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Community Dev & Planning

Transportation Impact Analysis

Courthouse Plaza

City of Fairfax, Virginia

August 7, 2026

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Executive Summary

This report presents the findings of a Transportation Impact Analysis (NOT a Chapter 870 Study) conducted for the Courthouse Plaza site in the City of Fairfax, Virginia. This study was developed in accordance with VDOT and City of Fairfax guidelines.

This document was prepared in accordance with best professional practices and applicable standards to assess the impact of a proposed development on the transportation system and recommends improvements to lessen or negate those impacts. Transportation Impact Analysis involves the evaluation of anticipated roadway conditions with and without the proposed development and recommendation of transportation improvements to offset both the impacts of the increase in future traffic volumes and the changes in traffic operations due to the proposed development. The analysis assists public officials and developers to balance interrelations between efficient traffic movements with necessary lane access.

Site Location and Study Area

Courthouse Plaza Development is located west of Blenheim Boulevard (Old Lee Highway), east of University Drive and north of North Street in the City of Fairfax, Virginia. The existing site is currently occupied by approximately 91,860 SF of retail (including a supermarket, defunct drive-thru, and pad site) and surface parking. The vehicular study area includes 11 intersections, of which nine (9) are existing. Site access is planned to be provided via two curb cuts along University Drive and three curb cuts along Blenheim Blvd.

Description of Proposed Development

The initial phase of development is planned to replace approximately 25 kSF of retail with approximately 315 multifamily units in a single mixed-use building on the west side of the property. Approximately 67 kSF of existing retail (including a supermarket and pad sites) would remain while 12.5 kSF of new retail would be introduced on the ground floor of the new mixed-use building. In this revised TIA submission, the extension of Street 1 to Blenheim Boulevard as a right-out exit is no longer proposed, allowing for additional open space and enhanced pedestrian accommodations through the area. For consistency with previous TIA submissions, two (2) scenarios are presented: one with the right-out exit at Blenheim Boulevard and one without it.

Principal Findings and Conclusions

Discussions regarding the study assumptions and relevant background information were held with City of Fairfax staff during the scoping meeting on Friday, March 13, 2026. A copy of the signed scoping document is included in Appendix A. Please note that the pre-application submission illustrated potential future phases are possible at the site that align with the overall Comprehensive Plan vision for this area. This TIA only analyzes the initial phase of development. Any future phases of the ultimate build out conditions at the Courthouse Plaza site are studied in a separately submitted technical memorandum.

The following analysis scenarios are included in this Transportation Impact Analysis:

- **Existing (2026) Scenario** – assumes traffic volume of 2023 plus additional traffic due to a 1% annual growth rate between 2023-2026.
- **Future without Development 2028** – assumes traffic volume of 2023 plus additional traffic due to a 1% annual growth rate between 2023-2028.
- **Future with Development 2028** – assumes Future without Development 2028 traffic plus traffic generated by the proposed Courthouse Plaza Development. Trips associated with the inline retail to be removed (approximately 25.2 kSF) were removed from the existing driveways based on proportion. Appendix E shows the trips removed from the existing driveways for the AM and PM peak hours.

The analysis of the traffic operations for the proposed Courthouse Plaza Development supports the following major conclusions:

Analysis Components

- Based on comments from the City of Fairfax staff, traffic counts from 2023 with growth were applied to the major movements to account for a regional increase in existing traffic.
 - A 1.0% per year growth rate from the year 2023 to 2026.
- As determined based on discussions with City of Fairfax staff at the scoping meeting, the following growth was applied to the major movements to account for a regional increase in background traffic.
 - A 1.0% per year growth rate from the year 2023 to 2028
- A TDM/mode split reduction of 15 percent was applied to the residential use, as agreed upon by City of Fairfax staff.
- Under Future without Development (2028) includes two existing pad site developments, which are assumed to be fully built and operational by 2028. These pad site developments are estimated to generate approximately 19 trips during the AM peak hour, 42 trips during the PM peak hour, and 447 trips on a typical weekday.
- Under Future with Development (2028), the proposed development will generate approximately 127 AM peak hour trips, 140 PM peak hour trips and 1,571 trips on a typical weekday per ITE Trip Generation Manual (11th Edition).
- The proposed development continues to generate fewer trips than the existing shopping center development at the site which is approximately 91.9 kSF in size.
- There are two (2) proposed access points to the development along University Drive: one utilizing Democracy Lane and another provided by the new Street 1 connection on the south side of the building
- Internal to the site, a north-south street has been planned (Street 2) east of the proposed building that intersects Democracy Lane. This configuration achieves the City's Comprehensive Plan vision of a grid system of streets within the Courthouse Plaza site.

Multimodal Transportation Elements

- Sidewalks currently exist at all study intersections, with a minimum width of 5 feet and up to 10 feet. Further pedestrian safety and convenience will be enhanced by the proposed development, with additional pedestrian accommodations within the block.
- The analysis assumes the City Project 'University Drive Spine' as a background improvement for all Future (2028) scenarios.
- Four (4) bus routes operated by CUE system currently serve the site area. The system provides scheduled, low-cost or free transportation services to George Mason University, to shopping centers and other locations within the City of Fairfax as well as the Vienna/Fairfax GMU WMATA station.

Infrastructure

- The Courthouse Plaza Development in existing conditions is accessed via multiple entrances on Blenheim Boulevard and University Drive.
- With the proposed development, two new roadways (Street 1 and Street 2) will be constructed adjacent to the new multifamily building.
- Primary access to the site will continue to be provided via University Drive, Blenheim Boulevard, and Democracy Lane. The newly created Street 1 intersection on University Drive replaces the existing intersection previously located across from 7- Eleven.

- The City of Fairfax project 'University Drive Spine', which provides multimodal improvements along University Drive with conversion of existing four- lane configuration to a three-lane configuration with Two-Way Left Turn Lanes (TWLTLs) and bike lanes is included in the analysis for all future scenarios.

Analysis Results

- All the study intersections operate at acceptable levels of service during all the study periods and analysis conditions.
- 95th percentile queues are contained within the available storage at the turning movements during all the study periods/conditions.
- The location of the garage entrance and the westbound queue along Democracy Lane is not anticipated to cause operational issues. Analysis results show the 50th and 95th percentile queues are accommodated along all peak times, with the location of the garage gate allowing up to a two-car storage inside the garage. SimTraffic results are included in the revised submission that show that the maximum queues are not anticipated to block the garage entrance.
- The internal intersections within the development with the introduced Street 1 and Street 2 operate with minimal delays and queuing.
- Based on the capacity and queuing analysis of internal intersections, all intersections are anticipated to operate with acceptable Level of Service and queuing.

All-Way Stop Control Warrant Evaluation

- A preliminary all-way stop control warrant analysis was conducted for the intersection of Democracy Lane and Street 2 in accordance with MUTCD criteria.
- All-way stop control is considered appropriate at this location with the multifamily building, with the understanding that traffic control can be reevaluated as future site development and operating conditions evolve.

Introduction

This report presents the findings of a Transportation Impact Analysis conducted for the Courthouse Plaza Development in City of Fairfax, Virginia ("the City").

The site consists of two (2) parcels (Tax Map # 57-2-20-004 D and Tax Map # 57-2-20-003 A). The existing site is currently occupied by 91,860 SF of retail and surface parking.

The following tasks were completed as part of this study effort:

- A scoping meeting was conducted with City of Fairfax staff on March 13, 2026. This scope details the study assumptions and relevant background information. A copy of the signed scoping document is included in Appendix A.
- Existing conditions were observed in the field to verify roadway geometry, pedestrian and bicycle infrastructure, and traffic flow characteristics.
- Traffic counts were conducted on Thursday, March 30, 2023, during the morning and afternoon peak periods. In addition, Intersection 11 traffic counts were found from University Drive Bicycle Lane Traffic Analysis report, which was conducted on Tuesday, March 07, 2023, during the morning and afternoon peak periods.
- The future traffic volumes were developed by accounting for regional growth in the area. As determined based on discussions with the City, a growth rate of 1% per year compounded annually was applied to all major roadway intersections for the period between 2023 and 2028.
- Proposed site traffic volumes were generated based on the methodology outlined in ITE Trip Generation, 11th Edition.
- Vehicular traffic analysis for the study area intersections was performed using Synchro 11 based on Highway Capacity Manual (HCM) 6th methodology. Intersection analysis was performed for existing conditions (2026) and future without development (2028), and future with development (2028). Sources of data for this study include information provided by VDOT, City of Fairfax, and the office files and field reconnaissance efforts of Gorove Slade.

Background Information: Proposed Development (Site & Nearby)

Description of the Existing Site

General Location

The site is in the City of Fairfax and is part of the City's Old Town Fairfax Transition Overlay District. It is located north of North Street, west of Blenheim Boulevard as shown in Figure 1.



Figure 1: Site Location

Description of the Parcels

The proposed redevelopment of Courthouse Plaza Development is composed of two (2) parcels. The parcels can be identified on City of Fairfax Maps with the parcel IDs: 57-2-20-004 D and 57-2-20-003 A.

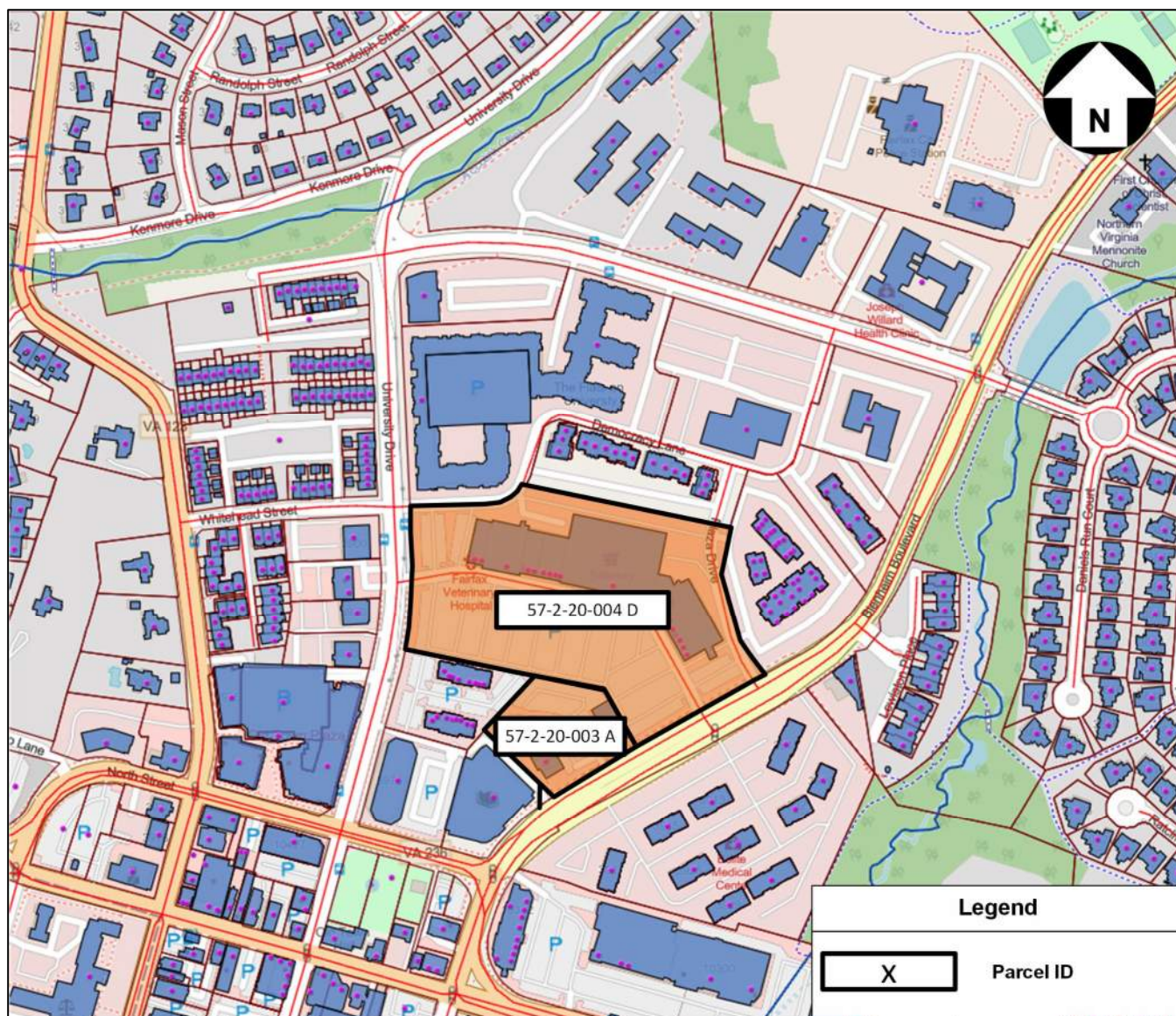


Figure 2: Parcel Map

Source: City of Fairfax Real Estate Database

Location within Jurisdiction and Region

As shown in Figure 3, the site is situated approximately 2 miles south of the closest I-66 interchange and approximately 1.5 miles north of George Mason University's main campus.

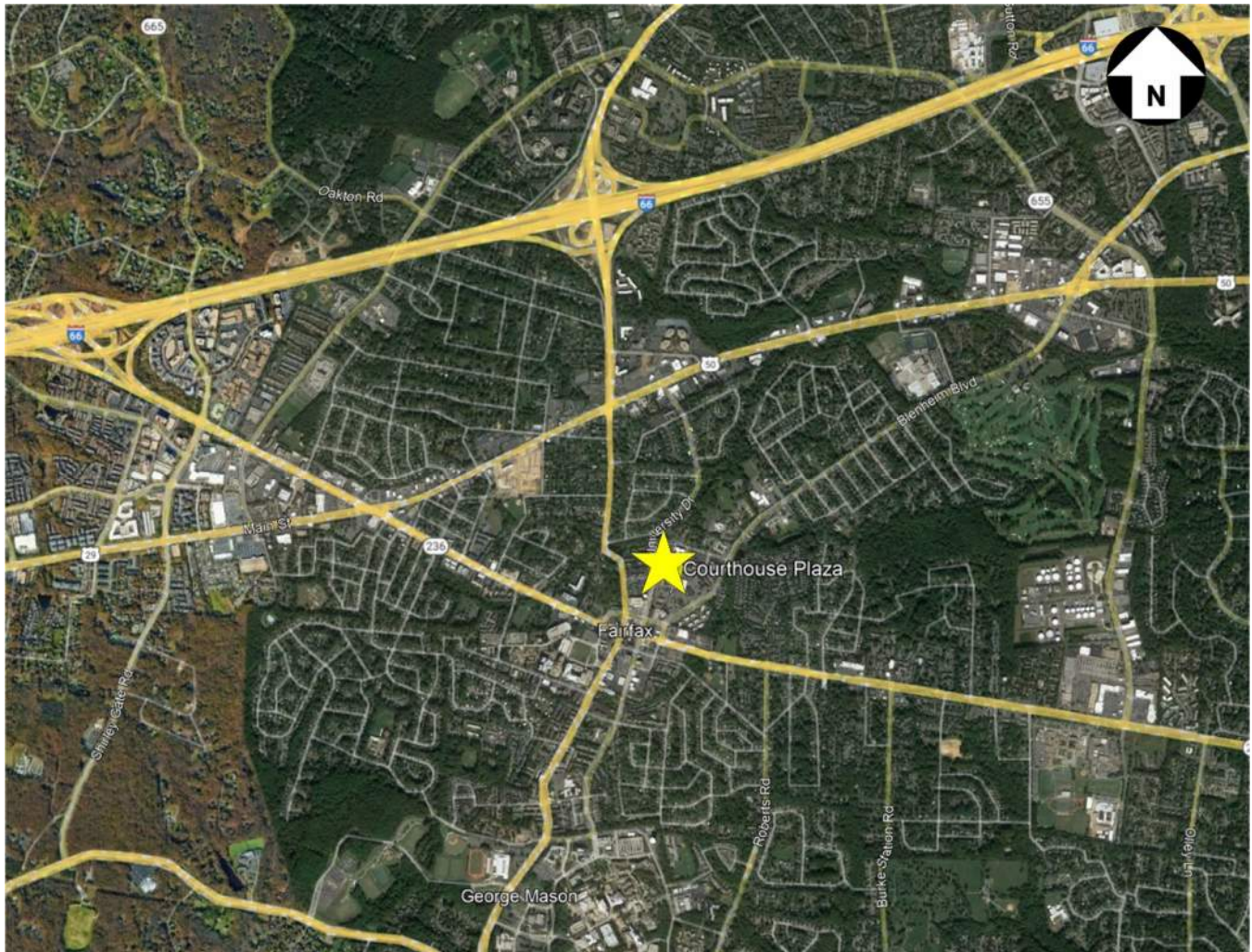


Figure 3: Regional Location

Comprehensive Plan Transportation Recommendations

The City of Fairfax Comprehensive Plan establishes goals and guiding principles for multimodal transportation for the City. The Comprehensive Plan envisions 'Active Streets' within the Old Town Fairfax Transition Overlay District. Figure 4 shows the proposed street typology for the City and Figure 5 shows the street hierarchy map from the Old Town Fairfax Small Area Plan. As shown, University Drive is planned as an Active Street.

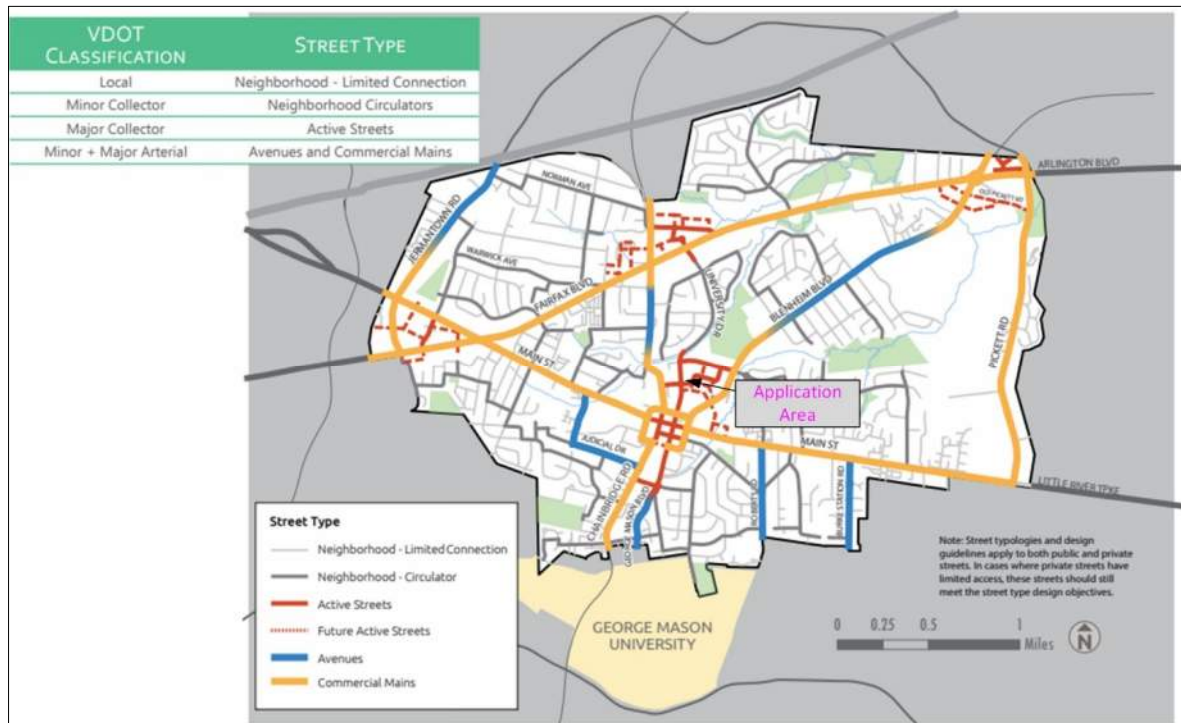


Figure 4: Comprehensive Plan – Transportation Recommendations
Source: City of Fairfax 2035 Comprehensive Plan

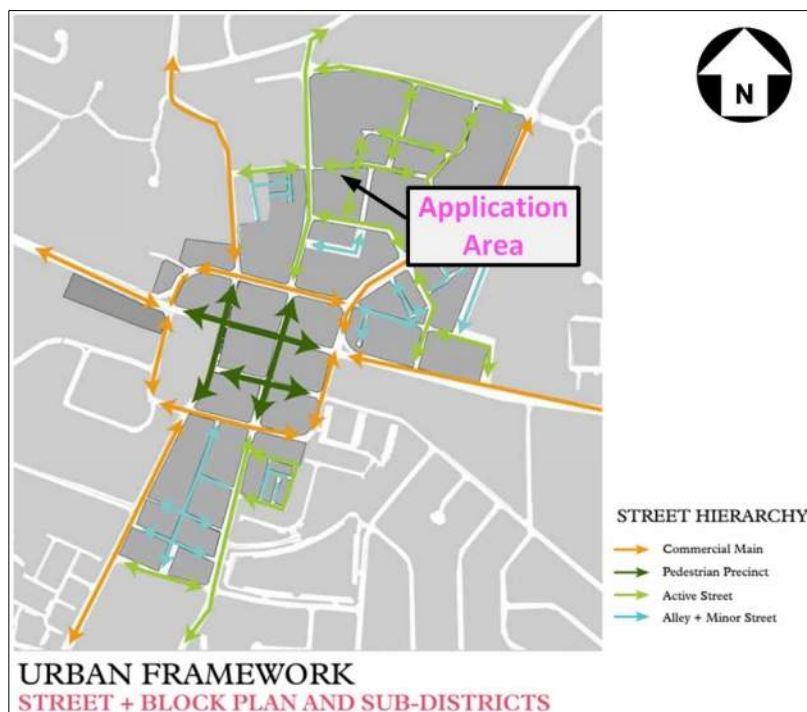


Figure 5: Street Hierarchy Map (City of Fairfax Old Town Small Area Plan)

Additionally, nearby multimodal improvements are planned in the area as outlined below.

- 1) University Drive Spine: To provide a 'complete street' environment for all road users by accommodating a variety of transportation modes, the existing four lane street is planned to be converted to a three-lane street with two travel lanes, a single central two-way left turn lane (TWLTL), and buffered bike lanes in both travel directions. Improvements are planned within the existing ROW and are expected to be completed before this proposed development. The estimated schedule for construction to be completed is in 2027. Figure 6 shows the project plans with the three-lane configuration on University Drive with bicycle facilities. The figure also shows the reconfiguration of the intersection of University Drive and Layton Hall Drive.

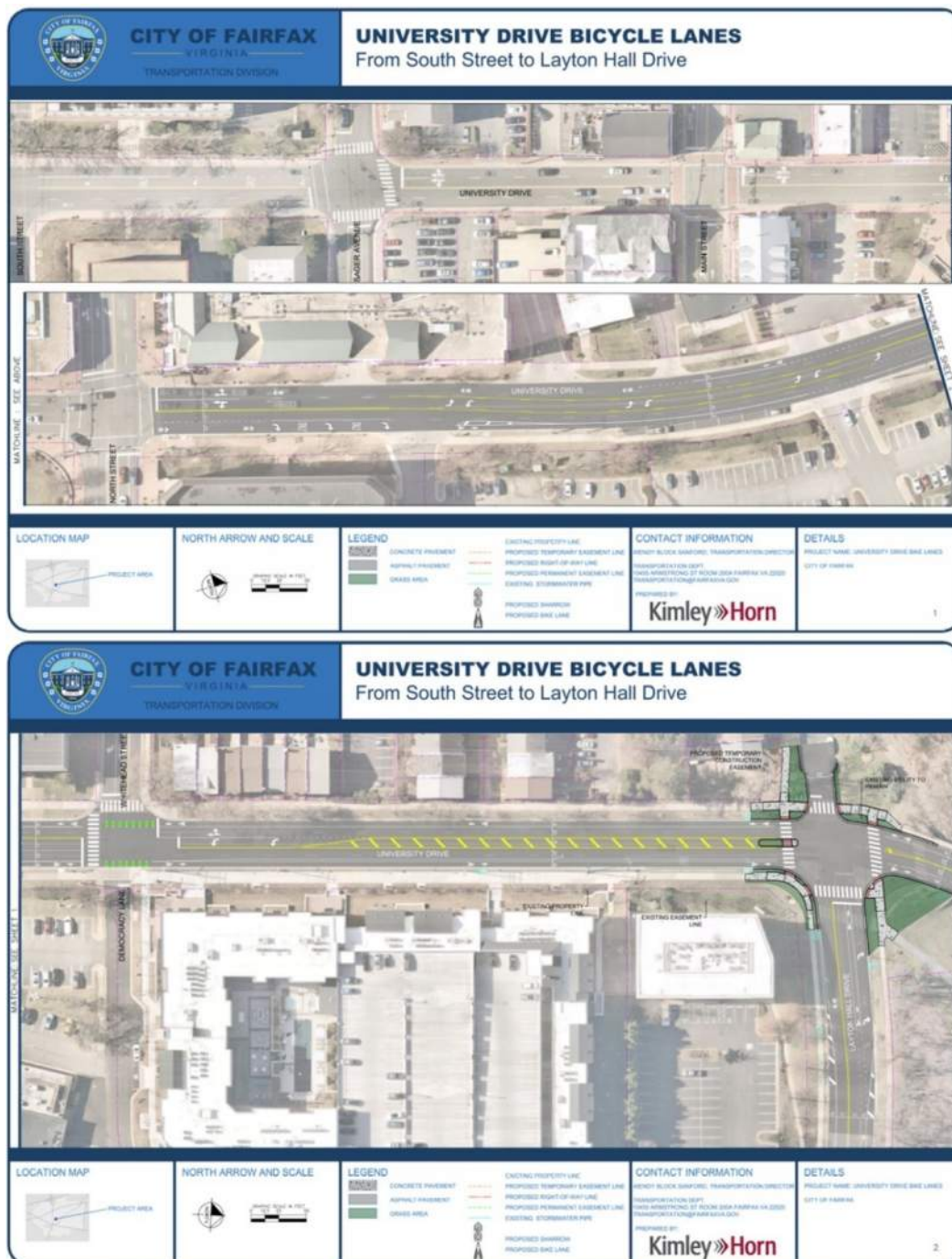


Figure 6: University Drive Spine (City of Fairfax Project)

- 2) Blenheim Boulevard: Plans for new bicycle facilities on Blenheim Boulevard from Layton Hall Drive to Ridge Avenue are currently in design per the Old Town Small Area Plan, as shown below. These facilities are not currently planned to the south of Layton Hall Drive. Construction is currently estimated to be completed in 2027, according to the City of Fairfax website.

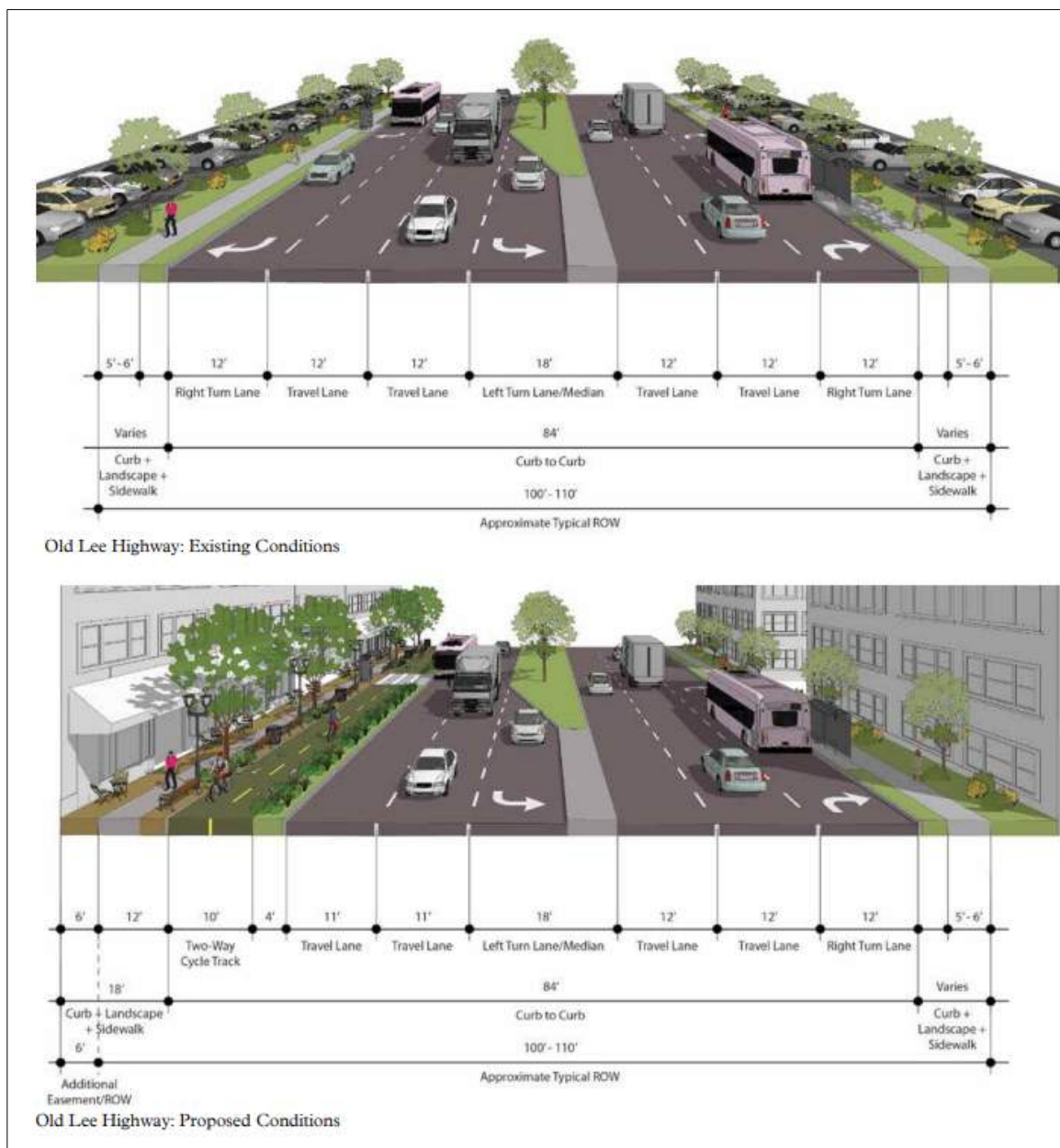


Figure 7: Blenheim Boulevard (Old Lee Highway) Multimodal Improvements (Source: Old Town Small Area Plan)

Zoning and Future Land Use for the Site and Nearby Uses

In existing conditions, the site parcels are zoned as CR Commercial Retail and CG Commercial General as shown in Figure 8.

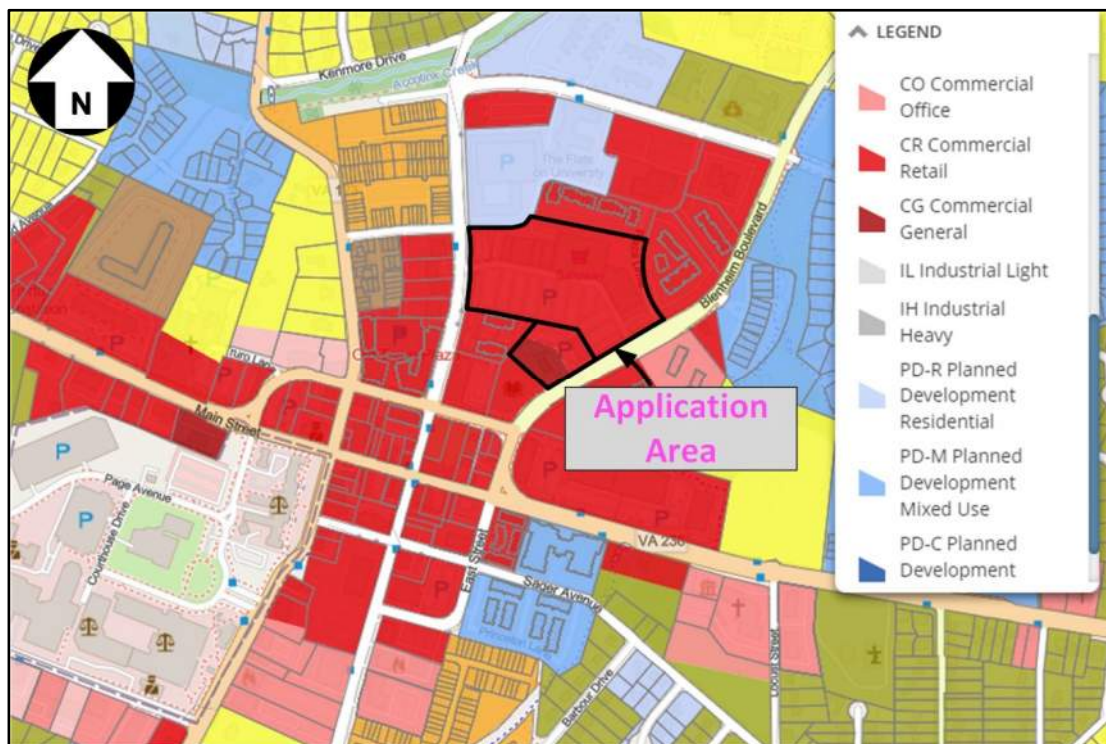


Figure 8: City of Fairfax Zoning Map

Future land use for the site parcels shows the area as 'Activity Center'. Activity Center per the City's Zoning Ordinance refers to area(s) designated for mixed-use environments. Future land use map is shown in Figure 9.

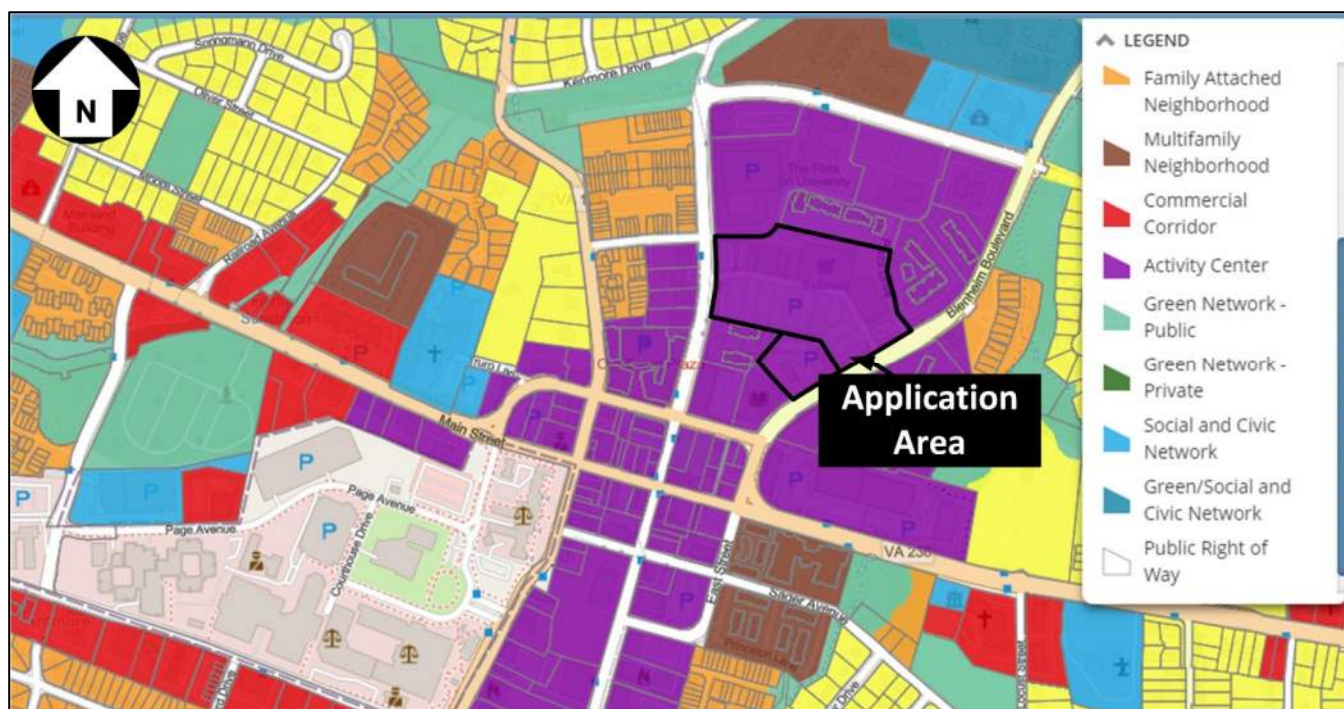


Figure 9: City of Fairfax Future Land Use

Descriptions of Geographic Scope and Limits of the Study Area

The geographic scope for the transportation study area was developed in accordance with the City's guidance.

The vehicular study area in the approved scope included the following intersections.

1. Blenheim Boulevard and Street 3 / Plaza Drive
2. Blenheim Boulevard and Fairfax Commons Entrance
3. Blenheim Boulevard and Street 1
4. Blenheim Boulevard and Southern Entrance
5. University Drive and Street 1/ Existing Driveway
6. University Drive and Existing Courthouse Plaza Entrance/7-11 Entrance
7. University Drive and Democracy Lane/Whitehead Street
8. Democracy Lane and Garage Entrance
9. Democracy Lane and Layton Hall Drive
10. Blenheim Boulevard and Layton Hall Drive
11. University Drive and Layton Hall Drive

Existing Roadways

The study area includes five (5) intersections along Blenheim Boulevard, four (4) intersections along University Drive, one (1) intersection on Democracy Lane and one (1) intersection along Layton Hall Drive. Figure 10 shows the study intersections.



Figure 10: Study Intersections

Existing Conditions (2026)

Existing Transit Services

Four (4) bus routes operated by City of Fairfax: CUE system currently serves the site area. The system provides scheduled, free/low-cost transportation services to George Mason University, to shopping centers and other locations within the City of Fairfax as well as the Vienna/Fairfax GMU WMATA station. The existing bus routes and WMATA metro bus routes are shown on Figure 11 and Figure 12. It is noted that only the CUE system serves the immediate site area. WMATA bus route F23 (Previously route 29K) originating from King Street-Old Town metro station, serves the area via the University Drive & Main Street bus stop on Main Street. In addition, WMATA Route F50 originates from the Vienna/Fairfax GMU WMATA station serves the immediate site area through Blenheim Boulevard.

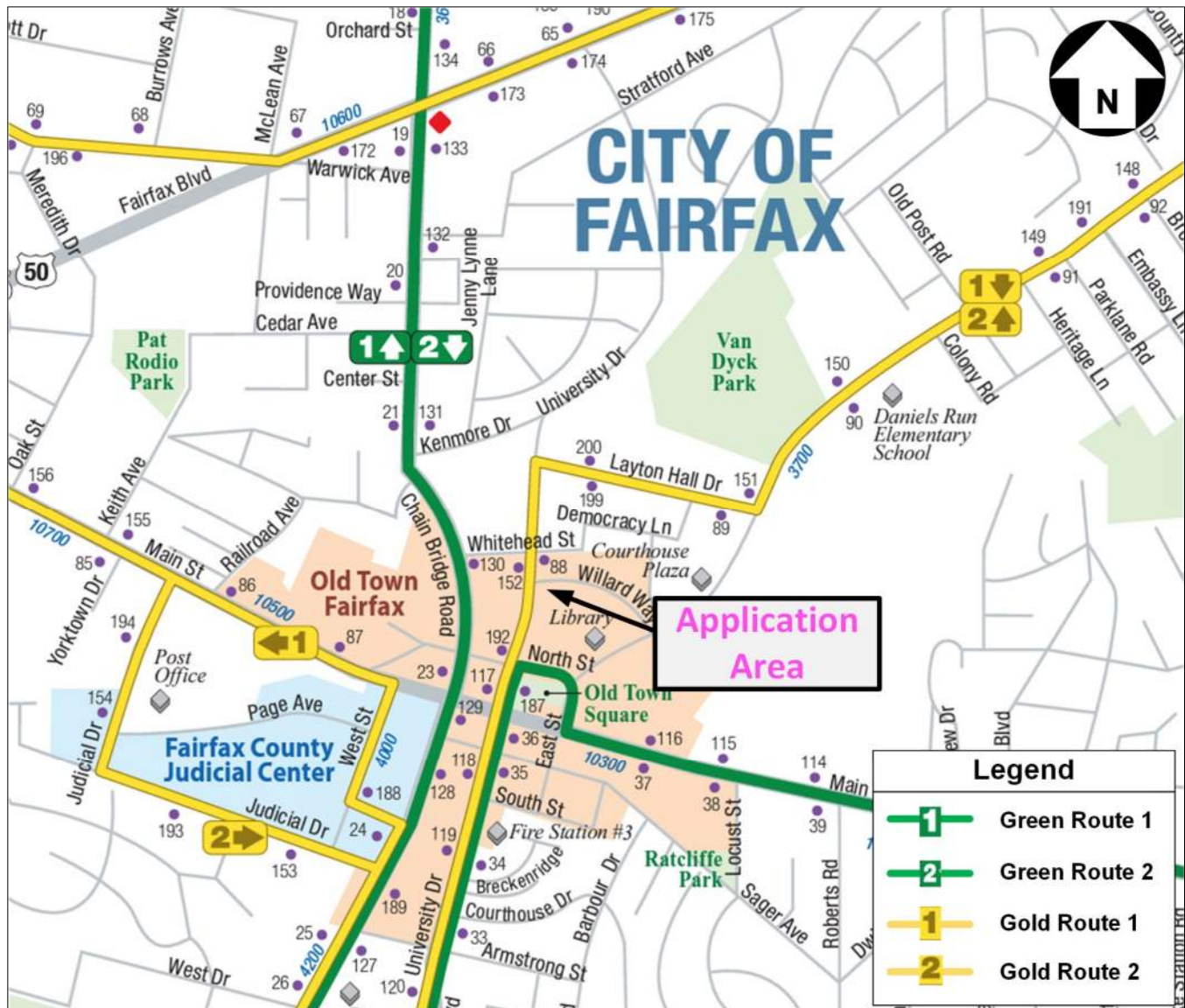


Figure 11: Existing CUE Bus Routes

Source: cuebus.org

The CUE system operates Monday-Friday for all four routes, with a typical headway of approximately 30 minutes during AM and PM peak periods. Special reduced service is also provided on Saturdays and Sundays with headways of approximately 60 minutes during the peak mid-day periods.

Information about the CUE bus schedules is included in Appendix B.

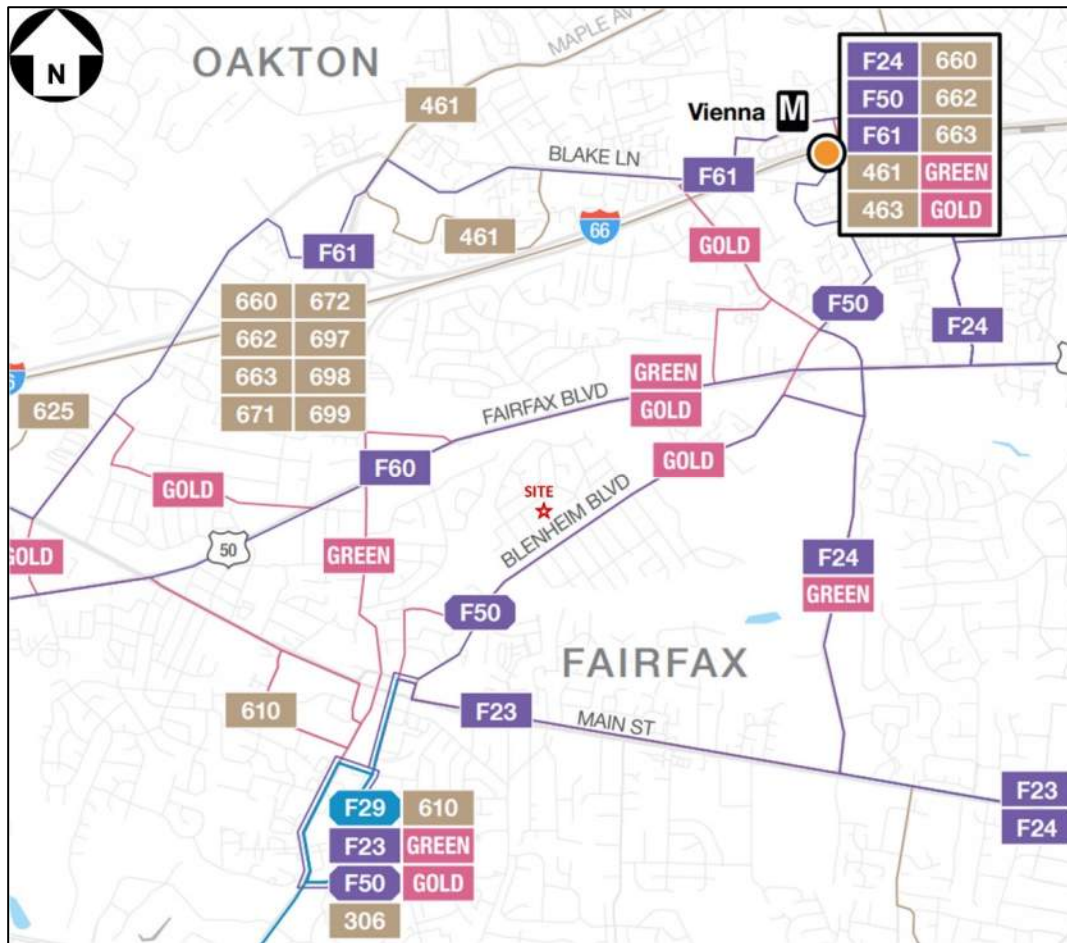


Figure 12: Existing WMATA Bus Routes within site

(Source: www.wmata.com)

The WMATA metro bus system operates Monday-Friday for all routes, with a typical headway of approximately 30 minutes during AM and PM peak periods. Special reduced service is also provided on Saturdays and Sundays with headways of approximately 50 minutes during the peak mid-day periods.

Information about the WMATA metro bus schedules is included in Appendix B.

Bus Stop Assessment

A total of 14 bus stops currently exist near the site and along Main Street towards the south of the site. Table 1 lists the available infrastructure at the bus stops. The provided infrastructure can include a sign and pole, with or without an information case, ADA landing pads and sidewalk, seating, shelter, and trash bins.

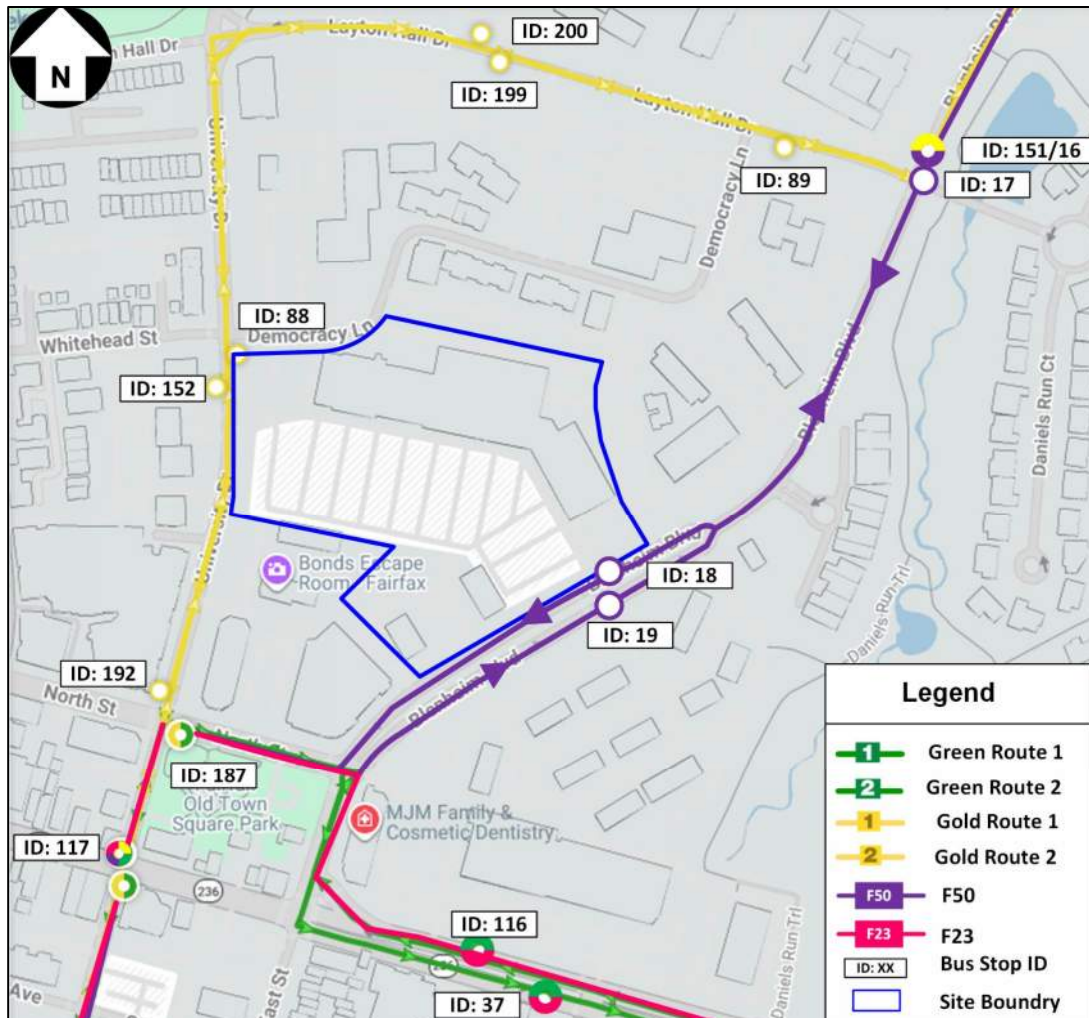


Figure 13: Bus Stops in Vicinity of the Site

Table 1: Bus Stop Facilities

Location	Stop ID	Routes Served	Infrastructure						
			Sign	ADA Landing Pad	Sidewalk	Route Info Case	Bench	Shelter	Trash
Old Lee Highway/Blenheim Boulevard at Layton Hall Dr (SB)	151/16	Gold 1 , F50	●	●	●	●	●	●	●
Layton Hall Drive at Old Lee Highway/Blenheim Boulevard (EB)	89	Gold 2	●	●	●	●	●	●	●
Layton Hall Drive at The Flats (EB)	199	Gold 2	●	●	●	●	●	●	●
Layton Hall Drive at Layton Hall Apartments (WB)	200	Gold 1	●	●	●	●	●	●	●
University Drive at Democracy Lane (NB)	88	Gold 2	●		●				●
University Drive at Whitehead Street (SB)	152	Gold 1	●	●	●	●	●	●	●
University Drive at North Street (SB)	192	Gold 1	●		●				
University Dr & Main St	117	Gold 2, Green 2, F23, F50	●	●	●				●
University Dr at North St	187	Gold 2, Green 2	●		●				
Main Street Market Place	116	F23, Green 1	●		●	●	●	●	●
Main St at East St	37	F23, Green 2	●	●	●	●	●	●	●
Blenheim Bl+Farrcroft Dr	17	F50	●		●				
Blenheim Bl+Courthouse Plaza	18	F50	●	●	●				
Blenheim Bl+Fairfax Commons	19	F50	●		●		●		

As shown in Table 1, all the bus stops identified have a sign and a connected sidewalk. Depending on the location, some of the bus stops lack some additional facilities such as a shelter and route information cases with the map of the bus network. As part of the proposed application, the applicant has identified a location for a potential bus shelter along the site frontage on University Drive.

Existing Bicycle Facilities

As shown in Figure 14, dedicated bike lanes are limited on westbound Layton Hall Drive when traveling from Blenheim Boulevard to University Drive via Layton Hall Drive. Conversely, when traveling from University Drive to Blenheim Boulevard, a Bike Sharrow is provided. It is worth noting that these bike facilities cater to cyclists along this specific route, offering designated spaces for safe and convenient biking. Lastly, two (2) Capital Bikeshare locations in the vicinity of the application area provide further opportunities for bicycle travel to/from the site. With the 'University Drive Bicycle Facilities' project, bike lane at the intersection of Layton Hall Road and University Drive are also proposed. In addition, as observed, bicycle facilities currently exist on Layton Hall Drive which connects to Daniels Run Trail.

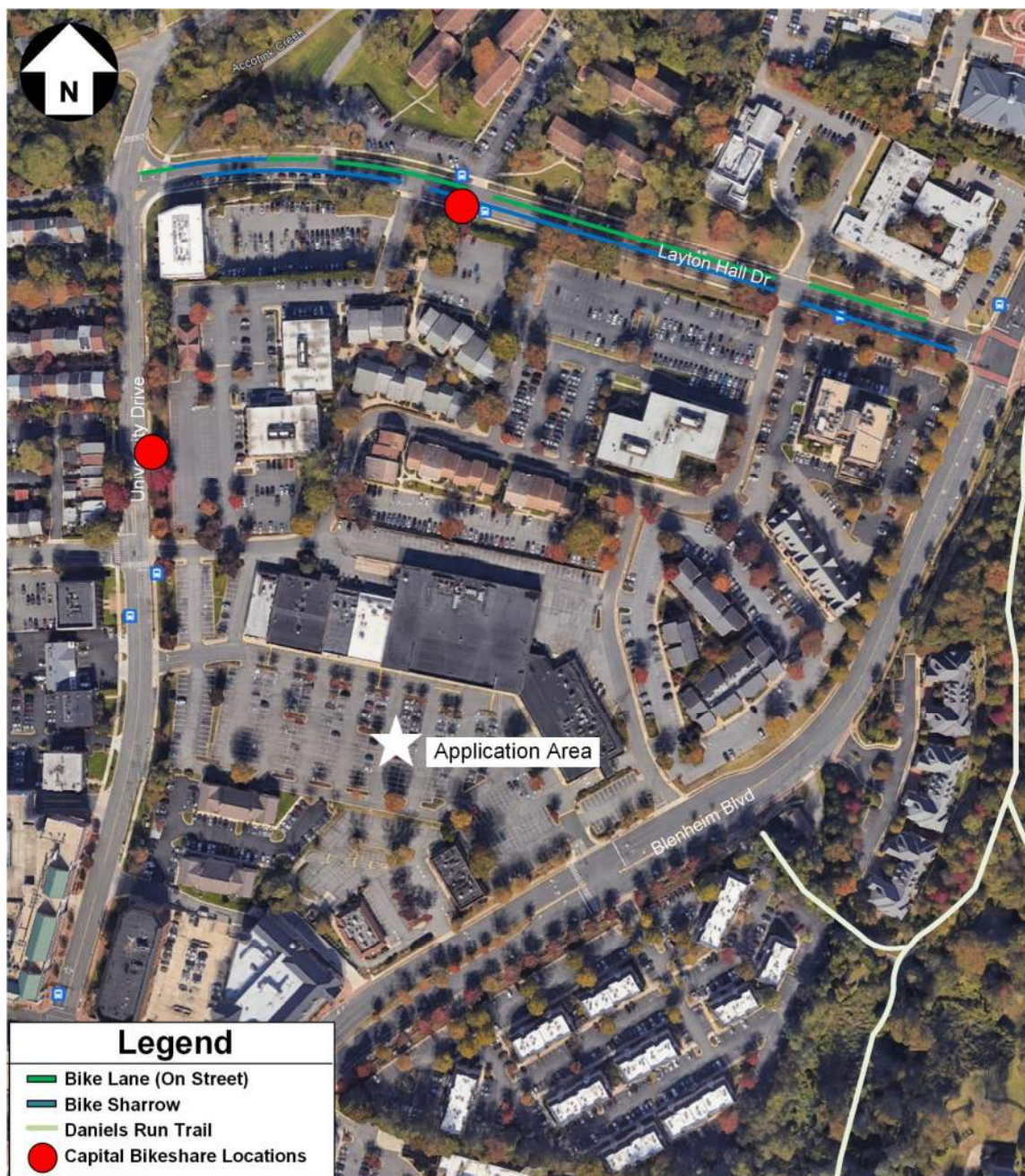


Figure 14: Existing Conditions – Bicycle Facilities

Existing Bicycle Volumes

Figure 15 depicts the existing bicyclist peak hour volumes, based on counts included with the conducted vehicular counts collected at the study intersections during the peak periods (conducted on Thursday, March 30, 2023). In addition, Intersection 11 traffic counts were found from University Drive Bicycle Lane Traffic Analysis report, which was conducted on Tuesday, March 07, 2023, during the morning and afternoon peak periods. The peak hours for the system were determined to be 7:30 AM to 8:30 AM and 4:45 PM to 5:45 PM.

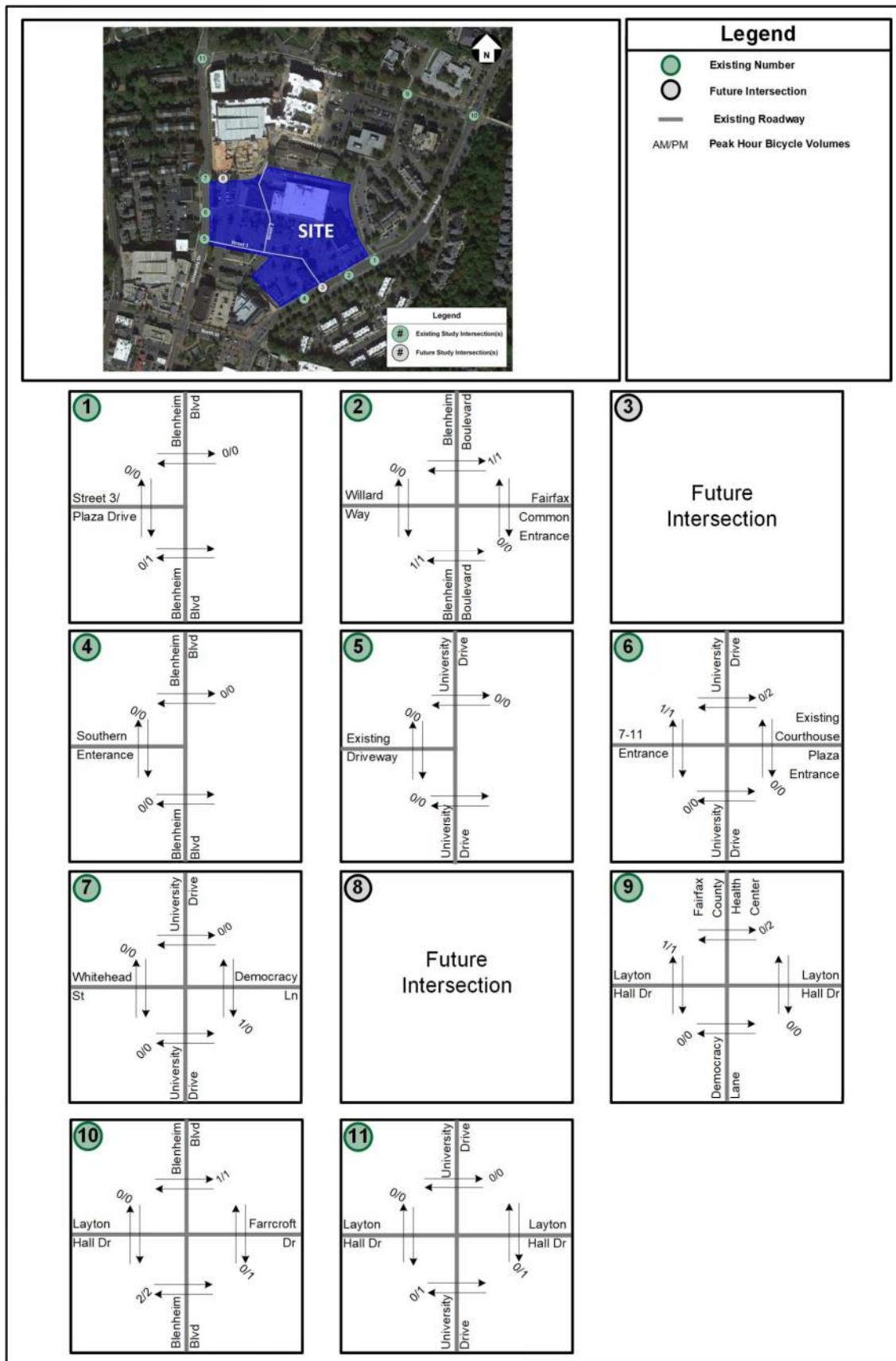


Figure 15: Existing Bike Volumes

Pedestrian Facilities

Existing Infrastructure

The site location benefits from well-established pedestrian facilities surrounding the site. Sidewalks currently exist at all study intersections, with a minimum width of 5 feet and up to 10 feet. Sidewalks exist on both sides of the streets on Blenheim Boulevard, University Drive, North Street and Layton Hall Drive. Further pedestrian safety and convenience can be enhanced by putting marked crosswalks at certain midblock locations and future signalized intersections if the necessary pedestrian demand is observed. Midblock crosswalks and future signals can better serve pedestrian demand if the anticipated pedestrian activity due to the various land uses is not adequately served by the existing pedestrian crosswalks. A midblock crosswalk is currently proposed on Democracy Lane on the north side of the Courthouse Plaza Development, which would reduce pedestrian travel and crossing times for pedestrians anticipated from The Flats, the proposed Development, and the existing retail uses. Based on further engineering studies, appropriate crosswalk treatments would be recommended based on pedestrian demand and design constraints. Figure 16 shows the existing pedestrian facilities in the site study area.

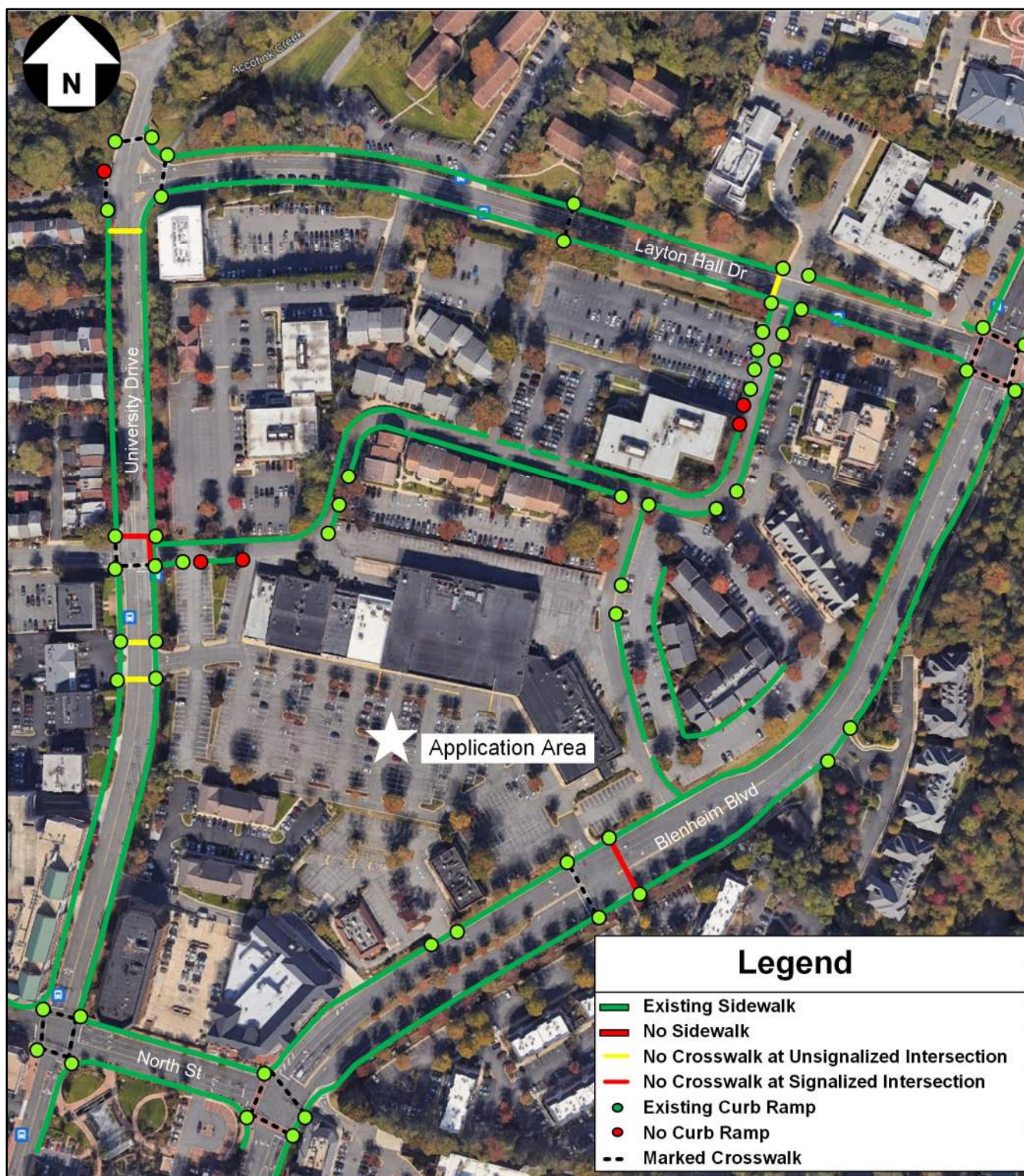


Figure 16: Existing Pedestrian Facilities

With the 'University Drive Bicycle Facilities' project, pedestrian improvements at the intersection of Layton Hall Road and University Drive are also proposed. These include an added crosswalk on the south leg of the intersection and addition of missing curb ramps.

Existing Pedestrian Volumes

Figure 17 depicts the existing pedestrian peak hour volumes at the study intersections, based on counts included with the conducted vehicular counts collected at the study intersections during the peak periods (conducted on Thursday, March 30, 2023). In addition, Intersection 11 traffic counts were found from University Drive Bicycle Lanes Traffic Analysis report (Dated October 2023), which were collected on Tuesday, March 07, 2023, during the morning and afternoon peak periods. For the purposes of this analysis, no inherent growth is assumed for pedestrian trips.

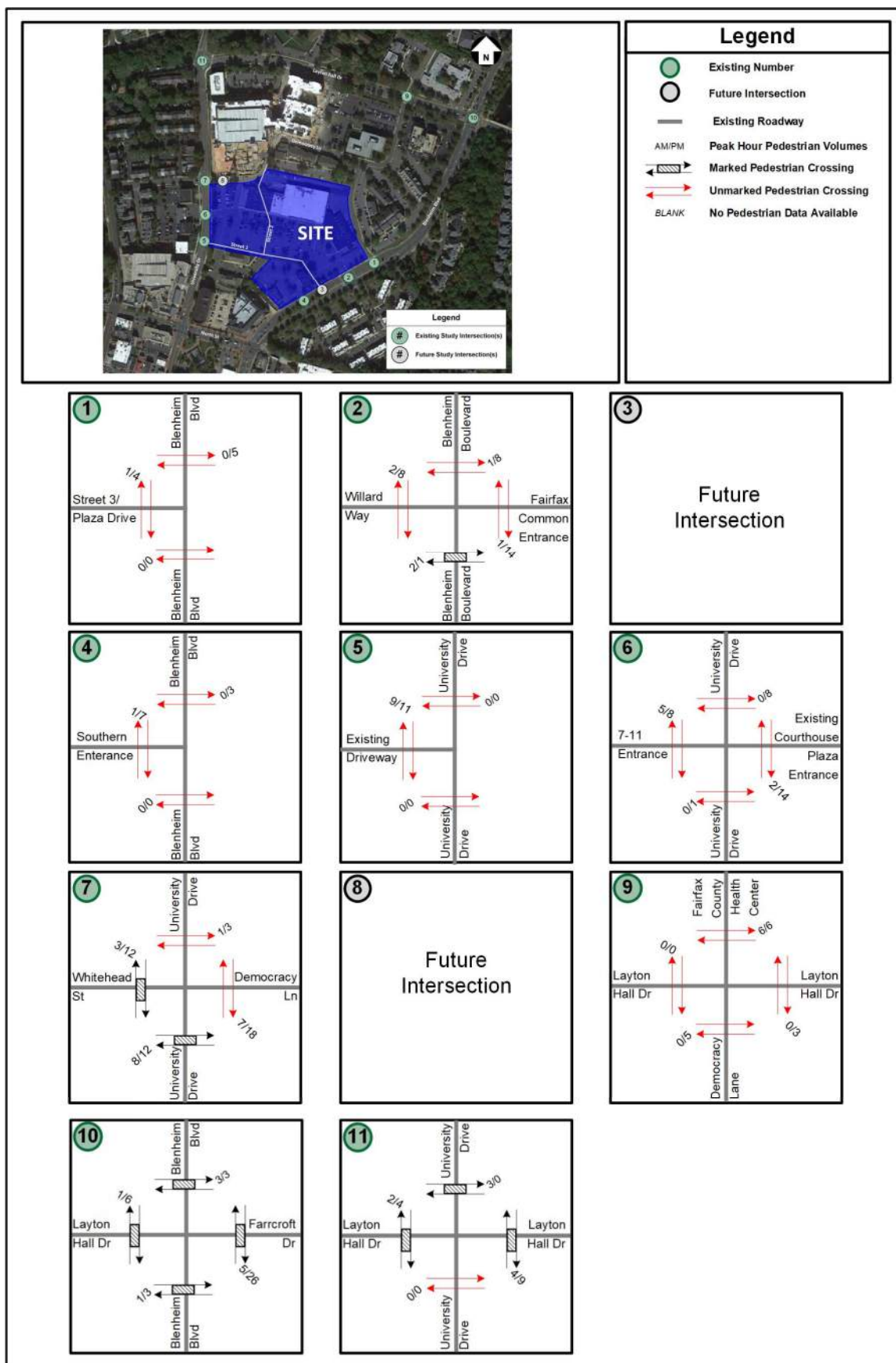


Figure 17: Peak Hour Pedestrian Volumes

Anticipated Pedestrian Activity

The proposed project intends to provide an internal pedestrian network that serves the demand between the residential and retail uses and in addition, provides connectivity to the existing pedestrian infrastructure surrounding the site. Figure 18 shows the pedestrian paths from the site to selected surrounding land uses in the vicinity of the site.



Figure 18: Pedestrian Paths to Selected Surrounding Land Uses

As mentioned previously, Street 1 and Street 2 intend to follow the City's urban framework of achieving a grid street hierarchy. Additional pedestrian accommodations are proposed such as a crosswalk on Democracy Lane and a potential crosswalk at the intersection between Street 1 and Street 2 to enhance safer pedestrian walkability in the vicinity of the Site. Additionally, the pedestrian path to Blenheim Boulevard is being completed by extending the sidewalk and adding a crosswalk east of the shopping center. The sidewalk on Blenheim Boulevard is also being widened to enhance the pedestrian connectivity to the north and south.

Existing Scooter Volumes

To accommodate for any potential scooter volumes in the vicinity of the site and any crossing volumes across University Drive, the existing scooter volumes at University Drive were collected. Figure 19 shows the Existing Peak Hour Scooter Volumes. As shown, there were no scooters observed in the peak hours.

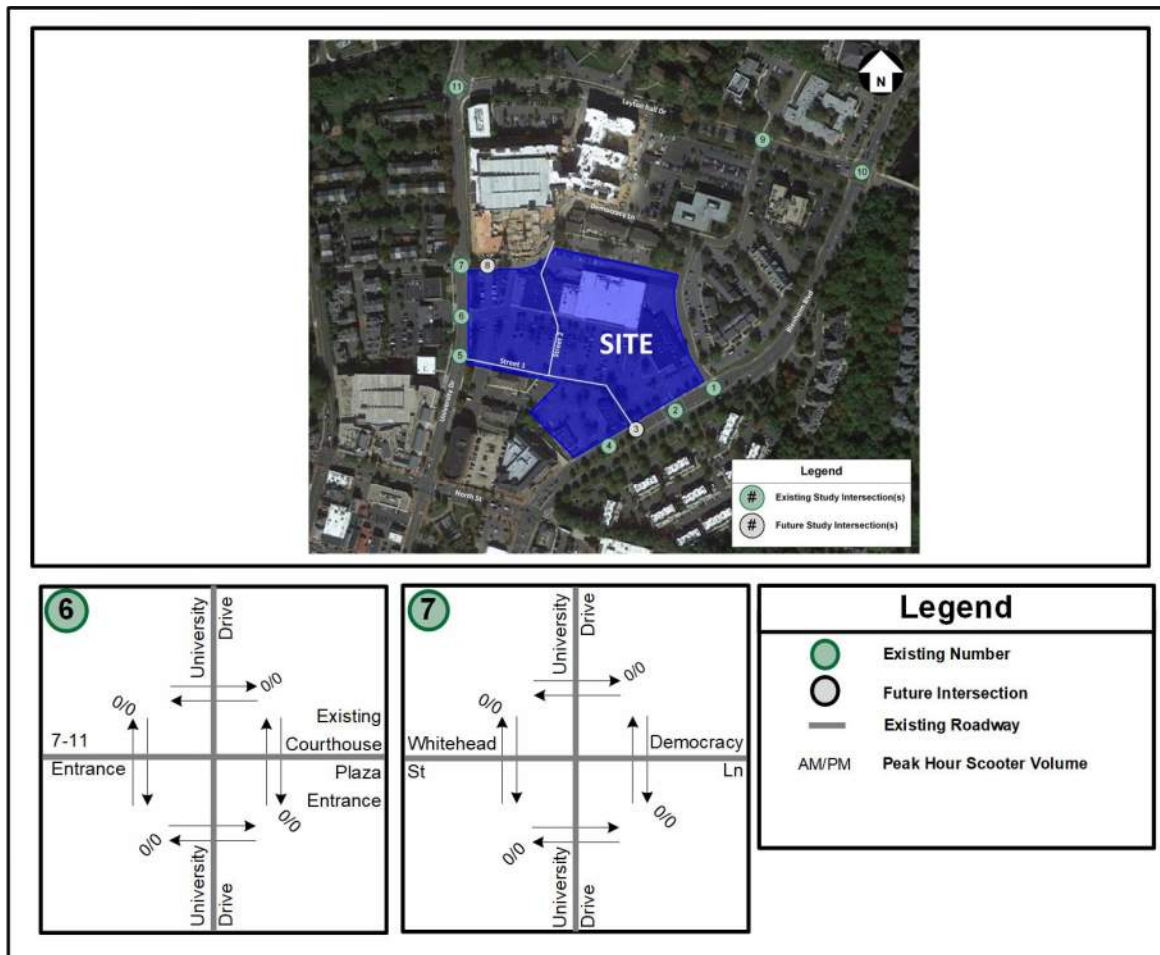


Figure 19: Existing Peak Hour Scooter Volumes

Existing Bus Volumes

Existing Bus Volumes for the study area intersections along University Drive are shown in Figure 20.

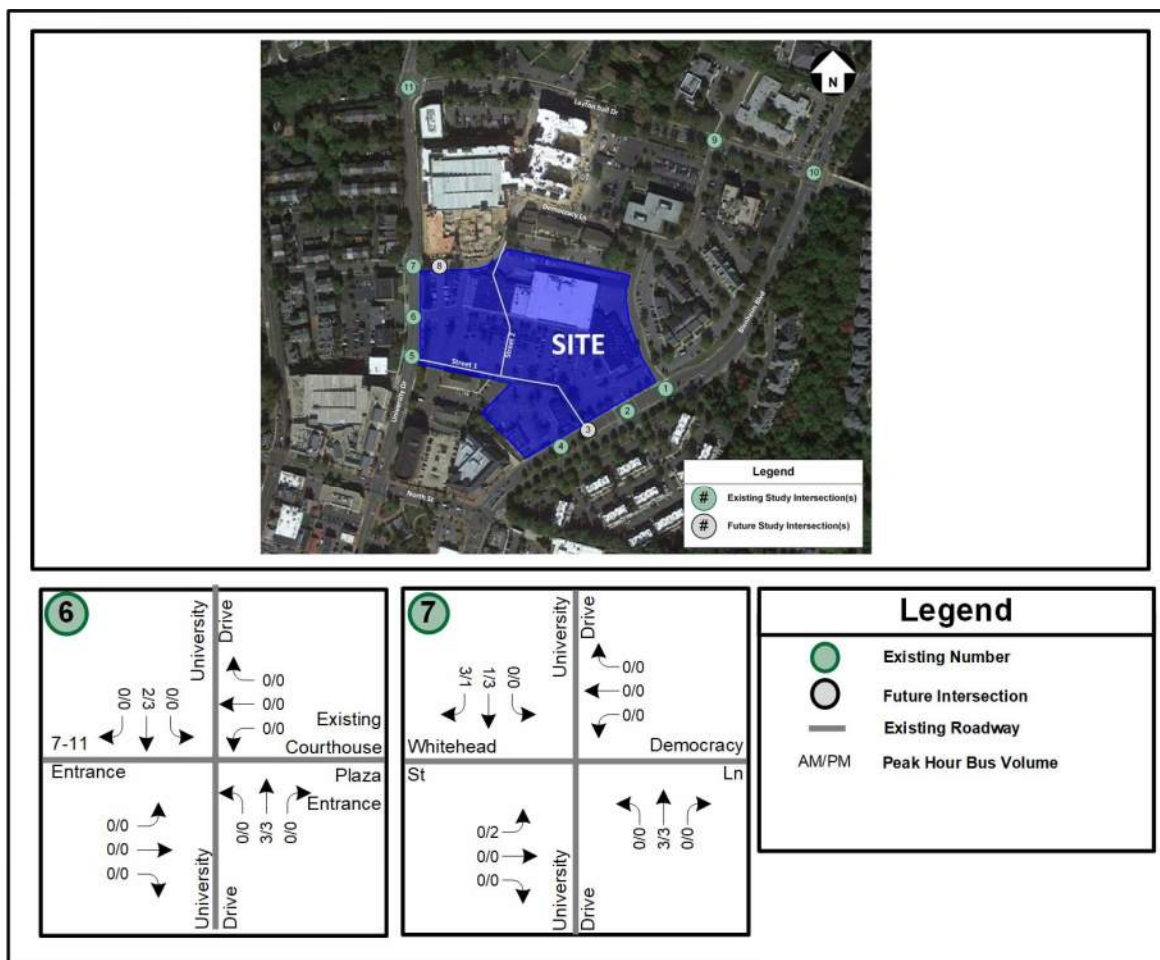


Figure 20: Existing Peak Hour Bus Volumes

As observed, bus volumes along University Drive are minimal with three (3) to four (4) peak hour trips. These bus volumes are included in the heavy vehicle percentages in the analysis.

Planned Future Transportation Improvements

Roadway & Multimodal Improvements

As mentioned previously, the City of Fairfax Project ‘University Drive Spine’, which provides multimodal transportation improvements along University Drive, is included in all future (2028) analysis scenarios.

Existing Roadway Network

A description of the major roadways within the study area is presented in Table 2. The existing local roadway network, including lane configurations and traffic controls, is illustrated on Figure 21.

Table 2: Existing Road Network (Per published VDOT 2024 AADT Data)

Roadway	RTE #	VDOT Classification	Posted Speed Limit (mph)	AADT (vpd)	k-factor
University Drive	903	Major Collector	25	9,400	10.0%
Layton Hall Road	906	Major Collector	25	4,800	10.6%
Blenheim Blvd	900	Minor Arterial	30	12,000	9.3%

Historical Crash Data

Historical crash data was obtained from VDOT’s Crash Analysis Tool for the existing study intersections for a five-year period, from January 2021 to December 2025. The crash data from VDOT is provided in Appendix C.

The crash rate for the existing intersections were computed using the following formula:

$$\text{Crash Rate} = \frac{1,000,000 * \# \text{ of Crashes at an Intersection}}{365 * \# \text{ of Years} * \text{Intersection Approach ADT}}$$

The following section presents the crash analysis for all study intersections that had reported crashes during the five-year study period. Table 3 shows the summary of the crash analysis results. It is noted that there were no reported crashes at Study Intersection 5 (University Drive and Existing Driveway).

Table 3: Crash Data Analysis Summary Table

Intersection	Estimated ADT	PDO	Injury	Fatality	Total	Crash Rate (Per MEV)
2 Blenheim Blvd at Fairfax Commons Entrance	13,395	2	1	0	3	0.12
6 University Drive at Existing Courthouse Plaza Entrance/7-11 Entrance	9,510	2	0	0	2	0.12
7 University Drive at Democracy Ln/Whitehead St	9,390	3	3	0	6	0.35
9 Layton Hall Drive at Democracy Ln	4,450	3	0	0	3	0.37
10 Blenheim Blvd at Layton Hall Dr	14,210	5	1	0	6	0.23
11 University Drive at Layton Hall Drive	8,565	4	0	0	4	0.26

It is noted that the ADT used for calculating the crash rates are based on existing collected PM peak hour volumes and the VDOT published k-factor or an assumed k-factor of 10%.

Table 4: Crash Data for the Intersection of Blenheim Blvd and Fairfax Commons Entrance (Intersection 2)

Crash Data for the Intersection of Blenheim Blvd and Fairfax Commons Entrance (January 2021 - December 2025)							
Intersection Crash Analysis	2021	2022	2023	2024	2025	Total	Relative Frequency
<u>Crash Severity</u>							
Fatal Collision (Type K)							0.00%
Injury Collision (Type A, B, and C)				1		1	33.33%
Type A							
Type B				1		1	
Type C							
Property Damage Only (Type PDO)	1				1	2	66.67%
TOTAL*	1			1	1	3	100.00%
<u>Crash Type</u>							
Fixed Object/ Single-Vehicle Crash					1	1	33.33%
Head-On							0.00%
Sideswipe / Same Direction							0.00%
Sideswipe / Opposite Direction							0.00%
Rear-End Collision							0.00%
Angle Collision	1					1	33.33%
Backed Into							0.00%
Pedestrian Collision				1		1	33.33%
Deer/Animal							0.00%
Other							0.00%
TOTAL*	1			1	1	3	100.00%
<u>Other Factors</u>							
Distracted Driver							0.00%
Alcohol**							0.00%
Work-Zone							0.00%
Inclement Weather (Non-Dry)	1					1	33.33%
Speeding							0.00%
Pedestrian Injury***				1		1	N/A
Time of Day							
AM Peak Period (6 - 10 AM)							0.00%
Off Peak - Daytime (10 AM - 3 PM)					1	1	33.33%
PM Peak Period (3 - 7 PM)	1			1		2	66.67%
Off Peak - Nighttime (7 PM - 6 AM)							0.00%
CALCULATED CRASH RATE****						0.12	Crashes per MEV

* It should be noted that an intersection radius of 150 feet was used in this analysis. Crashes also thought to be caused by the intersection may have been added based on the description of the crash and engineering judgement.

** Instances where the event was classified as "Unknown", "Not Known Whether Impaired", "Ability Not Impaired" were classified as alcohol related to provide a more conservative analysis.

*** Pedestrian injuries are based on the number of pedestrians injured and may not be directly related to the number of crash incidences (i.e., if one crash occurred injuring two pedestrians, the table would show a "2" instead of a "1").

****Crash rate based on an approximated 13395 ADT.

*Estimated ADT = (12,200+11,250+2,290+1,050) /2 = 13,395

The intersection of Blenheim Blvd and Fairfax Commons Entrance (Intersection 2) experienced a total of three (3) crashes during the five-year study period, as depicted in the table above. There was one "Injury Collision (IC) and one PDO crash "Property Damage Only (PDO)". Of that 1 crash was angle collision. Of the 2 crashes, one crash occurred by fixed object, and one caused by pedestrian collision. Both the accidents occurred during the PM Peak Period. The intersection had a crash rate of 0.12 MEV (million entering vehicles) and hence does not exhibit an elevated crash rate.

Table 5: VDOT Crash Data for the Intersection of University Drive and Existing Courthouse Plaza Entrance/7-11 Entrance (Intersection 6)

Crash Data for the Intersection of University Drive and Existing Courthouse Plaza Entrance/7-11 Entrance (January 2021 - December 2025)							
Intersection Crash Analysis	2021	2022	2023	2024	2025	Total	Relative Frequency
<u>Crash Severity</u>							
Fatal Collision (Type K)							0.00%
Injury Collision (Type A, B, and C)							0.00%
Type A							
Type B							
Type C							
Property Damage Only (Type PDO)			2			2	100.00%
TOTAL*			2			2	100.00%
<u>Crash Type</u>							
Fixed Object/ Single-Vehicle Crash							0.00%
Head-On			1			1	50.00%
Sideswipe / Same Direction			1			1	50.00%
Sideswipe / Opposite Direction							0.00%
Rear-End Collision							0.00%
Angle Collision							0.00%
Backed Into							0.00%
Pedestrian Collision							0.00%
Deer/Animal							0.00%
Other							0.00%
TOTAL*			2			2	100.00%
<u>Other Factors</u>							
Distracted Driver							0.00%
Alcohol**							0.00%
Work-Zone							0.00%
Inclement Weather (Non-Dry)			1			1	50.00%
Speeding							0.00%
Pedestrian Injury***							N/A
Time of Day							
AM Peak Period (6 - 10 AM)							0.00%
Off Peak - Daytime (10 AM - 3 PM)			2			2	100.00%
PM Peak Period (3 - 7 PM)							0.00%
Off Peak - Nighttime (7 PM - 6 AM)							0.00%
CALCULATED CRASH RATE****						0.12	Crashes per MEV
* It should be noted that an intersection radius of 150 feet was used in this analysis. Crashes also thought to be caused by the intersection may have been added based on the description of the crash and engineering judgement.							
** Instances where the event was classified as "Unknown", "Not Known Whether Impaired", "Ability Not Impaired" were classified as alcohol related to provide a more conservative analysis.							
*** Pedestrian injuries are based on the number of pedestrians injured and may not be directly be related to the number of crash incidences (i.e., if one crash occurred injuring two pedestrians, the table would show a "2" instead of a "1").							
****Crash rate based on an approximated 9510 ADT.							

*Estimated ADT = (7,910 + 8,420 + 790 + 1,900) / 2 = 9,510

The intersection of University Drive and Existing Courthouse Plaza Entrance/7-11 Entrance (Intersection 6) experienced a total of two (2) crashes during the five-year study period, as depicted in the table above. Both crashes were categorized as Property Damage Only (PDO). The intersection had a crash rate of 0.12 MEV (million entering vehicles) and hence does not exhibit an elevated crash rate.

Table 6: VDOT Crash Data for the Intersection of University Drive and Democracy Lane/Whitehead Street (Intersection 7)

Crash Data for the Intersection of University Drive and Democracy Ln/Whitehead St (January 2021 - December 2025)							
Intersection Crash Analysis	2021	2022	2023	2024	2025	Total	Relative Frequency
<u>Crash Severity</u>							
Fatal Collision (Type K)							0.00%
Injury Collision (Type A, B, and C)		1		1	1	3	50.00%
Type A					1	1	
Type B		1		1		2	
Type C							
Property Damage Only (Type PDO)	1			1	1	3	50.00%
TOTAL*	1	1		2	2	6	100.00%
<u>Crash Type</u>							
Fixed Object/ Single-Vehicle Crash							0.00%
Head-On							0.00%
Sideswipe / Same Direction							0.00%
Sideswipe / Opposite Direction							0.00%
Rear-End Collision							0.00%
Angle Collision	1	1		2	1	5	83.33%
Backed Into							0.00%
Pedestrian Collision					1	1	16.67%
Deer/Animal							0.00%
Other							0.00%
TOTAL*	1	1		2	2	6	100.00%
<u>Other Factors</u>							
Distracted Driver							0.00%
Alcohol**							0.00%
Work-Zone							0.00%
Inclement Weather (Non-Dry)		1				1	16.67%
Speeding							0.00%
Pedestrian Injury***					1	1	16.67%
Time of Day							
AM Peak Period (6 - 10 AM)							0.00%
Off Peak - Daytime (10 AM - 3 PM)					1	1	16.67%
PM Peak Period (3 - 7 PM)		1		1		2	33.33%
Off Peak - Nighttime (7 PM - 6 AM)	1			1	1	3	50.00%
CALCULATED CRASH RATE****						0.35	Crashes per MEV
* It should be noted that an intersection radius of 150 feet was used in this analysis. Crashes also thought to be caused by the intersection may have been added based on the description of the crash and engineering judgement.							
** Instances where the event was classified as "Unknown", "Not Known Whether Impaired", "Ability Not Impaired" were classified as alcohol related to provide a more conservative analysis.							
*** Pedestrian injuries are based on the number of pedestrians injured and may not be directly be related to the number of crash incidences (i.e., if one crash occurred injuring two pedestrians, the table would show a "2" instead of a "1").							
****Crash rate based on an approximated 9390 ADT.							

*Estimated ADT = (6,850+7,830+2,320+1,790) / 2 = 9,395

The intersection of University Drive and Democracy Ln/Whitehead St (Intersection 7) experienced a total of six (6) crashes during the five-year study period, as depicted in the table above. There were three (3) "Injury Collision (IC) and three (3) PDO crashes "Property Damage Only (PDO)". Of the six (6) crashes, there was one (1) reported crash involving a pedestrian. The intersection had a crash rate of 0.35 MEV (million entering vehicles) and hence does not exhibit an elevated crash rate.

Table 7: VDOT Crash Data for the Intersection of Layton Hall Drive and Democracy Lane (Intersection 9)

Crash Data for the Intersection of Layton Hall Drive and Democracy Ln (January 2021 - December 2025)							
Intersection Crash Analysis	2021	2022	2023	2024	2025	Total	Relative Frequency
Crash Severity							
Fatal Collision (Type K)							0.00%
Injury Collision (Type A, B, and C)							0.00%
Type A							
Type B							
Type C							
Property Damage Only (Type PDO)	1	1	1			3	100.00%
TOTAL*	1	1	1			3	100.00%
Crash Type							
Fixed Object/ Single-Vehicle Crash							0.00%
Head-On							0.00%
Sideswipe / Same Direction							0.00%
Sideswipe / Opposite Direction							0.00%
Rear-End Collision	1	1				2	66.67%
Angle Collision				1		1	33.33%
Backed Into							0.00%
Pedestrian Collision							0.00%
Deer/Animal							0.00%
Other							0.00%
TOTAL*	1	1	1			3	100.00%
Other Factors							
Distracted Driver							0.00%
Alcohol**							0.00%
Work-Zone							0.00%
Inclement Weather (Non-Dry)							0.00%
Speeding							0.00%
Pedestrian Injury***							N/A
Time of Day							
AM Peak Period (6 - 10 AM)			1	1		2	66.67%
Off Peak - Daytime (10 AM - 3 PM)							0.00%
PM Peak Period (3 - 7 PM)		1				1	33.33%
Off Peak - Nighttime (7 PM - 6 AM)							0.00%
CALCULATED CRASH RATE****						0.37	Crashes per MEV
* It should be noted that an intersection radius of 150 feet w as used in this analysis. Crashes also thought to be caused by the intersection may have been added based on the description of the crash and engineering judgement.							
** Instances w here the event w as classified as "Unknown n", "Not Know n Whether Impaired", "Ability Not Impaired" w ere classified as alcohol related to provide a more conservative analysis.							
*** Pedestrian injuries are based on the number of pedestrians injured and may not be directly be related to the number of crash incidences (i.e., if one crash occurred injuring two pedestrians, the table w ould show a "2" instead of a "1").							
****Crash rate based on an approximated 4450 ADT.							

*Estimated ADT = (170+650+4,010+4,070) / 2 = 4,450

The intersection of Layton Hall Drive and Democracy Ln (Intersection 9) experienced a total of three (3) crashes during the five-year study period, as depicted in the table above. All three (3) crashes were classified as Property Damage Only (PDO) crashes. Among these crashes, one involved an angle collision, and two involved rear-end collisions. The intersection had a crash rate of 0.37 MEV (million entering vehicles), indicating that it does not exhibit an elevated crash rate.

Table 8: VDOT Crash Data for the Intersection of Blenheim Blvd and Layton Hall Drive (Intersection 10)

Crash Data for the Intersection of Blenheim Blvd and Layton Hall Dr (January 2021 - December 2025)							
Intersection Crash Analysis	2021	2022	2023	2024	2025	Total	Relative Frequency
<u>Crash Severity</u>							
Fatal Collision (Type K)							0.00%
Injury Collision (Type A, B, and C)					1	1	16.67%
Type A							
Type B							
Type C					1	1	
Property Damage Only (Type PDO)	2		1	2		5	83.33%
TOTAL *	2		1	2	1	6	100.00%
<u>Crash Type</u>							
Fixed Object/ Single-Vehicle Crash							0.00%
Head-On							0.00%
Sideswipe / Same Direction							0.00%
Sideswipe / Opposite Direction							0.00%
Rear-End Collision	2			1	1	4	66.67%
Angle Collision			1	1		2	33.33%
Backed Into							0.00%
Pedestrian Collision							0.00%
Deer/Animal							0.00%
Other							0.00%
TOTAL *	2		1	2	1	6	100.00%
<u>Other Factors</u>							
Distracted Driver							0.00%
Alcohol**							0.00%
Work-Zone							0.00%
Inclement Weather (Non-Dry)	1					1	16.67%
Speeding							0.00%
Pedestrian Injury***							N/A
Time of Day							
AM Peak Period (6 - 10 AM)	2		1			3	50.00%
Off Peak - Daytime (10 AM - 3 PM)							0.00%
PM Peak Period (3 - 7 PM)				1	1	2	33.33%
Off Peak - Nighttime (7 PM - 6 AM)				1		1	16.67%
CALCULATED CRASH RATE****						0.23	Crashes per MEV
* It should be noted that an intersection radius of 150 feet was used in this analysis. Crashes also thought to be caused by the intersection may have been added based on the description of the crash and engineering judgement.							
** Instances where the event was classified as "Unknown", "Not Known Whether Impaired", "Ability Not Impaired" were classified as alcohol related to provide a more conservative analysis.							
*** Pedestrian injuries are based on the number of pedestrians injured and may not be directly be related to the number of crash incidences (i.e., if one crash occurred injuring two pedestrians, the table would show a "2" instead of a "1").							
****Crash rate based on an approximated 14210 ADT.							

*Estimated ADT = (12,630 + 10,740 + 940 + 4,110) / 2 = 14,210

The intersection of Blenheim Blvd and Layton Hall Dr (Intersection 10) experienced a total of 6 crashes during the five-year study period, as depicted in the table above. Out of the six (6) crashes, five (5) were "Property Damage Only" (PDO) crashes. The intersection had a crash rate of 0.23 MEV (million entering vehicles) and hence does not exhibit an elevated crash rate.

Table 9: VDOT Crash Data for the Intersection of University Drive and Layton Hall Drive (Intersection 11)

Crash Data for the Intersection of University Drive and Layton Hall Drive (January 2021 - December 2025)							
Intersection Crash Analysis	2021	2022	2023	2024	2025	Total	Relative Frequency
<u>Crash Severity</u>							
Fatal Collision (Type K)							0.00%
Injury Collision (Type A, B, and C)							0.00%
Type A							
Type B							
Type C							
Property Damage Only (Type PDO)			1	2	1	4	100.00%
TOTAL*			1	2	1	4	100.00%
<u>Crash Type</u>							
Fixed Object/ Single-Vehicle Crash							0.00%
Head-On							0.00%
Sideswipe / Same Direction							0.00%
Sideswipe / Opposite Direction			1			1	25.00%
Rear-End Collision							0.00%
Angle Collision				2	1	3	75.00%
Backed Into							0.00%
Pedestrian Collision							0.00%
Deer/Animal							0.00%
Other							0.00%
TOTAL*			1	2	1	4	100.00%
<u>Other Factors</u>							
Distracted Driver							0.00%
Alcohol**							0.00%
Work-Zone							0.00%
Inclement Weather (Non-Dry)				1		1	25.00%
Speeding							0.00%
Pedestrian Injury***							N/A
Time of Day							
AM Peak Period (6 - 10 AM)							0.00%
Off Peak - Daytime (10 AM - 3 PM)			1	1		2	50.00%
PM Peak Period (3 - 7 PM)				1	1	2	50.00%
Off Peak - Nighttime (7 PM - 6 AM)							0.00%
CALCULATED CRASH RATE****						0.26	Crashes per MEV
* It should be noted that an intersection radius of 250 feet was used in this analysis. Crashes also thought to be caused by the intersection may have been added based on the description of the crash and engineering judgement.							
** Instances where the event was classified as "Unknown", "Not Known Whether Impaired", "Ability Not Impaired" were classified as alcohol related to provide a more conservative analysis.							
*** Pedestrian injuries are based on the number of pedestrians injured and may not be directly related to the number of crash incidences (i.e., if one crash occurred injuring two pedestrians, the table would show a "2" instead of a "1").							
****Crash rate based on an approximated 8565 ADT.							

*Estimated ADT = (6,350 + 6,630 + 280 + 3,870) /2 = 8,565

The intersection of University Dr and Layton Hall Dr (Intersection 11) experienced 4 crashes during the five-year study period, as depicted in the table above. All reported crashes were categorized as "Property Damage Only" (PDO) crashes. The intersection had a crash rate of 0.26 MEV (million entering vehicles) and hence does not exhibit an elevated crash rate.

Intersection Analysis of Existing Conditions (2026)

The lane configuration observed at the existing study intersections within the study area is presented in Figure 21.

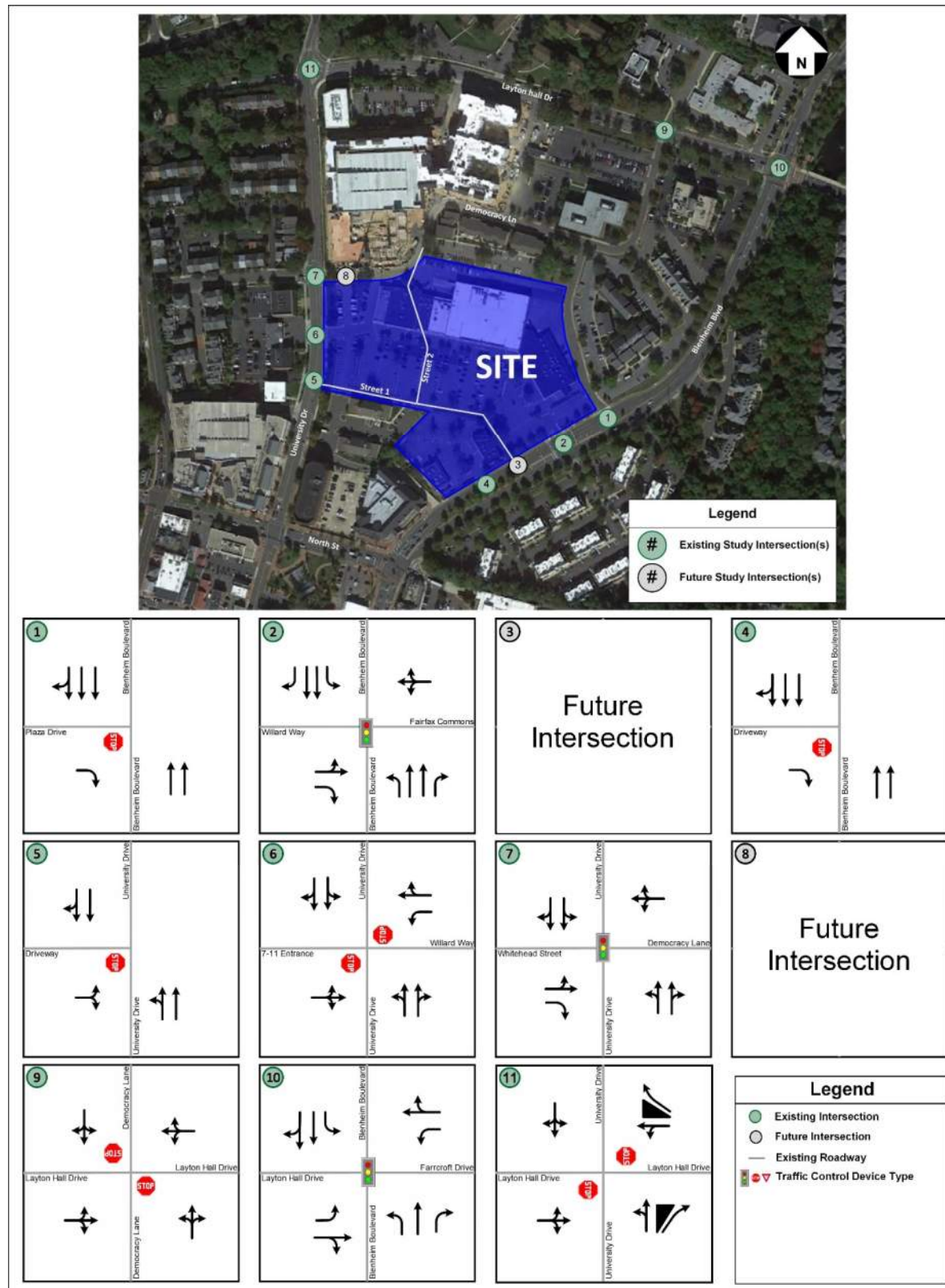


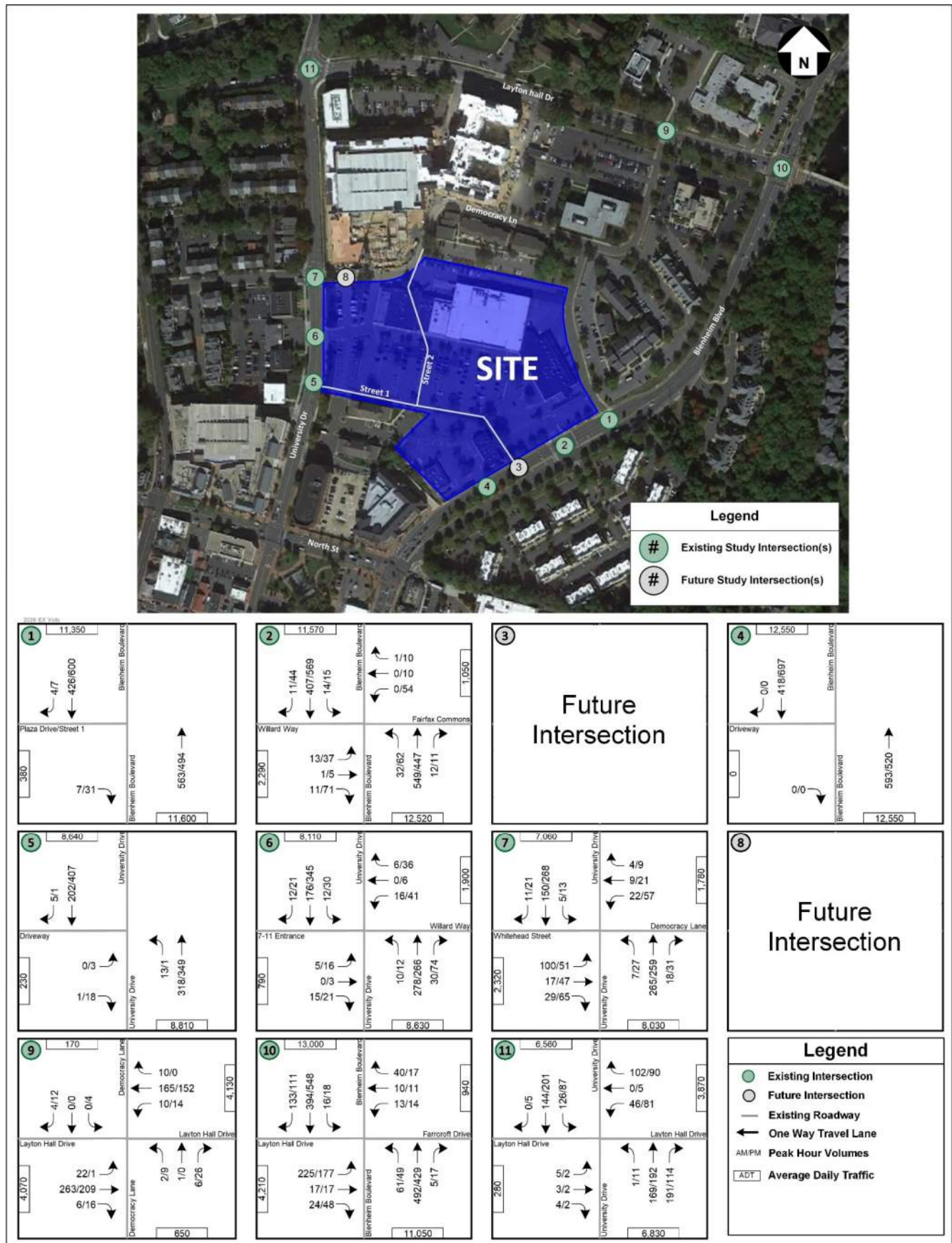
Figure 21: Existing Conditions – Lane Configuration

Existing Traffic Volumes

Turning movement counts were collected at the study area intersections on Thursday, March 30, 2023, and Tuesday, March 07, 2023. The peak hours for the system of intersections were determined to be 7:30 AM to 8:30 AM and 4:45 PM to 5:45 PM. In addition, Intersection 11 traffic counts were found from University Drive Bicycle Lane Traffic Analysis report, which was conducted on Tuesday, March 07, 2023, during the morning and afternoon peak periods.

Based on feedback received from City of Fairfax staff, growth rate was applied to the 2023 traffic counts to project to 2026 conditions using 1% annual background growth rate.

The existing peak hour traffic volumes for the study area intersections are presented on Figure 22. The existing raw turning movement counts are included in Appendix D.



Capacity analysis was performed at the intersections within the study area during the weekday morning and evening peak hours under existing conditions. *Synchro Version 11* was used to analyze the study intersections based on the Highway Capacity Manual (HCM) 6th Edition methodology and includes level of service (LOS), delay, and queue length comparisons for the turning movements analyzed.

Synchro files with existing signal timings were provided by City staff and used as a base for the existing analysis. Existing peak hour factors found in the field were used, except where the field peak hour factor was lower than 0.85 in which case a minimum value of 0.85 was used, consistent with VDOT analysis guidelines. Heavy vehicle percentages determined by existing traffic counts were used for analysis. Pedestrian volumes were also collected during the intersection traffic counts and included in the analysis.

The results of the existing intersection analysis are presented in Table 10, and are expressed in LOS and delay (seconds per vehicle) per lane group. The 95th percentile queue results for each intersection are also presented in Table 10 and are expressed in feet, along with 50th percentile queues shown for signalized intersections. The detailed analysis worksheets are included in Appendix E.

No.	Intersection (Movement)	Effective Storage Length (ft.) [1]	AM Peak Hour				PM Peak Hour			
			LOS	Delay (sec/veh)	50th % Queue (ft.) [2]	95th % Queue (ft.)	LOS	Delay (sec/veh)	50th % Queue (ft.) [2]	95th % Queue
1	Blenheim Boulevard (N/S) at Plaza Drive (E/W)									
	Overall Intersection (TWSC)									
	Eastbound Approach		B	11.0			B	11.8		
	Eastbound Right		B	11.0		0	B	11.8	5	
2	Blenheim Boulevard (N/S) at Fairfax Commons (E/W)									
	Overall Intersection (Signalized)		A	8.8			B	12.0		
	Eastbound Approach		B	18.3			B	17.7		
	Eastbound Thru/Left		B	17.9	3	18	B	17.0	41	
	Eastbound Right		B	18.7	0	0	B	18.1	17	
	Westbound Approach		B	17.7			B	17.8		
	Westbound Left/Thru/Right		B	17.7	0	0	B	17.8	20	
	Northbound Approach		A	8.5			A	10.0	59	
	Northbound Left	120	A	6.8	0	11	A	9.0	8	
	Northbound Thru		A	8.6	0	112	B	10.1	32	
	Northbound Right		A	6.9	0	0	A	8.7	0	
	Southbound Approach		A	8.7			B	12.1		
	Southbound Left	120	A	7.3	1	6	A	9.4	2	
	Southbound Thru		A	8.8	0	85	B	12.3	81	
	Southbound Right		A	7.5	0	0	B	10.2	0	
3	Future Intersection									
4	Blenheim Boulevard (N/S) at Existing Driveway (E/W)									
	Overall Intersection (TWSC)									
	Eastbound Approach		A	0.0			A	0.0		
	Eastbound Right		A	0.0		0	A	0.0	0	
5	University Drive (N/S) at Existing Driveway (E/W)									
	Overall Intersection (TWSC)									
	Eastbound Approach		A	8.9			B	10.4		
	Eastbound Left/Right		A	8.9		0	B	10.4	3	
	Northbound Approach									
	Northbound Left		A	7.7		0	A	8.2	0	
6	University Drive (N/S) at 7-11 Driveway (E/W)									
	Overall Intersection (TWSC)									
	Eastbound Approach		A	9.9			B	13.4		
	Eastbound Left/Thru/Right		A	9.9		3	B	13.4	8	
	Westbound Approach		B	12.5			B	13.8		
	Westbound Left		B	13.6		3	C	16.8	10	
	Westbound Thru/Right		A	9.4		0	B	10.9	5	
	Northbound Approach									
	Northbound Thru/Left		A	7.8		0	A	8.1	0	
	Southbound Approach									
	Southbound Thru/Left		A	8.1		0	A	8.1	3	

No.	Intersection (Movement)	Effective Storage Length (ft.) [1]	AM Peak Hour				PM Peak Hour			
			LOS	Delay (sec/veh)	50th % Queue (ft.) [2]	95th % Queue (ft.)	LOS	Delay (sec/veh)	50th % Queue (ft.) [2]	95th % Queue (ft.)
7	University Drive (N/S) at Whitehead Street/Democracy Lane (E/W) Overall Intersection (Signalized)		B	10.7			B	10.4		
	Eastbound Approach		B	15.4			B	14.0		
	Eastbound Left/Thru		B	16.1	15	92	B	14.8	11	79
	Eastbound Right		B	12.8	0	9	B	12.9	0	28
	Westbound Approach		B	13.3			B	14.7		
	Westbound Left/Thru/Right		B	13.3	4	33	B	14.7	10	71
	Northbound Approach		A	9.1			A	8.8		
	Northbound Thru/Left		A	9.1	18	92	A	8.8	17	94
	Northbound Thru/Right		A	9.1	18	92	A	8.8	17	94
	Southbound Approach		A	8.7			A	8.8		
	Southbound Thru/Left		A	8.7	10	56	A	8.8	17	91
	Southbound Thru/Right		A	8.7	10	56	A	8.8	17	91
8	Future Intersection									
9	Layton Hall Drive (E/W) at Democracy Lane (N/S) Overall Intersection (TWSC)									
	Eastbound Approach									
	Eastbound Left		A	7.7		3	A	7.6		0
	Westbound Approach									
	Westbound Left		A	7.9		0	A	7.8		0
	Northbound Approach		B	11.6			B	10.5		
	Northbound Left/Thru/Right		B	11.6		3	B	10.5		5
	Southbound Approach		A	9.4			B	10.1		
	Southbound Left/Thru/Right		A	9.4		0	B	10.1		3
10	Blenheim Boulevard (N/S) at Layton Hall Drive (E/W) Overall Intersection (Signalized)		C	25.4			C	20.9		
	Eastbound Approach		C	33.4			C	27.1		
	Eastbound Left		C	34.6	136	295	C	28.3	82	180
	Eastbound Thru/Right		C	26.4	9	45	C	24.0	7	47
	Westbound Approach		D	40.0			C	30.4		
	Westbound Left		D	35.0	8	35	C	29.0	7	29
	Westbound Thru/Right		D	41.3	7	50	C	31.1	5	36
	Northbound Approach		C	24.1			B	18.9		
	Northbound Left		B	16.1	24	50	B	14.5	13	37
	Northbound Thru		C	25.2	267	509	B	19.6	144	354
	Northbound Right	230	B	15.3	0	0	B	14.0	0	0
	Southbound Approach		C	21.2			B	19.6		
	Southbound Left	150	B	18.6	6	19	B	15.2	5	18
	Southbound Thru/Right		C	21.2	157	225	B	19.7	148	245
11	University Drive (N/S) at Layton Hall Drive (E/W) Overall Intersection (TWSC)									
	Eastbound Approach		B	14.7			B	13.3		
	Eastbound Left/Thru/Right		B	14.7		3	B	13.3		0
	Westbound Approach		C	20.8			C	18.8		
	Westbound Left/Thru		C	20.8		20	C	18.8		25
	Westbound Right	150	A	0.0		0	A	0.0		0
	Northbound Approach									
	Northbound Left/Thru		A	7.6		0	A	7.7		0
	Northbound Right		A	0.0		0	A	0.0		0
	Southbound Approach									
	Southbound Left/Thru/Right		A	8.0		10	A	7.8		5

NOTES:

- [1] Effective storage length is based on the storage length plus one-half of the taper length per TOSAM guidelines.
[2] 50th Percentile Queues are not reported for TWSC intersections under HCM Methodology.

For the purposes of this analysis, it is desirable to achieve a LOS of D or better for each lane group at the intersections. The capacity analysis results indicate that all movements operate at acceptable LOS under existing conditions.

The queueing analysis results indicate that none of the movements at the study intersections have 95th percentile queues exceeding available storage. The intersection capacity results are summarized below in Figure 23.

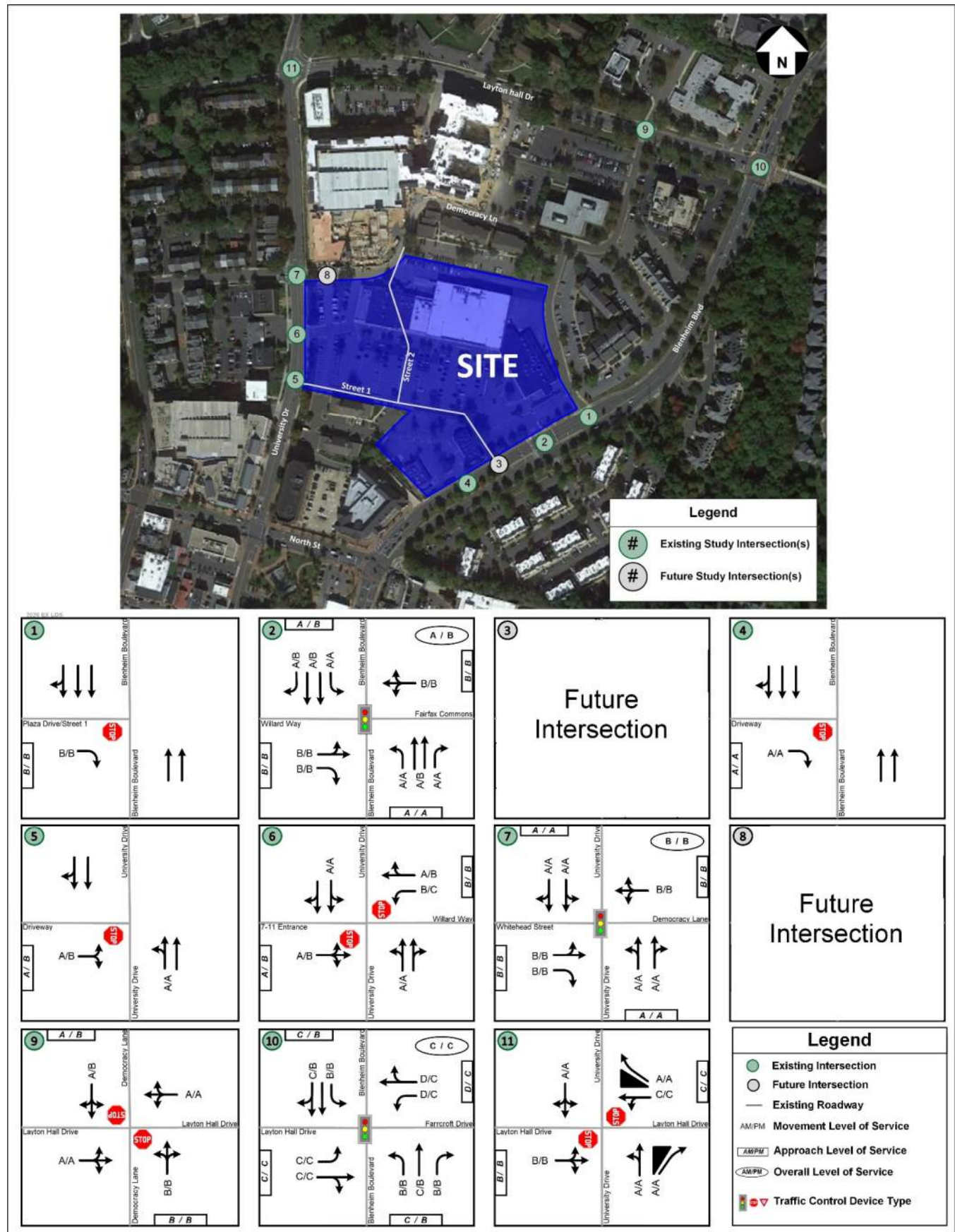


Figure 23: Existing (2026) Level of Service

Future Conditions without Development (2028)

Future without Development (2028) Traffic Volumes

The Courthouse Plaza Development (Phase 1) is anticipated to be complete by the year 2028. To reflect inherent growth in the study area, existing volumes at the major movements within the study area were grown to reflect 2028 conditions. The future traffic volumes were projected to 2028 by using a 1 percent per year background growth rate. This rate was developed after discussions with the City staff during the scoping process for this transportation analysis. No approved additional background developments were identified within the study area.

The inherent growth volumes on the network shown in Figure 26 were added to the Existing (2026) traffic volumes shown in Figure 22 in order to generate the Future without Development (2028) volumes. The vehicular volumes for the Future without Development (2028) scenario are presented on Figure 27. It is also assumed that the two existing pad site buildings on parcel 57-2-20-004 D will be fully operational by 2028. The trip generation associated with these two pad site buildings is shown in Table 11.

Table 11: Trip Generation for the Future without Development (2028) (ITE 11th Edition; Peak Hour of Adjacent Street)

Land Use	ITE Code	Size	----- Week day -----						
			AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Shopping Center (<40 kSF)	822	8.7 kSF of GFA	16	10	26	35	35	70	596
	Pass-By Reduction ²	25%/40%/25%	-4	-3	-7	-14	-14	-28	-149
		Retail Subtotal (with Reductions)	12	7	19	21	21	42	447

As shown, the two existing pad site buildings will generate approximately 19 trips in the AM peak hour, 42 trips in the PM peak hour and 447 trips on a typical weekday, after reductions. The primary trips associated with these pad sites are shown in Figure 24 and the associated pass by trips are shown in Figure 25.

Assumed Background Improvements

University Drive Bicycle Facilities: To achieve the vision of the Small Area Plan, a multimodal 'spine' with enhanced pedestrian and bicycle facilities along University Drive are planned to be constructed by 2027. The proposed improvements include bicycle lanes or sharrows with a conversion of existing four-lane section of University Drive to a two-lane section with a single central two-way left turn lane. At Intersection 11, the existing right-turn lane on University Drive will be removed to accommodate a new bicycle lane. The current left/thru lane will be re-designated as a left/thru/right lane and along Layton Hall Drive, one bicycle lane will be added, and the existing right-turn channelization will be removed.

Lane configuration details can be found in the UPC #121556 Intermediate Submission dated November 26, 2024, included in Appendix L. The lane configuration and the future without development Level of Service results are shown in Figure 28.

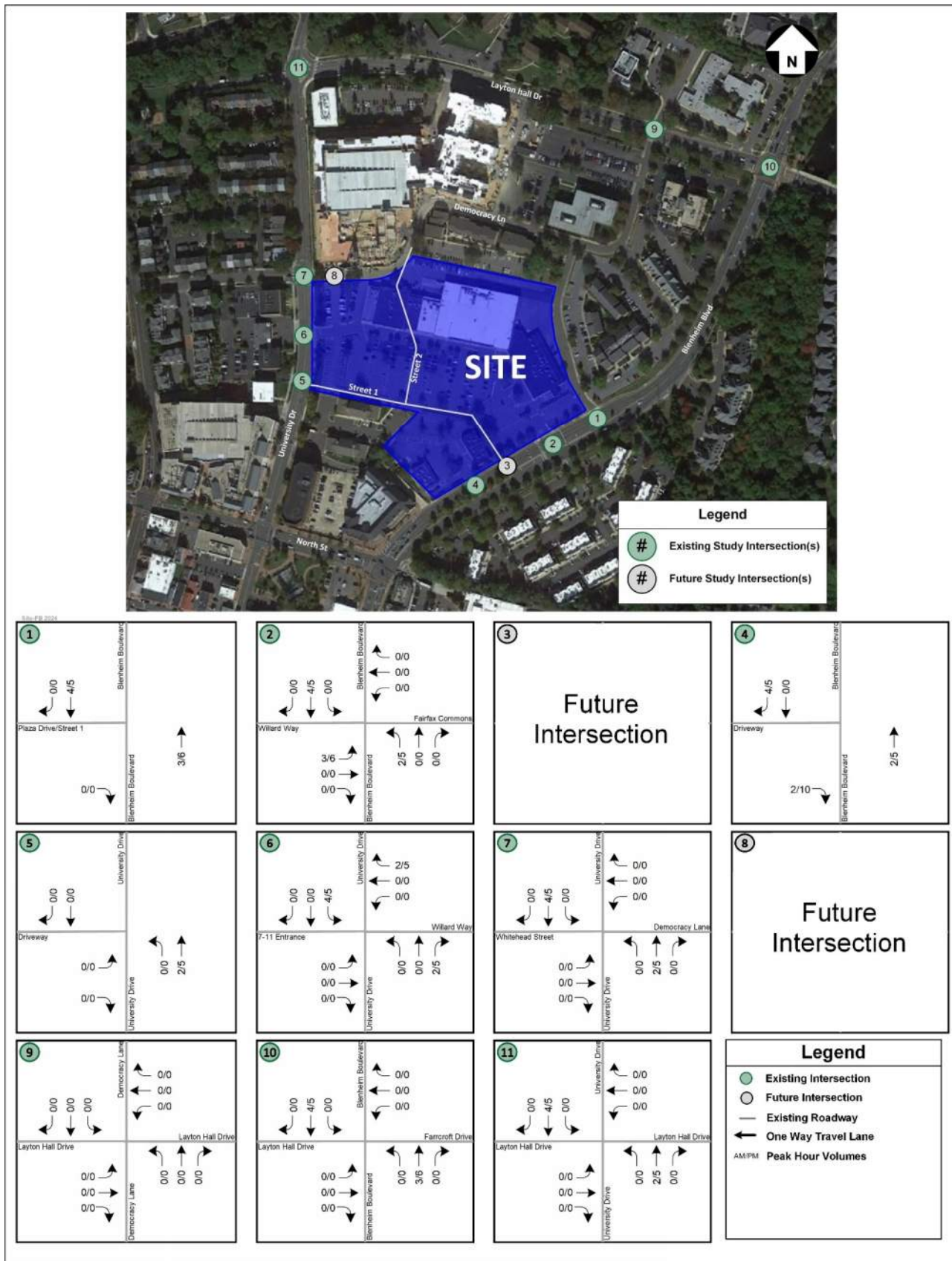


Figure 24: Existing Pad Site Trips (2028)

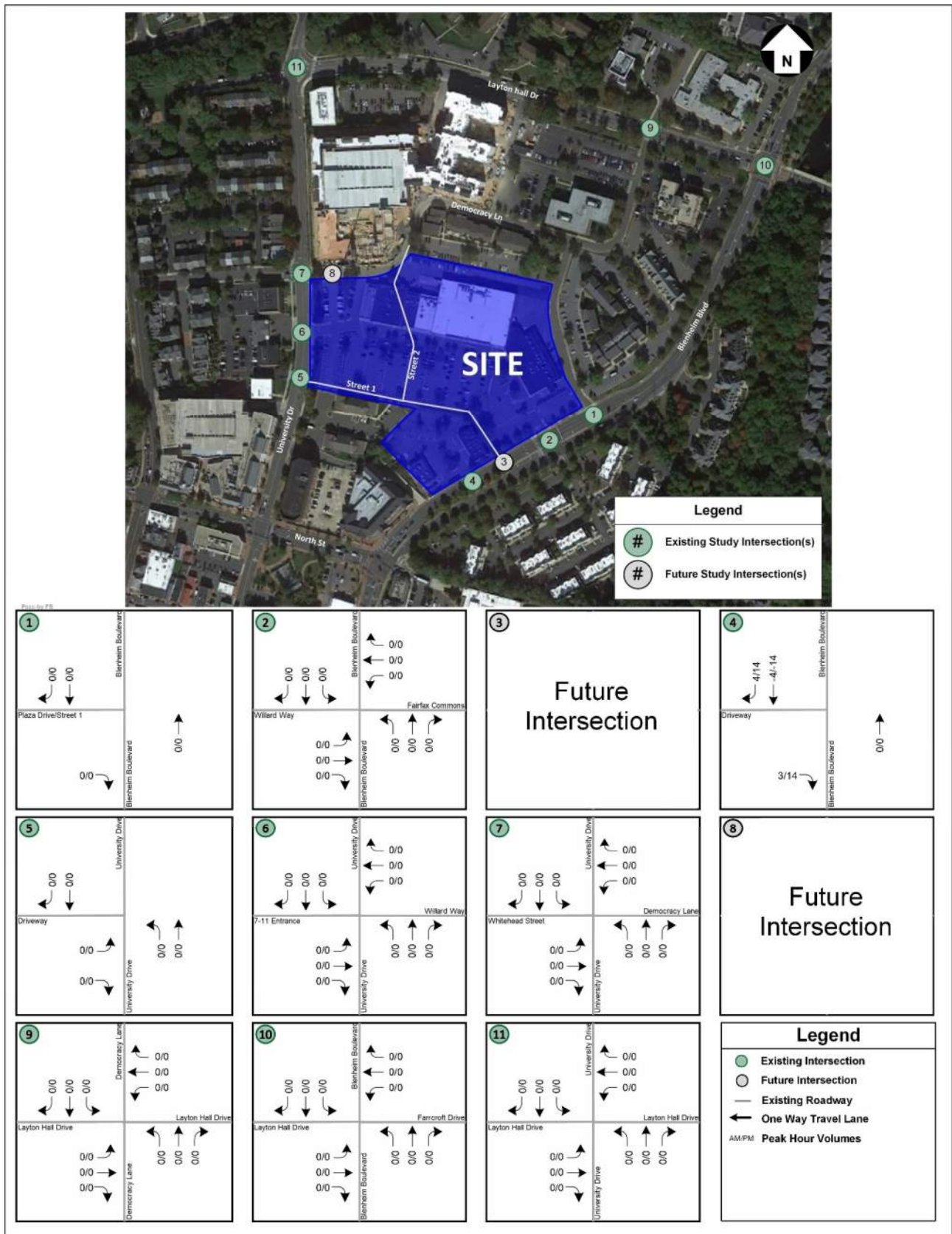


Figure 25: Existing Pad Site Pass-by Trips (2028)

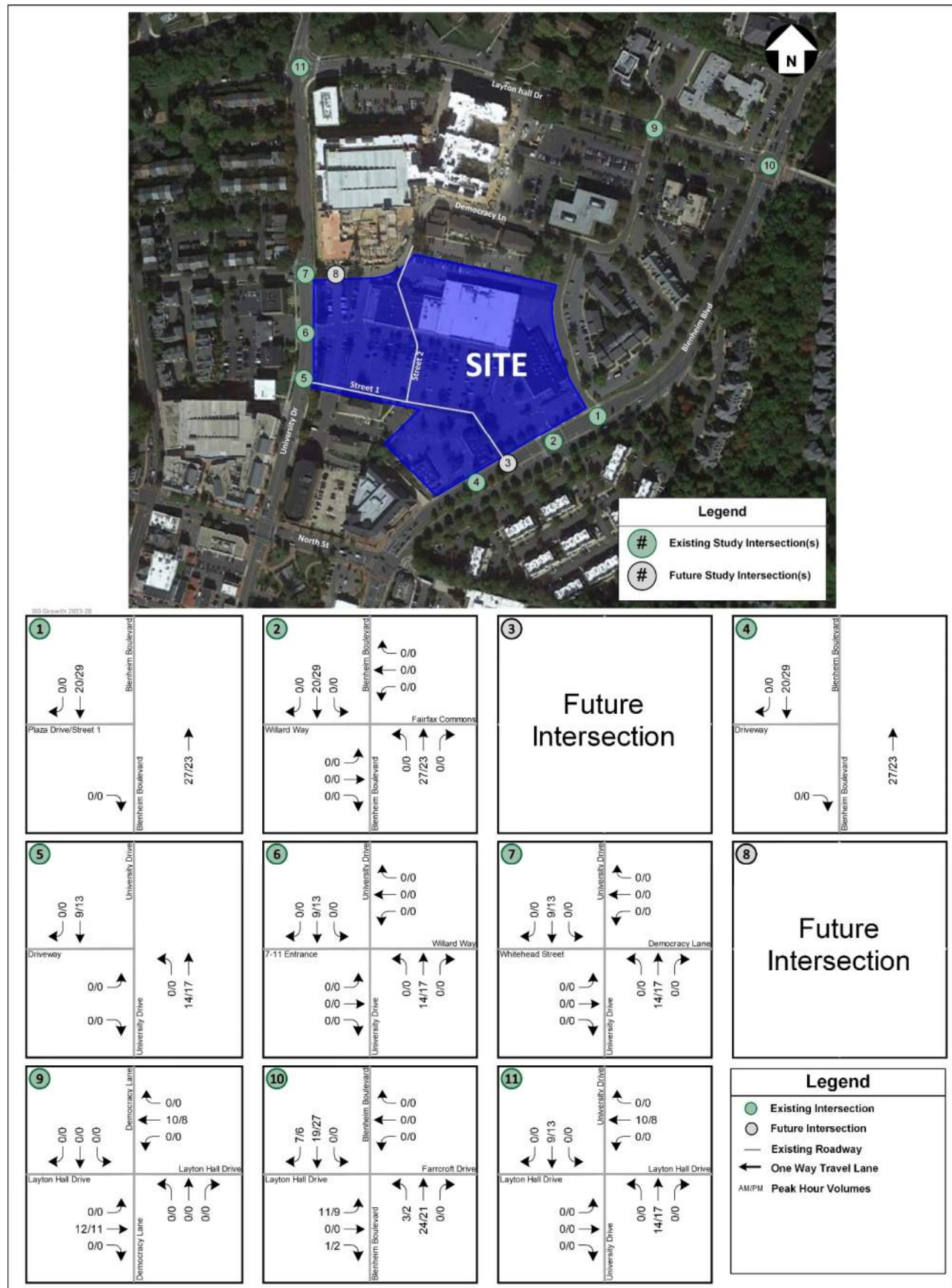
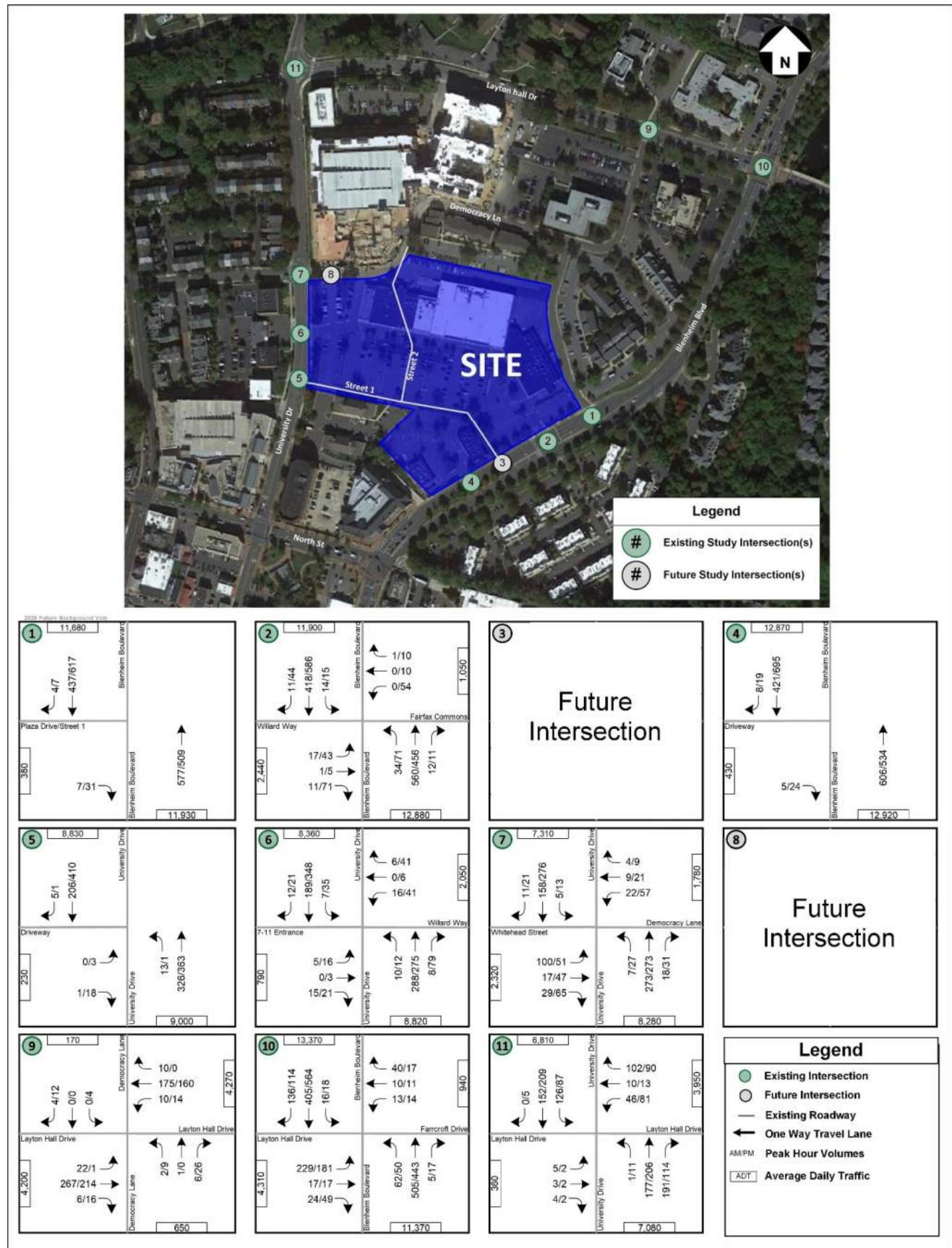


Figure 26: Inherent Growth Volumes (2023-2028)



Future without Development (2028) Intersection Capacity and Queuing Analysis

Capacity and queuing analyses were performed at the intersections within the study area during the weekday morning and evening peak hours under Future without Development conditions. Synchro Version 11 was used to analyze the study intersections based on the Highway Capacity Manual (HCM) 6th methodology and includes level of service (LOS), delay, and queue length comparisons for the turning movements analyzed.

Existing peak hour factors found in the field were used, except where the field peak hour factor was lower than 0.92 in which case a minimum value of 0.92 was used, consistent with VDOT analysis guidelines.

The results of the intersection analysis are presented in Table 12 and are expressed in LOS and delay (seconds per vehicle) per lane group. The 95th percentile queue results for each intersection are also presented in Table 12 and are expressed in feet, along with 50th percentile queue results for signalized intersections. The detailed analysis worksheets are included in Appendix G.

Table 12: Future (2028) without Development Intersection Capacity and Queuing Analysis

Table 12: Future (2026) without Development Intersection Capacity and Queuing Analysis										
No.	Intersection (Movement)	Effective Storage Length (ft.) [1]	AM Peak Hour				PM Peak Hour			
			LOS	Delay (sec/veh)	50th % Queue (ft.) [2]	95th % Queue (ft.)	LOS	Delay (sec/veh)	50th % Queue (ft.) [2]	95th % Queue
1	Blenheim Boulevard (N/S) at Plaza Drive (E/W)									
	Overall Intersection (TWSC)									
	Eastbound Approach		B	10.0			B	10.7		
	Eastbound Right		B	10.0		0	B	10.7		5
2	Blenheim Boulevard (N/S) at Fairfax Commons (E/W)									
	Overall Intersection (Signalized)		A	8.7			B	12.2		
	Eastbound Approach		B	18.1			B	17.8		
	Eastbound Thru/Left		B	17.9	3	20	B	17.2	14	45
	Eastbound Right		B	18.5	0	0	B	18.2	0	17
	Westbound Approach		B	17.6			B	18		
	Westbound Left/Thru/Right		B	17.6	0	0	B	18.0	20	60
	Northbound Approach		A	8.3			A	10.0		
	Northbound Left	120	A	6.8	0	12	A	9.1	9	25
	Northbound Thru		A	8.4	0	114	B	10.1	33	102
	Northbound Right		A	6.9	0	0	A	8.7	0	0
	Southbound Approach		A	8.6			B	12.3		
	Southbound Left	120	A	7.3	1	6	A	9.6	2	8
	Southbound Thru		A	8.7	0	88	B	12.5	85	145
	Southbound Right		A	7.5	0	0	B	10.4	0	1
	3	Future Intersection								
4	Blenheim Boulevard (N/S) at Existing Driveway (E/W)									
	Overall Intersection (TWSC)									
	Eastbound Approach		A	9.7			B	10.9		
	Eastbound Right		A	9.7		0	B	10.9		3
5	University Drive (N/S) at Existing Driveway (E/W)									
	Overall Intersection (TWSC)									
	Eastbound Approach		A	9.4			B	11.4		
	Eastbound Left/Right		A	9.4		0	B	11.4		3
	Northbound Approach									
Northbound Left		A	7.7		0	A	8.2		0	
6	University Drive (N/S) at 7-11 Driveway (E/W)									
	Overall Intersection (TWSC)									
	Eastbound Approach		B	10.6			C	16.0		
	Eastbound Left/Thru/Right		B	10.6		3	C	16.0		10
	Westbound Approach		B	12.9			C	16.3		
	Westbound Left		B	14.0		3	C	21.6		15
	Westbound Thru/Right		B	10.0		0	B	11.7		8
	Northbound Approach									
	Northbound Left		A	7.8		0	A	8.1		0
	Southbound Approach									
Southbound Left		A	7.9		0	A	8.2		3	

No.	Intersection (Movement)	Effective Storage Length (ft.) [1]	AM Peak Hour				PM Peak Hour			
			LOS	Delay (sec/veh)	50th % Queue (ft.) [2]	95th % Queue (ft.)	LOS	Delay (sec/veh)	50th % Queue (ft.) [2]	95th % Queue
7	University Drive (N/S) at Whitehead Street/Democracy Lane (E/W)									
	Overall Intersection (Signalized)		B	11.2			B	11.0		
	Eastbound Approach		B	17.3			B	15.6		
	Eastbound Left/Thru		B	18.0	16	105	B	16.4	13	88
	Eastbound Right		B	14.6	0	10	B	14.3	0	31
	Westbound Approach		B	15.2			B	16.3		
	Westbound Left/Thru/Right		B	15.2	4	38	B	16.3	11	79
	Northbound Approach		A	9.3			A	9.1		
	Northbound Left		A	7.5	1	12	A	7.6	3	27
	Northbound Thru/Right		A	9.3	37	201	A	9.3	36	197
	Southbound Approach		A	8.7			A	9.1		
	Southbound Left	150	A	7.5	1	9	A	7.4	1	16
	Southbound Thru/Right		A	8.7	20	122	A	9.2	35	193
8	Future Intersection									
9	Layton Hall Drive (E/W) at Democracy Lane (N/S)									
	Overall Intersection (TWSC)									
	Eastbound Approach									
	Eastbound Left		A	7.7		3	A	7.6		0
	Westbound Approach									
	Westbound Left		A	7.9		0	A	7.8		0
	Northbound Approach		B	11.3			B	10.5		
	Northbound Left/Thru/Right		B	11.3		3	B	10.5		5
10	Southbound Approach		A	9.4			B	10.1		
	Southbound Left/Thru/Right		A	9.4		0	B	10.1		3
	Blenheim Boulevard (N/S) at Layton Hall Drive (E/W)									
	Overall Intersection (Signalized)		C	24.4			C	21.2		
	Eastbound Approach		C	31.6			C	27.4		
	Eastbound Left		C	32.7	115	286	C	28.5	86	187
	Eastbound Thru/Right		C	25.2	7	45	C	24.2	7	47
	Westbound Approach		D	37.0			C	30.9		
	Westbound Left		C	32.9	7	33	C	29.4	7	30
	Westbound Thru/Right		D	38.1	5	51	C	31.6	5	37
	Northbound Approach		C	23.2			B	19.3		
	Northbound Left		B	15.7	20	51	B	14.6	14	38
	Northbound Thru		C	24.2	221	518	B	20.0	153	372
	Northbound Right	230	B	15.0	0	0	B	14.1	0	0
	Southbound Approach		C	20.6			B	19.9		
	Southbound Left	150	B	18.0	5	19	B	15.4	5	18
	Southbound Thru/Right		C	20.7	134	227	B	19.9	156	257
11	University Drive (N/S) at Layton Hall Drive (E/W)									
	Background Improvement: University Drive Bike lane Improvement									
	Overall Intersection (TWSC)									
	Eastbound Approach		C	16.9			C	15.8		
	Eastbound Left/Thru/Right		C	16.9		3	C	15.8		3
	Westbound Approach		B	14.4			C	16.6		
	Westbound Left/Thru		C	21.0		20	C	22.5		35
	Westbound Right	150	B	10.7		13	B	10.5		10
	Northbound Approach									
	Northbound Left/Thru/Right		A	7.5		0	A	7.7		0
	Southbound Approach									
	Southbound Left/Thru/Right		A	8.5		10	A	8.2		8

NOTES:

[1] Effective storage length is based on the storage length plus one-half of the taper length per TOSAM guidelines.

[2] 50th Percentile Queues are not reported for TWSC intersections under HCM Methodology.

For this analysis, it is desirable to achieve a LOS of D or better for each lane group at the intersections. The capacity analysis results indicate that all movements operate at acceptable LOS under 2028 Future without Development scenario.

Based on the queuing analysis performed at the study intersections, no movements have 95th percentile queues that exceed the available storage at the turning movements. The results of the intersection capacity analysis for the 2028 Future without Development conditions are summarized below in Figure 28.

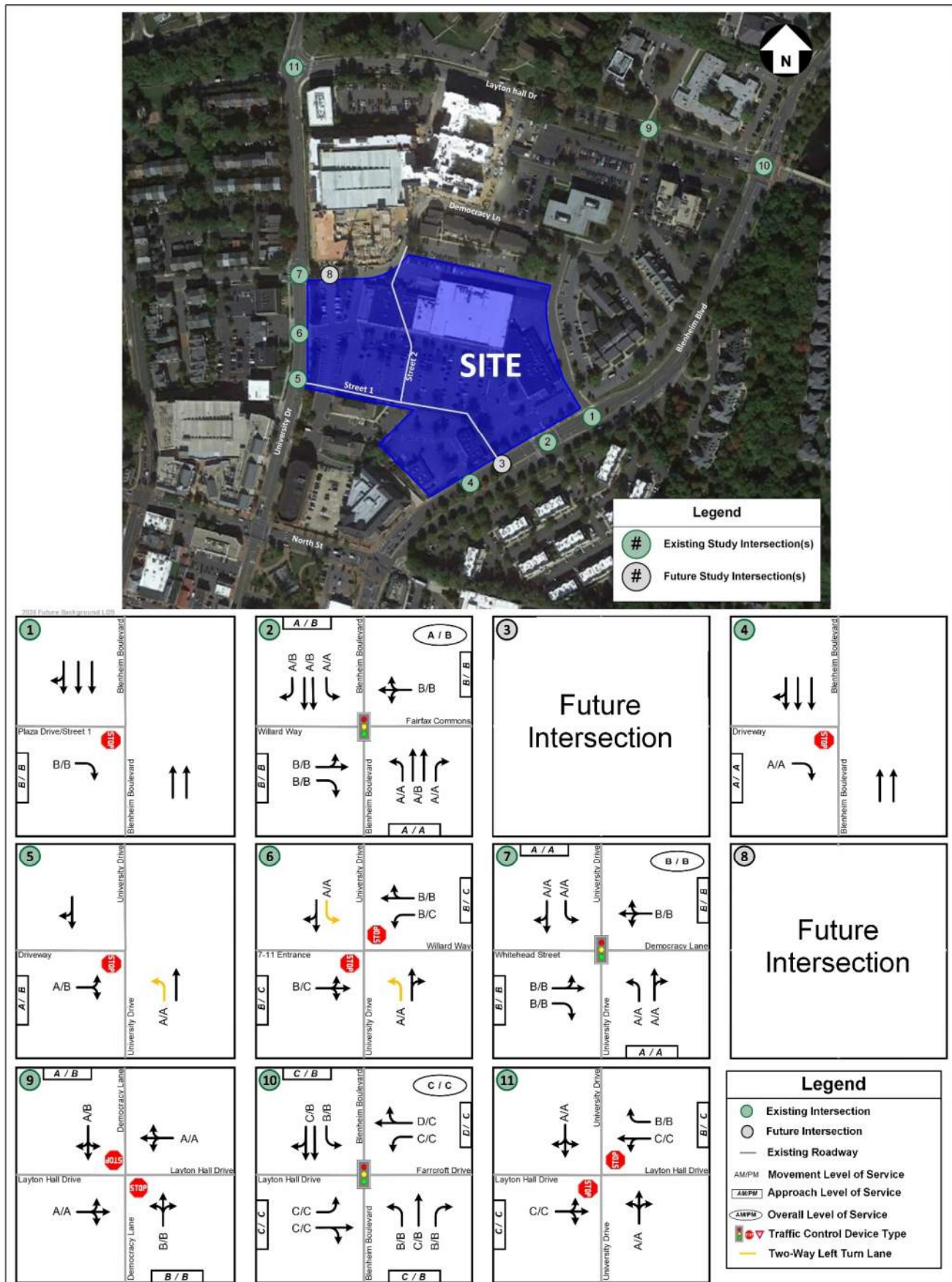


Figure 28: Future Without Development (2028) Level of Service

Future with Development (2028)

Project Description & Site Access

The Courthouse Plaza Development is currently accessed via multiple entrances on Blenheim Boulevard and University Drive.

The addition of 315 units at Courthouse Plaza Development is anticipated to be complete and in operation by the year 2028. Approximately 25 kSF of existing retail uses will be removed and replaced with the mixed-use building leaving approximately 67kSF of existing retail remaining, which is in addition to the 12,500 SF of new ground floor retail in the proposed building.

The plan for the development (subject to change) is shown below in Figure 29.



Figure 29: Concept Plan (Subject to Change)

With the redevelopment, two new roadways (Street 1 and Street 2) will be constructed adjacent to the new multifamily building which will provide additional vehicular and pedestrian paths. These roadways align with future plans in the Small Area Plan. The lane configuration for the study intersections for future with development (2028) conditions is shown in Figure 31. Please note, in this revised TIA submission, the extension of Street 1 to Blenheim Boulevard as a right-out exit is no longer proposed, allowing for additional open space and enhanced pedestrian accommodation through the area. For consistency with previous TIA submissions, two (2) scenarios are presented: one with the right-out exit at Blenheim Boulevard and one without it. The intersection capacity and queuing analysis for the without right-out exit scenario is shown in a subsequent section of this TIA.

Based on the proposed number of units in the development program, an estimation for the number of walking trips generated by the proposed land use is developed using ITE Trip Generation Manual 11th Edition. Based on 315 units, approximately 16 walking trips are estimated in the AM peak hour and 19 walking trips are estimated in the PM peak hour. Similarly, the addition

of 12,500 SF of retail will generate 7 walking trips in the PM peak hour. No ITE data is available for AM peak hour walking trips for retail uses. Based on engineering judgement, it is approximated that 10% of the pedestrian generated trips will use the eastbound/westbound crosswalk at Intersection 7 (University Drive and Democracy Lane). However, to be conservative, 12 pedestrian trips and calls are added as crossing trips to Intersection 7 Synchro analysis to account for site generated pedestrian trips in the model (future pedestrian calls were modeled at 20 AM calls and 24 PM calls). Please note that existing pedestrian traffic associated with the retail to be removed is continued to be included in this analysis, resulting in a conservative estimate. Figure 30 shows the anticipated number of pedestrian trips at Intersection 7 (University Drive and Democracy Lane) for the future with development (2028) scenario.

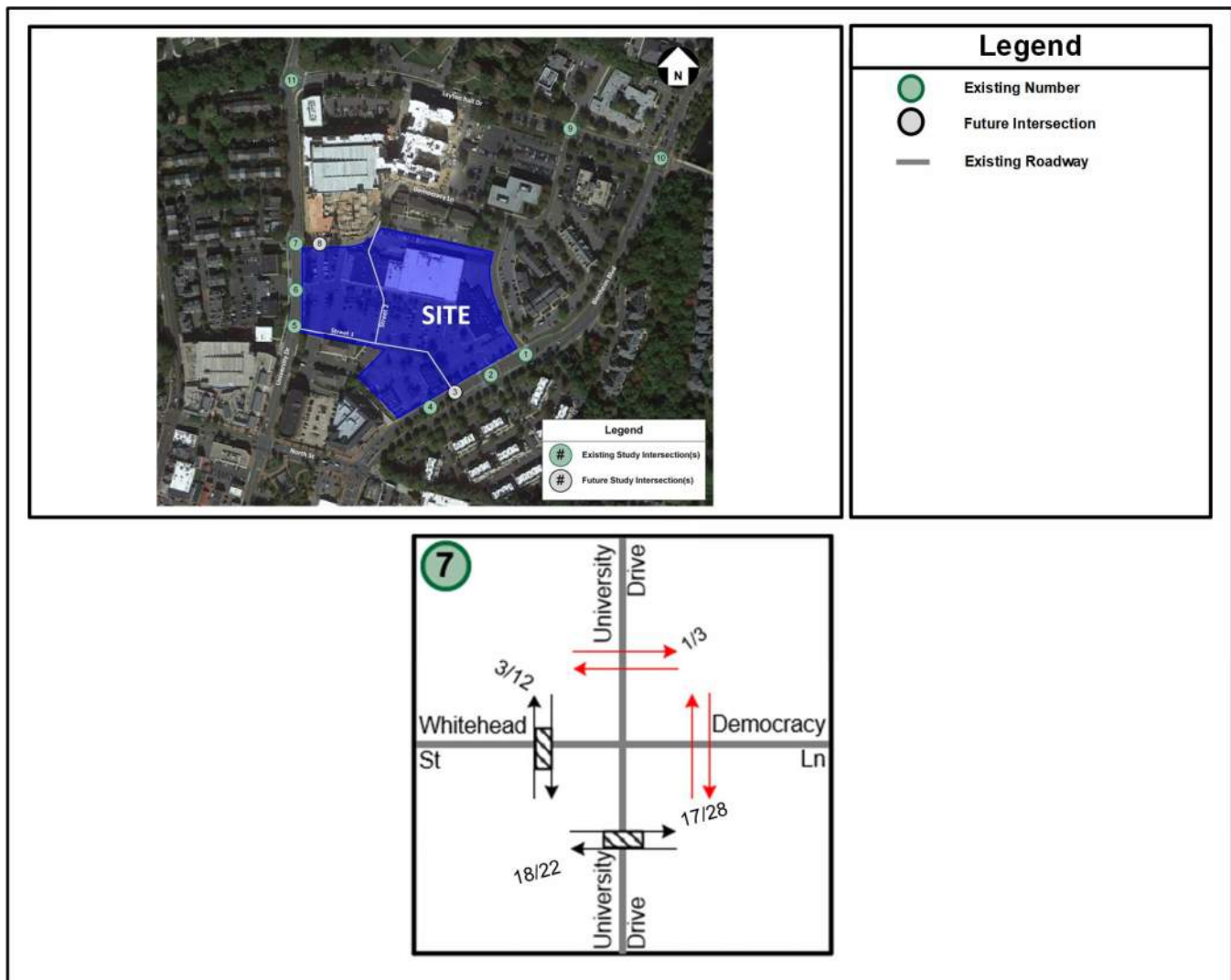
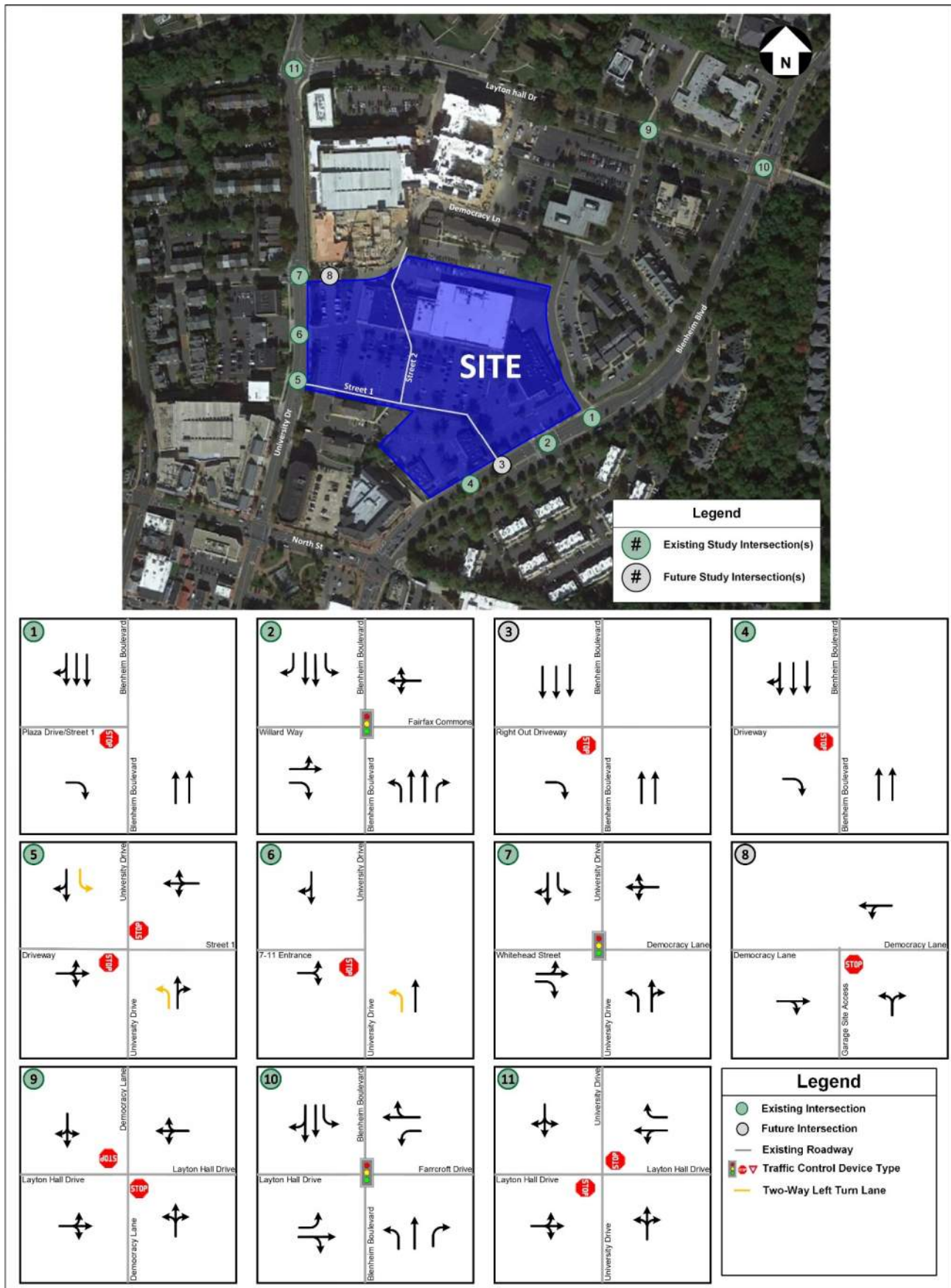


Figure 30: Future with Development (2028) Pedestrian Volumes at Intersection 7



Existing Trips to be Removed

The Courthouse Plaza Development replaces a portion of the existing inline retail uses at the site. Currently there is approximately 92,000 SF of inline retail (inclusive of pad sites) and approximately 25.17 kSF of the existing inline retail uses will be removed (27% removed). For the purposes of this analysis, and in order to be conservative, 20% of the existing site trips were assumed to be removed with the removal of the existing 25.17 kSF of inline retail. The comparison of trips associated with the existing inline retail and inline retail to be removed is included in Appendix E.

In order to remove the trips associated with the 25.17 kSF of inline retail proposed to be removed, the following assumptions were made:

- 20% of the inbound and outbound trips were removed at Intersection 1, Intersection 2, Intersection 6.
- The inbound and outbound trips removed from these intersections were distributed to the adjacent downstream intersections as appropriate.

Additionally, it is noted that with the development, the westbound leg of Study Intersection 6 (University Drive and Existing Driveway/7-11 Driveway) would be closed, and the intersection would be converted to a 3-legged intersection. The turning volumes associated with the westbound leg of Study Intersection 6 have been added to Study Intersection 5 (University Drive and Street 1). The portion of the inline retail trips to be removed and the trips removed associated with the westbound approach at Study Intersection 6 are shown in Figure 32 and Figure 33.

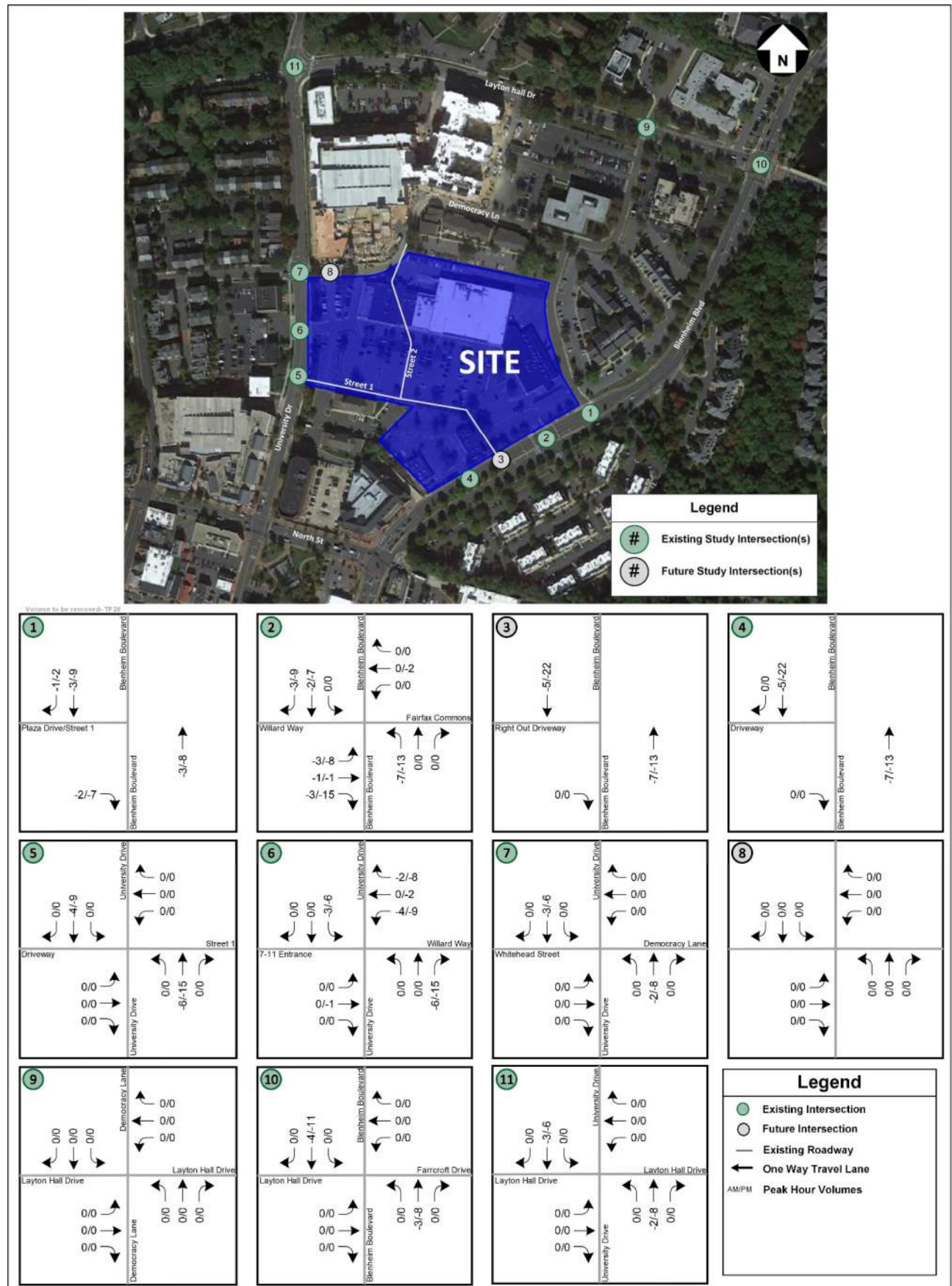
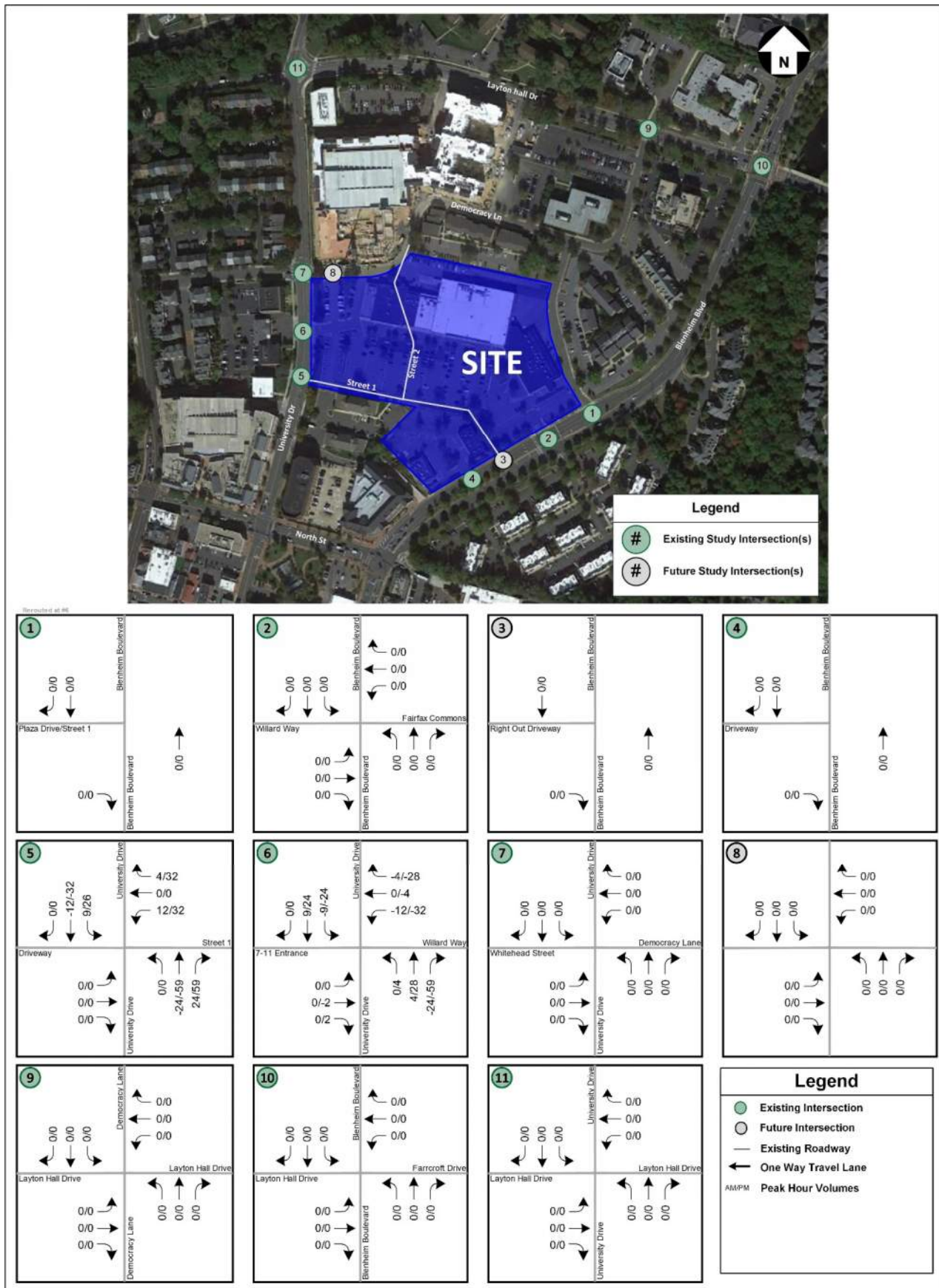


Figure 32: Existing Trips to be Removed



Existing Trips Rerouted

It is anticipated that in the future with the introduction of the Right-Out entrance (Intersection 3), a portion (~15%) of existing retail trips at the Courthouse Plaza site will reroute from Intersection 2 (Blenheim Boulevard/Fairfax Commons Entrance) to use the newly built Right-Out entrance on Blenheim Boulevard (Intersection 3). The rerouted trips due to this are shown in Figure 34.

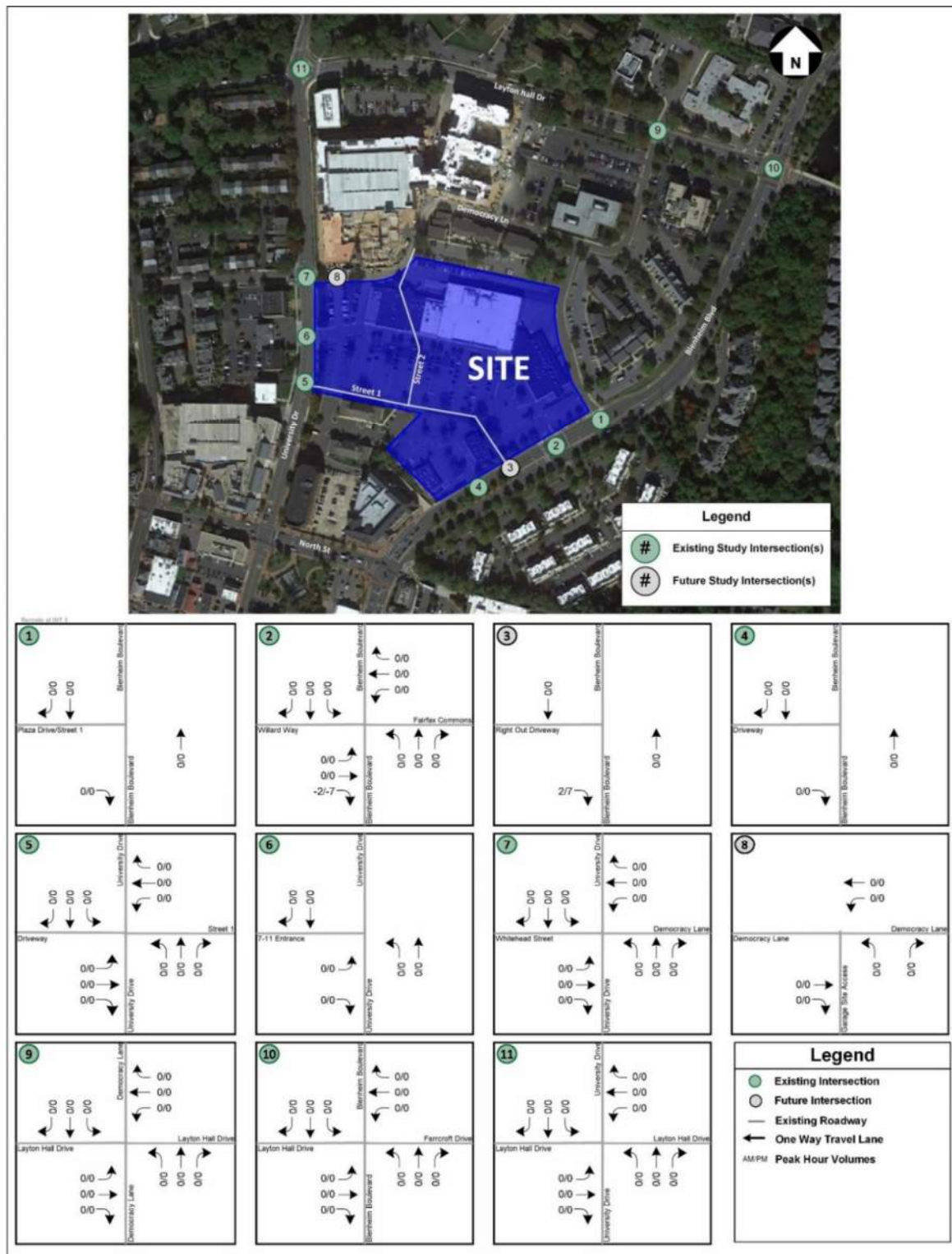


Figure 34: Trips Rerouted at Intersection 2 due to addition of Right-Out Entrance at Intersection 3

In the future with development condition (2028), the existing pad site will have additional options for access due to the introduction of Street 1 and Street 2. Specifically, trips will use Street 1, accessing University Boulevard via Intersection 5, consistent with the expected circulation pattern.

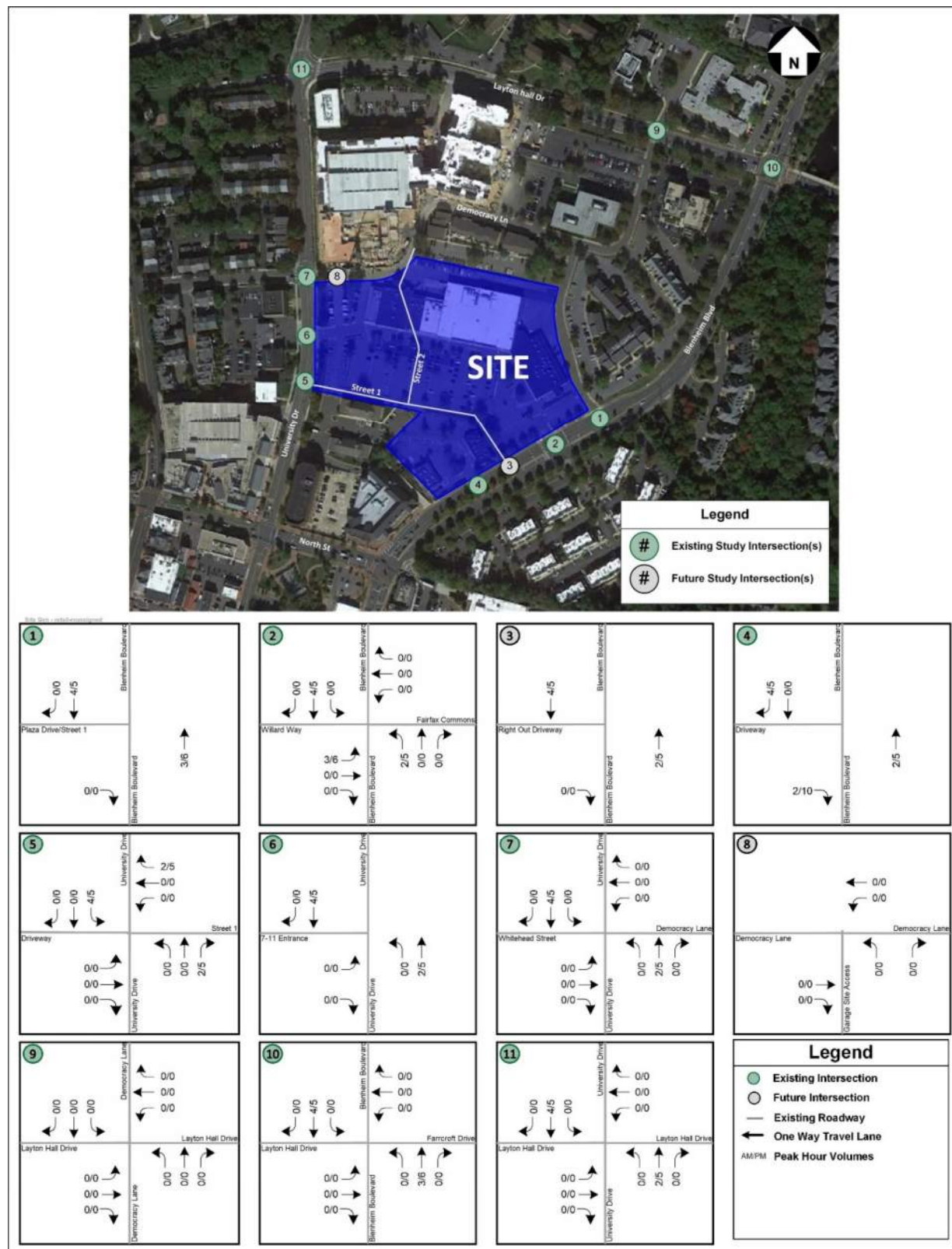


Figure 35: Existing Pad Site Trips (Reassigned to use Street 1)

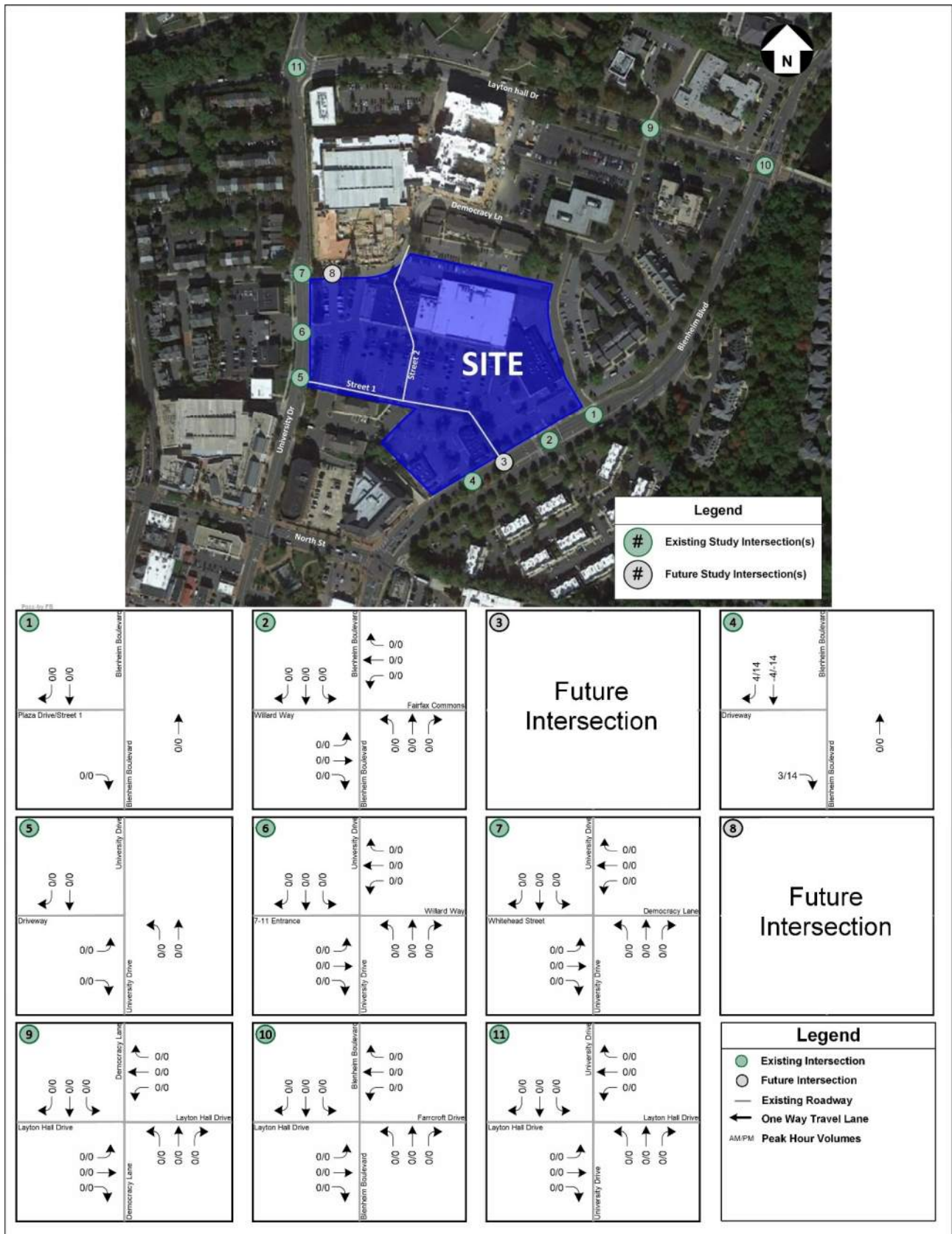


Figure 36: Existing Pad Site Pass-by Trips (2028)

Site Generated Traffic

The Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 11th Edition was used to determine the future trips generated by the proposed development as shown in Table 13. As discussed during the scoping meeting, a TDM Reduction/Mode Split of 15 percent was applied to residential use as agreed upon by the City officials. Similarly, Pass-By and Internal Capture reductions were applied based on ITE *Trip Generation Handbook*, 3rd Edition and after discussions with City officials. The addition of up to 12,500 SF of retail use is analyzed in this revised submission of the TIA with approximately 66.7 kSF of existing retail uses to remain at the site.

Table 13: Trip Generation for (2028) (ITE 11th Edition; Peak Hour of Adjacent Street)

Land Use	ITE Code	Size	----- Week day -----						Daily Total
			AM Peak Hour			PM Peak Hour			
			In	Out	Total	In	Out	Total	
Proposed Development - Proposed Concept (Phase 1)									
Multifamily Housing (Mid-Rise) (Apartments, Townhomes, Condo; max 10 floors; Not Close to Rail Transit)	221	315 DU	29	98	127	75	48	123	1,456
	Internal Capture Residential - Retail ¹	(1)	-2	-1	-3	-8	-5	-13	-146
	Mode Split/TDM Reduction	15%	-4	-15	-19	-10	-6	-17	-197
	Residential Subtotal (with Reductions)		23	82	105	57	37	93	1,113
Shopping Center (<40 kSF)	822	12.5 kSF of GFA	20	13	33	45	46	91	757
	Internal Capture Retail - Residential ¹	(1)	-1	-2	-3	-5	-8	-13	-146
	Pass-By Reduction ²	25%/40%/25%	-4	-4	-8	-16	-15	-31	-153
	Retail Subtotal (with Reductions)		15	7	22	24	23	47	458
	Total Proposed Trips (with Reductions)		38	89	127	81	60	140	1,571

As shown, the proposed development will generate approximately 127 trips in the AM peak hour, 140 trips in the PM peak hour and 1,571 trips on a typical weekday, after reductions. Please note that this proposed development represents an overall reduction of trips on the property. Table 14 was not used for analysis purposes but is presented to show the comparison to the existing shopping center and the overall proposed development with the retail to remain.

Table 14: Trip Generation Comparison (Existing vs. Proposed with Retail to Remain)

Land Use	ITE Code	Size	----- Week day -----						Daily Total	
			AM Peak Hour			PM Peak Hour				
			In	Out	Total	In	Out	Total		
Existing Development										
Shopping Center (40 kSF<X<150 kSF) (with Supermarket)	821	91.9 kSF of GFA	201	123	324	395	429	824	8,485	
Subtotal (Existing)			201	123	324	395	429	824	8,485	
Proposed Development - Proposed Concept (Phase 1)										
Multifamily Housing (Mid-Rise) (Apartments, Townhomes, Condo; max 10 floors; Not Close to Rail Transit)	221	315 DU	29	98	127	75	48	123	1,456	
	Internal Capture Residential - Retail ¹	(1)	-3	-10	-13	-8	-5	-12	-146	
	Mode Split/TDM Reduction	15%	-4	-13	-17	-10	-6	-17	-197	
Residential Subtotal (with Reductions)			22	75	97	57	37	94	1,113	
Shopping Center (40 kSF<X<150 kSF) (with Supermarket)	821	66.7 kSF of GFA	146	89	235	302	328	630	6,546	
Shopping Center (<40 kSF)	822	12.5 kSF of GFA	20	13	33	45	46	91	757	
	Internal Capture Retail - Residential ¹	(1)	-10	-3	-13	-5	-8	-12	-146	
	Pass-By Reduction ²	25%/40%/25%	-32	-32	-64	-142	-142	-284	-1,789	
Retail Subtotal (with Reductions)			124	67	191	200	224	425	5,368	
Total Proposed Trips (with Reductions)			146	142	288	257	261	519	6,481	
Net New Trips (Proposed - Existing)			-55	19	-36	-138	-168	-305	-2,004	

¹ Internal Capture rates consider site trips "captured" within a mixed-use development, recognising that trips from one land use can access another land use within a site development without having to access the (1) residential / retail - smaller of X% of residential trips or X% of retail trips; AM: X = 5%, PM: X = 10%, Daily: X = 15%

² The pass by reduction for Shopping Center is based on the ITE Trip Generation methodology, as provided in the Trip Generation Handbook, 3rd Edition. The average rate for Shopping Centers is 40% for the PM Peak. For all other time periods, the default pass by rate is 25%

¹ Internal Capture rates consider site trips "captured" within a mixed-use development, recognising that trips from one land use can access another land use within a site development without having to access the (1) residential / retail - smaller of X% of residential trips or X% of retail trips; AM: X = 5%, PM: X = 10%, Daily: X = 15%

² The pass by reduction for Shopping Center is based on the ITE Trip Generation methodology, as provided in the Trip Generation Handbook, 3rd Edition. The average rate for Shopping Centers is 40% for the PM Peak. For all other time periods, the default pass by rate is 25%

As seen from Table 14, the proposed development with the existing uses to remain generates approximately 2,004 fewer overall typical daily trips as compared to the existing retail uses at the Courthouse Plaza site.

Transportation Demand Management

The Courthouse Plaza Development project aims to provide a vibrant and thriving mixed-use community compatible with surrounding land uses in the City. Transportation Demand Management (TDM) is an important goal for the applicant, with the intent of achieving reduced site generated peak hour vehicular trips generated by the residential and commercial uses proposed with the redevelopment. TDM is achieved by establishing measures to influence travel behavior by mode, frequency, time, route, or trip length in order to achieve a maximally efficient use of transportation facilities. TDM commitments and strategies for the project are included in a separate TDM Plan document for City review.

Site Trip Distribution

The distribution of site trips was based on historical data, observed turning movement volumes and guidance and input from the City staff. The directional distribution percentages are presented in Figure 37.

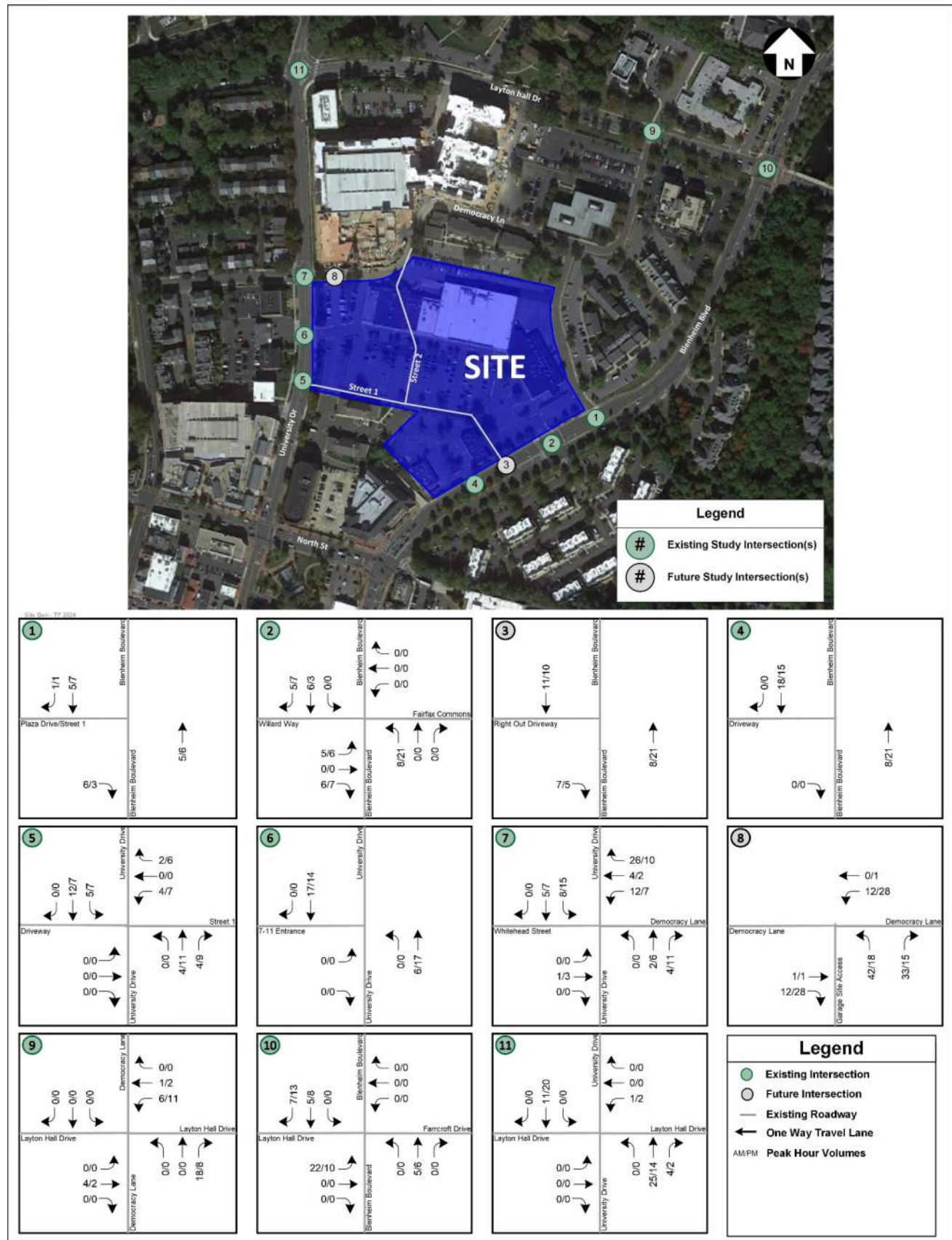


Figure 37: Site Trip Distribution/Direction of Approach (DOA)

Future with Development Traffic Volumes

In order to determine the traffic volumes at the study intersections, the site generated traffic volumes presented below in Figure 38, the existing volumes removed presented in Figure 32 and pass-by trips shown in Figure 39 were added to the 2028 Future without Development traffic volumes presented in Figure 27. The 2028 future with development volumes are shown in Figure 40.

Also, please note that retail trips are planned to park in the existing surface lot or on-street parking and therefore have not been routed into/out of the garage entrance (Intersection #8), which is specific to residential uses.



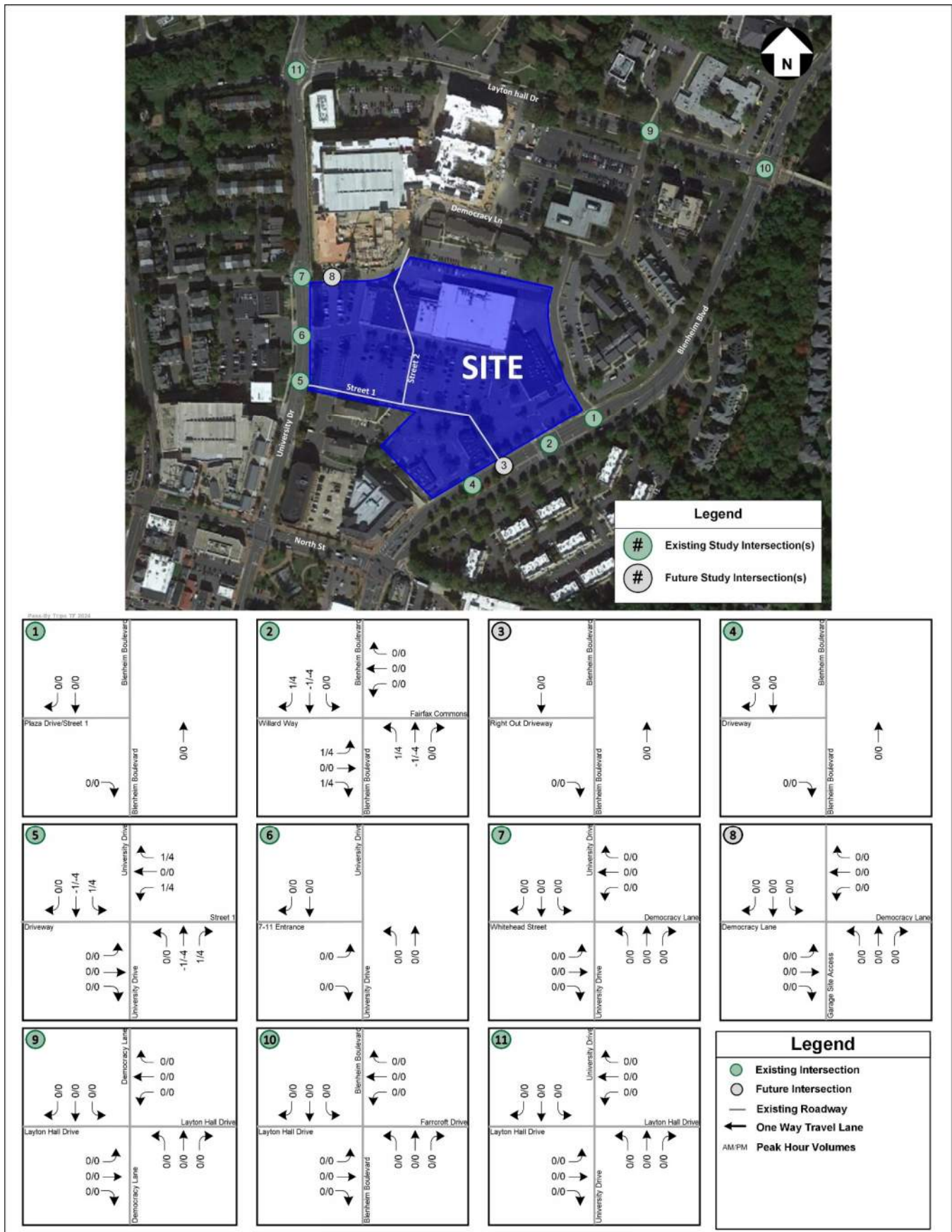


Figure 39: Pass-By Trips Attributed to Retail

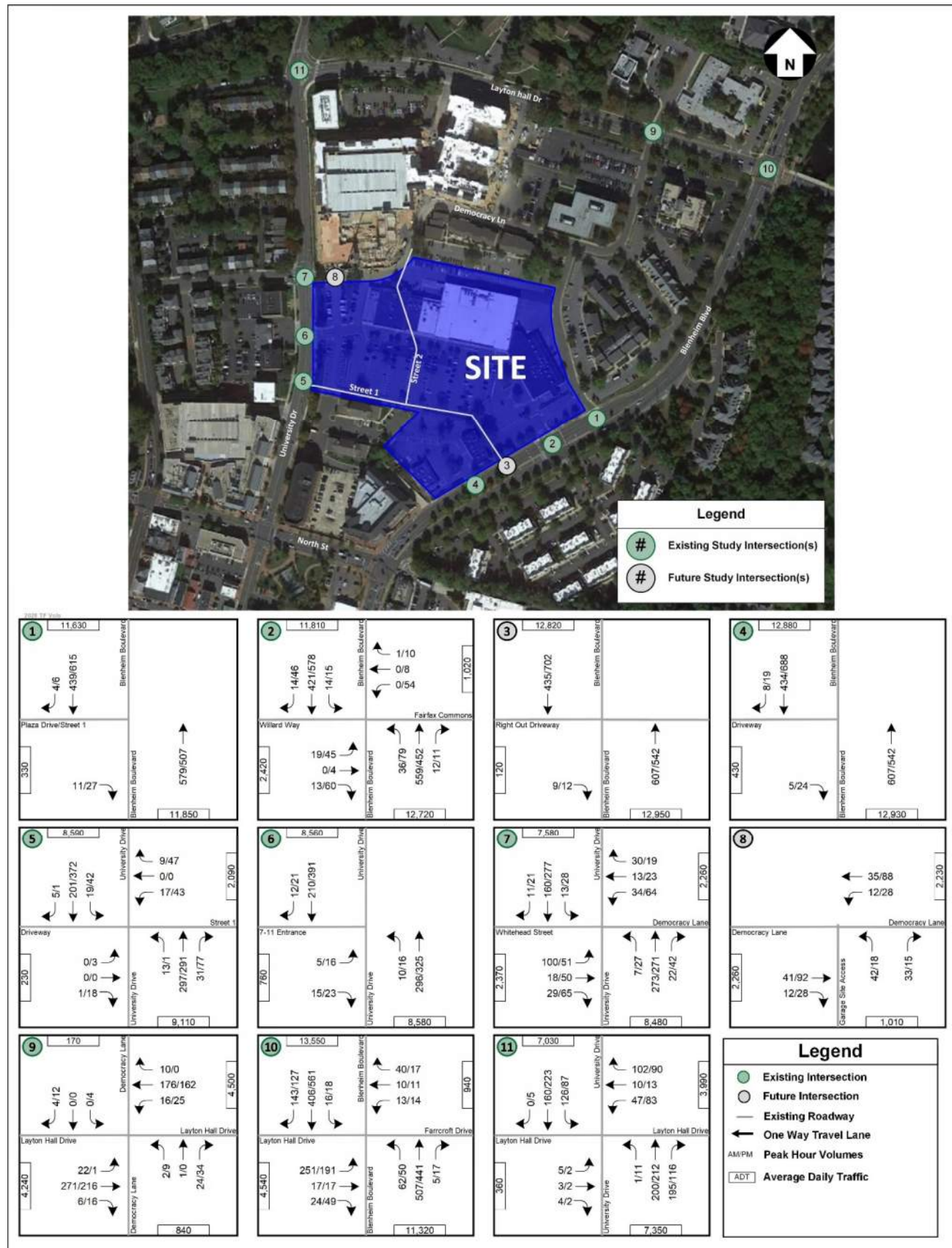


Figure 40: 2028 Future with Development Volumes (With Right-Out)

Future with Development (2028) Intersection Analysis

Capacity analysis was performed at the intersections within the study area during the weekday morning and evening peak hours under Future with Development conditions. *Synchro Version 11* was used to analyze the study intersections based on the Highway Capacity Manual (HCM) methodology and includes level of service (LOS), delay, and queue length comparisons for the turning movements analyzed.

Existing peak hour factors found in the field were used, except where the field peak hour factor was lower than 0.92 in which case a minimum value of 0.92 was used, consistent with VDOT analysis guidelines.

The results of the intersection analysis are presented in Table 15 and are expressed in LOS and delay (seconds per vehicle) per lane group. The mitigation analysis results are shown in grey. The 95th percentile queue results for each intersection are also presented in Table 12 and are expressed in feet, along with the 50th percentile queue results for each of the signalized intersections. The detailed analysis worksheets are included in Appendix H.

Table 15: Future with Development Intersection Analysis (2028) (With Right-Out)

No.	Intersection (Movement)	Effective Storage Length (ft.) (1)	AM Peak Hour				PM Peak Hour			
			LOS	Delay (sec/veh)	50th % Queue (ft.) (2)	95th % Queue (ft.)	LOS	Delay (sec/veh)	50th % Queue (ft.) (2)	95th % Queue
1	Blenheim Boulevard (N/S) at Plaza Drive (E/W) Overall Intersection (TWSC) Eastbound Approach Eastbound Right		B B	10.0 10.0		3	B B	10.7 10.7		3
2	Blenheim Boulevard (N/S) at Fairfax Commons (E/W) Overall Intersection (Signalized) Eastbound Approach Eastbound Left/Thru Eastbound Right Westbound Approach Westbound Left/Thru/Right Northbound Approach Northbound Left Northbound Thru Northbound Right Southbound Approach Southbound Left Southbound Thru Southbound Right		A B B B B A A A A A A A A A A	8.9 18.1 17.9 18.4 17.6 8.5 6.9 8.6 7.0 8.8 7.4 8.9 7.7		22 0 0 0 13 115 0 7 90 0	B B A B B A A A B A B B	12.1 17.7 17.4 18.0 18.2 9.9 9.1 10.0 8.6 12.3 9.6 12.6 10.4	14 0 20 10 32 0 2 84 0	46 11 59 27 101 0 8 144 2
3	Blenheim Boulevard (N/S) at Right Out Driveway (E/W) Overall Intersection (TWSC) Eastbound Approach Eastbound Right		B B	10.6 10.6		0	B 12	12.0 12.0		3
4	Blenheim Boulevard (N/S) at Existing Driveway (E/W) Overall Intersection (TWSC) Eastbound Approach Eastbound Right		A A	9.7 9.7		0	B B	10.9 10.9		3
5	University Drive (N/S) at Street 1(E/W) Overall Intersection (TWSC) Eastbound Approach Eastbound Left/Thru/Right Westbound Approach Westbound Left/Thru/Right Northbound Approach Northbound Left Southbound Approach Southbound Left		A A B B A A A	9.4 9.4 13.4 13.4 7.7 8.0		0 5 0 3	B B C C A A	12.2 12.2 17.6 17.6 8.1 8.2		3 25 0 3

No.	Intersection (Movement)	Effective Storage Length (ft.) [1]	AM Peak Hour				PM Peak Hour			
			LOS	Delay (sec/veh)	50th % Queue (ft.) [2]	95th % Queue (ft.)	LOS	Delay (sec/veh)	50th % Queue (ft.) [2]	95th % Queue
6	University Drive (N/S) at 7-11 Driveway (N/S)									
	Overall Intersection (TWSC)									
	Eastbound Approach		B	10.1			B	12.2		
	Eastbound Left/Thru/Right		B	10.1		3	B	12.2		8
7	University Drive (N/S) at Whitehead Street/Democracy Lane (E/W)									
	Overall Intersection (Signalized)									
	Eastbound Approach		C	20.0			B	18.4		
	Eastbound Left/Thru		C	21.0	28	108	B	19.4	14	92
8	Democracy Lane (E/W) at Garage Entrance (N/S)									
	Overall Intersection (TWSC)									
	Westbound Approach									
	Westbound Left		A	7.3		0	A	7.5		3
9	Layton Hall Drive (E/W) at Democracy Lane (N/S)									
	Overall Intersection (TWSC)									
	Eastbound Approach									
	Eastbound Left		A	7.7		3	A	7.6		0
10	Blenheim Boulevard (N/S) at Layton Hall Drive (E/W)									
	Overall Intersection (Signalized)		C	25.2			C	21.5		
	Eastbound Approach		C	32.2			C	27.6		
	Eastbound Left		C	33.3	130	315	C	28.8	92	197
11	University Drive (N/S) at Layton Hall Drive (E/W)									
	Background Development: University Drive Bike lane Improvement									
	Overall Intersection (TWSC)									
	Eastbound Approach		C	17.6			C	16.2		
	Eastbound Left/Thru/Right		C	17.6		3	C	16.2		145
	Westbound Approach		C	15			C	17.3		
	Westbound Left/Thru		C	22.3		23	C	23.6		19
	Westbound Right		B	10.9		13	B	10.6		35
	Northbound Approach									
	Northbound Left/Thru/Right		A	7.6		0	A	7.8		38
	Southbound Approach									
	Southbound Left/Thru/Right		A	8.6		10	A	8.2		18

NOTES:

- [1] Effective storage length is based on the storage length plus one-half of the taper length per TOSAM guidelines.
[2] 50th Percentile Queues are not reported for TWSC intersections under HCM Methodology.

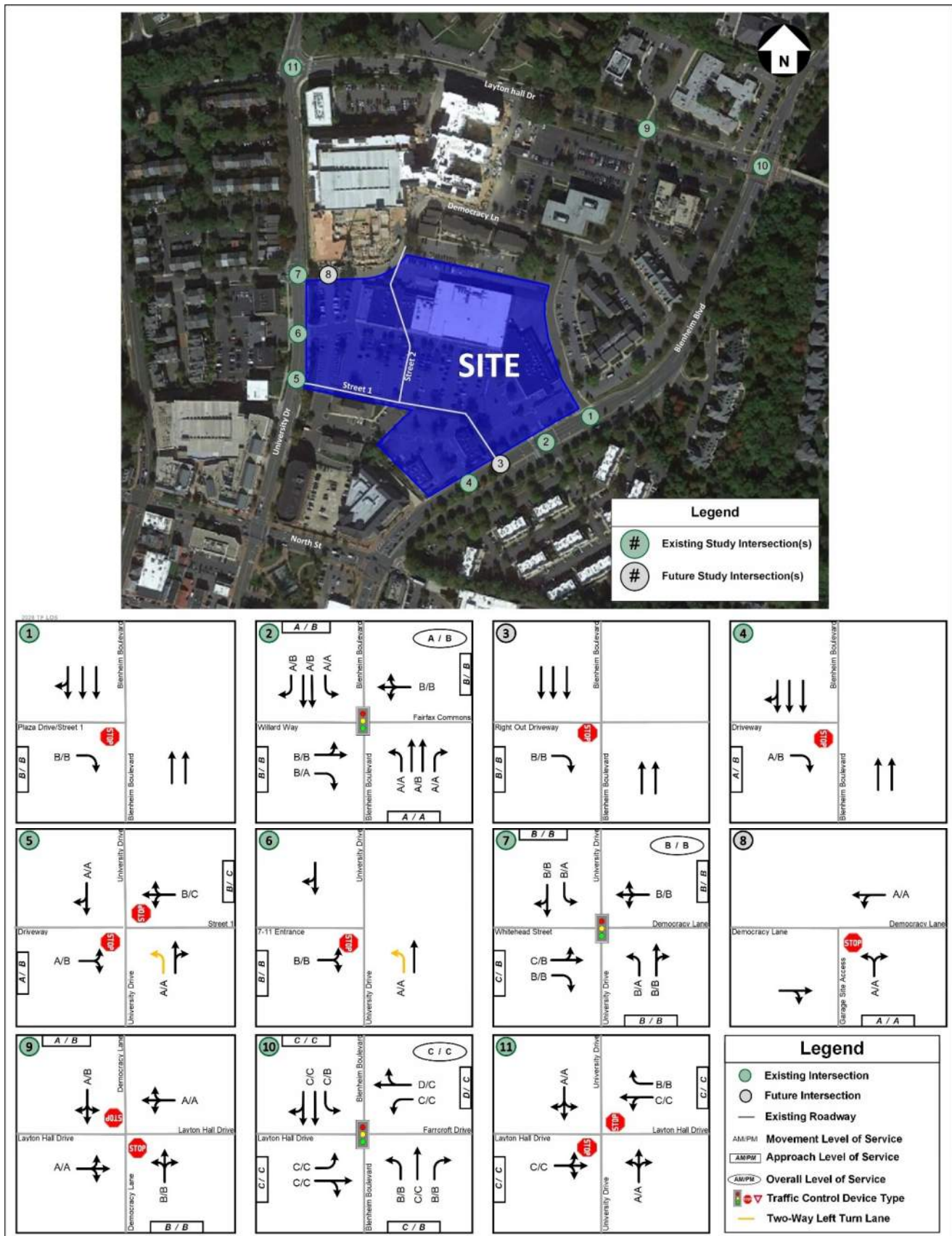


Figure 41: 2028 Future with Development Level of Service Results (With Right-Out)

For the purpose of this analysis, it is desirable to achieve a level of service (LOS) of D or better for each lane group at the intersections. The capacity analysis results indicate that **all movements operate at acceptable LOS** under Future (2028) with Development.

Queuing analysis results indicate that all study movements have 95th percentile queues accommodated in the available storage bays. Additionally, it was noted that the queueing on Democracy Lane is not anticipated to cause operational issues for the garage entrance for the development, which is located approximately 117 feet east of University Drive as the 50th and 95th percentile queues per Synchro analysis results for the westbound approach (Democracy Lane) are under 117 feet during both the AM and PM peak hours. With the development, the existing curb cut on Democracy Lane closest to University Drive (located about 90 feet from University Drive) will be closed and would mark an improvement upon the existing queuing conditions on Democracy Lane. The garage entrance gate is also planned to be located 50 feet away from Democracy Lane into the garage structure and hence will provide an additional two car storage for vehicles to queue without blocking the intersection at Democracy Lane. Additionally, Street 2 is now proposed to connect between Street 1 and Democracy Lane which will provide more options for vehicles and pedestrians to disperse between multiple paths.

Internal Road Network

As mentioned previously, Street 1 and Street 2 are added within the application area to achieve City of Fairfax Small Area Plan vision for the site area of creating a grid-system of streets with emphasis on walkability within the Courthouse Plaza shopping center. With the addition of Street 1 at Study Intersection 5 and Street 2 between Democracy Lane and Street 1, future intersections are created. The intersection of Street 1 and Street 2 is labeled as 'Intersection A' and the intersection of Democracy Lane and Street 2 is named 'Intersection B'. Figure 42 shows the locations of these internal intersections with respect to the application area.



Figure 42: Internal Intersections Locations

The volumes at Intersection A were developed based on the westbound approach volumes at Study Intersection 5 for the 2028 Future Conditions with Development analysis scenario. Based on engineering judgement, 50% of the eastbound volumes on Street 1 were assigned as eastbound lefts onto Street 2 at Intersection A with the remaining 50% of the eastbound retail volumes on Street 1 continuing through to the parking lot or onto Blenheim Boulevard. Additionally, volumes were assigned at this intersection based on residential trips using the newly created Intersection 3 (Right-Out) on Blenheim Boulevard.

For Intersection B, the site trips from the mixed-use building and a portion of site retail trips destined to/from the south on University Drive were assigned to the intersection. Approximately 90% was assigned onto Democracy Lane (turning left or right) with 10% assigned eastward towards the back of the shopping center. Figure 43 shows the volumes at the two internal intersections.

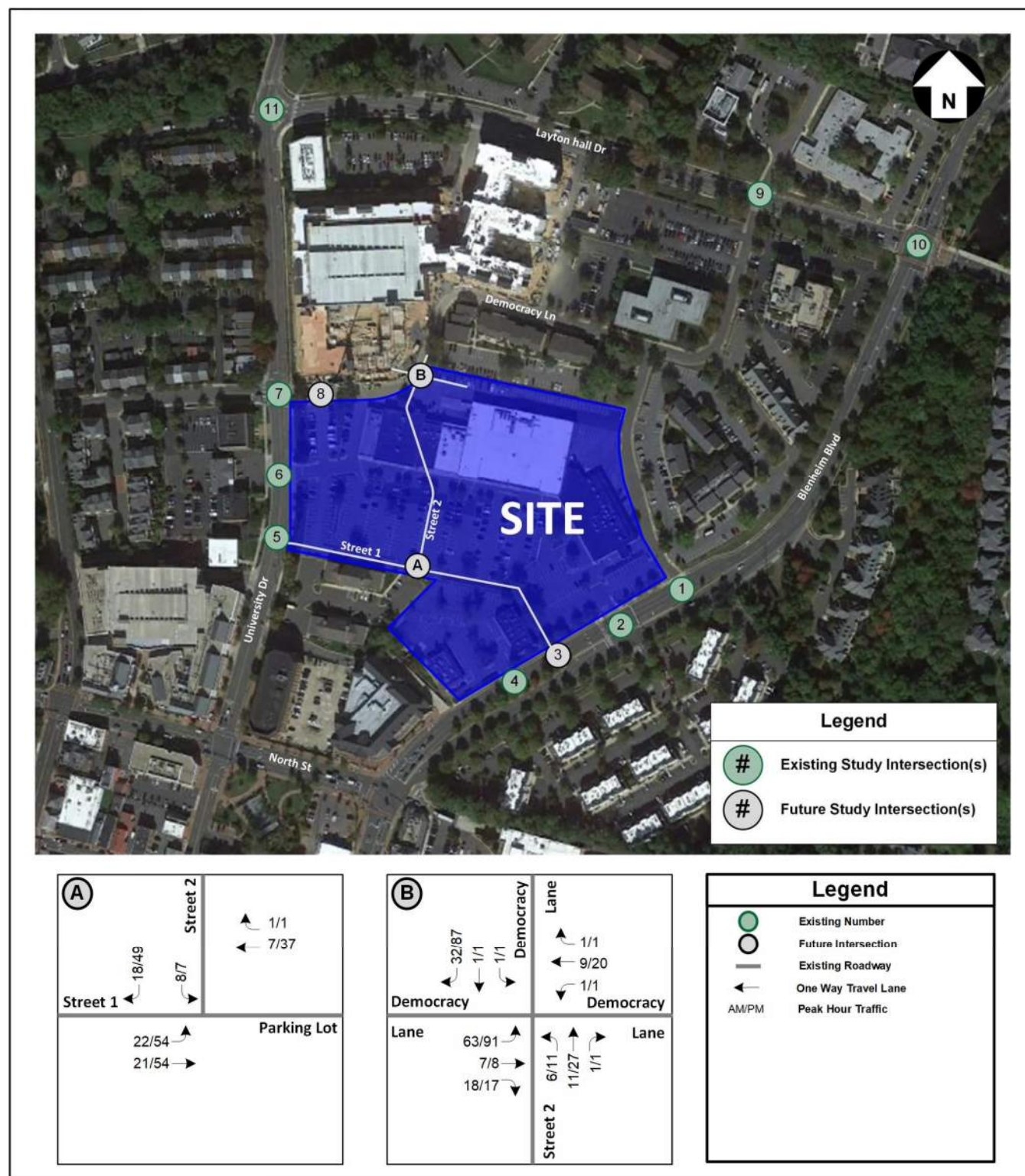


Figure 43: 2028 Future with Development Volumes at Internal Intersections

It is noted that Intersection A is planned with the Street 2 approach (southbound approach) and the Parking Lot approach (westbound approach) operating under stop-controlled conditions. Intersection B is planned as an All-Way stop-controlled intersection.

Future with Development (2028) - Internal Intersection Analysis

Consistent with previous analysis scenarios, capacity analysis was performed at the two internal intersections within the study area during the weekday morning and evening peak hours under Future with Development conditions. *Synchro Version 11* was used to analyze the study intersections based on the Highway Capacity Manual (HCM) 6th Edition methodology and includes level of service (LOS), delay, and queue length comparisons for the turning movements analyzed. A peak hour-factor of 0.92 was used for the two future intersections.

The results of the intersection analysis are presented in Table 16 and are expressed in LOS and delay (seconds per vehicle) per lane group. The 95th percentile queue results for each intersection are also presented in Table 16 and are expressed in feet. The detailed analysis worksheets are included in Appendix I.

Table 16: Future with Development Internal Intersection Analysis (2028)

No.	Intersection (Movement)	Effective Storage Length (ft.)	AM Peak Hour			PM Peak Hour		
			LOS	Delay (sec/veh)	95th % Queue (ft.)	LOS	Delay (sec/veh)	95th % Queue
A	Street 1 (E/W) and Street 2 (N/S) Overall Intersection (AWSC)							
	Eastbound Approach							
	Eastbound Left/Thru		A	7.3	0	A	7.9	0
	Westbound Approach							
	Westbound Thru/Right		A	7.0	0	A	7.4	0
B	Southbound Approach							
	Southbound Left/Thru/Right		A	6.8	0	A	7.0	0
	Democracy Lane (E/W) and Street 2 (N/S) Overall Intersection (AWSC)							
	Eastbound Approach							
	Eastbound Left/Thru/Right		A	7.6	10	A	8.1	13
	Westbound Approach							
	Westbound Left/Thru/Right		A	7.2	0	A	7.5	3
	Northbound Approach							
	Northbound Left/Thru/Right		A	7.3	3	A	7.6	5
	Southbound Approach							
	Southbound Left/Thru/Right		A	6.8	3	A	7.1	8

As observed from Table 16, all intersection approaches and movements operate at LOS B or better, with minimal queuing.

Preliminary All-Way Stop Control Warrant Analysis

Under the MUTCD (Manual on Uniform Traffic Control Devices), installing an all-way stop (multi-way stop) is governed by Section 2B.12 to 2B.20. The warrants are guidelines, not strict requirements and specifically warrant 2B.17 allows for 'Other Factors' wherein "pedestrian and/or bicyclist movements support the installation of all-way stop control". Therefore, all-way stop can still be justified even if volume thresholds aren't met, especially on internal urban streets.

Section 2B.16 (Warrant D: 8-Hour Vehicular Volume) evaluates whether an all-way stop is justified based on traffic volumes on intersecting approaches over an 8-hour period. The warrant establishes that the combined, vehicle, bicycle and pedestrian volume entering the intersection from the major-street approaches is at least 300 units per hour for each of any 8 hours of a typical day and the combined, vehicle, bicycle and pedestrian volume entering the intersection from the minor-street approaches is at least 200 units per hour for each of any of the same 8 hours. Table 17 below shows the combined vehicle, pedestrian and bicycle counts at the intersection of Democracy Lane and Street 2. Please note, the vehicular volumes are projected for a future phase 1 buildout, the pedestrian and bicycle volumes are based on collected data on Democracy Lane.

Table 17: Traffic Counts for All-Way Stop Evaluation at Intersection B (Democracy Lane and Street 2)

Intersection B	Major Units	Minor Units	Major Units	Minor Units	Major Units	Minor Units	Major Units	Minor Units
	Vehicle (EB/WB)	Vehicle (NB/SB)	Bicycle (EB/WB)	Bicycle (NB/SB)	Pedestrian (EB/WB)	Pedestrian (NB/SB)	Total (EB/WB)	Total (NB/SB)
AM Peak Hour	99	52	0	0	9	0	108	52
PM Peak Hour	138	128	0	0	15	0	153	128

Table 17 shows that for the AM and PM peak hours, the MUTCD unit threshold of 300 units on the major street approach and 200 units on the minor street approach are not satisfied. Based on this data, it is anticipated that for a total of 8 hours, the MUTCD unit threshold will unlikely be met in future conditions.

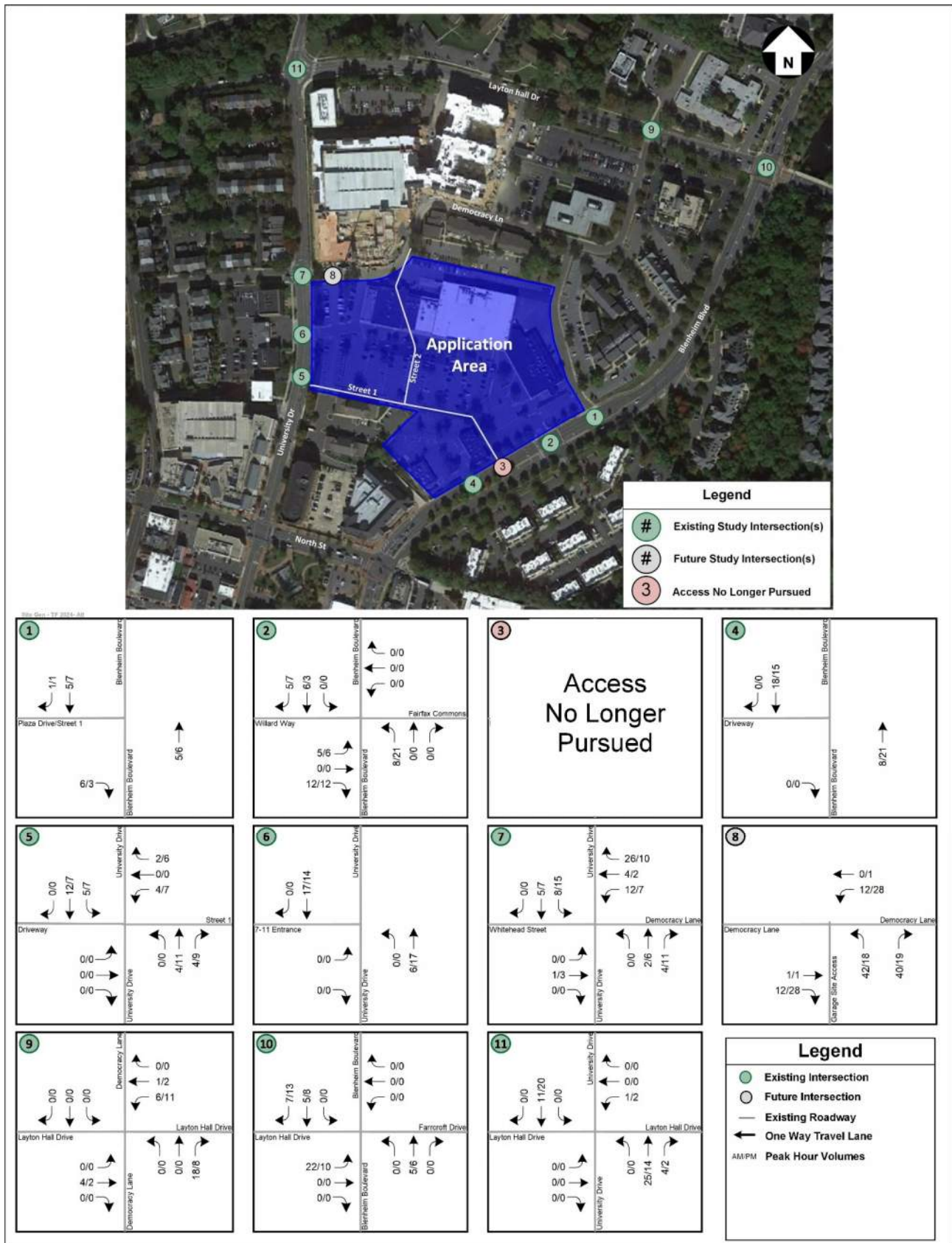
However, an All-Way Stop Control is continued to be recommended at the intersection of Democracy Lane and Street 2 for the following reasons as allowable per warrant 2B.17(Other Factors):

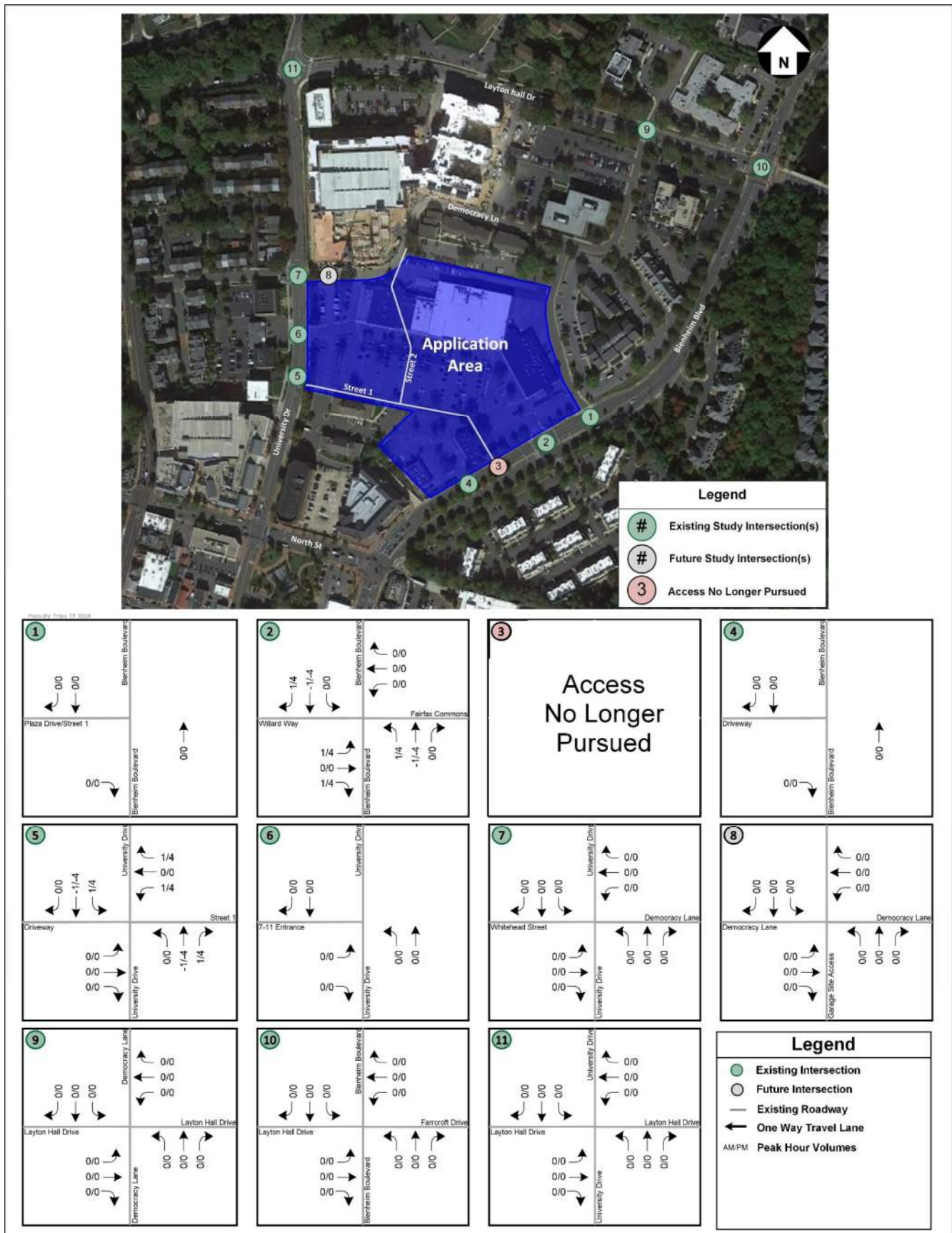
- Safeway loading operations on the east side of the intersection introduce conflicts with large trucks entering and exiting the loading area. These maneuvers create intermittent visibility obstructions and unpredictable vehicle movements, supporting the need for all-way stop control to enhance safety.
- A marked crosswalk is present on the west leg of the intersection, serving existing pedestrian activity and anticipated increases in pedestrian traffic associated with The Flats and access to the proposed retail and Safeway. All-way stop control would improve pedestrian crossing safety by providing defined right-of-way for pedestrians.
- Restricted sight distance for northbound vehicles, particularly when looking east toward the Safeway loading area due to potential tree plantings, may limit drivers' ability to detect approaching traffic from the Safeway Loading area. All-way stop control would mitigate this condition by requiring all approaches to stop and proceed in a controlled manner.
- Future site development at full buildout is expected to modify intersection geometry and operations. With the ultimate redevelopment at the Courthouse Plaza, Democracy Lane is anticipated to function as a more conventional four-legged intersection, without the presence of the existing loading dock for Safeway. At that time, traffic control can be reevaluated based on updated traffic volumes, patterns, and site conditions.

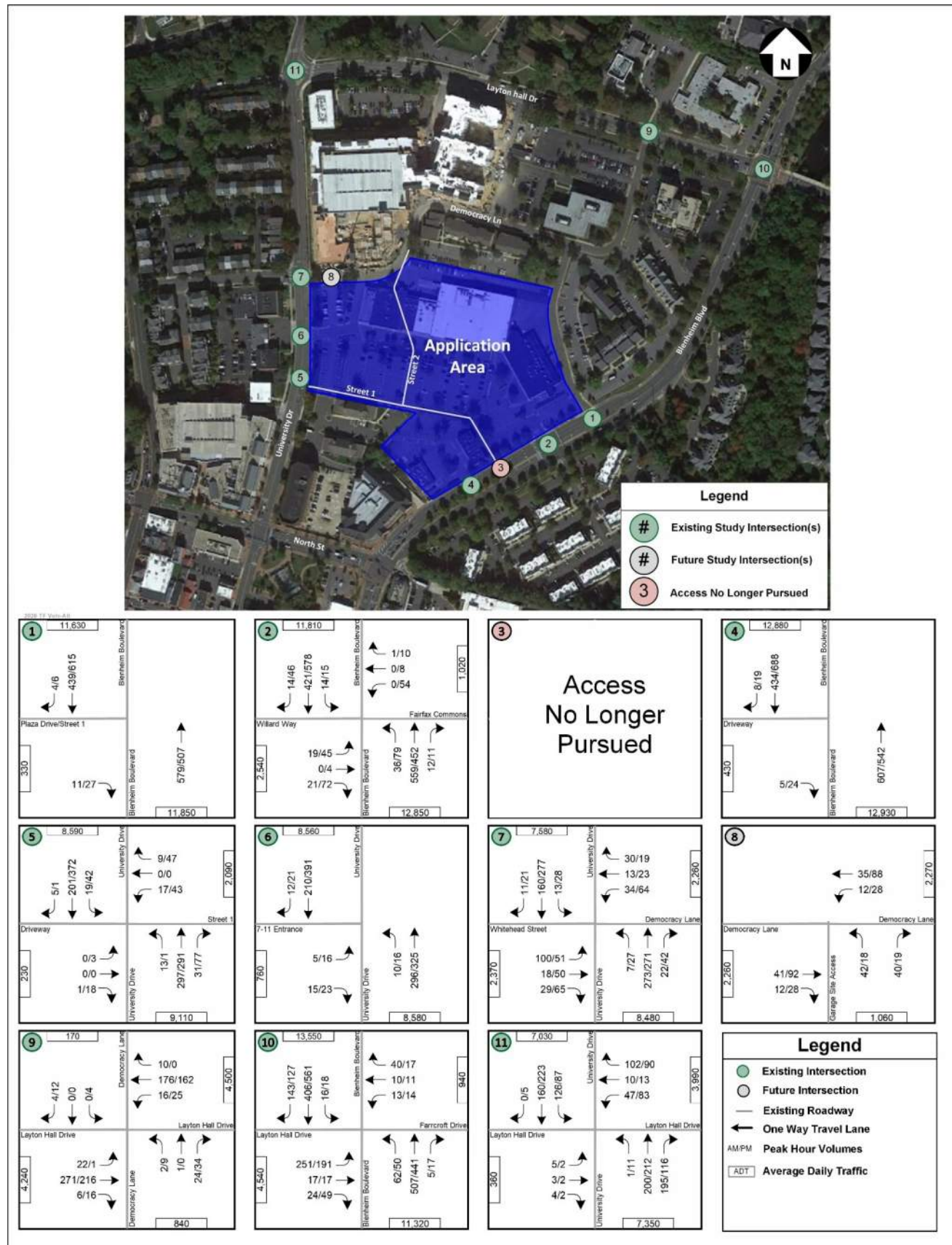
Future with Development (2028) – Alternate Scenario without Right-Out at Blenheim Boulevard (Intersection 3)

Under this analysis scenario, the right-out access on Blenheim Boulevard at Intersection 3 is not pursued. As a result, all site-generated trips that would have used the right-out access at Intersection 3 are reassigned to Intersection 2. This configuration reflects the preferred site access arrangement developed following discussions with, and feedback from, City staff since the previous application submission. Removal of the right-out access also allows this area to provide additional open space and enhanced pedestrian accommodation.

The revised site-generated trip distribution resulting from this alternate access configuration is illustrated in Figure 44. The corresponding future with development (2028) volumes under this alternate scenario, are presented in Figure 46.







Future with Development (2028) – No Right-Out Access on Blenheim Boulevard

Capacity analysis was performed at the intersections within the study area during the weekday morning and evening peak hours under Future with Development conditions. *Synchro Version 11* was used to analyze the study intersections based on the Highway Capacity Manual (HCM) methodology and includes level of service (LOS), delay, and queue length comparisons for the turning movements analyzed.

Existing peak hour factors found in the field were used, except where the field peak hour factor was lower than 0.92 in which case a minimum value of 0.92 was used, consistent with VDOT analysis guidelines.

The results of the intersection analysis are presented in Table 18 and are expressed in LOS and delay (seconds per vehicle) per lane group. The mitigation analysis results are shown in grey. The 95th percentile queue results for each intersection are also presented in Table 12 and are expressed in feet, along with the 50th percentile queue results for each of the signalized intersections. The detailed analysis worksheets are included in Appendix M.

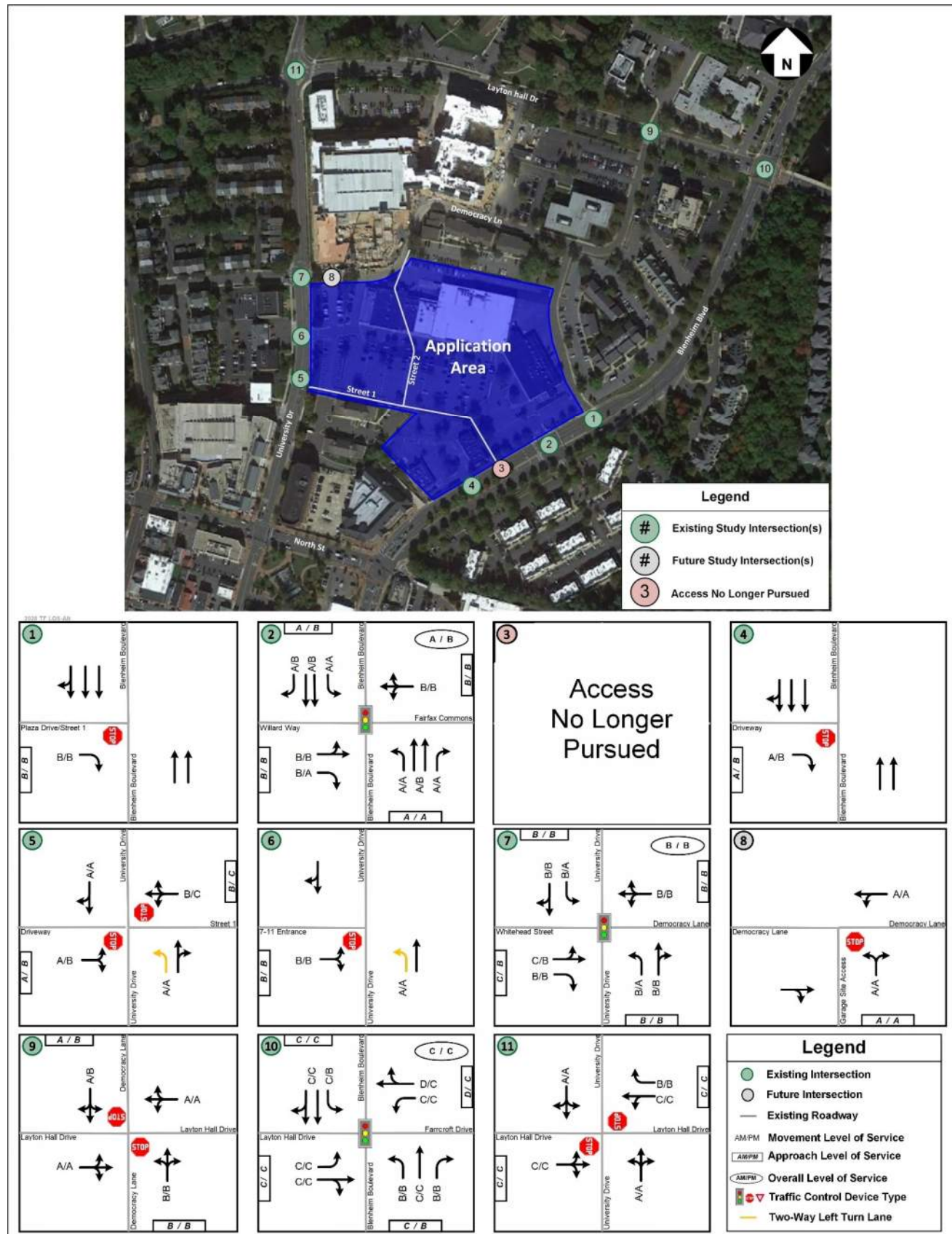
Table 18: Future with Development Intersection Analysis (2028)- Alternate Scenario

No.	Intersection (Movement)	Effective Storage Length (ft.) (1)	AM Peak Hour				PM Peak Hour			
			LOS	Delay (sec/veh)	50th % Queue (ft.) (2)	95th % Queue (ft.)	LOS	Delay (sec/veh)	50th % Queue (ft.) (2)	95th % Queue
1	Blenheim Boulevard (N/S) at Plaza Drive (E/W) Overall Intersection (TWSC) Eastbound Approach Eastbound Right		B B	10.0 10.0		3	B B	10.7 10.7		3
2	Blenheim Boulevard (N/S) at Fairfax Commons (E/W) Overall Intersection (Signalized) Eastbound Approach Eastbound Left/Thru Eastbound Right Westbound Approach Westbound Left/Thru/Right Northbound Approach Northbound Left Northbound Thru Northbound Right Southbound Approach Southbound Left Southbound Thru Southbound Right		A B B B B B A A A A A A A A	9.2 18.1 17.7 18.5 17.3 17.3 8.7 7.1 8.9 7.2 9.0 7.6 9.1 7.9		22 0 0 0 0 13 115 0 0 7 1 0 0	B B B A B A A B A B A B B	12.2 17.9 17.3 18.3 18.1 18.1 9.9 9.1 10.1 8.6 12.4 9.6 12.6 10.5		46 18 59 27 101 0 8 144 2
4	Blenheim Boulevard (N/S) at Existing Driveway (E/W) Overall Intersection (TWSC) Eastbound Approach Eastbound Right		A A	9.7 9.7		0	B B	10.9 10.9		3
5	University Drive (N/S) at Street 1(E/W) Overall Intersection (TWSC) Eastbound Approach Eastbound Left/Thru/Right Westbound Approach Westbound Left/Thru/Right Northbound Approach Northbound Left Southbound Approach Southbound Left		A A B B A A	9.4 9.4 13.4 13.4 7.7 8.0		0 5 0 3	B B C C A A	12.2 12.2 17.6 17.6 8.1 8.2		3 25 0 3

No.	Intersection (Movement)	Effective Storage Length (ft.) [1]	AM Peak Hour				PM Peak Hour			
			LOS	Delay (sec/veh)	50th % Queue (ft.) [2]	95th % Queue (ft.)	LOS	Delay (sec/veh)	50th % Queue (ft.) [2]	95th % Queue
6	University Drive (N/S) at 7-11 Driveway (N/S)									
	Overall Intersection (TWSC)									
	Eastbound Approach		B	10.1			B	12.2		
	Eastbound Left/Thru/Right		B	10.1		3	B	12.2		8
7	University Drive (N/S) at Whitehead Street/Democracy Lane (E/W)									
	Overall Intersection (Signalized)									
	Eastbound Approach		C	20.0			B	18.4		
	Eastbound Left/Thru		C	21.0	28	108	B	19.4	14	92
8	Democracy Lane (E/W) at Garage Entrance (N/S)									
	Overall Intersection (TWSC)									
	Westbound Approach									
	Westbound Left		A	7.3		0	A	7.5		3
9	Layton Hall Drive (E/W) at Democracy Lane (N/S)									
	Overall Intersection (TWSC)									
	Eastbound Approach									
	Eastbound Left		A	7.7		3	A	7.6		0
10	Blenheim Boulevard (N/S) at Layton Hall Drive (E/W)									
	Overall Intersection (Signalized)		C	25.2			C	21.5		
	Eastbound Approach		C	32.2			C	27.6		
	Eastbound Left		C	33.3	130	315	C	28.8	92	197
11	University Drive (N/S) at Layton Hall Drive (E/W)									
	Background Development: University Drive Bike lane Improvement									
	Overall Intersection (TWSC)									
	Eastbound Approach		C	17.6			C	16.2		
12	University Drive (N/S) at Layton Hall Drive (E/W)									
	Eastbound Left/Thru/Right		C	17.6		3	C	16.2		145
	Westbound Approach		C	15			C	17.3		
	Westbound Left/Thru		C	22.3		23	C	23.6		19
13	University Drive (N/S) at Layton Hall Drive (E/W)									
	Westbound Right		B	10.9		13	B	10.6		35
	Northbound Approach									
	Northbound Left/Thru/Right		A	7.6		0	A	7.8		38
14	University Drive (N/S) at Layton Hall Drive (E/W)									
	Southbound Approach									
	Southbound Left/Thru/Right		A	8.6		10	A	8.2		18

NOTES:

- [1] Effective storage length is based on the storage length plus one-half of the taper length per TOSAM guidelines.
[2] 50th Percentile Queues are not reported for TWSC intersections under HCM Methodology.



As seen, with the removal of the right-out, the intersection delays at Intersection 2 are observed to go up by 0.3 seconds in the AM peak hour and 0.1 seconds PM peak hour (overall intersection delay). This change is operationally insignificant and indicates that the reassigned site traffic can be accommodated with minimal effect on intersection performance for Intersection 2 (Blenheim Boulevard and Fairfax Commons Access).

Overall Comparison of Intersection Capacity and Queuing Analysis Results

As described in the previous sections, vehicular capacity analysis was performed for the following three scenarios:

- **Existing (2026) Scenario** – assumes traffic volume of 2023 plus additional traffic due to a 1% annual growth rate.
- **Future without Development 2028** – assumes traffic volume of 2023 plus additional traffic due to a 1% annual growth rate.
- **Future with Development 2028** – assumes Future without Development 2028 traffic plus traffic generated by the proposed Courthouse Plaza Development (Phase 1). Trips associated with the inline retail to be removed (approximately 25.2 kSF) were removed from the existing driveways.

A comparison of the delays and LOS results is presented in Table 19 and the queue comparison for the study scenarios is included in Table 20 and Table 21.

Table 19: Delay Comparison Table

No.	Intersection (Movement)	Level of Service (LOS) (Sec./Veh.)					
		AM Peak Hour			PM Peak Hour		
		2026 EX	2028 FB	2028 TF	2026 EX	2028 FB	2028 TF
1	Blenheim Boulevard (N/S) at Plaza Drive (E/W)						
	Overall Intersection (TWSC)						
	<i>Eastbound Approach</i>	<i>B (10.9)</i>	<i>B (10)</i>	<i>B (10)</i>	<i>B (11.7)</i>	<i>B (10.7)</i>	<i>B (10.7)</i>
	<i>Eastbound Right</i>	<i>B (10.9)</i>	<i>B (10)</i>	<i>B (10)</i>	<i>B (11.7)</i>	<i>B (10.7)</i>	<i>B (10.7)</i>
2	Blenheim Boulevard (N/S) at Fairfax Commons (E/W)						
	Overall Intersection (Signalized)	A (8.8)	A (8.7)	A (9.2)	B (12)	B (12.2)	B (12.2)
	<i>Eastbound Approach</i>	<i>B (18.3)</i>	<i>B (18.1)</i>	<i>B (18.1)</i>	<i>B (17.7)</i>	<i>B (17.8)</i>	<i>B (17.9)</i>
	<i>Eastbound Thru/Left</i>	<i>B (17.9)</i>	<i>B (17.9)</i>	<i>B (17.7)</i>	<i>B (17)</i>	<i>B (17.2)</i>	<i>B (17.3)</i>
	<i>Eastbound Right</i>	<i>B (18.7)</i>	<i>B (18.5)</i>	<i>B (18.5)</i>	<i>B (18.1)</i>	<i>B (18.2)</i>	<i>A (18.3)</i>
	<i>Westbound Approach</i>	<i>B (17.7)</i>	<i>B (17.6)</i>	<i>B (17.3)</i>	<i>B (17.8)</i>	<i>B (18)</i>	<i>B (18.1)</i>
	<i>Westbound Left/Thru/Right</i>	<i>B (17.7)</i>	<i>B (17.6)</i>	<i>B (17.3)</i>	<i>B (17.8)</i>	<i>B (18)</i>	<i>B (18.1)</i>
	<i>Northbound Approach</i>	<i>A (8.4)</i>	<i>A (8.3)</i>	<i>A (8.7)</i>	<i>A (9.9)</i>	<i>A (10)</i>	<i>A (9.9)</i>
	<i>Northbound Left</i>	<i>A (6.8)</i>	<i>A (6.8)</i>	<i>A (7.1)</i>	<i>A (9)</i>	<i>A (9.1)</i>	<i>A (9.1)</i>
	<i>Northbound Thru</i>	<i>A (8.6)</i>	<i>A (8.4)</i>	<i>A (8.9)</i>	<i>B (10.1)</i>	<i>B (10.1)</i>	<i>B (10.1)</i>
	<i>Northbound Right</i>	<i>A (6.9)</i>	<i>A (6.9)</i>	<i>A (7.2)</i>	<i>A (8.7)</i>	<i>A (8.7)</i>	<i>A (8.6)</i>
	<i>Southbound Approach</i>	<i>A (8.6)</i>	<i>A (8.6)</i>	<i>A (9)</i>	<i>B (12)</i>	<i>B (12.3)</i>	<i>B (12.4)</i>
	<i>Southbound Left</i>	<i>A (7.2)</i>	<i>A (7.3)</i>	<i>A (7.6)</i>	<i>A (9.4)</i>	<i>A (9.6)</i>	<i>A (9.6)</i>
	<i>Southbound Thru</i>	<i>A (8.7)</i>	<i>A (8.7)</i>	<i>A (9.1)</i>	<i>B (12.2)</i>	<i>B (12.5)</i>	<i>B (12.6)</i>
	<i>Southbound Right</i>	<i>A (7.5)</i>	<i>A (7.5)</i>	<i>A (7.9)</i>	<i>B (10.2)</i>	<i>B (10.4)</i>	<i>B (10.5)</i>
3	Access not Longer Pursued						
4	Blenheim Boulevard (N/S) at Existing Driveway (E/W)						
	Overall Intersection (TWSC)						
	<i>Eastbound Approach</i>	<i>A (0)</i>	<i>A (9.7)</i>	<i>A (9.7)</i>	<i>A (0)</i>	<i>B (10.9)</i>	<i>B (10.9)</i>
	<i>Eastbound Right</i>	<i>A (0)</i>	<i>A (9.7)</i>	<i>A (9.7)</i>	<i>A (0)</i>	<i>B (10.9)</i>	<i>B (10.9)</i>
5	University Drive (N/S) at Existing Driveway (E/W) (3-Legged)						
	Overall Intersection (TWSC)						
	<i>Eastbound Approach</i>	<i>A (8.9)</i>	<i>A (9.4)</i>		<i>B (10.4)</i>	<i>B (11.4)</i>	
	<i>Eastbound Left/Right</i>	<i>A (8.9)</i>	<i>A (9.4)</i>		<i>B (10.4)</i>	<i>B (11.4)</i>	
	<i>Northbound Approach</i>						
	<i>Northbound Left</i>	<i>A (7.7)</i>	<i>A (7.7)</i>		<i>A (8.2)</i>	<i>A (8.2)</i>	
5	University Drive (N/S) at Street 1(E/W) (4-Legged)						
	Overall Intersection (TWSC)						
	<i>Eastbound Approach</i>			<i>A (9.4)</i>			<i>B (12.2)</i>
	<i>Eastbound Left/Thru/Right</i>			<i>A (9.4)</i>			<i>B (12.2)</i>
	<i>Westbound Approach</i>			<i>B (13.4)</i>			<i>C (17.6)</i>
	<i>Westbound Left/Thru/Right</i>			<i>B (13.4)</i>			<i>C (17.6)</i>
	<i>Northbound Approach</i>						
	<i>Northbound Left</i>			<i>A (7.7)</i>			<i>A (8.1)</i>
	<i>Northbound Thru</i>						
	<i>Southbound Approach</i>						
	<i>Southbound Left</i>			<i>A (8)</i>			<i>A (8.2)</i>
	<i>Southbound Thru</i>						

No.	Intersection (Movement)	Level of Service (LOS) (Sec./Veh.)					
		AM Peak Hour			PM Peak Hour		
		2026 EX	2028 FB	2028 TF	2026 EX	2028 FB	2028 TF
6	University Drive (N/S) at 7-11 Driveway (E/W) (4-Legged)						
	Overall Intersection (TWSC)						
	<i>Eastbound Approach</i>	A (9.9)	B (10.6)		B (13.4)	C (16)	
	Eastbound Left/Thru/Right	A (9.9)	B (10.6)		B (13.4)	C (16)	
	<i>Westbound Approach</i>	B (12.5)	B (12.9)		B (13.8)	C (16.3)	
	Westbound Left	B (13.6)	B (14)		C (16.8)	C (21.6)	
	Westbound Thru/Right	A (9.4)	B (10)		B (10.9)	B (11.7)	
	<i>Northbound Approach</i>						
6	University Drive (N/S) at 7-11 Driveway (N/S) (3-Legged)						
	Overall Intersection (TWSC)						
	<i>Eastbound Approach</i>			B (10.1)			B (12.2)
	Eastbound Left/Thru/Right			B (10.1)			B (12.2)
	<i>Northbound Approach</i>						
	Northbound Thru/Left			A (7.8)			A (8.3)
7	University Drive (N/S) at Whitehead Street/Democracy Lane (E/W)						
	Overall Intersection (Signalized)	B (10.7)	B (11.2)	B (15.1)	B (10.4)	B (11)	B (13)
	<i>Eastbound Approach</i>	B (15.4)	B (17.3)	C (20)	B (14)	B (15.6)	B (18.4)
	Eastbound Left/Thru	B (16.1)	B (18)	C (21)	B (14.8)	B (16.4)	B (19.4)
	Eastbound Right	B (12.8)	B (14.6)	B (16)	B (12.9)	B (14.3)	B (16.9)
	<i>Westbound Approach</i>	B (13.3)	B (15.2)	B (17.3)	B (14.7)	B (16.3)	B (19.7)
	Westbound Left/Thru/Right	B (13.3)	B (15.2)	B (17.3)	B (14.7)	B (16.3)	B (19.7)
	<i>Northbound Approach</i>	A (9.1)	A (9.3)	B (13.7)	A (8.8)	A (9.1)	B (10.6)
	Northbound Thru/Left (Northbound Left in 2028)	A (9.1)	A (7.5)	B (10.8)	A (8.8)	A (7.6)	A (8.8)
	Northbound Thru/Right	A (9.1)	A (9.3)	B (13.8)	A (8.8)	A (9.3)	B (10.7)
	<i>Southbound Approach</i>	A (8.7)	A (8.7)	B (12.6)	A (8.8)	A (9.1)	B (10.5)
	Southbound Thru/Left (Southbound Left in 2028)	A (8.7)	A (7.5)	B (11)	A (8.8)	A (7.4)	A (8.8)
	Southbound Thru/Right	A (8.7)	A (8.7)	B (12.7)	A (8.8)	A (9.2)	B (10.7)
8	Democracy Lane (E/W) at Garage Entrance (N/S)						
	Overall Intersection (TWSC)						
	<i>Westbound Approach</i>						
	Westbound Left			A (7.3)			A (7.5)
	<i>Northbound Approach</i>			A (9.2)			A (9.8)
9	Layton Hall Drive (E/W) at Democracy Lane (N/S)						
	Overall Intersection (TWSC)						
	<i>Eastbound Approach</i>						
	Eastbound Left	A (7.7)	A (7.7)	A (7.7)	A (7.6)	A (7.6)	A (7.6)
	<i>Westbound Approach</i>						
	Westbound Left	A (7.9)	A (7.9)	A (7.9)	A (7.8)	A (7.8)	A (7.9)
	<i>Northbound Approach</i>	B (11.6)	B (11.3)	B (10.8)	B (10.5)	B (10.5)	B (10.5)
	Northbound Left/Thru/Right	B (11.6)	B (11.3)	B (10.8)	B (10.5)	B (10.5)	B (10.5)
	<i>Southbound Approach</i>	A (9.4)	A (9.4)	A (9.4)	B (10.1)	B (10.1)	B (10.3)
	Southbound Left/Thru/Right	A (9.4)	A (9.4)	A (9.4)	B (10.1)	B (10.1)	B (10.3)

No.	Intersection (Movement)	Level of Service (LOS) (Sec./Veh.)					
		AM Peak Hour			PM Peak Hour		
		2026 EX	2028 FB	2028 TF	2026 EX	2028 FB	2028 TF
10	Blenheim Boulevard (N/S) at Layton Hall Drive (E/W)						
	Overall Intersection (Signalized)	C (25.4)	C (24.4)	C (25.2)	C (20.9)	C (21.2)	C (21.5)
	<i>Eastbound Approach</i>	<i>C (33.4)</i>	<i>C (31.6)</i>	<i>C (32.2)</i>	<i>C (27.1)</i>	<i>C (27.4)</i>	<i>C (27.6)</i>
	Eastbound Left	C (34.6)	C (32.7)	C (33.3)	C (28.3)	C (28.5)	C (28.8)
	Eastbound Thru/Right	C (26.4)	C (25.2)	C (25.1)	C (24)	C (24.2)	C (24.2)
	<i>Westbound Approach</i>	<i>D (40)</i>	<i>D (37)</i>	<i>D (38.2)</i>	<i>C (30.4)</i>	<i>C (30.9)</i>	<i>C (31.3)</i>
	Westbound Left	D (35)	C (32.9)	C (34)	C (29)	C (29.4)	C (29.8)
	Westbound Thru/Right	D (41.3)	D (38.1)	D (39.3)	C (31.1)	C (31.6)	C (32)
	<i>Northbound Approach</i>	<i>C (24.1)</i>	<i>C (23.2)</i>	<i>C (24)</i>	<i>B (18.9)</i>	<i>B (19.3)</i>	<i>B (19.4)</i>
	Northbound Left	B (16.1)	B (15.7)	B (16.2)	B (14.5)	B (14.6)	B (14.8)
	Northbound Thru	C (25.2)	C (24.2)	C (25)	B (19.6)	B (20)	C (20.1)
	Northbound Right	B (15.3)	B (15)	B (15.5)	B (14)	B (14.1)	B (14.2)
	<i>Southbound Approach</i>	<i>C (21.2)</i>	<i>C (20.6)</i>	<i>C (21.3)</i>	<i>B (19.6)</i>	<i>B (19.9)</i>	<i>C (20.2)</i>
	Southbound Left	B (18.6)	B (18)	C (18.6)	B (15.2)	B (15.4)	B (15.6)
	Southbound Thru/Right	C (21.2)	C (20.7)	C (21.5)	B (19.7)	B (19.9)	C (20.3)
11	University Drive (N/S) at Layton Hall Drive (E/W)						
	Overall Intersection (TWSC)						
	<i>Eastbound Approach</i>	<i>B (14.7)</i>			<i>B (13.3)</i>		
	Eastbound Left/Thru/Right	B (14.7)			B (13.3)		
	<i>Westbound Approach</i>	<i>C (20.8)</i>			<i>C (18.8)</i>		
	Westbound Left/Thru	C (20.8)			C (18.8)		
	Westbound Right	A (0)			A (0)		
	<i>Northbound Approach</i>						
	Northbound Left/Thru	A (7.6)			A (7.7)		
	Northbound Right	A (0)			A (0)		
11	University Drive (N/S) at Layton Hall Drive (E/W)						
	Background Development: University Drive Bike lane Improvement						
	Overall Intersection (TWSC)						
	<i>Eastbound Approach</i>		<i>C (16.9)</i>	<i>C (17.6)</i>		<i>C (15.8)</i>	<i>C (16.2)</i>
	Eastbound Left/Thru/Right		C (16.9)	C (17.6)		C (15.8)	C (16.2)
	<i>Westbound Approach</i>		<i>B (14.4)</i>	<i>C (15)</i>		<i>C (16.6)</i>	<i>C (17.3)</i>
	Westbound Left/Thru		C (21)	C (22.3)		C (22.5)	C (23.6)
	Westbound Right		B (10.7)	B (10.9)		B (10.5)	B (10.6)
	<i>Northbound Approach</i>						
	Northbound Left/Thru/Right		A (7.5)	A (7.6)		A (7.7)	A (7.8)
11	<i>Southbound Approach</i>						
	Southbound Left/Thru/Right		A (8.5)	A (8.6)		A (8.2)	A (8.2)

Note: EX = Existing, FB = Future Background, TF = Total Future/Future with Development, R-O: Right-Out

As mentioned previously, it is desirable to achieve a level of service (LOS) of D or better for each lane group at the intersections. Table 19 shows that the capacity analysis results indicate that all movements operate at acceptable LOS under all analysis scenarios.

Table 20: Queue Comparison Table (50th Percentile – for Signalized Intersections Only)

No.	Intersection (Movement)	Effective Storage Length (ft.)	50th Percentile Queue (ft.)					
			AM Peak Hour			PM Peak Hour		
			2026 EX	2028 FB	2028 TF	2026 EX	2028 FB	2028 TF
2	Blenheim Boulevard (N/S) at Fairfax Commons (E/W)							
	Overall Intersection (Signalized)							
	<i>Eastbound Approach</i>							
	Eastbound Thru/Left		3	3	3	18	14	14
	Eastbound Right		0	0	0	0	0	0
	<i>Westbound Approach</i>							
	Westbound Left/Thru/Right		0	0	0	0	20	20
	<i>Northbound Approach</i>							
	Northbound Left	120	0	0	0	11	9	10
	Northbound Thru		0	0	0	112	33	32
	Northbound Right		0	0	0	0	0	0
	<i>Southbound Approach</i>							
7	University Drive (N/S) at Whitehead Street/Democracy Lane (E/W)							
	Overall Intersection (Signalized)							
	<i>Eastbound Approach</i>							
	Eastbound Left/Thru		15	16	28	11	13	14
	Eastbound Right		0	0	0	0	0	0
	<i>Westbound Approach</i>							
	Westbound Left/Thru/Right		4	4	12	10	11	13
	<i>Northbound Approach</i>							
	Northbound Thru/Left (Northbound Left in 2028)	150	18	1	1	17	3	3
	Northbound Thru/Right		18	37	65	17	36	38
	<i>Southbound Approach</i>							
	Southbound Thru/Left (Southbound Left in 2028)		10	1	2	17	1	3
10	Blenheim Boulevard (N/S) at Layton Hall Drive (E/W)							
	Overall Intersection (Signalized)							
	<i>Eastbound Approach</i>							
	Eastbound Left		136	115	130	82	86	92
	Eastbound Thru/Right		9	7	7	7	7	8
	<i>Westbound Approach</i>							
	Westbound Left		8	7	7	7	7	7
	Westbound Thru/Right		7	5	6	5	5	5
	<i>Northbound Approach</i>							
	Northbound Left	250	24	20	21	13	14	14
	Northbound Thru		267	221	234	144	153	154
	Northbound Right	230	0	0	0	0	0	0
	<i>Southbound Approach</i>							
	Southbound Left	150	6	5	5	5	5	5
	Southbound Thru/Right		157	134	142	148	156	161

Note: EX = Existing, FB = Future Background, TF = Total Future/Future with Development

Table 20 shows that all 50th percentile queues are accommodated within the available storage for all movements at the signalized intersections in the study area.

Table 21: Queue Comparison Table (95th Percentile)

No.	Intersection (Movement)	95th Percentile Queues (ft.)						
		Effective Storage Length (ft.)	AM Peak Hour			PM Peak Hour		
	2026 EX		2028 FB	2028 TF	2026 EX	2028 FB	2028 TF	
1	Blenheim Boulevard (N/S) at Plaza Drive (E/W) Overall Intersection (TWSC) Eastbound Approach Eastbound Right		0	0	3	5	5	3
2	Blenheim Boulevard (N/S) at Fairfax Commons (E/W) Overall Intersection (Signalized) Eastbound Approach Eastbound Thru/Left Eastbound Right Westbound Approach Westbound Left/Thru/Right Northbound Approach Northbound Left Northbound Thru Northbound Right Southbound Approach Southbound Left Southbound Thru Southbound Right	120 <						

No.	Intersection (Movement)	Effective Storage Length (ft.)	95th Percentile Queues (ft.)					
			AM Peak Hour			PM Peak Hour		
			2026 EX	2028 FB	2028 TF	2026 EX	2028 FB	2028 TF
6	University Drive (N/S) at 7-11 Driveway (E/W) (4-Legged)							
	Overall Intersection (TWSC)							
	<i>Eastbound Approach</i>							
	Eastbound Left/Thru/Right		3	3		8	10	
	<i>Westbound Approach</i>							
	Westbound Left		3	3		10	15	
	Westbound Thru/Right		0	0		5	8	
	<i>Northbound Approach</i>							
6	University Drive (N/S) at 7-11 Driveway (N/S) (3-Legged)							
	Overall Intersection (TWSC)							
	<i>Eastbound Approach</i>							
	Eastbound Left/Thru/Right				3			8
	<i>Northbound Approach</i>							
	Northbound Thru/Left				0			0
	<i>Southbound Approach</i>							
	Southbound Thru/Left (EX Only)		0	0		3	3	
7	University Drive (N/S) at Whitehead Street/Democracy Lane (E/W)							
	Overall Intersection (Signalized)							
	<i>Eastbound Approach</i>							
	Eastbound Left/Thru		92	105	108	79	88	92
	Eastbound Right		9	10	10	28	31	32
	<i>Westbound Approach</i>							
	Westbound Left/Thru/Right		33	38	60	71	79	93
	<i>Northbound Approach</i>							
	Northbound Thru/Left (Northbound Left in 2028)	150	92	12	12	94	27	28
	Northbound Thru/Right		92	201	204	94	197	210
	<i>Southbound Approach</i>							
	Southbound Thru/Left (Southbound Left in 2028)		56	9	17	91	16	29
	Southbound Thru/Right		56	122	123	91	193	205
8	Democracy Lane (E/W) at Garage Entrance (N/S)							
	Overall Intersection (TWSC)							
	<i>Westbound Approach</i>							
	Westbound Left				0			3
9	Layton Hall Drive (E/W) at Democracy Lane (N/S)							
	Overall Intersection (TWSC)							
	<i>Eastbound Approach</i>							
9	Eastbound Left		3	3	3	0	0	0
	<i>Westbound Approach</i>							
	Westbound Left		0	0	0	0	0	3
	<i>Northbound Approach</i>							
	Northbound Left/Thru/Right		3	3	3	5	5	5
	<i>Southbound Approach</i>							
	Southbound Left/Thru/Right		0	0	0	3	3	3

No.	Intersection (Movement)	95th Percentile Queues (ft.)						
		Effective Storage Length (ft.)	AM Peak Hour			PM Peak Hour		
			2026 EX	2028 FB	2028 TF	2026 EX	2028 FB	2028 TF
10	Blenheim Boulevard (N/S) at Layton Hall Drive (E/W)							
	Overall Intersection (Signalized)							
	<i>Eastbound Approach</i>							
	Eastbound Left		295	286	315	180	187	197
	Eastbound Thru/Right		45	45	45	47	47	47
	<i>Westbound Approach</i>							
	Westbound Left		35	33	34	29	30	30
	Westbound Thru/Right		50	51	51	36	37	37
	<i>Northbound Approach</i>							
	Northbound Left	250	50	51	51	37	38	38
	Northbound Thru		509	518	522	354	372	375
	Northbound Right	230	0	0	0	0	0	0
11	University Drive (N/S) at Layton Hall Drive (E/W)							
	Overall Intersection (TWSC)							
	<i>Eastbound Approach</i>							
	Eastbound Left/Thru/Right		3			0		
	<i>Westbound Approach</i>							
	Westbound Left/Thru		20			25		
	Westbound Right		0			0		
	<i>Northbound Approach</i>							
	Northbound Left/Thru		0			0		
	Northbound Right		0			0		
	<i>Southbound Approach</i>							
	Southbound Left/Thru/Right		10			5		
11	University Drive (N/S) at Layton Hall Drive (E/W)							
	Background Development: University Drive Bike lane Improvement							
	Overall Intersection (TWSC)							
	<i>Eastbound Approach</i>							
	Eastbound Left/Thru/Right			3	3	3	145	
	<i>Westbound Approach</i>							
	Westbound Left/Thru			20	23	35	19	
	Westbound Right			13	13	10	35	
	<i>Northbound Approach</i>							
	Northbound Left/Thru/Right			0	0	0	38	
	<i>Southbound Approach</i>							
	Southbound Left/Thru/Right			10	10	8	18	

Note: EX = Existing, FB = Future Background, TF = Total Future/Future with Development

Table 21 shows that the 95th percentile queues are accommodated in the available storage bays for all lane movements at the study intersections within the study area.

Supplemental SimTraffic Analysis for Democracy Lane and University Drive Intersection

Queuing analyses for the intersection of Democracy Lane and University Drive (Intersection 7) were performed using *SimTraffic*, version 11. *SimTraffic* micro-simulation model calibration was based on volume as per the collected counts which serve the basis of this TIA.

SimTraffic analysis for the intersection in Existing (2026) and Future with Development (2028) conditions was performed using *SimTraffic*, version 11. All *SimTraffic* model parameters and assumptions for this report, including simulation seeding time, determination of the number of simulation runs, simulation parameters, and MOE outputs are consistent with VDOT's TOSAM - Version 2.0 guidelines. The parameters used for simulation are depicted in Table 22. Per Section 7.6 of the TOSAM, all other parameters not addressed in the table should not be modified.

Table 22: SimTraffic Input Parameters

SimTraffic (Ver. 11) Analysis Input Parameters	
Number of Intervals	One (1) Seeding Interval and Four (4) Recording Intervals
Seeding and Recording Interval Duration	15-minutes (each)
Peak Hour Factor (PHF) Adjustment	Selected "Yes" to One of the Four (1 of 4) Recording Intervals Selected "No" for all Other Intervals
Anti-PHF Adjustment	Selected "Yes" for Three (3) Recording Intervals, where PHF Adjustment is set to "No" Selected "No" for the seeding and recording intervals, where PHF Adjustment is set to "Yes"
Number of Runs	Based on the Microsimulation Sample Size Direction Guidance

10 model runs were conducted, with queuing reports representing the average of the 10 simulation runs generated, starting with random seed 1, except where noted in the results. A 15-minute seeding period was utilized. The simulations were recorded for four, 15-minute periods for a total of one hour, with anti-PHF volume adjustment for periods 1, 3, and 4, and PHF volume adjustment for period 2.

The input parameters for the SimTraffic conditions are consistent with the previous Synchro results for all inputs. The vehicular and pedestrian volumes that were analyzed are shown previously in the Existing and Future with Development Volume graphics. The intersection phasing is consistent with what was presented in the Synchro analysis and is shown below for reference. A summary of the number of pedestrian calls assumed at the intersection of University Drive and Whitehead Street/Democracy Lane in the Existing and Future scenarios are shown in Table 24. Please note that for the purposes of this analysis it was conservatively assumed that each pedestrian would have an individual pedestrian call. This is conservative as a number of the pedestrians are anticipated to be going to/from the bus stop which would have platooned pedestrian trips.

PHASING SETTINGS	 2-NBTL	 3-Ped	 4-WBTL	 6-SBTL	 8-EBTL
Minimum Initial (s)	7.0	1.0	7.0	7.0	7.0
Minimum Split (s)	22.0	24.0	13.0	22.0	13.0
Maximum Split (s)	55.0	24.0	31.0	55.0	31.0
Yellow Time (s)	3.5	3.0	3.9	3.5	3.9
All-Red Time (s)	1.5	1.0	2.1	1.5	2.1

Figure 48: Phasing Parameters

Table 23: Analyzed Pedestrian Calls at University Drive and Whitehead Street/Democracy

	Number of Pedestrian Calls	
	AM	PM
Existing	8	12
Future with Development	20	24

Table 24 shows the results of the *SimTraffic* analysis for the existing (2026) conditions.

Table 24: Existing Conditions (2026) - Simulation Analysis Results

No.	Intersection (Movement)	Effective Storage Length (ft.)	SimTraffic Delay (s)	AM Peak		SimTraffic Delay (s)	PM Peak	
				50th % Queue (ft.)	Max Queue (ft.)		50th % Queue (ft.)	Max Queue (ft.)
7	University Drive (N/S) at Whitehead Street/Democracy Lane (E/W) Overall Intersection (Signalized)		6.1			8.5		
	Eastbound Approach							
	Eastbound Left/Thru		8.8	41	113	11.6	43	96
	Eastbound Right		3.5	17	54	4.0	28	64
	Westbound Approach							
	Westbound Left/Thru/Right		10.1	21	67	12.4	40	98
	Northbound Approach							
	Northbound Left		7.2	34	90	11.2	47	115
	Northbound Thru/Right		6.2	34	88	8.0	32	100
	Southbound Approach							
	Southbound Left	150	8.3	41	117	12.0	49	110
	Southbound Thru/Right		4.8	18	78	8.3	36	88

Based on the *SimTraffic* results show, the westbound left/thru/right movement (Democracy Lane) is expected to have queue lengths of 67 feet in the AM peak hour and 98 feet in the PM peak hour. Based on the PM peak hour maximum queue, this is equivalent to approximately four (4) vehicle lengths(25 feet per vehicle).

Table 25 shows the results of the *SimTraffic* analysis for the Future without Development (2028) conditions.

Table 25: Future without Development (2028) - Simulation Analysis Results

No.	Intersection (Movement)	Effective Storage Length (ft.)	SimTraffic Delay (s)	AM Peak		SimTraffic Delay (s)	PM Peak	
				50th % Queue (ft.)	Max Queue (ft.)		50th % Queue (ft.)	Max Queue (ft.)
7	University Drive (N/S) at Whitehead Street/Democracy Lane (E/W) Overall Intersection (Signalized)		7.3			9.9		
	Eastbound Approach							
	Eastbound Left/Thru		11.0	47	110	14.2	46	107
	Eastbound Right		3.7	16	56	4.5	29	64
	Westbound Approach							
	Westbound Left/Thru/Right		11.2	21	66	12.9	43	103
	Northbound Approach							
	Northbound Left		9.7	4	39	15.0	19	71
	Northbound Thru/Right		7.5	59	128	8.7	69	131
	Southbound Approach							
	Southbound Left	150	12.1	3	30	13.8	7	32
	Southbound Thru/Right		5.5	57	148	9.8	77	172

Based on the *SimTraffic* results show, the westbound left/thru/right movement (Democracy Lane) experienced 66 feet queue length during the AM peak hour and 103 feet queue length during the PM peak hour. Based on the PM peak hour maximum queue of 103 feet, this is equivalent to approximately four (4) vehicle lengths (25 feet per vehicle).

Table 26 shows the results of the *SimTraffic* analysis at the intersection of Democracy Lane and University Drive for the Future with Development (2028) conditions. The results show the delay, average and maximum queues expressed in feet.

Table 26: Future with Development (2028) Conditions (Increased Pedestrian Calls) – Simulation Analysis Results

No.	Intersection (Movement)	Effective Storage Length (ft.)	SimTraffic Delay (s)	AM Peak		SimTraffic Delay (s)	PM Peak	
				50th % Queue (ft.)	Max Queue (ft.)		50th % Queue (ft.)	Max Queue (ft.)
7	University Drive (N/S) at Whitehead Street/Democracy Lane (E/W) Overall Intersection (Signalized)		11.8			12.5		
	Eastbound Approach							
	Eastbound Left/Thru		18.2	59	123	16.3	51	127
	Eastbound Right		4	17	49	5.0	29	66
	Westbound Approach							
	Westbound Left/Thru/Right		15	37	92	16.0	49	115
	Northbound Approach							
	Northbound Left		17.3	6	52	18.0	18	67
	Northbound Thru/Right		12.1	79	146	11.8	84	131
	Southbound Approach							
	Southbound Left	150	22.5	11	48	20.0	17	75
	Southbound Thru/Right		8.4	69	160	12.2	91	221

Based on the *SimTraffic* results shown in Table 24 to Table 26, the 50th percentile queue and the maximum for the westbound left/thru/right movement (Democracy Lane) have peak hour queues of below 117 feet (the distance from the garage entrance to University Drive). These queues were visually observed in *SimTraffic* with an exclusive pedestrian phase. Based on the maximum queues in the PM peak hour of 115 feet, this represents queues of under-five (5) vehicle lengths, based on 25 feet per vehicle.

The delay and queuing results presented above are comparable to the Synchro results presented for the Existing (2026), Future without Development (2028) and Future with Development (2028) conditions. The *SimTraffic* results sheets are included in Appendix K.

Table 27 shows below the results of the *SimTraffic* analysis at the intersection of Democracy Lane and University Drive for the Future with Development (2028) conditions with existing ped calls. Table 27 reflects conditions using the existing pedestrian call volumes, with 8 calls during the AM peak hour and 12 calls during the PM peak hour. Whereas, Table 26 incorporates the projected increased pedestrian call volumes associated with future with development, with 20 calls in the AM peak hour and 24 calls in the PM peak hour.

This approach is used to isolate and evaluate the impact of increased pedestrian activity on vehicle queuing and delays. By comparing these two scenarios, the analysis highlights how additional pedestrian calls influence queue lengths and intersection performance during peak periods.

Table 27: Future with Development (2028) Conditions (Pedestrian Calls per Existing Conditions) – Simulation Analysis Results

No.	Intersection (Movement)	Effective Storage Length (ft.)	SimTraffic Delay (s)	AM Peak		SimTraffic Delay (s)	PM Peak	
				50th % Queue (ft.)	Max Queue (ft.)		50th % Queue (ft.)	Max Queue (ft.)
7	University Drive (N/S) at Whitehead Street/Democracy Lane (E/W) Overall Intersection (Signalized)		10.6			10.6		
	Eastbound Approach							
	Eastbound Left/Thru		16.4	61	144	14.8	48	117
	Eastbound Right		3.7	18	60	4.8	29	66
	Westbound Approach							
	Westbound Left/Thru/Right		14	38	91	12.6	48	112
	Northbound Approach							
	Northbound Left		12.1	5	55	14.8	16	70
	Northbound Thru/Right		11	73	140	9.5	73	132
	Southbound Approach							
	Southbound Left	150	17.6	9	37	15.6	17	72
	Southbound Thru/Right		7.8	66	144	10.6	84	197

From Table 26 and Table 27, the results indicate that increased pedestrian activity affects overall intersection delays during both the AM and PM peak hours, including the movement delays for the westbound movement (Democracy Lane). In the PM peak hour, westbound movement delay increases by 3.4 seconds. In the AM peak hour, westbound movement delay increases by approximately 1.0 second. Therefore, the results show that additional pedestrian activity has an impact on intersection performance, particularly during the PM peak, though the effects remain relatively minor and the intersection has sufficient capacity to accommodate higher pedestrian activity.

Conclusion

The analysis of the traffic operations for the proposed Courthouse Plaza Development supports the following major conclusions:

Principal Findings and Conclusions

Discussions regarding the study assumptions and relevant background information were held with City of Fairfax staff during the scoping meeting held on Friday March 13, 2026. A copy of the signed scoping document is included in Appendix A. Please note, the pre-application submission illustrated potential future phases are possible at the site that align with the overall Comprehensive Plan vision for this area, however, no future phases are included in this Transportation Impact Analysis. Potential future buildout at the site is studied in a separately submitted technical memorandum.

The analysis of the traffic operations for the proposed Courthouse Plaza Development supports the following major conclusions:

Analysis Components

- Based on comments from the City of Fairfax staff, traffic counts from 2023 with growth was applied to the major movements to account for a regional increase in existing traffic.
 - A 1.0% per year growth rate from the year 2023 to 2026.
- As determined based on discussions with City of Fairfax staff at the scoping meeting, the following growth was applied to the major movements to account for a regional increase in background traffic.
 - A 1.0% per year growth rate from the year 2023 to 2028
- A TDM/mode split reduction of 15 percent was applied to the residential use, as agreed upon by City of Fairfax staff.
- Under Future without Development (2028) includes two existing pad site developments, which are assumed to be fully built and operational by 2028. These pad site developments are estimated to generate approximately 19 trips during the AM peak hour, 42 trips during the PM peak hour, and 447 trips on a typical weekday.
- Under Future with Development (2028), the proposed development, will generate approximately 127 AM peak hour trips, 140 PM peak hour trips and 1,571 trips on a typical weekday per ITE Trip Generation Manual (11th Edition).
- The proposed development continues to generate fewer trips than the existing shopping center development at the site which is approximately 91.9 kSF in size.
- There are two (2) proposed access points to the development along University Drive: one utilizing Democracy Lane and another provided by the new Street 1 connection on the south side of the building
- Internal to the site, a north-south street has been planned (Street 2) east of the proposed building that intersects Democracy Lane. This configuration achieves the City's Comprehensive Plan vision of a grid system of streets within the Courthouse Plaza site.
- In this revised TIA submission, the extension of Street 1 to Blenheim Boulevard as a right-out exit is no longer proposed, allowing for additional open space and enhanced pedestrian accommodations through the area. For consistency with previous TIA submissions, two (2) scenarios are presented: one with the right-out exit at Blenheim Boulevard and one without it.

Multimodal Transportation Elements

- Sidewalks currently exist at all study intersections, with a minimum width of 5 feet and up to 10 feet. Further pedestrian safety and convenience will be enhanced by the proposed development, with additional pedestrian accommodations within the block.

- The analysis assumes the City Project 'University Drive Spine' as a background improvement for all Future (2028) scenarios.
- Four (4) bus routes operated by CUE system currently serve the site area. The system provides scheduled, low or no cost transportation services to George Mason University, to shopping centers and other locations within the City of Fairfax as well as the Vienna/Fairfax GMU WMATA station.

Infrastructure

- The Courthouse Plaza Development in existing conditions is accessed via multiple entrances on Blenheim Boulevard and University Drive.
- During the proposed redevelopment (2028), two new roadways (Street 1 and Street 2) will be constructed adjacent to the new multifamily building.
- Primary access to the site will continue to be provided via University Drive, Blenheim Boulevard, and Democracy Lane.
- The City of Fairfax project 'University Drive Spine', which provides multimodal improvements along University Drive with conversion of existing four- lane configuration to a three-lane configuration with Two-Way Left Turn Lanes (TWLTLs) and bike lanes is included in the analysis for all future scenarios.

Analysis Results

- All the study intersections operate at acceptable levels of service during all the study periods and analysis conditions.
- 95th percentile queues are contained within the available storage at the turning movements during all the study periods/conditions.
- The location of the garage entrance and the westbound queue along Democracy Lane is not anticipated to cause operational issues. Analysis results show the 50th and 95th percentile queues are accommodated along all peak times, with the location of the garage gate allowing up to a two-car storage inside the garage. SimTraffic results are included in the revised submission that show that the maximum queues are not anticipated to block the garage entrance.
- The internal intersections within the development with the introduced Street 1 and Street 2 operate with minimal delays and queuing.
- Based on the capacity and queuing analysis of internal intersections, all intersections are anticipated to operate with acceptable Level of Service and queuing.

All-Way Stop Control Warrant Evaluation

- A preliminary all-way stop control warrant analysis was conducted for the intersection of Democracy Lane and Street 2 (Intersection 2) in accordance with MUTCD criteria.
- All-way stop control is considered appropriate at this location, with the understanding that traffic control can be reevaluated as future site development and operating conditions evolve.

Transportation Technical Appendix

Courthouse Plaza

City of Fairfax, Virginia

GOROVE SLADE
Transportation Planners and Engineers

CONTENTS

Appendix A – Signed Scoping Document

Appendix B – CUE Bus Schedules and WAMATA Metro bus Schedules

Appendix C – Crash Data

Appendix D – 2023 Turning Movement Counts

Appendix E – Comparison of Existing Inline Retail Trips and Inline Retail Trips to be Removed

Appendix F – Intersection Analysis Worksheets – Existing 2026

Appendix G – Intersection Analysis Worksheets – 2028 Future without Development

Appendix H – Intersection Analysis Worksheets – 2028 Future with Development (Full-Build)

Appendix I – Intersection Analysis Worksheets – Internal Intersections

Appendix J – Site Visit Photographs

Appendix K – SimTraffic Analysis Results Worksheets

Appendix L – Background Development

Appendix M – Intersection Analysis Worksheets – 2028 Future with Development (Full-Build)-Alternative Scenario

A. Signed Scoping Document

PRE-SCOPE OF WORK MEETING FORM

Information on the Project

Traffic Impact Analysis Base Assumptions

The applicant is responsible for entering the relevant information and submitting the form to the locality no less than three (3) business days prior to the meeting. If a form is not received by this deadline, the scope of work meeting may be postponed.

Contact Information

Consultant Name:	Kayla Ord, Gorove Slade
Tele:	703-657-0270
E-mail:	kayla.ord@goroveslade.com
Developer/Owner Name:	Combined Properties, Inc
Tele:	
E-mail:	

Project Information

Project Name:	Courthouse Plaza			
Project Location: (Attach regional and site specific location map) PLEASE SEE FIGURE 1	The project is located north of North St, south of Democracy Ln, east of University Dr, and west of Blenheim Blvd in the City of Fairfax, VA. The site is located in the Old Town Fairfax Transition Overlay District.			
Submission Type	Comp Plan ☐	Rezoning ☒	Site Plan ☐	Subd Plat ☐
Project Description: Including type of application (rezoning, subdivision, site plan), acreage, business square ft, number of dwelling units, access location, etc. Attach additional sheet if necessary)	This rezoning application is for the Courthouse Plaza redevelopment. The 10.34-acre site consists of two (2) parcels (Tax Map # 57-2-20-004 D & # 57-2-20-003 A). The existing site is currently occupied by approximately 91,860 SF of retail and surface parking. The proposed redevelopment is planned to be constructed in 2 phases; Phase 1 is planned to approximately consist of a new 315 multifamily units residential building on the west side of the property with approximately 66,690 SF of existing retail to remain. The development is also planning to add 12,500 SF of retail space as part of Phase 1 building. Phase 2 (Full Build-Out) is planned to approximately consist of an additional 315 multifamily units (630 total units) along with approximately 52,900 SF retail (74,100 SF of total future retail) which will replace the existing retail. Phase 1 is anticipated to be in place by 2028 and Phase 2 timing is not yet known. A separate analysis memo will be prepared to show Phase 2 operations and will be submitted with the TIA. In Phase 1, site access is planned to be provided via two curb cuts along University Drive and four curb cuts along Blenheim Blvd.			

It is important for the applicant to provide sufficient information to county and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

Locality/County:	City of Fairfax, VA			
Proposed Use: (Check all that apply; attach additional pages as necessary)	Residential ☐	Commercial ☐	Mixed Use ☒	Other ☐
	Residential # of Units: Commercial Use Sq Ft: ITE LU Code(s):		Mixed Use: (Phase I) • 315 DU (ITE LUC 221) • 79,190 SF (ITE LUC 821,822) (Full Build-Out) • 630 DU (ITE LUC 221) • 74,100 SF (ITE LUC 821,822)	
Total Peak Hour Trip Projection:	Less than 100 ☒	100 – 499 ☐	500 – 999 ☐	1,000 or more ☐
Traffic Impact Analysis Assumptions				
Study Period	Existing Year: 2023	Build-out Year: Phase 1 – 2028 Phase 2 – Addressed in a separate analysis memo		Design Year: N/A
Study Area Boundaries (Attach map) PLEASE SEE FIGURE 2	North: Democracy Ln		South: North St	
	East: Blenheim Rd		West: University Dr	
External Factors That Could Affect Project (Planned road improvements, other nearby developments)	• Blenheim Blvd (formerly Old Lee Hwy) Multimodal Improvements • University Dr Road Diet • University Drive Bicycle Facilities (City of Fairfax)			
Consistency With Comprehensive Plan	The site is within the Old Town Fairfax Small Area Plan where pedestrian-oriented, mixed-use development is strongly encouraged. The proposed redevelopment of Courthouse Plaza (Mixed-Use development) is working to be consistent with the City of Fairfax Comprehensive Plan by providing new grid links and pedestrian friendly networks.			
Available Traffic Data (Historical, forecasts)	• VDOT AADT data • Traffic counts dated March 30, 2023			

Trip Distribution (Attach sketch) PLEASE SEE FIGURE 3	Please refer to Figure 3.		
Annual Vehicle Trip Growth Rate: PLEASE SEE TABLE 1	1.0% - 2023 to 2028 On all major roadways	Peak Period for Study (check all that apply)	☒ AM ☒ PM ☐ SAT
Study Intersections and/or Road Segments (Attach additional sheets as necessary) PLEASE SEE FIGURE 2	1. Blenheim Blvd and Street 3 2. Blenheim Blvd and Fairfax Commons Entrance 3. Blenheim Blvd and Street 1 (Future Intersection) 4. Blenheim Blvd and Southern Entrance 5. University Drive and Street 1 (Future Intersection) 6. University Drive and Existing Courthouse Plaza Entrance/7-11 Entrance 7. University Drive and Democracy Ln/Whitehead St 8. Democracy Ln and Garage Entrance 9. Democracy Ln and Layton Hall Drive 10. Blenheim Blvd and Layton Hall Drive 11. Layton Hall Drive and University Drive		
Trip Adjustment Factors PLEASE SEE TABLE 3	Internal allowance: ☒ Yes ☐ No		Pass-by allowance: ☒ Yes ☐ No
Software Methodology	☒ Synchro ☐ HCS (v.2000/+) ☐ SIDRA ☐ CORSIM ☐ VISSIM		
Traffic Signal Proposed or Affected (Analysis software to be used, progression speed, cycle length)	2. Blenheim Blvd and Fairfax Commons Entrance/Street 1 7. University Drive and Democracy Ln/Whitehead St 10. Blenheim Blvd and Layton Hall Dr		
Improvement(s) Assumed or to be Considered	• University Drive Bicycle Facilities (City of Fairfax) University Dr Road Diet • University Dr Road Diet • Blenheim Blvd (formerly Old Lee Hwy) Multimodal Improvements		
Background Traffic Studies Considered	None		
Plan Submission	☒ Master Development Plan (MDP) ☐ Generalized Development Plan (GDP) ☐ Preliminary/Sketch Plan ☐ Other Plan type (Final Site, Subd. Plan)		
Additional Issues to be addressed	☒ Queuing analysis ☐ Actuation/Coordination ☐ Weaving analysis ☐ Merge analysis ☒ Bike/Ped Accommodations ☒ Intersection(s) ☒ TDM Measures ☐ Other _____		

NOTES on ASSUMPTIONS:

1. Synchro 11, HCM 6 methodology will be used for intersection analysis where applicable. HCM 2000 methodology will be used if HCM 6 is not applicable.
2. A vehicle classification count will be conducted to verify heavy vehicle percentages. The vehicle classification count will include pedestrian and bicycle counts.
3. Peak hour factors will be consistent with VDOT guidelines (VDOT TOSAM v2.0)
 - a. Existing peak hour factors by overall intersection (minimum of 0.85) will be used for existing year analysis.
 - b. For future year analysis, the PHF will be minimum 0.92 or existing, whichever is higher.
4. Analysis procedures consistent with the VDOT Traffic Operations And Safety Analysis Manual Version 2.0 will be used unless otherwise noted.
5. The latest signal timings will be obtained from the City of Fairfax.
6. LOS D or non-degradation from future without development scenario is considered to be an acceptable design standard for non-NHS roadways.
7. The site's traffic impact will be mitigated based on Synchro results.
8. Crash data at the existing study intersections for 2021 through 2025 will be obtained from VDOT.
9. Transportation Demand Management (TDM) discussion will be provided.
10. Relevant Pages on guidance from ITE for Pass-By and Internal Capture percentages are included in the scoping document supplement.
11. Review of the garage entrance and the proximity to University Drive will be included in the study.
12. Review of Access Management will be included in the TIA based on City of Fairfax Public Facilities Manual (PFM).
13. A traffic analysis Phase 2 memo will be prepared separately and will be submitted with the TIA.
14. A portion of the site trips destined to/from the northwest will be assigned as thru trips on Whitehead Street.



SIGNED: _____ DATE: 03/16/2026
Applicant or Consultant

PRINT NAME: Kayla Ord, P.E., PTOE, Gorove Slade Associates, Inc.
Applicant or Consultant

SIGNED: _____ DATE: _____
City of Fairfax

PRINT NAME: _____
City of Fairfax

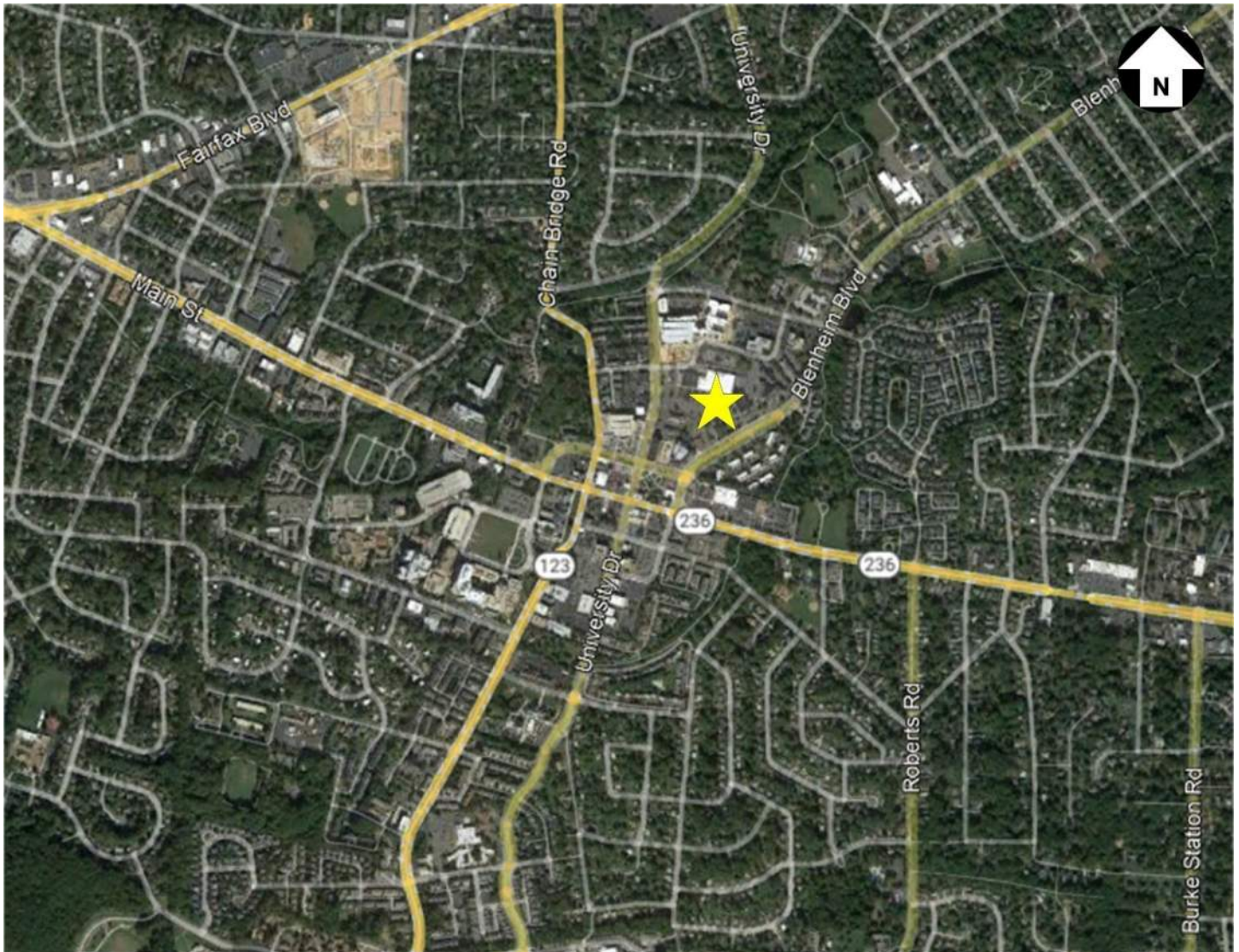


FIGURE 1: REGIONAL MAP



FIGURE 2: STUDY INTERSECTIONS



FIGURE 3: SITE TRIP DISTRIBUTION

TABLE 1: HISTORICAL AADT COMPARISON

Road Segment:	From:	To:	Published VDOT AADT					Annual Growth Rate			
			2020	2021	2022	2023	2024	2020 - 2021	2021 - 2022	2022 - 2023	2023 - 2024
University Dr	SR-236 Main St	Whitehead St	4,900	5,700	5,800	9,300	9,400	16%	2%	60%	1%
*North St	SR-236 W Main St	SR-236 E Main St	15,000	17,000	18,000	18,000	18,000	13%	6%	0%	0%
Blenheim Blvd (Old Lee Hwy)	SR-236 Main St	Layton Hall Rd	8,300	9,600	10,200	12,000	12,000	16%	6%	18%	0%
**Democracy Ln	SR-236 Main St	Layton Hall Rd	590	670	670	670	670	14%	0%	0%	0%
Source: VDOT Traffic Data (https://data.virginia.gov/)											
*ADT year 2022											
**ADT year 2021											

TABLE 2: TRIP GENERATION: EXISTING DEVELOPMENT

Land Use	ITE Code	Size	----- Week day -----						Daily Total
			AM Peak Hour			PM Peak Hour			
			In	Out	Total	In	Out	Total	
Existing Development									
Shopping Center (40 kSF<X<150 kSF) (with Supermarket)	821	91.9 kSF of GFA	201	123	324	395	429	824	8,485
Subtotal (Existing)			201	123	324	395	429	824	8,485

TABLE 3: TRIP GENERATION: PHASE 1 WITH NO REDUCTIONS

Land Use	ITE Code	Size	----- Week day -----						Daily Total
			AM Peak Hour			PM Peak Hour			
			In	Out	Total	In	Out	Total	
Proposed Development - Proposed Concept (Phase 1)									
Multifamily Housing (Mid-Rise) (Apartments, Townhomes, Condo; max 10 floors; Not Close to Rail Transit)	221	315 DU	29	98	127	75	48	123	1,456
Shopping Center (40 kSF<X<150 kSF) (with Supermarket)	821	66.7 kSF of GFA	146	89	235	302	328	630	6,546
Shopping Center (<40 kSF)	822	12.5 kSF of GFA	20	13	33	45	46	91	757
Subtotal (Phase I)			195	200	395	422	422	844	8,759

TABLE 4: TRIP GENERATION: PHASE 1 WITH REDUCTIONS

Land Use	ITE Code	Size	----- Week day -----						Daily Total
			AM Peak Hour			PM Peak Hour			
			In	Out	Total	In	Out	Total	
Existing Development									
Shopping Center (40 kSF<X<150 kSF) (with Supermarket)	821	91.9 kSF of GFA	201	123	324	395	429	824	8,485
Subtotal (Existing)			201	123	324	395	429	824	8,485
Proposed Development - Proposed Concept (Phase 1)									
Multifamily Housing (Mid-Rise) (Apartments, Townhomes, Condo; max 10 floors; Not Close to Rail Transit)	221	315 DU	29	98	127	75	48	123	1,456
	Internal Capture Residential - Retail ¹	(1)	-3	-10	-13	-8	-5	-12	-146
	Mode Split/TDM Reduction	15%	-4	-13	-17	-10	-6	-17	-197
Residential Subtotal (with Reductions)			22	75	97	57	37	94	1,113
Shopping Center (40 kSF<X<150 kSF) (with Supermarket)	821	66.7 kSF of GFA	146	89	235	302	328	630	6,546
Shopping Center (<40 kSF)	822	12.5 kSF of GFA	20	13	33	45	46	91	757
	Internal Capture Retail - Residential ¹	(1)	-10	-3	-13	-5	-8	-12	-146
	Pass-By Reduction ²	25%/40%/25%	-32	-32	-64	-142	-142	-284	-1,789
Retail Subtotal (with Reductions)			124	67	191	200	224	425	5,368
Total Proposed Trips (with Reductions)			146	142	288	257	261	519	6,481
Net New Trips (Proposed - Existing)			-55	19	-36	-138	-168	-305	-2,004

¹ Internal Capture rates consider site trips "captured" within a mixed-use development, recognising that trips from one land use can access another land use within a site development without having to access the (1) residential / retail - smaller of X% of residential trips or X% of retail trips; AM: X = 5%, PM: X = 10%, Daily: X = 15%

² The pass by reduction for Shopping Center is based on the ITE Trip Generation methodology, as provided in the Trip Generation Handbook, 3rd Edition. The average rate for Shopping Centers is 40% for the PM Peak. For all other time periods, the default pass by rate is 25%

TABLE 5: TRIP GENERATION: FULL BUILD-OUT WITH NO REDUCTIONS

Land Use	ITE Code	Size	----- Week day -----						Daily Total
			AM Peak Hour			PM Peak Hour			
			In	Out	Total	In	Out	Total	
Proposed Development - Proposed Concept (Full Build-Out)									
Multifamily Housing (Mid-Rise) (Apartments, Townhomes, Condo; max 10 floors; Not Close to Rail Transit)	221	630 DU	61	205	266	150	96	246	2,959
Shopping Center (40 kSF<X<150 kSF) (with Supermarket)	821	74.1 kSF of GFA	162	100	262	330	357	687	7,116
Subtotal (Proposed Full Build-Out)			223	305	528	480	453	933	10,075

TABLE 6: TRIP GENERATION: FULL BUILD-OUT WITH REDUCTIONS

Land Use	ITE Code	Size	----- Week day -----						Daily Total
			AM Peak Hour			PM Peak Hour			
			In	Out	Total	In	Out	Total	
Existing Development									
Shopping Center (40 kSF<X<150 kSF) (with Supermarket)	821	91.9 kSF of GFA	201	123	324	396	428	824	8,485
Subtotal (Existing)			201	123	324	396	428	824	8,485
Proposed Development - Proposed Concept (Full Build-Out)									
Multifamily Housing (Mid-Rise) (Apartments, Townhomes, Condo; max 10 floors; Not Close to Rail Transit)	221	630 DU	61	205	266	150	96	246	2,959
	Internal Capture Residential - Retail ¹		-9	-14	-23	-15	-10	-25	-296
	Mode Split/TDM Reduction		-8	-29	-37	-20	-13	-33	-399
	Residential Subtotal (with Reductions)		44	162	206	115	73	188	2,264
Shopping Center (40 kSF<X<150 kSF) (with Supermarket)	821	50.0 kSF of GFA	110	67	177	241	261	502	5,261
Shopping Center (<40 kSF)	822	24.1 kSF of GFA	31	20	51	72	73	145	1,245
	Internal Capture Retail - Residential ¹		-14	-9	-23	-10	-15	-25	-296
	Pass-By Reduction ²		-26	-25	-51	-78	-78	-156	-1,553
	Retail Subtotal (with Reductions)		101	53	154	225	241	466	4,657
	Total Proposed Trips (with Reductions)		145	215	360	340	314	654	6,921
	Total Trips (Proposed - Existing)		-56	92	36	-56	-114	-170	-1,564

¹ Internal Capture rates consider site trips "captured" within a mixed-use development, recognising that trips from one land use can access another land use within a site development without having to access

(1) residential / retail - smaller of 10% of residential trips or 10% of retail trips

² The pass by reduction for Shopping Center is based on the ITE Trip Generation methodology, as provided in the Trip Generation Handbook, 3rd Edition. The average rate for Shopping Centers is 40% for the PM Peak. For all other time periods, the default pass by rate is 25%

TABLE 7: TRIP GENERATION: FULL BUILD-OUT WITH REDUCTIONS

Vehicle Pass-By Rates by Land Use									
Source: ITE Trip Generation Manual, 12th Edition									
Pass-By Characteristics for Individual Sites									
GLA (000)	State or Province	Survey Year	# Interviews	Pass-By Trip (%)	Primary (%)	Diverted (%)	Total (%)	Adj Street Peak Hour Volume	Source
45	Florida	1992	844	56	24	20	44	—	30
50	Florida	1992	555	41	41	18	59	—	30
52	Florida	1995	665	42	33	25	58	—	30
53	Florida	1993	162	59	—	—	41	—	30
57.23	Kentucky	1993	247	31	53	16	69	2659	34
60	Florida	1995	1583	40	38	22	60	—	30
69.4	Kentucky	1993	109	25	42	33	75	1559	34
77	Florida	1992	365	46	—	—	54	—	30
78	Florida	1991	702	55	23	22	45	—	30
82	Florida	1992	336	34	—	—	66	—	30
92.857	Kentucky	1993	133	22	50	28	78	3555	34
100.888	Kentucky	1993	281	28	50	22	72	2111	34
121.54	Kentucky	1993	210	53	30	17	47	2636	34
144	New Jersey	1990	176	32	44	24	68	—	24
146.8	Kentucky	1993	—	36	39	25	64	—	34



FIGURE 4: MULTIMODAL ITEMS INCLUDED IN STUDY



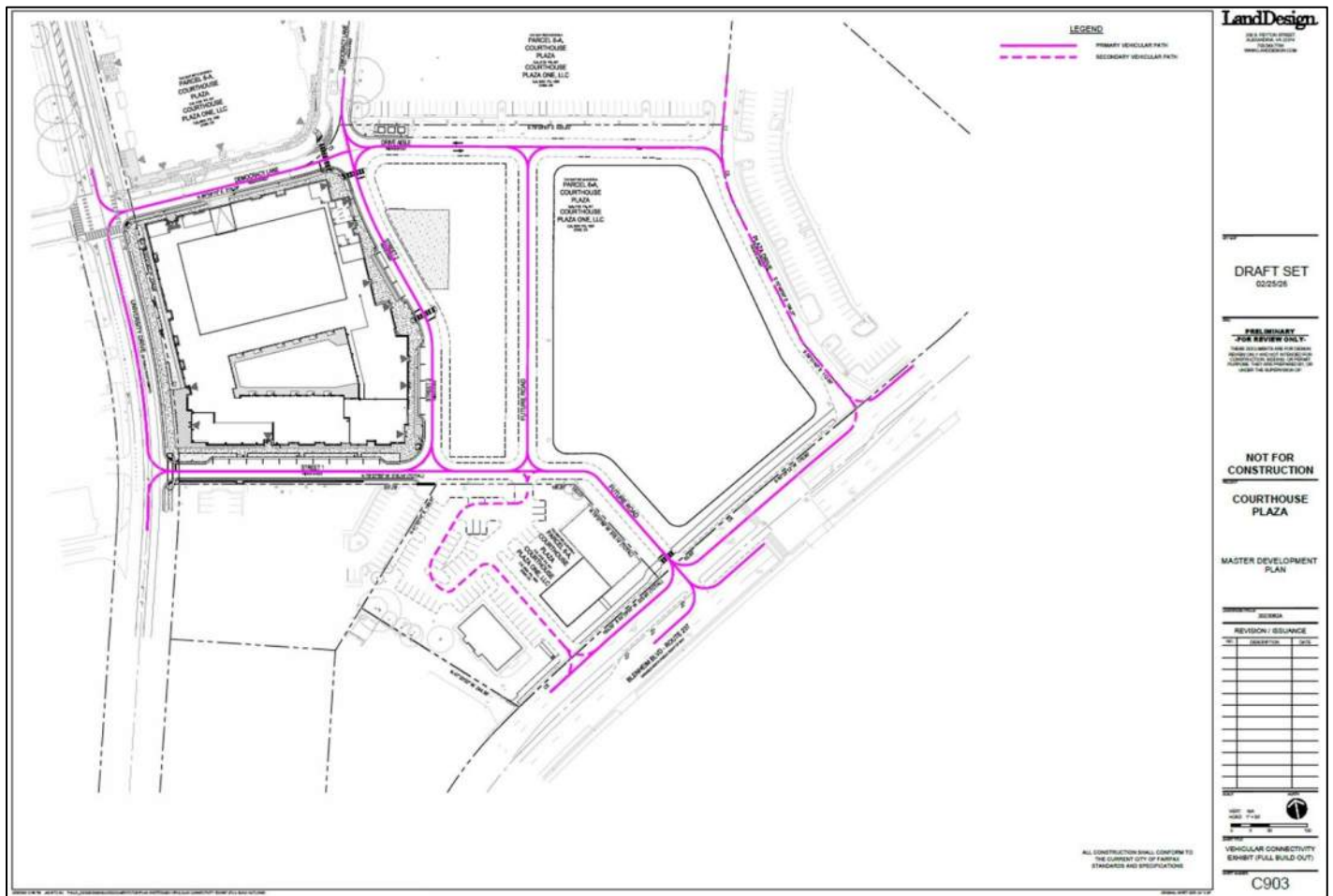


FIGURE 6: VEHICULAR CONNECTIVITY PLAN (FULL BUILDOUT)

B. CUE Bus Schedules and WAMATA Metro bus Schedules

F23 - F24



Weekday Eastbound

Effective: December 14, 2025

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AM Service												
F23	5:22	5:31	-	-	5:41	5:48	5:55	6:01	6:06	6:11	6:15	6:19
F24	-	-	5:50	6:01	6:11	6:18	6:25	6:31	6:36	6:41	6:45	6:49
F23	6:12	6:21	-	-	6:31	6:38	6:45	6:51	6:56	7:01	7:05	7:09
F24	-	-	6:30	6:41	6:51	6:58	7:05	7:11	7:16	7:21	7:25	7:29
F23	6:52	7:01	-	-	7:11	7:18	7:25	7:31	7:36	7:41	7:45	7:49
F24	-	-	7:10	7:21	7:31	7:38	7:45	7:51	7:56	8:01	8:05	8:09
F23	7:27	7:37	-	-	7:47	7:54	8:02	8:09	8:14	8:21	8:25	8:29
F24	-	-	7:44	7:56	8:07	8:14	8:22	8:29	8:34	8:41	8:45	8:49
F23	8:07	8:17	-	-	8:27	8:34	8:42	8:49	8:54	9:01	9:05	9:09
F24	-	-	8:24	8:36	8:47	8:54	9:02	9:09	9:14	9:21	9:25	9:29
F23	8:47	8:57	-	-	9:07	9:14	9:22	9:29	9:34	9:41	9:45	9:49
F24	-	-	9:04	9:16	9:27	9:34	9:42	9:49	9:54	10:01	10:05	10:09
F23	9:27	9:37	-	-	9:47	9:54	10:02	10:09	10:14	10:21	10:25	10:29
F24	-	-	9:51	10:01	10:11	10:18	10:25	10:31	10:36	10:42	10:45	10:49
F23	10:11	10:21	-	-	10:29	10:36	10:43	10:49	10:54	11:00	11:03	11:07
F24	-	-	10:29	10:39	10:49	10:56	11:03	11:09	11:14	11:20	11:23	11:27
F23	10:51	11:01	-	-	11:09	11:16	11:23	11:29	11:34	11:40	11:43	11:47
F24	-	-	11:09	11:19	11:29	11:36	11:43	11:49	11:54	12:00	12:03	12:07
F23	11:31	11:41	-	-	11:49	11:56	12:03	12:09	12:14	12:20	12:23	12:27
F24	-	-	11:49	11:59	12:09	12:16	12:23	12:29	12:34	12:40	12:43	12:47
PM Service												
F23	12:09	12:19	-	-	12:27	12:34	12:41	12:47	12:52	12:58	1:01	1:05
F24	-	-	12:25	12:35	12:46	12:54	1:02	1:09	1:14	1:22	1:26	1:30
F23	12:47	12:57	-	-	1:06	1:14	1:22	1:29	1:34	1:42	1:46	1:50
F24	-	-	1:05	1:15	1:26	1:34	1:42	1:49	1:54	2:02	2:06	2:10
F23	1:27	1:37	-	-	1:46	1:54	2:02	2:09	2:14	2:22	2:26	2:30

F23 - F24



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F24	-	-	1:45	1:55	2:06	2:14	2:22	2:29	2:34	2:42	2:46	2:50
F23	2:07	2:17	-	-	2:26	2:34	2:42	2:49	2:54	3:02	3:06	3:10
F24	-	-	2:14	2:24	2:37	2:46	2:55	3:03	3:08	3:16	3:22	3:27
F23	2:35	2:47	-	-	2:57	3:06	3:15	3:23	3:28	3:36	3:42	3:47
F24	-	-	2:54	3:04	3:17	3:26	3:35	3:43	3:48	3:56	4:02	4:07
F23	3:15	3:27	-	-	3:37	3:46	3:55	4:03	4:08	4:16	4:22	4:27
F23	3:30	3:42	-	-	3:54	4:04	4:13	4:22	4:27	4:35	4:42	4:48
F24	-	-	3:49	4:00	4:14	4:24	4:33	4:42	4:47	4:55	5:02	5:08
F23	4:10	4:22	-	-	4:34	4:44	4:53	5:02	5:07	5:15	5:22	5:28
F24	-	-	4:29	4:40	4:54	5:04	5:13	5:22	5:27	5:35	5:42	5:48
F23	4:50	5:02	-	-	5:14	5:24	5:33	5:42	5:47	5:55	6:02	6:08
F24	-	-	5:09	5:20	5:34	5:44	5:53	6:02	6:07	6:15	6:22	6:28
F23	5:34	5:46	-	-	5:57	6:07	6:15	6:24	6:29	6:37	6:43	6:48
F24	-	-	5:51	6:03	6:17	6:27	6:35	6:44	6:49	6:57	7:03	7:08
F23	6:23	6:34	-	-	6:44	6:52	7:01	7:08	7:13	7:20	7:24	7:28
F24	-	-	6:39	6:52	7:04	7:12	7:21	7:28	7:33	7:40	7:44	7:48
F23	7:03	7:14	-	-	7:24	7:32	7:41	7:48	7:53	8:00	8:04	8:08
F24	-	-	7:19	7:32	7:44	7:52	8:01	8:08	8:13	8:20	8:24	8:28
F23	7:52	8:02	-	-	8:10	8:17	8:24	8:30	8:34	8:40	8:44	8:48
F24	-	-	8:08	8:19	8:30	8:37	8:44	8:50	8:54	9:00	9:04	9:08
F23	8:32	8:42	-	-	8:50	8:57	9:04	9:10	9:14	9:20	9:24	9:28
F24	-	-	8:52	9:03	9:14	9:21	9:28	9:34	9:38	9:44	9:48	9:52
F23	9:16	9:26	-	-	9:34	9:41	9:48	9:54	9:58	10:04	10:08	10:12
F24	-	-	9:40	9:49	9:58	10:04	10:10	10:15	10:19	10:25	10:29	10:32
F23	10:03	10:13	-	-	10:21	10:27	10:33	10:38	10:42	10:48	10:52	10:55
F24	-	-	10:29	10:38	10:47	10:53	10:59	11:04	11:08	11:14	11:18	11:21

F23 - F24



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AM Service												
F23	5:40	5:46	5:50	5:57	6:01	6:07	6:14	6:22	6:30	6:36	-	-
F24	6:10	6:17	6:21	6:28	6:33	6:39	6:47	6:57	-	-	7:11	7:17
F23	6:40	6:47	6:51	6:58	7:03	7:09	7:17	7:27	7:38	7:44	-	-
F24	7:00	7:08	7:13	7:20	7:25	7:33	7:42	7:52	-	-	8:03	8:11
F23	7:20	7:28	7:33	7:40	7:45	7:53	8:02	8:12	8:23	8:31	-	-
F24	7:40	7:48	7:53	8:00	8:05	8:13	8:22	8:32	-	-	8:43	8:51
F23	8:00	8:08	8:13	8:20	8:25	8:33	8:42	8:52	9:03	9:11	-	-
F24	8:20	8:28	8:33	8:40	8:45	8:53	9:02	9:12	-	-	9:23	9:31
F23	8:40	8:48	8:53	9:00	9:05	9:13	9:22	9:32	9:43	9:51	-	-
F24	9:00	9:07	9:12	9:19	9:22	9:29	9:37	9:46	-	-	9:58	10:04
F23	9:20	9:27	9:32	9:39	9:42	9:49	9:57	10:06	10:16	10:23	-	-
F24	9:40	9:47	9:52	9:59	10:02	10:09	10:17	10:26	-	-	10:38	10:44
F23	10:00	10:07	10:12	10:19	10:22	10:29	10:37	10:46	10:56	11:03	-	-
F24	10:20	10:27	10:32	10:39	10:42	10:49	10:57	11:06	-	-	11:18	11:24
F23	10:40	10:47	10:52	10:59	11:02	11:09	11:17	11:26	11:36	11:43	-	-
F24	11:00	11:07	11:12	11:19	11:22	11:29	11:37	11:46	-	-	11:58	12:04
F23	11:20	11:27	11:32	11:39	11:42	11:49	11:57	12:06	12:16	12:23	-	-
F24	11:40	11:47	11:52	11:59	12:02	12:09	12:17	12:26	-	-	12:38	12:44
PM Service												
F23	12:00	12:07	12:12	12:19	12:22	12:29	12:37	12:46	12:56	1:03	-	-
F24	12:20	12:27	12:32	12:39	12:42	12:49	12:57	1:06	-	-	1:18	1:24
F23	12:40	12:47	12:52	12:59	1:02	1:09	1:17	1:26	1:36	1:43	-	-
F24	1:00	1:07	1:12	1:19	1:22	1:29	1:37	1:46	-	-	1:58	2:04
F23	1:20	1:27	1:32	1:39	1:42	1:49	1:57	2:06	2:16	2:23	-	-
F24	1:40	1:47	1:52	1:59	2:02	2:09	2:17	2:26	-	-	2:38	2:44
F23	2:00	2:07	2:12	2:19	2:22	2:29	2:37	2:46	2:56	3:03	-	-

F23 - F24



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F24	2:20	2:29	2:34	2:41	2:44	2:51	3:00	3:10	-	-	3:24	3:32
F23	2:40	2:49	2:54	3:01	3:04	3:11	3:20	3:30	3:40	3:48	-	-
F24	3:00	3:09	3:14	3:21	3:24	3:31	3:40	3:50	-	-	4:04	4:12
F23	3:20	3:29	3:34	3:41	3:44	3:51	4:00	4:10	4:20	4:28	-	-
F24	3:40	3:49	3:54	4:01	4:04	4:11	4:20	4:30	-	-	4:44	4:52
F23	4:00	4:09	4:15	4:22	4:25	4:32	4:41	4:51	5:02	5:10	-	-
F24	4:20	4:29	4:35	4:42	4:45	4:52	5:01	5:11	-	-	5:25	5:32
F23	4:40	4:49	4:55	5:02	5:05	5:12	5:21	5:31	5:42	5:50	-	-
F24	5:00	5:09	5:15	5:22	5:25	5:32	5:41	5:51	-	-	6:05	6:12
F23	5:20	5:29	5:35	5:42	5:45	5:52	6:01	6:11	6:22	6:30	-	-
F24	5:40	5:49	5:55	6:02	6:05	6:12	6:21	6:31	-	-	6:45	6:52
F23	6:00	6:09	6:15	6:22	6:25	6:32	6:41	6:51	7:02	7:10	-	-
F24	6:20	6:29	6:35	6:42	6:45	6:52	7:01	7:11	-	-	7:25	7:32
F23	6:40	6:48	6:52	6:59	7:02	7:08	7:15	7:23	7:33	7:40	-	-
F24	7:00	7:08	7:12	7:19	7:22	7:28	7:35	7:43	-	-	7:55	8:02
F23	7:20	7:28	7:32	7:39	7:42	7:48	7:55	8:03	8:13	8:20	-	-
F24	7:40	7:48	7:52	7:59	8:02	8:08	8:15	8:23	-	-	8:35	8:42
F23	8:00	8:08	8:12	8:19	8:22	8:28	8:35	8:43	8:53	9:00	-	-
F24	8:20	8:28	8:32	8:38	8:41	8:47	8:54	9:01	-	-	9:13	9:20
F23	8:40	8:48	8:52	8:58	9:01	9:07	9:14	9:21	9:31	9:38	-	-
F24	9:10	9:18	9:22	9:28	9:31	9:37	9:44	9:51	-	-	10:03	10:10
F23	9:40	9:48	9:52	9:58	10:01	10:07	10:14	10:21	10:31	10:38	-	-
F24	10:10	10:18	10:22	10:28	10:31	10:37	10:44	10:51	-	-	11:03	11:10

F23 - F24



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AM Service												
F23	6:13	6:24	-	-	6:32	6:38	6:46	6:52	6:57	7:02	7:05	7:08
F24	-	-	6:35	6:44	6:52	6:58	7:06	7:12	7:17	7:22	7:25	7:28
F23	6:53	7:04	-	-	7:12	7:18	7:26	7:32	7:37	7:42	7:45	7:48
F24	-	-	7:15	7:24	7:32	7:38	7:46	7:52	7:57	8:02	8:05	8:08
F23	7:33	7:44	-	-	7:52	7:58	8:06	8:12	8:17	8:22	8:25	8:28
F24	-	-	7:50	7:59	8:08	8:15	8:23	8:29	8:34	8:40	8:44	8:48
F23	8:09	8:20	-	-	8:28	8:35	8:43	8:49	8:54	9:00	9:04	9:08
F24	-	-	8:30	8:39	8:48	8:55	9:03	9:09	9:14	9:20	9:24	9:28
F23	8:49	9:00	-	-	9:08	9:15	9:23	9:29	9:34	9:40	9:44	9:48
F24	-	-	9:10	9:19	9:28	9:35	9:43	9:49	9:54	10:00	10:04	10:08
F23	9:29	9:40	-	-	9:48	9:55	10:03	10:09	10:14	10:20	10:24	10:28
F24	-	-	9:50	9:59	10:08	10:15	10:23	10:29	10:34	10:40	10:44	10:48
F23	10:05	10:16	-	-	10:24	10:32	10:40	10:47	10:52	11:00	11:04	11:08
F24	-	-	10:24	10:34	10:44	10:52	11:00	11:07	11:12	11:20	11:24	11:28
F23	10:45	10:56	-	-	11:04	11:12	11:20	11:27	11:32	11:40	11:44	11:48
F24	-	-	11:04	11:14	11:24	11:32	11:40	11:47	11:52	12:00	12:04	12:08
F23	11:25	11:36	-	-	11:44	11:52	12:00	12:07	12:12	12:20	12:24	12:28
F24	-	-	11:44	11:54	12:04	12:12	12:20	12:27	12:32	12:40	12:44	12:48
PM Service												
F23	12:05	12:16	-	-	12:24	12:32	12:40	12:47	12:52	1:00	1:04	1:08
F24	-	-	12:24	12:34	12:44	12:52	1:00	1:07	1:12	1:20	1:24	1:28
F23	12:45	12:56	-	-	1:04	1:12	1:20	1:27	1:32	1:40	1:44	1:48
F24	-	-	1:04	1:14	1:24	1:32	1:40	1:47	1:52	2:00	2:04	2:08
F23	1:25	1:36	-	-	1:44	1:52	2:00	2:07	2:12	2:20	2:24	2:28
F24	-	-	1:44	1:54	2:04	2:12	2:20	2:27	2:32	2:40	2:44	2:48
F23	2:05	2:16	-	-	2:24	2:32	2:40	2:47	2:52	3:00	3:04	3:08

F23 - F24



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F24	-	-	2:24	2:34	2:44	2:52	3:00	3:07	3:12	3:20	3:24	3:28
F23	2:45	2:56	-	-	3:04	3:12	3:20	3:27	3:32	3:40	3:44	3:48
F24	-	-	3:04	3:14	3:24	3:32	3:40	3:47	3:52	4:00	4:04	4:08
F23	3:25	3:36	-	-	3:44	3:52	4:00	4:07	4:12	4:20	4:24	4:28
F24	-	-	3:44	3:54	4:04	4:12	4:20	4:27	4:32	4:40	4:44	4:48
F23	4:05	4:16	-	-	4:24	4:32	4:40	4:47	4:52	5:00	5:04	5:08
F24	-	-	4:24	4:34	4:44	4:52	5:00	5:07	5:12	5:20	5:24	5:28
F23	4:45	4:56	-	-	5:04	5:12	5:20	5:27	5:32	5:40	5:44	5:48
F24	-	-	5:04	5:14	5:24	5:32	5:40	5:47	5:52	6:00	6:04	6:08
F23	5:25	5:36	-	-	5:44	5:52	6:00	6:07	6:12	6:20	6:24	6:28
F24	-	-	5:44	5:54	6:04	6:12	6:20	6:27	6:32	6:40	6:44	6:48
F23	6:04	6:13	-	-	6:22	6:30	6:39	6:47	6:53	7:00	7:04	7:08
F24	-	-	6:23	6:32	6:42	6:50	6:59	7:07	7:13	7:20	7:24	7:28
F23	6:44	6:53	-	-	7:02	7:10	7:19	7:27	7:33	7:40	7:44	7:48
F24	-	-	7:03	7:12	7:22	7:30	7:39	7:47	7:53	8:00	8:04	8:08
F23	7:24	7:33	-	-	7:42	7:50	7:59	8:07	8:13	8:20	8:24	8:28
F24	-	-	7:43	7:52	8:02	8:10	8:19	8:27	8:33	8:40	8:44	8:48
F23	8:05	8:14	-	-	8:23	8:31	8:40	8:48	8:54	9:01	9:05	9:09
F24	-	-	8:24	8:33	8:43	8:51	9:00	9:08	9:14	9:21	9:25	9:29
F23	9:06	9:15	-	-	9:23	9:30	9:35	9:41	9:46	9:52	9:55	9:59
F24	-	-	9:34	9:43	9:53	10:00	10:05	10:11	10:16	10:22	10:25	10:29

F23 - F24



Saturday Westbound

Effective: December 14, 2025

wmata.com

202-GO-METRO

Route	King Street-Old Town	Alexandria Commons Shopping Center	Duke St + N Jordan St	West Alexandria Transit Center	Little River Tpk + Oasis Dr	Little River Tpk + Braddock Rd	Little River Tpk + John Marr Dr	Lake Dr + NVCC-Annandale	Pickett Rd + Arlington Blvd	Vienna/Fairfax-GMU (South Side)	Main St + Stonewall Av	University Dr + George Mason Blvd
AM Service												
F24	6:10	6:15	6:19	6:26	6:29	6:35	6:42	6:48	6:58	7:04	-	-
F23	6:40	6:45	6:49	6:56	6:59	7:05	7:12	7:18	-	-	7:28	7:35
F24	7:00	7:05	7:09	7:16	7:19	7:25	7:32	7:38	7:48	7:54	-	-
F23	7:20	7:25	7:29	7:36	7:39	7:45	7:52	7:58	-	-	8:08	8:15
F24	7:40	7:45	7:49	7:56	7:59	8:05	8:12	8:18	8:28	8:34	-	-
F23	8:00	8:06	8:10	8:17	8:20	8:26	8:34	8:41	-	-	8:52	9:00
F24	8:20	8:26	8:30	8:37	8:40	8:46	8:54	9:01	9:12	9:18	-	-
F23	8:40	8:46	8:50	8:57	9:00	9:06	9:14	9:21	-	-	9:32	9:40
F24	9:00	9:06	9:10	9:17	9:20	9:26	9:34	9:41	9:52	9:58	-	-
F23	9:20	9:26	9:30	9:37	9:40	9:46	9:54	10:01	-	-	10:12	10:20
F24	9:40	9:46	9:50	9:57	10:00	10:06	10:14	10:21	10:32	10:38	-	-
F23	10:00	10:06	10:10	10:17	10:20	10:26	10:34	10:41	-	-	10:52	11:00
F24	10:20	10:26	10:30	10:37	10:40	10:46	10:54	11:01	11:12	11:18	-	-
F23	10:40	10:46	10:50	10:57	11:00	11:06	11:14	11:21	-	-	11:32	11:40
F24	11:00	11:07	11:12	11:19	11:22	11:30	11:39	11:48	12:00	12:08	-	-
F23	11:20	11:27	11:32	11:39	11:42	11:50	11:59	12:08	-	-	12:18	12:27
F24	11:40	11:47	11:52	11:59	12:02	12:10	12:19	12:28	12:40	12:48	-	-
PM Service												
F23	12:00	12:07	12:12	12:19	12:22	12:30	12:39	12:48	-	-	12:58	1:07
F24	12:20	12:27	12:32	12:39	12:42	12:50	12:59	1:08	1:20	1:28	-	-
F23	12:40	12:47	12:52	12:59	1:02	1:10	1:19	1:28	-	-	1:38	1:47
F24	1:00	1:07	1:12	1:19	1:22	1:30	1:39	1:48	2:00	2:08	-	-
F23	1:20	1:27	1:32	1:39	1:42	1:50	1:59	2:08	-	-	2:18	2:27
F24	1:40	1:47	1:52	1:59	2:02	2:10	2:19	2:28	2:40	2:48	-	-
F23	2:00	2:07	2:12	2:19	2:22	2:30	2:39	2:48	-	-	2:58	3:07
F24	2:20	2:27	2:32	2:39	2:42	2:50	2:59	3:08	3:20	3:28	-	-

F23 - F24



Saturday Westbound

Effective: December 14, 2025

wmata.com

202-GO-METRO

Route	King Street-Old Town	Alexandria Commons Shopping Center	Duke St + N Jordan St	West Alexandria Transit Center	Little River Tpk + Oasis Dr	Little River Tpk + Braddock Rd	Little River Tpk + John Marr Dr	Lake Dr + NVCC-Annandale	Pickett Rd + Arlington Blvd	Vienna/Fairfax-GMU (South Side)	Main St + Stonewall Av	University Dr + George Mason Blvd
F23	2:40	2:47	2:52	2:59	3:02	3:10	3:19	3:28	-	-	3:38	3:47
F24	3:00	3:07	3:12	3:19	3:22	3:30	3:39	3:48	4:00	4:08	-	-
F23	3:20	3:27	3:32	3:39	3:42	3:50	3:59	4:08	-	-	4:18	4:27
F24	3:40	3:47	3:52	3:59	4:02	4:10	4:19	4:28	4:40	4:48	-	-
F23	4:00	4:07	4:12	4:19	4:22	4:30	4:39	4:48	-	-	4:58	5:07
F24	4:20	4:27	4:32	4:39	4:42	4:50	4:59	5:08	5:20	5:28	-	-
F23	4:40	4:47	4:52	4:59	5:02	5:10	5:19	5:28	-	-	5:38	5:47
F24	5:00	5:06	5:11	5:18	5:21	5:29	5:38	5:46	5:59	6:06	-	-
F23	5:20	5:26	5:31	5:38	5:41	5:49	5:58	6:06	-	-	6:15	6:22
F24	5:40	5:46	5:51	5:58	6:01	6:09	6:18	6:26	6:39	6:46	-	-
F23	6:00	6:06	6:11	6:18	6:21	6:29	6:38	6:46	-	-	6:55	7:02
F24	6:20	6:26	6:31	6:38	6:41	6:49	6:58	7:06	7:19	7:26	-	-
F23	6:40	6:46	6:51	6:58	7:01	7:09	7:18	7:26	-	-	7:35	7:42
F24	7:00	7:05	7:10	7:17	7:20	7:27	7:34	7:41	7:52	7:57	-	-
F23	7:20	7:25	7:30	7:37	7:40	7:47	7:54	8:01	-	-	8:10	8:17
F24	7:40	7:45	7:50	7:57	8:00	8:07	8:14	8:21	8:32	8:37	-	-
F23	8:00	8:05	8:10	8:17	8:20	8:27	8:34	8:41	-	-	8:50	8:57
F24	8:20	8:25	8:30	8:37	8:40	8:47	8:54	9:01	9:12	9:17	-	-
F23	8:40	8:45	8:50	8:57	9:00	9:07	9:14	9:21	-	-	9:30	9:37
F24	9:10	9:15	9:20	9:27	9:30	9:37	9:44	9:51	10:02	10:07	-	-

F23 - F24



Sunday Eastbound

Effective: December 14, 2025

wmata.com

202-GO-METRO

Route	University Dr + George Mason Blvd	Main St + Stonewall Av	Vienna/Fairfax-GMU (South Side)	Pickett Rd + Arlington Blvd	Little River Tpk + Lake Dr	Little River Tpk + John Marr Dr	Little River Tpk + Braddock Rd	Little River Tpk + Oasis Dr	West Alexandria Transit Center	Duke St + N Jordan St	Alexandria Commons Shopping Center	King Street-Old Town
AM Service												
F23	6:16	6:25	-	-	6:33	6:40	6:46	6:51	6:55	7:01	7:04	7:08
F24	-	-	6:35	6:44	6:53	7:00	7:06	7:11	7:15	7:21	7:24	7:28
F23	6:56	7:05	-	-	7:13	7:20	7:26	7:31	7:35	7:41	7:44	7:48
F24	-	-	7:15	7:24	7:33	7:40	7:46	7:51	7:55	8:01	8:04	8:08
F23	7:36	7:45	-	-	7:53	8:00	8:06	8:11	8:15	8:21	8:24	8:28
F24	-	-	7:55	8:04	8:13	8:20	8:26	8:31	8:35	8:41	8:44	8:48
F23	8:16	8:25	-	-	8:33	8:40	8:46	8:51	8:55	9:01	9:04	9:08
F24	-	-	8:35	8:44	8:53	9:00	9:06	9:11	9:15	9:21	9:24	9:28
F23	8:55	9:04	-	-	9:12	9:19	9:25	9:31	9:35	9:41	9:44	9:48
F24	-	-	9:12	9:23	9:32	9:39	9:45	9:51	9:55	10:01	10:04	10:08
F23	9:35	9:44	-	-	9:52	9:59	10:05	10:11	10:15	10:21	10:24	10:28
F24	-	-	9:52	10:03	10:12	10:19	10:25	10:31	10:35	10:41	10:44	10:48
F23	10:15	10:24	-	-	10:32	10:39	10:45	10:51	10:55	11:01	11:04	11:08
F24	-	-	10:32	10:43	10:52	10:59	11:05	11:11	11:15	11:21	11:24	11:28
F23	10:55	11:04	-	-	11:12	11:19	11:25	11:31	11:35	11:41	11:44	11:48
F24	-	-	11:12	11:23	11:32	11:39	11:45	11:51	11:55	12:01	12:04	12:08
F23	11:26	11:36	-	-	11:45	11:52	12:00	12:07	12:12	12:20	12:24	12:28
F24	-	-	11:45	11:55	12:05	12:12	12:20	12:27	12:32	12:40	12:44	12:48
PM Service												
F23	12:06	12:16	-	-	12:25	12:32	12:40	12:47	12:52	1:00	1:04	1:08
F24	-	-	12:25	12:35	12:45	12:52	1:00	1:07	1:12	1:20	1:24	1:28
F23	12:46	12:56	-	-	1:05	1:12	1:20	1:27	1:32	1:40	1:44	1:48
F24	-	-	1:05	1:15	1:25	1:32	1:40	1:47	1:52	2:00	2:04	2:08
F23	1:26	1:36	-	-	1:45	1:52	2:00	2:07	2:12	2:20	2:24	2:28
F24	-	-	1:45	1:55	2:05	2:12	2:20	2:27	2:32	2:40	2:44	2:48
F23	2:06	2:16	-	-	2:25	2:32	2:40	2:47	2:52	3:00	3:04	3:08

F23 - F24



Sunday Eastbound

Effective: December 14, 2025

wmata.com

202-GO-METRO

Route	University Dr + George Mason Blvd	Main St + Stonewall Av	Vienna/Fairfax-GMU (South Side)	Pickett Rd + Arlington Blvd	Little River Tpk + Lake Dr	Little River Tpk + John Marr Dr	Little River Tpk + Braddock Rd	Little River Tpk + Oasis Dr	West Alexandria Transit Center	Duke St + N Jordan St	Alexandria Commons Shopping Center	King Street-Old Town
F24	-	-	2:25	2:35	2:45	2:52	3:00	3:07	3:12	3:20	3:24	3:28
F23	2:46	2:56	-	-	3:05	3:12	3:20	3:27	3:32	3:40	3:44	3:48
F24	-	-	3:05	3:15	3:25	3:32	3:40	3:47	3:52	4:00	4:04	4:08
F23	3:26	3:36	-	-	3:45	3:52	4:00	4:07	4:12	4:20	4:24	4:28
F24	-	-	3:45	3:55	4:05	4:12	4:20	4:27	4:32	4:40	4:44	4:48
F23	4:06	4:16	-	-	4:25	4:32	4:40	4:47	4:52	5:00	5:04	5:08
F24	-	-	4:25	4:35	4:45	4:52	5:00	5:07	5:12	5:20	5:24	5:28
F23	4:46	4:56	-	-	5:05	5:12	5:20	5:27	5:32	5:40	5:44	5:48
F24	-	-	5:05	5:15	5:25	5:32	5:40	5:47	5:52	6:00	6:04	6:08
F23	5:26	5:36	-	-	5:45	5:52	6:00	6:07	6:12	6:20	6:24	6:28
F24	-	-	5:45	5:55	6:05	6:12	6:20	6:27	6:32	6:40	6:44	6:48
F23	6:06	6:16	-	-	6:25	6:32	6:40	6:47	6:52	7:00	7:04	7:08
F24	-	-	6:25	6:35	6:45	6:52	7:00	7:07	7:12	7:20	7:24	7:28
F23	6:46	6:56	-	-	7:05	7:12	7:20	7:27	7:32	7:40	7:44	7:48
F24	-	-	7:05	7:15	7:25	7:32	7:40	7:47	7:52	8:00	8:04	8:08
F23	7:34	7:44	-	-	7:52	7:58	8:05	8:10	8:14	8:20	8:24	8:28
F24	-	-	7:53	8:03	8:12	8:18	8:25	8:30	8:34	8:40	8:44	8:48
F23	8:14	8:24	-	-	8:32	8:38	8:45	8:50	8:54	9:00	9:04	9:08
F24	-	-	8:33	8:43	8:52	8:58	9:05	9:10	9:14	9:20	9:24	9:28
F23	9:05	9:15	-	-	9:23	9:29	9:36	9:41	9:45	9:51	9:55	9:59
F24	-	-	9:35	9:45	9:54	10:00	10:07	10:12	10:16	10:22	10:26	10:30

F23 - F24



Sunday Westbound

Effective: December 14, 2025

wmata.com

202-GO-METRO

Route	King Street-Old Town	Alexandria Commons Shopping Center	Duke St + N Jordan St	West Alexandria Transit Center	Little River Tpk + Oasis Dr	Little River Tpk + Braddock Rd	Little River Tpk + John Marr Dr	Lake Dr + NVCC-Annandale	Pickett Rd + Arlington Blvd	Vienna/Fairfax-GMU (South Side)	Main St + Stonewall Av	University Dr + George Mason Blvd
AM Service												
F24	6:10	6:15	6:19	6:25	6:28	6:34	6:40	6:47	6:57	7:02	-	-
F23	6:40	6:45	6:49	6:55	6:58	7:04	7:10	7:17	-	-	7:25	7:32
F24	7:00	7:05	7:09	7:15	7:18	7:24	7:30	7:37	7:47	7:52	-	-
F23	7:20	7:25	7:29	7:35	7:38	7:44	7:50	7:57	-	-	8:05	8:12
F24	7:40	7:45	7:49	7:55	7:58	8:04	8:10	8:17	8:27	8:32	-	-
F23	8:00	8:06	8:10	8:16	8:19	8:25	8:32	8:39	-	-	8:48	8:55
F24	8:20	8:26	8:30	8:36	8:39	8:45	8:52	8:59	9:10	9:16	-	-
F23	8:40	8:46	8:50	8:56	8:59	9:05	9:12	9:19	-	-	9:28	9:35
F24	9:00	9:06	9:10	9:16	9:19	9:25	9:32	9:39	9:50	9:56	-	-
F23	9:20	9:26	9:30	9:36	9:39	9:45	9:52	9:59	-	-	10:08	10:15
F24	9:40	9:46	9:50	9:56	9:59	10:05	10:12	10:19	10:30	10:36	-	-
F23	10:00	10:06	10:10	10:16	10:19	10:25	10:32	10:39	-	-	10:48	10:55
F24	10:20	10:26	10:30	10:36	10:39	10:45	10:52	10:59	11:10	11:16	-	-
F23	10:40	10:46	10:50	10:56	10:59	11:05	11:12	11:19	-	-	11:28	11:35
F24	11:00	11:06	11:10	11:16	11:19	11:25	11:32	11:39	11:50	11:56	-	-
F23	11:20	11:26	11:30	11:36	11:39	11:45	11:52	11:59	-	-	12:08	12:15
F24	11:40	11:46	11:50	11:56	11:59	12:05	12:12	12:19	12:30	12:36	-	-
PM Service												
F23	12:00	12:06	12:10	12:16	12:19	12:25	12:32	12:39	-	-	12:48	12:55
F24	12:20	12:27	12:32	12:38	12:41	12:48	12:56	1:04	1:15	1:21	-	-
F23	12:40	12:47	12:52	12:58	1:01	1:08	1:16	1:24	-	-	1:33	1:41
F24	1:00	1:07	1:12	1:18	1:21	1:28	1:36	1:44	1:55	2:01	-	-
F23	1:20	1:27	1:32	1:38	1:41	1:48	1:56	2:04	-	-	2:13	2:21
F24	1:40	1:47	1:52	1:58	2:01	2:08	2:16	2:24	2:35	2:41	-	-
F23	2:00	2:07	2:12	2:18	2:21	2:28	2:36	2:44	-	-	2:53	3:01
F24	2:20	2:27	2:32	2:38	2:41	2:48	2:56	3:04	3:15	3:21	-	-

F23 - F24



Sunday Westbound

Effective: December 14, 2025

wmata.com

202-GO-METRO

Route	King Street-Old Town	Alexandria Commons Shopping Center	Duke St + N Jordan St	West Alexandria Transit Center	Little River Tpk + Oasis Dr	Little River Tpk + Braddock Rd	Little River Tpk + John Marr Dr	Lake Dr + NVCC-Annandale	Pickett Rd + Arlington Blvd	Vienna/Fairfax-GMU (South Side)	Main St + Stonewall Av	University Dr + George Mason Blvd
F23	2:40	2:47	2:52	2:58	3:01	3:08	3:16	3:24	-	-	3:33	3:41
F24	3:00	3:07	3:12	3:18	3:21	3:28	3:36	3:44	3:55	4:01	-	-
F23	3:20	3:27	3:32	3:38	3:41	3:48	3:56	4:04	-	-	4:13	4:21
F24	3:40	3:47	3:52	3:58	4:01	4:08	4:16	4:24	4:35	4:41	-	-
F23	4:00	4:07	4:12	4:18	4:21	4:28	4:36	4:44	-	-	4:53	5:01
F24	4:20	4:27	4:32	4:38	4:41	4:48	4:56	5:04	5:15	5:21	-	-
F23	4:40	4:46	4:51	4:58	5:01	5:08	5:15	5:23	-	-	5:33	5:40
F24	5:00	5:06	5:11	5:18	5:21	5:28	5:35	5:43	5:54	6:00	-	-
F23	5:20	5:26	5:31	5:38	5:41	5:48	5:55	6:03	-	-	6:13	6:20
F24	5:40	5:46	5:51	5:58	6:01	6:08	6:15	6:23	6:34	6:40	-	-
F23	6:00	6:06	6:11	6:18	6:21	6:28	6:35	6:43	-	-	6:53	7:00
F24	6:20	6:26	6:31	6:38	6:41	6:48	6:55	7:03	7:14	7:20	-	-
F23	6:40	6:46	6:51	6:58	7:01	7:08	7:15	7:23	-	-	7:33	7:40
F24	7:00	7:06	7:11	7:18	7:21	7:28	7:35	7:43	7:54	8:00	-	-
F23	7:20	7:26	7:31	7:37	7:40	7:46	7:53	8:00	-	-	8:10	8:16
F24	7:40	7:46	7:51	7:57	8:00	8:06	8:13	8:20	8:31	8:36	-	-
F23	8:00	8:06	8:11	8:17	8:20	8:26	8:33	8:40	-	-	8:50	8:56
F24	8:20	8:26	8:31	8:37	8:40	8:46	8:53	9:00	9:11	9:16	-	-
F23	8:40	8:45	8:49	8:55	8:58	9:04	9:10	9:17	-	-	9:27	9:33
F24	9:10	9:15	9:19	9:25	9:28	9:34	9:40	9:47	9:57	10:01	-	-

F50



Weekday Eastbound

Effective: December 14, 2025

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202-GO-METRO

Route	University Dr + George Mason Blvd	Pickett Rd + Arlington Blvd	Vienna/Fairfax-GMU (South Side)	Dunn Loring-Merrifield	Lee Hwy + Graham Rd	N Washington St + Park Av	East Falls Church	Washington Blvd + N Longfellow St	Ballston-MU
AM Service									
F50	5:18	5:30	5:36	5:51	6:03	6:09	6:14	6:18	6:27
F50	5:35	5:49	5:56	6:13	6:27	6:35	6:42	6:46	6:57
F50	6:05	6:19	6:26	6:43	6:57	7:05	7:12	7:16	7:27
F50	6:35	6:49	6:56	7:13	7:27	7:35	7:42	7:46	7:57
F50	7:05	7:19	7:26	7:43	7:57	8:05	8:12	8:16	8:27
F50	7:35	7:49	7:56	8:13	8:27	8:35	8:42	8:46	8:57
F50	8:11	8:24	8:30	8:46	9:00	9:07	9:13	9:17	9:27
F50	8:41	8:54	9:00	9:16	9:30	9:37	9:43	9:47	9:57
F50	9:11	9:24	9:30	9:46	10:00	10:07	10:13	10:17	10:27
F50	9:41	9:54	10:00	10:16	10:30	10:37	10:43	10:47	10:57
F50	10:11	10:24	10:30	10:46	11:00	11:07	11:13	11:17	11:27
F50	10:41	10:54	11:00	11:16	11:30	11:37	11:43	11:47	11:57
F50	11:11	11:24	11:30	11:46	12:00	12:07	12:13	12:17	12:27
F50	11:41	11:54	12:00	12:16	12:30	12:37	12:43	12:47	12:57
PM Service									
F50	12:11	12:24	12:30	12:46	1:00	1:07	1:13	1:17	1:27
F50	12:41	12:54	1:00	1:16	1:30	1:37	1:43	1:47	1:57
F50	1:05	1:19	1:26	1:44	1:59	2:06	2:13	2:17	2:27
F50	1:35	1:49	1:56	2:14	2:29	2:36	2:43	2:47	2:57
F50	2:05	2:19	2:26	2:44	2:59	3:06	3:13	3:17	3:27
F50	2:35	2:49	2:56	3:14	3:29	3:36	3:43	3:47	3:57
F50	3:05	3:19	3:26	3:44	3:59	4:06	4:13	4:17	4:27
F50	3:35	3:49	3:56	4:14	4:29	4:36	4:43	4:47	4:57
F50	4:05	4:19	4:26	4:44	4:59	5:06	5:13	5:17	5:27
F50	4:35	4:49	4:56	5:14	5:29	5:36	5:43	5:47	5:57
F50	5:05	5:19	5:26	5:44	5:59	6:06	6:13	6:17	6:27

F50



Weekday Eastbound

Effective: December 14, 2025

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202-GO-METRO

Route	University Dr + George Mason Blvd	Pickett Rd + Arlington Blvd	Vienna/Fairfax-GMU (South Side)	Dunn Loring-Merrifield	Lee Hwy + Graham Rd	N Washington St + Park Av	East Falls Church	Washington Blvd + N Longfellow St	Ballston-MU
F50	5:48	6:01	6:07	6:22	6:33	6:39	6:44	6:48	6:57
F50	6:18	6:31	6:37	6:52	7:03	7:09	7:14	7:18	7:27
F50	6:48	7:01	7:07	7:22	7:33	7:39	7:44	7:48	7:57
F50	7:18	7:31	7:37	7:52	8:03	8:09	8:14	8:18	8:27
F50	7:48	8:01	8:07	8:22	8:33	8:39	8:44	8:48	8:57
F50	8:21	8:34	8:40	8:55	9:06	9:12	9:17	9:21	9:30
F50	9:07	9:19	9:25	9:39	9:49	9:54	9:59	10:02	10:10
F50	9:47	9:59	10:05	10:19	10:29	10:34	10:39	10:42	10:50
F50	-	-	10:45	10:59	11:09	11:14	11:19	11:22	11:30
F50	-	-	11:25	11:39	11:49	11:54	11:59	12:02	12:10

F50



Weekday Westbound

Effective: December 14, 2025

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202-GO-METRO

Route	Ballston-MU	Washington Blvd + N Longfellow St	East Falls Church	N Washington St + Park Av	Lee Hwy + Woodley Pl	Dunn Loring-Merrifield	Vienna/Fairfax-GMU (South Side)	Pickett Rd + Arlington Blvd	University Dr + George Mason Blvd
AM Service									
F50	6:40	6:48	6:55	7:00	7:05	7:17	7:31	7:37	7:49
F50	7:10	7:18	7:25	7:30	7:35	7:47	8:01	8:07	8:19
F50	7:40	7:48	7:55	8:00	8:05	8:17	8:31	8:37	8:49
F50	8:10	8:18	8:25	8:30	8:35	8:47	9:01	9:07	9:19
F50	8:40	8:48	8:55	9:00	9:05	9:17	9:31	9:37	9:49
F50	9:10	9:18	9:24	9:29	9:35	9:45	9:58	10:04	10:16
F50	9:40	9:48	9:54	9:59	10:05	10:15	10:28	10:34	10:46
F50	10:10	10:18	10:24	10:29	10:35	10:45	10:58	11:04	11:16
F50	10:40	10:48	10:54	10:59	11:05	11:15	11:28	11:34	11:46
F50	11:10	11:18	11:24	11:29	11:35	11:45	11:58	12:04	12:16
F50	11:40	11:48	11:54	11:59	12:05	12:15	12:28	12:34	12:46
PM Service									
F50	12:10	12:18	12:24	12:29	12:35	12:45	12:58	1:04	1:16
F50	12:40	12:48	12:54	12:59	1:05	1:15	1:28	1:34	1:46
F50	1:10	1:18	1:24	1:29	1:35	1:45	1:58	2:04	2:16
F50	1:40	1:48	1:54	1:59	2:05	2:15	2:28	2:34	2:46
F50	2:10	2:18	2:24	2:29	2:35	2:45	2:58	3:04	3:16
F50	2:40	2:48	2:54	2:59	3:05	3:15	3:28	3:34	3:46
F50	3:10	3:19	3:26	3:32	3:39	3:52	4:08	4:15	4:28
F50	3:40	3:49	3:56	4:02	4:09	4:22	4:38	4:45	4:58
F50	4:10	4:19	4:26	4:32	4:39	4:52	5:08	5:15	5:28
F50	4:40	4:49	4:56	5:02	5:09	5:22	5:38	5:45	5:58
F50	5:10	5:19	5:26	5:32	5:39	5:52	6:08	6:15	6:28
F50	5:40	5:49	5:56	6:02	6:09	6:22	6:38	6:45	6:58
F50	6:10	6:18	6:24	6:29	6:35	6:48	7:03	7:10	7:22
F50	6:40	6:48	6:54	6:59	7:05	7:18	7:33	7:40	7:52

F50



Weekday Westbound

Effective: December 14, 2025

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202-GO-METRO

Route	Ballston-MU	Washington Blvd + N Longfellow St	East Falls Church	N Washington St + Park Av	Lee Hwy + Woodley Pl	Dunn Loring-Merrifield	Vienna/Fairfax-GMU (South Side)	Pickett Rd + Arlington Blvd	University Dr + George Mason Blvd
F50	7:10	7:17	7:22	7:27	7:33	7:42	7:55	8:01	8:11
F50	7:40	7:47	7:52	7:57	8:03	8:12	8:25	8:31	8:41
F50	8:10	8:17	8:22	8:27	8:33	8:42	8:55	9:01	9:11
F50	8:40	8:47	8:52	8:57	9:03	9:12	9:25	9:31	9:41
F50	9:10	9:17	9:22	9:27	9:33	9:42	9:55	10:01	10:11
F50	9:40	9:47	9:52	9:57	10:03	10:12	10:25	-	-
F50	10:20	10:27	10:32	10:37	10:43	10:52	11:05	-	-
F50	11:00	11:07	11:11	11:16	11:20	11:27	11:38	-	-
F50	11:40	11:47	11:51	11:56	12:00	12:07	12:18	-	-

F50



Saturday Eastbound

Effective: December 14, 2025

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202-GO-METRO

Route	Vienna/Fairfax-GMU (South Side)	Dunn Loring-Merrifield	Lee Hwy + Graham Rd	N Washington St + Park Av	East Falls Church	Washington Blvd + N Longfellow St	Ballston-MU
AM Service							
F50	5:55	6:05	6:15	6:20	6:25	6:28	6:37
F50	6:40	6:50	7:00	7:05	7:10	7:13	7:22
F50	7:15	7:31	7:42	7:48	7:53	7:57	8:06
F50	8:00	8:16	8:27	8:33	8:38	8:42	8:51
F50	8:45	9:01	9:12	9:18	9:23	9:27	9:36
F50	9:30	9:46	9:57	10:03	10:08	10:12	10:21
F50	10:10	10:26	10:37	10:43	10:48	10:52	11:01
F50	10:50	11:06	11:20	11:26	11:32	11:36	11:47
F50	11:35	11:51	12:05	12:11	12:17	12:21	12:32
PM Service							
F50	12:20	12:36	12:50	12:56	1:02	1:06	1:17
F50	1:05	1:21	1:35	1:41	1:47	1:51	2:02
F50	1:50	2:06	2:20	2:26	2:32	2:36	2:47
F50	2:35	2:51	3:05	3:11	3:17	3:21	3:32
F50	3:20	3:36	3:50	3:56	4:02	4:06	4:17
F50	4:05	4:21	4:35	4:41	4:47	4:51	5:02
F50	4:50	5:06	5:20	5:26	5:32	5:36	5:47
F50	5:35	5:51	6:05	6:11	6:17	6:21	6:32
F50	6:20	6:37	6:50	6:55	7:00	7:04	7:14
F50	7:05	7:22	7:35	7:40	7:45	7:49	7:59
F50	7:50	8:07	8:20	8:25	8:30	8:34	8:44
F50	8:40	8:57	9:07	9:12	9:17	9:20	9:30
F50	9:30	9:47	9:57	10:02	10:07	10:10	10:20
F50	10:15	10:25	10:35	10:40	10:45	10:48	10:56
F50	11:00	11:10	11:20	11:25	11:30	11:33	11:41

F50



Saturday Westbound

Effective: December 14, 2025

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202-GO-METRO

Route	Ballston-MU	Washington Blvd + N Longfellow St	East Falls Church	N Washington St + Park Av	Lee Hwy + Woodley Pl	Dunn Loring-Merrifield	Vienna/Fairfax-GMU (South Side)
AM Service							
F50	5:50	5:57	6:02	6:06	6:11	6:21	6:30
F50	6:45	6:52	6:57	7:01	7:06	7:16	7:25
F50	7:30	7:37	7:42	7:46	7:51	8:01	8:10
F50	8:15	8:22	8:27	8:31	8:36	8:46	8:55
F50	9:00	9:07	9:12	9:16	9:21	9:31	9:40
F50	9:45	9:52	9:57	10:01	10:06	10:16	10:25
F50	10:30	10:38	10:44	10:49	10:55	11:06	11:18
F50	11:15	11:23	11:29	11:34	11:40	11:51	12:03
PM Service							
F50	12:00	12:08	12:14	12:19	12:25	12:36	12:48
F50	12:45	12:53	12:59	1:04	1:10	1:21	1:33
F50	1:30	1:38	1:44	1:49	1:55	2:06	2:18
F50	2:15	2:23	2:29	2:34	2:40	2:51	3:03
F50	3:00	3:08	3:14	3:19	3:25	3:36	3:48
F50	3:45	3:53	3:59	4:04	4:10	4:21	4:33
F50	4:30	4:38	4:44	4:49	4:55	5:06	5:18
F50	5:15	5:23	5:29	5:34	5:40	5:51	6:03
F50	6:00	6:08	6:14	6:19	6:25	6:36	6:48
F50	6:45	6:53	6:59	7:04	7:10	7:21	7:33
F50	7:30	7:38	7:44	7:49	7:55	8:06	8:18
F50	8:15	8:23	8:29	8:34	8:40	8:51	9:03
F50	9:00	9:07	9:12	9:17	9:22	9:30	9:39
F50	9:45	9:52	9:57	10:02	10:07	10:15	10:24
F50	10:30	10:37	10:42	10:47	10:52	11:00	11:09
F50	11:15	11:22	11:27	11:32	11:37	11:45	11:54
After Midnight Service							

F50



Saturday Westbound

Effective: December 14, 2025

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Route
F50

Ballston-MU	12:00
Washington Blvd + N Longfellow St	12:07
East Falls Church	12:12
N Washington St + Park Av	12:17
Lee Hwy + Woodley Pl	12:22
Dunn Loring-Merrifield	12:30
Vienna/Fairfax-GMU (South Side)	12:39

F50



Sunday Eastbound

Effective: December 14, 2025

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Route	Vienna/Fairfax-GMU (South Side)	Dunn Loring-Merrifield	Lee Hwy + Graham Rd	N Washington St + Park Av	East Falls Church	Washington Blvd + N Longfellow St	Ballston-MU
AM Service							
F50	6:25	6:37	6:49	6:54	6:59	7:03	7:12
F50	7:10	7:22	7:34	7:39	7:44	7:48	7:57
F50	7:55	8:07	8:19	8:24	8:29	8:33	8:42
F50	8:40	8:55	9:09	9:15	9:21	9:25	9:35
F50	9:25	9:40	9:54	10:00	10:06	10:10	10:20
F50	10:10	10:25	10:39	10:45	10:51	10:55	11:05
F50	10:55	11:10	11:24	11:30	11:36	11:40	11:50
F50	11:40	11:55	12:09	12:15	12:21	12:25	12:35
PM Service							
F50	12:25	12:40	12:54	1:00	1:06	1:10	1:20
F50	1:10	1:25	1:39	1:45	1:51	1:55	2:05
F50	1:55	2:10	2:24	2:30	2:36	2:40	2:50
F50	2:40	2:55	3:09	3:15	3:21	3:25	3:35
F50	3:25	3:40	3:54	4:00	4:06	4:10	4:20
F50	4:10	4:25	4:39	4:45	4:51	4:55	5:05
F50	4:55	5:10	5:24	5:30	5:36	5:40	5:50
F50	5:40	5:55	6:09	6:15	6:21	6:25	6:35
F50	6:25	6:39	6:51	6:56	7:01	7:05	7:15
F50	7:10	7:24	7:36	7:41	7:46	7:50	8:00
F50	7:55	8:09	8:21	8:26	8:31	8:35	8:45
F50	8:40	8:54	9:06	9:11	9:16	9:20	9:30
F50	9:25	9:37	9:47	9:52	9:57	10:01	10:10

F50



Sunday Westbound

Effective: December 14, 2025

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202-GO-METRO

Route	Ballston-MU	Washington Blvd + N Longfellow St	East Falls Church	N Washington St + Park Av	Lee Hwy + Woodley Pl	Dunn Loring-Merrifield	Vienna/Fairfax-GMU (South Side)
AM Service							
F50	6:00	6:07	6:12	6:16	6:21	6:31	6:43
F50	6:45	6:52	6:57	7:01	7:06	7:16	7:28
F50	7:30	7:37	7:42	7:46	7:51	8:01	8:13
F50	8:15	8:22	8:27	8:31	8:36	8:46	8:58
F50	9:00	9:07	9:12	9:16	9:21	9:31	9:43
F50	9:45	9:53	9:59	10:03	10:09	10:19	10:32
F50	10:30	10:38	10:44	10:48	10:54	11:04	11:17
F50	11:15	11:23	11:29	11:33	11:39	11:49	12:02
PM Service							
F50	12:00	12:08	12:14	12:18	12:24	12:34	12:47
F50	12:45	12:53	12:59	1:03	1:09	1:19	1:32
F50	1:30	1:38	1:44	1:48	1:54	2:04	2:17
F50	2:15	2:23	2:29	2:33	2:39	2:49	3:02
F50	3:00	3:08	3:14	3:18	3:24	3:34	3:47
F50	3:45	3:53	3:59	4:03	4:09	4:19	4:32
F50	4:30	4:38	4:44	4:48	4:54	5:04	5:17
F50	5:15	5:23	5:29	5:33	5:39	5:49	6:02
F50	6:00	6:08	6:14	6:18	6:24	6:34	6:47
F50	6:45	6:53	6:59	7:03	7:09	7:19	7:32
F50	7:30	7:37	7:42	7:47	7:52	8:00	8:12
F50	8:15	8:22	8:27	8:32	8:37	8:45	8:57
F50	9:00	9:07	9:12	9:17	9:22	9:30	9:42

C. Crash Data

VDOT Crash Data Summary Table

Crash Data for the Intersection of Blenheim Blvd and Fairfax Commons Entrance (January 2021 - December 2025)

Document Number	Date	Crash Severity	Collision Type	Pedestrian Injury	Persons Injured	Fatalities	Work Zone Related	Adverse Weather Conditions	Distracted Driver
210905263	3/31/2021	PDO. Property Damage Only	2. Angle	0	0	0	no	yes	no
240025345	1/2/2024	B. Visible Injury	12. Ped	1	2	0	no	no	no
250815140	3/22/2025	PDO. Property Damage Only	9. Fixed Object - Off Road	0	0	0	no	no	no

VDOT Crash Data Summary Table

Crash Data for the Intersection of University Drive and Existing Courthouse Plaza Entrance/7-11 Entrance (January 2021 - December 2025)									
Document Number	Date	Crash Severity	Collision Type	Pedestrian Injury	Persons Injured	Fatalities	Work Zone Related	Adverse Weather Conditions	Distracted Driver
233005219	10/21/2023	PDO. Property Damage Only	3. Head On	0	0	0	no	no	no
231815150	2/25/2023	PDO. Property Damage Only	4. Sideswipe - Same Direction	0	0	0	no	yes	no

VDOT Crash Data Summary Table

Crash Data for the Intersection of University Drive and Democracy Ln/Whitehead St (January 2021 - December 2025)

Document Number	Date	Crash Severity	Collision Type	Pedestrian Injury	Persons Injured	Fatalities	Work Zone Related	Adverse Weather Conditions	Distracted Driver
210985310	4/8/2021	PDO. Property Damage Only	2. Angle	0	0	0	no	no	no
223495454	12/15/2022	B. Visible Injury	2. Angle	0	2	0	no	yes	no
240515364	2/20/2024	PDO. Property Damage Only	2. Angle	0	0	0	no	no	no
241135060	4/18/2024	B. Visible Injury	2. Angle	0	2	0	no	no	no
250195250	1/18/2025	PDO. Property Damage Only	2. Angle	0	0	0	no	no	no
253100105	11/5/2025	A. Severe Injury	12. Ped	1	1	0	no	no	no

VDOT Crash Data Summary Table

Crash Data for the Intersection of Layton Hall Drive and Democracy Ln (January 2021 - December 2025)

Document Number	Date	Crash Severity	Collision Type	Pedestrian Injury	Persons Injured	Fatalities	Work Zone Related	Adverse Weather Conditions	Distracted Driver
223395384	12/5/2022	PDO. Property Damage Only	1. Rear End	0	0	0	no	no	no
230395245	2/8/2023	PDO. Property Damage Only	1. Rear End	0	0	0	no	no	no
243475225	12/12/2024	PDO. Property Damage Only	2. Angle	0	0	0	no	no	no

VDOT Crash Data Summary Table

Crash Data for the Intersection of Blenheim Blvd and Layton Hall Dr (January 2021 - December 2025)									
Document Number	Date	Crash Severity	Collision Type	Pedestrian Injury	Persons Injured	Fatalities	Work Zone Related	Adverse Weather Conditions	Distracted Driver
212705266	9/27/2021	PDO. Property Damage Only	1. Rear End	0	0	0	no	no	no
212715182	9/22/2021	PDO. Property Damage Only	1. Rear End	0	0	0	no	yes	no
232045140	7/22/2023	PDO. Property Damage Only	2. Angle	0	0	0	no	no	no
243615316	11/4/2024	PDO. Property Damage Only	2. Angle	0	0	0	no	no	no
240785325	3/18/2024	PDO. Property Damage Only	1. Rear End	0	0	0	no	no	no
253010199	10/27/2025	C. Nonvisible Injury	1. Rear End	0	2	0	no	no	no

VDOT Crash Data Summary Table

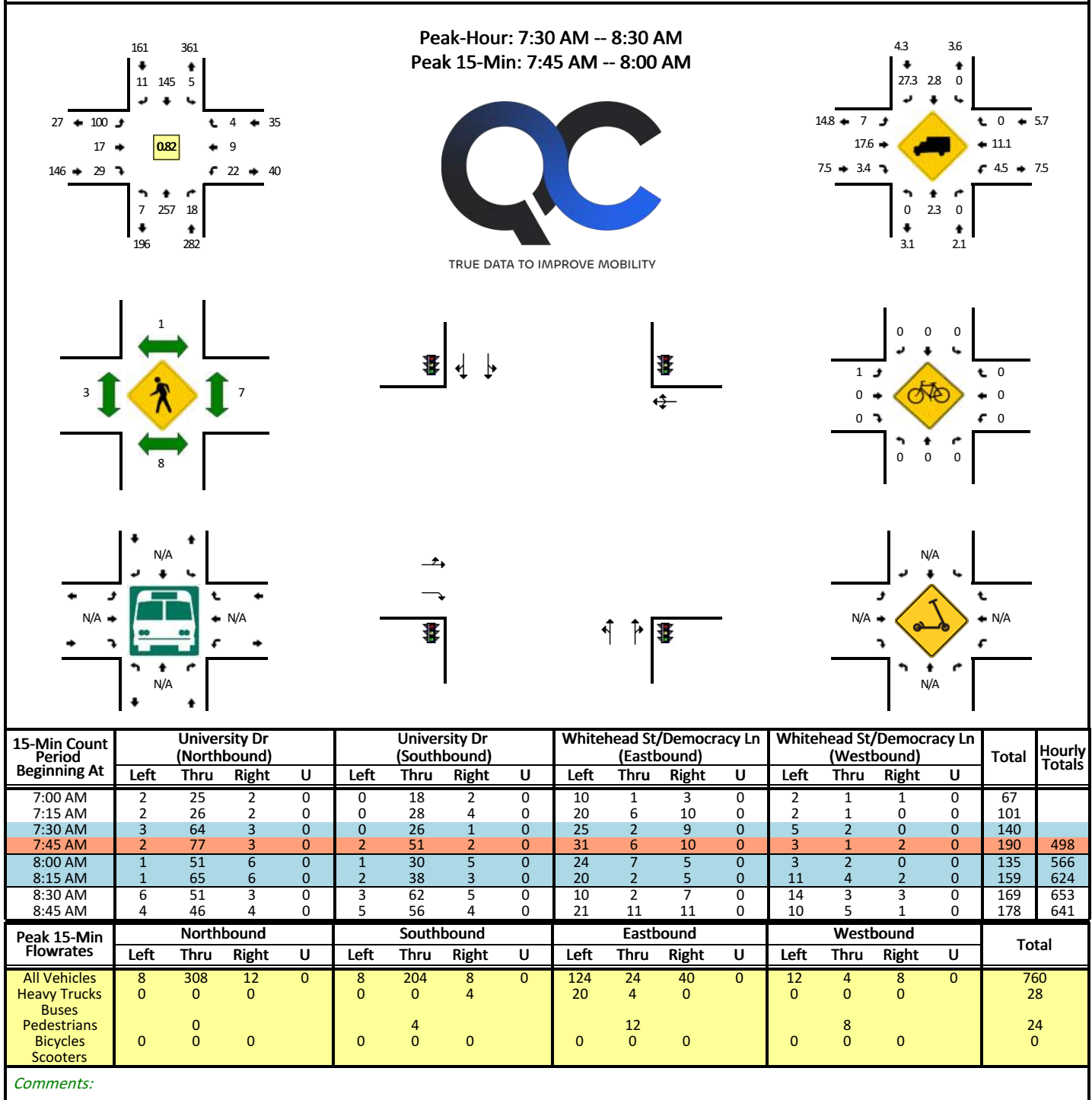
Crash Data for the Intersection of University Drive and Layton Hall Drive (January 2021 - December 2025)

Document Number	Date	Crash Severity	Collision Type	Pedestrian Injury	Persons Injured	Fatalities	Work Zone Related	Adverse Weather Conditions	Distracted Driver
232615229	9/11/2023	PDO. Property Damage Only	5. Sideswipe - Opposite Direction	0	0	0	no	no	no
240445287	2/12/2024	PDO. Property Damage Only	2. Angle	0	0	0	no	yes	no
242275076	8/13/2024	PDO. Property Damage Only	2. Angle	0	0	0	no	no	no
253030144	10/29/2025	PDO. Property Damage Only	2. Angle	0	0	0	no	no	no

D. 2023 Turning Movement Counts

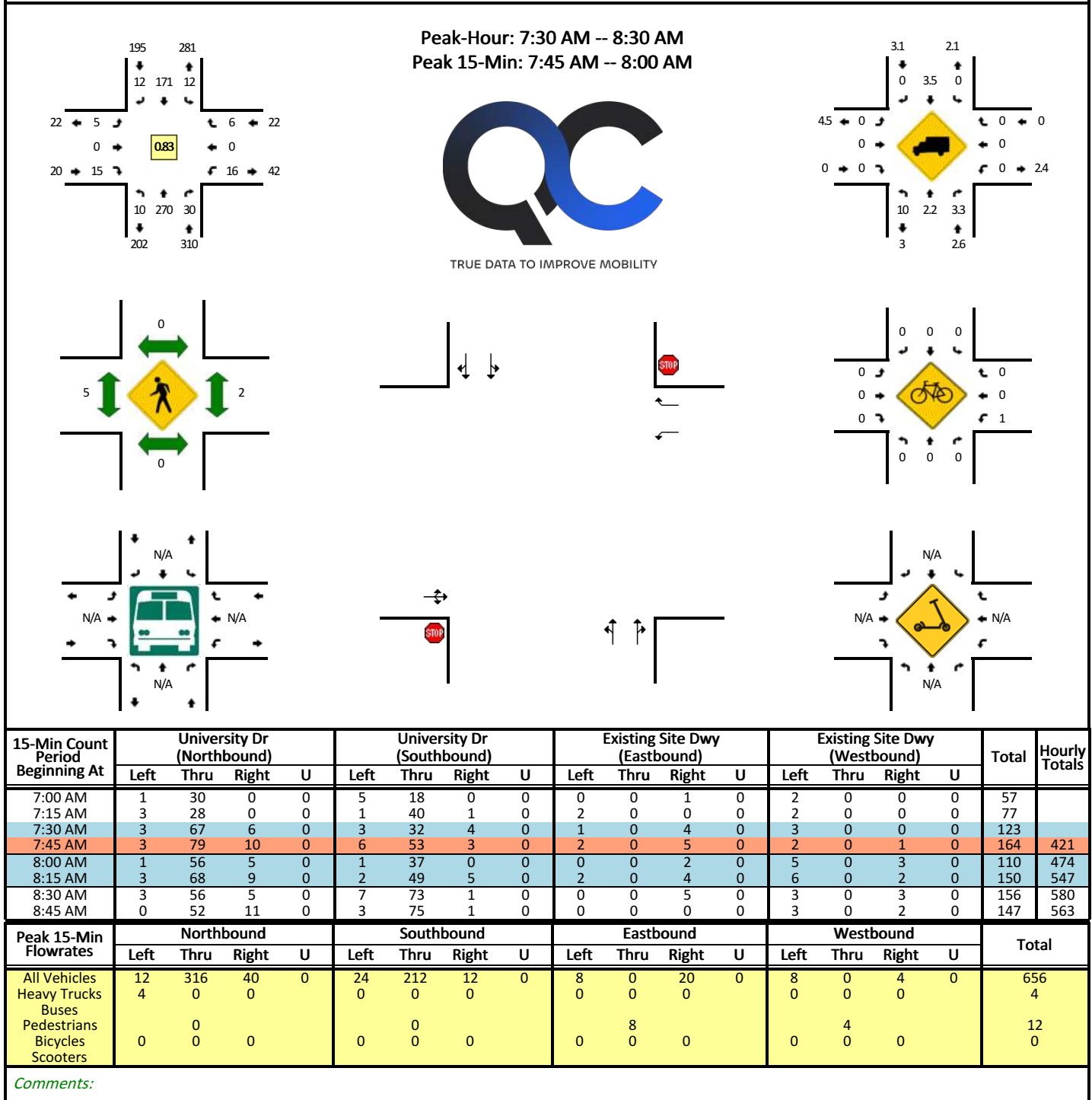
LOCATION: University Dr -- Whitehead St/Democracy Ln
CITY/STATE: Fairfax, VA

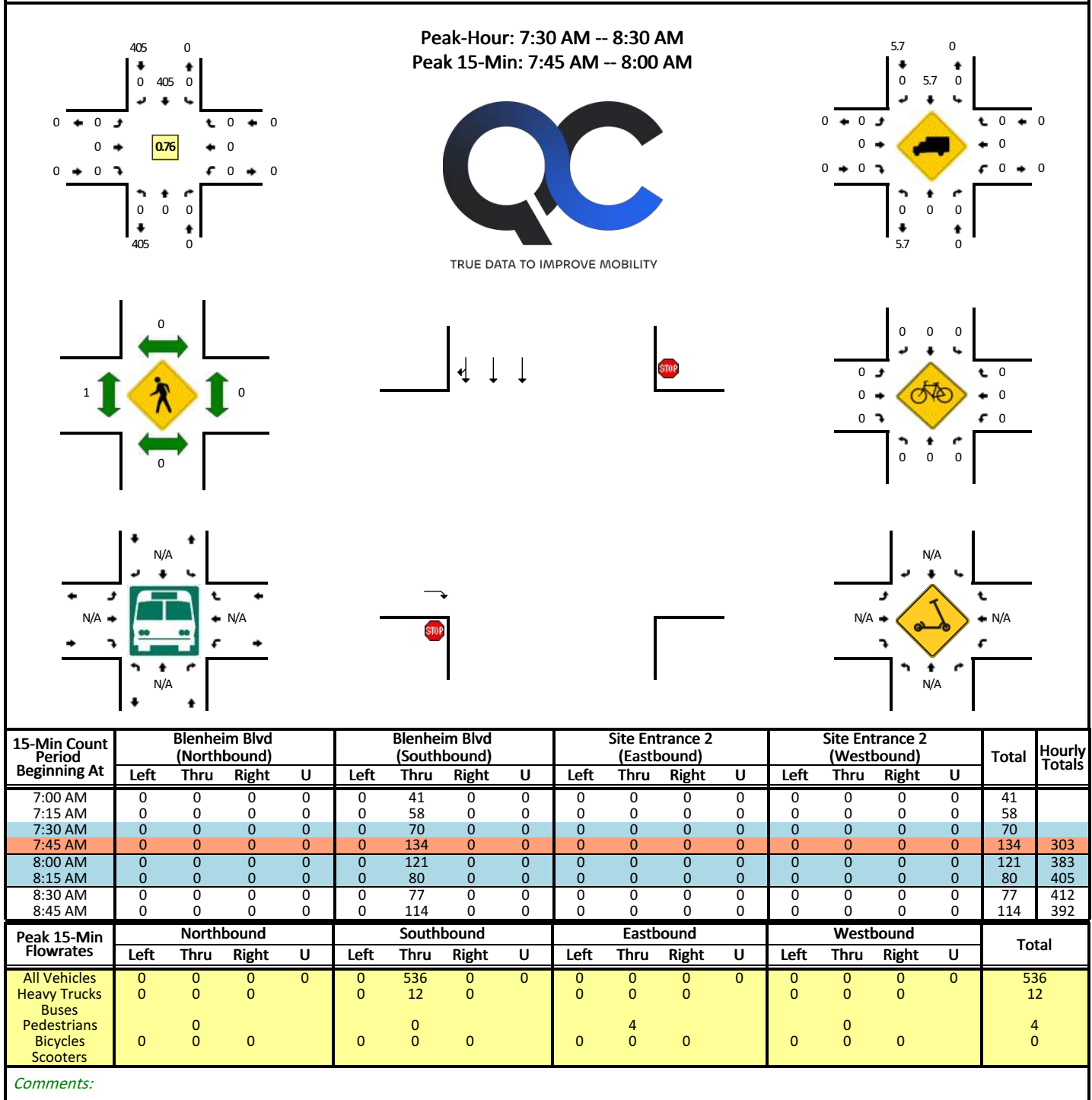
QC JOB #: 16229801
DATE: Thu, Mar 30 2023

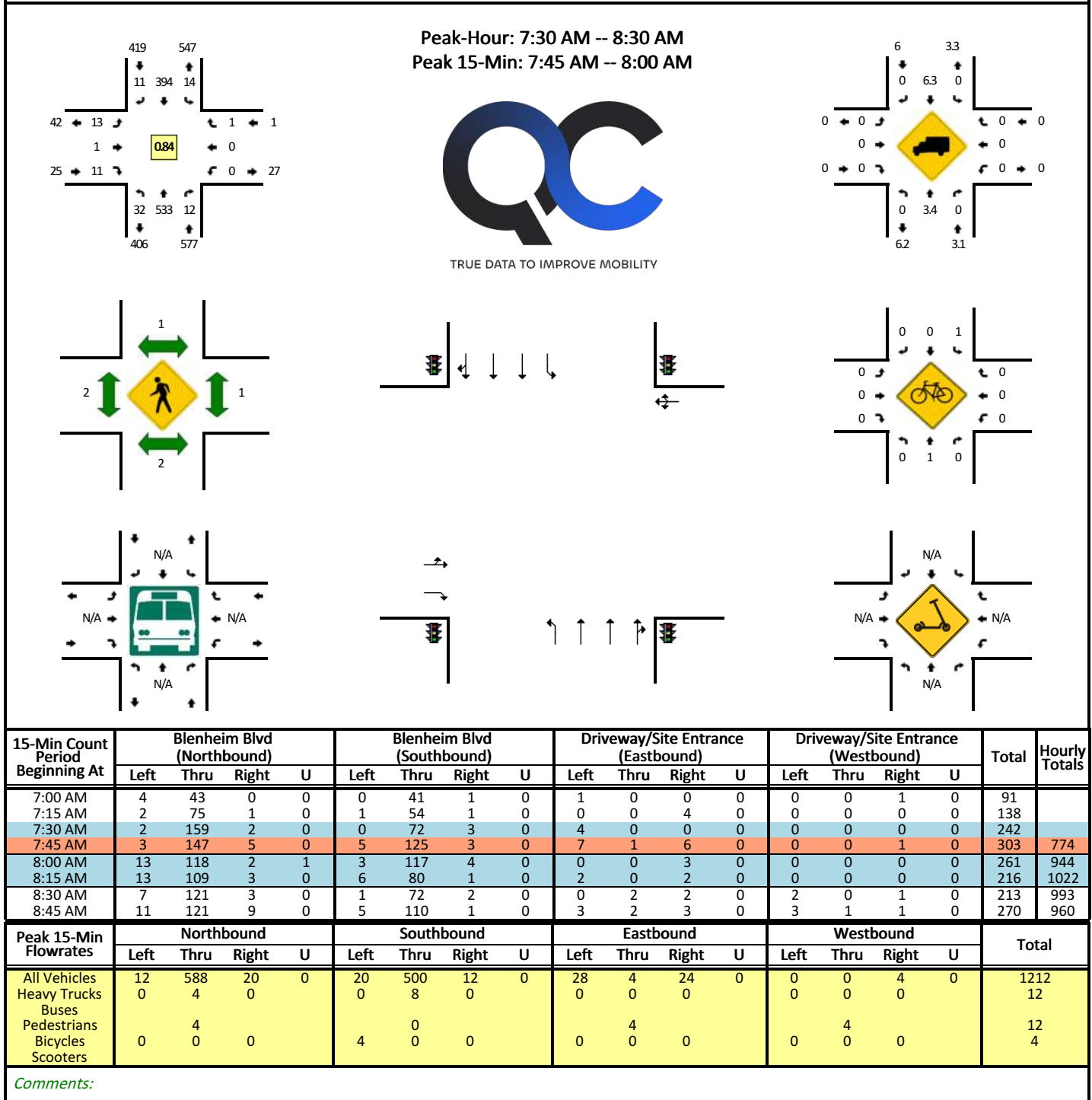


LOCATION: University Dr -- Existing Site Dwy
CITY/STATE: Fairfax, VA

QC JOB #: 16229802
DATE: Thu, Mar 30 2023

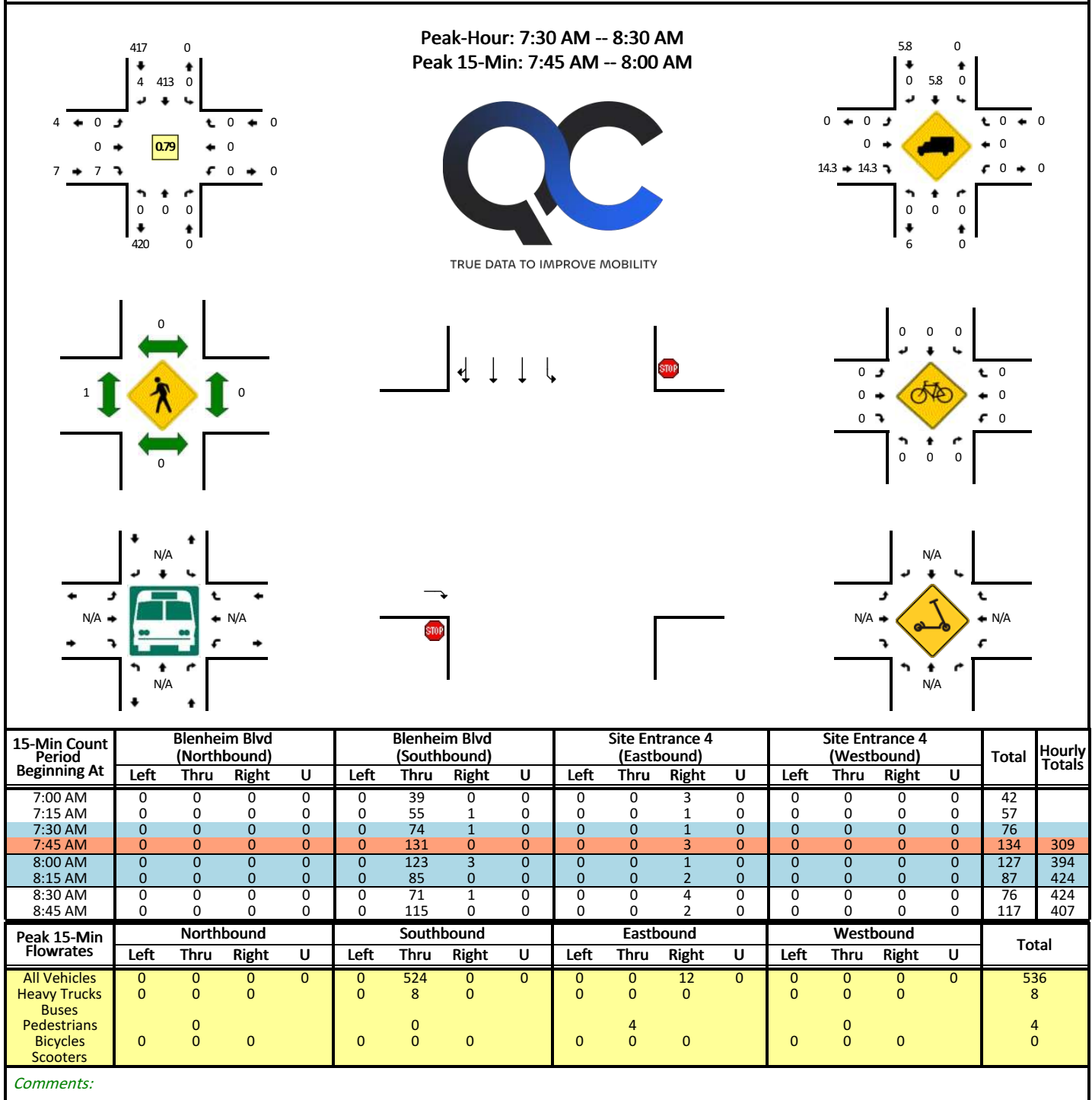


LOCATION: Blenheim Blvd -- Site Entrance 2**CITY/STATE:** Fairfax, VA**QC JOB #:** 16229803**DATE:** Thu, Mar 30 2023

LOCATION: Blenheim Blvd -- Driveway/Site Entrance**CITY/STATE:** Fairfax, VA**QC JOB #:** 16229804**DATE:** Thu, Mar 30 2023

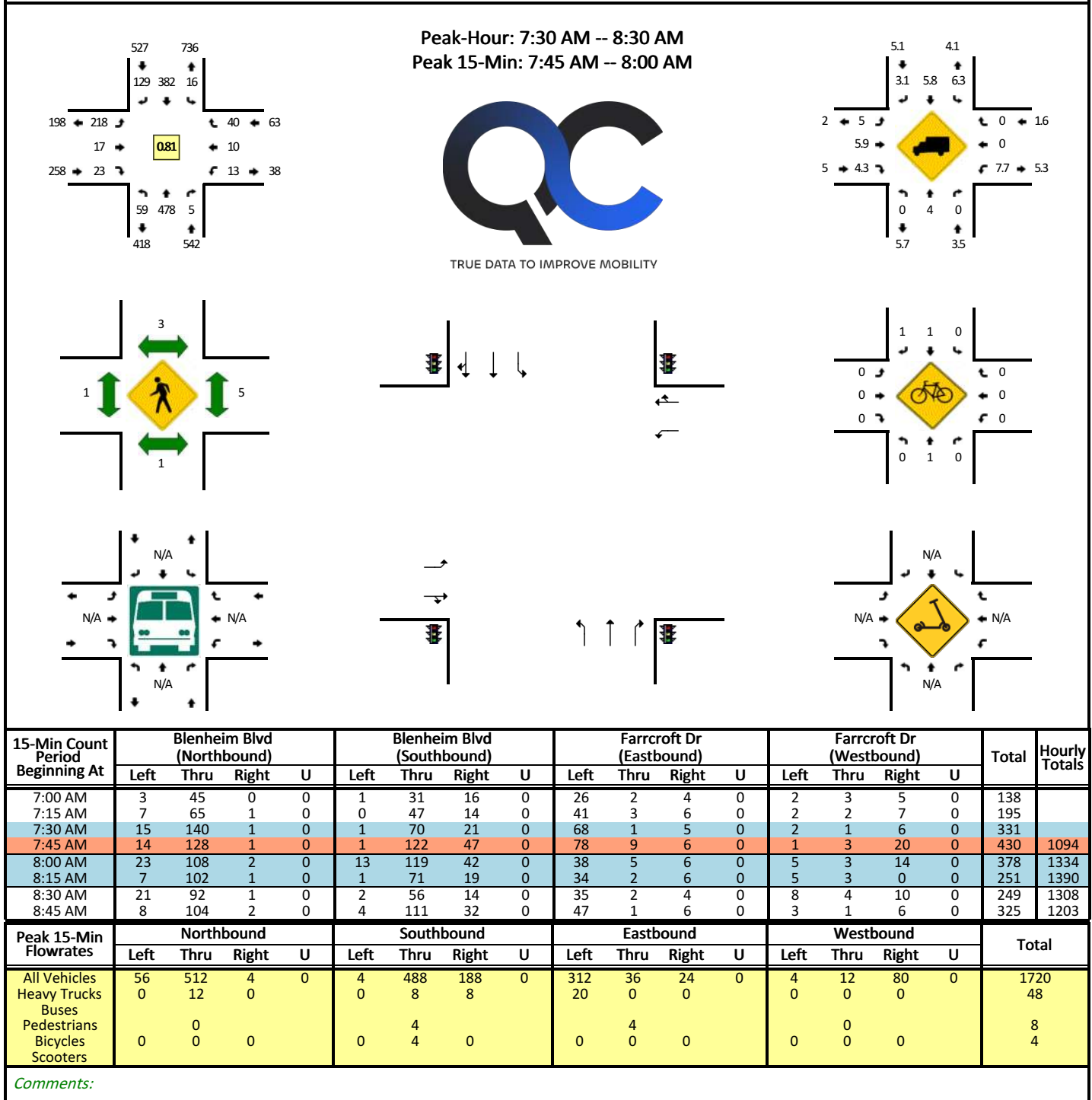
LOCATION: Blenheim Blvd -- Site Entrance 4
CITY/STATE: Fairfax, VA

QC JOB #: 16229805
DATE: Thu, Mar 30 2023



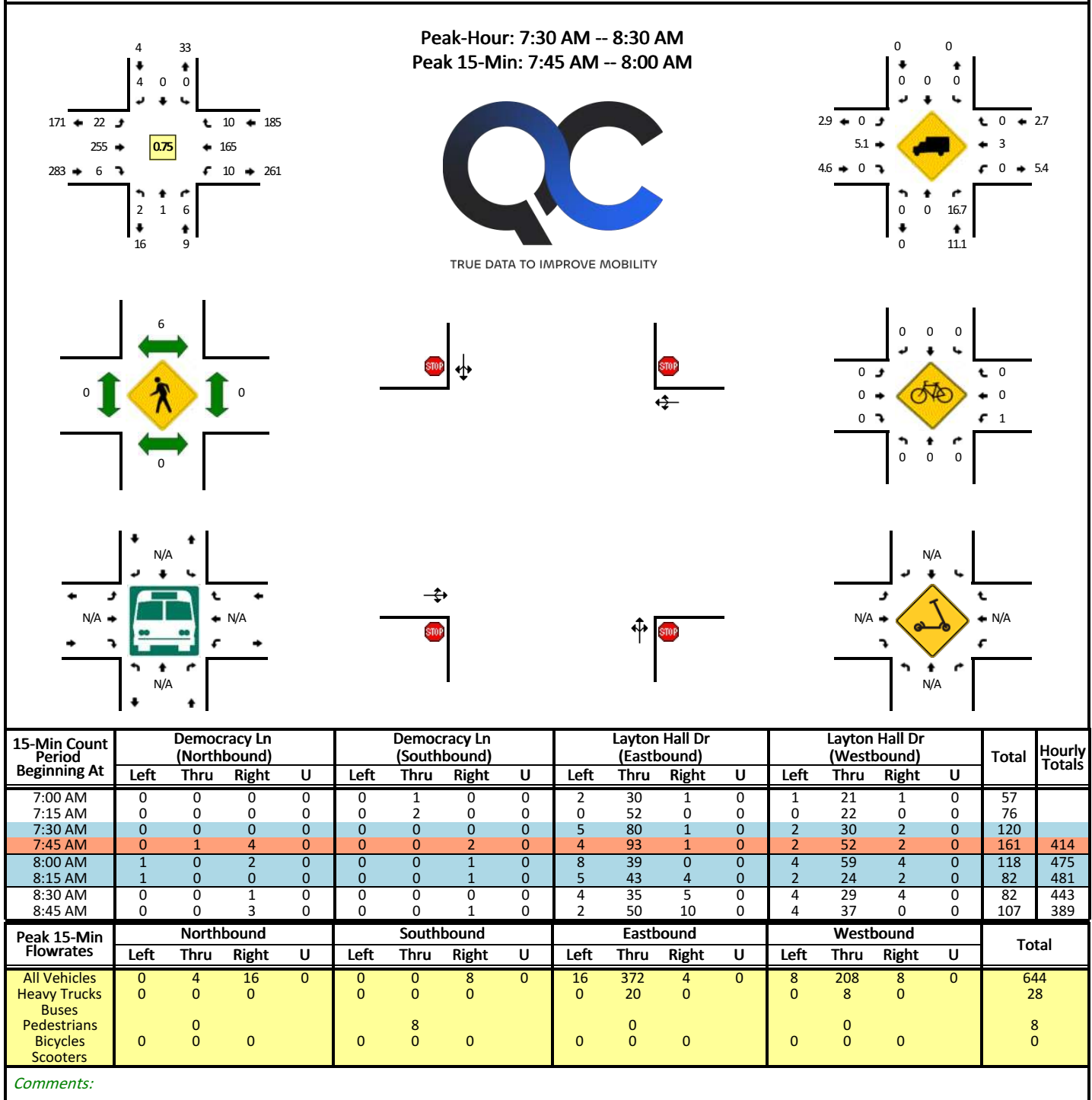
LOCATION: Blenheim Blvd -- Farrcroft Dr
CITY/STATE: Fairfax, VA

QC JOB #: 16229806
DATE: Thu, Mar 30 2023



LOCATION: Democracy Ln -- Layton Hall Dr
CITY/STATE: Fairfax, VA

QC JOB #: 16229807
DATE: Thu, Mar 30 2023



Peggy Malone and Associates

904-992-8072

File Name : 6-University Dr & Layton Hall Dr AM
 Site Code :
 Start Date : 3/7/2023
 Page No : 1

Groups Printed- Cars

	Layton Hall Dr Eastbound					Layton Hall Dr Westbound					University Dr Northbound					University Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	1	0	0	1	2	0	11	0	13	0	5	9	0	14	7	4	0	0	11	39
06:15 AM	0	1	0	0	1	8	0	6	0	14	0	4	10	0	14	2	5	0	0	7	36
06:30 AM	0	0	1	0	1	8	0	8	0	16	0	14	20	0	34	6	9	0	0	15	66
06:45 AM	0	0	4	0	4	4	1	15	0	20	2	14	17	0	33	4	10	0	0	14	71
Total	0	2	5	0	7	22	1	40	0	63	2	37	56	0	95	19	28	0	0	47	212
07:00 AM	0	0	1	0	1	11	0	21	0	32	1	13	16	0	30	16	7	0	0	23	86
07:15 AM	0	0	0	0	0	4	0	14	0	18	0	19	38	0	57	26	20	0	0	46	121
07:30 AM	1	1	1	0	3	8	0	17	0	25	1	35	46	0	82	35	16	0	0	51	161
07:45 AM	0	1	0	0	1	10	0	40	0	50	0	45	84	0	129	39	26	0	0	65	245
Total	1	2	2	0	5	33	0	92	0	125	2	112	184	0	298	116	69	0	0	185	613
08:00 AM	3	1	3	0	7	12	1	29	0	42	1	49	40	0	90	22	28	0	0	50	189
08:15 AM	1	0	0	0	1	9	1	11	0	21	0	31	42	0	73	26	36	0	0	62	157
08:30 AM	1	1	1	0	3	9	0	20	0	29	0	36	21	0	57	37	48	0	0	85	174
08:45 AM	2	0	2	0	4	16	1	27	0	44	1	44	29	0	74	24	40	0	0	64	186
Total	7	2	6	0	15	46	3	87	0	136	2	160	132	0	294	109	152	0	0	261	706
Grand Total	8	6	13	0	27	101	4	219	0	324	6	309	372	0	687	244	249	0	0	493	1531
Apprch %	29.6	22.2	48.1	0		31.2	1.2	67.6	0		0.9	45	54.1	0		49.5	50.5	0	0		
Total %	0.5	0.4	0.8	0	1.8	6.6	0.3	14.3	0	21.2	0.4	20.2	24.3	0	44.9	15.9	16.3	0	0	32.2	

	Layton Hall Dr Eastbound					Layton Hall Dr Westbound					University Dr Northbound					University Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	1	0	0	1	10	0	40	0	50	0	45	84	0	129	39	26	0	0	65	245
08:00 AM	3	1	3	0	7	12	1	29	0	42	1	49	40	0	90	22	28	0	0	50	189
08:15 AM	1	0	0	0	1	9	1	11	0	21	0	31	42	0	73	26	36	0	0	62	157
08:30 AM	1	1	1	0	3	9	0	20	0	29	0	36	21	0	57	37	48	0	0	85	174
Total Volume	5	3	4	0	12	40	2	100	0	142	1	161	187	0	349	124	138	0	0	262	765
% App. Total	41.7	25	33.3	0		28.2	1.4	70.4	0		0.3	46.1	53.6	0		47.3	52.7	0	0		
PHF	.417	.750	.333	.000	.429	.833	.500	.625	.000	.710	.250	.821	.557	.000	.676	.795	.719	.000	.000	.771	.781

Peggy Malone and Associates

904-992-8072

File Name : 6-University Dr & Layton Hall Dr AM
 Site Code :
 Start Date : 3/7/2023
 Page No : 1

Groups Printed- Trucks

	Layton Hall Dr Eastbound					Layton Hall Dr Westbound					University Dr Northbound					University Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
06:15 AM	0	0	0	0	0	1	0	0	0	1	0	0	1	0	1	0	0	0	0	0	2
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2
06:45 AM	0	0	0	0	0	2	0	0	0	2	0	0	1	0	1	0	0	0	0	0	3
Total	0	0	0	0	0	3	0	0	0	3	0	0	5	0	5	0	0	0	0	0	8
07:00 AM 07:15 AM 07:30 AM 07:45 AM	0	0	0	0	0	0	0	2	0	2	0	0	1	0	1	0	1	0	0	1	4
	0	0	0	0	0	1	0	0	0	1	0	0	1	0	1	0	2	0	0	2	4
	0	0	0	0	0	1	0	0	0	1	0	0	2	0	2	1	0	0	0	1	4
	0	0	0	0	0	2	0	1	0	3	0	0	1	0	1	0	0	0	0	0	4
	Total	0	0	0	0	0	4	0	3	0	7	0	0	5	0	5	1	3	0	0	4
08:00 AM 08:15 AM 08:30 AM 08:45 AM	0	0	0	0	0	2	0	0	0	2	0	0	2	0	2	0	0	0	0	0	4
	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	1	0	0	0	1	3
	0	0	0	0	0	1	0	0	0	1	0	0	1	0	1	1	1	0	0	2	4
	0	0	0	0	0	1	0	0	0	1	0	0	1	0	1	3	2	0	0	5	7
	Total	0	0	0	0	0	5	0	1	0	6	0	0	4	0	4	5	3	0	0	8
Grand Total	0	0	0	0	0	12	0	4	0	16	0	0	14	0	14	6	6	0	0	12	42
Apprch %	0	0	0	0		75	0	25	0		0	0	100	0		50	50	0	0		
Total %	0	0	0	0	0	28.6	0	9.5	0	38.1	0	0	33.3	0	33.3	14.3	14.3	0	0	28.6	

	Layton Hall Dr Eastbound					Layton Hall Dr Westbound					University Dr Northbound					University Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	0	0	2	0	0	0	2	0	0	2	0	2	0	0	0	0	0	4
08:15 AM	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	1	0	0	0	1	3
08:30 AM	0	0	0	0	0	1	0	0	0	1	0	0	1	0	1	1	1	0	0	2	4
08:45 AM	0	0	0	0	0	1	0	0	0	1	0	0	1	0	1	3	2	0	0	5	7
Total Volume	0	0	0	0	0	5	0	1	0	6	0	0	4	0	4	5	3	0	0	8	18
% App. Total	0	0	0	0		83.3	0	16.7	0		0	0	100	0		62.5	37.5	0	0		
PHF	.000	.000	.000	.000	.000	.625	.000	.250	.000	.750	.000	.000	.500	.000	.500	.417	.375	.000	.000	.400	.643

File Name : 6-University Dr & Layton Hall Dr AM
Site Code :
Start Date : 3/7/2023
Page No : 1

[illegible][illegible]

File Name : 6-University Dr & Layton Hall Dr AM
Site Code :
Start Date : 3/7/2023
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File Name : 6-University Dr & Layton Hall Dr AM
Site Code :
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Peggy Malone and Associates

904-992-8072

File Name : 6-University Dr & Layton Hall Dr AM
 Site Code :
 Start Date : 3/7/2023
 Page No : 1

Groups Printed- Pedestrians

	Layton Hall Dr Eastbound					Layton Hall Dr Westbound					University Dr Northbound					University Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
06:45 AM	0	0	0	2	2	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	3
Total	0	0	0	3	3	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1	5
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
07:15 AM	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	2
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	1	1	4
Total	0	0	0	1	1	0	0	0	4	4	0	0	0	0	0	0	0	0	2	2	7
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
08:15 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
08:30 AM	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	2
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	2	2	5
Grand Total	0	0	0	5	5	0	0	0	7	7	0	0	0	0	0	0	0	0	5	5	17
Apprch %	0	0	0	100		0	0	0	100		0	0	0	0		0	0	0	100		
Total %	0	0	0	29.4	29.4	0	0	0	41.2	41.2	0	0	0	0	0	0	0	0	29.4	29.4	

	Layton Hall Dr Eastbound					Layton Hall Dr Westbound					University Dr Northbound					University Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	0	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	1	1	4
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
08:15 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
08:30 AM	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	2
Total Volume	0	0	0	2	2	0	0	0	4	4	0	0	0	0	0	0	0	0	3	3	9
% App. Total	0	0	0	100		0	0	0	100		0	0	0	0		0	0	0	100		
PHF	.000	.000	.000	.500	.500	.000	.000	.000	.500	.500	.000	.000	.000	.000	.000	.000	.000	.000	.750	.750	.563

Peggy Malone and Associates

904-992-8072

File Name : 6-University Dr & Layton Hall Dr AM
 Site Code :
 Start Date : 3/7/2023
 Page No : 1

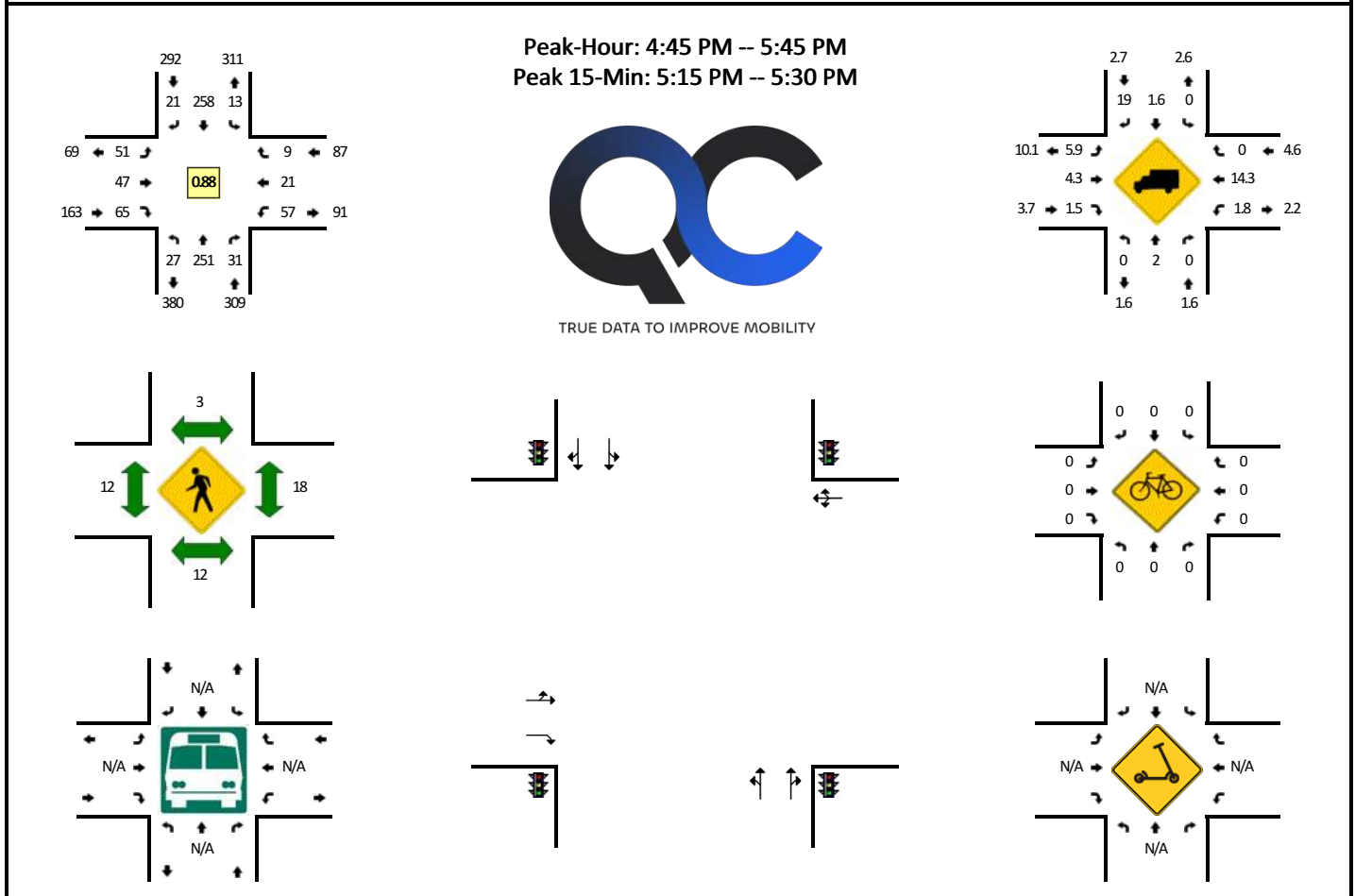
Groups Printed- Combined

	Layton Hall Dr Eastbound					Layton Hall Dr Westbound					University Dr Northbound					University Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	1	0	0	1	2	0	11	0	13	0	5	10	0	15	7	4	0	0	11	40
06:15 AM	0	1	0	1	2	9	0	6	0	15	0	4	11	0	15	2	5	0	0	7	39
06:30 AM	0	0	1	0	1	8	0	8	0	16	0	14	22	0	36	6	9	0	1	16	69
06:45 AM	0	0	4	2	6	6	1	15	1	23	2	14	18	0	34	4	10	0	0	14	77
Total	0	2	5	3	10	25	1	40	1	67	2	37	61	0	100	19	28	0	1	48	225
07:00 AM	0	0	1	0	1	11	0	23	0	34	1	13	17	0	31	16	8	0	1	25	91
07:15 AM	0	0	0	0	0	5	0	14	2	21	0	19	39	0	58	26	22	0	0	48	127
07:30 AM	1	1	1	0	3	9	0	17	0	26	1	35	48	0	84	36	16	0	0	52	165
07:45 AM	0	1	0	1	2	12	0	41	2	55	0	45	85	0	130	39	26	0	1	66	253
Total	1	2	2	1	6	37	0	95	4	136	2	112	189	0	303	117	72	0	2	191	636
08:00 AM	3	1	3	0	7	14	1	29	0	44	1	49	42	0	92	22	28	0	1	51	194
08:15 AM	1	0	0	1	2	10	1	12	0	23	0	31	42	0	73	27	36	0	1	64	162
08:30 AM	1	1	1	0	3	10	0	20	2	32	0	36	22	0	58	38	49	0	0	87	180
08:45 AM	2	0	2	0	4	17	1	27	0	45	1	44	30	0	75	27	42	0	0	69	193
Total	7	2	6	1	16	51	3	88	2	144	2	160	136	0	298	114	155	0	2	271	729
Grand Total	8	6	13	5	32	113	4	223	7	347	6	309	386	0	701	250	255	0	5	510	1590
Apprch %	25	18.8	40.6	15.6		32.6	1.2	64.3	2		0.9	44.1	55.1	0		49	50	0	1		
Total %	0.5	0.4	0.8	0.3	2	7.1	0.3	14	0.4	21.8	0.4	19.4	24.3	0	44.1	15.7	16	0	0.3	32.1	

	Layton Hall Dr Eastbound					Layton Hall Dr Westbound					University Dr Northbound					University Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	1	0	1	2	12	0	41	2	55	0	45	85	0	130	39	26	0	1	66	253
08:00 AM	3	1	3	0	7	14	1	29	0	44	1	49	42	0	92	22	28	0	1	51	194
08:15 AM	1	0	0	1	2	10	1	12	0	23	0	31	42	0	73	27	36	0	1	64	162
08:30 AM	1	1	1	0	3	10	0	20	2	32	0	36	22	0	58	38	49	0	0	87	180
Total Volume	5	3	4	2	14	46	2	102	4	154	1	161	191	0	353	126	139	0	3	268	789
% App. Total	35.7	21.4	28.6	14.3		29.9	1.3	66.2	2.6		0.3	45.6	54.1	0		47	51.9	0	1.1		
PHF	.417	.750	.333	.500	.500	.821	.500	.622	.500	.700	.250	.821	.562	.000	.679	.808	.709	.000	.750	.770	.780

LOCATION: University Dr -- Whitehead St/Democracy Ln
CITY/STATE: Fairfax, VA

QC JOB #: 16229808
DATE: Thu, Mar 30 2023

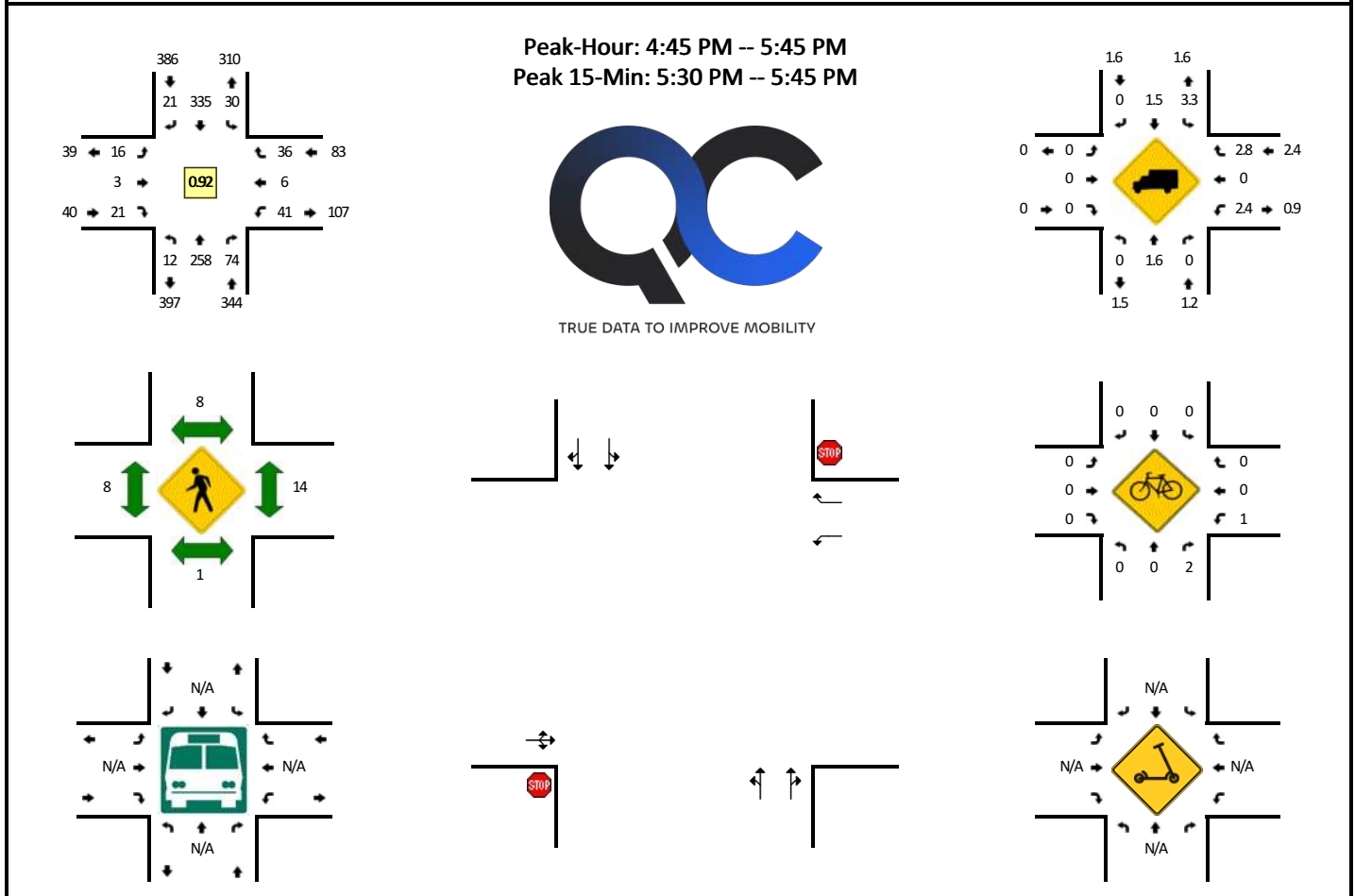


15-Min Count Period Beginning At	University Dr (Northbound)				University Dr (Southbound)				Whitehead St/Democracy Ln (Eastbound)				Whitehead St/Democracy Ln (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	6	40	5	0	1	86	10	0	11	5	7	0	17	3	5	0	196	
4:15 PM	9	78	6	0	2	72	4	0	16	8	13	0	13	3	3	0	227	
4:30 PM	12	41	10	0	3	89	3	0	14	9	18	0	10	3	2	0	214	
4:45 PM	9	45	5	0	3	48	2	0	15	10	22	0	6	2	1	0	168	805
5:00 PM	6	54	11	0	2	82	8	0	9	10	17	0	12	11	2	0	224	833
5:15 PM	5	76	8	0	6	62	8	0	19	16	19	0	15	4	4	0	242	848
5:30 PM	7	76	7	0	2	66	3	0	8	11	7	0	24	4	2	0	217	851
5:45 PM	5	56	9	0	2	49	9	0	12	5	10	0	6	2	4	0	169	852
6:00 PM	12	51	7	0	4	55	2	0	9	8	9	0	7	6	1	0	171	799
6:15 PM	8	38	10	0	2	46	5	0	6	7	6	0	12	8	2	0	150	707
6:30 PM	10	36	10	0	0	43	5	0	7	10	12	0	13	5	1	0	152	642
6:45 PM	6	35	10	0	3	40	2	0	11	5	10	0	12	2	2	0	138	611
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	20	304	32	0	24	248	32	0	76	64	76	0	60	16	16	0	968	
Heavy Trucks	0	4	0	0	0	4	8	0	0	4	4	0	0	0	0	0	24	
Buses																		
Pedestrians		16				0				28				20			64	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

LOCATION: University Dr -- Existing Site Dwy
CITY/STATE: Fairfax, VA

QC JOB #: 16229809
DATE: Thu, Mar 30 2023



15-Min Count Period Beginning At	University Dr (Northbound)				University Dr (Southbound)				Existing Site Dwy (Eastbound)				Existing Site Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	4	44	11	0	8	100	3	0	0	1	4	0	8	0	8	0	191	
4:15 PM	4	78	20	0	7	84	6	0	4	0	5	0	9	0	10	0	227	
4:30 PM	3	57	14	0	8	107	4	0	0	1	8	0	14	3	7	0	226	
4:45 PM	2	51	17	0	9	68	3	0	1	1	6	0	9	0	6	0	173	817
5:00 PM	4	57	15	0	6	93	7	0	5	1	6	0	7	3	11	0	215	841
5:15 PM	3	81	14	0	7	90	6	0	3	1	5	0	12	1	9	0	232	846
5:30 PM	3	69	28	0	8	84	5	0	7	0	4	0	13	2	10	0	233	853
5:45 PM	1	56	21	0	7	54	4	0	2	0	5	0	14	0	11	0	175	855
6:00 PM	1	63	22	0	6	60	4	0	1	0	3	0	18	1	6	0	185	825
6:15 PM	1	49	15	0	6	57	2	0	1	0	5	0	10	1	6	0	153	746
6:30 PM	3	48	13	0	7	60	2	0	2	0	3	0	19	0	7	0	164	677
6:45 PM	4	39	6	0	4	53	5	0	3	0	2	0	15	0	9	0	140	642
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	12	276	112	0	32	336	20	0	28	0	16	0	52	8	40	0	932	
Heavy Trucks	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	12	
Buses																		
Pedestrians	0	0			0	0			8				16				24	
Bicycles	0	0	4		0	0	0		0	0	0		4	0	0		8	
Scooters																		

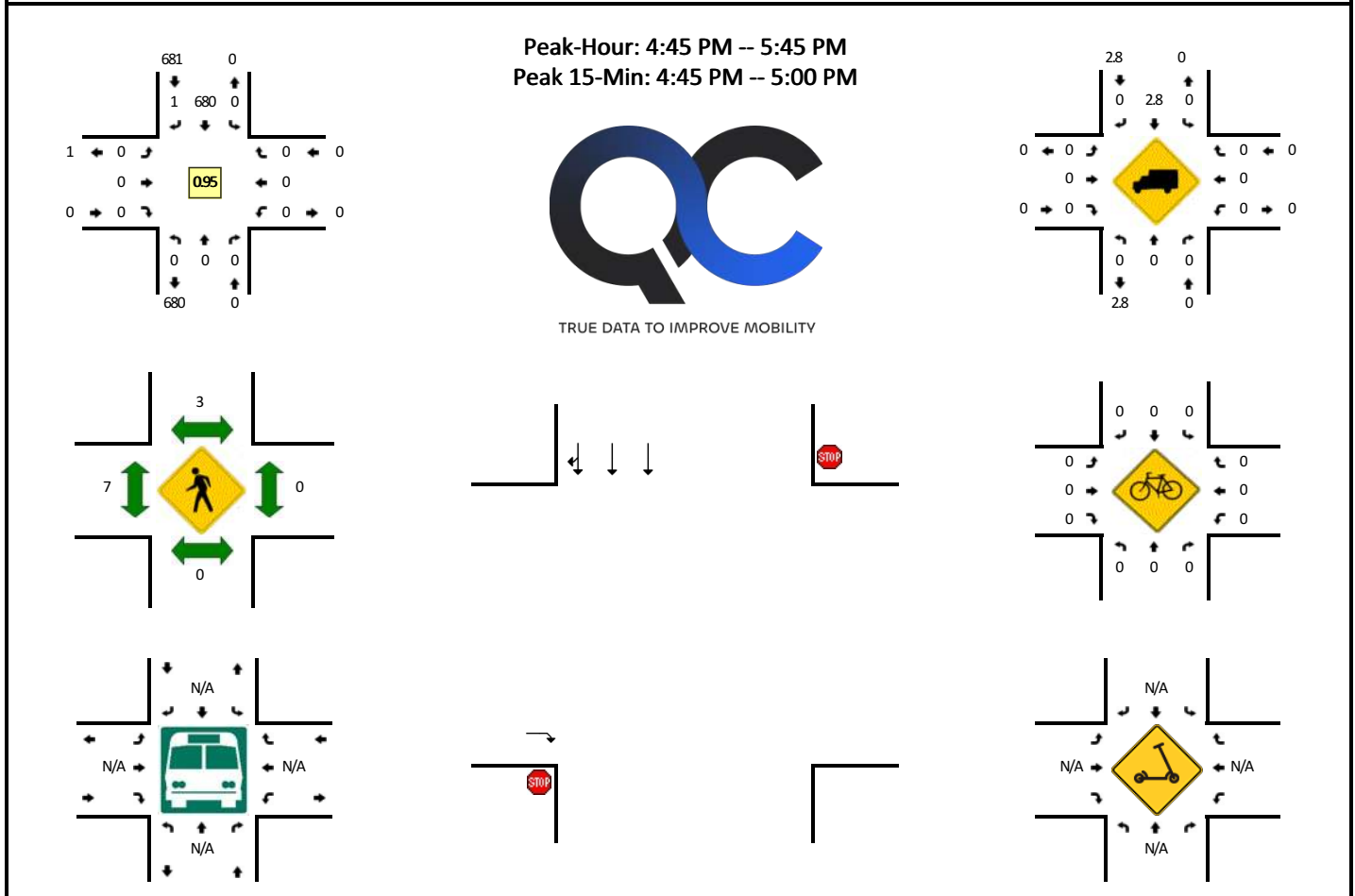
Comments:

Report generated on 8/13/2024 2:49 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

LOCATION: Blenheim Blvd -- Site Entrance 2
CITY/STATE: Fairfax, VA

QC JOB #: 16229810
DATE: Thu, Mar 30 2023

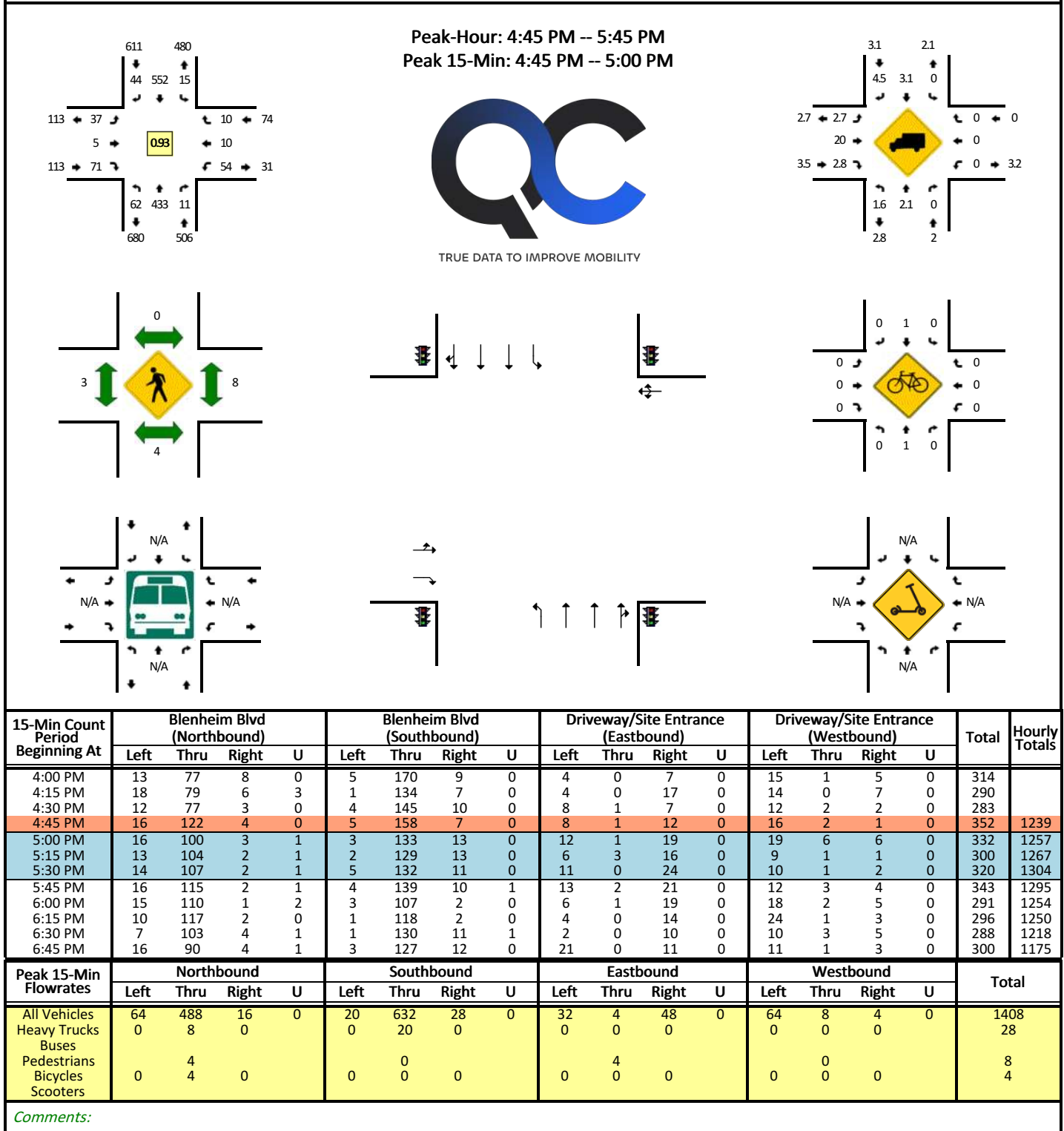


15-Min Count Period Beginning At	Blenheim Blvd (Northbound)				Blenheim Blvd (Southbound)				Site Entrance 2 (Eastbound)				Site Entrance 2 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	192	0	0	0	0	0	0	0	0	0	0	192	
4:15 PM	0	0	0	0	0	163	0	0	0	0	0	0	0	0	0	0	163	
4:30 PM	0	0	0	0	0	170	1	0	0	0	0	0	0	0	0	0	171	
4:45 PM	0	0	0	0	0	179	0	0	0	0	0	0	0	0	0	0	179	705
5:00 PM	0	0	0	0	0	175	1	0	0	0	0	0	0	0	0	0	176	689
5:15 PM	0	0	0	0	0	159	0	0	0	0	0	0	0	0	0	0	159	685
5:30 PM	0	0	0	0	0	167	0	0	0	0	0	0	0	0	0	0	167	681
5:45 PM	0	0	0	0	0	174	0	0	0	0	0	0	0	0	0	0	174	676
6:00 PM	0	0	0	0	0	146	0	0	0	0	0	0	0	0	0	0	146	646
6:15 PM	0	0	0	0	0	144	0	0	0	0	0	0	0	0	0	0	144	631
6:30 PM	0	0	0	0	0	152	1	0	0	0	0	0	0	0	0	0	153	617
6:45 PM	0	0	0	0	0	148	0	0	0	0	0	0	0	0	0	0	148	591
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	0	716	0	0	0	0	0	0	0	0	0	0	716	
Heavy Trucks	0	0	0	0	0	20	0	0	0	0	0	0	0	0	0	0	20	
Buses																		
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Scooters																		

Comments:

Report generated on 8/13/2024 2:49 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

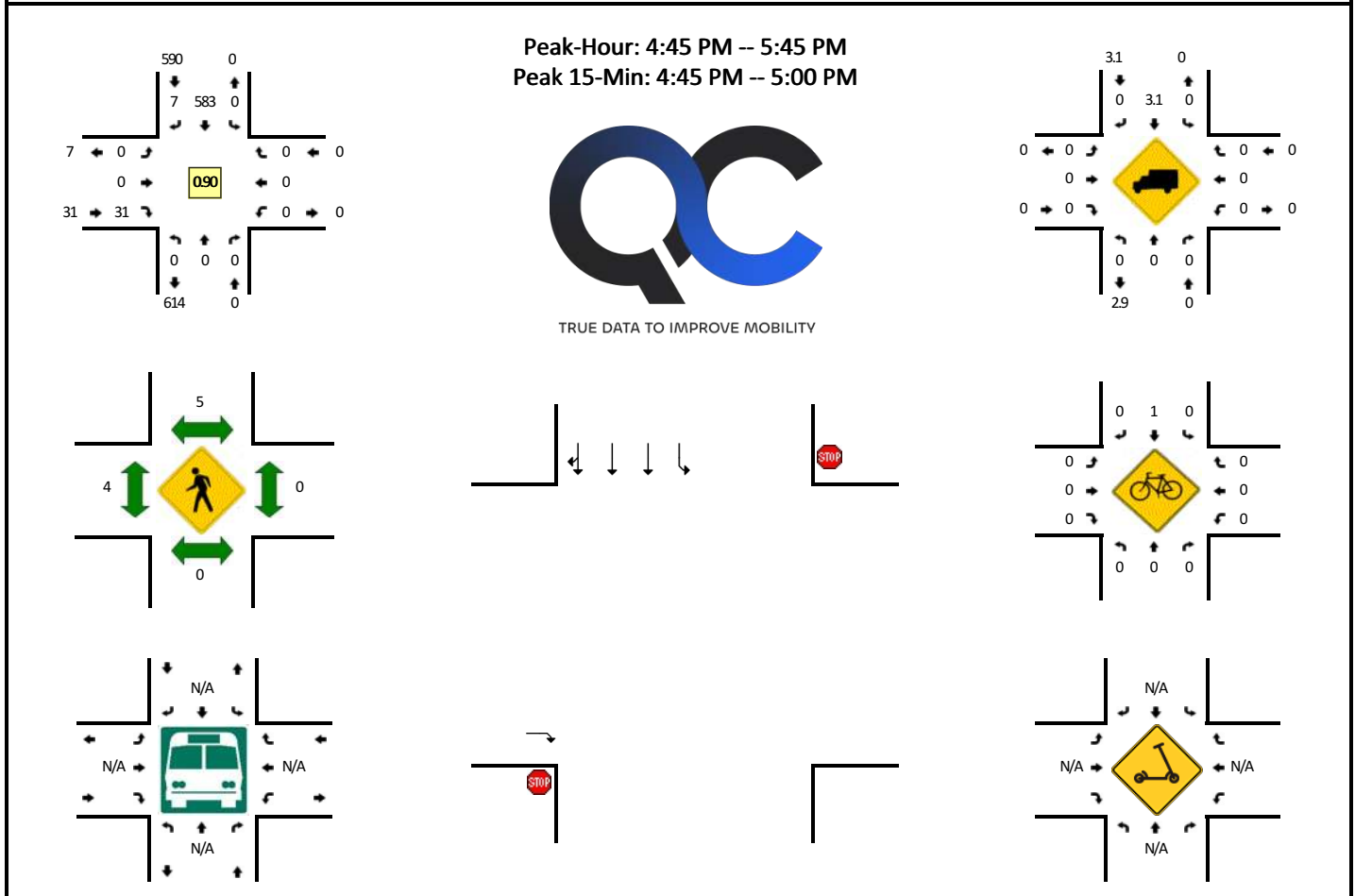
LOCATION: Blenheim Blvd -- Driveway/Site Entrance**CITY/STATE:** Fairfax, VA**QC JOB #:** 16229811**DATE:** Thu, Mar 30 2023

Report generated on 8/13/2024 2:49 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

LOCATION: Blenheim Blvd -- Site Entrance 4
CITY/STATE: Fairfax, VA

QC JOB #: 16229812
DATE: Thu, Mar 30 2023



15-Min Count Period Beginning At	Blenheim Blvd (Northbound)				Blenheim Blvd (Southbound)				Site Entrance 4 (Eastbound)				Site Entrance 4 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	178	3	0	0	0	7	0	0	0	0	0	188	
4:15 PM	0	0	0	0	0	140	1	0	0	0	4	0	0	0	0	0	145	
4:30 PM	0	0	0	0	0	154	1	0	0	0	6	0	0	0	0	0	161	
4:45 PM	0	0	0	0	0	161	5	0	0	0	6	0	0	0	0	0	172	666
5:00 PM	0	0	0	0	0	140	0	0	0	0	10	0	0	0	0	0	150	628
5:15 PM	0	0	0	0	0	137	0	0	0	0	8	0	0	0	0	0	145	628
5:30 PM	0	0	0	0	0	145	2	0	0	0	7	0	0	0	0	0	154	621
5:45 PM	0	0	0	0	0	136	2	0	0	0	13	0	0	0	0	0	151	600
6:00 PM	0	0	0	0	0	110	1	0	0	0	6	0	0	0	0	0	117	567
6:15 PM	0	0	0	0	0	113	1	0	0	0	4	0	0	0	0	0	118	540
6:30 PM	0	0	0	0	0	130	1	0	0	0	12	0	0	0	0	0	143	529
6:45 PM	0	0	0	0	0	133	1	0	0	0	11	0	0	0	0	0	145	523
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	0	644	20	0	0	0	24	0	0	0	0	0	688	
Heavy Trucks	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	0	16	
Buses																		
Pedestrians	0	0	0	0	0	12	0	0	0	4	0	0	0	0	0	0	16	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Scooters																		

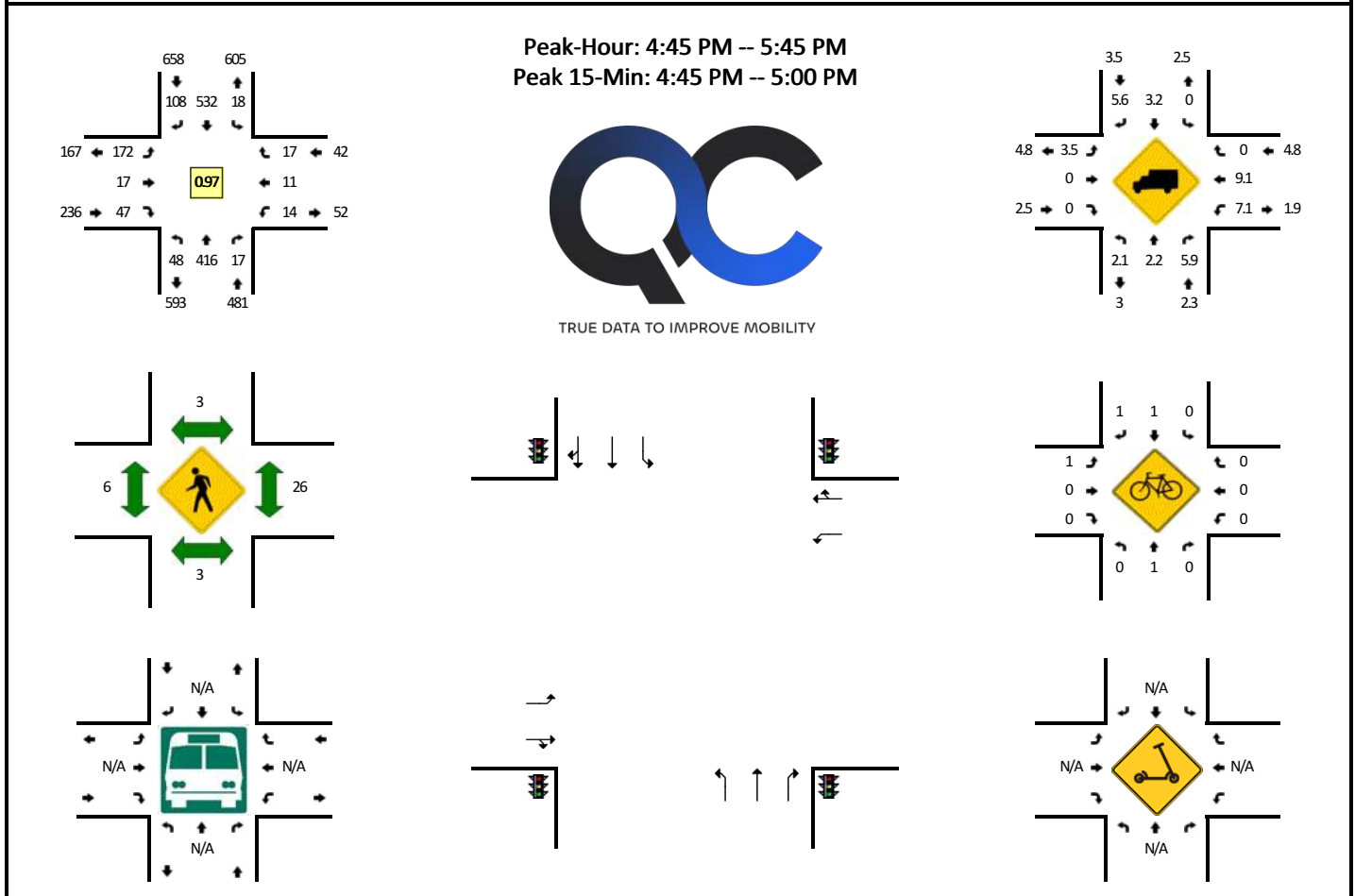
Comments:

Report generated on 8/13/2024 2:49 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

LOCATION: Blenheim Blvd -- Farrcroft Dr
CITY/STATE: Fairfax, VA

QC JOB #: 16229813
DATE: Thu, Mar 30 2023



15-Min Count Period Beginning At	Blenheim Blvd (Northbound)				Blenheim Blvd (Southbound)				Farrcroft Dr (Eastbound)				Farrcroft Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	14	69	4	0	8	155	46	0	26	3	14	0	7	2	2	0	350	
4:15 PM	8	80	2	0	11	137	25	0	39	1	7	0	6	1	4	0	321	
4:30 PM	8	78	2	0	2	112	22	0	39	1	27	0	4	2	4	0	301	
4:45 PM	20	96	8	0	7	148	22	0	43	3	12	0	1	1	5	0	366	1338
5:00 PM	11	115	3	0	5	127	40	0	32	3	12	0	4	5	3	0	360	1348
5:15 PM	8	97	5	0	5	117	28	0	49	4	13	0	8	5	4	0	343	1370
5:30 PM	9	108	1	0	1	140	18	0	48	7	10	0	1	0	5	0	348	1417
5:45 PM	15	120	2	0	6	125	19	0	52	7	4	0	3	1	6	0	360	1411
6:00 PM	9	109	4	0	7	106	20	0	50	3	3	0	2	1	6	0	320	1371
6:15 PM	13	110	7	0	6	114	21	0	45	3	8	0	3	3	4	0	337	1365
6:30 PM	11	94	2	0	5	118	19	0	25	1	5	0	6	1	4	0	291	1308
6:45 PM	9	104	4	0	4	117	14	0	35	2	7	0	2	2	3	0	303	1251
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	80	384	32	0	28	592	88	0	172	12	48	0	4	4	20	0	1464	
Heavy Trucks	0	4	4		0	16	0		4	0	0		0	0	0		28	
Buses																		
Pedestrians		8				8				8				28			52	
Bicycles	0	4	0		0	0	0		0	0	0		0	0	0		4	
Scooters																		

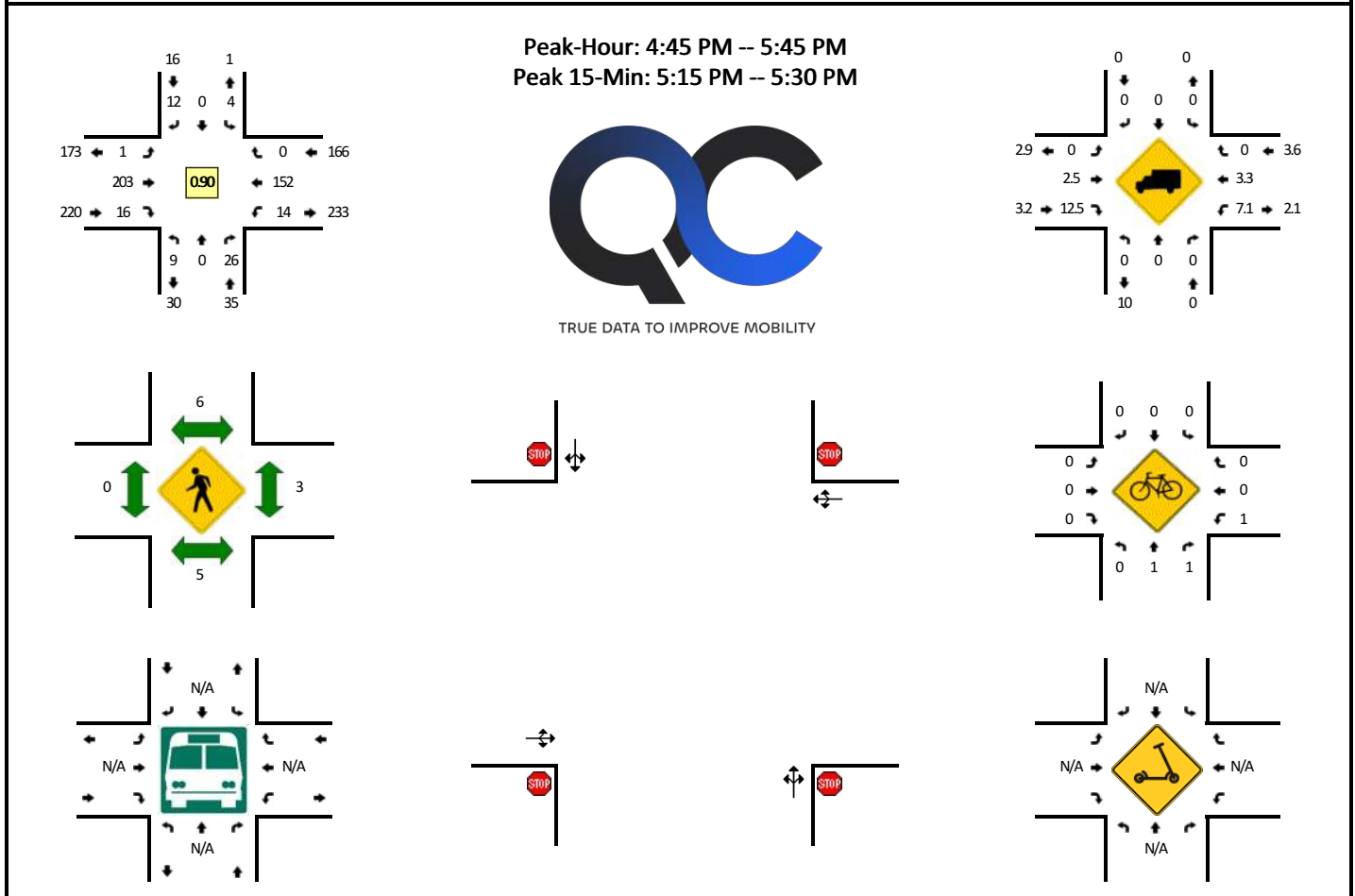
Comments:

Report generated on 8/13/2024 2:49 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

LOCATION: Democracy Ln -- Layton Hall Dr
CITY/STATE: Fairfax, VA

QC JOB #: 16229814
DATE: Thu, Mar 30 2023



15-Min Count Period Beginning At	Democracy Ln (Northbound)				Democracy Ln (Southbound)				Layton Hall Dr (Eastbound)				Layton Hall Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	7	0	7	0	1	0	1	0	0	34	1	0	4	59	0	0	114	
4:15 PM	4	0	6	0	0	0	1	0	2	42	3	0	5	29	0	0	92	
4:30 PM	2	0	5	0	11	1	5	0	1	48	1	0	1	39	0	0	114	
4:45 PM	3	0	3	0	1	0	0	0	0	48	5	0	5	40	0	0	105	425
5:00 PM	2	0	6	0	2	0	5	0	1	40	4	0	5	51	0	0	116	427
5:15 PM	4	0	7	0	1	0	7	0	0	58	5	0	4	35	0	0	121	456
5:30 PM	0	0	10	0	0	0	0	0	0	57	2	0	0	26	0	0	95	437
5:45 PM	3	0	5	0	0	0	0	0	0	53	5	0	2	33	0	0	101	433
6:00 PM	4	0	5	0	0	0	0	0	0	54	2	0	5	25	0	0	95	412
6:15 PM	9	0	10	0	0	0	0	0	0	43	0	0	5	32	0	0	99	390
6:30 PM	2	0	3	0	0	0	1	0	0	29	1	0	4	28	0	0	68	363
6:45 PM	5	0	5	0	0	0	0	0	0	37	1	0	0	25	0	0	73	335
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	16	0	28	0	4	0	28	0	0	232	20	0	16	140	0	0	484	
Heavy Trucks	0	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	8	
Buses																		
Pedestrians		8				4				0				0			12	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Scooters																		

Comments:

Peggy Malone and Associates

904-992-8072

File Name : 6-University Dr & Layton Hall Dr PM
 Site Code :
 Start Date : 3/7/2023
 Page No : 1

Groups Printed- Cars

	Layton Hall Dr Eastbound					Layton Hall Dr Westbound					University Dr Northbound					University Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	0	0	2	0	2	20	0	41	0	61	1	31	23	0	55	21	64	0	0	85	203
04:15 PM	0	0	1	0	1	25	0	27	0	52	0	45	23	0	68	19	65	0	0	84	205
04:30 PM	0	1	2	0	3	18	2	26	0	46	2	35	15	0	52	26	57	0	0	83	184
04:45 PM	0	0	0	0	0	16	0	11	0	27	0	49	26	0	75	21	51	0	0	72	174
Total	0	1	5	0	6	79	2	105	0	186	3	160	87	0	250	87	237	0	0	324	766
05:00 PM	2	0	0	0	2	24	1	23	0	48	4	54	30	0	88	18	49	2	0	69	207
05:15 PM	0	0	1	0	1	25	0	25	0	50	2	42	22	0	66	26	49	1	0	76	193
05:30 PM	0	0	1	0	1	11	1	23	0	35	2	46	28	0	76	14	44	1	0	59	171
05:45 PM	0	2	0	0	2	18	3	18	0	39	3	42	31	0	76	29	48	1	0	78	195
Total	2	2	2	0	6	78	5	89	0	172	11	184	111	0	306	87	190	5	0	282	766
06:00 PM	0	1	5	0	6	16	1	26	0	43	1	41	19	0	61	20	38	0	0	58	168
06:15 PM	0	1	1	0	2	21	0	28	0	49	1	34	24	0	59	17	34	1	0	52	162
06:30 PM	0	0	0	0	0	16	1	23	0	40	0	33	22	0	55	17	28	0	0	45	140
06:45 PM	0	0	0	0	0	14	0	11	0	25	1	29	18	0	48	10	35	2	0	47	120
Total	0	2	6	0	8	67	2	88	0	157	3	137	83	0	223	64	135	3	0	202	590
Grand Total	2	5	13	0	20	224	9	282	0	515	17	481	281	0	779	238	562	8	0	808	2122
Apprch %	10	25	65	0		43.5	1.7	54.8	0		2.2	61.7	36.1	0		29.5	69.6	1	0		
Total %	0.1	0.2	0.6	0	0.9	10.6	0.4	13.3	0	24.3	0.8	22.7	13.2	0	36.7	11.2	26.5	0.4	0	38.1	

	Layton Hall Dr Eastbound					Layton Hall Dr Westbound					University Dr Northbound					University Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	0	1	0	1	25	0	27	0	52	0	45	23	0	68	19	65	0	0	84	205
04:30 PM	0	1	2	0	3	18	2	26	0	46	2	35	15	0	52	26	57	0	0	83	184
04:45 PM	0	0	0	0	0	16	0	11	0	27	0	49	26	0	75	21	51	0	0	72	174
05:00 PM	2	0	0	0	2	24	1	23	0	48	4	54	30	0	88	18	49	2	0	69	207
Total Volume	2	1	3	0	6	83	3	87	0	173	6	183	94	0	283	84	222	2	0	308	770
% App. Total	33.3	16.7	50	0		48	1.7	50.3	0		2.1	64.7	33.2	0		27.3	72.1	0.6	0		
PHF	.250	.250	.375	.000	.500	.830	.375	.806	.000	.832	.375	.847	.783	.000	.804	.808	.854	.250	.000	.917	.930

Peggy Malone and Associates

904-992-8072

File Name : 6-University Dr & Layton Hall Dr PM
 Site Code :
 Start Date : 3/7/2023
 Page No : 1

Groups Printed- Trucks

	Layton Hall Dr Eastbound					Layton Hall Dr Westbound					University Dr Northbound					University Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	2	0	0	0	2	0	1	0	0	1	0	0	0	0	0	3
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	2
04:30 PM	0	0	0	0	0	2	0	1	0	3	0	0	0	0	0	0	1	0	0	1	4
04:45 PM	0	0	0	0	0	3	0	0	0	3	0	0	1	0	1	0	0	0	0	0	4
Total	0	0	0	0	0	7	0	1	0	8	0	1	2	0	3	0	2	0	0	2	13
05:00 PM	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	2
05:15 PM	0	0	0	0	0	1	0	0	0	1	0	0	1	0	1	0	0	0	0	0	2
05:30 PM	0	0	0	0	0	1	0	0	0	1	0	0	1	0	1	0	1	0	0	1	3
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	3	0	1	0	4	0	0	2	0	2	0	1	0	0	1	7
06:00 PM	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0	2
06:15 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
06:45 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	2	0	1	0	3	0	0	2	0	2	0	0	0	0	0	5
Grand Total	0	0	0	0	0	12	0	3	0	15	0	1	6	0	7	0	3	0	0	3	25
Apprch %	0	0	0	0		80	0	20	0		0	14.3	85.7	0		0	100	0	0		
Total %	0	0	0	0	0	48	0	12	0	60	0	4	24	0	28	0	12	0	0	12	

	Layton Hall Dr Eastbound					Layton Hall Dr Westbound					University Dr Northbound					University Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	0	0	0	2	0	0	0	2	0	1	0	0	1	0	0	0	0	0	3
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	2
04:30 PM	0	0	0	0	0	2	0	1	0	3	0	0	0	0	0	0	1	0	0	1	4
04:45 PM	0	0	0	0	0	3	0	0	0	3	0	0	1	0	1	0	0	0	0	0	4
Total Volume	0	0	0	0	0	7	0	1	0	8	0	1	2	0	3	0	2	0	0	2	13
% App. Total	0	0	0	0		87.5	0	12.5	0		0	33.3	66.7	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.583	.000	.250	.000	.667	.000	.250	.500	.000	.750	.000	.500	.000	.000	.500	.813

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	Layton Hall Dr Eastbound					Layton Hall Dr Westbound					University Dr Northbound					University Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total Apprch %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		

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904-992-8072

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Groups Printed- Bicycles on Road

	Layton Hall Dr Eastbound					Layton Hall Dr Westbound					University Dr Northbound					University Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
Apprch %	0	0	0	0		0	0	0	0		0	0	100	0		0	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	0	100	0	100	0	0	0	0	0	

	Layton Hall Dr Eastbound					Layton Hall Dr Westbound					University Dr Northbound					University Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
% App. Total	0	0	0	0		0	0	0	0		0	0	100	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250

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	Layton Hall Dr Eastbound					Layton Hall Dr Westbound					University Dr Northbound					University Dr Southbound						
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total	
04:00 PM	0	0	0	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	3
04:15 PM	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	2	2	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	5
Total	0	0	0	3	3	0	0	0	8	8	0	0	0	0	0	0	0	0	0	0	0	11
05:00 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	3
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	1	1	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	4
Total	0	0	0	2	2	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0	0	8
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	6	6	0	0	0	14	14	0	0	0	0	0	0	0	0	0	0	0	20
Apprch %	0	0	0	100		0	0	0	100		0	0	0	0	0		0	0	0	0		
Total %	0	0	0	30	30	0	0	0	70	70	0	0	0	0	0		0	0	0	0		

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Peggy Malone and Associates

904-992-8072

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Groups Printed- Combined

	Layton Hall Dr Eastbound					Layton Hall Dr Westbound					University Dr Northbound					University Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	0	0	2	1	3	22	0	41	2	65	1	32	23	0	56	21	64	0	0	85	209
04:15 PM	0	0	1	1	2	25	0	27	2	54	0	45	24	0	69	19	66	0	0	85	210
04:30 PM	0	1	2	0	3	20	2	27	1	50	2	35	15	0	52	26	58	0	0	84	189
04:45 PM	0	0	0	2	2	19	0	11	3	33	0	49	27	0	76	21	51	0	0	72	183
Total	0	1	5	4	10	86	2	106	8	202	3	161	89	0	253	87	239	0	0	326	791
05:00 PM	2	0	0	1	3	25	1	24	0	50	4	54	31	0	89	18	49	2	0	69	211
05:15 PM	0	0	1	0	1	26	0	25	4	55	2	42	23	0	67	26	49	1	0	76	199
05:30 PM	0	0	1	0	1	12	1	23	0	36	2	46	29	0	77	14	45	1	0	60	174
05:45 PM	0	2	0	1	3	18	3	18	3	42	3	42	31	0	76	29	48	1	0	78	199
Total	2	2	2	2	8	81	5	90	7	183	11	184	114	0	309	87	191	5	0	283	783
06:00 PM	0	1	5	0	6	16	1	27	0	44	1	41	20	0	62	20	38	0	0	58	170
06:15 PM	0	1	1	1	3	22	0	28	0	50	1	34	24	0	59	17	34	1	0	52	164
06:30 PM	0	0	0	0	0	16	1	23	0	40	0	33	23	0	56	17	28	0	0	45	141
06:45 PM	0	0	0	0	0	15	0	11	0	26	1	29	18	0	48	10	35	2	0	47	121
Total	0	2	6	1	9	69	2	89	0	160	3	137	85	0	225	64	135	3	0	202	596
Grand Total	2	5	13	7	27	236	9	285	15	545	17	482	288	0	787	238	565	8	0	811	2170
Apprch %	7.4	18.5	48.1	25.9		43.3	1.7	52.3	2.8		2.2	61.2	36.6	0		29.3	69.7	1	0		
Total %	0.1	0.2	0.6	0.3	1.2	10.9	0.4	13.1	0.7	25.1	0.8	22.2	13.3	0	36.3	11	26	0.4	0	37.4	

	Layton Hall Dr Eastbound					Layton Hall Dr Westbound					University Dr Northbound					University Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	0	1	1	2	25	0	27	2	54	0	45	24	0	69	19	66	0	0	85	210
04:30 PM	0	1	2	0	3	20	2	27	1	50	2	35	15	0	52	26	58	0	0	84	189
04:45 PM	0	0	0	2	2	19	0	11	3	33	0	49	27	0	76	21	51	0	0	72	183
05:00 PM	2	0	0	1	3	25	1	24	0	50	4	54	31	0	89	18	49	2	0	69	211
Total Volume	2	1	3	4	10	89	3	89	6	187	6	183	97	0	286	84	224	2	0	310	793
% App. Total	20	10	30	40		47.6	1.6	47.6	3.2		2.1	64	33.9	0		27.1	72.3	0.6	0		
PHF	.250	.250	.375	.500	.833	.890	.375	.824	.500	.866	.375	.847	.782	.000	.803	.808	.848	.250	.000	.912	.940

E. Comparison of Existing Inline Retail Trips and Inline Retail Trips to be Removed

Appendix E – Comparison of Existing Inline Retail Trips and Inline Retail Trips to be Removed

Land Use	ITE Code	Size	----- W e e k d a y -----						
			AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Existing Inline Retail									
Shopping Center (40 kSF<X<150 kSF) (with Supermarket) (1)	821	91.9 kSF of GFA	201	123	324	396	428	824	8,485
Inline Retail to be Removed									
Shopping Center (<40 kSF) (2)	822	25.2 kSF of GFA	32	21	53	75	75	150	1,292
% Comparison (2) / (1)					16.4%		18.2%		15.2%

F. Intersection Analysis Worksheets – Existing 2026

HCM 6th TWSC
1: Old Lee Highway & Plaza Drive

Timing Plan: AM Peak

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑↑	
Traffic Vol, veh/h	0	7	0	563	426	4
Future Vol, veh/h	0	7	0	563	426	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	120
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	14	2	2	6	2
Mvmt Flow	0	8	0	662	501	5
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	253	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.38	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	4.04	-	-	-	-
Pot Cap-1 Maneuver	0	609	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	609	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	11	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	609	-	-		
HCM Lane V/C Ratio	-	0.014	-	-		
HCM Control Delay (s)	-	11	-	-		
HCM Lane LOS	-	B	-	-		
HCM 95th %tile Q(veh)	-	0	-	-		

Queues

2: Old Lee Highway & FFX Commons

Timing Plan: AM Peak

									
Lane Group	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	16	13	1	38	646	14	16	479	13
v/c Ratio	0.05	0.04	0.00	0.05	0.23	0.01	0.02	0.19	0.01
Control Delay	18.9	0.2	0.0	3.9	5.6	0.0	4.4	8.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.9	0.2	0.0	3.9	5.6	0.0	4.4	8.0	0.0
Queue Length 50th (ft)	3	0	0	0	0	0	1	0	0
Queue Length 95th (ft)	18	0	0	11	112	0	6	85	0
Internal Link Dist (ft)	124		135		259			157	
Turn Bay Length (ft)				120			120		
Base Capacity (vph)	1403	1220	1329	1064	2813	1293	1041	2734	1293
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.01	0.00	0.04	0.23	0.01	0.02	0.18	0.01
Intersection Summary									

HCM Signalized Intersection Capacity Analysis

2: Old Lee Highway & FFX Commons

Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↩	↩		↩		↩	↩	↩	↩	↩	↩
Traffic Volume (vph)	13	1	11	0	0	1	32	549	12	14	407	11
Future Volume (vph)	13	1	11	0	0	1	32	549	12	14	407	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8	6.8		6.8		6.8	6.8	6.8	6.8	6.8	6.8
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		0.86		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.96	1.00		1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1779	1583		1611		1770	3505	1583	1770	3406	1583
Flt Permitted		1.00	1.00		1.00		0.46	1.00	1.00	0.41	1.00	1.00
Satd. Flow (perm)		1863	1583		1611		848	3505	1583	757	3406	1583
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	15	1	13	0	0	1	38	646	14	16	479	13
RTOR Reduction (vph)	0	0	12	0	1	0	0	0	6	0	0	6
Lane Group Flow (vph)	0	16	1	0	0	0	38	646	8	16	479	7
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	6%	2%
Turn Type	Perm	NA	Perm		NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8		8	4			2		2	6		6
Actuated Green, G (s)		2.4	2.4		2.4		31.1	28.8	28.8	28.3	27.4	27.4
Effective Green, g (s)		2.4	2.4		2.4		31.1	28.8	28.8	28.3	27.4	27.4
Actuated g/C Ratio		0.05	0.05		0.05		0.59	0.55	0.55	0.54	0.52	0.52
Clearance Time (s)		6.8	6.8		6.8		6.8	6.8	6.8	6.8	6.8	6.8
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		85	72		73		542	1922	868	425	1777	826
v/s Ratio Prot					0.00		c0.00	c0.18		0.00	0.14	
v/s Ratio Perm		c0.01	0.00				0.04		0.00	0.02		0.00
v/c Ratio		0.19	0.01		0.00		0.07	0.34	0.01	0.04	0.27	0.01
Uniform Delay, d1		24.1	23.9		23.9		4.5	6.6	5.4	5.6	7.0	6.0
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.1	0.0		0.0		0.1	0.1	0.0	0.0	0.1	0.0
Delay (s)		25.2	24.0		23.9		4.5	6.7	5.4	5.7	7.1	6.0
Level of Service		C	C		C		A	A	A	A	A	A
Approach Delay (s)		24.6			23.9			6.5			7.0	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay			7.2									
HCM 2000 Volume to Capacity ratio			0.32									
Actuated Cycle Length (s)			52.5							20.4		
Intersection Capacity Utilization			43.8%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

2: Old Lee Highway & FFX Commons

Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	1	11	0	0	1	32	549	12	14	407	11
Future Volume (veh/h)	13	1	11	0	0	1	32	549	12	14	407	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1856	1870	1870	1811	1870
Adj Flow Rate, veh/h	15	1	13	0	0	1	38	646	14	16	479	13
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	3	2	2	6	2
Cap, veh/h	245	4	79	0	0	79	519	1435	645	433	1322	609
Arrive On Green	0.05	0.05	0.05	0.00	0.00	0.05	0.04	0.41	0.41	0.02	0.38	0.38
Sat Flow, veh/h	1332	89	1585	0	0	1585	1781	3526	1585	1781	3441	1585
Grp Volume(v), veh/h	16	0	13	0	0	1	38	646	14	16	479	13
Grp Sat Flow(s),veh/h/ln	1421	0	1585	0	0	1585	1781	1763	1585	1781	1721	1585
Q Serve(g_s), s	0.4	0.0	0.3	0.0	0.0	0.0	0.5	5.2	0.2	0.2	3.9	0.2
Cycle Q Clear(g_c), s	0.4	0.0	0.3	0.0	0.0	0.0	0.5	5.2	0.2	0.2	3.9	0.2
Prop In Lane	0.94		1.00	0.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	249	0	79	0	0	79	519	1435	645	433	1322	609
V/C Ratio(X)	0.06	0.00	0.16	0.00	0.00	0.01	0.07	0.45	0.02	0.04	0.36	0.02
Avail Cap(c_a), veh/h	1320	0	1259	0	0	1259	1355	2710	1218	1310	2645	1218
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.8	0.0	17.8	0.0	0.0	17.6	6.7	8.4	6.9	7.2	8.6	7.5
Incr Delay (d2), s/veh	0.1	0.0	1.0	0.0	0.0	0.1	0.1	0.2	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	0.0	0.0	0.0	0.1	1.4	0.1	0.1	1.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.9	0.0	18.7	0.0	0.0	17.7	6.8	8.6	6.9	7.3	8.8	7.5
LnGrp LOS	B	A	B	A	A	B	A	A	A	A	A	A
Approach Vol, veh/h	29			1			698			508		
Approach Delay, s/veh	18.3			17.7			8.5			8.7		
Approach LOS	B			B			A			A		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	7.6	22.7	8.7		8.5	21.8	8.7					
Change Period (Y+Rc), s	* 6.8	* 6.8	* 6.8		* 6.8	* 6.8	* 6.8					
Max Green Setting (Gmax), s	* 20	* 30	* 31		* 20	* 30	* 31					
Max Q Clear Time (g_c+I1), s	2.2	7.2	2.0		2.5	5.9	2.4					
Green Ext Time (p_c), s	0.0	4.6	0.0		0.1	3.4	0.1					

Intersection Summary

HCM 6th Ctrl Delay 8.8

HCM 6th LOS A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
4: Old Lee Highway

Timing Plan: AM Peak

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑↑	
Traffic Vol, veh/h	0	0	0	593	418	0
Future Vol, veh/h	0	0	0	593	418	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	6	2
Mvmt Flow	0	0	0	698	492	0
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	246	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	643	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	643	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	0	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	-	-	-		
HCM Lane V/C Ratio	-	-	-	-		
HCM Control Delay (s)	-	0	-	-		
HCM Lane LOS	-	A	-	-		
HCM 95th %tile Q(veh)	-	-	-	-		

HCM 6th TWSC
5: University Drive & Driveway

Timing Plan: AM Peak

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1	13	318	202	5
Future Vol, veh/h	0	1	13	318	202	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	14	346	220	5
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	424	113	225	0	-	0
Stage 1	223	-	-	-	-	-
Stage 2	201	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	558	918	1341	-	-	-
Stage 1	793	-	-	-	-	-
Stage 2	813	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	551	918	1341	-	-	-
Mov Cap-2 Maneuver	551	-	-	-	-	-
Stage 1	783	-	-	-	-	-
Stage 2	813	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.9	0.3		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1341	-	918	-	-	
HCM Lane V/C Ratio	0.011	-	0.001	-	-	
HCM Control Delay (s)	7.7	0	8.9	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

HCM 6th TWSC
6: University Drive & 7-11 Entrance

Timing Plan: AM Peak

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔		↔		↔			↔	
Traffic Vol, veh/h	5	0	15	16	0	6	10	278	30	12	176	12
Future Vol, veh/h	5	0	15	16	0	6	10	278	30	12	176	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	10	2	3	2	4	2
Mvmt Flow	6	0	18	19	0	7	12	327	35	14	207	14

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	430	628	111	501	-	181	221	0	0	362	0	0
Stage 1	242	242	-	369	-	-	-	-	-	-	-	-
Stage 2	188	386	-	132	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	-	6.94	4.3	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	-	3.32	2.3	-	-	2.22	-	-
Pot Cap-1 Maneuver	509	398	921	453	0	831	1289	-	-	1193	-	-
Stage 1	740	704	-	623	0	-	-	-	-	-	-	-
Stage 2	796	609	-	858	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	495	388	921	436	-	831	1289	-	-	1193	-	-
Mov Cap-2 Maneuver	495	388	-	436	-	-	-	-	-	-	-	-
Stage 1	731	695	-	616	-	-	-	-	-	-	-	-
Stage 2	780	602	-	831	-	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB			
HCM Control Delay, s	9.9		12.5		0.2			0.5			
HCM LOS	A		B								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1289	-	-	758 436 831	1193	-	-
HCM Lane V/C Ratio	0.009	-	-	0.031 0.043 0.008	0.012	-	-
HCM Control Delay (s)	7.8	0	-	9.9 13.6 9.4	8.1	0	-
HCM Lane LOS	A	A	-	A B A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1 0.1 0	0	-	-

Queues

7: University Drive & Whitehead Street/Democracy Lane

Timing Plan: AM Peak

	→	↘	←	↑	↓
Lane Group	EBT	EBR	WBT	NBT	SBT
Lane Group Flow (vph)	138	34	42	341	195
v/c Ratio	0.39	0.07	0.12	0.23	0.16
Control Delay	17.2	3.3	13.2	12.0	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	17.2	3.3	13.2	12.0	12.2
Queue Length 50th (ft)	15	0	4	18	10
Queue Length 95th (ft)	92	9	33	92	56
Internal Link Dist (ft)	232		226	114	570
Turn Bay Length (ft)					
Base Capacity (vph)	981	1197	989	3137	2550
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.14	0.03	0.04	0.11	0.08
Intersection Summary					

HCM Signalized Intersection Capacity Analysis

7: University Drive & Whitehead Street/Democracy Lane

Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	17	29	22	9	4	7	265	18	5	150	11
Future Volume (vph)	100	17	29	22	9	4	7	265	18	5	150	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0			5.0			5.0	
Lane Util. Factor		1.00	1.00		1.00			0.95			0.95	
Frpb, ped/bikes		1.00	0.98		1.00			1.00			1.00	
Flpb, ped/bikes		1.00	1.00		0.99			1.00			1.00	
Frt		1.00	0.85		0.98			0.99			0.99	
Flt Protected		0.96	1.00		0.97			1.00			1.00	
Satd. Flow (prot)		1676	1531		1694			3496			2859	
Flt Permitted		0.73	1.00		0.73			0.95			0.94	
Satd. Flow (perm)		1271	1531		1278			3317			2698	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	118	20	34	26	11	5	8	312	21	6	176	13
RTOR Reduction (vph)	0	0	27	0	4	0	0	5	0	0	6	0
Lane Group Flow (vph)	0	138	7	0	38	0	0	336	0	0	189	0
Confl. Peds. (#/hr)	1		8	8		1	3		7	7		3
Heavy Vehicles (%)	7%	18%	3%	5%	11%	2%	2%	2%	2%	3%	27%	2%
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			2			6	
Permitted Phases	8		8	4			2			6		
Actuated Green, G (s)		8.4	8.4		8.4			14.9			14.9	
Effective Green, g (s)		8.4	8.4		8.4			14.9			14.9	
Actuated g/C Ratio		0.21	0.21		0.21			0.37			0.37	
Clearance Time (s)		6.0	6.0		6.0			5.0			5.0	
Vehicle Extension (s)		3.0	3.0		3.0			3.0			3.0	
Lane Grp Cap (vph)		264	318		265			1223			995	
v/s Ratio Prot												
v/s Ratio Perm		c0.11	0.00		0.03			c0.10			0.07	
v/c Ratio		0.52	0.02		0.14			0.27			0.19	
Uniform Delay, d1		14.2	12.7		13.1			9.0			8.7	
Progression Factor		1.00	1.00		1.00			1.00			1.00	
Incremental Delay, d2		1.9	0.0		0.3			0.1			0.1	
Delay (s)		16.1	12.8		13.3			9.1			8.7	
Level of Service		B	B		B			A			A	
Approach Delay (s)		15.4			13.3			9.1			8.7	
Approach LOS		B			B			A			A	
Intersection Summary												
HCM 2000 Control Delay			10.7									
HCM 2000 Volume to Capacity ratio			0.33									
Actuated Cycle Length (s)			40.4									
Intersection Capacity Utilization			32.5%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Edition methodology does not support exclusive ped or hold phases.

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	22	263	6	10	165	10	2	1	6	0	0	4
Future Vol, veh/h	22	263	6	10	165	10	2	1	6	0	0	4
Conflicting Peds, #/hr	9	0	0	0	0	9	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	5	2	2	3	2	2	2	17	2	2	2
Mvmt Flow	26	309	7	12	194	12	2	1	7	0	0	5
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	215	0	0	316	0	0	592	604	313	602	601	209
Stage 1	-	-	-	-	-	-	365	365	-	233	233	-
Stage 2	-	-	-	-	-	-	227	239	-	369	368	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.37	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.453	3.518	4.018	3.318
Pot Cap-1 Maneuver	1355	-	-	1244	-	-	418	412	694	412	414	831
Stage 1	-	-	-	-	-	-	654	623	-	770	712	-
Stage 2	-	-	-	-	-	-	776	708	-	651	621	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1343	-	-	1244	-	-	405	394	694	393	396	824
Mov Cap-2 Maneuver	-	-	-	-	-	-	405	394	-	393	396	-
Stage 1	-	-	-	-	-	-	638	608	-	745	698	-
Stage 2	-	-	-	-	-	-	763	694	-	628	606	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0.4			11.6			9.4		
HCM LOS							B			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	558	1343	-	-	1244	-	-	824				
HCM Lane V/C Ratio	0.019	0.019	-	-	0.009	-	-	0.006				
HCM Control Delay (s)	11.6	7.7	0	-	7.9	0	-	9.4				
HCM Lane LOS	B	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0				

Queues

10: Old Lee Highway & Layton Hall Drive/Farrcroft Drive

Timing Plan: AM Peak



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	265	48	15	59	72	579	6	19	620
v/c Ratio	0.62	0.11	0.11	0.34	0.20	0.75	0.01	0.07	0.53
Control Delay	44.9	20.9	55.2	26.7	15.9	32.3	0.0	15.1	26.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.9	20.9	55.2	26.7	15.9	32.3	0.0	15.1	26.3
Queue Length 50th (ft)	136	9	8	7	24	267	0	6	157
Queue Length 95th (ft)	295	45	35	50	50	509	0	19	225
Internal Link Dist (ft)		311		220		842			355
Turn Bay Length (ft)							230	150	
Base Capacity (vph)	645	632	522	533	492	1226	1061	438	2212
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.08	0.03	0.11	0.15	0.47	0.01	0.04	0.28
Intersection Summary									

HCM Signalized Intersection Capacity Analysis

10: Old Lee Highway & Layton Hall Drive/Farrcroft Drive

Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	225	17	24	13	10	40	61	492	5	16	394	133
Future Volume (vph)	225	17	24	13	10	40	61	492	5	16	394	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		7.3	7.3		6.9	6.9	6.9	6.9	6.9	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00	0.97	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.91		1.00	0.88		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1719	1641		1671	1606		1769	1827	1533	1702	3282	
Flt Permitted	0.95	1.00		0.95	1.00		0.31	1.00	1.00	0.24	1.00	
Satd. Flow (perm)	1719	1641		1671	1606		569	1827	1533	424	3282	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	265	20	28	15	12	47	72	579	6	19	464	156
RTOR Reduction (vph)	0	21	0	0	44	0	0	0	4	0	21	0
Lane Group Flow (vph)	265	27	0	15	15	0	72	579	2	19	599	0
Confl. Peds. (#/hr)	3		1	1		3	1		5	5		1
Heavy Vehicles (%)	5%	6%	4%	8%	2%	2%	2%	4%	2%	6%	6%	3%
Turn Type	Split	NA		Split	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	4	4		8	8		1	6		5	2	
Permitted Phases							6		6	2		
Actuated Green, G (s)	23.2	23.2		5.4	5.4		46.0	40.0	40.0	38.4	36.2	
Effective Green, g (s)	23.2	23.2		5.4	5.4		46.0	40.0	40.0	38.4	36.2	
Actuated g/C Ratio	0.24	0.24		0.05	0.05		0.47	0.41	0.41	0.39	0.37	
Clearance Time (s)	6.5	6.5		7.3	7.3		6.9	6.9	6.9	6.9	6.9	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	405	386		91	88		339	742	623	194	1207	
v/s Ratio Prot	c0.15	0.02		0.01	c0.01		c0.01	c0.32		0.00	0.18	
v/s Ratio Perm							0.09		0.00	0.04		
v/c Ratio	0.65	0.07		0.16	0.17		0.21	0.78	0.00	0.10	0.50	
Uniform Delay, d1	34.0	29.2		44.3	44.4		15.2	25.4	17.4	20.0	24.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.8	0.1		0.9	0.9		0.3	5.3	0.0	0.2	0.3	
Delay (s)	37.8	29.3		45.2	45.2		15.5	30.7	17.4	20.2	24.4	
Level of Service	D	C		D	D		B	C	B	C	C	
Approach Delay (s)		36.5			45.2			28.9			24.2	
Approach LOS		D			D			C			C	
Intersection Summary												
HCM 2000 Control Delay			29.3				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			98.4				Sum of lost time (s)			27.6		
Intersection Capacity Utilization			66.2%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

10: Old Lee Highway & Layton Hall Drive/Farrcroft Drive

Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	225	17	24	13	10	40	61	492	5	16	394	133
Future Volume (veh/h)	225	17	24	13	10	40	61	492	5	16	394	133
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1826	1811	1841	1781	1870	1870	1870	1841	1870	1811	1811	1856
Adj Flow Rate, veh/h	265	20	28	15	12	47	72	579	6	19	464	156
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	5	6	4	8	2	2	2	4	2	6	6	3
Cap, veh/h	328	128	180	102	20	78	339	684	585	197	865	289
Arrive On Green	0.19	0.19	0.19	0.06	0.06	0.06	0.05	0.37	0.37	0.02	0.34	0.34
Sat Flow, veh/h	1739	680	951	1697	329	1288	1781	1841	1574	1725	2529	844
Grp Volume(v), veh/h	265	0	48	15	0	59	72	579	6	19	315	305
Grp Sat Flow(s),veh/h/ln	1739	0	1631	1697	0	1617	1781	1841	1574	1725	1721	1652
Q Serve(g_s), s	11.3	0.0	1.9	0.6	0.0	2.7	2.0	22.3	0.2	0.5	11.4	11.5
Cycle Q Clear(g_c), s	11.3	0.0	1.9	0.6	0.0	2.7	2.0	22.3	0.2	0.5	11.4	11.5
Prop In Lane	1.00		0.58	1.00		0.80	1.00		1.00	1.00		0.51
Lane Grp Cap(c), veh/h	328	0	308	102	0	97	339	684	585	197	589	565
V/C Ratio(X)	0.81	0.00	0.16	0.15	0.00	0.61	0.21	0.85	0.01	0.10	0.53	0.54
Avail Cap(c_a), veh/h	676	0	634	550	0	524	594	1431	1224	495	1338	1285
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.9	0.0	26.2	34.4	0.0	35.4	15.7	22.2	15.3	18.4	20.4	20.5
Incr Delay (d2), s/veh	4.7	0.0	0.2	0.7	0.0	5.9	0.3	3.0	0.0	0.2	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	0.7	0.3	0.0	1.2	0.8	9.5	0.1	0.2	4.4	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.6	0.0	26.4	35.0	0.0	41.3	16.1	25.2	15.3	18.6	21.2	21.3
LnGrp LOS	C	A	C	D	A	D	B	C	B	B	C	C
Approach Vol, veh/h	313			74			657			639		
Approach Delay, s/veh	33.4			40.0			24.1			21.2		
Approach LOS	C			D			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.8	33.3		21.1	8.6	35.6		12.0				
Change Period (Y+Rc), s	* 6.9	* 6.9		6.5	* 6.9	* 6.9		7.3				
Max Green Setting (Gmax), s	* 15	* 60		30.0	* 15	* 60		25.0				
Max Q Clear Time (g_c+I1), s	4.0	13.5		13.3	2.5	24.3		4.7				
Green Ext Time (p_c), s	0.1	4.5		1.0	0.0	4.4		0.3				

Intersection Summary

HCM 6th Ctrl Delay	25.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
11: Layton Hall Drive

Timing Plan: AM Peak

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕	↕		↕	
Traffic Vol, veh/h	5	3	4	46	0	102	1	169	191	126	144	0
Future Vol, veh/h	5	3	4	46	0	102	1	169	191	126	144	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Free	-	-	Free	-	-	None
Storage Length	-	-	-	-	-	150	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	13	2	2	2	2	2	2	2	2
Mvmt Flow	6	4	5	59	0	131	1	217	245	162	185	0

Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	728	728	185	733	728	-	185	0
Stage 1	509	509	-	219	219	-	-	-
Stage 2	219	219	-	514	509	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.23	6.52	-	4.12	-
Critical Hdwy Stg 1	6.12	5.52	-	6.23	5.52	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.23	5.52	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.617	4.018	-	2.218	-
Pot Cap-1 Maneuver	339	350	857	323	350	0	1390	-
Stage 1	547	538	-	759	722	0	-	-
Stage 2	783	722	-	524	538	0	-	-
Platoon blocked, %								
Mov Cap-1 Maneuver	304	303	857	286	303	-	1390	-
Mov Cap-2 Maneuver	304	303	-	286	303	-	-	-
Stage 1	546	466	-	758	721	-	-	-
Stage 2	782	721	-	448	466	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.7	20.8	0	3.7
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1390	-	387 286	-	1353	-
HCM Lane V/C Ratio	0.001	-	0.04 0.206	-	0.119	-
HCM Control Delay (s)	7.6	0	14.7 20.8	0	8	0
HCM Lane LOS	A	A	B C	A	A	A
HCM 95th %tile Q(veh)	0	-	0.1 0.8	-	0.4	-

HCM 6th TWSC
1: Old Lee Highway

Timing Plan: PM Peak

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑↑	
Traffic Vol, veh/h	0	31	0	494	600	7
Future Vol, veh/h	0	31	0	494	600	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	120
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	3	2
Mvmt Flow	0	34	0	543	659	8
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	334	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	565	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	565	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	11.8	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	565	-	-		
HCM Lane V/C Ratio	-	0.06	-	-		
HCM Control Delay (s)	-	11.8	-	-		
HCM Lane LOS	-	B	-	-		
HCM 95th %tile Q(veh)	-	0.2	-	-		

Queues

2: Old Lee Highway

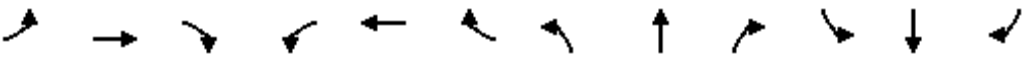
Timing Plan: PM Peak

									
Lane Group	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	45	76	80	67	481	12	16	612	47
v/c Ratio	0.20	0.20	0.31	0.12	0.23	0.01	0.03	0.36	0.06
Control Delay	22.8	3.8	22.5	5.9	8.2	0.0	5.9	13.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.8	3.8	22.5	5.9	8.2	0.0	5.9	13.8	0.1
Queue Length 50th (ft)	12	0	20	8	32	0	2	81	0
Queue Length 95th (ft)	41	17	59	23	100	0	8	140	1
Internal Link Dist (ft)	173		199		207			142	
Turn Bay Length (ft)				120			120		
Base Capacity (vph)	840	1087	928	899	2458	1134	938	2401	1089
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.07	0.09	0.07	0.20	0.01	0.02	0.25	0.04
Intersection Summary									

HCM Signalized Intersection Capacity Analysis

2: Old Lee Highway

Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↗	↕	↗	↗	↕	↗
Traffic Volume (vph)	37	5	71	54	10	10	62	447	11	15	569	44
Future Volume (vph)	37	5	71	54	10	10	62	447	11	15	569	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8	6.8		6.8		6.8	6.8	6.8	6.8	6.8	6.8
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.96	1.00		0.97		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1734	1568		1764		1770	3539	1583	1770	3505	1538
Flt Permitted		0.69	1.00		0.76		0.37	1.00	1.00	0.48	1.00	1.00
Satd. Flow (perm)		1256	1568		1384		689	3539	1583	889	3505	1538
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)	40	5	76	58	11	11	67	481	12	16	612	47
RTOR Reduction (vph)	0	0	66	0	7	0	0	0	6	0	0	27
Lane Group Flow (vph)	0	45	10	0	73	0	67	481	6	16	612	20
Heavy Vehicles (%)	3%	20%	3%	2%	2%	2%	2%	2%	2%	2%	3%	5%
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8		8	4			2		2	6		6
Actuated Green, G (s)		7.0	7.0		7.0		31.4	27.3	27.3	25.0	24.1	24.1
Effective Green, g (s)		7.0	7.0		7.0		31.4	27.3	27.3	25.0	24.1	24.1
Actuated g/C Ratio		0.13	0.13		0.13		0.56	0.49	0.49	0.45	0.43	0.43
Clearance Time (s)		6.8	6.8		6.8		6.8	6.8	6.8	6.8	6.8	6.8
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		158	197		174		468	1737	777	413	1519	666
v/s Ratio Prot							c0.01	c0.14		0.00	c0.17	
v/s Ratio Perm		0.04	0.01		c0.05		0.07		0.00	0.02		0.01
v/c Ratio		0.28	0.05		0.42		0.14	0.28	0.01	0.04	0.40	0.03
Uniform Delay, d1		22.0	21.4		22.4		5.6	8.3	7.2	8.5	10.8	9.0
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.0	0.1		1.6		0.1	0.1	0.0	0.0	0.2	0.0
Delay (s)		23.0	21.5		24.1		5.7	8.4	7.2	8.5	11.0	9.1
Level of Service		C	C		C		A	A	A	A	B	A
Approach Delay (s)		22.1			24.1			8.1			10.8	
Approach LOS		C			C			A			B	
Intersection Summary												
HCM 2000 Control Delay			11.4				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.38									
Actuated Cycle Length (s)			55.6				Sum of lost time (s)			20.4		
Intersection Capacity Utilization			47.7%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

2: Old Lee Highway

Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔		↖	↕	↗	↖	↕	↗
Traffic Volume (veh/h)	37	5	71	54	10	10	62	447	11	15	569	44
Future Volume (veh/h)	37	5	71	54	10	10	62	447	11	15	569	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1604	1856	1870	1870	1870	1870	1870	1870	1870	1856	1826
Adj Flow Rate, veh/h	40	5	76	58	11	11	67	481	12	16	612	47
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	20	3	2	2	2	2	2	2	2	3	5
Cap, veh/h	317	30	226	260	49	27	426	1347	601	452	1185	520
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.06	0.38	0.38	0.02	0.34	0.34
Sat Flow, veh/h	1144	205	1572	839	342	188	1781	3554	1585	1781	3526	1547
Grp Volume(v), veh/h	45	0	76	80	0	0	67	481	12	16	612	47
Grp Sat Flow(s),veh/h/ln	1349	0	1572	1369	0	0	1781	1777	1585	1781	1763	1547
Q Serve(g_s), s	0.0	0.0	1.9	1.3	0.0	0.0	1.0	4.3	0.2	0.3	6.2	0.9
Cycle Q Clear(g_c), s	1.1	0.0	1.9	2.5	0.0	0.0	1.0	4.3	0.2	0.3	6.2	0.9
Prop In Lane	0.89		1.00	0.72		0.14	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	346	0	226	336	0	0	426	1347	601	452	1185	520
V/C Ratio(X)	0.13	0.00	0.34	0.24	0.00	0.00	0.16	0.36	0.02	0.04	0.52	0.09
Avail Cap(c_a), veh/h	1022	0	1092	1111	0	0	1112	2388	1065	1214	2369	1040
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.8	0.0	17.2	17.4	0.0	0.0	8.8	10.0	8.7	9.4	11.9	10.1
Incr Delay (d2), s/veh	0.2	0.0	0.9	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.7	0.7	0.0	0.0	0.3	1.4	0.1	0.1	2.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.0	0.0	18.1	17.8	0.0	0.0	9.0	10.1	8.7	9.4	12.3	10.2
LnGrp LOS	B	A	B	B	A	A	A	B	A	A	B	B
Approach Vol, veh/h		121			80			560			675	
Approach Delay, s/veh		17.7			17.8			10.0			12.1	
Approach LOS		B			B			A			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.7	23.7		13.2	9.6	21.8		13.2				
Change Period (Y+Rc), s	* 6.8	* 6.8		* 6.8	* 6.8	* 6.8		* 6.8				
Max Green Setting (Gmax), s	* 20	* 30		* 31	* 20	* 30		* 31				
Max Q Clear Time (g_c+I1), s	2.3	6.3		4.5	3.0	8.2		3.9				
Green Ext Time (p_c), s	0.0	3.3		0.4	0.1	4.4		0.5				

Intersection Summary

HCM 6th Ctrl Delay 12.0

HCM 6th LOS B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
4: Old Lee Highway

Timing Plan: PM Peak

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑↑	
Traffic Vol, veh/h	0	0	0	520	697	0
Future Vol, veh/h	0	0	0	520	697	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	3	3	2
Mvmt Flow	0	0	0	547	734	0
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	367	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	538	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	538	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	0	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	-	-	-		
HCM Lane V/C Ratio	-	-	-	-		
HCM Control Delay (s)	-	0	-	-		
HCM Lane LOS	-	A	-	-		
HCM 95th %tile Q(veh)	-	-	-	-		

HCM 6th TWSC
5: University Drive & Driveway

Timing Plan: PM Peak

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	18	1	349	407	1
Future Vol, veh/h	3	18	1	349	407	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	20	1	379	442	1
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	635	222	443	0	-	0
Stage 1	443	-	-	-	-	-
Stage 2	192	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	411	782	1113	-	-	-
Stage 1	614	-	-	-	-	-
Stage 2	822	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	411	782	1113	-	-	-
Mov Cap-2 Maneuver	411	-	-	-	-	-
Stage 1	613	-	-	-	-	-
Stage 2	822	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10.4	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1113	-	693	-	-	
HCM Lane V/C Ratio	0.001	-	0.033	-	-	
HCM Control Delay (s)	8.2	0	10.4	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

HCM 6th TWSC
6: University Drive

Timing Plan: PM Peak

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	3	21	41	6	36	12	266	74	30	345	21
Future Vol, veh/h	16	3	21	41	6	36	12	266	74	30	345	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	3	2	2
Mvmt Flow	17	3	23	45	7	39	13	289	80	33	375	23
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	627	848	199	610	819	185	398	0	0	369	0	0
Stage 1	453	453	-	355	355	-	-	-	-	-	-	-
Stage 2	174	395	-	255	464	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.16	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.23	-	-
Pot Cap-1 Maneuver	368	297	809	378	309	826	1157	-	-	1179	-	-
Stage 1	556	568	-	635	628	-	-	-	-	-	-	-
Stage 2	811	603	-	727	562	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	332	282	809	350	294	826	1157	-	-	1179	-	-
Mov Cap-2 Maneuver	332	282	-	350	294	-	-	-	-	-	-	-
Stage 1	548	548	-	626	619	-	-	-	-	-	-	-
Stage 2	754	595	-	677	542	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	13.4		13.8		0.4		0.7					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR					
Capacity (veh/h)	1157	-	-	472 350 656	1179	-	-					
HCM Lane V/C Ratio	0.011	-	-	0.092 0.127 0.07	0.028	-	-					
HCM Control Delay (s)	8.1	0.1	-	13.4 16.8 10.9	8.1	0.1	-					
HCM Lane LOS	A	A	-	B C B	A	A	-					
HCM 95th %tile Q(veh)	0	-	-	0.3 0.4 0.2	0.1	-	-					

Queues

7: University Drive & Whitehead Street/Democracy Lane

Timing Plan: PM Peak

	→	↘	←	↑	↓
Lane Group	EBT	EBR	WBT	NBT	SBT
Lane Group Flow (vph)	111	74	99	360	344
v/c Ratio	0.30	0.16	0.29	0.26	0.24
Control Delay	16.2	6.3	15.9	11.3	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	16.2	6.3	15.9	11.3	11.3
Queue Length 50th (ft)	11	0	10	17	17
Queue Length 95th (ft)	79	28	71	94	91
Internal Link Dist (ft)	245		249	117	615
Turn Bay Length (ft)					
Base Capacity (vph)	1145	1260	1052	2976	3059
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.10	0.06	0.09	0.12	0.11
Intersection Summary					

HCM Signalized Intersection Capacity Analysis

7: University Drive & Whitehead Street/Democracy Lane

Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↩	↩		↩			↩			↩	
Traffic Volume (vph)	51	47	65	57	21	9	27	259	31	13	268	21
Future Volume (vph)	51	47	65	57	21	9	27	259	31	13	268	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0			5.0			5.0	
Lane Util. Factor		1.00	1.00		1.00			0.95			0.95	
Frpb, ped/bikes		1.00	0.97		1.00			1.00			1.00	
Flpb, ped/bikes		1.00	1.00		0.99			1.00			1.00	
Frt		1.00	0.85		0.99			0.99			0.99	
Flt Protected		0.97	1.00		0.97			1.00			1.00	
Satd. Flow (prot)		1759	1535		1708			3457			3444	
Flt Permitted		0.78	1.00		0.74			0.90			0.93	
Satd. Flow (perm)		1414	1535		1298			3137			3216	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	58	53	74	65	24	10	31	294	35	15	305	24
RTOR Reduction (vph)	0	0	60	0	4	0	0	9	0	0	6	0
Lane Group Flow (vph)	0	111	14	0	95	0	0	351	0	0	338	0
Confl. Peds. (#/hr)	3		12	12		3	12		18	18		12
Heavy Vehicles (%)	6%	4%	2%	2%	14%	2%	2%	2%	2%	2%	2%	19%
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			2			6	
Permitted Phases	8		8	4			2			6		
Actuated Green, G (s)		7.3	7.3		7.3			14.2			14.2	
Effective Green, g (s)		7.3	7.3		7.3			14.2			14.2	
Actuated g/C Ratio		0.19	0.19		0.19			0.37			0.37	
Clearance Time (s)		6.0	6.0		6.0			5.0			5.0	
Vehicle Extension (s)		3.0	3.0		3.0			3.0			3.0	
Lane Grp Cap (vph)		267	290		245			1154			1183	
v/s Ratio Prot												
v/s Ratio Perm		c0.08	0.01		0.07			c0.11			0.11	
v/c Ratio		0.42	0.05		0.39			0.30			0.29	
Uniform Delay, d1		13.8	12.8		13.7			8.7			8.6	
Progression Factor		1.00	1.00		1.00			1.00			1.00	
Incremental Delay, d2		1.1	0.1		1.0			0.2			0.1	
Delay (s)		14.8	12.9		14.7			8.8			8.8	
Level of Service		B	B		B			A			A	
Approach Delay (s)		14.0			14.7			8.8			8.8	
Approach LOS		B			B			A			A	
Intersection Summary												
HCM 2000 Control Delay			10.4									
HCM 2000 Volume to Capacity ratio			0.31									
Actuated Cycle Length (s)			38.6									
Intersection Capacity Utilization			46.6%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Edition methodology does not support exclusive ped or hold phases.

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	209	16	14	152	0	9	0	26	4	0	12
Future Vol, veh/h	1	209	16	14	152	0	9	0	26	4	0	12
Conflicting Peds, #/hr	2	0	0	0	0	2	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	13	7	3	2	2	2	2	2	2	2
Mvmt Flow	1	232	18	16	169	0	10	0	29	4	0	13
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	171	0	0	250	0	0	452	446	241	461	455	172
Stage 1	-	-	-	-	-	-	243	243	-	203	203	-
Stage 2	-	-	-	-	-	-	209	203	-	258	252	-
Critical Hdwy	4.12	-	-	4.17	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.263	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1406	-	-	1287	-	-	518	507	798	511	501	872
Stage 1	-	-	-	-	-	-	761	705	-	799	733	-
Stage 2	-	-	-	-	-	-	793	733	-	747	698	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1403	-	-	1287	-	-	503	498	798	486	492	870
Mov Cap-2 Maneuver	-	-	-	-	-	-	503	498	-	486	492	-
Stage 1	-	-	-	-	-	-	760	704	-	797	721	-
Stage 2	-	-	-	-	-	-	769	721	-	719	697	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.7			10.5			10.1		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	693	1403	-	-	1287	-	-	726				
HCM Lane V/C Ratio	0.056	0.001	-	-	0.012	-	-	0.024				
HCM Control Delay (s)	10.5	7.6	0	-	7.8	0	-	10.1				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1				

Queues

10: Old Lee Highway & Layton Hall Drive/Farrcroft Drive

Timing Plan: PM Peak



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	182	66	14	29	51	442	18	19	679
v/c Ratio	0.51	0.18	0.08	0.17	0.14	0.55	0.03	0.05	0.57
Control Delay	37.0	15.3	42.6	27.4	12.9	22.8	0.1	12.9	23.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.0	15.3	42.6	27.4	12.9	22.8	0.1	12.9	23.9
Queue Length 50th (ft)	82	7	7	5	13	144	0	5	148
Queue Length 95th (ft)	180	47	29	36	37	354	0	18	245
Internal Link Dist (ft)		305		220		864			293
Turn Bay Length (ft)							230	150	
Base Capacity (vph)	819	791	657	640	547	1487	1094	608	2699
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.08	0.02	0.05	0.09	0.30	0.02	0.03	0.25
Intersection Summary									

HCM Signalized Intersection Capacity Analysis

10: Old Lee Highway & Layton Hall Drive/Farrcroft Drive

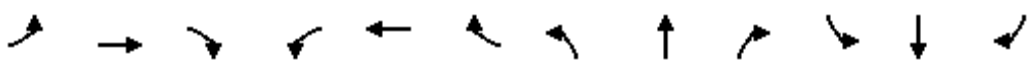
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	177	17	47	14	11	17	49	429	17	18	548	111
Future Volume (vph)	177	17	47	14	11	17	49	429	17	18	548	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		7.3	7.3		6.9	6.9	6.9	6.9	6.9	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00	0.93	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	0.99	1.00	
Frt	1.00	0.89		1.00	0.91		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	1642		1687	1621		1768	1863	1415	1753	3382	
Flt Permitted	0.95	1.00		0.95	1.00		0.28	1.00	1.00	0.41	1.00	
Satd. Flow (perm)	1752	1642		1687	1621		522	1863	1415	755	3382	
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)	182	18	48	14	11	18	51	442	18	19	565	114
RTOR Reduction (vph)	0	39	0	0	17	0	0	0	11	0	11	0
Lane Group Flow (vph)	182	27	0	14	12	0	51	442	7	19	668	0
Confl. Peds. (#/hr)	3		3	3		3	6		26	26		6
Heavy Vehicles (%)	3%	2%	2%	7%	9%	2%	2%	2%	6%	2%	3%	6%
Turn Type	Split	NA		Split	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	4	4		8	8		1	6		5	2	
Permitted Phases							6		6	2		
Actuated Green, G (s)	15.1	15.1		3.6	3.6		37.5	32.1	32.1	30.9	28.8	
Effective Green, g (s)	15.1	15.1		3.6	3.6		37.5	32.1	32.1	30.9	28.8	
Actuated g/C Ratio	0.19	0.19		0.04	0.04		0.47	0.40	0.40	0.38	0.36	
Clearance Time (s)	6.5	6.5		7.3	7.3		6.9	6.9	6.9	6.9	6.9	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	328	308		75	72		326	742	564	315	1209	
v/s Ratio Prot	c0.10	0.02		c0.01	0.01		c0.01	c0.24		0.00	0.20	
v/s Ratio Perm							0.06		0.01	0.02		
v/c Ratio	0.55	0.09		0.19	0.16		0.16	0.60	0.01	0.06	0.55	
Uniform Delay, d1	29.7	27.0		37.0	37.0		12.4	19.1	14.6	15.6	20.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.0	0.1		1.2	1.1		0.2	1.3	0.0	0.1	0.6	
Delay (s)	31.7	27.1		38.2	38.1		12.6	20.4	14.6	15.7	21.2	
Level of Service	C	C		D	D		B	C	B	B	C	
Approach Delay (s)		30.5			38.1			19.4			21.1	
Approach LOS		C			D			B			C	
Intersection Summary												
HCM 2000 Control Delay			22.6			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.55									
Actuated Cycle Length (s)			80.5			Sum of lost time (s)			27.6			
Intersection Capacity Utilization			60.6%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

10: Old Lee Highway & Layton Hall Drive/Farrcroft Drive

Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	177	17	47	14	11	17	49	429	17	18	548	111
Future Volume (veh/h)	177	17	47	14	11	17	49	429	17	18	548	111
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.96	0.98		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1870	1870	1796	1767	1870	1870	1870	1811	1870	1856	1811
Adj Flow Rate, veh/h	182	18	48	14	11	18	51	442	18	19	565	114
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	2	2	7	9	2	2	2	6	2	3	6
Cap, veh/h	263	67	178	87	31	50	305	622	490	272	893	179
Arrive On Green	0.15	0.15	0.15	0.05	0.05	0.05	0.05	0.33	0.33	0.02	0.31	0.31
Sat Flow, veh/h	1767	448	1194	1711	598	979	1781	1870	1475	1781	2900	583
Grp Volume(v), veh/h	182	0	66	14	0	29	51	442	18	19	343	336
Grp Sat Flow(s),veh/h/ln	1767	0	1641	1711	0	1577	1781	1870	1475	1781	1763	1720
Q Serve(g_s), s	6.1	0.0	2.2	0.5	0.0	1.1	1.2	12.8	0.5	0.4	10.4	10.4
Cycle Q Clear(g_c), s	6.1	0.0	2.2	0.5	0.0	1.1	1.2	12.8	0.5	0.4	10.4	10.4
Prop In Lane	1.00		0.73	1.00		0.62	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	263	0	245	87	0	81	305	622	490	272	543	530
V/C Ratio(X)	0.69	0.00	0.27	0.16	0.00	0.36	0.17	0.71	0.04	0.07	0.63	0.64
Avail Cap(c_a), veh/h	854	0	793	689	0	635	652	1808	1426	662	1704	1663
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.0	0.0	23.4	28.2	0.0	28.5	14.2	18.1	14.0	15.1	18.4	18.5
Incr Delay (d2), s/veh	3.2	0.0	0.6	0.8	0.0	2.7	0.3	1.5	0.0	0.1	1.2	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	0.9	0.2	0.0	0.5	0.5	5.3	0.2	0.2	4.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.3	0.0	24.0	29.0	0.0	31.1	14.5	19.6	14.0	15.2	19.7	19.7
LnGrp LOS	C	A	C	C	A	C	B	B	B	B	B	B
Approach Vol, veh/h	248			43			511			698		
Approach Delay, s/veh	27.1			30.4			18.9			19.6		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.8	26.0		15.8	8.3	27.5		10.5				
Change Period (Y+Rc), s	* 6.9	* 6.9		6.5	* 6.9	* 6.9		7.3				
Max Green Setting (Gmax), s	* 15	* 60		30.0	* 15	* 60		25.0				
Max Q Clear Time (g_c+I1), s	3.2	12.4		8.1	2.4	14.8		3.1				
Green Ext Time (p_c), s	0.1	5.0		0.9	0.0	3.2		0.1				

Intersection Summary

HCM 6th Ctrl Delay	20.9
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
11: Layton Hall Drive

Timing Plan: PM Peak

Intersection												
Int Delay, s/veh	4.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔	↔		↔	
Traffic Vol, veh/h	2	2	2	81	5	90	11	192	114	87	201	5
Future Vol, veh/h	2	2	2	81	5	90	11	192	114	87	201	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Free	-	-	Free	-	-	None
Storage Length	-	-	-	-	-	150	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	4	2	2	2	2	2	2	2	2
Mvmt Flow	2	2	2	88	5	98	12	209	124	95	218	5

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	647	644	221	646	646	-	223	0	-	209	0	0
Stage 1	411	411	-	233	233	-	-	-	-	-	-	-
Stage 2	236	233	-	413	413	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.14	6.52	-	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.14	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.14	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.536	4.018	-	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	384	391	819	382	390	0	1346	-	0	1362	-	-
Stage 1	618	595	-	766	712	0	-	-	0	-	-	-
Stage 2	767	712	-	612	594	0	-	-	0	-	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	354	356	819	353	355	-	1346	-	-	1362	-	-
Mov Cap-2 Maneuver	354	356	-	353	355	-	-	-	-	-	-	-
Stage 1	612	547	-	758	705	-	-	-	-	-	-	-
Stage 2	753	705	-	559	546	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.3		18.8		0.4		2.3	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1346	-	438 353	-	1362	-
HCM Lane V/C Ratio	0.009	-	0.015 0.265	-	0.069	-
HCM Control Delay (s)	7.7	0	13.3 18.8	0	7.8	0
HCM Lane LOS	A	A	B C	A	A	A
HCM 95th %tile Q(veh)	0	-	0 1	-	0.2	-

G. Intersection Analysis Worksheets – 2028 Future without Development

HCM 6th TWSC
1: Old Lee Highway & Plaza Drive

Timing Plan: AM Peak

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↗↗	↗↗	↗
Traffic Vol, veh/h	0	7	0	574	433	4
Future Vol, veh/h	0	7	0	574	433	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	120
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	14	2	2	6	2
Mvmt Flow	0	8	0	624	471	4
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	236	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.18	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.44	-	-	-	-
Pot Cap-1 Maneuver	0	730	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	730	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	10	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	730	-	-		
HCM Lane V/C Ratio	-	0.01	-	-		
HCM Control Delay (s)	-	10	-	-		
HCM Lane LOS	-	B	-	-		
HCM 95th %tile Q(veh)	-	0	-	-		

Queues

2: Old Lee Highway & FFX Commons

Timing Plan: AM Peak

	→	↘	←	↙	↑	↗	↘	↓	↙
Lane Group	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	15	12	1	35	609	13	15	450	12
v/c Ratio	0.04	0.03	0.00	0.04	0.20	0.01	0.02	0.18	0.01
Control Delay	16.6	0.2	0.0	2.7	4.2	0.0	3.2	6.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.6	0.2	0.0	2.7	4.2	0.0	3.2	6.2	0.0
Queue Length 50th (ft)	3	0	0	0	0	0	1	0	0
Queue Length 95th (ft)	17	0	0	11	113	0	7	86	0
Internal Link Dist (ft)	124		135		259			157	
Turn Bay Length (ft)				120			120		
Base Capacity (vph)	1486	1286	1382	1133	3095	1411	1113	3008	1411
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.01	0.00	0.03	0.20	0.01	0.01	0.15	0.01
Intersection Summary									

HCM Signalized Intersection Capacity Analysis

2: Old Lee Highway & FFX Commons

Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔		↔	↕	↔	↔	↕	↔
Traffic Volume (vph)	13	1	11	0	0	1	32	560	12	14	414	11
Future Volume (vph)	13	1	11	0	0	1	32	560	12	14	414	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8	6.8		6.8		6.8	6.8	6.8	6.8	6.8	6.8
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		0.86		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.96	1.00		1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1780	1583		1611		1770	3505	1583	1770	3406	1583
Flt Permitted		1.00	1.00		1.00		0.46	1.00	1.00	0.42	1.00	1.00
Satd. Flow (perm)		1863	1583		1611		862	3505	1583	785	3406	1583
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)	14	1	12	0	0	1	35	609	13	15	450	12
RTOR Reduction (vph)	0	0	12	0	1	0	0	0	6	0	0	6
Lane Group Flow (vph)	0	15	0	0	0	0	35	609	7	15	450	6
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	6%	2%
Turn Type	Perm	NA	Perm		NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8		8	4			2		2	6		6
Actuated Green, G (s)		1.1	1.1		1.1		31.4	28.8	28.8	28.0	27.1	27.1
Effective Green, g (s)		1.1	1.1		1.1		31.4	28.8	28.8	28.0	27.1	27.1
Actuated g/C Ratio		0.02	0.02		0.02		0.61	0.56	0.56	0.55	0.53	0.53
Clearance Time (s)		6.8	6.8		6.8		6.8	6.8	6.8	6.8	6.8	6.8
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		40	34		34		574	1971	890	446	1802	837
v/s Ratio Prot					0.00		c0.00	c0.17		0.00	0.13	
v/s Ratio Perm		c0.01	0.00				0.03		0.00	0.02		0.00
v/c Ratio		0.38	0.01		0.00		0.06	0.31	0.01	0.03	0.25	0.01
Uniform Delay, d1		24.7	24.5		24.5		3.9	5.9	4.9	5.3	6.5	5.7
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		5.8	0.1		0.0		0.0	0.1	0.0	0.0	0.1	0.0
Delay (s)		30.5	24.6		24.5		4.0	6.0	4.9	5.3	6.6	5.7
Level of Service		C	C		C		A	A	A	A	A	A
Approach Delay (s)		27.9			24.5			5.9			6.5	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay			6.7									
HCM 2000 Volume to Capacity ratio			0.31									
Actuated Cycle Length (s)			51.2							20.4		
Intersection Capacity Utilization			44.1%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

2: Old Lee Highway & FFX Commons

Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	1	11	0	0	1	32	560	12	14	414	11
Future Volume (veh/h)	13	1	11	0	0	1	32	560	12	14	414	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1856	1870	1870	1811	1870
Adj Flow Rate, veh/h	14	1	12	0	0	1	35	609	13	15	450	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	3	2	2	6	2
Cap, veh/h	242	4	74	0	0	74	532	1438	647	448	1331	613
Arrive On Green	0.05	0.05	0.05	0.00	0.00	0.05	0.04	0.41	0.41	0.02	0.39	0.39
Sat Flow, veh/h	1326	95	1585	0	0	1585	1781	3526	1585	1781	3441	1585
Grp Volume(v), veh/h	15	0	12	0	0	1	35	609	13	15	450	12
Grp Sat Flow(s),veh/h/ln	1421	0	1585	0	0	1585	1781	1763	1585	1781	1721	1585
Q Serve(g_s), s	0.4	0.0	0.3	0.0	0.0	0.0	0.4	4.8	0.2	0.2	3.6	0.2
Cycle Q Clear(g_c), s	0.4	0.0	0.3	0.0	0.0	0.0	0.4	4.8	0.2	0.2	3.6	0.2
Prop In Lane	0.93		1.00	0.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	246	0	74	0	0	74	532	1438	647	448	1331	613
V/C Ratio(X)	0.06	0.00	0.16	0.00	0.00	0.01	0.07	0.42	0.02	0.03	0.34	0.02
Avail Cap(c_a), veh/h	1329	0	1267	0	0	1267	1378	2726	1226	1332	2661	1226
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.8	0.0	17.8	0.0	0.0	17.6	6.7	8.2	6.9	7.1	8.4	7.4
Incr Delay (d2), s/veh	0.1	0.0	1.0	0.0	0.0	0.1	0.1	0.2	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	0.0	0.0	0.0	0.1	1.3	0.0	0.1	1.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.9	0.0	18.8	0.0	0.0	17.7	6.7	8.4	6.9	7.1	8.5	7.4
LnGrp LOS	B	A	B	A	A	B	A	A	A	A	A	A
Approach Vol, veh/h	27		1				657		477			
Approach Delay, s/veh	18.3		17.7				8.3		8.5			
Approach LOS	B		B				A		A			
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	7.5	22.6	8.6		8.4	21.8	8.6					
Change Period (Y+Rc), s	* 6.8	* 6.8	* 6.8		* 6.8	* 6.8	* 6.8					
Max Green Setting (Gmax), s	* 20	* 30	* 31		* 20	* 30	* 31					
Max Q Clear Time (g_c+I1), s	2.2	6.8	2.0		2.4	5.6	2.4					
Green Ext Time (p_c), s	0.0	4.4	0.0		0.0	3.1	0.1					
Intersection Summary												
HCM 6th Ctrl Delay			8.6									
HCM 6th LOS			A									
Notes												

HCM 6th TWSC
4: Old Lee Highway

Timing Plan: AM Peak

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↗↗	↗↗	↗
Traffic Vol, veh/h	0	0	0	604	425	0
Future Vol, veh/h	0	0	0	604	425	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	6	2
Mvmt Flow	0	0	0	657	462	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	-	231	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	771	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	771	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	-	-	-		
HCM Lane V/C Ratio	-	-	-	-		
HCM Control Delay (s)	-	0	-	-		
HCM Lane LOS	-	A	-	-		
HCM 95th %tile Q(veh)	-	-	-	-		

HCM 6th TWSC
5: University Drive & Driveway

Timing Plan: AM Peak

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1	13	324	206	5
Future Vol, veh/h	0	1	13	324	206	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	14	352	224	5
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	607	227	229	0	-	0
Stage 1	227	-	-	-	-	-
Stage 2	380	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	460	812	1339	-	-	-
Stage 1	811	-	-	-	-	-
Stage 2	691	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	455	812	1339	-	-	-
Mov Cap-2 Maneuver	544	-	-	-	-	-
Stage 1	803	-	-	-	-	-
Stage 2	691	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.4	0.3		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1339	-	812	-	-	
HCM Lane V/C Ratio	0.011	-	0.001	-	-	
HCM Control Delay (s)	7.7	-	9.4	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

HCM 6th TWSC
6: University Drive & 7-11 Entrance

Timing Plan: AM Peak

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕		↕	↕		↕	↕	
Traffic Vol, veh/h	5	0	15	16	0	6	10	284	30	12	180	12
Future Vol, veh/h	5	0	15	16	0	6	10	284	30	12	180	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	10	2	3	2	4	2
Mvmt Flow	5	0	16	17	0	7	11	309	33	13	196	13

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	580	593	203	585	583	326	209	0	0	342	0	0
Stage 1	229	229	-	348	348	-	-	-	-	-	-	-
Stage 2	351	364	-	237	235	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.2	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.29	-	-	2.218	-	-
Pot Cap-1 Maneuver	426	418	838	422	424	715	1316	-	-	1217	-	-
Stage 1	774	715	-	668	634	-	-	-	-	-	-	-
Stage 2	666	624	-	766	710	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	416	410	838	408	416	715	1316	-	-	1217	-	-
Mov Cap-2 Maneuver	416	410	-	408	416	-	-	-	-	-	-	-
Stage 1	768	707	-	663	629	-	-	-	-	-	-	-
Stage 2	654	619	-	743	702	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.6		13.1		0.2		0.5	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1316	-	-	668 408 715 1217	-	-	-
HCM Lane V/C Ratio	0.008	-	-	0.033 0.043 0.009 0.011	-	-	-
HCM Control Delay (s)	7.8	-	-	10.6 14.2 10.1 8	-	-	-
HCM Lane LOS	A	-	-	B B B A	-	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1 0.1 0 0	-	-	-

Queues

7: University Drive & Whitehead Street/Democracy Lane

Timing Plan: AM Peak

							
Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	127	32	38	8	315	5	179
v/c Ratio	0.38	0.07	0.11	0.01	0.34	0.01	0.24
Control Delay	19.8	3.1	15.7	12.9	13.1	12.8	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.8	3.1	15.7	12.9	13.1	12.8	12.9
Queue Length 50th (ft)	16	0	4	1	36	1	19
Queue Length 95th (ft)	105	10	38	12	200	9	118
Internal Link Dist (ft)	232		226		127		552
Turn Bay Length (ft)				50		150	
Base Capacity (vph)	890	1073	894	1104	1706	938	1389
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.03	0.04	0.01	0.18	0.01	0.13
Intersection Summary							

HCM Signalized Intersection Capacity Analysis

7: University Drive & Whitehead Street/Democracy Lane

Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	17	29	22	9	4	7	271	18	5	154	11
Future Volume (vph)	100	17	29	22	9	4	7	271	18	5	154	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.96		1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		0.99		1.00	1.00		0.99	1.00	
Frt		1.00	0.85		0.99		1.00	0.99		1.00	0.99	
Flt Protected		0.96	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1675	1505		1686		1764	1842		1742	1498	
Flt Permitted		0.73	1.00		0.73		0.64	1.00		0.56	1.00	
Satd. Flow (perm)		1274	1505		1277		1197	1842		1018	1498	
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)	109	18	32	24	10	4	8	295	20	5	167	12
RTOR Reduction (vph)	0	0	26	0	3	0	0	2	0	0	2	0
Lane Group Flow (vph)	0	127	6	0	35	0	8	313	0	5	177	0
Confl. Peds. (#/hr)	1		8	8		1	3		7	7		3
Heavy Vehicles (%)	7%	18%	3%	5%	11%	2%	2%	2%	2%	3%	27%	2%
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			2			6	
Permitted Phases	8		8	4			2			6		
Actuated Green, G (s)		8.7	8.7		8.7		19.0	19.0		19.0	19.0	
Effective Green, g (s)		8.7	8.7		8.7		19.0	19.0		19.0	19.0	
Actuated g/C Ratio		0.19	0.19		0.19		0.42	0.42		0.42	0.42	
Clearance Time (s)		6.0	6.0		6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		247	292		247		507	781		431	635	
v/s Ratio Prot							c0.17				0.12	
v/s Ratio Perm		c0.10	0.00		0.03		0.01			0.00		
v/c Ratio		0.51	0.02		0.14		0.02	0.40		0.01	0.28	
Uniform Delay, d1		16.2	14.6		15.0		7.5	8.9		7.5	8.4	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.8	0.0		0.3		0.0	0.3		0.0	0.2	
Delay (s)		18.0	14.6		15.2		7.5	9.3		7.5	8.7	
Level of Service		B	B		B		A	A		A	A	
Approach Delay (s)		17.3			15.2			9.2			8.6	
Approach LOS		B			B			A			A	
Intersection Summary												
HCM 2000 Control Delay			11.2				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.41									
Actuated Cycle Length (s)			44.8				Sum of lost time (s)			15.0		
Intersection Capacity Utilization			35.1%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Edition methodology does not support exclusive ped or hold phases.

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	22	267	6	10	175	10	2	1	6	0	0	4
Future Vol, veh/h	22	267	6	10	175	10	2	1	6	0	0	4
Conflicting Peds, #/hr	9	0	0	0	0	9	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	5	2	2	3	2	2	2	17	2	2	2
Mvmt Flow	24	290	7	11	190	11	2	1	7	0	0	4
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	210	0	0	297	0	0	562	574	294	573	572	205
Stage 1	-	-	-	-	-	-	342	342	-	227	227	-
Stage 2	-	-	-	-	-	-	220	232	-	346	345	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.37	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.453	3.518	4.018	3.318
Pot Cap-1 Maneuver	1361	-	-	1264	-	-	438	429	711	430	430	836
Stage 1	-	-	-	-	-	-	673	638	-	776	716	-
Stage 2	-	-	-	-	-	-	782	713	-	670	636	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1349	-	-	1264	-	-	425	412	711	412	413	829
Mov Cap-2 Maneuver	-	-	-	-	-	-	425	412	-	412	413	-
Stage 1	-	-	-	-	-	-	659	625	-	753	702	-
Stage 2	-	-	-	-	-	-	770	699	-	649	623	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0.4			11.3			9.4		
HCM LOS							B			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	578	1349	-	-	1264	-	-	829				
HCM Lane V/C Ratio	0.017	0.018	-	-	0.009	-	-	0.005				
HCM Control Delay (s)	11.3	7.7	0	-	7.9	0	-	9.4				
HCM Lane LOS	B	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0				

Queues

10: Old Lee Highway & Layton Hall Drive/Farrcroft Drive

Timing Plan: AM Peak



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	249	44	14	54	67	546	5	17	584
v/c Ratio	0.61	0.11	0.10	0.30	0.18	0.73	0.01	0.06	0.52
Control Delay	42.9	20.1	51.7	25.4	15.3	30.9	0.0	14.8	25.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.9	20.1	51.7	25.4	15.3	30.9	0.0	14.8	25.6
Queue Length 50th (ft)	115	7	7	5	20	218	0	5	133
Queue Length 95th (ft)	284	44	33	52	51	515	0	19	226
Internal Link Dist (ft)		305		220		842			355
Turn Bay Length (ft)							230	150	
Base Capacity (vph)	698	680	565	570	512	1290	1110	466	2327
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.06	0.02	0.09	0.13	0.42	0.00	0.04	0.25
Intersection Summary									

HCM Signalized Intersection Capacity Analysis

10: Old Lee Highway & Layton Hall Drive/Farrcroft Drive

Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	229	17	24	13	10	40	62	502	5	16	401	136
Future Volume (vph)	229	17	24	13	10	40	62	502	5	16	401	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		7.3	7.3		6.9	6.9	6.9	6.9	6.9	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00	0.97	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.91		1.00	0.88		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1719	1639		1671	1607		1769	1827	1534	1701	3281	
Flt Permitted	0.95	1.00		0.95	1.00		0.32	1.00	1.00	0.27	1.00	
Satd. Flow (perm)	1719	1639		1671	1607		600	1827	1534	478	3281	
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)	249	18	26	14	11	43	67	546	5	17	436	148
RTOR Reduction (vph)	0	20	0	0	41	0	0	0	3	0	22	0
Lane Group Flow (vph)	249	24	0	14	13	0	67	546	2	17	562	0
Confl. Peds. (#/hr)	3		1	1		3	1		5	5		1
Heavy Vehicles (%)	5%	6%	4%	8%	2%	2%	2%	4%	2%	6%	6%	3%
Turn Type	Split	NA		Split	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	4	4		8	8		1	6		5	2	
Permitted Phases							6		6	2		
Actuated Green, G (s)	20.8	20.8		5.3	5.3		42.1	36.2	36.2	34.5	32.4	
Effective Green, g (s)	20.8	20.8		5.3	5.3		42.1	36.2	36.2	34.5	32.4	
Actuated g/C Ratio	0.23	0.23		0.06	0.06		0.46	0.39	0.39	0.38	0.35	
Clearance Time (s)	6.5	6.5		7.3	7.3		6.9	6.9	6.9	6.9	6.9	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	388	370		96	92		349	718	603	207	1155	
v/s Ratio Prot	c0.14	0.01		0.01	c0.01		c0.01	c0.30		0.00	0.17	
v/s Ratio Perm							0.08		0.00	0.03		
v/c Ratio	0.64	0.06		0.15	0.15		0.19	0.76	0.00	0.08	0.49	
Uniform Delay, d1	32.2	28.0		41.2	41.2		14.6	24.1	16.9	19.2	23.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.6	0.1		0.7	0.7		0.3	4.8	0.0	0.2	0.3	
Delay (s)	35.8	28.0		41.9	41.9		14.8	28.9	16.9	19.3	23.6	
Level of Service	D	C		D	D		B	C	B	B	C	
Approach Delay (s)		34.7			41.9			27.3			23.5	
Approach LOS		C			D			C			C	
Intersection Summary												
HCM 2000 Control Delay			27.8			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			92.0			Sum of lost time (s)			27.6			
Intersection Capacity Utilization			66.9%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

10: Old Lee Highway & Layton Hall Drive/Farrcroft Drive

Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	229	17	24	13	10	40	62	502	5	16	401	136
Future Volume (veh/h)	229	17	24	13	10	40	62	502	5	16	401	136
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1826	1811	1841	1781	1870	1870	1870	1841	1870	1811	1811	1856
Adj Flow Rate, veh/h	249	18	26	14	11	43	67	546	5	17	436	148
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	6	4	8	2	2	2	4	2	6	6	3
Cap, veh/h	316	121	175	102	20	77	342	655	560	204	820	276
Arrive On Green	0.18	0.18	0.18	0.06	0.06	0.06	0.05	0.36	0.36	0.02	0.32	0.32
Sat Flow, veh/h	1739	666	962	1697	330	1289	1781	1841	1574	1725	2523	848
Grp Volume(v), veh/h	249	0	44	14	0	54	67	546	5	17	296	288
Grp Sat Flow(s),veh/h/ln	1739	0	1628	1697	0	1618	1781	1841	1574	1725	1721	1651
Q Serve(g_s), s	9.9	0.0	1.6	0.6	0.0	2.3	1.8	19.6	0.1	0.5	10.1	10.3
Cycle Q Clear(g_c), s	9.9	0.0	1.6	0.6	0.0	2.3	1.8	19.6	0.1	0.5	10.1	10.3
Prop In Lane	1.00		0.59	1.00		0.80	1.00		1.00	1.00		0.51
Lane Grp Cap(c), veh/h	316	0	296	102	0	97	342	655	560	204	559	536
V/C Ratio(X)	0.79	0.00	0.15	0.14	0.00	0.56	0.20	0.83	0.01	0.08	0.53	0.54
Avail Cap(c_a), veh/h	722	0	676	587	0	560	620	1529	1307	528	1429	1371
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.2	0.0	24.8	32.2	0.0	33.0	15.4	21.3	15.0	17.8	19.9	19.9
Incr Delay (d2), s/veh	4.3	0.0	0.2	0.6	0.0	4.9	0.3	2.9	0.0	0.2	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.0	0.6	0.2	0.0	1.0	0.7	8.3	0.1	0.2	3.9	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.6	0.0	25.1	32.8	0.0	37.9	15.7	24.2	15.0	18.0	20.7	20.8
LnGrp LOS	C	A	C	C	A	D	B	C	B	B	C	C
Approach Vol, veh/h	293			68			618			601		
Approach Delay, s/veh	31.4			36.9			23.2			20.6		
Approach LOS	C			D			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.6	30.4		19.6	8.3	32.6		11.6				
Change Period (Y+Rc), s	* 6.9	* 6.9		6.5	* 6.9	* 6.9		7.3				
Max Green Setting (Gmax), s	* 15	* 60		30.0	* 15	* 60		25.0				
Max Q Clear Time (g_c+I1), s	3.8	12.3		11.9	2.5	21.6		4.3				
Green Ext Time (p_c), s	0.1	4.2		0.9	0.0	4.1		0.3				

Intersection Summary

HCM 6th Ctrl Delay	24.3
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
11: Layton Hall Drive

Timing Plan: AM Peak

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	
Traffic Vol, veh/h	5	3	4	46	10	102	1	175	191	126	148	0
Future Vol, veh/h	5	3	4	46	10	102	1	175	191	126	148	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	150	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	13	2	2	2	2	2	2	2	2
Mvmt Flow	5	3	4	50	11	111	1	190	208	137	161	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	792	835	161	735	731	294	161	0	0	398	0	0
Stage 1	435	435	-	296	296	-	-	-	-	-	-	-
Stage 2	357	400	-	439	435	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.23	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.23	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.23	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.617	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	307	304	884	322	349	745	1418	-	-	1161	-	-
Stage 1	600	580	-	689	668	-	-	-	-	-	-	-
Stage 2	661	602	-	576	580	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	229	264	884	286	303	745	1418	-	-	1161	-	-
Mov Cap-2 Maneuver	229	264	-	286	303	-	-	-	-	-	-	-
Stage 1	599	505	-	688	667	-	-	-	-	-	-	-
Stage 2	553	601	-	495	505	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	16.8		14.3		0		3.9	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1418	-	-	318 289 745 1161	-	-	-
HCM Lane V/C Ratio	0.001	-	-	0.041 0.211 0.149 0.118	-	-	-
HCM Control Delay (s)	7.5	0	-	16.8 20.8 10.7 8.5	0	-	-
HCM Lane LOS	A	A	-	C C B A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1 0.8 0.5 0.4	-	-	-

HCM 6th TWSC
1: Old Lee Highway

Timing Plan: PM Peak

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↗↗	↗↗	↗
Traffic Vol, veh/h	0	31	0	528	635	7
Future Vol, veh/h	0	31	0	528	635	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	120
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	3	2
Mvmt Flow	0	34	0	574	690	8
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	-	345	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	651	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	651	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10.8	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT EBLn1		SBT	SBR		
Capacity (veh/h)	- 651		-	-		
HCM Lane V/C Ratio	- 0.052		-	-		
HCM Control Delay (s)	- 10.8		-	-		
HCM Lane LOS	- B		-	-		
HCM 95th %tile Q(veh)	- 0.2		-	-		

Queues

2: Old Lee Highway

Timing Plan: PM Peak

									
Lane Group	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	45	76	80	67	517	12	16	649	47
v/c Ratio	0.20	0.20	0.31	0.12	0.24	0.01	0.03	0.38	0.06
Control Delay	23.4	3.8	23.0	5.8	8.1	0.0	5.9	13.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.4	3.8	23.0	5.8	8.1	0.0	5.9	13.8	0.1
Queue Length 50th (ft)	12	0	20	8	35	0	2	87	0
Queue Length 95th (ft)	41	17	60	23	107	0	8	148	1
Internal Link Dist (ft)	173		199		207			142	
Turn Bay Length (ft)				120			120		
Base Capacity (vph)	831	1076	918	889	2460	1135	931	2375	1079
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.07	0.09	0.08	0.21	0.01	0.02	0.27	0.04
Intersection Summary									

HCM Signalized Intersection Capacity Analysis

2: Old Lee Highway

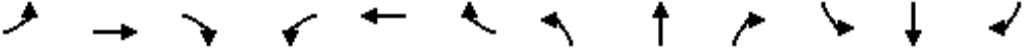
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↩	↩		↔		↩	↕	↕	↩	↕	↩
Traffic Volume (vph)	37	5	71	54	10	10	62	481	11	15	604	44
Future Volume (vph)	37	5	71	54	10	10	62	481	11	15	604	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8	6.8		6.8		6.8	6.8	6.8	6.8	6.8	6.8
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.96	1.00		0.97		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1734	1568		1764		1770	3539	1583	1770	3505	1538
Flt Permitted		0.69	1.00		0.76		0.35	1.00	1.00	0.46	1.00	1.00
Satd. Flow (perm)		1256	1568		1384		652	3539	1583	859	3505	1538
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)	40	5	76	58	11	11	67	517	12	16	649	47
RTOR Reduction (vph)	0	0	66	0	7	0	0	0	6	0	0	26
Lane Group Flow (vph)	0	45	10	0	73	0	67	517	6	16	649	21
Heavy Vehicles (%)	3%	20%	3%	2%	2%	2%	2%	2%	2%	2%	3%	5%
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8		8	4			2		2	6		6
Actuated Green, G (s)		7.1	7.1		7.1		32.1	28.0	28.0	25.7	24.8	24.8
Effective Green, g (s)		7.1	7.1		7.1		32.1	28.0	28.0	25.7	24.8	24.8
Actuated g/C Ratio		0.13	0.13		0.13		0.57	0.50	0.50	0.46	0.44	0.44
Clearance Time (s)		6.8	6.8		6.8		6.8	6.8	6.8	6.8	6.8	6.8
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		158	197		174		452	1756	785	405	1541	676
v/s Ratio Prot							c0.01	c0.15		0.00	c0.19	
v/s Ratio Perm		0.04	0.01		c0.05		0.07		0.00	0.02		0.01
v/c Ratio		0.28	0.05		0.42		0.15	0.29	0.01	0.04	0.42	0.03
Uniform Delay, d1		22.3	21.7		22.7		5.6	8.4	7.2	8.4	10.9	9.0
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.0	0.1		1.6		0.2	0.1	0.0	0.0	0.2	0.0
Delay (s)		23.3	21.8		24.4		5.7	8.5	7.2	8.5	11.1	9.0
Level of Service		C	C		C		A	A	A	A	B	A
Approach Delay (s)		22.4			24.4			8.1			10.9	
Approach LOS		C			C			A			B	
Intersection Summary												
HCM 2000 Control Delay			11.4									
HCM 2000 Volume to Capacity ratio			0.40									
Actuated Cycle Length (s)			56.4							20.4		
Intersection Capacity Utilization			48.7%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

2: Old Lee Highway

Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↗	↘		↔		↗	↕	↘	↗	↕	↘
Traffic Volume (veh/h)	37	5	71	54	10	10	62	481	11	15	604	44
Future Volume (veh/h)	37	5	71	54	10	10	62	481	11	15	604	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1604	1856	1870	1870	1870	1870	1870	1870	1870	1856	1826
Adj Flow Rate, veh/h	40	5	76	58	11	11	67	517	12	16	649	47
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	20	3	2	2	2	2	2	2	2	3	5
Cap, veh/h	317	30	226	260	49	27	413	1347	601	436	1185	520
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.06	0.38	0.38	0.02	0.34	0.34
Sat Flow, veh/h	1144	205	1572	839	342	188	1781	3554	1585	1781	3526	1547
Grp Volume(v), veh/h	45	0	76	80	0	0	67	517	12	16	649	47
Grp Sat Flow(s),veh/h/ln	1349	0	1572	1369	0	0	1781	1777	1585	1781	1763	1547
Q Serve(g_s), s	0.0	0.0	1.9	1.3	0.0	0.0	1.0	4.7	0.2	0.3	6.7	0.9
Cycle Q Clear(g_c), s	1.1	0.0	1.9	2.5	0.0	0.0	1.0	4.7	0.2	0.3	6.7	0.9
Prop In Lane	0.89		1.00	0.72		0.14	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	346	0	226	336	0	0	413	1347	601	436	1185	520
V/C Ratio(X)	0.13	0.00	0.34	0.24	0.00	0.00	0.16	0.38	0.02	0.04	0.55	0.09
Avail Cap(c_a), veh/h	1022	0	1092	1111	0	0	1099	2388	1065	1198	2369	1040
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.8	0.0	17.2	17.4	0.0	0.0	8.9	10.1	8.7	9.4	12.1	10.1
Incr Delay (d2), s/veh	0.2	0.0	0.9	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.7	0.7	0.0	0.0	0.3	1.5	0.1	0.1	2.2	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.0	0.0	18.1	17.8	0.0	0.0	9.1	10.3	8.7	9.5	12.5	10.2
LnGrp LOS	B	A	B	B	A	A	A	B	A	A	B	B
Approach Vol, veh/h		121			80			596			712	
Approach Delay, s/veh		17.7			17.8			10.1			12.2	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.7	23.7		13.2	9.6	21.8		13.2				
Change Period (Y+Rc), s	* 6.8	* 6.8		* 6.8	* 6.8	* 6.8		* 6.8				
Max Green Setting (Gmax), s	* 20	* 30		* 31	* 20	* 30		* 31				
Max Q Clear Time (g_c+I1), s	2.3	6.7		4.5	3.0	8.7		3.9				
Green Ext Time (p_c), s	0.0	3.6		0.4	0.1	4.7		0.5				

Intersection Summary

HCM 6th Ctrl Delay	12.1
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
4: Old Lee Highway

Timing Plan: PM Peak

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↗↗	↗↗	↗
Traffic Vol, veh/h	0	0	0	554	732	0
Future Vol, veh/h	0	0	0	554	732	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	3	3	2
Mvmt Flow	0	0	0	583	771	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	-	386	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	612	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	612	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT EBLn1		SBT	SBR		
Capacity (veh/h)	-	-	-	-		
HCM Lane V/C Ratio	-	-	-	-		
HCM Control Delay (s)	-	0	-	-		
HCM Lane LOS	-	A	-	-		
HCM 95th %tile Q(veh)	-	-	-	-		

HCM 6th TWSC
5: University Drive & Driveway

Timing Plan: PM Peak

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	18	1	366	430	1
Future Vol, veh/h	3	18	1	366	430	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	20	1	398	467	1
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	868	468	468	0	-	0
Stage 1	468	-	-	-	-	-
Stage 2	400	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	323	595	1094	-	-	-
Stage 1	630	-	-	-	-	-
Stage 2	677	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	323	595	1094	-	-	-
Mov Cap-2 Maneuver	445	-	-	-	-	-
Stage 1	629	-	-	-	-	-
Stage 2	677	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	11.6	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1094	-	568	-	-	
HCM Lane V/C Ratio	0.001	-	0.04	-	-	
HCM Control Delay (s)	8.3	-	11.6	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

HCM 6th TWSC
6: University Drive

Timing Plan: PM Peak

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔		↔	↔		↔	↔	
Traffic Vol, veh/h	16	3	21	41	6	36	12	283	74	30	368	21
Future Vol, veh/h	16	3	21	41	6	36	12	283	74	30	368	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	3	2	2
Mvmt Flow	17	3	23	45	7	39	13	308	80	33	400	23

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	875	892	412	865	863	348	423	0	0	388	0	0
Stage 1	478	478	-	374	374	-	-	-	-	-	-	-
Stage 2	397	414	-	491	489	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.13	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.227	-	-
Pot Cap-1 Maneuver	270	281	640	274	292	695	1136	-	-	1165	-	-
Stage 1	568	556	-	647	618	-	-	-	-	-	-	-
Stage 2	629	593	-	559	549	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	243	270	640	254	281	695	1136	-	-	1165	-	-
Mov Cap-2 Maneuver	243	270	-	254	281	-	-	-	-	-	-	-
Stage 1	562	540	-	640	611	-	-	-	-	-	-	-
Stage 2	581	586	-	521	534	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	16.2		16.9		0.3		0.6	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1136	-	-	364 254 574	1165	-	-
HCM Lane V/C Ratio	0.011	-	-	0.119 0.175 0.08	0.028	-	-
HCM Control Delay (s)	8.2	-	-	16.2 22.2 11.8	8.2	-	-
HCM Lane LOS	A	-	-	C C B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4 0.6 0.3	0.1	-	-

Queues

7: University Drive & Whitehead Street/Democracy Lane

Timing Plan: PM Peak

							
Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	106	71	95	29	334	14	339
v/c Ratio	0.30	0.17	0.29	0.06	0.37	0.03	0.38
Control Delay	18.7	7.3	18.3	11.9	12.5	11.8	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.7	7.3	18.3	11.9	12.5	11.8	12.7
Queue Length 50th (ft)	13	0	11	3	36	1	37
Queue Length 95th (ft)	89	32	80	27	199	16	204
Internal Link Dist (ft)	245		249		117		604
Turn Bay Length (ft)				50		150	
Base Capacity (vph)	1050	1136	961	909	1697	911	1694
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.06	0.10	0.03	0.20	0.02	0.20
Intersection Summary							

HCM Signalized Intersection Capacity Analysis

7: University Drive & Whitehead Street/Democracy Lane

Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↩	↩		↩		↩	↩		↩	↩	
Traffic Volume (vph)	51	47	65	57	21	9	27	276	31	13	291	21
Future Volume (vph)	51	47	65	57	21	9	27	276	31	13	291	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.95		1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		0.98		0.99	1.00		0.99	1.00	
Frt		1.00	0.85		0.99		1.00	0.98		1.00	0.99	
Flt Protected		0.97	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1756	1500		1692		1753	1826		1745	1819	
Flt Permitted		0.79	1.00		0.74		0.53	1.00		0.54	1.00	
Satd. Flow (perm)		1418	1500		1292		984	1826		990	1819	
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)	55	51	71	62	23	10	29	300	34	14	316	23
RTOR Reduction (vph)	0	0	58	0	4	0	0	4	0	0	2	0
Lane Group Flow (vph)	0	106	13	0	91	0	29	330	0	14	337	0
Confl. Peds. (#/hr)	3		12	12		3	12		18	18		12
Heavy Vehicles (%)	6%	4%	2%	2%	14%	2%	2%	2%	2%	2%	2%	19%
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			2			6	
Permitted Phases	8		8	4			2			6		
Actuated Green, G (s)		7.7	7.7		7.7		17.8	17.8		17.8	17.8	
Effective Green, g (s)		7.7	7.7		7.7		17.8	17.8		17.8	17.8	
Actuated g/C Ratio		0.18	0.18		0.18		0.42	0.42		0.42	0.42	
Clearance Time (s)		6.0	6.0		6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		256	271		233		411	762		413	760	
v/s Ratio Prot								0.18			c0.19	
v/s Ratio Perm		c0.07	0.01		0.07		0.03			0.01		
v/c Ratio		0.41	0.05		0.39		0.07	0.43		0.03	0.44	
Uniform Delay, d1		15.5	14.4		15.4		7.4	8.8		7.3	8.9	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.1	0.1		1.1		0.1	0.4		0.0	0.4	
Delay (s)		16.5	14.5		16.5		7.5	9.2		7.4	9.3	
Level of Service		B	B		B		A	A		A	A	
Approach Delay (s)		15.7			16.5			9.1			9.2	
Approach LOS		B			B			A			A	
Intersection Summary												
HCM 2000 Control Delay			11.0									
HCM 2000 Volume to Capacity ratio			0.40									
Actuated Cycle Length (s)			42.6									
Intersection Capacity Utilization			43.1%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Edition methodology does not support exclusive ped or hold phases.

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	225	16	14	170	0	9	0	26	4	0	12
Future Vol, veh/h	1	225	16	14	170	0	9	0	26	4	0	12
Conflicting Peds, #/hr	2	0	0	0	0	2	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	13	7	3	2	2	2	2	2	2	2
Mvmt Flow	1	245	17	15	185	0	10	0	28	4	0	13
Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	187	0	0	262	0	0	479	473	254	487	481	188
Stage 1	-	-	-	-	-	-	256	256	-	217	217	-
Stage 2	-	-	-	-	-	-	223	217	-	270	264	-
Critical Hdwy	4.12	-	-	4.17	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.263	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1387	-	-	1274	-	-	497	490	785	491	485	854
Stage 1	-	-	-	-	-	-	749	696	-	785	723	-
Stage 2	-	-	-	-	-	-	780	723	-	736	690	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1384	-	-	1274	-	-	484	482	785	467	477	852
Mov Cap-2 Maneuver	-	-	-	-	-	-	484	482	-	467	477	-
Stage 1	-	-	-	-	-	-	748	695	-	783	712	-
Stage 2	-	-	-	-	-	-	757	712	-	709	689	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	0		0.6		10.6		10.2					
HCM LOS					B		B					
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	677	1384	-	-	1274	-	-	706				
HCM Lane V/C Ratio	0.056	0.001	-	-	0.012	-	-	0.025				
HCM Control Delay (s)	10.6	7.6	0	-	7.9	0	-	10.2				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1				

Queues

10: Old Lee Highway & Layton Hall Drive/Farrcroft Drive

Timing Plan: PM Peak



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	196	71	14	29	55	473	18	19	723
v/c Ratio	0.53	0.18	0.09	0.17	0.15	0.58	0.03	0.05	0.59
Control Delay	38.4	15.1	45.4	29.0	13.3	23.6	0.1	13.1	24.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.4	15.1	45.4	29.0	13.3	23.6	0.1	13.1	24.5
Queue Length 50th (ft)	92	8	7	5	15	163	0	5	166
Queue Length 95th (ft)	202	49	31	38	40	394	0	18	272
Internal Link Dist (ft)		305		220		864			293
Turn Bay Length (ft)							230	150	
Base Capacity (vph)	788	763	632	617	528	1441	1064	585	2614
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.09	0.02	0.05	0.10	0.33	0.02	0.03	0.28
Intersection Summary									

HCM Signalized Intersection Capacity Analysis

10: Old Lee Highway & Layton Hall Drive/Farrcroft Drive

Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	17	51	14	11	17	53	459	17	18	580	121
Future Volume (vph)	190	17	51	14	11	17	53	459	17	18	580	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		7.3	7.3		6.9	6.9	6.9	6.9	6.9	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00	0.93	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	0.99	1.00	
Frt	1.00	0.89		1.00	0.91		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	1636		1687	1621		1768	1863	1412	1756	3379	
Flt Permitted	0.95	1.00		0.95	1.00		0.26	1.00	1.00	0.37	1.00	
Satd. Flow (perm)	1752	1636		1687	1621		482	1863	1412	691	3379	
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)	196	18	53	14	11	18	55	473	18	19	598	125
RTOR Reduction (vph)	0	43	0	0	17	0	0	0	11	0	11	0
Lane Group Flow (vph)	196	28	0	14	12	0	55	473	7	19	712	0
Confl. Peds. (#/hr)	3		3	3		3	6		26	26		6
Heavy Vehicles (%)	3%	2%	2%	7%	9%	2%	2%	2%	6%	2%	3%	6%
Turn Type	Split	NA		Split	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	4	4		8	8		1	6		5	2	
Permitted Phases							6		6	2		
Actuated Green, G (s)	16.4	16.4		3.6	3.6		39.8	34.3	34.3	33.0	30.9	
Effective Green, g (s)	16.4	16.4		3.6	3.6		39.8	34.3	34.3	33.0	30.9	
Actuated g/C Ratio	0.20	0.20		0.04	0.04		0.47	0.41	0.41	0.39	0.37	
Clearance Time (s)	6.5	6.5		7.3	7.3		6.9	6.9	6.9	6.9	6.9	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	342	319		72	69		312	760	576	298	1242	
v/s Ratio Prot	c0.11	0.02		c0.01	0.01		c0.01	c0.25		0.00	0.21	
v/s Ratio Perm							0.07		0.01	0.02		
v/c Ratio	0.57	0.09		0.19	0.17		0.18	0.62	0.01	0.06	0.57	
Uniform Delay, d1	30.6	27.7		38.8	38.8		12.7	19.7	14.8	16.0	21.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.3	0.1		1.3	1.2		0.3	1.6	0.0	0.1	0.6	
Delay (s)	32.9	27.8		40.1	39.9		13.0	21.3	14.8	16.1	21.9	
Level of Service	C	C		D	D		B	C	B	B	C	
Approach Delay (s)		31.6			40.0			20.3			21.8	
Approach LOS		C			D			C			C	
Intersection Summary												
HCM 2000 Control Delay			23.4			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.57									
Actuated Cycle Length (s)			84.0			Sum of lost time (s)			27.6			
Intersection Capacity Utilization			62.8%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary 10: Old Lee Highway & Layton Hall Drive/Farrcroft Drive

Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	17	51	14	11	17	53	459	17	18	580	121
Future Volume (veh/h)	190	17	51	14	11	17	53	459	17	18	580	121
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.96	0.99		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1870	1870	1796	1767	1870	1870	1870	1811	1870	1856	1811
Adj Flow Rate, veh/h	196	18	53	14	11	18	55	473	18	19	598	125
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	2	2	7	9	2	2	2	6	2	3	6
Cap, veh/h	277	65	191	87	30	50	295	636	502	256	903	188
Arrive On Green	0.16	0.16	0.16	0.05	0.05	0.05	0.05	0.34	0.34	0.02	0.31	0.31
Sat Flow, veh/h	1767	415	1222	1711	598	979	1781	1870	1476	1781	2880	600
Grp Volume(v), veh/h	196	0	71	14	0	29	55	473	18	19	365	358
Grp Sat Flow(s),veh/h/ln	1767	0	1637	1711	0	1577	1781	1870	1476	1781	1763	1717
Q Serve(g_s), s	6.7	0.0	2.5	0.5	0.0	1.1	1.3	14.3	0.5	0.5	11.5	11.6
Cycle Q Clear(g_c), s	6.7	0.0	2.5	0.5	0.0	1.1	1.3	14.3	0.5	0.5	11.5	11.6
Prop In Lane	1.00		0.75	1.00		0.62	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	277	0	256	87	0	80	295	636	502	256	553	539
V/C Ratio(X)	0.71	0.00	0.28	0.16	0.00	0.36	0.19	0.74	0.04	0.07	0.66	0.66
Avail Cap(c_a), veh/h	827	0	766	667	0	615	625	1750	1381	633	1649	1606
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.7	0.0	23.8	29.1	0.0	29.4	14.6	18.7	14.1	15.6	19.1	19.1
Incr Delay (d2), s/veh	3.3	0.0	0.6	0.9	0.0	2.7	0.3	1.7	0.0	0.1	1.4	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	1.0	0.2	0.0	0.5	0.5	5.9	0.2	0.2	4.5	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.0	0.0	24.4	30.0	0.0	32.2	14.9	20.4	14.2	15.7	20.4	20.5
LnGrp LOS	C	A	C	C	A	C	B	C	B	B	C	C
Approach Vol, veh/h	267					43		546		742		
Approach Delay, s/veh	27.8					31.5		19.7		20.3		
Approach LOS	C					C		B		C		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	10.0	27.0	16.5		8.3	28.7	10.5					
Change Period (Y+Rc), s	* 6.9	* 6.9	6.5		* 6.9	* 6.9	7.3					
Max Green Setting (Gmax), s	* 15	* 60	30.0		* 15	* 60	25.0					
Max Q Clear Time (g_c+I1), s	3.3	13.6	8.7		2.5	16.3	3.1					
Green Ext Time (p_c), s	0.1	5.4	1.0		0.0	3.5	0.1					
Intersection Summary												
HCM 6th Ctrl Delay			21.7									
HCM 6th LOS			C									
Notes												

HCM 6th TWSC
11: Layton Hall Drive

Timing Plan: PM Peak

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	2	2	81	13	90	11	209	114	87	224	5
Future Vol, veh/h	2	2	2	81	13	90	11	209	114	87	224	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	150	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	4	2	2	2	2	2	2	2	2
Mvmt Flow	2	2	2	88	14	98	12	227	124	95	243	5
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	805	811	246	751	751	289	248	0	0	351	0	0
Stage 1	436	436	-	313	313	-	-	-	-	-	-	-
Stage 2	369	375	-	438	438	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.14	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.14	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.14	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.536	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	301	313	793	325	340	750	1318	-	-	1208	-	-
Stage 1	599	580	-	693	657	-	-	-	-	-	-	-
Stage 2	651	617	-	594	579	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	233	281	793	297	305	750	1318	-	-	1208	-	-
Mov Cap-2 Maneuver	233	281	-	297	305	-	-	-	-	-	-	-
Stage 1	592	527	-	685	649	-	-	-	-	-	-	-
Stage 2	547	610	-	536	526	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	16.2		17			0.3			2.3			
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR					
Capacity (veh/h)	1318	-	-	329 298 750	1208	-	-					
HCM Lane V/C Ratio	0.009	-	-	0.02 0.343 0.13	0.078	-	-					
HCM Control Delay (s)	7.8	0	-	16.2 23.3 10.5	8.2	0	-					
HCM Lane LOS	A	A	-	C C B	A A	-	-					
HCM 95th %tile Q(veh)	0	-	-	0.1 1.5 0.4	0.3	-	-					

H. Intersection Analysis Worksheets – 2028 Future with Development (Full-Build)

HCM 6th TWSC
1: Old Lee Highway & Plaza Drive

05/05/2026

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑	↗
Traffic Vol, veh/h	0	11	0	579	439	4
Future Vol, veh/h	0	11	0	579	439	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	120
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	14	2	2	6	2
Mvmt Flow	0	12	0	629	477	4
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	239	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.18	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.44	-	-	-	-
Pot Cap-1 Maneuver	0	727	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	727	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	10	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	727	-	-		
HCM Lane V/C Ratio	-	0.016	-	-		
HCM Control Delay (s)	-	10	-	-		
HCM Lane LOS	-	B	-	-		
HCM 95th %tile Q(veh)	-	0.1	-	-		

Queues

2: Old Lee Highway & FFX Commons

05/05/2026



Lane Group	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	21	14	1	39	608	13	15	458	15
v/c Ratio	0.06	0.04	0.00	0.05	0.22	0.01	0.02	0.18	0.01
Control Delay	18.6	0.2	0.0	4.0	5.7	0.0	4.5	8.1	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.6	0.2	0.0	4.0	5.7	0.0	4.5	8.1	0.0
Queue Length 50th (ft)	3	0	0	0	0	0	1	0	0
Queue Length 95th (ft)	22	0	0	13	115	0	7	90	0
Internal Link Dist (ft)	124		135		95			157	
Turn Bay Length (ft)				120		150	120		
Base Capacity (vph)	1423	1236	1343	1070	2851	1309	1052	2770	1309
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.01	0.00	0.04	0.21	0.01	0.01	0.17	0.01
Intersection Summary									

HCM Signalized Intersection Capacity Analysis

2: Old Lee Highway & FFX Commons

05/05/2026

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔		↖	↕	↗	↖	↕	↗
Traffic Volume (vph)	19	0	13	0	0	1	36	559	12	14	421	14
Future Volume (vph)	19	0	13	0	0	1	36	559	12	14	421	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8	6.8		6.8		6.8	6.8	6.8	6.8	6.8	6.8
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		0.86		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00		1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1770	1583		1611		1770	3505	1583	1770	3406	1583
Flt Permitted		1.00	1.00		1.00		0.46	1.00	1.00	0.42	1.00	1.00
Satd. Flow (perm)		1863	1583		1611		864	3505	1583	786	3406	1583
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)	21	0	14	0	0	1	39	608	13	15	458	15
RTOR Reduction (vph)	0	0	13	0	1	0	0	0	6	0	0	7
Lane Group Flow (vph)	0	21	1	0	0	0	39	608	7	15	458	8
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	6%	2%
Turn Type	Perm	NA	Perm		NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8		8	4			2		2	6		6
Actuated Green, G (s)		2.4	2.4		2.4		30.6	28.3	28.3	27.8	26.9	26.9
Effective Green, g (s)		2.4	2.4		2.4		30.6	28.3	28.3	27.8	26.9	26.9
Actuated g/C Ratio		0.05	0.05		0.05		0.59	0.54	0.54	0.53	0.52	0.52
Clearance Time (s)		6.8	6.8		6.8		6.8	6.8	6.8	6.8	6.8	6.8
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		85	73		74		548	1907	861	437	1761	818
v/s Ratio Prot					0.00		c0.00	c0.17		0.00	0.13	
v/s Ratio Perm		c0.01	0.00				0.04		0.00	0.02		0.00
v/c Ratio		0.25	0.01		0.00		0.07	0.32	0.01	0.03	0.26	0.01
Uniform Delay, d1		23.9	23.7		23.7		4.5	6.5	5.4	5.7	7.0	6.1
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.5	0.0		0.0		0.1	0.1	0.0	0.0	0.1	0.0
Delay (s)		25.5	23.7		23.7		4.6	6.6	5.4	5.7	7.1	6.1
Level of Service		C	C		C		A	A	A	A	A	A
Approach Delay (s)		24.8			23.7			6.5			7.0	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay			7.3				HCM 2000 Level of Service			A		
HCM 2000 Volume to Capacity ratio			0.31									
Actuated Cycle Length (s)			52.0				Sum of lost time (s)			20.4		
Intersection Capacity Utilization			44.3%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

2: Old Lee Highway & FFX Commons

05/05/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	0	13	0	0	1	36	559	12	14	421	14
Future Volume (veh/h)	19	0	13	0	0	1	36	559	12	14	421	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1856	1870	1870	1811	1870
Adj Flow Rate, veh/h	21	0	14	0	0	1	39	608	13	15	458	15
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	3	2	2	6	2
Cap, veh/h	264	0	92	0	0	92	524	1429	643	443	1309	603
Arrive On Green	0.06	0.00	0.06	0.00	0.00	0.06	0.04	0.41	0.41	0.02	0.38	0.38
Sat Flow, veh/h	1402	0	1585	0	0	1585	1781	3526	1585	1781	3441	1585
Grp Volume(v), veh/h	21	0	14	0	0	1	39	608	13	15	458	15
Grp Sat Flow(s),veh/h/ln	1402	0	1585	0	0	1585	1781	1763	1585	1781	1721	1585
Q Serve(g_s), s	0.6	0.0	0.3	0.0	0.0	0.0	0.5	4.9	0.2	0.2	3.7	0.2
Cycle Q Clear(g_c), s	0.6	0.0	0.3	0.0	0.0	0.0	0.5	4.9	0.2	0.2	3.7	0.2
Prop In Lane	1.00		1.00	0.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	264	0	92	0	0	92	524	1429	643	443	1309	603
V/C Ratio(X)	0.08	0.00	0.15	0.00	0.00	0.01	0.07	0.43	0.02	0.03	0.35	0.02
Avail Cap(c_a), veh/h	1296	0	1247	0	0	1247	1349	2683	1206	1312	2619	1206
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.8	0.0	17.7	0.0	0.0	17.5	6.9	8.4	7.0	7.4	8.7	7.6
Incr Delay (d2), s/veh	0.1	0.0	0.8	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.1	0.0	0.0	0.0	0.1	1.4	0.0	0.1	1.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.9	0.0	18.4	0.0	0.0	17.6	6.9	8.6	7.0	7.4	8.9	7.7
LnGrp LOS	B	A	B	A	A	B	A	A	A	A	A	A
Approach Vol, veh/h	35			1			660			488		
Approach Delay, s/veh	18.1			17.6			8.5			8.8		
Approach LOS	B			B			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.6	22.8		9.1	8.5	21.8		9.1				
Change Period (Y+Rc), s	* 6.8	* 6.8		* 6.8	* 6.8	* 6.8		* 6.8				
Max Green Setting (Gmax), s	* 20	* 30		* 31	* 20	* 30		* 31				
Max Q Clear Time (g_c+I1), s	2.2	6.9		2.0	2.5	5.7		2.6				
Green Ext Time (p_c), s	0.0	4.3		0.0	0.1	3.2		0.1				
Intersection Summary												
HCM 6th Ctrl Delay	8.9											
HCM 6th LOS	A											
Notes												

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑↑	
Traffic Vol, veh/h	0	9	0	607	435	0
Future Vol, veh/h	0	9	0	607	435	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	10	0	660	473	0
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	237	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	651	0	-	-	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	-	651	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	10.6	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT			
Capacity (veh/h)	-	651	-			
HCM Lane V/C Ratio	-	0.015	-			
HCM Control Delay (s)	-	10.6	-			
HCM Lane LOS	-	B	-			
HCM 95th %tile Q(veh)	-	0	-			

HCM 6th TWSC
4: Old Lee Highway

05/05/2026

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑	↗
Traffic Vol, veh/h	0	5	0	607	434	8
Future Vol, veh/h	0	5	0	607	434	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	6	2
Mvmt Flow	0	5	0	660	472	9
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	-	236	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	766	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	766	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.7	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT EBLn1		SBT	SBR		
Capacity (veh/h)	- 766		-	-		
HCM Lane V/C Ratio	- 0.007		-	-		
HCM Control Delay (s)	- 9.7		-	-		
HCM Lane LOS	- A		-	-		
HCM 95th %tile Q(veh)	- 0		-	-		

HCM 6th TWSC
5: University Drive & Street 1

05/05/2026

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↵	↵		↵	↵	
Traffic Vol, veh/h	0	0	1	17	0	9	13	297	31	19	201	5
Future Vol, veh/h	0	0	1	17	0	9	13	297	31	19	201	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	1	18	0	10	14	323	34	21	218	5
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	636	648	221	631	633	340	223	0	0	357	0	0
Stage 1	263	263	-	368	368	-	-	-	-	-	-	-
Stage 2	373	385	-	263	265	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	391	389	819	394	397	702	1346	-	-	1202	-	-
Stage 1	742	691	-	652	621	-	-	-	-	-	-	-
Stage 2	648	611	-	742	689	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	377	378	819	385	386	702	1346	-	-	1202	-	-
Mov Cap-2 Maneuver	377	378	-	385	386	-	-	-	-	-	-	-
Stage 1	735	679	-	645	615	-	-	-	-	-	-	-
Stage 2	632	605	-	728	677	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.4		13.4			0.3			0.7			
HCM LOS	A		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1346	-	-	819	456	1202	-	-				
HCM Lane V/C Ratio	0.01	-	-	0.001	0.062	0.017	-	-				
HCM Control Delay (s)	7.7	-	-	9.4	13.4	8	-	-				
HCM Lane LOS	A	-	-	A	B	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0.1	-	-				

HCM 6th TWSC
6: University Drive & 7-11 Entrance

05/05/2026

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	15	10	296	210	12
Future Vol, veh/h	5	15	10	296	210	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	10	2	4	2
Mvmt Flow	5	16	11	322	228	13

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	579	235	241	0	-	0
Stage 1	235	-	-	-	-	-
Stage 2	344	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.2	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.29	-	-	-
Pot Cap-1 Maneuver	477	804	1280	-	-	-
Stage 1	804	-	-	-	-	-
Stage 2	718	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	473	804	1280	-	-	-
Mov Cap-2 Maneuver	559	-	-	-	-	-
Stage 1	797	-	-	-	-	-
Stage 2	718	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1280	-	725	-	-
HCM Lane V/C Ratio	0.008	-	0.03	-	-
HCM Control Delay (s)	7.8	-	10.1	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Queues

7: University Drive & Whitehead Street/Democracy Lane

05/05/2026



Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	129	32	84	8	321	14	186
v/c Ratio	0.43	0.08	0.24	0.02	0.53	0.05	0.37
Control Delay	25.0	3.3	16.4	15.0	19.0	15.5	17.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.0	3.3	16.4	15.0	19.0	15.5	17.5
Queue Length 50th (ft)	28	0	12	1	65	2	35
Queue Length 95th (ft)	108	10	60	12	204	17	123
Internal Link Dist (ft)	232		266		127		572
Turn Bay Length (ft)				50		150	
Base Capacity (vph)	724	898	802	1078	1668	810	1363
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.04	0.10	0.01	0.19	0.02	0.14
Intersection Summary							

HCM Signalized Intersection Capacity Analysis

7: University Drive & Whitehead Street/Democracy Lane

05/05/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	18	29	34	13	30	7	273	22	13	160	11
Future Volume (vph)	100	18	29	34	13	30	7	273	22	13	160	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.93		0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		0.98		1.00	1.00		0.99	1.00	
Frt		1.00	0.85		0.95		1.00	0.99		1.00	0.99	
Flt Protected		0.96	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1674	1463		1635		1764	1836		1727	1498	
Flt Permitted		0.70	1.00		0.80		0.64	1.00		0.50	1.00	
Satd. Flow (perm)		1223	1463		1332		1189	1836		901	1498	
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)	109	20	32	37	14	33	8	297	24	14	174	12
RTOR Reduction (vph)	0	0	26	0	22	0	0	3	0	0	3	0
Lane Group Flow (vph)	0	129	6	0	62	0	8	318	0	14	183	0
Confl. Peds. (#/hr)	1		18	18		1	3		17	17		3
Heavy Vehicles (%)	7%	18%	3%	5%	11%	2%	2%	2%	2%	3%	27%	2%
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			2			6	
Permitted Phases	8		8	4			2			6		
Actuated Green, G (s)		9.0	9.0		9.0		16.0	16.0		16.0	16.0	
Effective Green, g (s)		9.0	9.0		9.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio		0.19	0.19		0.19		0.33	0.33		0.33	0.33	
Clearance Time (s)		6.0	6.0		6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		228	273		248		394	609		299	497	
v/s Ratio Prot							c0.17				0.12	
v/s Ratio Perm		c0.11	0.00		0.05		0.01			0.02		
v/c Ratio		0.57	0.02		0.25		0.02	0.52		0.05	0.37	
Uniform Delay, d1		17.8	16.0		16.7		10.8	13.0		10.9	12.3	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.2	0.0		0.5		0.0	0.8		0.1	0.5	
Delay (s)		21.0	16.0		17.3		10.8	13.8		11.0	12.7	
Level of Service		C	B		B		B	B		B	B	
Approach Delay (s)		20.0			17.3			13.7			12.6	
Approach LOS		C			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			15.1									
HCM 2000 Volume to Capacity ratio			0.40									
Actuated Cycle Length (s)			48.2									
Intersection Capacity Utilization			36.5%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Edition methodology does not support exclusive ped or hold phases.

HCM 6th TWSC
8: Garage Access & Democracy Lane

05/05/2026

Intersection						
Int Delay, s/veh	4.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	41	12	12	35	42	33
Future Vol, veh/h	41	12	12	35	42	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	13	13	38	46	36
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	58	0	116	52
Stage 1	-	-	-	-	52	-
Stage 2	-	-	-	-	64	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1546	-	880	1016
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	959	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1546	-	872	1016
Mov Cap-2 Maneuver	-	-	-	-	872	-
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	950	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.9		9.2	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	930	-	-	1546	-	
HCM Lane V/C Ratio	0.088	-	-	0.008	-	
HCM Control Delay (s)	9.2	-	-	7.3	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.3	-	-	0	-	

HCM 6th TWSC
9: Democracy Lane & Layton Hall Drive

05/05/2026

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	22	271	6	16	176	10	2	1	24	0	0	4
Future Vol, veh/h	22	271	6	16	176	10	2	1	24	0	0	4
Conflicting Peds, #/hr	9	0	0	0	0	9	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	5	2	2	3	2	2	2	17	2	2	2
Mvmt Flow	24	295	7	17	191	11	2	1	26	0	0	4
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	211	0	0	302	0	0	580	592	299	600	590	206
Stage 1	-	-	-	-	-	-	347	347	-	240	240	-
Stage 2	-	-	-	-	-	-	233	245	-	360	350	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.37	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.453	3.518	4.018	3.318
Pot Cap-1 Maneuver	1360	-	-	1259	-	-	426	419	707	413	420	835
Stage 1	-	-	-	-	-	-	669	635	-	763	707	-
Stage 2	-	-	-	-	-	-	770	703	-	658	633	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1348	-	-	1259	-	-	412	401	707	383	402	828
Mov Cap-2 Maneuver	-	-	-	-	-	-	412	401	-	383	402	-
Stage 1	-	-	-	-	-	-	655	622	-	741	690	-
Stage 2	-	-	-	-	-	-	754	686	-	619	620	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0.6			10.8			9.4		
HCM LOS							B			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	654	1348	-	-	1259	-	-	828				
HCM Lane V/C Ratio	0.045	0.018	-	-	0.014	-	-	0.005				
HCM Control Delay (s)	10.8	7.7	0	-	7.9	0	-	9.4				
HCM Lane LOS	B	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0				

Queues

10: Old Lee Highway & Layton Hall Drive/Farrcroft Drive

05/05/2026



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	273	44	14	54	67	551	5	17	596
v/c Ratio	0.63	0.10	0.10	0.31	0.18	0.74	0.01	0.06	0.53
Control Delay	43.0	19.9	52.6	25.9	16.0	32.2	0.0	15.2	26.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.0	19.9	52.6	25.9	16.0	32.2	0.0	15.2	26.5
Queue Length 50th (ft)	130	7	7	6	21	234	0	5	142
Queue Length 95th (ft)	315	45	34	51	51	522	0	19	231
Internal Link Dist (ft)		305		220		842			355
Turn Bay Length (ft)							230	150	
Base Capacity (vph)	669	653	542	548	496	1262	1089	448	2275
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.07	0.03	0.10	0.14	0.44	0.00	0.04	0.26
Intersection Summary									

HCM Signalized Intersection Capacity Analysis

10: Old Lee Highway & Layton Hall Drive/Farrcroft Drive

05/05/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	251	17	24	13	10	40	62	507	5	16	406	143
Future Volume (vph)	251	17	24	13	10	40	62	507	5	16	406	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		7.3	7.3		6.9	6.9	6.9	6.9	6.9	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00	0.97	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.91		1.00	0.88		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1719	1639		1671	1607		1769	1827	1533	1702	3278	
Flt Permitted	0.95	1.00		0.95	1.00		0.31	1.00	1.00	0.25	1.00	
Satd. Flow (perm)	1719	1639		1671	1607		582	1827	1533	454	3278	
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)	273	18	26	14	11	43	67	551	5	17	441	155
RTOR Reduction (vph)	0	20	0	0	41	0	0	0	3	0	23	0
Lane Group Flow (vph)	273	24	0	14	13	0	67	551	2	17	573	0
Confl. Peds. (#/hr)	3		1	1		3	1		5	5		1
Heavy Vehicles (%)	5%	6%	4%	8%	2%	2%	2%	4%	2%	6%	6%	3%
Turn Type	Split	NA		Split	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	4	4		8	8		1	6		5	2	
Permitted Phases							6		6	2		
Actuated Green, G (s)	22.8	22.8		5.3	5.3		42.8	36.9	36.9	35.2	33.1	
Effective Green, g (s)	22.8	22.8		5.3	5.3		42.8	36.9	36.9	35.2	33.1	
Actuated g/C Ratio	0.24	0.24		0.06	0.06		0.45	0.39	0.39	0.37	0.35	
Clearance Time (s)	6.5	6.5		7.3	7.3		6.9	6.9	6.9	6.9	6.9	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	413	394		93	89		336	711	597	196	1145	
v/s Ratio Prot	c0.16	0.01		c0.01	0.01		c0.01	c0.30		0.00	0.17	
v/s Ratio Perm							0.08		0.00	0.03		
v/c Ratio	0.66	0.06		0.15	0.15		0.20	0.77	0.00	0.09	0.50	
Uniform Delay, d1	32.5	27.7		42.6	42.6		15.3	25.3	17.7	20.1	24.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.9	0.1		0.8	0.8		0.3	5.3	0.0	0.2	0.3	
Delay (s)	36.4	27.8		43.3	43.3		15.6	30.6	17.7	20.3	24.6	
Level of Service	D	C		D	D		B	C	B	C	C	
Approach Delay (s)		35.2			43.3			28.8			24.5	
Approach LOS		D			D			C			C	
Intersection Summary												
HCM 2000 Control Delay			29.1			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			94.7			Sum of lost time (s)			27.6			
Intersection Capacity Utilization			68.3%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

10: Old Lee Highway & Layton Hall Drive/Farrcroft Drive

05/05/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	251	17	24	13	10	40	62	507	5	16	406	143
Future Volume (veh/h)	251	17	24	13	10	40	62	507	5	16	406	143
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1826	1811	1841	1781	1870	1870	1870	1841	1870	1811	1811	1856
Adj Flow Rate, veh/h	273	18	26	14	11	43	67	551	5	17	441	155
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	6	4	8	2	2	2	4	2	6	6	3
Cap, veh/h	338	130	187	100	19	76	334	657	562	199	816	284
Arrive On Green	0.19	0.19	0.19	0.06	0.06	0.06	0.05	0.36	0.36	0.02	0.33	0.33
Sat Flow, veh/h	1739	666	963	1697	330	1288	1781	1841	1574	1725	2498	870
Grp Volume(v), veh/h	273	0	44	14	0	54	67	551	5	17	302	294
Grp Sat Flow(s),veh/h/ln	1739	0	1629	1697	0	1618	1781	1841	1574	1725	1721	1647
Q Serve(g_s), s	11.2	0.0	1.7	0.6	0.0	2.4	1.8	20.5	0.2	0.5	10.7	10.9
Cycle Q Clear(g_c), s	11.2	0.0	1.7	0.6	0.0	2.4	1.8	20.5	0.2	0.5	10.7	10.9
Prop In Lane	1.00		0.59	1.00		0.80	1.00		1.00	1.00		0.53
Lane Grp Cap(c), veh/h	338	0	317	100	0	96	334	657	562	199	562	538
V/C Ratio(X)	0.81	0.00	0.14	0.14	0.00	0.56	0.20	0.84	0.01	0.09	0.54	0.55
Avail Cap(c_a), veh/h	699	0	655	568	0	542	602	1479	1265	511	1383	1323
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.7	0.0	24.9	33.3	0.0	34.2	15.9	22.0	15.5	18.4	20.5	20.6
Incr Delay (d2), s/veh	4.6	0.0	0.2	0.6	0.0	5.1	0.3	3.0	0.0	0.2	0.8	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	0.7	0.3	0.0	1.1	0.7	8.8	0.1	0.2	4.2	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.3	0.0	25.1	34.0	0.0	39.3	16.2	25.0	15.5	18.6	21.3	21.5
LnGrp LOS	C	A	C	C	A	D	B	C	B	B	C	C
Approach Vol, veh/h	317		68			623			613			
Approach Delay, s/veh	32.2		38.2			24.0			21.3			
Approach LOS	C		D			C			C			
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	10.7	31.3	21.0		8.4	33.6	11.7					
Change Period (Y+Rc), s	* 6.9	* 6.9	6.5		* 6.9	* 6.9	7.3					
Max Green Setting (Gmax), s	* 15	* 60	30.0		* 15	* 60	25.0					
Max Q Clear Time (g_c+I1), s	3.8	12.9	13.2		2.5	22.5	4.4					
Green Ext Time (p_c), s	0.1	4.3	1.0		0.0	4.1	0.3					
Intersection Summary												
HCM 6th Ctrl Delay			25.2									
HCM 6th LOS			C									
Notes												

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	3	4	47	10	102	1	200	195	126	160	0
Future Vol, veh/h	5	3	4	47	10	102	1	200	195	126	160	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	13	2	2	2	2	2	2	2	2
Mvmt Flow	5	3	4	51	11	111	1	217	212	137	174	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	834	879	174	777	773	323	174	0	0	429	0	0
Stage 1	448	448	-	325	325	-	-	-	-	-	-	-
Stage 2	386	431	-	452	448	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.23	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.23	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.23	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.617	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	288	286	869	301	330	718	1403	-	-	1130	-	-
Stage 1	590	573	-	665	649	-	-	-	-	-	-	-
Stage 2	637	583	-	566	573	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	212	247	869	266	285	718	1403	-	-	1130	-	-
Mov Cap-2 Maneuver	212	247	-	266	285	-	-	-	-	-	-	-
Stage 1	589	496	-	664	648	-	-	-	-	-	-	-
Stage 2	529	582	-	484	496	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	17.6		15		0		3.8					
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR					
Capacity (veh/h)	1403	-	-	298	269	718	1130	-	-			
HCM Lane V/C Ratio	0.001	-	-	0.044	0.23	0.154	0.121	-	-			
HCM Control Delay (s)	7.6	0	-	17.6	22.3	10.9	8.6	0	-			
HCM Lane LOS	A	A	-	C	C	B	A	A	-			
HCM 95th %tile Q(veh)	0	-	-	0.1	0.9	0.5	0.4	-	-			

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↗↗	↗↗	↗
Traffic Vol, veh/h	0	27	0	507	615	6
Future Vol, veh/h	0	27	0	507	615	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	120
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	3	2
Mvmt Flow	0	29	0	551	668	7
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	-	334	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	662	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	662	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10.7	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT EBLn1		SBT	SBR		
Capacity (veh/h)	- 662		-	-		
HCM Lane V/C Ratio	- 0.044		-	-		
HCM Control Delay (s)	- 10.7		-	-		
HCM Lane LOS	- B		-	-		
HCM 95th %tile Q(veh)	- 0.1		-	-		

Queues
2: Old Lee Highway

05/05/2026

									
Lane Group	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	52	65	78	85	486	12	16	622	49
v/c Ratio	0.25	0.18	0.33	0.15	0.22	0.01	0.03	0.39	0.06
Control Delay	24.6	3.0	23.9	5.8	7.7	0.0	5.9	15.3	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.6	3.0	23.9	5.8	7.7	0.0	5.9	15.3	0.3
Queue Length 50th (ft)	14	0	20	10	32	0	2	84	0
Queue Length 95th (ft)	46	11	59	27	101	0	8	144	2
Internal Link Dist (ft)	173		199		95			142	
Turn Bay Length (ft)				120		150	120		
Base Capacity (vph)	770	1009	844	853	2294	1066	913	2217	1015
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.06	0.09	0.10	0.21	0.01	0.02	0.28	0.05
Intersection Summary									

HCM Signalized Intersection Capacity Analysis

2: Old Lee Highway

05/05/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔		↖	↗	↗	↖	↗	↗
Traffic Volume (vph)	45	4	60	54	8	10	79	452	11	15	578	46
Future Volume (vph)	45	4	60	54	8	10	79	452	11	15	578	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8	6.8		6.8		6.8	6.8	6.8	6.8	6.8	6.8
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.96	1.00		0.96		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1741	1568		1762		1770	3539	1583	1770	3505	1538
Flt Permitted		0.69	1.00		0.75		0.34	1.00	1.00	0.48	1.00	1.00
Satd. Flow (perm)		1251	1568		1366		629	3539	1583	885	3505	1538
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)	48	4	65	58	9	11	85	486	12	16	622	49
RTOR Reduction (vph)	0	0	57	0	7	0	0	0	6	0	0	28
Lane Group Flow (vph)	0	52	8	0	71	0	85	486	6	16	622	21
Heavy Vehicles (%)	3%	20%	3%	2%	2%	2%	2%	2%	2%	2%	3%	5%
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8		8	4			2		2	6		6
Actuated Green, G (s)		6.9	6.9		6.9		37.3	31.1	31.1	26.9	25.9	25.9
Effective Green, g (s)		6.9	6.9		6.9		37.3	31.1	31.1	26.9	25.9	25.9
Actuated g/C Ratio		0.12	0.12		0.12		0.63	0.52	0.52	0.45	0.44	0.44
Clearance Time (s)		6.8	6.8		6.8		6.8	6.8	6.8	6.8	6.8	6.8
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		145	182		158		514	1852	828	415	1528	670
v/s Ratio Prot							c0.02	c0.14		0.00	c0.18	
v/s Ratio Perm		0.04	0.00		c0.05		0.09		0.00	0.02		0.01
v/c Ratio		0.36	0.04		0.45		0.17	0.26	0.01	0.04	0.41	0.03
Uniform Delay, d1		24.2	23.3		24.5		4.6	7.8	6.8	9.0	11.5	9.6
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.5	0.1		2.0		0.2	0.1	0.0	0.0	0.2	0.0
Delay (s)		25.7	23.4		26.5		4.8	7.9	6.8	9.0	11.7	9.6
Level of Service		C	C		C		A	A	A	A	B	A
Approach Delay (s)		24.4			26.5			7.4			11.5	
Approach LOS		C			C			A			B	
Intersection Summary												
HCM 2000 Control Delay			11.7				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.39									
Actuated Cycle Length (s)			59.4				Sum of lost time (s)			20.4		
Intersection Capacity Utilization			48.0%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

2: Old Lee Highway

05/05/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 			 	
Traffic Volume (veh/h)	45	4	60	54	8	10	79	452	11	15	578	46
Future Volume (veh/h)	45	4	60	54	8	10	79	452	11	15	578	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1604	1856	1870	1870	1870	1870	1870	1870	1870	1856	1826
Adj Flow Rate, veh/h	48	4	65	58	9	11	85	486	12	16	622	49
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	20	3	2	2	2	2	2	2	2	3	5
Cap, veh/h	326	20	223	257	42	26	435	1370	611	455	1173	515
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.07	0.39	0.39	0.02	0.33	0.33
Sat Flow, veh/h	1213	143	1572	827	295	184	1781	3554	1585	1781	3526	1547
Grp Volume(v), veh/h	52	0	65	78	0	0	85	486	12	16	622	49
Grp Sat Flow(s),veh/h/ln	1356	0	1572	1307	0	0	1781	1777	1585	1781	1763	1547
Q Serve(g_s), s	0.0	0.0	1.7	1.4	0.0	0.0	1.3	4.4	0.2	0.3	6.4	1.0
Cycle Q Clear(g_c), s	1.4	0.0	1.7	2.8	0.0	0.0	1.3	4.4	0.2	0.3	6.4	1.0
Prop In Lane	0.92		1.00	0.74		0.14	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	346	0	223	325	0	0	435	1370	611	455	1173	515
V/C Ratio(X)	0.15	0.00	0.29	0.24	0.00	0.00	0.20	0.35	0.02	0.04	0.53	0.10
Avail Cap(c_a), veh/h	1011	0	1082	1095	0	0	1096	2366	1055	1209	2347	1030
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.2	0.0	17.3	17.8	0.0	0.0	8.9	9.9	8.6	9.6	12.2	10.4
Incr Delay (d2), s/veh	0.2	0.0	0.7	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.6	0.7	0.0	0.0	0.4	1.4	0.1	0.1	2.1	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.4	0.0	18.0	18.2	0.0	0.0	9.1	10.0	8.6	9.6	12.6	10.4
LnGrp LOS	B	A	B	B	A	A	A	B	A	A	B	B
Approach Vol, veh/h		117			78			583			687	
Approach Delay, s/veh		17.7			18.2			9.9			12.3	
Approach LOS		B			B			A			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.7	24.2		13.2	10.1	21.8		13.2				
Change Period (Y+Rc), s	* 6.8	* 6.8		* 6.8	* 6.8	* 6.8		* 6.8				
Max Green Setting (Gmax), s	* 20	* 30		* 31	* 20	* 30		* 31				
Max Q Clear Time (g_c+I1), s	2.3	6.4		4.8	3.3	8.4		3.7				
Green Ext Time (p_c), s	0.0	3.4		0.4	0.2	4.5		0.5				
Intersection Summary												
HCM 6th Ctrl Delay			12.1									
HCM 6th LOS			B									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th TWSC
3: Old Lee Highway

05/05/2026

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑↑	
Traffic Vol, veh/h	0	12	0	542	702	0
Future Vol, veh/h	0	12	0	542	702	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	13	0	589	763	0
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	382	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	526	0	-	-	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	-	526	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	12	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT			
Capacity (veh/h)	-	526	-			
HCM Lane V/C Ratio	-	0.025	-			
HCM Control Delay (s)	-	12	-			
HCM Lane LOS	-	B	-			
HCM 95th %tile Q(veh)	-	0.1	-			

HCM 6th TWSC
4: Old Lee Highway

05/05/2026

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↗↗	↗↗	↗
Traffic Vol, veh/h	0	24	0	542	688	19
Future Vol, veh/h	0	24	0	542	688	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	3	3	2
Mvmt Flow	0	25	0	571	724	20
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	-	362	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	635	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	635	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10.9	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT EBLn1		SBT	SBR		
Capacity (veh/h)	- 635		-	-		
HCM Lane V/C Ratio	- 0.04		-	-		
HCM Control Delay (s)	- 10.9		-	-		
HCM Lane LOS	- B		-	-		
HCM 95th %tile Q(veh)	- 0.1		-	-		

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↵	↵		↵	↵	
Traffic Vol, veh/h	3	0	18	43	0	47	1	291	77	42	372	1
Future Vol, veh/h	3	0	18	43	0	47	1	291	77	42	372	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	20	47	0	51	1	316	84	46	404	1
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	883	899	405	867	857	358	405	0	0	400	0	0
Stage 1	497	497	-	360	360	-	-	-	-	-	-	-
Stage 2	386	402	-	507	497	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	266	279	646	273	295	686	1154	-	-	1159	-	-
Stage 1	555	545	-	658	626	-	-	-	-	-	-	-
Stage 2	637	600	-	548	545	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	239	268	646	257	283	686	1154	-	-	1159	-	-
Mov Cap-2 Maneuver	239	268	-	257	283	-	-	-	-	-	-	-
Stage 1	554	523	-	657	625	-	-	-	-	-	-	-
Stage 2	589	599	-	510	523	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	12.2		17.6		0		0.8					
HCM LOS	B		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1154	-	-	520	382	1159	-	-				
HCM Lane V/C Ratio	0.001	-	-	0.044	0.256	0.039	-	-				
HCM Control Delay (s)	8.1	-	-	12.2	17.6	8.2	-	-				
HCM Lane LOS	A	-	-	B	C	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	1	0.1	-	-				

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	23	16	325	391	21
Future Vol, veh/h	16	23	16	325	391	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	25	17	353	425	23
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	824	437	448	0	-	0
Stage 1	437	-	-	-	-	-
Stage 2	387	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	343	620	1112	-	-	-
Stage 1	651	-	-	-	-	-
Stage 2	686	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	338	620	1112	-	-	-
Mov Cap-2 Maneuver	456	-	-	-	-	-
Stage 1	641	-	-	-	-	-
Stage 2	686	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	12.2	0.4		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1112	-	540	-	-	
HCM Lane V/C Ratio	0.016	-	0.079	-	-	
HCM Control Delay (s)	8.3	-	12.2	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.3	-	-	

Queues

7: University Drive & Whitehead Street/Democracy Lane

05/05/2026



Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	109	71	116	29	341	30	331
v/c Ratio	0.33	0.18	0.37	0.06	0.40	0.07	0.39
Control Delay	23.8	8.5	23.5	16.0	16.3	16.1	16.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.8	8.5	23.5	16.0	16.3	16.1	16.4
Queue Length 50th (ft)	14	0	13	3	38	3	37
Queue Length 95th (ft)	92	32	93	28	210	29	205
Internal Link Dist (ft)	245		267		117		591
Turn Bay Length (ft)				50		150	
Base Capacity (vph)	921	990	850	830	1578	793	1572
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.07	0.14	0.03	0.22	0.04	0.21
Intersection Summary							

HCM Signalized Intersection Capacity Analysis

7: University Drive & Whitehead Street/Democracy Lane

05/05/2026

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱		↰	↱	↰	↱		↰	↱	
Traffic Volume (vph)	51	50	65	64	23	19	27	271	42	28	277	28
Future Volume (vph)	51	50	65	64	23	19	27	271	42	28	277	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.92		0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		0.97		0.99	1.00		0.98	1.00	
Frt		1.00	0.85		0.98		1.00	0.98		1.00	0.99	
Flt Protected		0.98	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1758	1455		1656		1751	1814		1727	1804	
Flt Permitted		0.78	1.00		0.75		0.52	1.00		0.51	1.00	
Satd. Flow (perm)		1408	1455		1284		959	1814		925	1804	
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)	55	54	71	70	25	21	29	295	46	30	301	30
RTOR Reduction (vph)	0	0	58	0	7	0	0	5	0	0	4	0
Lane Group Flow (vph)	0	109	13	0	109	0	29	336	0	30	327	0
Confl. Peds. (#/hr)	3		22	22		3	12		18	28		12
Heavy Vehicles (%)	6%	4%	2%	2%	14%	2%	2%	2%	2%	2%	2%	19%
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			2			6	
Permitted Phases	8		8	4			2			6		
Actuated Green, G (s)		8.7	8.7		8.7		20.5	20.5		20.5	20.5	
Effective Green, g (s)		8.7	8.7		8.7		20.5	20.5		20.5	20.5	
Actuated g/C Ratio		0.18	0.18		0.18		0.42	0.42		0.42	0.42	
Clearance Time (s)		6.0	6.0		6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		248	256		226		398	754		384	750	
v/s Ratio Prot								c0.19			0.18	
v/s Ratio Perm		0.08	0.01		c0.08		0.03			0.03		
v/c Ratio		0.44	0.05		0.48		0.07	0.45		0.08	0.44	
Uniform Delay, d1		18.1	16.9		18.3		8.7	10.3		8.7	10.3	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.2	0.1		1.6		0.1	0.4		0.1	0.4	
Delay (s)		19.4	16.9		19.9		8.8	10.7		8.8	10.7	
Level of Service		B	B		B		A	B		A	B	
Approach Delay (s)		18.4			19.9			10.6			10.5	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			13.0									
HCM 2000 Volume to Capacity ratio			0.39									
Actuated Cycle Length (s)			49.3									
Intersection Capacity Utilization			45.1%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Edition methodology does not support exclusive ped or hold phases.

HCM 6th TWSC
8: Garage Access & Democracy Lane

05/05/2026

Intersection						
Int Delay, s/veh	2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	92	28	28	88	18	15
Future Vol, veh/h	92	28	28	88	18	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	100	30	30	96	20	16
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	130	0	271	115
Stage 1	-	-	-	-	115	-
Stage 2	-	-	-	-	156	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1455	-	718	937
Stage 1	-	-	-	-	910	-
Stage 2	-	-	-	-	872	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1455	-	702	937
Mov Cap-2 Maneuver	-	-	-	-	702	-
Stage 1	-	-	-	-	910	-
Stage 2	-	-	-	-	853	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.8		9.8	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	792	-	-	1455	-	
HCM Lane V/C Ratio	0.045	-	-	0.021	-	
HCM Control Delay (s)	9.8	-	-	7.5	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	216	16	25	162	0	9	0	34	4	0	12
Future Vol, veh/h	1	216	16	25	162	0	9	0	34	4	0	12
Conflicting Peds, #/hr	2	0	0	0	0	2	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	13	7	3	2	2	2	2	2	2	2
Mvmt Flow	1	235	17	27	176	0	10	0	37	4	0	13
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	178	0	0	252	0	0	484	478	244	496	486	179
Stage 1	-	-	-	-	-	-	246	246	-	232	232	-
Stage 2	-	-	-	-	-	-	238	232	-	264	254	-
Critical Hdwy	4.12	-	-	4.17	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.263	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1398	-	-	1285	-	-	493	486	795	484	481	864
Stage 1	-	-	-	-	-	-	758	703	-	771	713	-
Stage 2	-	-	-	-	-	-	765	713	-	741	697	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1395	-	-	1285	-	-	476	473	795	452	468	862
Mov Cap-2 Maneuver	-	-	-	-	-	-	476	473	-	452	468	-
Stage 1	-	-	-	-	-	-	757	702	-	769	695	-
Stage 2	-	-	-	-	-	-	735	695	-	706	696	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			1.1			10.5			10.3		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	697	1395	-	-	1285	-	-	703				
HCM Lane V/C Ratio	0.067	0.001	-	-	0.021	-	-	0.025				
HCM Control Delay (s)	10.5	7.6	0	-	7.9	0	-	10.3				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.1				

Queues

10: Old Lee Highway & Layton Hall Drive/Farrcroft Drive

05/05/2026



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	197	69	14	29	52	455	18	19	709
v/c Ratio	0.53	0.18	0.09	0.17	0.14	0.56	0.03	0.05	0.59
Control Delay	37.8	15.0	44.2	28.4	13.3	23.4	0.1	13.2	24.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.8	15.0	44.2	28.4	13.3	23.4	0.1	13.2	24.4
Queue Length 50th (ft)	92	8	7	5	14	154	0	5	161
Queue Length 95th (ft)	197	47	30	37	38	375	0	19	264
Internal Link Dist (ft)		305		220		864			293
Turn Bay Length (ft)							230	150	
Base Capacity (vph)	796	770	639	623	532	1457	1075	593	2635
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.09	0.02	0.05	0.10	0.31	0.02	0.03	0.27
Intersection Summary									

HCM Signalized Intersection Capacity Analysis

10: Old Lee Highway & Layton Hall Drive/Farrcroft Drive

05/05/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	191	17	49	14	11	17	50	441	17	18	561	127
Future Volume (vph)	191	17	49	14	11	17	50	441	17	18	561	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		7.3	7.3		6.9	6.9	6.9	6.9	6.9	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00	0.93	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	0.99	1.00	
Frt	1.00	0.89		1.00	0.91		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	1638		1687	1621		1768	1863	1413	1754	3370	
Flt Permitted	0.95	1.00		0.95	1.00		0.26	1.00	1.00	0.39	1.00	
Satd. Flow (perm)	1752	1638		1687	1621		493	1863	1413	723	3370	
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)	197	18	51	14	11	18	52	455	18	19	578	131
RTOR Reduction (vph)	0	41	0	0	17	0	0	0	11	0	13	0
Lane Group Flow (vph)	197	28	0	14	12	0	52	455	7	19	696	0
Confl. Peds. (#/hr)	3		3	3		3	6		26	26		6
Heavy Vehicles (%)	3%	2%	2%	7%	9%	2%	2%	2%	6%	2%	3%	6%
Turn Type	Split	NA		Split	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	4	4		8	8		1	6		5	2	
Permitted Phases							6		6	2		
Actuated Green, G (s)	16.2	16.2		3.6	3.6		38.7	33.3	33.3	32.1	30.0	
Effective Green, g (s)	16.2	16.2		3.6	3.6		38.7	33.3	33.3	32.1	30.0	
Actuated g/C Ratio	0.20	0.20		0.04	0.04		0.47	0.40	0.40	0.39	0.36	
Clearance Time (s)	6.5	6.5		7.3	7.3		6.9	6.9	6.9	6.9	6.9	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	342	320		73	70		313	749	568	306	1221	
v/s Ratio Prot	c0.11	0.02		c0.01	0.01		c0.01	c0.24		0.00	0.21	
v/s Ratio Perm							0.07		0.01	0.02		
v/c Ratio	0.58	0.09		0.19	0.17		0.17	0.61	0.01	0.06	0.57	
Uniform Delay, d1	30.2	27.3		38.2	38.2		12.8	19.6	14.9	16.0	21.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.3	0.1		1.3	1.1		0.3	1.4	0.0	0.1	0.6	
Delay (s)	32.5	27.4		39.5	39.3		13.0	21.0	14.9	16.0	21.9	
Level of Service	C	C		D	D		B	C	B	B	C	
Approach Delay (s)		31.2			39.4			20.0			21.7	
Approach LOS		C			D			B			C	
Intersection Summary												
HCM 2000 Control Delay			23.2			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.56									
Actuated Cycle Length (s)			82.8			Sum of lost time (s)			27.6			
Intersection Capacity Utilization			61.9%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

10: Old Lee Highway & Layton Hall Drive/Farrcroft Drive

05/05/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	191	17	49	14	11	17	50	441	17	18	561	127
Future Volume (veh/h)	191	17	49	14	11	17	50	441	17	18	561	127
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.96	0.98		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1870	1870	1796	1767	1870	1870	1870	1811	1870	1856	1811
Adj Flow Rate, veh/h	197	18	51	14	11	18	52	455	18	19	578	131
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	2	2	7	9	2	2	2	6	2	3	6
Cap, veh/h	278	67	190	87	30	50	295	629	497	265	882	199
Arrive On Green	0.16	0.16	0.16	0.05	0.05	0.05	0.05	0.34	0.34	0.02	0.31	0.31
Sat Flow, veh/h	1767	427	1211	1711	598	979	1781	1870	1476	1781	2831	639
Grp Volume(v), veh/h	197	0	69	14	0	29	52	455	18	19	359	350
Grp Sat Flow(s),veh/h/ln	1767	0	1639	1711	0	1577	1781	1870	1476	1781	1763	1708
Q Serve(g_s), s	6.7	0.0	2.4	0.5	0.0	1.1	1.2	13.6	0.5	0.5	11.2	11.3
Cycle Q Clear(g_c), s	6.7	0.0	2.4	0.5	0.0	1.1	1.2	13.6	0.5	0.5	11.2	11.3
Prop In Lane	1.00		0.74	1.00		0.62	1.00		1.00	1.00		0.37
Lane Grp Cap(c), veh/h	278	0	258	87	0	80	295	629	497	265	549	532
V/C Ratio(X)	0.71	0.00	0.27	0.16	0.00	0.36	0.18	0.72	0.04	0.07	0.65	0.66
Avail Cap(c_a), veh/h	832	0	771	671	0	619	631	1761	1389	644	1660	1608
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.5	0.0	23.6	28.9	0.0	29.2	14.6	18.5	14.2	15.4	19.0	19.0
Incr Delay (d2), s/veh	3.3	0.0	0.6	0.9	0.0	2.7	0.3	1.6	0.0	0.1	1.3	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	0.9	0.2	0.0	0.5	0.5	5.6	0.2	0.2	4.4	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.8	0.0	24.2	29.8	0.0	32.0	14.8	20.1	14.2	15.6	20.3	20.4
LnGrp LOS	C	A	C	C	A	C	B	C	B	B	C	C
Approach Vol, veh/h	266			43			525			728		
Approach Delay, s/veh	27.6			31.3			19.4			20.2		
Approach LOS	C			C			B			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.9	26.8		16.5	8.3	28.3		10.5				
Change Period (Y+Rc), s	* 6.9	* 6.9		6.5	* 6.9	* 6.9		7.3				
Max Green Setting (Gmax), s	* 15	* 60		30.0	* 15	* 60		25.0				
Max Q Clear Time (g_c+I1), s	3.2	13.3		8.7	2.5	15.6		3.1				
Green Ext Time (p_c), s	0.1	5.3		1.0	0.0	3.3		0.1				

Intersection Summary

HCM 6th Ctrl Delay	21.5
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection												
Int Delay, s/veh	4.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	2	2	83	13	90	11	212	116	87	223	5
Future Vol, veh/h	2	2	2	83	13	90	11	212	116	87	223	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	4	2	2	2	2	2	2	2	2
Mvmt Flow	2	2	2	90	14	98	12	230	126	95	242	5
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	808	815	245	754	754	293	247	0	0	356	0	0
Stage 1	435	435	-	317	317	-	-	-	-	-	-	-
Stage 2	373	380	-	437	437	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.14	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.14	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.14	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.536	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	299	312	794	323	338	746	1319	-	-	1203	-	-
Stage 1	600	580	-	690	654	-	-	-	-	-	-	-
Stage 2	648	614	-	594	579	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	231	280	794	295	303	746	1319	-	-	1203	-	-
Mov Cap-2 Maneuver	231	280	-	295	303	-	-	-	-	-	-	-
Stage 1	593	527	-	682	646	-	-	-	-	-	-	-
Stage 2	544	607	-	536	526	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	16.2		17.3			0.3			2.3			
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR					
Capacity (veh/h)	1319	-	-	328 296 746	1203	-	-					
HCM Lane V/C Ratio	0.009	-	-	0.02 0.353 0.131	0.079	-	-					
HCM Control Delay (s)	7.8	0	-	16.2 23.6 10.6	8.2	0	-					
HCM Lane LOS	A	A	-	C C B	A	A	-					
HCM 95th %tile Q(veh)	0	-	-	0.1 1.5 0.5	0.3	-	-					

I. Intersection Analysis Worksheets – Internal Intersections

Intersection

Intersection Delay, s/veh 7.4

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	63	7	18	1	9	1	6	11	1	1	1	32
Future Vol, veh/h	63	7	18	1	9	1	6	11	1	1	1	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	68	8	20	1	10	1	7	12	1	1	1	35
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.6	7.2	7.3	6.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	33%	72%	9%	3%
Vol Thru, %	61%	8%	82%	3%
Vol Right, %	6%	20%	9%	94%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	18	88	11	34
LT Vol	6	63	1	1
Through Vol	11	7	9	1
RT Vol	1	18	1	32
Lane Flow Rate	20	96	12	37
Geometry Grp	1	1	1	1
Degree of Util (X)	0.023	0.108	0.014	0.037
Departure Headway (Hd)	4.184	4.062	4.068	3.577
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	850	883	877	992
Service Time	2.238	2.084	2.107	1.632
HCM Lane V/C Ratio	0.024	0.109	0.014	0.037
HCM Control Delay	7.3	7.6	7.2	6.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.4	0	0.1

Intersection

Intersection Delay, s/veh 7.6

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	91	8	12	1	20	1	11	27	1	1	1	87
Future Vol, veh/h	91	8	12	1	20	1	11	27	1	1	1	87
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	99	9	13	1	22	1	12	29	1	1	1	95
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.1	7.5	7.6	7.1
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	28%	82%	5%	1%
Vol Thru, %	69%	7%	91%	1%
Vol Right, %	3%	11%	5%	98%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	39	111	22	89
LT Vol	11	91	1	1
Through Vol	27	8	20	1
RT Vol	1	12	1	87
Lane Flow Rate	42	121	24	97
Geometry Grp	1	1	1	1
Degree of Util (X)	0.051	0.144	0.028	0.098
Departure Headway (Hd)	4.301	4.293	4.252	3.631
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	819	830	831	966
Service Time	2.399	2.347	2.334	1.729
HCM Lane V/C Ratio	0.051	0.146	0.029	0.1
HCM Control Delay	7.6	8.1	7.5	7.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.5	0.1	0.3

J. Site Visit Photographs

**Intersection 1: Blenheim Blvd and Street 3/
Plaza Dr**



Photograph taken at Intersection 1, looking North

**Intersection 1: Blenheim Blvd and Street 3/
Plaza Dr**



Photograph taken at Intersection 1, looking South

**Intersection 2: Blenheim Blvd and Fairfax
Commons Entrance**



Photograph taken at Intersection 2, looking North

**Intersection 2: Blenheim Blvd and Fairfax
Commons Entrance**



Photograph taken at Intersection 2, looking East

**Intersection 2: Blenheim Blvd and Fairfax
Commons Entrance**



Photograph taken at Intersection 2, looking South

**Intersection 4: Blenheim Blvd and Southern
Entrance**



Photograph taken at Intersection 4, looking North

**Intersection 4: Blenheim Blvd and Southern
Entrance**



Photograph taken at Intersection 4, looking South

**Intersection 4: Blenheim Blvd and Southern
Entrance**



Photograph taken at Intersection 4, looking West

Intersection 4: Blenheim Blvd and Southern Entrance



Photograph taken at Intersection 4, looking South

Intersection 6: University Drive and Existing Courthouse Plaza Entrance/7-11 Entrance



Photograph taken at Intersection 6, looking West

Intersection 6: University Drive and Existing Courthouse Plaza Entrance/7-11 Entrance



Photograph taken at Intersection 6, looking East

Intersection 6: University Drive and Existing Courthouse Plaza Entrance/7-11 Entrance



Photograph taken at Intersection 6, looking South

Intersection 7: University Drive and Democracy Ln/Whitehead St



Photograph taken at Intersection 7, looking South

Intersection 7: University Drive and Democracy Ln/Whitehead St



Photograph taken at Intersection 7, looking West

Intersection 7: University Drive and Democracy Ln/Whitehead St



Photograph taken at Intersection 7, looking North and East

Intersection 7: University Drive and Democracy Ln/Whitehead St



Photograph taken at Intersection 7, looking North

Intersection 9: Democracy Ln and Layton Hall Drive



Photograph taken at Intersection 9, looking West

Intersection 9: Democracy Ln and Layton Hall Drive



Photograph taken at Intersection 9, looking East

Intersection 9: Democracy Ln and Layton Hall Drive



Photograph taken at Intersection 9, looking West

Intersection 9: Democracy Ln and Layton Hall Drive



Photograph taken at Intersection 9, looking East

Intersection 10: Blenheim Blvd and Layton Hall Dr



Photograph taken at Intersection 10, looking North

Intersection 10: Blenheim Blvd and Layton Hall Dr



Photograph taken at Intersection 10, looking East

Intersection 10: Blenheim Blvd and Layton Hall Dr



Photograph taken at Intersection 10, looking West

Intersection 10: Blenheim Blvd and Layton Hall Dr



Photograph taken at Intersection 10, looking East

Intersection 10: Blenheim Blvd and Layton Hall Dr



Photograph taken at Intersection 10, looking North

Intersection 10: Blenheim Blvd and Layton Hall Dr



Photograph taken at Intersection 10, looking East

K. SimTraffic Analysis Results Worksheets

7: University Drive & Whitehead Street/Democracy Lane Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.2	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.8	11.8	3.5	9.7	10.1	3.6	7.2	6.2	2.8	8.3	4.8	1.7

7: University Drive & Whitehead Street/Democracy Lane Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	6.1

Intersection: 7: University Drive & Whitehead Street/Democracy Lane

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LTR	LT	TR	LT	TR
Maximum Queue (ft)	113	54	67	90	88	117	78
Average Queue (ft)	41	17	21	34	34	41	18
95th Queue (ft)	81	45	53	71	68	90	54
Link Distance (ft)	266	266	265	104	104	590	590
Upstream Blk Time (%)				0	0		
Queuing Penalty (veh)				0	0		
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

7: University Drive & Whitehead Street/Democracy Lane Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	11.6	11.8	4.0	12.1	12.4	5.0	11.2	8.0	3.4	12.0	8.3	4.4

7: University Drive & Whitehead Street/Democracy Lane Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	8.5

Intersection: 7: University Drive & Whitehead Street/Democracy Lane

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LTR	LT	TR	LT	TR
Maximum Queue (ft)	96	64	98	115	100	110	88
Average Queue (ft)	43	28	40	47	32	49	36
95th Queue (ft)	80	56	77	93	74	89	73
Link Distance (ft)	285	285	286	123	123	633	633
Upstream Blk Time (%)				0	0		
Queuing Penalty (veh)				0	0		
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

7: University Drive & Whitehead Street/Democracy Lane Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	11.0	10.3	3.7	9.1	11.2	5.1	9.7	7.5	4.8	12.1	5.5	3.9

7: University Drive & Whitehead Street/Democracy Lane Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	7.3

Intersection: 7: University Drive & Whitehead Street/Democracy Lane

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LTR	L	TR	L	TR
Maximum Queue (ft)	110	56	66	39	128	30	148
Average Queue (ft)	47	16	21	4	59	3	57
95th Queue (ft)	87	43	54	21	117	19	119
Link Distance (ft)	274	274	271		122		576
Upstream Blk Time (%)					1		
Queuing Penalty (veh)					3		
Storage Bay Dist (ft)				50		150	
Storage Blk Time (%)				0	8		0
Queuing Penalty (veh)				0	1		0

7: University Drive & Whitehead Street/Democracy Lane Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.2	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.4	0.0	0.0
Total Del/Veh (s)	14.2	13.2	4.5	14.8	12.9	7.9	15.0	8.7	4.8	13.8	9.8	7.0

7: University Drive & Whitehead Street/Democracy Lane Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	9.9

Intersection: 7: University Drive & Whitehead Street/Democracy Lane

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LTR	L	TR	L	TR
Maximum Queue (ft)	107	64	103	71	131	32	172
Average Queue (ft)	46	29	43	19	69	7	77
95th Queue (ft)	87	58	83	52	125	27	145
Link Distance (ft)	291	291	288		122		613
Upstream Blk Time (%)					1		
Queuing Penalty (veh)					3		
Storage Bay Dist (ft)				50		150	
Storage Blk Time (%)				1	10		1
Queuing Penalty (veh)				3	3		0

7: University Drive & Whitehead Street/Democracy Lane Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	18.2	19.0	4.0	17.2	15.0	7.4	17.3	12.1	7.4	22.5	8.4	6.6

7: University Drive & Whitehead Street/Democracy Lane Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	11.8

Intersection: 7: University Drive & Whitehead Street/Democracy Lane

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LTR	L	TR	L	TR
Maximum Queue (ft)	123	49	92	52	146	48	160
Average Queue (ft)	59	17	37	6	79	11	69
95th Queue (ft)	104	45	72	31	140	37	136
Link Distance (ft)	274	274	278		130		592
Upstream Blk Time (%)					1		
Queuing Penalty (veh)					4		
Storage Bay Dist (ft)				50		150	
Storage Blk Time (%)				0	14		1
Queuing Penalty (veh)				0	1		0

7: University Drive & Whitehead Street/Democracy Lane Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
Total Del/Veh (s)	16.3	18.0	5.0	16.9	16.0	8.3	18.0	11.8	7.2	20.0	12.2	9.6

7: University Drive & Whitehead Street/Democracy Lane Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	12.5

Intersection: 7: University Drive & Whitehead Street/Democracy Lane

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LTR	L	TR	L	TR
Maximum Queue (ft)	127	66	115	67	131	75	221
Average Queue (ft)	51	29	49	18	84	17	91
95th Queue (ft)	99	58	91	55	140	51	170
Link Distance (ft)	291	291	271		122		605
Upstream Blk Time (%)					3		
Queuing Penalty (veh)					9		
Storage Bay Dist (ft)				50		150	
Storage Blk Time (%)				1	16		2
Queuing Penalty (veh)				4	4		0

7: University Drive & Whitehead Street/Democracy Lane Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.2	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	16.4	17.2	3.7	14.6	14.0	6.3	12.1	11.0	6.3	17.6	7.8	5.7

7: University Drive & Whitehead Street/Democracy Lane Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	10.6

Intersection: 7: University Drive & Whitehead Street/Democracy Lane

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LTR	L	TR	L	TR
Maximum Queue (ft)	144	60	91	55	140	37	144
Average Queue (ft)	61	18	38	5	73	9	66
95th Queue (ft)	112	48	76	30	130	32	124
Link Distance (ft)	274	274	278		130		592
Upstream Blk Time (%)					1		
Queuing Penalty (veh)					3		
Storage Bay Dist (ft)				50		150	
Storage Blk Time (%)				0	13		0
Queuing Penalty (veh)				0	1		0

7: University Drive & Whitehead Street/Democracy Lane Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.1
Total Del/Veh (s)	14.8	15.1	4.8	15.4	12.6	7.7	14.8	9.5	4.8	15.6	10.6	5.7

7: University Drive & Whitehead Street/Democracy Lane Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	10.6

Intersection: 7: University Drive & Whitehead Street/Democracy Lane

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LTR	L	TR	L	TR
Maximum Queue (ft)	117	66	112	70	132	72	197
Average Queue (ft)	48	29	48	16	73	17	84
95th Queue (ft)	91	58	94	51	131	51	160
Link Distance (ft)	291	291	271		122		605
Upstream Blk Time (%)					2		
Queuing Penalty (veh)					7		
Storage Bay Dist (ft)				50		150	
Storage Blk Time (%)				1	12		1
Queuing Penalty (veh)				2	3		0

L. Background Development

University Drive Bicycle Facilities

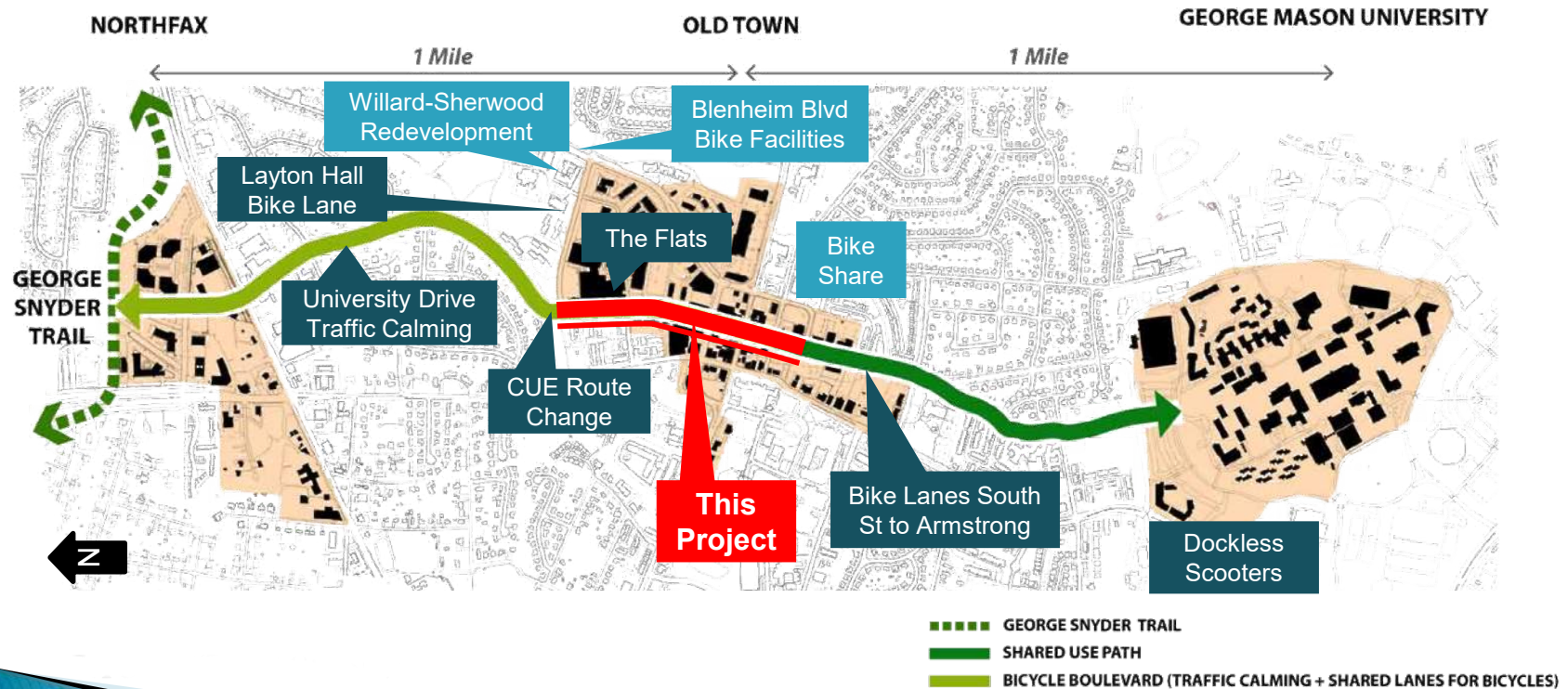
VDOT Project No: EN22-151-221
UPC: 121556

Public Hearing
February 25, 2025

Public Hearing Objectives

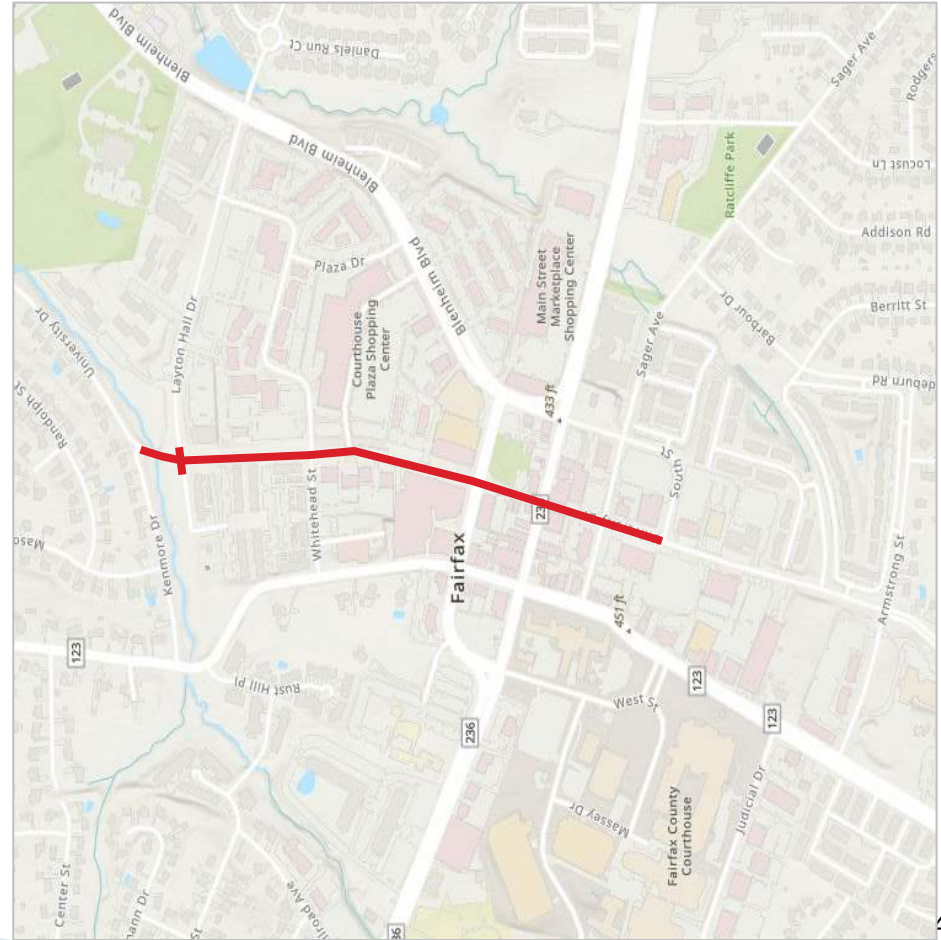
- ▶ Project Background
- ▶ Design Presentation
- ▶ Answer Questions
- ▶ Invite Public Comment
- ▶ No City Council Action Required

Project Location/Overview



Project Overview

- ▶ Layton Hall Drive Intersection
 - Removal of northbound right turn slip lane
 - Crosswalks on all four legs
 - Median Refuge
- ▶ Layton Hall Drive to North Street “Road Diet”
 - Restripe road from 4 vehicle lanes to 2 through lanes, a center turn lane, and 2 bicycle lanes
- ▶ North Street to South Street
 - Shared lane markings



Project Status

- ▶ Intermediate Design for Public Hearing Phase
 - Roadway and drainage design
 - Striping plans
 - National Environmental Policy Act (NEPA) (Programmatic Categorical Exclusion)

Transportation Capital Project Roadmap



Timeline

June 23, 2020

June 22, 2021

September 28, 2021

October 24, 2023

December 6, 2023

February 25, 2025

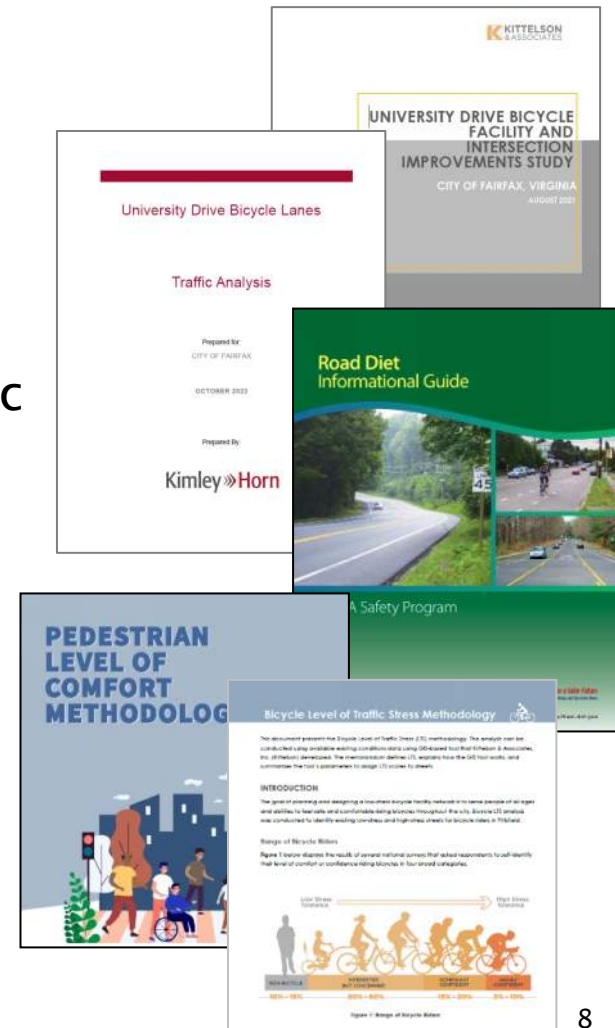
- ▶ Old Town/Northfax Small Area Plans adoption
- ▶ Bicycle Plan adoption
- ▶ Two-Year Transportation Program adoption
- ▶ Transportation Alternatives funding application endorsement
- ▶ City Council Work Session (concept design)
- ▶ Open House (concept design)
- ▶ **Design Public Hearing**

Project Objectives

- ▶ Improve pedestrian and bicycle safety, including comfortable facilities and crossings
- ▶ Maintain sufficient vehicular capacity on the corridor to satisfy future transportation system needs
- ▶ Accommodate transit operations
- ▶ Implement the vision for University Drive as a multimodal “spine” between Old Town and Northfax (as described in the Small Area Plans and City of Fairfax Bicycle Plan)

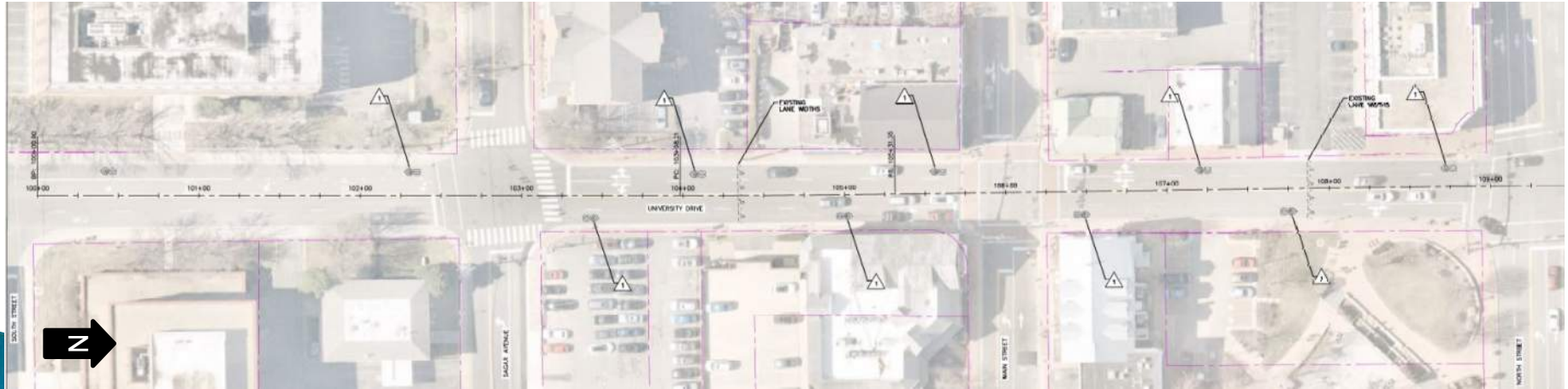
Multimodal Analysis

- ▶ Two traffic studies completed
 - Pre-application road diet evaluation
 - Intersection alternatives evaluation
- ▶ Road diet shows no significant change to traffic LOS, improves bicyclist and pedestrian safety and comfort
- ▶ Intersection evaluation looked at multiple factors, including operations, safety, cost, and constructability
- ▶ Intersection design improves pedestrian and bicyclist safety with small impact to left turns from Layton Hall Drive



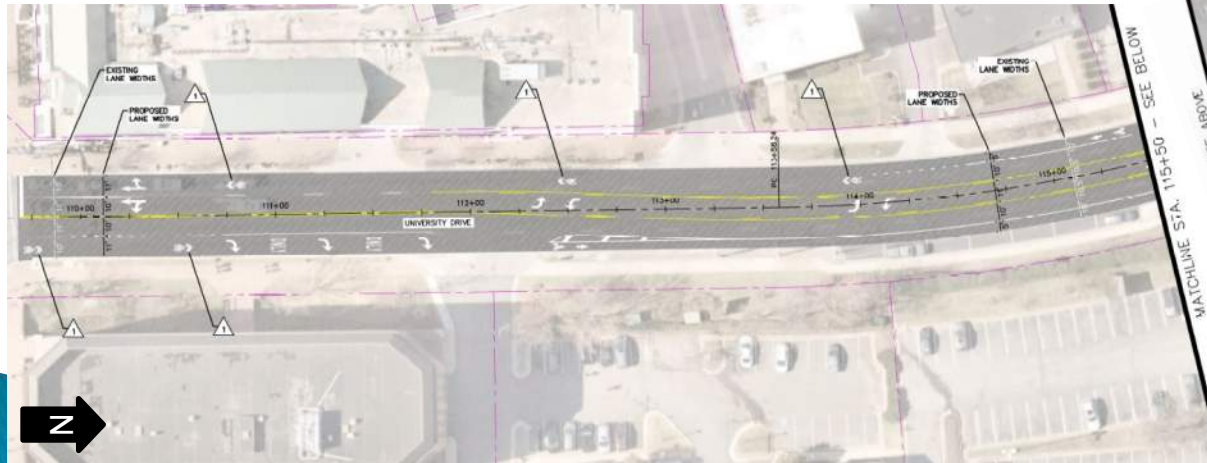
Bicycle Facility Design: South Street to North Street

- ▶ Shared lane markings (“sharrows”) in outside travel lanes
- ▶ Bicyclists share the lane with drivers
- ▶ No reduction to vehicle lanes



Bicycle Facility Design: North Street to Whitehead Street

- ▶ Transition to bicycle lanes past Old Town Plaza and Library garages
- ▶ Two-way center left turn lane
- ▶ Green pavement in bike lane through intersections/major conflict points



Bicycle Facility Design: Whitehead Street to Layton Hall Drive

- ▶ Bicycle lanes in each direction
- ▶ Striped center median
- ▶ Reconfigured intersection at University Drive and Layton Hall Drive
- ▶ Transition to existing sharrows north of Layton Hall Drive



Intersection Design: University Drive and Layton Hall Drive

- ▶ Two-way stop (stop signs on Layton Hall Dr)
- ▶ Remove northbound right turn lane
- ▶ Remove westbound slip lane
- ▶ Crosswalks moved closer to intersection
- ▶ Addition of crosswalk on south leg
- ▶ Addition of median refuge island



Intersection Design: University Drive and Layton Hall Drive

- ▶ Reduces bicycle/vehicle conflicts
- ▶ Improves pedestrian crossings
- ▶ Maintains transit and vehicle operations
- ▶ Traffic signal may be accommodated if warranted by future conditions



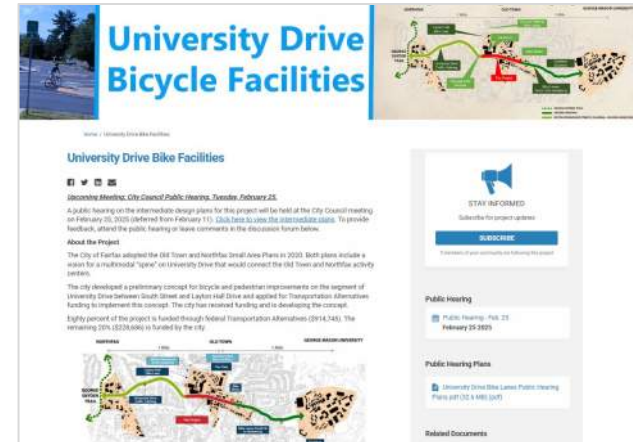
Right-of-Way and Utility Impacts

- ▶ No right-of-way or utility impacts
 - Design stays within the existing right-of-way for the entirety of the project
- ▶ No utility impacts



Engagement To-Date

- ▶ Two Year Program, Bicycle Plan, and Small Area Plan engagement (2020–2021)
- ▶ Funding application public hearing (September 2021)
- ▶ Concept Open House (December 2023)
- ▶ Engage page statistics (as of January 2025):
 - 294 visitors, 424 visits
 - 104 visitors viewed multiple pages or documents
 - 5 visitors commented on concept



Previous Feedback

Feedback Themes	Response
• Question about the best intersection design to support the Small Area Plan goals for the multimodal “spine”	• Evaluated intersection alternatives (signal, all-way stop, two-way stop, roundabout)
• Concerns about bicyclist safety in transition areas (right turn lane, transitions to sharrows)	• Removed northbound right turn lane at Layton Hall Dr to reduce conflicts after evaluating traffic needs • Extended bike lane a short distance north of Layton Hall Dr
• Concerns about bicyclist safety through intersections and in high conflict areas	• Added green pavement markings through intersections and conflict areas
• Desire for more separation between bike lanes and vehicle lanes, especially on hills	• Added painted buffer to uphill bike lane • Evaluated option of vertical barrier (flex-posts), but not recommended
• Concerns about pedestrian safety in crosswalk at University Dr and Layton Hall Dr	• Added median refuge in crosswalk at University Dr and Layton Hall Dr

Project Schedule



February 25, 2025

Design Public Hearing

- Public Hearing record open through March 7

Spring–Summer
2025

Respond to Public Hearing Comments

Develop 100% Plans

Fall–Winter
2025

Issue IFB for Construction

Award Construction Contract

Spring 2026

Begin Construction

Project Budget

Project Estimates

Engineering (PE)	\$ 295,000
Right-of-Way/Utilities (RW)	\$ 44,000
<u>Construction (CN)</u>	<u>\$1,680,000</u>
Total	\$2,019,000

Project Funding

Federal

➤ Transportation Alternatives (TA) (80/20 match)	\$ 914,745
➤ Regional Surface Transportation Program (RSTP)	\$ 875,051
<u>Local Match (C&I)</u>	<u>\$ 228,686</u>
Total (FY 2023)	\$2,018,482

Public Hearing Notifications

- ▶ Engage Page updates
- ▶ CityScene
- ▶ A-frame signs
- ▶ Newspaper ads
- ▶ Emails to civic associations along corridor
- ▶ City Clips emails
- ▶ Social media posts



Questions / Comments?

M. Intersection Analysis Worksheets – 2028 Future with Development (Full-Build)-Alternative Scenario

HCM 6th TWSC
1: Old Lee Highway & Plaza Drive

05/05/2026

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑	↗
Traffic Vol, veh/h	0	11	0	579	439	4
Future Vol, veh/h	0	11	0	579	439	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	120
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	14	2	2	6	2
Mvmt Flow	0	12	0	629	477	4
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	239	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.18	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.44	-	-	-	-
Pot Cap-1 Maneuver	0	727	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	727	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	10	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	727	-	-		
HCM Lane V/C Ratio	-	0.016	-	-		
HCM Control Delay (s)	-	10	-	-		
HCM Lane LOS	-	B	-	-		
HCM 95th %tile Q(veh)	-	0.1	-	-		

Queues

2: Old Lee Highway & FFX Commons

05/05/2026



Lane Group	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	21	23	1	39	608	13	15	458	15
v/c Ratio	0.06	0.06	0.00	0.05	0.22	0.01	0.02	0.18	0.01
Control Delay	18.4	0.3	0.0	4.0	5.7	0.0	4.5	8.1	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.4	0.3	0.0	4.0	5.7	0.0	4.5	8.1	0.0
Queue Length 50th (ft)	3	0	0	0	0	0	1	0	0
Queue Length 95th (ft)	22	0	0	13	115	0	7	90	0
Internal Link Dist (ft)	124		135		95			157	
Turn Bay Length (ft)				120		150	120		
Base Capacity (vph)	1449	1256	1359	1075	2900	1329	1058	2818	1329
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.02	0.00	0.04	0.21	0.01	0.01	0.16	0.01
Intersection Summary									

HCM Signalized Intersection Capacity Analysis

2: Old Lee Highway & FFX Commons

05/05/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	0	21	0	0	1	36	559	12	14	421	14
Future Volume (vph)	19	0	21	0	0	1	36	559	12	14	421	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8	6.8		6.8		6.8	6.8	6.8	6.8	6.8	6.8
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		0.86		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00		1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1770	1583		1611		1770	3505	1583	1770	3406	1583
Flt Permitted		1.00	1.00		1.00		0.46	1.00	1.00	0.42	1.00	1.00
Satd. Flow (perm)		1863	1583		1611		864	3505	1583	786	3406	1583
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)	21	0	23	0	0	1	39	608	13	15	458	15
RTOR Reduction (vph)	0	0	22	0	1	0	0	0	6	0	0	7
Lane Group Flow (vph)	0	21	1	0	0	0	39	608	7	15	458	8
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	6%	2%
Turn Type	Perm	NA	Perm		NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8		8	4			2		2	6		6
Actuated Green, G (s)		2.4	2.4		2.4		30.2	27.9	27.9	27.4	26.5	26.5
Effective Green, g (s)		2.4	2.4		2.4		30.2	27.9	27.9	27.4	26.5	26.5
Actuated g/C Ratio		0.05	0.05		0.05		0.59	0.54	0.54	0.53	0.51	0.51
Clearance Time (s)		6.8	6.8		6.8		6.8	6.8	6.8	6.8	6.8	6.8
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		86	73		74		546	1895	855	434	1749	812
v/s Ratio Prot					0.00		c0.00	c0.17		0.00	0.13	
v/s Ratio Perm		c0.01	0.00				0.04		0.00	0.02		0.00
v/c Ratio		0.24	0.01		0.00		0.07	0.32	0.01	0.03	0.26	0.01
Uniform Delay, d1		23.7	23.5		23.5		4.6	6.6	5.5	5.7	7.1	6.1
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.5	0.1		0.0		0.1	0.1	0.0	0.0	0.1	0.0
Delay (s)		25.2	23.6		23.5		4.6	6.7	5.5	5.8	7.1	6.1
Level of Service		C	C		C		A	A	A	A	A	A
Approach Delay (s)		24.3			23.5			6.5			7.1	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay			7.4		HCM 2000 Level of Service					A		
HCM 2000 Volume to Capacity ratio			0.31									
Actuated Cycle Length (s)			51.6		Sum of lost time (s)					20.4		
Intersection Capacity Utilization			44.3%		ICU Level of Service					A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

2: Old Lee Highway & FFX Commons

05/05/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	0	21	0	0	1	36	559	12	14	421	14
Future Volume (veh/h)	19	0	21	0	0	1	36	559	12	14	421	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1856	1870	1870	1811	1870
Adj Flow Rate, veh/h	21	0	23	0	0	1	39	608	13	15	458	15
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	3	2	2	6	2
Cap, veh/h	277	0	109	0	0	109	517	1413	635	436	1293	596
Arrive On Green	0.07	0.00	0.07	0.00	0.00	0.07	0.04	0.40	0.40	0.02	0.38	0.38
Sat Flow, veh/h	1404	0	1585	0	0	1585	1781	3526	1585	1781	3441	1585
Grp Volume(v), veh/h	21	0	23	0	0	1	39	608	13	15	458	15
Grp Sat Flow(s),veh/h/ln	1404	0	1585	0	0	1585	1781	1763	1585	1781	1721	1585
Q Serve(g_s), s	0.6	0.0	0.5	0.0	0.0	0.0	0.5	5.0	0.2	0.2	3.8	0.2
Cycle Q Clear(g_c), s	0.6	0.0	0.5	0.0	0.0	0.0	0.5	5.0	0.2	0.2	3.8	0.2
Prop In Lane	1.00		1.00	0.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	277	0	109	0	0	109	517	1413	635	436	1293	596
V/C Ratio(X)	0.08	0.00	0.21	0.00	0.00	0.01	0.08	0.43	0.02	0.03	0.35	0.03
Avail Cap(c_a), veh/h	1280	0	1231	0	0	1231	1331	2650	1192	1295	2587	1192
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.6	0.0	17.6	0.0	0.0	17.3	7.1	8.7	7.2	7.6	9.0	7.8
Incr Delay (d2), s/veh	0.1	0.0	0.9	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.2	0.0	0.0	0.0	0.1	1.4	0.1	0.1	1.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.7	0.0	18.5	0.0	0.0	17.3	7.1	8.9	7.2	7.6	9.1	7.9
LnGrp LOS	B	A	B	A	A	B	A	A	A	A	A	A
Approach Vol, veh/h	44		1				660				488	
Approach Delay, s/veh	18.1		17.3				8.7				9.0	
Approach LOS	B		B				A				A	
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	7.6	22.8	9.5		8.6	21.8	9.5					
Change Period (Y+Rc), s	* 6.8	* 6.8	* 6.8		* 6.8	* 6.8	* 6.8					
Max Green Setting (Gmax), s	* 20	* 30	* 31		* 20	* 30	* 31					
Max Q Clear Time (g_c+I1), s	2.2	7.0	2.0		2.5	5.8	2.6					
Green Ext Time (p_c), s	0.0	4.3	0.0		0.1	3.2	0.1					
Intersection Summary												
HCM 6th Ctrl Delay			9.2									
HCM 6th LOS			A									
Notes												

HCM 6th TWSC
3: Old Lee Highway

05/05/2026

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑↑	
Traffic Vol, veh/h	0	0	0	607	442	0
Future Vol, veh/h	0	0	0	607	442	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	660	480	0
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	240	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	648	0	-	-	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	-	648	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	0	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT			
Capacity (veh/h)	-	-	-			
HCM Lane V/C Ratio	-	-	-			
HCM Control Delay (s)	-	0	-			
HCM Lane LOS	-	A	-			
HCM 95th %tile Q(veh)	-	-	-			

HCM 6th TWSC
4: Old Lee Highway

05/05/2026

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↗↗	↗↗	↗
Traffic Vol, veh/h	0	5	0	607	434	8
Future Vol, veh/h	0	5	0	607	434	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	6	2
Mvmt Flow	0	5	0	660	472	9
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	-	236	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	766	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	766	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.7	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT EBLn1		SBT	SBR		
Capacity (veh/h)	- 766		-	-		
HCM Lane V/C Ratio	- 0.007		-	-		
HCM Control Delay (s)	- 9.7		-	-		
HCM Lane LOS	- A		-	-		
HCM 95th %tile Q(veh)	- 0		-	-		

HCM 6th TWSC
5: University Drive & Street 1

05/05/2026

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↵	↵		↵	↵	
Traffic Vol, veh/h	0	0	1	17	0	9	13	297	31	19	201	5
Future Vol, veh/h	0	0	1	17	0	9	13	297	31	19	201	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	1	18	0	10	14	323	34	21	218	5
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	636	648	221	631	633	340	223	0	0	357	0	0
Stage 1	263	263	-	368	368	-	-	-	-	-	-	-
Stage 2	373	385	-	263	265	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	391	389	819	394	397	702	1346	-	-	1202	-	-
Stage 1	742	691	-	652	621	-	-	-	-	-	-	-
Stage 2	648	611	-	742	689	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	377	378	819	385	386	702	1346	-	-	1202	-	-
Mov Cap-2 Maneuver	377	378	-	385	386	-	-	-	-	-	-	-
Stage 1	735	679	-	645	615	-	-	-	-	-	-	-
Stage 2	632	605	-	728	677	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.4		13.4			0.3			0.7			
HCM LOS	A		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1346	-	-	819	456	1202	-	-				
HCM Lane V/C Ratio	0.01	-	-	0.001	0.062	0.017	-	-				
HCM Control Delay (s)	7.7	-	-	9.4	13.4	8	-	-				
HCM Lane LOS	A	-	-	A	B	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0.1	-	-				

HCM 6th TWSC
6: University Drive & 7-11 Entrance

05/05/2026

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	15	10	296	210	12
Future Vol, veh/h	5	15	10	296	210	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	10	2	4	2
Mvmt Flow	5	16	11	322	228	13

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	579	235	241	0	-	0
Stage 1	235	-	-	-	-	-
Stage 2	344	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.2	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.29	-	-	-
Pot Cap-1 Maneuver	477	804	1280	-	-	-
Stage 1	804	-	-	-	-	-
Stage 2	718	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	473	804	1280	-	-	-
Mov Cap-2 Maneuver	559	-	-	-	-	-
Stage 1	797	-	-	-	-	-
Stage 2	718	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1280	-	725	-	-
HCM Lane V/C Ratio	0.008	-	0.03	-	-
HCM Control Delay (s)	7.8	-	10.1	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Queues

7: University Drive & Whitehead Street/Democracy Lane

05/05/2026



Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	129	32	84	8	321	14	186
v/c Ratio	0.43	0.08	0.24	0.02	0.53	0.05	0.37
Control Delay	25.0	3.3	16.4	15.0	19.0	15.5	17.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.0	3.3	16.4	15.0	19.0	15.5	17.5
Queue Length 50th (ft)	28	0	12	1	65	2	35
Queue Length 95th (ft)	108	10	60	12	204	17	123
Internal Link Dist (ft)	232		266		127		572
Turn Bay Length (ft)				50		150	
Base Capacity (vph)	724	898	802	1078	1668	810	1363
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.04	0.10	0.01	0.19	0.02	0.14
Intersection Summary							

HCM Signalized Intersection Capacity Analysis

7: University Drive & Whitehead Street/Democracy Lane

05/05/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	18	29	34	13	30	7	273	22	13	160	11
Future Volume (vph)	100	18	29	34	13	30	7	273	22	13	160	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.93		0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		0.98		1.00	1.00		0.99	1.00	
Frt		1.00	0.85		0.95		1.00	0.99		1.00	0.99	
Flt Protected		0.96	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1674	1463		1635		1764	1836		1727	1498	
Flt Permitted		0.70	1.00		0.80		0.64	1.00		0.50	1.00	
Satd. Flow (perm)		1223	1463		1332		1189	1836		901	1498	
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)	109	20	32	37	14	33	8	297	24	14	174	12
RTOR Reduction (vph)	0	0	26	0	22	0	0	3	0	0	3	0
Lane Group Flow (vph)	0	129	6	0	62	0	8	318	0	14	183	0
Confl. Peds. (#/hr)	1		18	18		1	3		17	17		3
Heavy Vehicles (%)	7%	18%	3%	5%	11%	2%	2%	2%	2%	3%	27%	2%
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			2			6	
Permitted Phases	8		8	4			2			6		
Actuated Green, G (s)		9.0	9.0		9.0		16.0	16.0		16.0	16.0	
Effective Green, g (s)		9.0	9.0		9.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio		0.19	0.19		0.19		0.33	0.33		0.33	0.33	
Clearance Time (s)		6.0	6.0		6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		228	273		248		394	609		299	497	
v/s Ratio Prot							c0.17				0.12	
v/s Ratio Perm		c0.11	0.00		0.05		0.01			0.02		
v/c Ratio		0.57	0.02		0.25		0.02	0.52		0.05	0.37	
Uniform Delay, d1		17.8	16.0		16.7		10.8	13.0		10.9	12.3	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.2	0.0		0.5		0.0	0.8		0.1	0.5	
Delay (s)		21.0	16.0		17.3		10.8	13.8		11.0	12.7	
Level of Service		C	B		B		B	B		B	B	
Approach Delay (s)		20.0			17.3			13.7			12.6	
Approach LOS		C			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			15.1									
HCM 2000 Volume to Capacity ratio			0.40									
Actuated Cycle Length (s)			48.2									
Intersection Capacity Utilization			36.5%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Edition methodology does not support exclusive ped or hold phases.

HCM 6th TWSC
8: Garage Access & Democracy Lane

05/05/2026

Intersection						
Int Delay, s/veh	4.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	41	12	12	35	42	33
Future Vol, veh/h	41	12	12	35	42	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	13	13	38	46	36
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	58	0	116	52
Stage 1	-	-	-	-	52	-
Stage 2	-	-	-	-	64	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1546	-	880	1016
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	959	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1546	-	872	1016
Mov Cap-2 Maneuver	-	-	-	-	872	-
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	950	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.9		9.2	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	930	-	-	1546	-	
HCM Lane V/C Ratio	0.088	-	-	0.008	-	
HCM Control Delay (s)	9.2	-	-	7.3	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.3	-	-	0	-	

HCM 6th TWSC
9: Democracy Lane & Layton Hall Drive

05/05/2026

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	22	271	6	16	176	10	2	1	24	0	0	4
Future Vol, veh/h	22	271	6	16	176	10	2	1	24	0	0	4
Conflicting Peds, #/hr	9	0	0	0	0	9	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	5	2	2	3	2	2	2	17	2	2	2
Mvmt Flow	24	295	7	17	191	11	2	1	26	0	0	4
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	211	0	0	302	0	0	580	592	299	600	590	206
Stage 1	-	-	-	-	-	-	347	347	-	240	240	-
Stage 2	-	-	-	-	-	-	233	245	-	360	350	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.37	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.453	3.518	4.018	3.318
Pot Cap-1 Maneuver	1360	-	-	1259	-	-	426	419	707	413	420	835
Stage 1	-	-	-	-	-	-	669	635	-	763	707	-
Stage 2	-	-	-	-	-	-	770	703	-	658	633	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1348	-	-	1259	-	-	412	401	707	383	402	828
Mov Cap-2 Maneuver	-	-	-	-	-	-	412	401	-	383	402	-
Stage 1	-	-	-	-	-	-	655	622	-	741	690	-
Stage 2	-	-	-	-	-	-	754	686	-	619	620	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0.6			10.8			9.4		
HCM LOS							B			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	654	1348	-	-	1259	-	-	828				
HCM Lane V/C Ratio	0.045	0.018	-	-	0.014	-	-	0.005				
HCM Control Delay (s)	10.8	7.7	0	-	7.9	0	-	9.4				
HCM Lane LOS	B	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0				

Queues

10: Old Lee Highway & Layton Hall Drive/Farrcroft Drive

05/05/2026



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	273	44	14	54	67	551	5	17	596
v/c Ratio	0.63	0.10	0.10	0.31	0.18	0.74	0.01	0.06	0.53
Control Delay	43.0	19.9	52.6	25.9	16.0	32.2	0.0	15.2	26.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.0	19.9	52.6	25.9	16.0	32.2	0.0	15.2	26.5
Queue Length 50th (ft)	130	7	7	6	21	234	0	5	142
Queue Length 95th (ft)	315	45	34	51	51	522	0	19	231
Internal Link Dist (ft)		305		220		842			355
Turn Bay Length (ft)							230	150	
Base Capacity (vph)	669	653	542	548	496	1262	1089	448	2275
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.07	0.03	0.10	0.14	0.44	0.00	0.04	0.26
Intersection Summary									

HCM Signalized Intersection Capacity Analysis

10: Old Lee Highway & Layton Hall Drive/Farrcroft Drive

05/05/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	251	17	24	13	10	40	62	507	5	16	406	143
Future Volume (vph)	251	17	24	13	10	40	62	507	5	16	406	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		7.3	7.3		6.9	6.9	6.9	6.9	6.9	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00	0.97	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.91		1.00	0.88		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1719	1639		1671	1607		1769	1827	1533	1702	3278	
Flt Permitted	0.95	1.00		0.95	1.00		0.31	1.00	1.00	0.25	1.00	
Satd. Flow (perm)	1719	1639		1671	1607		582	1827	1533	454	3278	
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)	273	18	26	14	11	43	67	551	5	17	441	155
RTOR Reduction (vph)	0	20	0	0	41	0	0	0	3	0	23	0
Lane Group Flow (vph)	273	24	0	14	13	0	67	551	2	17	573	0
Confl. Peds. (#/hr)	3		1	1		3	1		5	5		1
Heavy Vehicles (%)	5%	6%	4%	8%	2%	2%	2%	4%	2%	6%	6%	3%
Turn Type	Split	NA		Split	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	4	4		8	8		1	6		5	2	
Permitted Phases							6		6	2		
Actuated Green, G (s)	22.8	22.8		5.3	5.3		42.8	36.9	36.9	35.2	33.1	
Effective Green, g (s)	22.8	22.8		5.3	5.3		42.8	36.9	36.9	35.2	33.1	
Actuated g/C Ratio	0.24	0.24		0.06	0.06		0.45	0.39	0.39	0.37	0.35	
Clearance Time (s)	6.5	6.5		7.3	7.3		6.9	6.9	6.9	6.9	6.9	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	413	394		93	89		336	711	597	196	1145	
v/s Ratio Prot	c0.16	0.01		c0.01	0.01		c0.01	c0.30		0.00	0.17	
v/s Ratio Perm							0.08		0.00	0.03		
v/c Ratio	0.66	0.06		0.15	0.15		0.20	0.77	0.00	0.09	0.50	
Uniform Delay, d1	32.5	27.7		42.6	42.6		15.3	25.3	17.7	20.1	24.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.9	0.1		0.8	0.8		0.3	5.3	0.0	0.2	0.3	
Delay (s)	36.4	27.8		43.3	43.3		15.6	30.6	17.7	20.3	24.6	
Level of Service	D	C		D	D		B	C	B	C	C	
Approach Delay (s)		35.2			43.3			28.8			24.5	
Approach LOS		D			D			C			C	
Intersection Summary												
HCM 2000 Control Delay			29.1			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			94.7			Sum of lost time (s)			27.6			
Intersection Capacity Utilization			68.3%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary 10: Old Lee Highway & Layton Hall Drive/Farrcroft Drive

05/05/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	251	17	24	13	10	40	62	507	5	16	406	143
Future Volume (veh/h)	251	17	24	13	10	40	62	507	5	16	406	143
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1826	1811	1841	1781	1870	1870	1870	1841	1870	1811	1811	1856
Adj Flow Rate, veh/h	273	18	26	14	11	43	67	551	5	17	441	155
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	6	4	8	2	2	2	4	2	6	6	3
Cap, veh/h	338	130	187	100	19	76	334	657	562	199	816	284
Arrive On Green	0.19	0.19	0.19	0.06	0.06	0.06	0.05	0.36	0.36	0.02	0.33	0.33
Sat Flow, veh/h	1739	666	963	1697	330	1288	1781	1841	1574	1725	2498	870
Grp Volume(v), veh/h	273	0	44	14	0	54	67	551	5	17	302	294
Grp Sat Flow(s),veh/h/ln	1739	0	1629	1697	0	1618	1781	1841	1574	1725	1721	1647
Q Serve(g_s), s	11.2	0.0	1.7	0.6	0.0	2.4	1.8	20.5	0.2	0.5	10.7	10.9
Cycle Q Clear(g_c), s	11.2	0.0	1.7	0.6	0.0	2.4	1.8	20.5	0.2	0.5	10.7	10.9
Prop In Lane	1.00		0.59	1.00		0.80	1.00		1.00	1.00		0.53
Lane Grp Cap(c), veh/h	338	0	317	100	0	96	334	657	562	199	562	538
V/C Ratio(X)	0.81	0.00	0.14	0.14	0.00	0.56	0.20	0.84	0.01	0.09	0.54	0.55
Avail Cap(c_a), veh/h	699	0	655	568	0	542	602	1479	1265	511	1383	1323
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.7	0.0	24.9	33.3	0.0	34.2	15.9	22.0	15.5	18.4	20.5	20.6
Incr Delay (d2), s/veh	4.6	0.0	0.2	0.6	0.0	5.1	0.3	3.0	0.0	0.2	0.8	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	0.7	0.3	0.0	1.1	0.7	8.8	0.1	0.2	4.2	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.3	0.0	25.1	34.0	0.0	39.3	16.2	25.0	15.5	18.6	21.3	21.5
LnGrp LOS	C	A	C	C	A	D	B	C	B	B	C	C
Approach Vol, veh/h	317		68				623			613		
Approach Delay, s/veh	32.2		38.2				24.0			21.3		
Approach LOS	C		D				C			C		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	10.7	31.3	21.0		8.4	33.6	11.7					
Change Period (Y+Rc), s	* 6.9	* 6.9	6.5		* 6.9	* 6.9	7.3					
Max Green Setting (Gmax), s	* 15	* 60	30.0		* 15	* 60	25.0					
Max Q Clear Time (g_c+I1), s	3.8	12.9	13.2		2.5	22.5	4.4					
Green Ext Time (p_c), s	0.1	4.3	1.0		0.0	4.1	0.3					
Intersection Summary												
HCM 6th Ctrl Delay			25.2									
HCM 6th LOS			C									
Notes												

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	3	4	47	10	102	1	200	195	126	160	0
Future Vol, veh/h	5	3	4	47	10	102	1	200	195	126	160	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	13	2	2	2	2	2	2	2	2
Mvmt Flow	5	3	4	51	11	111	1	217	212	137	174	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	834	879	174	777	773	323	174	0	0	429	0	0
Stage 1	448	448	-	325	325	-	-	-	-	-	-	-
Stage 2	386	431	-	452	448	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.23	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.23	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.23	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.617	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	288	286	869	301	330	718	1403	-	-	1130	-	-
Stage 1	590	573	-	665	649	-	-	-	-	-	-	-
Stage 2	637	583	-	566	573	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	212	247	869	266	285	718	1403	-	-	1130	-	-
Mov Cap-2 Maneuver	212	247	-	266	285	-	-	-	-	-	-	-
Stage 1	589	496	-	664	648	-	-	-	-	-	-	-
Stage 2	529	582	-	484	496	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	17.6		15		0		3.8					
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR					
Capacity (veh/h)	1403	-	-	298 269 718 1130	-	-	-					
HCM Lane V/C Ratio	0.001	-	-	0.044 0.23 0.154 0.121	-	-	-					
HCM Control Delay (s)	7.6	0	-	17.6 22.3 10.9 8.6	0	-	-					
HCM Lane LOS	A	A	-	C C B A	A	-	-					
HCM 95th %tile Q(veh)	0	-	-	0.1 0.9 0.5 0.4	-	-	-					

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↗↗	↗↗	↗
Traffic Vol, veh/h	0	27	0	507	615	6
Future Vol, veh/h	0	27	0	507	615	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	120
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	3	2
Mvmt Flow	0	29	0	551	668	7
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	-	334	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	662	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	662	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10.7	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT EBLn1		SBT	SBR		
Capacity (veh/h)	- 662		-	-		
HCM Lane V/C Ratio	- 0.044		-	-		
HCM Control Delay (s)	- 10.7		-	-		
HCM Lane LOS	- B		-	-		
HCM 95th %tile Q(veh)	- 0.1		-	-		

Queues

2: Old Lee Highway

05/05/2026

									
Lane Group	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	52	77	78	85	486	12	16	622	49
v/c Ratio	0.25	0.21	0.33	0.15	0.22	0.01	0.03	0.39	0.06
Control Delay	24.6	4.0	23.9	5.8	7.7	0.0	5.9	15.3	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.6	4.0	23.9	5.8	7.7	0.0	5.9	15.3	0.3
Queue Length 50th (ft)	14	0	20	10	32	0	2	84	0
Queue Length 95th (ft)	46	18	59	27	101	0	8	144	2
Internal Link Dist (ft)	173		199		95			142	
Turn Bay Length (ft)				120		150	120		
Base Capacity (vph)	770	1009	844	853	2294	1066	913	2217	1015
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.08	0.09	0.10	0.21	0.01	0.02	0.28	0.05
Intersection Summary									

HCM Signalized Intersection Capacity Analysis

2: Old Lee Highway

05/05/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	4	72	54	8	10	79	452	11	15	578	46
Future Volume (vph)	45	4	72	54	8	10	79	452	11	15	578	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8	6.8		6.8		6.8	6.8	6.8	6.8	6.8	6.8
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.96	1.00		0.96		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1741	1568		1762		1770	3539	1583	1770	3505	1538
Flt Permitted		0.69	1.00		0.75		0.34	1.00	1.00	0.48	1.00	1.00
Satd. Flow (perm)		1251	1568		1366		629	3539	1583	885	3505	1538
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)	48	4	77	58	9	11	85	486	12	16	622	49
RTOR Reduction (vph)	0	0	68	0	7	0	0	0	6	0	0	28
Lane Group Flow (vph)	0	52	9	0	71	0	85	486	6	16	622	21
Heavy Vehicles (%)	3%	20%	3%	2%	2%	2%	2%	2%	2%	2%	3%	5%
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8		8	4			2		2	6		6
Actuated Green, G (s)		6.9	6.9		6.9		37.3	31.1	31.1	26.9	25.9	25.9
Effective Green, g (s)		6.9	6.9		6.9		37.3	31.1	31.1	26.9	25.9	25.9
Actuated g/C Ratio		0.12	0.12		0.12		0.63	0.52	0.52	0.45	0.44	0.44
Clearance Time (s)		6.8	6.8		6.8		6.8	6.8	6.8	6.8	6.8	6.8
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		145	182		158		514	1852	828	415	1528	670
v/s Ratio Prot							c0.02	c0.14		0.00	c0.18	
v/s Ratio Perm		0.04	0.01		c0.05		0.09		0.00	0.02		0.01
v/c Ratio		0.36	0.05		0.45		0.17	0.26	0.01	0.04	0.41	0.03
Uniform Delay, d1		24.2	23.3		24.5		4.6	7.8	6.8	9.0	11.5	9.6
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.5	0.1		2.0		0.2	0.1	0.0	0.0	0.2	0.0
Delay (s)		25.7	23.4		26.5		4.8	7.9	6.8	9.0	11.7	9.6
Level of Service		C	C		C		A	A	A	A	B	A
Approach Delay (s)		24.4			26.5			7.4			11.5	
Approach LOS		C			C			A			B	
Intersection Summary												
HCM 2000 Control Delay			11.8				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.39									
Actuated Cycle Length (s)			59.4				Sum of lost time (s)			20.4		
Intersection Capacity Utilization			48.0%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

2: Old Lee Highway

05/05/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	4	72	54	8	10	79	452	11	15	578	46
Future Volume (veh/h)	45	4	72	54	8	10	79	452	11	15	578	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1604	1856	1870	1870	1870	1870	1870	1870	1870	1856	1826
Adj Flow Rate, veh/h	48	4	77	58	9	11	85	486	12	16	622	49
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	20	3	2	2	2	2	2	2	2	3	5
Cap, veh/h	327	20	226	257	42	26	434	1367	610	454	1171	514
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.07	0.38	0.38	0.02	0.33	0.33
Sat Flow, veh/h	1212	142	1572	823	292	183	1781	3554	1585	1781	3526	1547
Grp Volume(v), veh/h	52	0	77	78	0	0	85	486	12	16	622	49
Grp Sat Flow(s),veh/h/ln	1354	0	1572	1299	0	0	1781	1777	1585	1781	1763	1547
Q Serve(g_s), s	0.0	0.0	2.0	1.4	0.0	0.0	1.3	4.4	0.2	0.3	6.5	1.0
Cycle Q Clear(g_c), s	1.4	0.0	2.0	2.8	0.0	0.0	1.3	4.4	0.2	0.3	6.5	1.0
Prop In Lane	0.92		1.00	0.74		0.14	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	348	0	226	325	0	0	434	1367	610	454	1171	514
V/C Ratio(X)	0.15	0.00	0.34	0.24	0.00	0.00	0.20	0.36	0.02	0.04	0.53	0.10
Avail Cap(c_a), veh/h	1009	0	1080	1085	0	0	1093	2361	1053	1207	2342	1028
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.1	0.0	17.4	17.8	0.0	0.0	8.9	9.9	8.6	9.6	12.2	10.4
Incr Delay (d2), s/veh	0.2	0.0	0.9	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.7	0.7	0.0	0.0	0.4	1.4	0.1	0.1	2.1	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.3	0.0	18.3	18.1	0.0	0.0	9.1	10.1	8.6	9.6	12.6	10.5
LnGrp LOS	B	A	B	B	A	A	A	B	A	A	B	B
Approach Vol, veh/h		129			78			583			687	
Approach Delay, s/veh		17.9			18.1			9.9			12.4	
Approach LOS		B			B			A			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.7	24.2		13.3	10.1	21.8		13.3				
Change Period (Y+Rc), s	* 6.8	* 6.8		* 6.8	* 6.8	* 6.8		* 6.8				
Max Green Setting (Gmax), s	* 20	* 30		* 31	* 20	* 30		* 31				
Max Q Clear Time (g_c+I1), s	2.3	6.4		4.8	3.3	8.5		4.0				
Green Ext Time (p_c), s	0.0	3.4		0.4	0.2	4.5		0.5				
Intersection Summary												
HCM 6th Ctrl Delay			12.2									
HCM 6th LOS			B									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th TWSC
3: Old Lee Highway

05/05/2026

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑↑	
Traffic Vol, veh/h	0	0	0	542	707	0
Future Vol, veh/h	0	0	0	542	707	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	589	768	0
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	384	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	525	0	-	-	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	-	525	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	0	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT			
Capacity (veh/h)	-	-	-			
HCM Lane V/C Ratio	-	-	-			
HCM Control Delay (s)	-	0	-			
HCM Lane LOS	-	A	-			
HCM 95th %tile Q(veh)	-	-	-			

HCM 6th TWSC
4: Old Lee Highway

05/05/2026

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↗↗	↗↗	↗
Traffic Vol, veh/h	0	24	0	542	688	19
Future Vol, veh/h	0	24	0	542	688	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	3	3	2
Mvmt Flow	0	25	0	571	724	20
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	362	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	635	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	635	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	10.9	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	635	-	-		
HCM Lane V/C Ratio	-	0.04	-	-		
HCM Control Delay (s)	-	10.9	-	-		
HCM Lane LOS	-	B	-	-		
HCM 95th %tile Q(veh)	-	0.1	-	-		

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↵	↵		↵	↵	
Traffic Vol, veh/h	3	0	18	43	0	47	1	291	77	42	372	1
Future Vol, veh/h	3	0	18	43	0	47	1	291	77	42	372	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	20	47	0	51	1	316	84	46	404	1
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	883	899	405	867	857	358	405	0	0	400	0	0
Stage 1	497	497	-	360	360	-	-	-	-	-	-	-
Stage 2	386	402	-	507	497	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	266	279	646	273	295	686	1154	-	-	1159	-	-
Stage 1	555	545	-	658	626	-	-	-	-	-	-	-
Stage 2	637	600	-	548	545	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	239	268	646	257	283	686	1154	-	-	1159	-	-
Mov Cap-2 Maneuver	239	268	-	257	283	-	-	-	-	-	-	-
Stage 1	554	523	-	657	625	-	-	-	-	-	-	-
Stage 2	589	599	-	510	523	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	12.2		17.6		0		0.8					
HCM LOS	B		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1154	-	-	520	382	1159	-	-				
HCM Lane V/C Ratio	0.001	-	-	0.044	0.256	0.039	-	-				
HCM Control Delay (s)	8.1	-	-	12.2	17.6	8.2	-	-				
HCM Lane LOS	A	-	-	B	C	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	1	0.1	-	-				

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	23	16	325	391	21
Future Vol, veh/h	16	23	16	325	391	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	25	17	353	425	23
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	824	437	448	0	-	0
Stage 1	437	-	-	-	-	-
Stage 2	387	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	343	620	1112	-	-	-
Stage 1	651	-	-	-	-	-
Stage 2	686	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	338	620	1112	-	-	-
Mov Cap-2 Maneuver	456	-	-	-	-	-
Stage 1	641	-	-	-	-	-
Stage 2	686	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	12.2	0.4		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1112	-	540	-	-	
HCM Lane V/C Ratio	0.016	-	0.079	-	-	
HCM Control Delay (s)	8.3	-	12.2	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.3	-	-	

Queues

7: University Drive & Whitehead Street/Democracy Lane

05/05/2026



Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	109	71	116	29	341	30	331
v/c Ratio	0.33	0.18	0.37	0.06	0.40	0.07	0.39
Control Delay	23.8	8.5	23.5	16.0	16.3	16.1	16.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.8	8.5	23.5	16.0	16.3	16.1	16.4
Queue Length 50th (ft)	14	0	13	3	38	3	37
Queue Length 95th (ft)	92	32	93	28	210	29	205
Internal Link Dist (ft)	245		267		117		591
Turn Bay Length (ft)				50		150	
Base Capacity (vph)	921	990	850	830	1578	793	1572
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.07	0.14	0.03	0.22	0.04	0.21
Intersection Summary							

HCM Signalized Intersection Capacity Analysis

7: University Drive & Whitehead Street/Democracy Lane

05/05/2026

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱		↰	↱	↰	↱		↰	↱	
Traffic Volume (vph)	51	50	65	64	23	19	27	271	42	28	277	28
Future Volume (vph)	51	50	65	64	23	19	27	271	42	28	277	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.92		0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		0.97		0.99	1.00		0.98	1.00	
Frt		1.00	0.85		0.98		1.00	0.98		1.00	0.99	
Flt Protected		0.98	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1758	1455		1656		1751	1814		1727	1804	
Flt Permitted		0.78	1.00		0.75		0.52	1.00		0.51	1.00	
Satd. Flow (perm)		1408	1455		1284		959	1814		925	1804	
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)	55	54	71	70	25	21	29	295	46	30	301	30
RTOR Reduction (vph)	0	0	58	0	7	0	0	5	0	0	4	0
Lane Group Flow (vph)	0	109	13	0	109	0	29	336	0	30	327	0
Confl. Peds. (#/hr)	3		22	22		3	12		18	28		12
Heavy Vehicles (%)	6%	4%	2%	2%	14%	2%	2%	2%	2%	2%	2%	19%
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			2			6	
Permitted Phases	8		8	4			2			6		
Actuated Green, G (s)		8.7	8.7		8.7		20.5	20.5		20.5	20.5	
Effective Green, g (s)		8.7	8.7		8.7		20.5	20.5		20.5	20.5	
Actuated g/C Ratio		0.18	0.18		0.18		0.42	0.42		0.42	0.42	
Clearance Time (s)		6.0	6.0		6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		248	256		226		398	754		384	750	
v/s Ratio Prot							c0.19				0.18	
v/s Ratio Perm		0.08	0.01		c0.08		0.03			0.03		
v/c Ratio		0.44	0.05		0.48		0.07	0.45		0.08	0.44	
Uniform Delay, d1		18.1	16.9		18.3		8.7	10.3		8.7	10.3	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.2	0.1		1.6		0.1	0.4		0.1	0.4	
Delay (s)		19.4	16.9		19.9		8.8	10.7		8.8	10.7	
Level of Service		B	B		B		A	B		A	B	
Approach Delay (s)		18.4			19.9			10.6			10.5	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			13.0			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.39									
Actuated Cycle Length (s)			49.3			Sum of lost time (s)				15.0		
Intersection Capacity Utilization			45.1%			ICU Level of Service				A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Edition methodology does not support exclusive ped or hold phases.

HCM 6th TWSC
8: Garage Access & Democracy Lane

05/05/2026

Intersection						
Int Delay, s/veh	2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	92	28	28	88	18	15
Future Vol, veh/h	92	28	28	88	18	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	100	30	30	96	20	16
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	130	0	271	115
Stage 1	-	-	-	-	115	-
Stage 2	-	-	-	-	156	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1455	-	718	937
Stage 1	-	-	-	-	910	-
Stage 2	-	-	-	-	872	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1455	-	702	937
Mov Cap-2 Maneuver	-	-	-	-	702	-
Stage 1	-	-	-	-	910	-
Stage 2	-	-	-	-	853	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.8		9.8	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	792	-	-	1455	-	
HCM Lane V/C Ratio	0.045	-	-	0.021	-	
HCM Control Delay (s)	9.8	-	-	7.5	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	216	16	25	162	0	9	0	34	4	0	12
Future Vol, veh/h	1	216	16	25	162	0	9	0	34	4	0	12
Conflicting Peds, #/hr	2	0	0	0	0	2	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	13	7	3	2	2	2	2	2	2	2
Mvmt Flow	1	235	17	27	176	0	10	0	37	4	0	13
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	178	0	0	252	0	0	484	478	244	496	486	179
Stage 1	-	-	-	-	-	-	246	246	-	232	232	-
Stage 2	-	-	-	-	-	-	238	232	-	264	254	-
Critical Hdwy	4.12	-	-	4.17	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.263	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1398	-	-	1285	-	-	493	486	795	484	481	864
Stage 1	-	-	-	-	-	-	758	703	-	771	713	-
Stage 2	-	-	-	-	-	-	765	713	-	741	697	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1395	-	-	1285	-	-	476	473	795	452	468	862
Mov Cap-2 Maneuver	-	-	-	-	-	-	476	473	-	452	468	-
Stage 1	-	-	-	-	-	-	757	702	-	769	695	-
Stage 2	-	-	-	-	-	-	735	695	-	706	696	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			1.1			10.5			10.3		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	697	1395	-	-	1285	-	-	703				
HCM Lane V/C Ratio	0.067	0.001	-	-	0.021	-	-	0.025				
HCM Control Delay (s)	10.5	7.6	0	-	7.9	0	-	10.3				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.1				

Queues

10: Old Lee Highway & Layton Hall Drive/Farrcroft Drive

05/05/2026



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	197	69	14	29	52	455	18	19	709
v/c Ratio	0.53	0.18	0.09	0.17	0.14	0.56	0.03	0.05	0.59
Control Delay	37.8	15.0	44.2	28.4	13.3	23.4	0.1	13.2	24.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.8	15.0	44.2	28.4	13.3	23.4	0.1	13.2	24.4
Queue Length 50th (ft)	92	8	7	5	14	154	0	5	161
Queue Length 95th (ft)	197	47	30	37	38	375	0	19	264
Internal Link Dist (ft)		305		220		864			293
Turn Bay Length (ft)							230	150	
Base Capacity (vph)	796	770	639	623	532	1457	1075	593	2635
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.09	0.02	0.05	0.10	0.31	0.02	0.03	0.27
Intersection Summary									

HCM Signalized Intersection Capacity Analysis

10: Old Lee Highway & Layton Hall Drive/Farrcroft Drive

05/05/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	191	17	49	14	11	17	50	441	17	18	561	127
Future Volume (vph)	191	17	49	14	11	17	50	441	17	18	561	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		7.3	7.3		6.9	6.9	6.9	6.9	6.9	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00	0.93	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	0.99	1.00	
Frt	1.00	0.89		1.00	0.91		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	1638		1687	1621		1768	1863	1413	1754	3370	
Flt Permitted	0.95	1.00		0.95	1.00		0.26	1.00	1.00	0.39	1.00	
Satd. Flow (perm)	1752	1638		1687	1621		493	1863	1413	723	3370	
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)	197	18	51	14	11	18	52	455	18	19	578	131
RTOR Reduction (vph)	0	41	0	0	17	0	0	0	11	0	13	0
Lane Group Flow (vph)	197	28	0	14	12	0	52	455	7	19	696	0
Confl. Peds. (#/hr)	3		3	3		3	6		26	26		6
Heavy Vehicles (%)	3%	2%	2%	7%	9%	2%	2%	2%	6%	2%	3%	6%
Turn Type	Split	NA		Split	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	4	4		8	8		1	6		5	2	
Permitted Phases							6		6	2		
Actuated Green, G (s)	16.2	16.2		3.6	3.6		38.7	33.3	33.3	32.1	30.0	
Effective Green, g (s)	16.2	16.2		3.6	3.6		38.7	33.3	33.3	32.1	30.0	
Actuated g/C Ratio	0.20	0.20		0.04	0.04		0.47	0.40	0.40	0.39	0.36	
Clearance Time (s)	6.5	6.5		7.3	7.3		6.9	6.9	6.9	6.9	6.9	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	342	320		73	70		313	749	568	306	1221	
v/s Ratio Prot	c0.11	0.02		c0.01	0.01		c0.01	c0.24		0.00	0.21	
v/s Ratio Perm							0.07		0.01	0.02		
v/c Ratio	0.58	0.09		0.19	0.17		0.17	0.61	0.01	0.06	0.57	
Uniform Delay, d1	30.2	27.3		38.2	38.2		12.8	19.6	14.9	16.0	21.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.3	0.1		1.3	1.1		0.3	1.4	0.0	0.1	0.6	
Delay (s)	32.5	27.4		39.5	39.3		13.0	21.0	14.9	16.0	21.9	
Level of Service	C	C		D	D		B	C	B	B	C	
Approach Delay (s)		31.2			39.4			20.0			21.7	
Approach LOS		C			D			B			C	
Intersection Summary												
HCM 2000 Control Delay			23.2			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.56									
Actuated Cycle Length (s)			82.8			Sum of lost time (s)			27.6			
Intersection Capacity Utilization			61.9%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

10: Old Lee Highway & Layton Hall Drive/Farrcroft Drive

05/05/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	191	17	49	14	11	17	50	441	17	18	561	127
Future Volume (veh/h)	191	17	49	14	11	17	50	441	17	18	561	127
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.96	0.98		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1870	1870	1796	1767	1870	1870	1870	1811	1870	1856	1811
Adj Flow Rate, veh/h	197	18	51	14	11	18	52	455	18	19	578	131
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	2	2	7	9	2	2	2	6	2	3	6
Cap, veh/h	278	67	190	87	30	50	295	629	497	265	882	199
Arrive On Green	0.16	0.16	0.16	0.05	0.05	0.05	0.05	0.34	0.34	0.02	0.31	0.31
Sat Flow, veh/h	1767	427	1211	1711	598	979	1781	1870	1476	1781	2831	639
Grp Volume(v), veh/h	197	0	69	14	0	29	52	455	18	19	359	350
Grp Sat Flow(s),veh/h/ln	1767	0	1639	1711	0	1577	1781	1870	1476	1781	1763	1708
Q Serve(g_s), s	6.7	0.0	2.4	0.5	0.0	1.1	1.2	13.6	0.5	0.5	11.2	11.3
Cycle Q Clear(g_c), s	6.7	0.0	2.4	0.5	0.0	1.1	1.2	13.6	0.5	0.5	11.2	11.3
Prop In Lane	1.00		0.74	1.00		0.62	1.00		1.00	1.00		0.37
Lane Grp Cap(c), veh/h	278	0	258	87	0	80	295	629	497	265	549	532
V/C Ratio(X)	0.71	0.00	0.27	0.16	0.00	0.36	0.18	0.72	0.04	0.07	0.65	0.66
Avail Cap(c_a), veh/h	832	0	771	671	0	619	631	1761	1389	644	1660	1608
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.5	0.0	23.6	28.9	0.0	29.2	14.6	18.5	14.2	15.4	19.0	19.0
Incr Delay (d2), s/veh	3.3	0.0	0.6	0.9	0.0	2.7	0.3	1.6	0.0	0.1	1.3	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	0.9	0.2	0.0	0.5	0.5	5.6	0.2	0.2	4.4	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.8	0.0	24.2	29.8	0.0	32.0	14.8	20.1	14.2	15.6	20.3	20.4
LnGrp LOS	C	A	C	C	A	C	B	C	B	B	C	C
Approach Vol, veh/h	266			43			525			728		
Approach Delay, s/veh	27.6			31.3			19.4			20.2		
Approach LOS	C			C			B			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.9	26.8		16.5	8.3	28.3		10.5				
Change Period (Y+Rc), s	* 6.9	* 6.9		6.5	* 6.9	* 6.9		7.3				
Max Green Setting (Gmax), s	* 15	* 60		30.0	* 15	* 60		25.0				
Max Q Clear Time (g_c+I1), s	3.2	13.3		8.7	2.5	15.6		3.1				
Green Ext Time (p_c), s	0.1	5.3		1.0	0.0	3.3		0.1				

Intersection Summary

HCM 6th Ctrl Delay	21.5
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection												
Int Delay, s/veh	4.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	2	2	83	13	90	11	212	116	87	223	5
Future Vol, veh/h	2	2	2	83	13	90	11	212	116	87	223	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	4	2	2	2	2	2	2	2	2
Mvmt Flow	2	2	2	90	14	98	12	230	126	95	242	5
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	808	815	245	754	754	293	247	0	0	356	0	0
Stage 1	435	435	-	317	317	-	-	-	-	-	-	-
Stage 2	373	380	-	437	437	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.14	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.14	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.14	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.536	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	299	312	794	323	338	746	1319	-	-	1203	-	-
Stage 1	600	580	-	690	654	-	-	-	-	-	-	-
Stage 2	648	614	-	594	579	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	231	280	794	295	303	746	1319	-	-	1203	-	-
Mov Cap-2 Maneuver	231	280	-	295	303	-	-	-	-	-	-	-
Stage 1	593	527	-	682	646	-	-	-	-	-	-	-
Stage 2	544	607	-	536	526	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	16.2		17.3			0.3			2.3			
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR					
Capacity (veh/h)	1319	-	-	328 296 746	1203	-	-					
HCM Lane V/C Ratio	0.009	-	-	0.02 0.353 0.131	0.079	-	-					
HCM Control Delay (s)	7.8	0	-	16.2 23.6 10.6	8.2	0	-					
HCM Lane LOS	A	A	-	C C B	A	A	-					
HCM 95th %tile Q(veh)	0	-	-	0.1 1.5 0.5	0.3	-	-					