	7:39	7:43	7:49	7:55	8:00	8:12
7:55	8:04	8:08	8:14	8:20	8:25	8:37
8:15	8:24	8:28	8:34	8:40	8:45	8:57
8:35	8:43	8:48	8:55	9:02	9:08	9:21
8:55	9:03	9:08	9:15	9:22	9:28	9:41
9:15	9:23	9:28	9:35	9:42	9:48	10:01
9:35	9:43	9:48	9:55	10:02	10:08	10:21
9:54	10:02	10:07	10:14	10:21	10:27	10:40
10:11	10:19	10:24	10:31	10:38	10:44	10:57
10:26	10:34	10:39	10:46	10:53	10:59	11:12
10:41	10:49	10:54	11:01	11:08	11:14	11:27
10:56	11:04	11:09	11:16	11:23	11:29	11:42
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11:41	11:49	11:54	12:01	12:08	12:14	12:27
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12:11	12:19	12:24	12:31	12:38	12:44	12:57
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12:41	12:49	12:54	1:01	1:08	1:14	1:27
12:56	1:04	1:09	1:16	1:23	1:29	1:42
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2:11	2:19	2:24	2:31	2:38	2:44	2:57
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2:41	2:49	2:54	3:01	3:08	3:14	3:27
2:56	3:06	3:11	3:19	3:27	3:34	3:48
3:11	3:21	3:26	3:34	3:42	3:49	4:03
3:26	3:36	3:41	3:49	3:57	4:04	4:18
3:41	3:51	3:56	4:04	4:12	4:19	4:33
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8:25	8:34	8:38	8:45	8:51	8:57	9:10
8:53	9:02	9:06	9:13	9:19	9:25	9:38
9:18	9:27	9:31	9:38	9:44	9:50	10:03
9:48	9:55	9:59	10:05	10:11	10:16	10:26
10:23	10:30	10:34	10:40	10:46	10:51	11:01
10:58	11:05	11:09	11:15	11:21	11:26	11:36
11:38	11:44	11:48	11:52	11:57	12:01	12:10
12:23	12:29	12:33	12:37	12:42	12:46	12:55
1:15	1:21	1:25	1:29	1:34	1:38	1:47

NOTES: AM PM

**46 To Medical Center** 

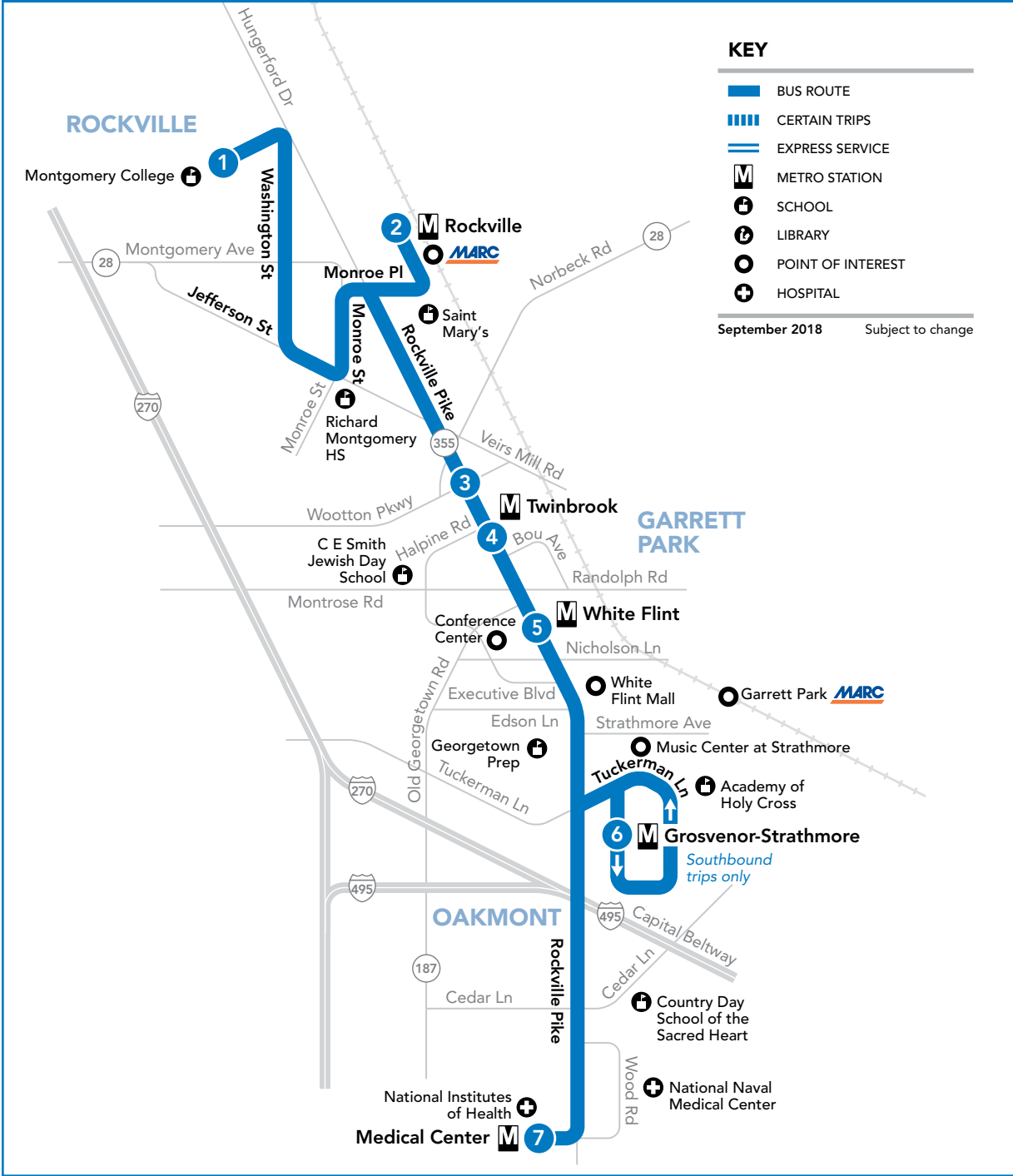
**SATURDAY**

SEE TIMEPOINT LOCATION ON ROUTE MAP



1	2	3	4	5	6	7
5:11	5:21	5:25	5:30	5:37	5:41	5:48
5:45	5:55	5:59	6:04	6:11	6:15	6:22
6:14	6:24	6:28	6:33	6:40	6:44	6:51
6:40	6:50	6:54	6:59	7:06	7:10	7:17
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7:30	7:41	7:46	7:52	7:59	8:05	8:12
7:55	8:06	8:11	8:17	8:24	8:30	8:37
8:20	8:31	8:36	8:42	8:49	8:55	9:02
8:45	8:56	9:01	9:07	9:14	9:20	9:27
9:10	9:21	9:26	9:32	9:39	9:45	9:52
9:35	9:46	9:51	9:57	10:04	10:10	10:17
10:00	10:11	10:18	10:26	10:36	10:42	10:50
10:25	10:36	10:43	10:51	11:01	11:07	11:15
10:50	11:01	11:08	11:16	11:26	11:32	11:40
11:15	11:26	11:33	11:41	11:51	11:57	12:05
11:40	11:51	11:58	12:06	12:16	12:22	12:30
12:05	12:16	12:23	12:31	12:41	12:47	12:55
12:25	12:36	12:43	12:51	1:01	1:07	1:15
12:45	12:56	1:03	1:11	1:21	1:27	1:35
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2:25	2:36	2:43	2:51	3:01	3:07	3:15
2:45	2:56	3:03	3:11	3:21	3:27	3:35
3:05	3:16	3:23	3:31	3:41	3:47	3:55
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10:20	10:29	10:34	10:39	10:45	10:50	10:57
11:05	11:14	11:19	11:24	11:30	11:35	11:42
11:50	11:59	12:04	12:09	12:15	12:20	12:27





**KEY**

- BUS ROUTE
- |||| CERTAIN TRIPS
- == EXPRESS SERVICE
- M** METRO STATION
- S** SCHOOL
- L** LIBRARY
- O** POINT OF INTEREST
- H** HOSPITAL

September 2018 Subject to change

**46 To Medical Center M**

**SUNDAY**  
SEE TIMEPOINT LOCATION ON ROUTE MAP

1	2	3	4	5	6	7
5:11	5:22	5:27	5:33	5:39	5:44	5:51
5:41	5:52	5:57	6:03	6:09	6:14	6:21
6:10	6:21	6:26	6:32	6:38	6:43	6:50
6:40	6:51	6:56	7:02	7:08	7:13	7:20
7:10	7:21	7:26	7:32	7:38	7:43	7:50
7:40	7:51	7:56	8:02	8:08	8:13	8:20
8:10	8:21	8:26	8:32	8:38	8:43	8:50
8:40	8:51	8:56	9:02	9:08	9:13	9:20
9:10	9:21	9:27	9:34	9:42	9:47	9:55
9:35	9:46	9:52	9:59	10:07	10:12	10:20
10:00	10:11	10:17	10:24	10:32	10:37	10:45
10:25	10:36	10:42	10:49	10:57	11:02	11:10
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1:25	1:37	1:43	1:51	2:00	2:06	2:14
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2:05	2:17	2:23	2:31	2:40	2:46	2:54
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9:45	9:55	10:00	10:06	10:12	10:17	10:24
10:35	10:45	10:50	10:56	11:02	11:07	11:14
11:31	11:41	11:46	11:52	11:58	12:03	12:10

NOTES: AM PM

**46 To Montgomery College (Rockville)**

**SUNDAY**  
SEE TIMEPOINT LOCATION ON ROUTE MAP

7	6	5	4	3	2	1
5:59	6:05	6:09	6:14	6:18	6:23	6:31
6:29	6:35	6:39	6:44	6:48	6:53	7:01
6:59	7:05	7:10	7:16	7:21	7:26	7:36
7:29	7:35	7:40	7:46	7:51	7:56	8:06
7:59	8:05	8:10	8:16	8:21	8:26	8:36
8:29	8:35	8:40	8:46	8:51	8:56	9:06
8:59	9:05	9:10	9:16	9:21	9:26	9:36
9:29	9:35	9:40	9:46	9:51	9:56	10:06
9:59	10:05	10:10	10:16	10:21	10:26	10:36
10:29	10:36	10:41	10:48	10:55	11:01	11:12
10:56	11:03	11:08	11:15	11:22	11:28	11:39
11:21	11:28	11:33	11:40	11:47	11:53	12:04
11:46	11:53	11:58	12:05	12:12	12:18	12:29
12:11	12:18	12:23	12:30	12:37	12:43	12:54
12:36	12:43	12:48	12:55	1:02	1:08	1:19
1:01	1:08	1:13	1:20	1:27	1:33	1:44
1:23	1:30	1:35	1:42	1:49	1:55	2:06
1:43	1:50	1:55	2:02	2:09	2:15	2:26
2:03	2:10	2:15	2:22	2:29	2:35	2:46
2:23	2:30	2:35	2:42	2:49	2:55	3:06
2:43	2:50	2:55	3:02	3:09	3:15	3:26
3:03	3:10	3:15	3:22	3:29	3:35	3:46
3:23	3:30	3:35	3:42	3:49	3:55	4:06
3:43	3:50	3:55	4:02	4:09	4:15	4:26
4:03	4:10	4:15	4:22	4:29	4:35	4:46
4:23	4:30	4:35	4:42	4:49	4:55	5:06
4:43	4:50	4:55	5:02	5:09	5:15	5:26
5:03	5:10	5:15	5:22	5:29	5:35	5:46
5:23	5:30	5:35	5:42	5:49	5:55	6:06
5:43	5:50	5:55	6:02	6:09	6:15	6:26
6:10	6:17	6:22	6:29	6:36	6:42	6:53
6:40	6:47	6:52	6:59	7:06	7:12	7:23
7:10	7:17	7:22	7:29	7:36	7:42	7:53
7:40	7:46	7:51	7:57	8:03	8:09	8:19
8:05	8:11	8:16	8:22	8:28	8:34	8:44
8:30	8:36	8:41	8:47	8:53	8:59	9:09
9:00	9:06	9:11	9:17	9:23	9:29	9:39
9:30	9:36	9:41	9:47	9:53	9:59	10:09
10:00	10:06	10:11	10:17	10:23	10:29	10:39
10:36	10:42	10:46	10:52	10:57	11:02	11:11
11:20	11:26	11:30	11:36	11:41	11:46	11:55
12:15	12:21	12:25	12:31	12:36	12:41	12:50

NOTES: AM PM

**FARES** Effective September 2, 2017

Regular Fare, Token, or SmarTrip®	\$2.00
SmarTrip® Fare Transfer from MetroRail	\$1.50
<b>Seniors and persons with disability with valid ID (including attendant-eligible) except during free periods:</b>	
Senior/Disabled SmarTrip® or Cash	\$1.00
Senior/Disabled SmarTrip® Transfer from Metrorail	\$0.50
Seniors age 65 years or older with a Senior SmarTrip® card or valid Metro Senior ID Card or with valid Medicare Card and Photo ID from 9:30 am – 3:00 pm Monday through Friday and Saturday from 8:30 am – 4:00 pm.	<b>FREE</b>
Person with disability with Metro Disabled ID Card from 9:30 am – 3:00 pm Monday through Friday and Saturday from 8:30 am – 4:00 pm.	
Person with disability with Metro Disability ID Card – Attendant Eligible from 9:30 am – 3:00 pm Mon. through Fri. and Sat. from 8:30 am – 4:00 pm. Attendant rides half fare or free depending on time.	<b>FREE</b>
<b>MetroAccess</b> - Certified Customer with ID <b>MetroAccess</b> - Companion	
<b>Children under age 5</b> Limit 2 children per paying passenger	<b>FREE</b>
<b>Local Bus Transfer with SmarTrip®</b>	
<b>Children 5 to 18 with a student ID or Youth Cruiser SmarTrip® Card</b> Monday to Friday, 2:00 - 8:00 pm	

**HOW TO RIDE A BUS**

- Check schedule for timepoint nearest your location. Wait at the blue and white **RIDE ON** bus stop sign. Arrive several minutes before scheduled time. Have exact fare ready (drivers do not make change).
- Not all stops are listed on a public timetable.
- If you are unfamiliar with your stop, sit or stand behind the line near the front of the bus and ask the bus driver to notify you when your stop is approaching.
- Ask the bus driver if you are not sure if the bus goes to your stop.
- If you have internet access (at home or somewhere else, such as a public library), it may be easier for you to use an online trip planner rather than a paper timetable.
- Be mindful of changes in the schedule, for holidays or bad weather.
- Please observe the following rules for all patrons: No eating, drinking, or smoking.
- Electronic devices may be played with earphones set at low level.

**WELCOME TO RIDE ON**

**RIDE ON** is a community bus service operated by the Montgomery County Department of Transportation. **RIDE ON** operates over 75 routes that serve all 13 Montgomery County Metrorail stations and 7 MARC stations. For detailed information, or to have timetables mailed, call **311**. Outside Montgomery County ..... **240-777-0311**

Visit our web site at: [www.rideonbus.com](http://www.rideonbus.com)  
Real Time information is available at: [www.rideonrealtime.com](http://www.rideonrealtime.com)

**Regular Mailing Address:**  
Montgomery County DOT  
Division of Transit Services  
101 Monroe Street, 5th  
Floor Rockville, MD 20850

For more information, or to request this document in an alternate format or translated into another language, please call 311, or outside Montgomery County 240-777-0311.

Para más información o para pedir este documento en un formato diferente o traducido a otro idioma, por favor, llame al 311 o de fuera del Condado de Montgomery al 240-777-0311.

如需更多信息、需要以其它格式提供本文檔或需要將本文檔翻譯成其它語言，請撥打311。如果您不在蒙哥馬利郡，請撥打240-777-0311。

자세한 정보를 원하시거나 본 문서를 다른 형식 또는 다른 언어로의 번역본으로 원하실 경우, 전화번호 311, 또는 몽고메리 카운티 이외의 지역에서는 240-777-0311로 연락하시기 바랍니다.

ለተጨማሪ መረጃ፣ ወይም ይህንን ደብዳቤ በተለያዩ መልኩ ለመጠየቅ ወይም ወደሌላ ቋንቋ ለማስተርጎም፣ አከላካይነት ለ 311 ወይም ከሞንትጎመሪ ካውንቲ ውጭ 240-777-0311 ይደውሉ።

Pour plus d'informations ou pour recevoir un exemplaire de ce document sous un format différent ou traduit dans une autre langue, veuillez composer le 311 ou le 240-777-0311, à l'extérieur du comté de Montgomery.

Để tìm hiểu thêm, hoặc để yêu cầu cung cấp tài liệu này theo định dạng khác hay chuyển ngữ sang ngôn ngữ khác, vui lòng gọi 311 hoặc số 240-777-0311 nếu gọi từ bên ngoài Quận Montgomery.

**HOLIDAY SCHEDULE**

Weekday Schedule operates on Columbus Day  
Saturday Schedule operates on Independence Day  
Sunday Schedule operates on New Year's Day, Memorial Day, Labor Day, Thanksgiving Day, Christmas Day  
Special Schedule operates on MLK, Jr. Day, Presidents' Day, Veterans Day

**Like us on Facebook** [facebook.com/RideOnMCT](https://www.facebook.com/RideOnMCT) **Follow us on Twitter** [twitter.com/RideOnMCT](https://twitter.com/RideOnMCT)

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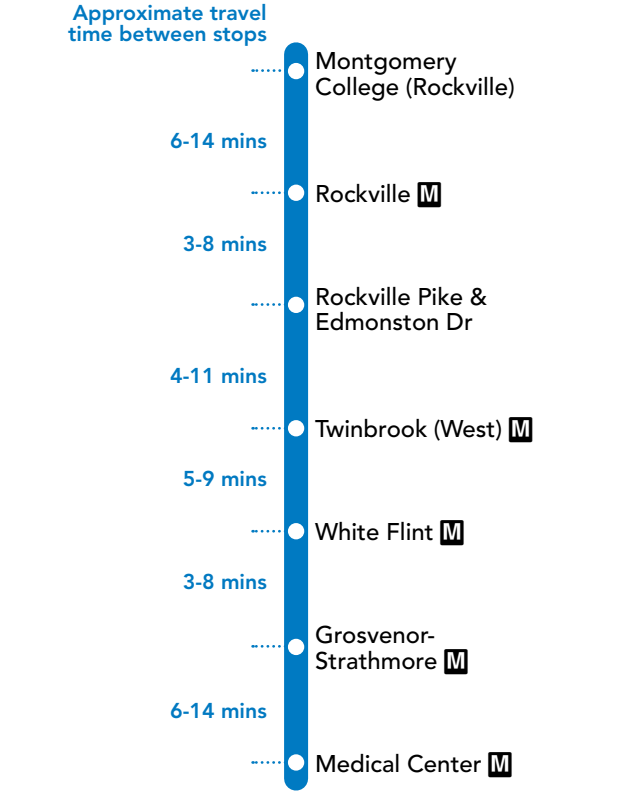
**Subscribe to text alerts by texting** MONTGOMERY RIDEON to 468311

**YouTube** [youtube.com/RideOnMCT](https://youtube.com/RideOnMCT)

**Thank You for Riding with Us!**

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**EFFECTIVE: SEPTEMBER 16, 2018**



**SERVICE DAYS**  
DAILY



**Ride On**  
Montgomery County Transit

Telephone 311  
Online at [www.rideonbus.com](http://www.rideonbus.com)  
Real Time Info at [www.rideonrealtime.com](http://www.rideonrealtime.com)

## 81 To White Flint

### MONDAY THROUGH FRIDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP



Rockville 	Tower Building	The Preserve	Montrose Rd & Jefferson St	White Flint 
1	2	3	4	5
6:00	6:07	6:09	6:16	6:22
6:32	6:39	6:41	6:48	6:54
7:02	7:09	7:11	7:18	7:24
7:32	7:39	7:41	7:49	7:57
8:02	8:09	8:11	8:19	8:27
8:32	8:39	8:41	8:48	8:55
9:02	9:09	9:11	9:18	9:25
AFTERNOON				
3:15	3:23	3:25	3:33	3:40
3:45	3:53	3:55	4:03	4:10
4:15	4:23	4:25	4:33	4:40
4:45	4:53	4:55	5:03	5:10
5:15	5:23	5:25	5:33	5:41
5:45	5:53	5:55	6:03	6:11
6:15	6:23	6:25	6:32	6:38
6:45	6:53	6:55	7:02	7:08
NOTES:			AM	PM

Please arrive at your stop several minutes ahead of your bus' scheduled arrival. Since safe service is a priority at Ride On, buses may be delayed due to traffic or weather.

## 81 To Rockville

### MONDAY THROUGH FRIDAY

SEE TIMEPOINT LOCATION ON ROUTE MAP

White Flint 	Montrose Rd & Jefferson St	The Preserve	Tower Building	Rockville 
5	4	3	2	1
6:05	6:11	6:16	6:20	6:28
6:35	6:41	6:46	6:50	6:58
7:05	7:11	7:16	7:20	7:28
7:35	7:41	7:47	7:50	7:57
8:05	8:11	8:17	8:20	8:27
8:35	8:41	8:47	8:50	8:57
9:05	9:11	9:17	9:20	9:27
AFTERNOON				
3:15	3:21	3:27	3:31	3:41
3:46	3:52	3:58	4:02	4:12
4:16	4:22	4:28	4:32	4:42
4:47	4:52	4:57	5:01	5:09
5:17	5:22	5:27	5:31	5:39
5:47	5:52	5:57	6:01	6:09
6:17	6:22	6:27	6:31	6:39
6:47	6:51	6:56	6:59	7:06
7:17	7:21	7:26	7:29	7:36
NOTES:			AM	PM

There is NO Saturday or Sunday service on this route

## HOW TO RIDE A BUS

Check schedule for timepoint nearest your location. Wait at the blue and white **RIDE ON** bus stop sign. Arrive several minutes before scheduled time. Have exact fare ready (drivers do not make change).

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- Be mindful of changes in the schedule, for holidays or bad weather.
- Please observe the following rules for all patrons: No eating, drinking, or smoking.
- Electronic devices may be played with earphones set *at low level*.

## HOW TO READ A TIMETABLE

- Find the schedule for the day of the week and the direction you wish to ride.
- Find the timepoints closest to your origin and destination. The timepoints are shown on the route map and indicate the time the bus is scheduled to be at the particular location. Your nearest bus stop may be between timepoints.
- Read down the column to see the times when a trip will be at the given timepoint. Read the times across to the right to see when the trip reaches other timepoints. If no time is shown, that trip does not serve that timepoint.

## FARES

Effective September 2, 2017

Regular Fare, Token, or SmarTrip®	\$2.00
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Seniors age 65 years or older with a Senior SmarTrip® card or valid Metro Senior ID Card or with valid Medicare Card and Photo ID from 9:30 am – 3:00 pm Monday through Friday and Saturday from 8:30 am – 4:00 pm.	FREE
Person with disability with Metro Disabled ID Card from 9:30 am – 3:00 pm Monday through Friday and Saturday from 8:30 am – 4:00 pm.	
Person with disability with Metro Disability ID Card – Attendant Eligible from 9:30 am – 3:00 pm Mon. through Fri. and Sat. from 8:30 am – 4:00 pm. Attendant rides half fare or free depending on time.	
MetroAccess - Certified Customer with ID	FREE
MetroAccess - Companion	
Children under age 5 Limit 2 children per paying passenger	
Local Bus Transfer with SmarTrip®	FREE
Children 5 to 18 with a student ID or Youth Cruiser SmarTrip® Card Monday to Friday, 2:00 - 8:00 pm	

## GUARANTEED RIDE HOME

When you take Metrobus, Metrorail and Ride On to work, you are eligible to participate in the free Commuter Connections Guaranteed Ride Home Program. To register and to receive program details call: Commuter Services at **301-770-POOL(7665)**.

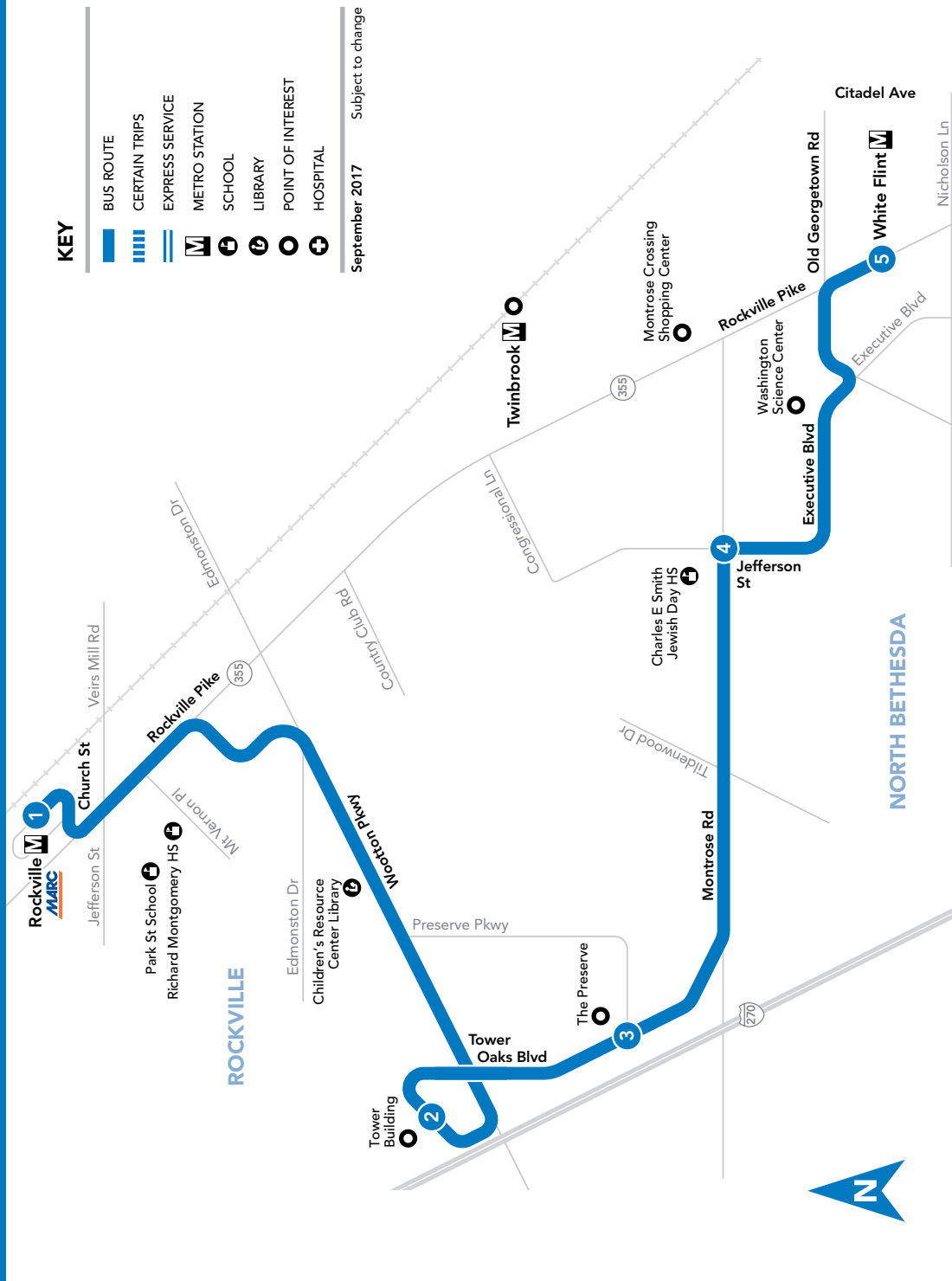
## METROACCESS

Alternative paratransit service to this Ride On route for people with certified disabilities is available. Call MetroAccess at **301-562-5360**.



# 81

Rockville M – Wootton Pkwy – Tower Oaks Blvd –  
Montrose Rd – Executive Blvd – White Flint M



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Regular Mailing Address:  
Montgomery County DOT  
Division of Transit Services  
101 Monroe Street, 5th Floor  
Rockville, MD 20850

## HOLIDAY SCHEDULE

New Year's Day.....	Sunday Schedule
Martin Luther King, Jr. Day.....	Special Schedule
Presidents' Day.....	Special Schedule
Memorial Day.....	Sunday Schedule
Independence Day.....	Saturday Schedule
Labor Day.....	Sunday Schedule
Columbus Day.....	Weekday Schedule
Veterans Day.....	Special Schedule
Thanksgiving Day.....	Sunday Schedule
Christmas Day.....	Sunday Schedule

For special schedules, consult our website,  
[www.rideonbus.com](http://www.rideonbus.com), or call **311**

Like us on Facebook [facebook.com/RideOnMCT](https://facebook.com/RideOnMCT) Follow us on Twitter [twitter.com/RideOnMCT](https://twitter.com/RideOnMCT)

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YouTube [youtube.com/c/RideOnMCT](https://youtube.com/c/RideOnMCT)

Thank You for Riding with Us!



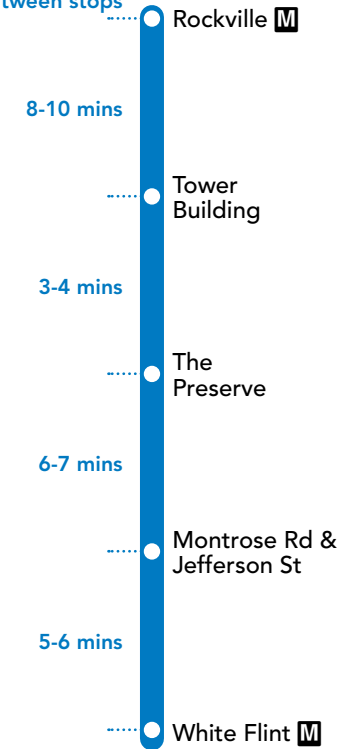
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EFFECTIVE: SEPTEMBER 17, 2017



# 81

Approximate travel time between stops



**SERVICE DAYS**  
MONDAY - FRIDAY



Telephone **311**  
Online at [www.rideonbus.com](http://www.rideonbus.com)  
Real Time Info at [www.rideonrealtime.com](http://www.rideonrealtime.com)