Transportation Impact Analysis

Courthouse Plaza

City of Fairfax, Virginia

December 20, 2024

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Executive Summary

This report presents the findings of a Transportation Impact Analysis (NOT a Chapter 870 Study) conducted for the 10.4-acre Courthouse Plaza site in the City of Fairfax, Virginia. This study was developed in accordance with VDOT and City of Fairfax guidelines.

The document is prepared in accordance with best professional practice and standards that 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 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 ten (10) intersections, of which eight (8) 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

It is anticipated by 2028, the development project is planned to replace approximately 25k SF of retail with approximately 315 multifamily units (Full-Build) in a single residential building on the west side of the property with approximately 67k SF of existing retail (including a supermarket and pad sites) to remain and up to 13,000 SF of ground floor retail introduced in the residential building.

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 Monday, May 22, 2023. 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. No future phases are included with the application submission.

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

- **Existing (2023) Scenario** – assumes existing traffic volume based on the counts.
- **Future without Development 2028** – assumes existing traffic volume plus additional traffic due to a 1% annual growth rate.
- **Future with Development 2028 (Full-Build)** – assumes Future without Development 2028 traffic plus traffic generated by the proposed Courthouse Plaza Development (Full Build). 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

- 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.
- At full build-out (2028), the proposed development, will generate approximately 127 AM peak hour trips, 146 PM peak hour trips and 1,696 trips on a typical weekday per ITE Trip General 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.
- Please note that the application has evolved throughout the process, and as such the TIA has evolved to reflect the current plans. As compared to the previous TIA submission dated May 17, 2024, the development program has changed to include up to 13,000 SF of retail within the proposed building. The proposed access points to the development are unchanged, however, internally Street 2 has been extended to the north to intersect Democracy Lane. This configuration achieves the City's Comprehensive Plan vision of a grid system of streets within the Courthouse Plaza site. Lastly, in the latest submission, the analysis scenario with an adjacent separate Special Use Permit (SUP) application which included a coffee shop has been removed from the TIA, as that SUP is no longer being pursued and is no longer applicable.

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 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 (Full-Build 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.

- The internal intersections within the development with the introduced Street 1 and Street 2 operate with minimal delays and queuing.

Introduction

This report presents the findings of a Comprehensive Transportation Analysis conducted for the 10.4-acre Courthouse Plaza Development in City of Fairfax, Virginia ("the City").

The 10.4-acre site consists of two (2) parcels (Tax Map # 57-2-20-004 D and 57-2-20-003A). 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 May 22, 2023. 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.
- 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 (2023) and future without development (2028), and future with development (full-build, 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 located 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. It is noted that the application area shown is for illustrative purposes only as the plan has evolved throughout the application process for the site. Please see the site plan for the most recent application area.

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.

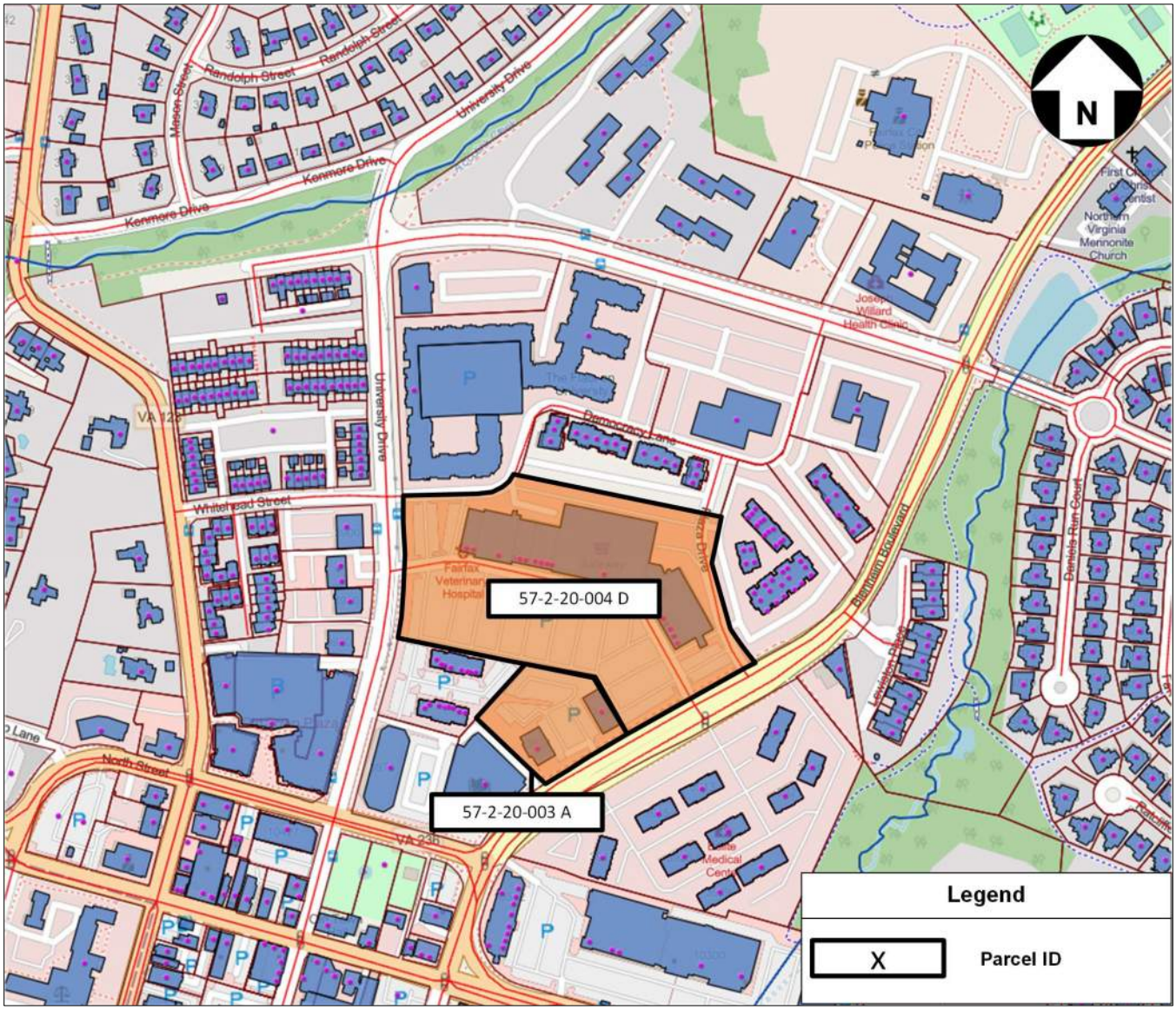

Figure 2: Parcel Map
Source: City of Fairfax Real Estate Database

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.

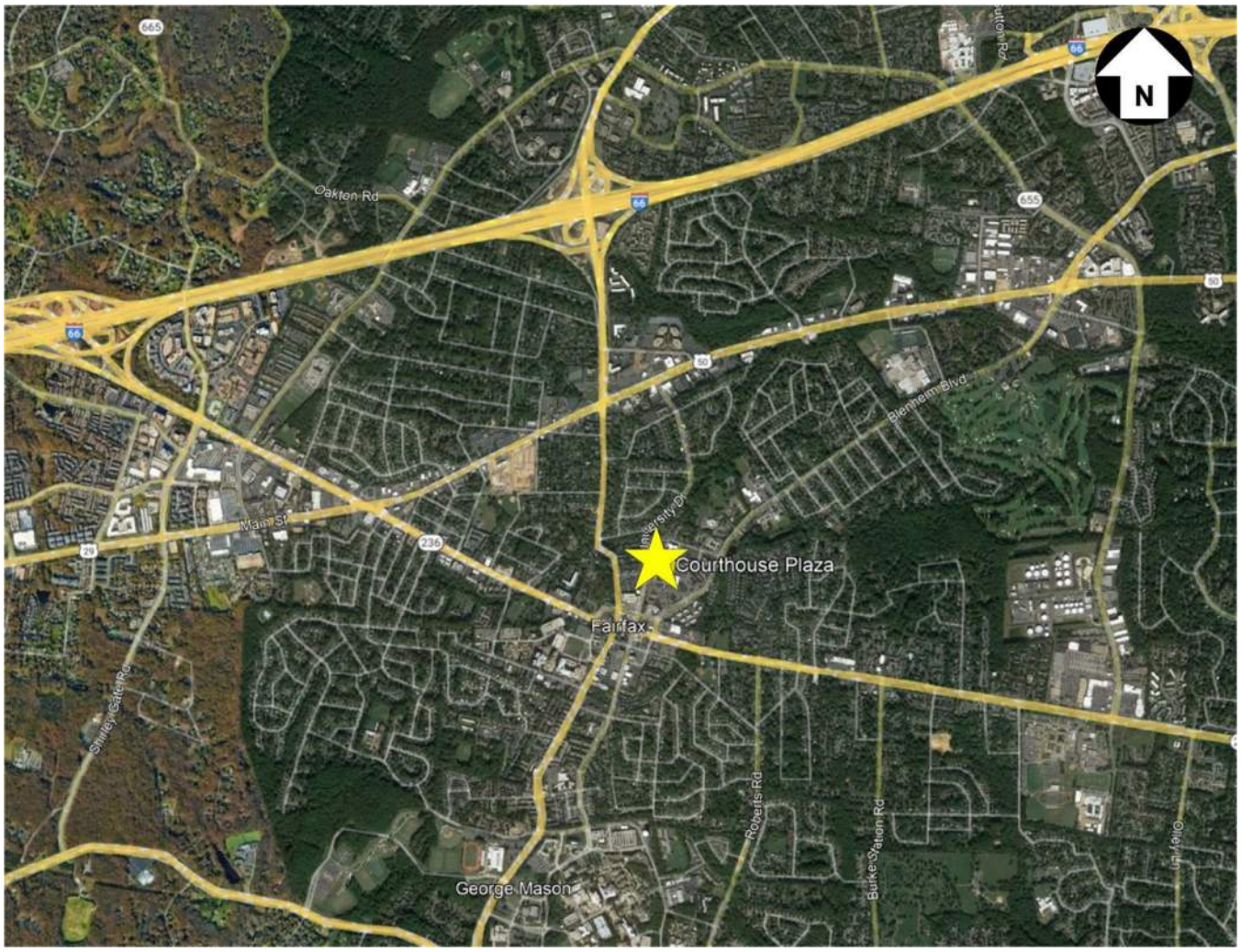

Figure 3: Regional Location

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. It is observed that University Drive and Layton Hall Drive are envisioned to be Active Streets.

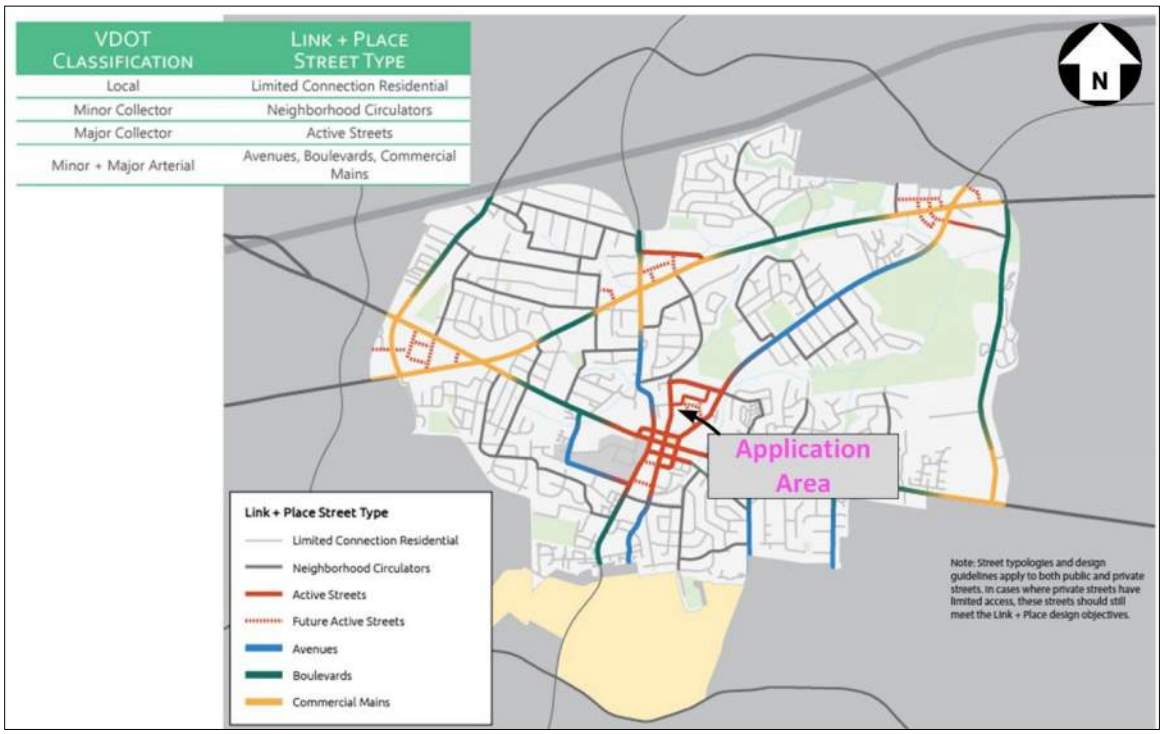

Figure 4: Comprehensive Plan – Transportation Recommendations
Source: City of Fairfax 2035 Comprehensive Plan (Appendix B: Transportation)

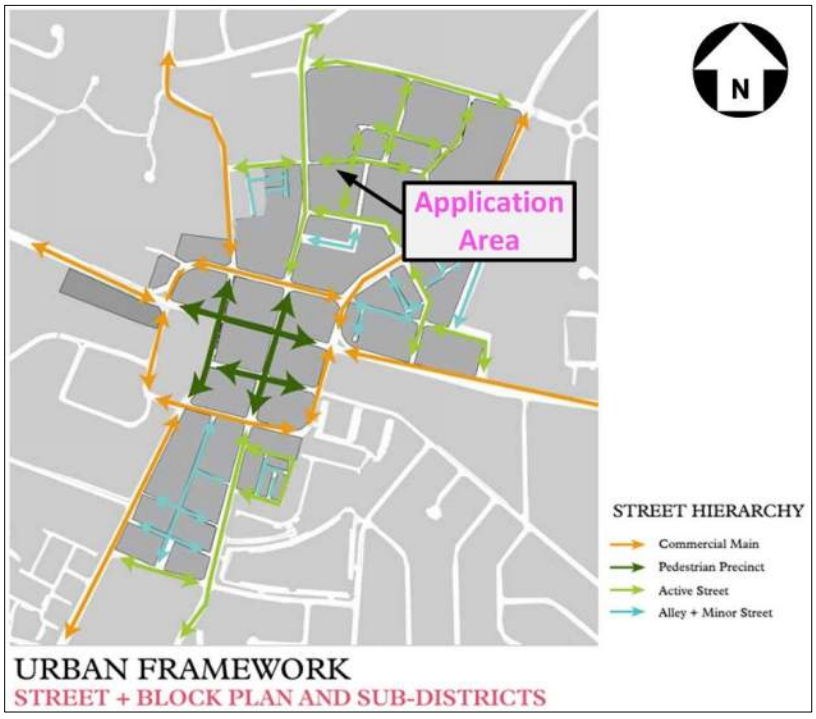

Figure 5: Street Hierarchy Map (City of Fairfax Old Town Small Area Plan)

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, one two-way left turn lane (TWLTL), and buffered bike lanes in both travel directions. It is anticipated that the improvements could be made within the existing ROW and the proposed development would not prevent this improvement from being implemented in the future. The estimated schedule for construction to be complete is end of 2025. Figure 6 shows the project plans with the three-lane configuration on University Drive with bicycle facilities.

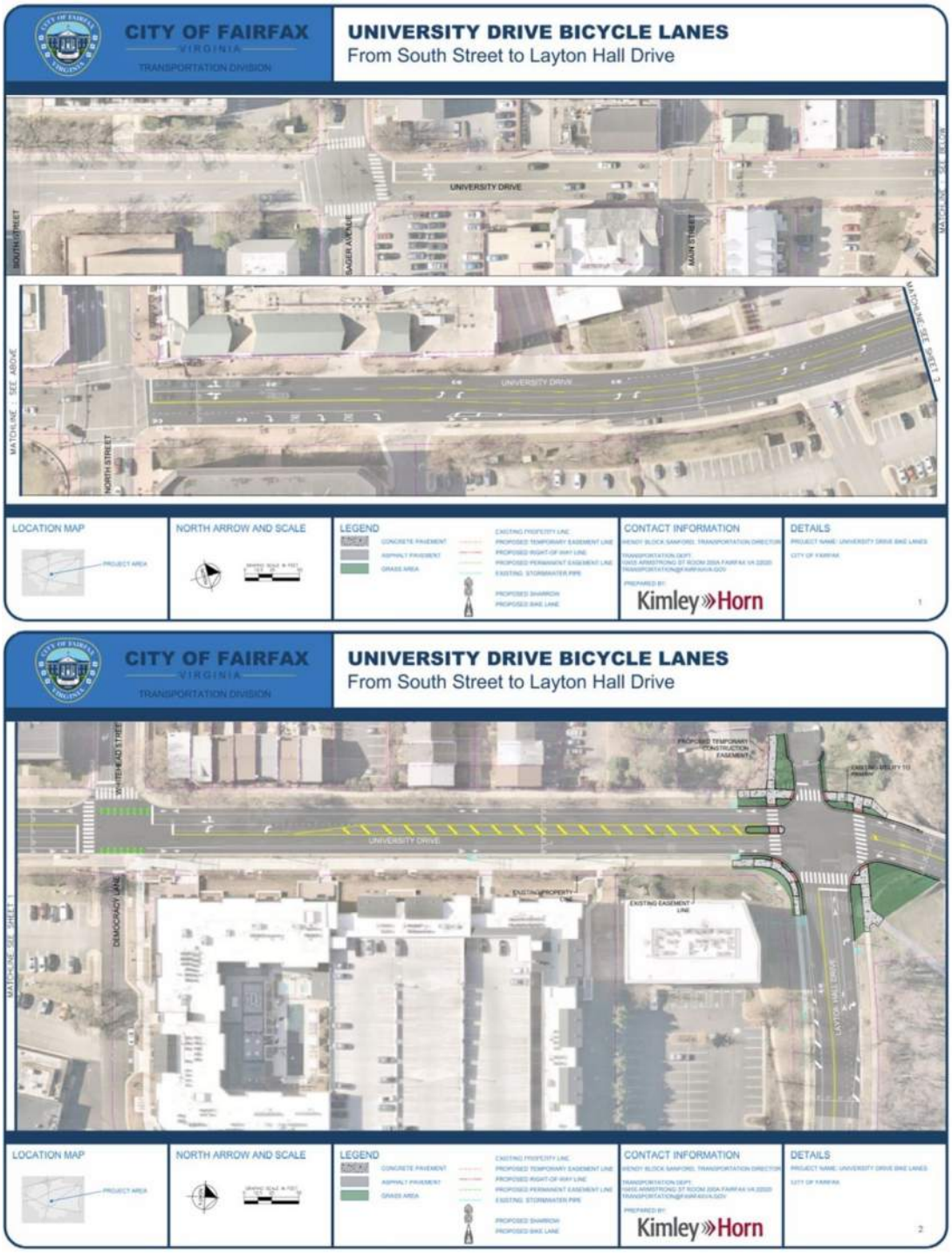

Figure 6: University Drive Spine (City of Fairfax Project)

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.

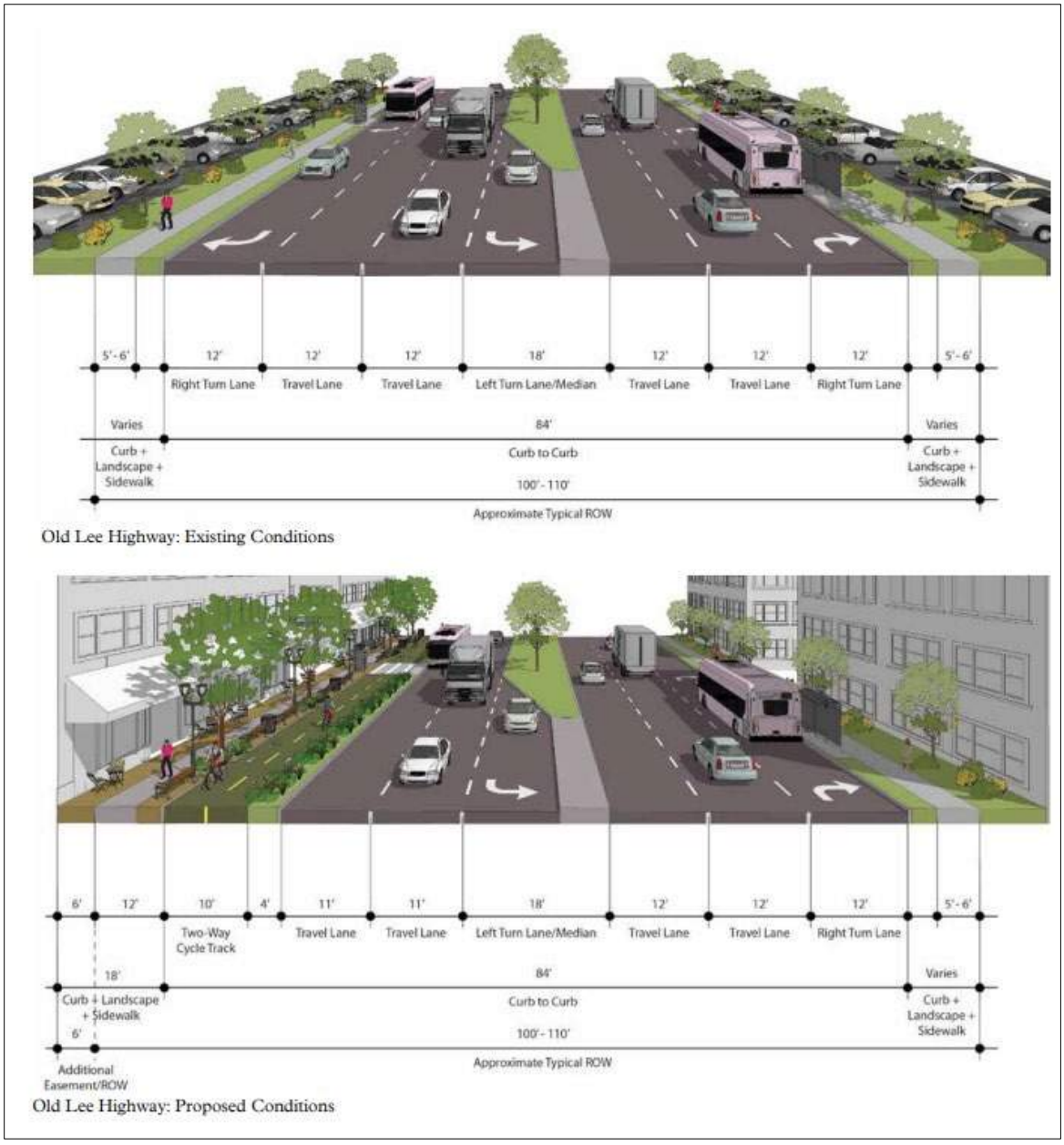

Figure 7: Blenheim Boulevard (Old Lee Highway)Multimodal Improvements (Source: Old Town Small Area Plan)

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.

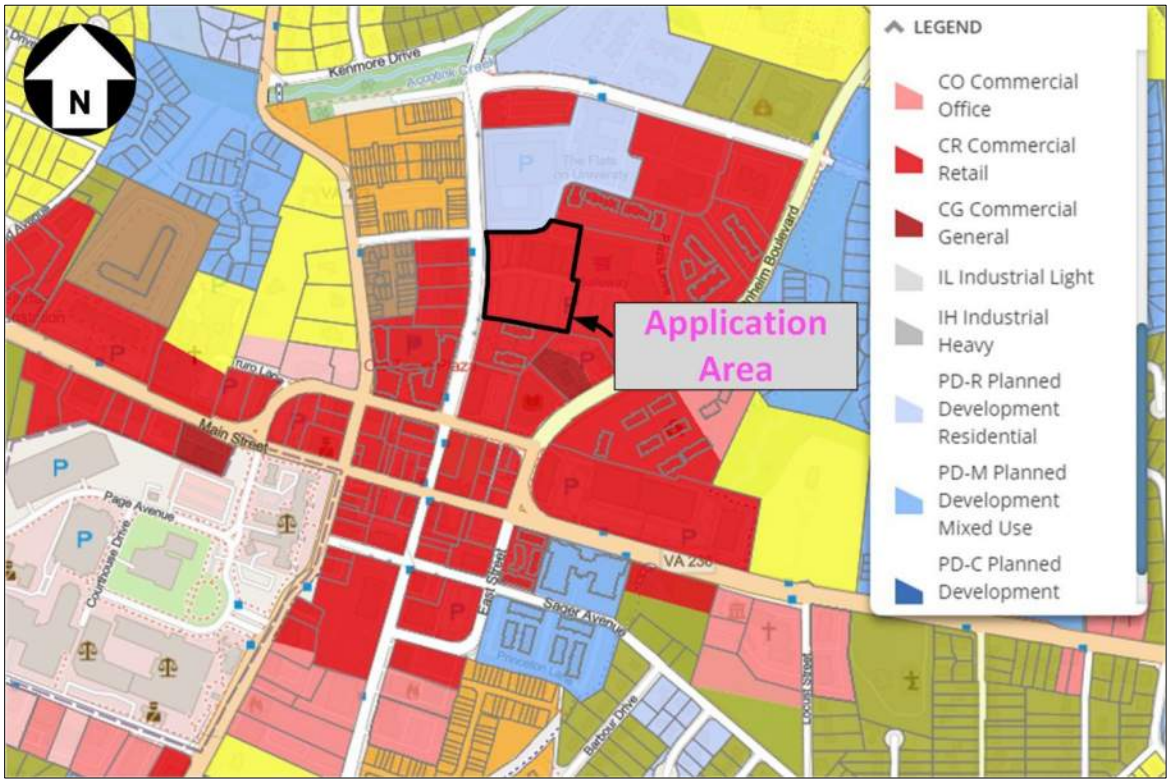

Figure 8: City of Fairfax Zoning Map

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.

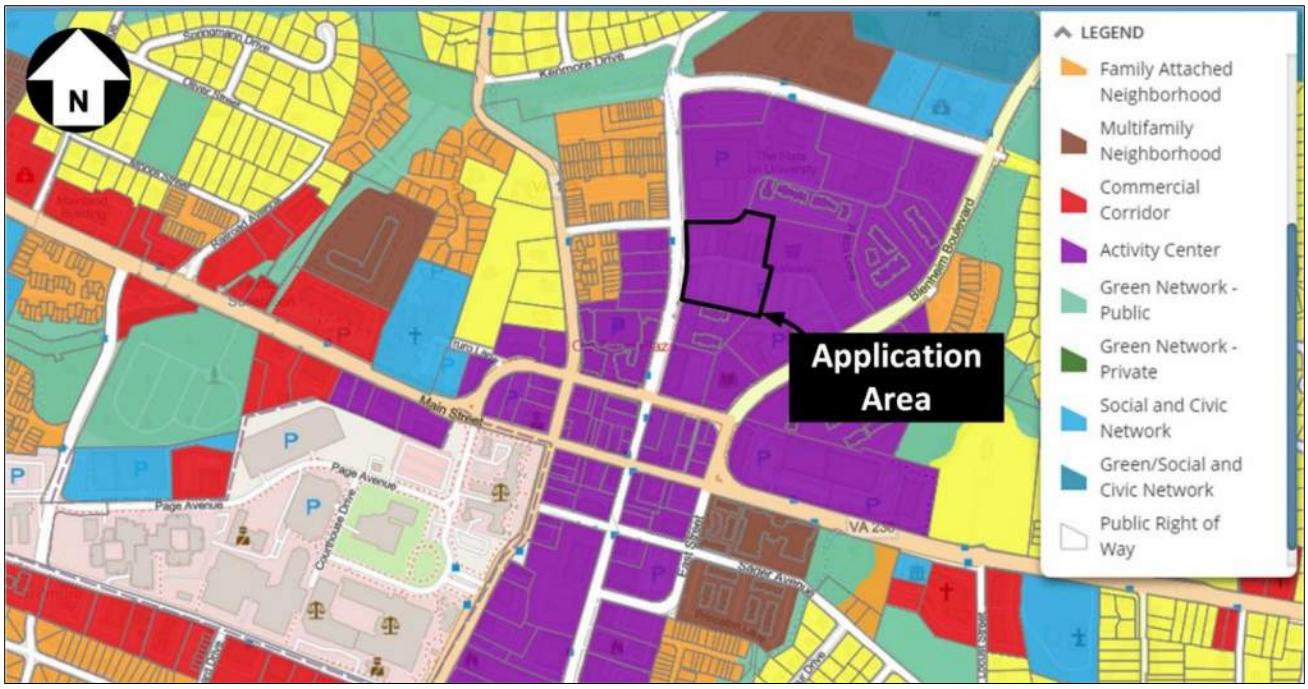

Figure 9: City of Fairfax Future Land Use

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. Please note that Intersection 3 is no longer included as it is not required for the proposed development.

1. Blenheim Boulevard and Street 3 / Plaza Drive
2. Blenheim Boulevard and Fairfax Commons Entrance
3. Blenheim Boulevard and Street 1 (**Access No Longer Pursued**)
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

Existing Roadways

The study area includes four (4) intersections along Blenheim Boulevard, three (3) intersections along University Drive, one (1) intersection on Democracy Lane and one (1) intersection along Layton Hall Drive. Figure 10 shows the study intersections. It is noted that access at Study Intersection 3 (Blenheim Boulevard and Street 1) is no longer pursued, and the intersection is shown in order to be consistent with the scoping document.

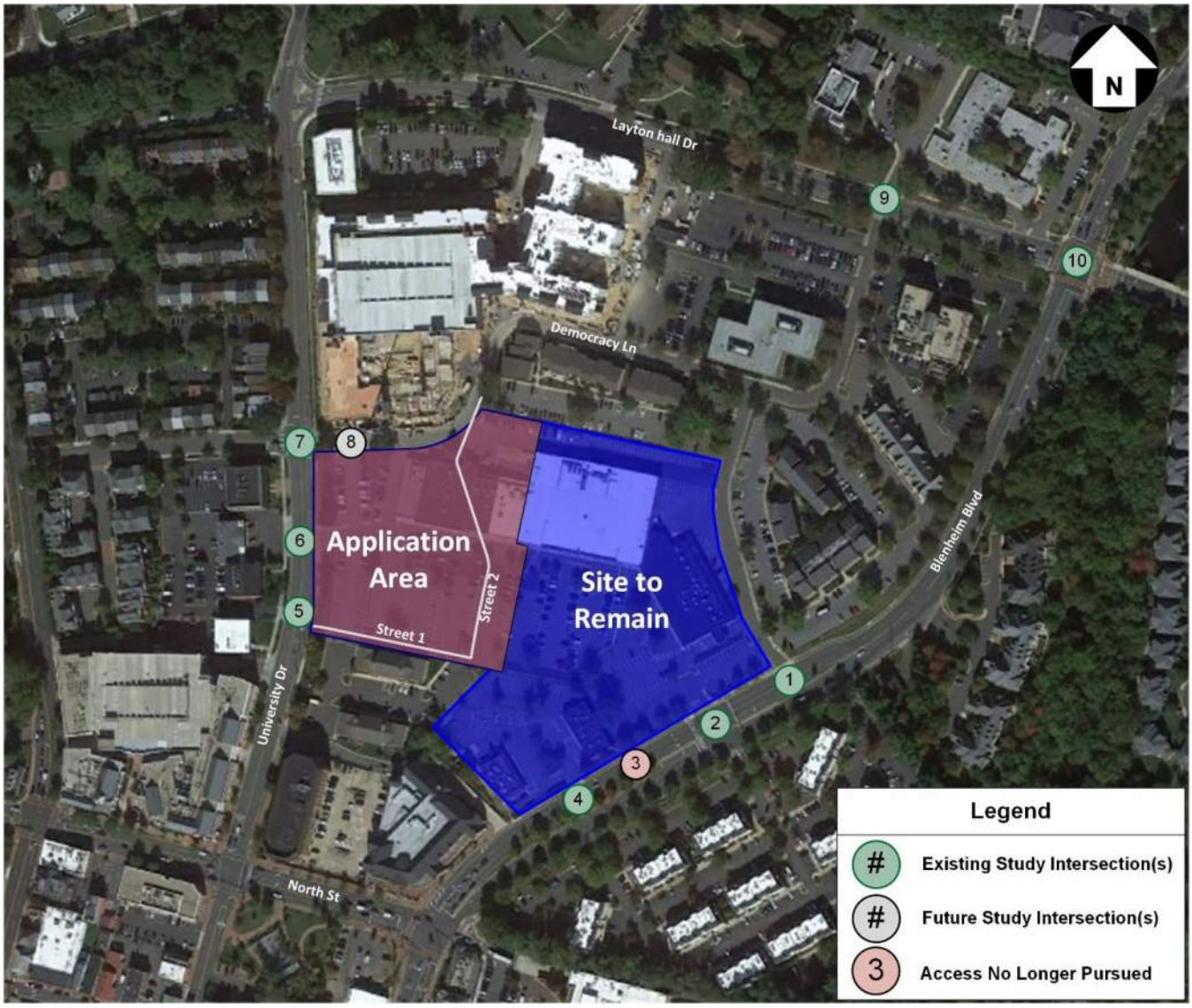

Figure 10: Study Intersections

Existing Conditions (2023)

Existing Transit Services

Four (4) bus routes operated by City of Fairfax: CUE system currently serve the site area. The system provides scheduled, 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 are shown on Figure 11. It is noted that only the CUE system serves the immediate site area. WMATA bus route 29K originating from King Street-Old Town metro station serves the area via the University Drive & Main Street bus stop on Main Street.

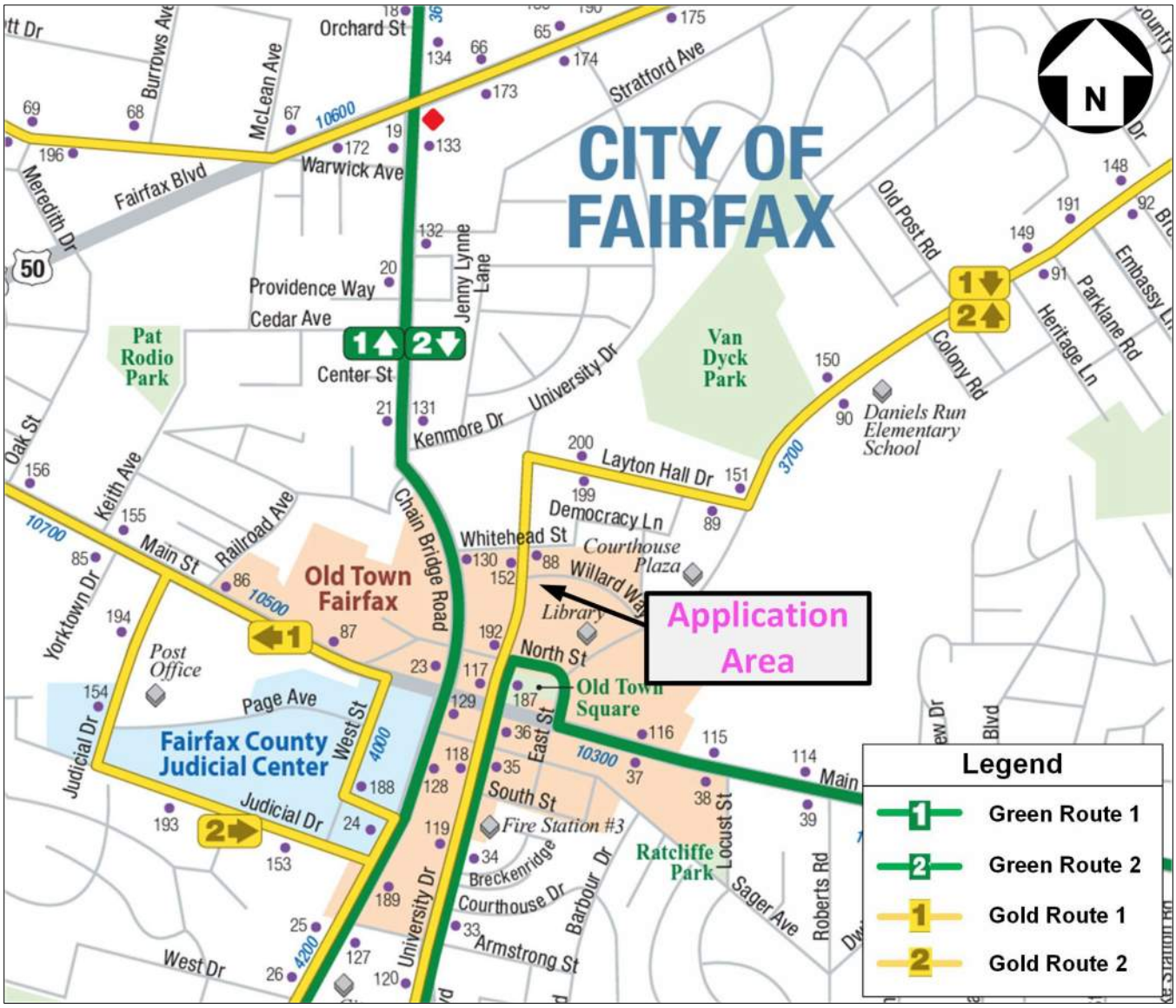

Figure 11: Existing CUE Bus Routes
Source: cuebus.org

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.

Bus Stop Assessment

A total of 11 bus stops currently exist along the frontage of 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.

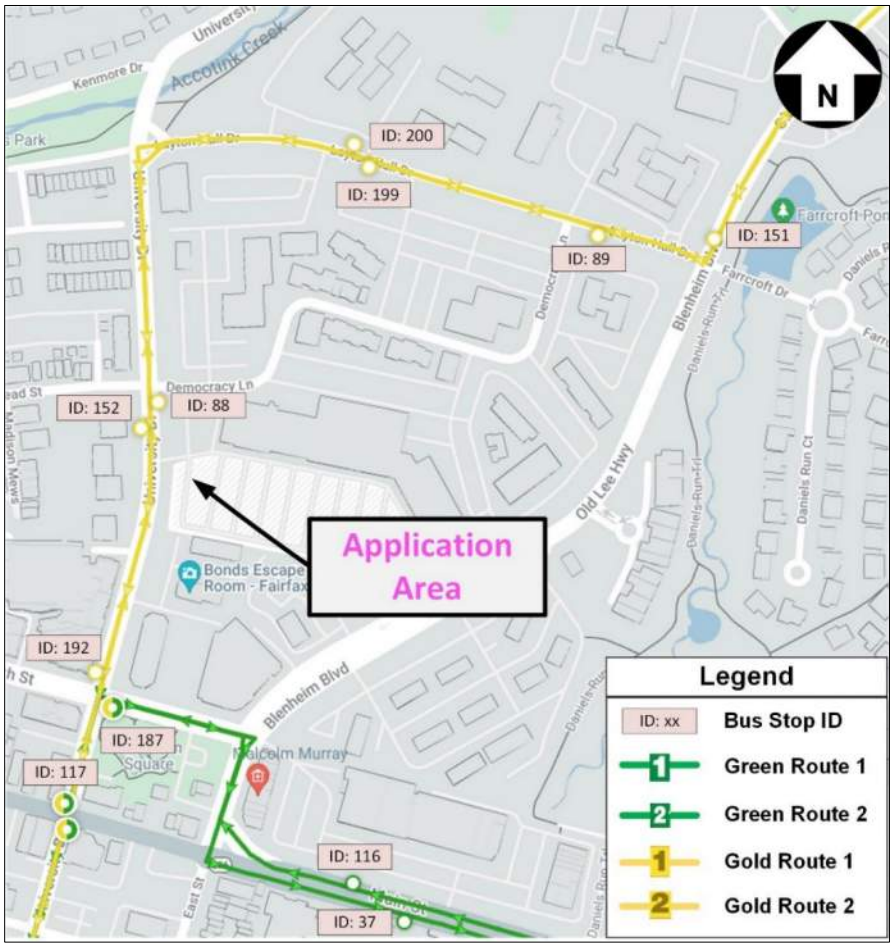

Figure 12: Bus Stops in Vicinity of the Site
Source: cuebus.org

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	Gold 1	●	●	●	●	●	●	●
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	Green 1	●	●	●				●
University Dr at North St	187	Gold 2, Green 2, 29K	●		●				
Main Street Market Place	116	29K, Green 1	●		●	●	●	●	●
Main St at East St	37	29K, Green 2	●	●	●	●	●	●	●

As shown in Table 1, all of 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 13, it is evident that 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 available. It is worth noting that these bike facilities cater to cyclists along this specific route, offering designated spaces for safe and convenient biking. However, additional bike paths or lanes at other locations within the area may be necessary to further encourage cycling as a viable mode of transportation and promote connectivity for cyclists across the region. Lastly, three (3) Capital Bikeshare locations in the vicinity of the application area provide further opportunities for bicycle travel to/from the site.

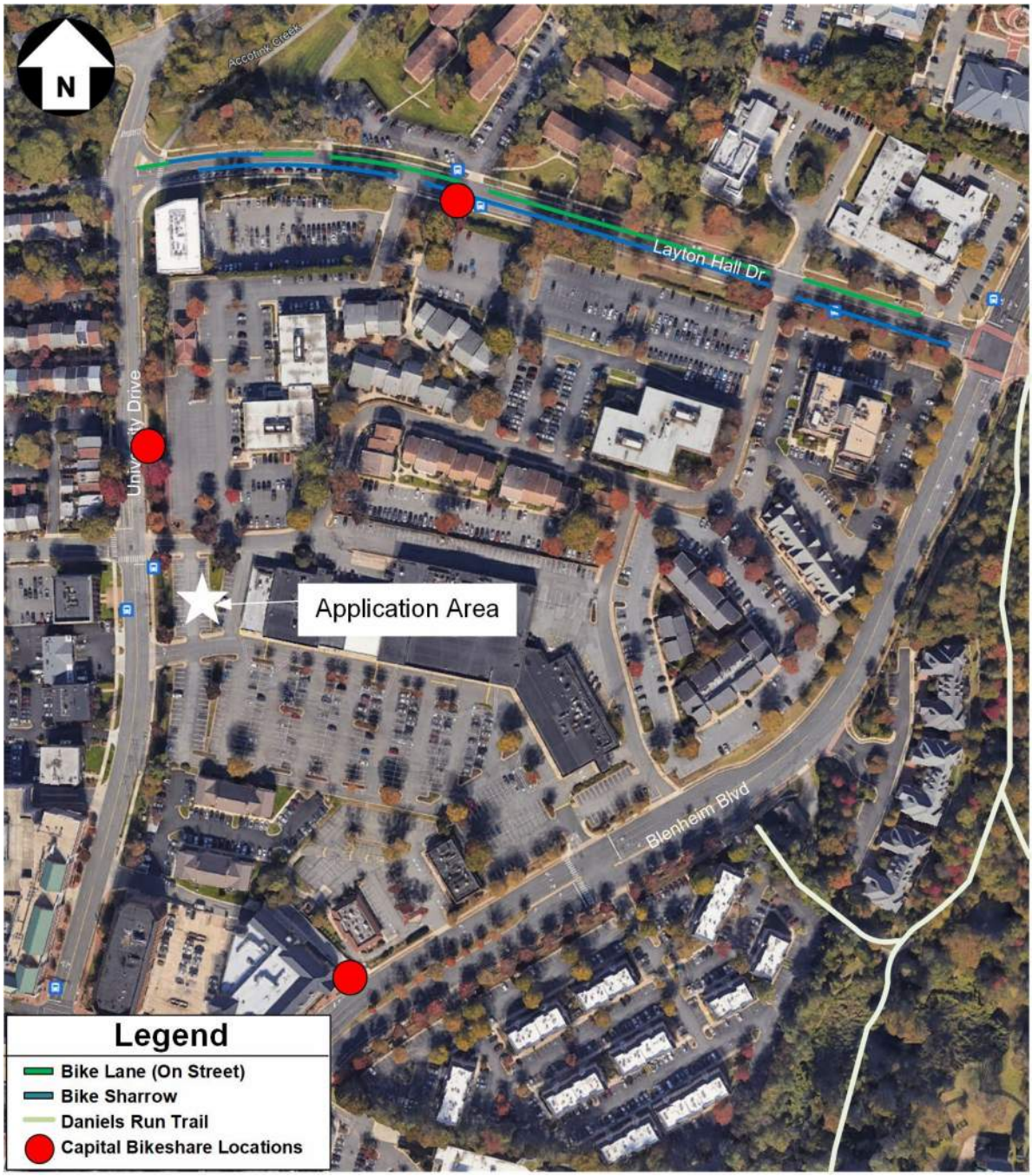

Figure 13: Existing Conditions – Bicycle Facilities

As observed, bicycle facilities currently exist on Layton Hall Drive which connects to Daniels Run Trail.

Existing Bicycle Volumes

Figure 14 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). 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.

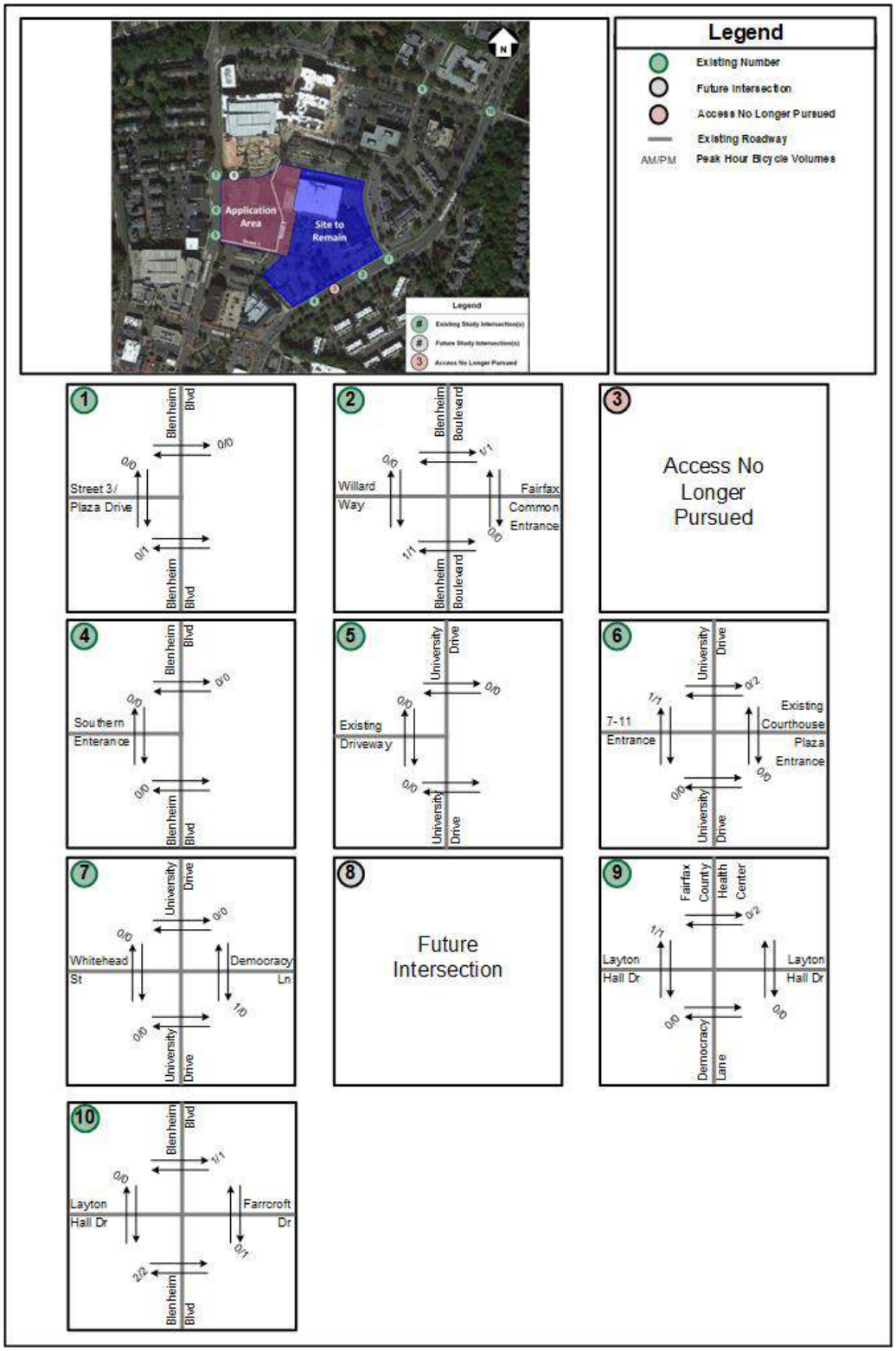

Figure 14: Existing Bike Volumes

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 15 shows the existing pedestrian facilities in the site study area.

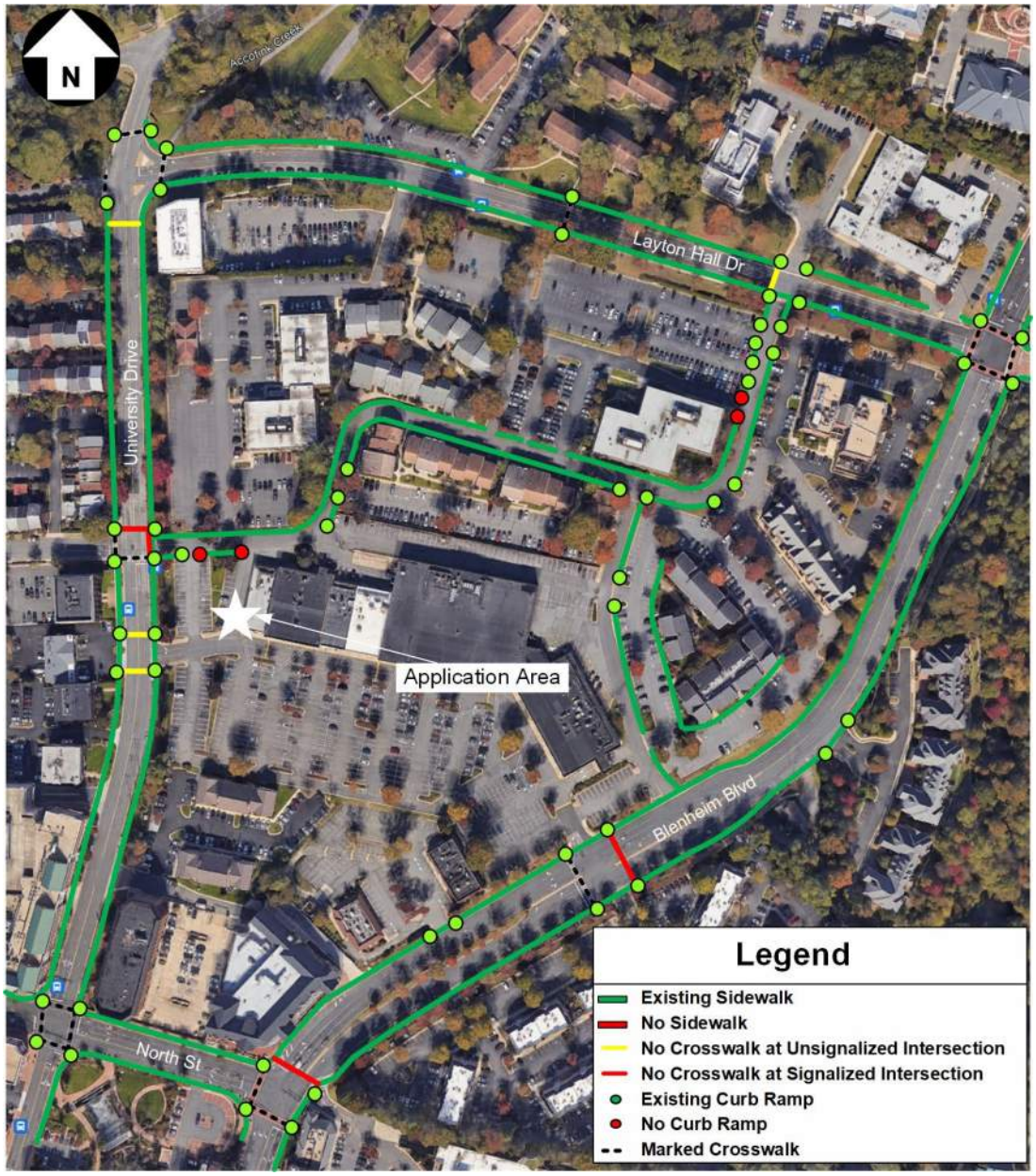

Figure 15: Existing Pedestrian Facilities

Existing Pedestrian Volumes

Figure 16 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). For the purposes of this analysis, no inherent growth is assumed for pedestrian trips.

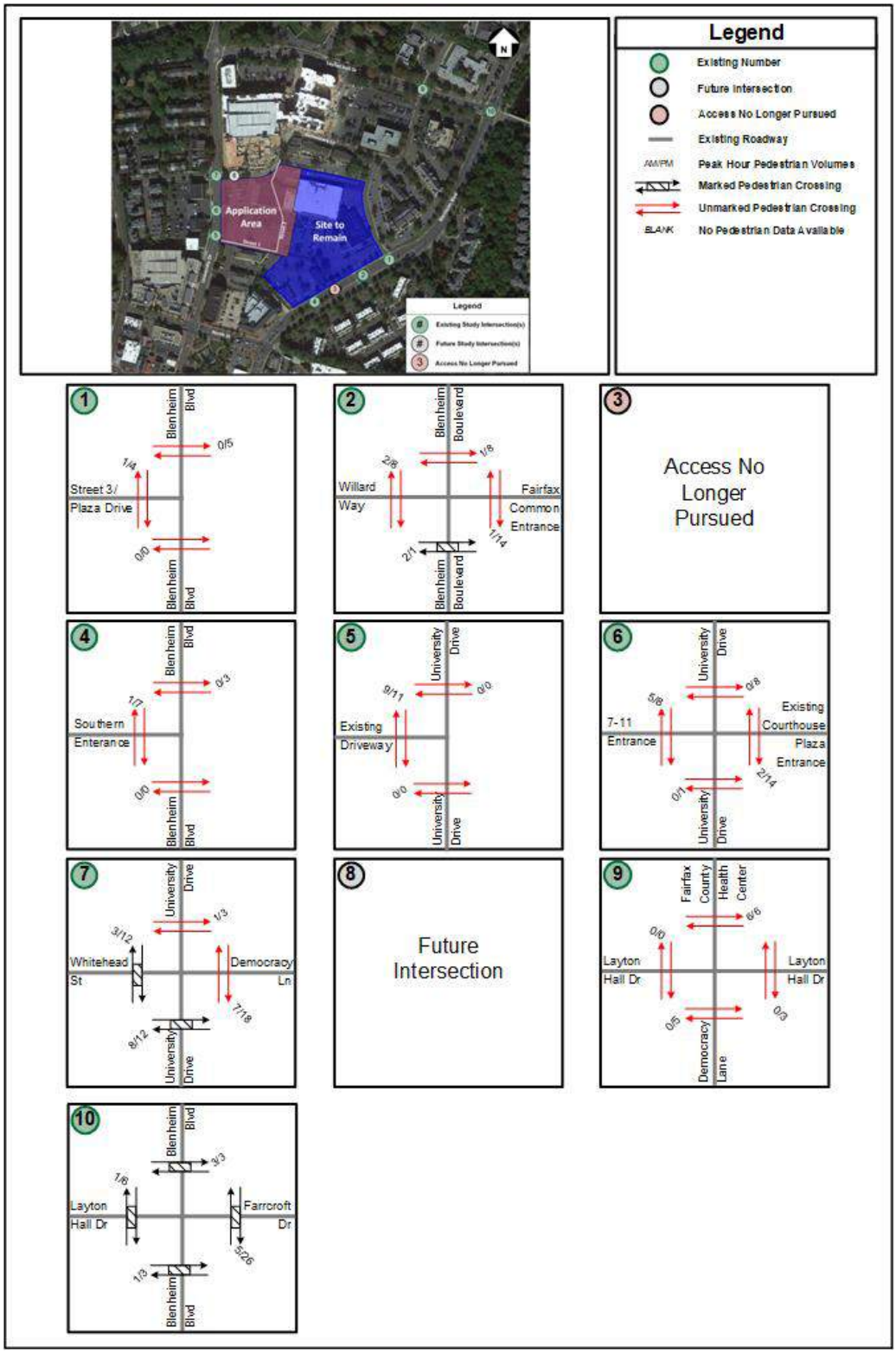

Figure 16: Peak Hour Pedestrian Volumes

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, provide connectivity to the existing pedestrian infrastructure surrounding the site. Figure 17 shows the pedestrian paths from the site to selected surrounding land uses in the vicinity of the site.

Figure 17: 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 All-Way Stop Controlled 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

In order 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 18 shows the Existing Peak Hour Scooter Volumes. As shown, there were no scooters observed in the peak hours.

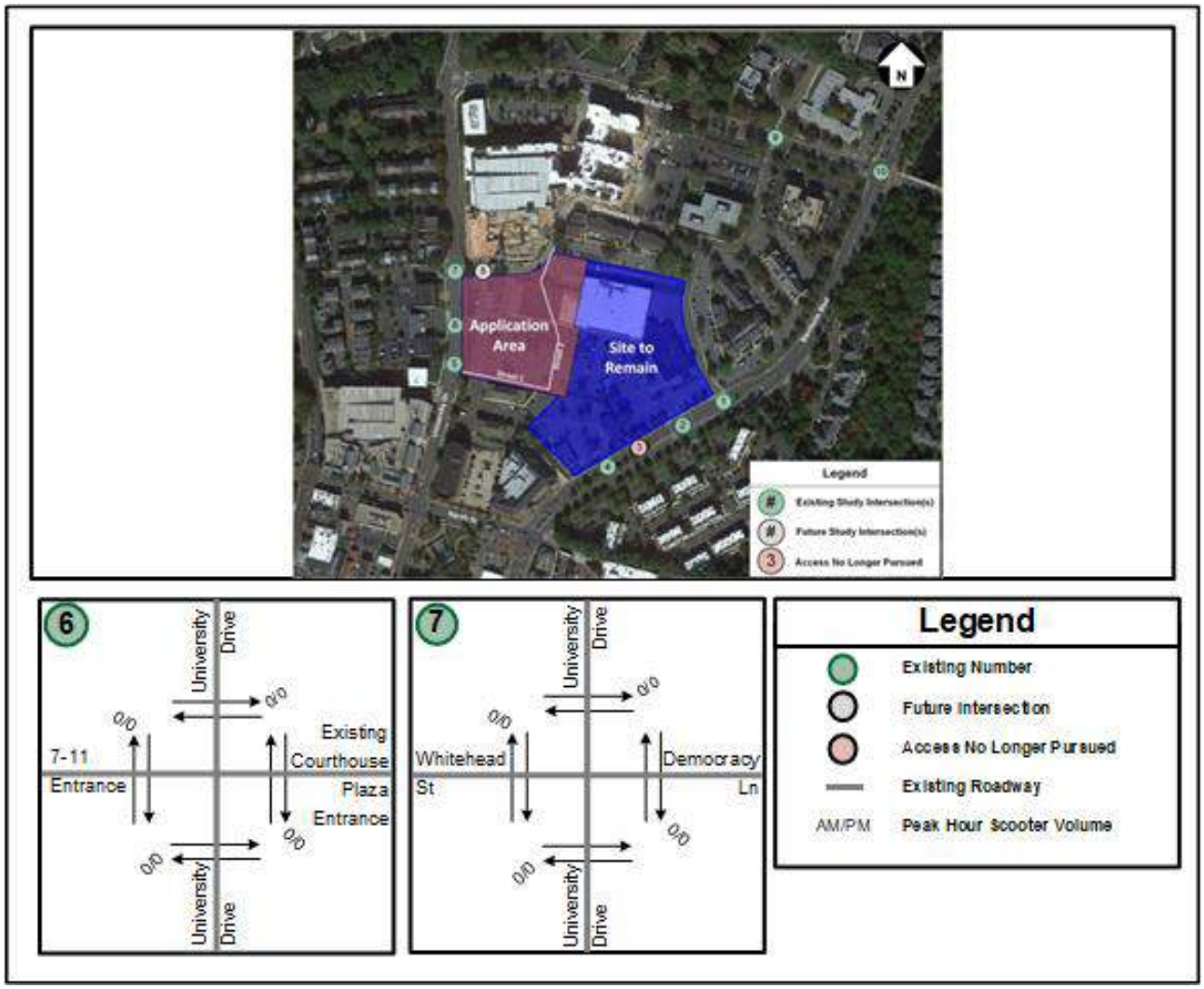

Figure 18: Existing Peak Hour Scooter Volumes

Existing Bus Volumes

Existing Bus Volumes for the study area intersections along University Drive are shown in Figure 19.

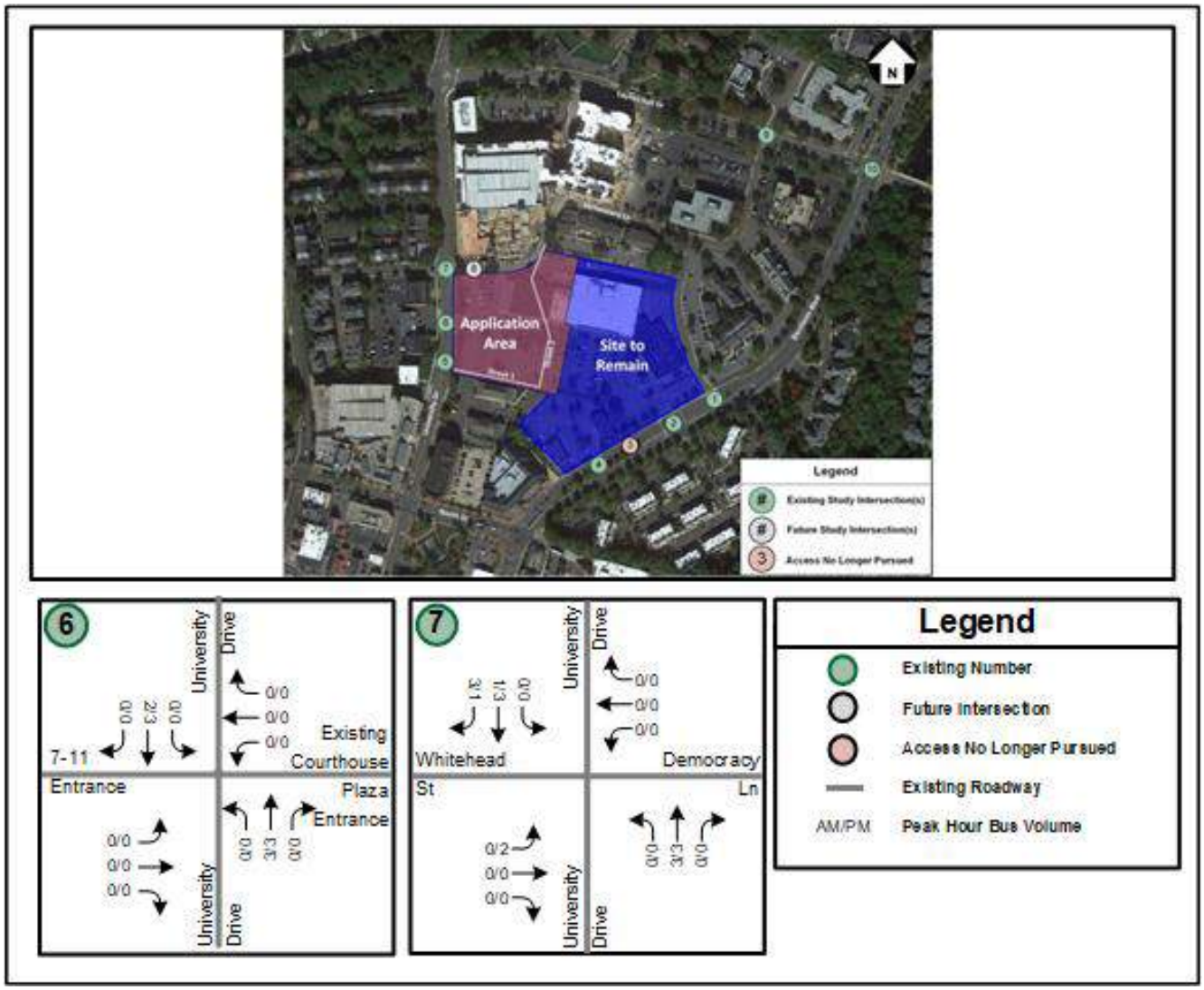

Figure 19: Existing Peak Hour Bus Volumes

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 20.

Table 2: Existing Road Network (Per published VDOT 2019 AADT Data)

Roadway	RTE #	VDOT Classification	Posted Speed Limit (mph)	AADT (vpd)	k-factor
University Drive	6627	Major Collector	25	11,000	8.8%
North St	236	Other Principal Arterial	25	20,000	9.0%
Blenheim Blvd	6628	Minor Arterial	30	17,000	9.7%

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 2018 to December 2022. The crash data from VDOT is provided in Appendix C.

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

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

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	1	1	0	2	0.08
6	University Drive at Existing Courthouse Plaza Entrance/7-11 Entrance	9,510	2	1	0	3	0.17
7	University Drive at Democracy Ln/Whitehead St	9,390	6	1	0	7	0.41
9	Layton Hall Drive at Democracy Ln	4,450	3	0	0	3	0.37
10	Blenheim Blvd at Layton Hall Dr	14,210	6	2	0	8	0.31

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

Intersection Crash Analysis	Crash Data for the Intersection of Blenheim Blvd and Fairfax Commons Entrance (January 2018 - December 2022)						
	2018	2019	2020	2021	2022	Total	Relative Frequency
Crash Severity							
Fatal Collision (Type K)							0.00%
Injury Collision (Type A, B, and C)		1				1	50.00%
Type A							
Type B		*1*				*1*	
Type C							
Property Damage Only (Type PDO)				1		1	50.00%
TOTAL*		***1***		***1***		***2***	***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							0.00%
Angle Collision		1		1		2	100.00%
Backed Into							0.00%
Pedestrian Collision							0.00%
Deer/Animal							0.00%
Other							0.00%
TOTAL*		***1***		***1***		***2***	***100.00%***
Other Factors							
Distracted Driver							0.00%
Alcohol**							0.00%
Work-Zone							0.00%
Inclement Weather (Non-Dry)				1		1	50.00%
Speeding		1				1	50.00%
Pedestrian Injury***							N/A
Time of Day							
AM Peak Period (6 - 10 AM)							*0.00%*
Off Peak - Daytime (10 AM - 3 PM)							*0.00%*
PM Peak Period (3 - 7 PM)		*1*		*1*		*2*	*100.00%*
Off Peak - Nighttime (7 PM - 6 AM)							*0.00%*
CALCULATED CRASH RATE***						***0.08***	***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 13395 ADT.

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

The intersection of Blenheim Blvd and Fairfax Commons Entrance experienced a total of 2 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 those 2 crashes both were angle collisions. Of the 2 crashes, one crash occurred during inclement weather (non-dry conditions), and one caused by speeding. Both the accidents occurred during the PM Peak Period. The intersection had a crash rate of 0.08 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)

Intersection Crash Analysis	Crash Data for the Intersection of University Drive and Existing Courthouse Plaza Entrance/7-11 Entrance (January 2018 - December 2022)						
	2018	2019	2020	2021	2022	Total	Relative Frequency
Crash Severity							
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***		***2***			***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							0.00%
Angle Collision	1		2			3	100.00%
Backed Into							0.00%
Pedestrian Collision							0.00%
Deer/Animal							0.00%
Other							0.00%
TOTAL*	***1***		***2***			***3***	***100.00%***
Other Factors							
Distracted Driver							0.00%
Alcohol**							0.00%
Work-Zone							0.00%
Inclement Weather (Non-Dry)			1			1	33.33%
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*	*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***						***0.17***	***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 experienced a total of 3 crashes during the five-year study period, as depicted in the table above. There was one “Injury Collision (IC) and two PDO crashes “Property Damage Only (PDO)”. All three crashes involved angled collisions. Of the 3 crashes, one crash occurred during inclement weather (non-dry conditions). Two out of the three crashes occurred during the PM peak period and one during Off Peak Daytime. The intersection had a crash rate of 0.17 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)

Intersection Crash Analysis	Crash Data for the Intersection of University Drive and Democracy Ln/Whitehead St (January 2018 - December 2022)						
	2018	2019	2020	2021	2022	Total	Relative Frequency
Crash Severity							
Fatal Collision (Type K)							0.00%
Injury Collision (Type A, B, and C)					1	1	14.29%
Type A							
Type B					*1*	*1*	
Type C							
Property Damage Only (Type PDO)	1	3	1	1		6	85.71%
TOTAL*	***1***	***3***	***1***	***1***	***1***	***7***	***100.00%***
Crash Type							
Fixed Object/ Single-Vehicle Crash	1					1	14.29%
Head-On							0.00%
Sideswipe / Same Direction		1				1	14.29%
Sideswipe / Opposite Direction							0.00%
Rear-End Collision			1			1	14.29%
Angle Collision		2		1	1	4	57.14%
Backed Into							0.00%
Pedestrian Collision							0.00%
Deer/Animal							0.00%
Other							0.00%
TOTAL*	***1***	***3***	***1***	***1***	***1***	***7***	***100.00%***
Other Factors							
Distracted Driver							0.00%
Alcohol**							0.00%
Work-Zone							0.00%
Inclement Weather (Non-Dry)	1				1	2	28.57%
Speeding							0.00%
Pedestrian Injury***							N/A
Time of Day							
AM Peak Period (6 - 10 AM)	*1*					*1*	*14.29%*
Off Peak - Daytime (10 AM - 3 PM)		*1*				*1*	*14.29%*
PM Peak Period (3 - 7 PM)		*2*	*1*		*1*	*4*	*57.14%*
Off Peak - Nighttime (7 PM - 6 AM)				*1*		*1*	*14.29%*
CALCULATED CRASH RATE***						***0.41***	***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 experienced a total of 7 crashes during the five-year study period, as depicted in the table above. There was one “Injury Collision (IC) and 6 PDO crashes “Property Damage Only (PDO)”. Furthermore, 57.14% were angle collisions and 14.29% rear-end collisions and 14.29% were caused by a fixed object or single vehicle crash. Inclement weather was a factor for two of the crashes. Four out of the seven crashes occurred during the PM Peak Period, one crash occurred during the AM Peak Period, and two crashes occurred during the Off-Peak Period: one during the daytime and the other during nighttime. The intersection had a crash rate of 0.41 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)

Intersection Crash Analysis	Crash Data for the Intersection of Layton Hall Drive and Democracy Ln (January 2018 - December 2022)						
	2018	2019	2020	2021	2022	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)	2				1	3	100.00%
TOTAL*	***2***				***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	33.33%
Angle Collision	1					1	33.33%
Backed Into							0.00%
Pedestrian Collision							0.00%
Deer/Animal							0.00%
Other	1					1	33.33%
TOTAL*	***2***				***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*	*33.33%*
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)	*1*					*1*	*33.33%*
CALCULATED CRASH RATE***						***0.37***	***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 4450 ADT.

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

The intersection of Layton Hall Drive and Democracy Ln experienced a total of 3 crashes during the five-year study period, as depicted in the table above. All three crashes were classified as Property Damage Only (PDO) crashes. Among these crashes, one involved an angle collision, and one involved a rear-end collision. 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)

Intersection Crash Analysis	Crash Data for the Intersection of Blenheim Blvd and Layton Hall Dr (January 2018 - December 2022)						
	2018	2019	2020	2021	2022	Total	Relative Frequency
Crash Severity							
Fatal Collision (Type K)							0.00%
Injury Collision (Type A, B, and C)	1	1				2	25.00%
Type A		*1*				*1*	
Type B	*1*					*1*	
Type C							
Property Damage Only (Type PDO)	1	3		2		6	75.00%
TOTAL*	***2***	***4***		***2***		***8***	***100.00%***
Crash Type							
Fixed Object/ Single-Vehicle Crash							0.00%
Head-On							0.00%
Sideswipe / Same Direction	1					1	12.50%
Sideswipe / Opposite Direction							0.00%
Rear-End Collision	1	2		2		5	62.50%
Angle Collision		2				2	25.00%
Backed Into							0.00%
Pedestrian Collision							0.00%
Deer/Animal							0.00%
Other							0.00%
TOTAL*	***2***	***4***		***2***		***8***	***100.00%***
Other Factors							
Distracted Driver							0.00%
Alcohol**							0.00%
Work-Zone							0.00%
Inclement Weather (Non-Dry)		1		1		2	25.00%
Speeding							0.00%
Pedestrian Injury***							N/A
Time of Day							
AM Peak Period (6 - 10 AM)	*1*			*2*		*3*	*37.50%*
Off Peak - Daytime (10 AM - 3 PM)	*1*	*2*				*3*	*37.50%*
PM Peak Period (3 - 7 PM)		*2*				*2*	*25.00%*
Off Peak - Nighttime (7 PM - 6 AM)							*0.00%*
CALCULATED CRASH RATE*						***0.31***	***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 experienced a total of 8 crashes during the five-year study period, as depicted in the table above. There were two “Injury Collision (IC) and six PDO crashes “Property Damage Only (PDO)”. Furthermore, 62.50% were rear-end collisions and 25% angle collisions. The other crash was categorized as a sideswipe: one in the same direction. Inclement weather was a factor for two of the crashes. Three crashes occurred during the AM Peak Period, two crashes occurred during the PM Peak Period, and three crashes occurred during the Off-Peak Daytime. The intersection had a crash rate of 0.31 MEV (million entering vehicles), and hence does not exhibit an elevated crash rate.

Intersection Analysis of Existing Conditions (2023)

The lane configuration observed at the existing study intersections within the study area is presented in Figure 20.

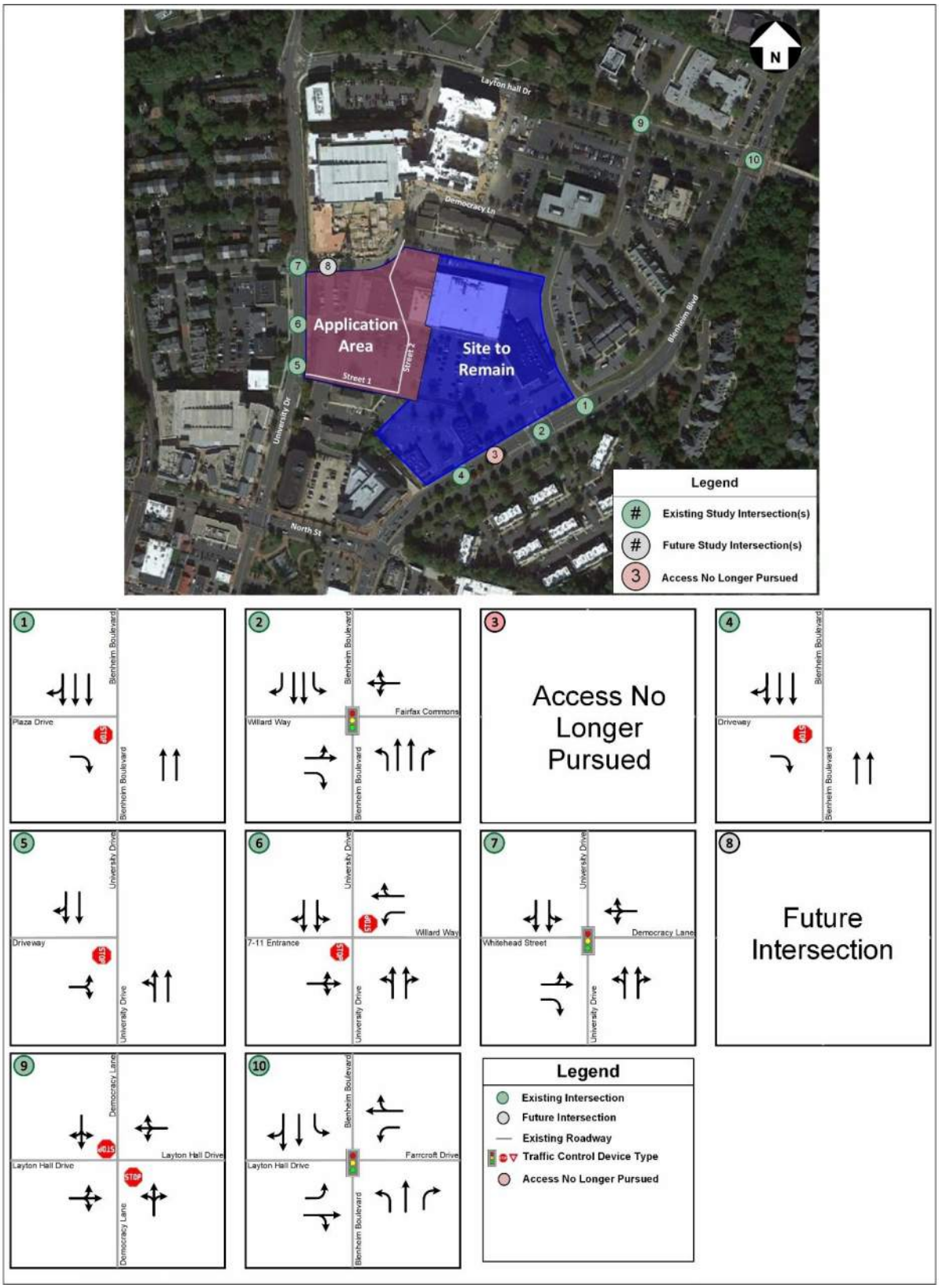

Figure 20: Existing 2023 – Lane Configuration

Existing Traffic Volumes

Turning movement counts were collected at the study area intersections on Thursday, March 30, 2023. 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.

The existing peak hour traffic volumes for the study area intersections are presented on Figure 21. The existing raw turning movement counts are included in Appendix D.

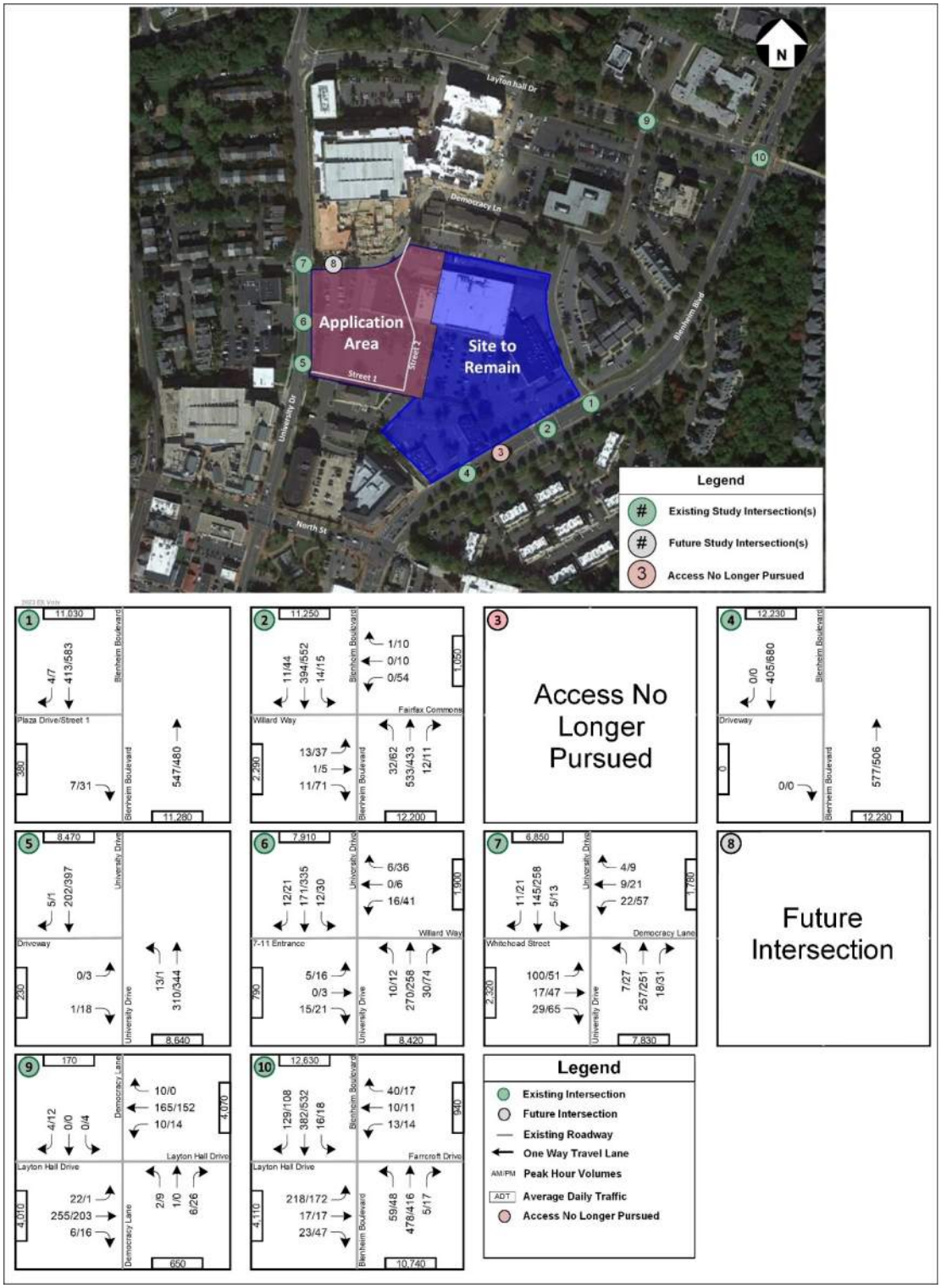

Figure 21: Existing 2023 - Traffic Volumes

Existing (2023) Intersection Capacity and Queuing Analysis

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 9, 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 9 and are expressed in feet, along with 50th percentile queues shown for signalized intersections. The detailed analysis worksheets are included in Appendix F.

Table 9: Existing 2023 – 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***	***10.9***			***B***	***11.7***		
	Eastbound Right		B	10.9		0	B	11.7		5
2	**Blenheim Boulevard (N/S) at Fairfax Commons (E/W)**									
	Overall Intersection (Signalized)		**A**	**8.8**			**B**	**11.2**		
	Eastbound Approach		***B***	***18.3***			***C***	***26.1***		
	Eastbound Thru/Left		B	17.9	1	17	C	24.9	17	45
	Eastbound Right		B	18.7	0	0	C	26.8	0	18
	Westbound Approach		***B***	***17.7***			***C***	***26.5***		
	Westbound Left/Thru/Right		B	17.7	0	0	C	26.5	27	66
	Northbound Approach		***A***	***8.4***			***A***	***7.6***		
	Northbound Left	120	A	6.8	0	11	A	6.8	8	22
	Northbound Thru		A	8.6	0	108	A	7.7	32	94
	Northbound Right		A	6.9	0	0	A	6.7	0	0
	Southbound Approach		***A***	***8.6***			***A***	***9.6***		
	Southbound Left	120	A	7.2	1	6	A	7.2	2	8
	Southbound Thru		A	8.7	0	83	A	9.8	80	132
	Southbound Right		A	7.5	0	0	A	8.1	0	0
3	**Access No Longer Pursued**									
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***	***10.3***		
	Eastbound Left/Right		A	8.9		0	B	10.3		3
	Northbound Approach									
	Northbound Left		A	7.7		0	A	8.2		0

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 (E/W)**									
	Overall Intersection (TWSC)									
	Eastbound Approach		***A***	***9.9***			***B***	***13.2***		
	Eastbound Left/Thru/Right		A	9.9		3	B	13.2		8
	Westbound Approach		***B***	***12.4***			***B***	***13.6***		
	Westbound Left		B	13.5		3	C	16.4		10
	Westbound Thru/Right		A	9.3		0	B	10.8		5
	Northbound Approach									
	Northbound Thru/Left		A	7.8		0	A	8.1		0
	Southbound Approach									
	Southbound Thru/Left		A	8.0		0	A	8.1		3
7	**University Drive (N/S) at Whitehead Street/Democracy Lane (E/W)**									
	Overall Intersection (Signalized)		**B**	**10.4**			**B**	**10.3**		
	Eastbound Approach		***B***	***13.5***			***B***	***12.8***		
	Eastbound Left/Thru		B	14.0	15	91	B	13.5	11	79
	Eastbound Right		B	11.3	0	9	B	11.7	0	28
	Westbound Approach		***B***	***11.8***			***B***	***13.4***		
	Westbound Left/Thru/Right		B	11.8	4	33	B	13.4	10	70
	Northbound Approach		***A***	***9.5***			***A***	***9.2***		
	Northbound Thru/Left		A	9.5	17	89	A	9.2	17	92
	Northbound Thru/Right		A	9.5	17	89	A	9.2	17	92
	Southbound Approach		***A***	***9.1***			***A***	***9.1***		
	Southbound Thru/Left		A	9.1	9	55	A	9.1	16	87
	Southbound Thru/Right		A	9.1	9	55	A	9.1	16	87
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***	***11.5***			***B***	***10.5***		
	Northbound Left/Thru/Right		B	11.5		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**	**24.9**			**C**	**20.7**		
	Eastbound Approach		***C***	***32.4***			***C***	***26.8***		
	Eastbound Left		C	33.6	125	279	C	27.9	78	172
	Eastbound Thru/Right		C	25.8	8	44	C	23.8	7	46
	Westbound Approach		***D***	***38.7***			***C***	***30.0***		
	Westbound Left		C	33.9	8	34	C	28.6	6	29
	Westbound Thru/Right		D	39.9	6	50	C	30.7	5	35
	Northbound Approach		***C***	***23.7***			***B***	***18.7***		
	Northbound Left		B	15.9	22	49	B	14.4	12	35
	Northbound Thru		C	24.8	248	490	B	19.3	136	338
	Northbound Right	230	B	15.2	0	0	B	14.0	0	0
	Southbound Approach		***C***	***20.9***			***B***	***19.3***		
	Southbound Left	150	B	18.3	6	19	B	15.1	5	18
	Southbound Thru/Right		C	20.9	147	217	B	19.4	142	234

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 22.

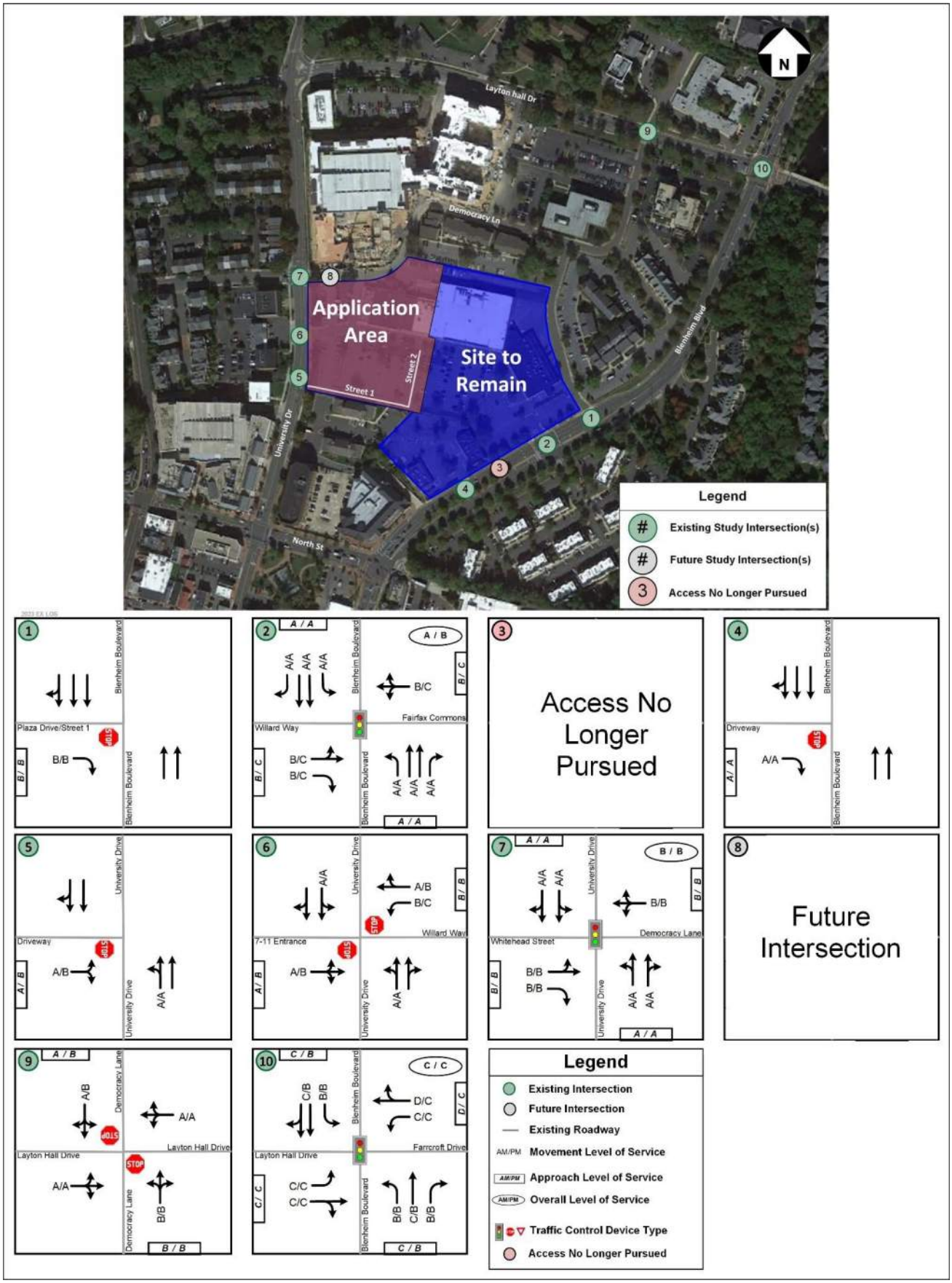

Figure 22: Existing (2023) Level of Service

Future Conditions without Development (2028)

Future without Development (2028) Traffic Volumes

The Courthouse Plaza Development (Full-Build) 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 23 were added to the Existing (2023) traffic volumes shown in Figure 21 in order to generate the Future without Development (2028) volumes. The vehicular volumes for the Future (2028) without Development scenario are presented on Figure 24.

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 2025.The proposed improvements include bicycle lanes or sharrows with a conversion of existing four-lane section of University Boulevard to a two-lane section with two-way left turn lanes. The lane configuration and the future without development Level of Service results are shown in Figure 25

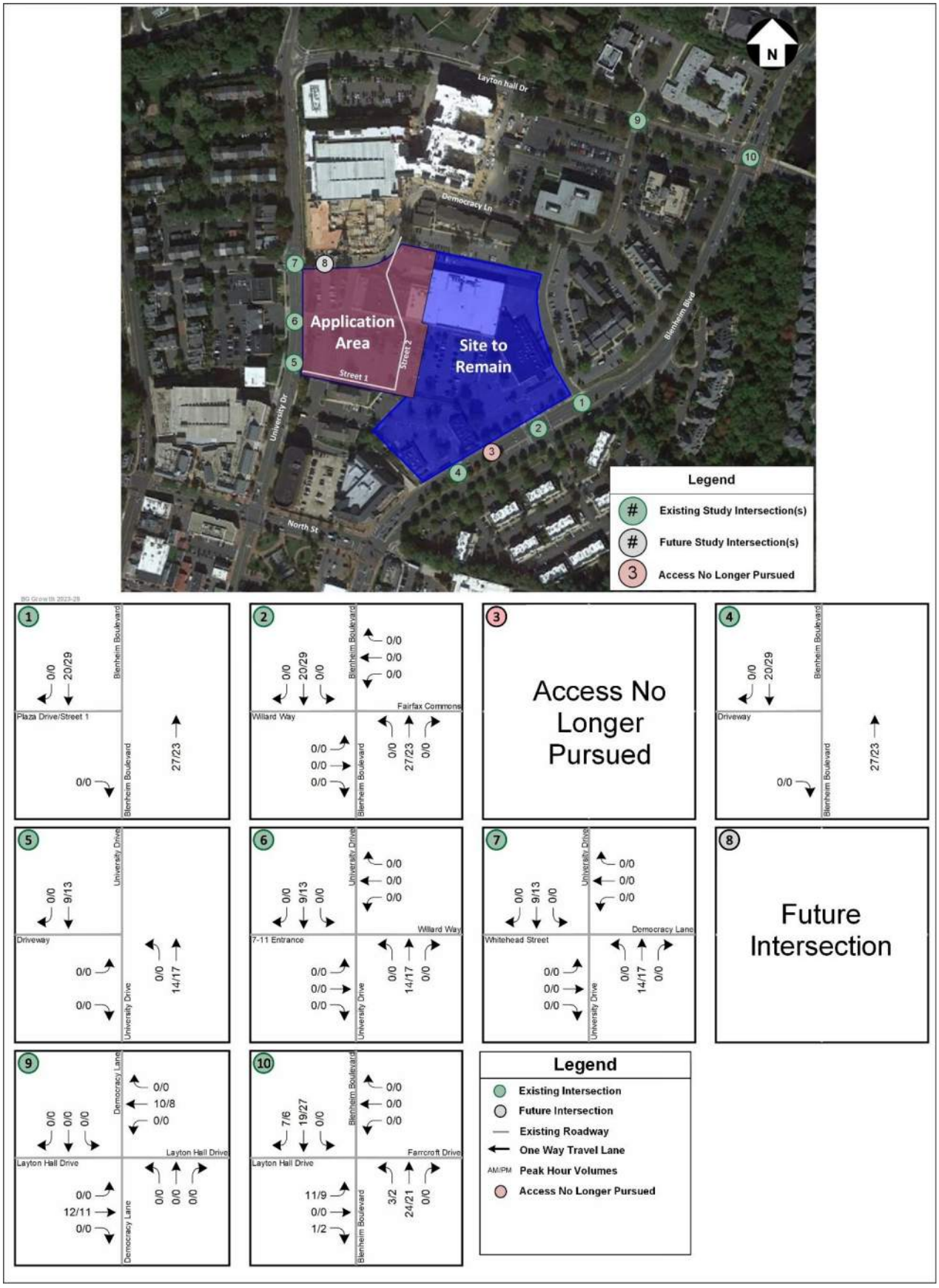

Figure 23: Inherent Growth Volumes (2023-2028)

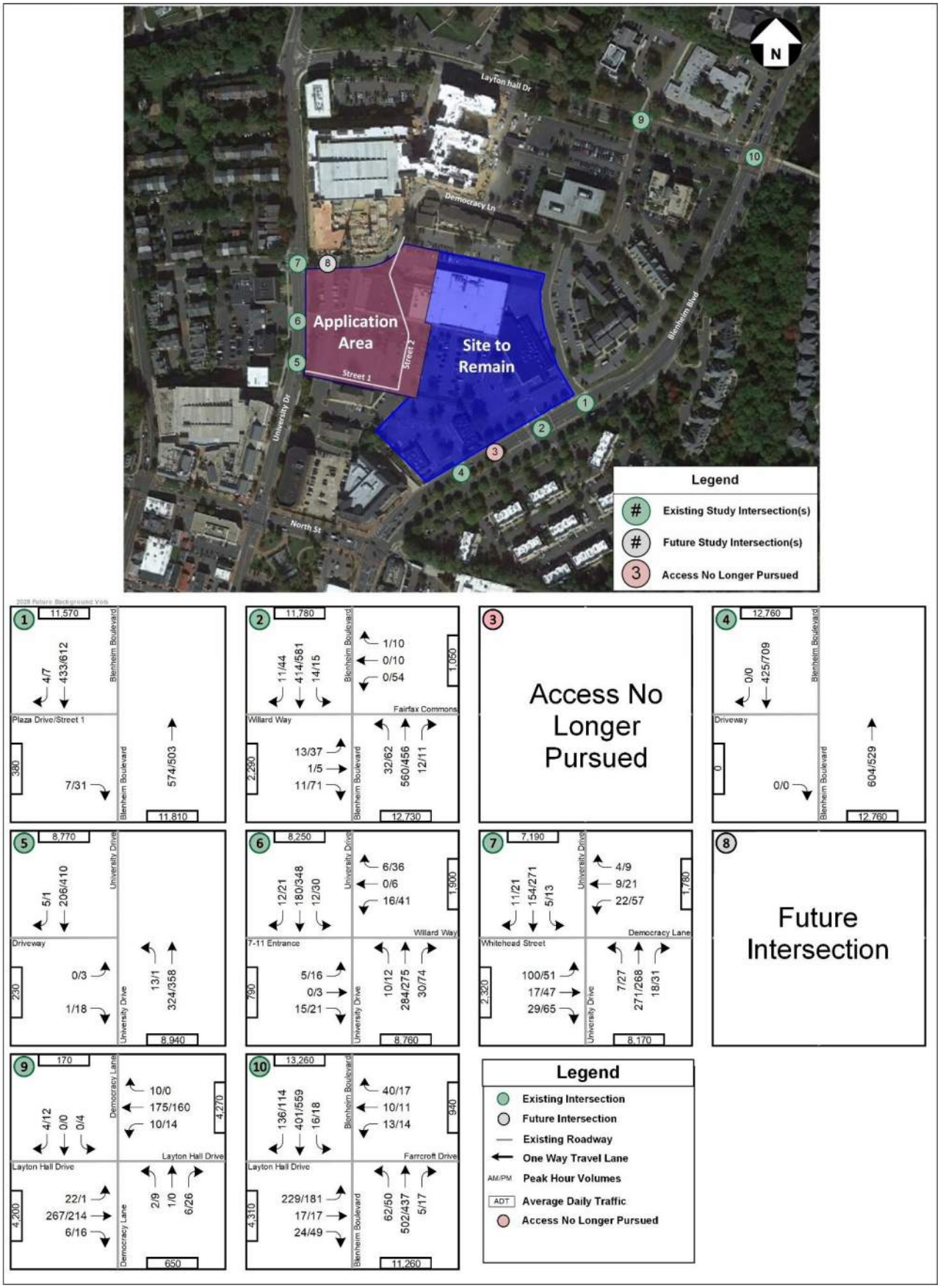

Figure 24: Future (2028) without Development Traffic Volumes

Future without Development (2028) Intersection Capacity and Queuing Analysis

Capacity and queuing analysis was 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 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 queue results for signalized intersections. The detailed analysis worksheets are included in Appendix G.

Table 10: Future (2028) 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
			Synchro				Synchro			
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**	**8.6**			**B**	**11.2**		
	Eastbound Approach		***B***	***18.3***			***C***	***26.1***		
	Eastbound Thru/Left		B	17.9	1	17	C	24.9	17	45
	Eastbound Right		B	18.8	0	0	C	26.8	0	18
	Westbound Approach		***B***	***17.7***			***C***	***26.5***		
	Westbound Left/Thru/Right		B	17.7	0	0	C	26.5	27	66
	Northbound Approach		***A***	***8.3***			***A***	***7.6***		
	Northbound Left	120	A	6.7	0	11	A	6.8	8	22
	Northbound Thru		A	8.4	0	113	A	7.8	34	100
	Northbound Right		A	6.9	0	0	A	6.7	0	0
	Southbound Approach		***A***	***8.5***			***A***	***9.7***		
	Southbound Left	120	A	7.1	1	7	A	7.3	2	8
	Southbound Thru		A	8.5	0	86	A	9.9	85	140
	Southbound Right		A	7.4	0	0	A	8.1	0	0
3	**Access No Longer Pursued**									
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***	***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***	***15.7***		
	Eastbound Left/Thru/Right		B	10.6		3	C	15.7		10
	Westbound Approach		***B***	***13.1***			***C***	***16.4***		
	Westbound Left		B	14.2		3	C	21.2		15
	Westbound Thru/Right		B	10.1		0	B	11.7		8
	Northbound Approach									
	Northbound Left		A	7.8		0	A	8.1		0
	Southbound Approach									
	Southbound Left		A	8.0		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**	**11.0**			**B**	**10.8**		
	Eastbound Approach		***B***	***14.9***			***B***	***14.2***		
	Eastbound Left/Thru		B	15.5	16	105	B	14.9	13	88
	Eastbound Right		B	12.7	0	10	B	13.0	0	32
	Westbound Approach		***B***	***13.2***			***B***	***14.9***		
	Westbound Left/Thru/Right		B	13.2	4	38	B	14.9	11	79
	Northbound Approach		***A***	***9.9***			***A***	***9.4***		
	Northbound Left		A	7.9	1	12	A	9.5	3	27
	Northbound Thru/Right		A	9.9	36	200	A	9.5	35	193
	Southbound Approach		***A***	***9.2***			***A***	***9.4***		
	Southbound Left	150	A	7.9	1	9	A	9.5	1	16
	Southbound Thru/Right		A	9.2	19	118	A	9.5	34	189
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
	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**	**24.3**			**C**	**21.2**		
	Eastbound Approach		***C***	***31.4***			***C***	***27.3***		
	Eastbound Left		C	32.6	115	284	C	28.5	86	187
	Eastbound Thru/Right		C	25.1	7	44	C	24.2	7	47
	Westbound Approach		***D***	***36.9***			***C***	***30.8***		
	Westbound Left		C	32.8	7	33	C	29.4	7	29
	Westbound Thru/Right		D	37.9	5	52	C	31.5	5	36
	Northbound Approach		***C***	***23.2***			***B***	***19.1***		
	Northbound Left		B	15.7	20	51	B	14.6	14	38
	Northbound Thru		C	24.2	218	515	B	19.9	150	366
	Northbound Right	230	B	15.0	0	0	B	14.1	0	0
	Southbound Approach		***C***	***20.6***			***B***	***19.8***		
	Southbound Left	150	B	18.0	5	19	B	15.4	5	18
	Southbound Thru/Right		C	20.7	133	226	B	19.9	155	254

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 purpose 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 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 25.

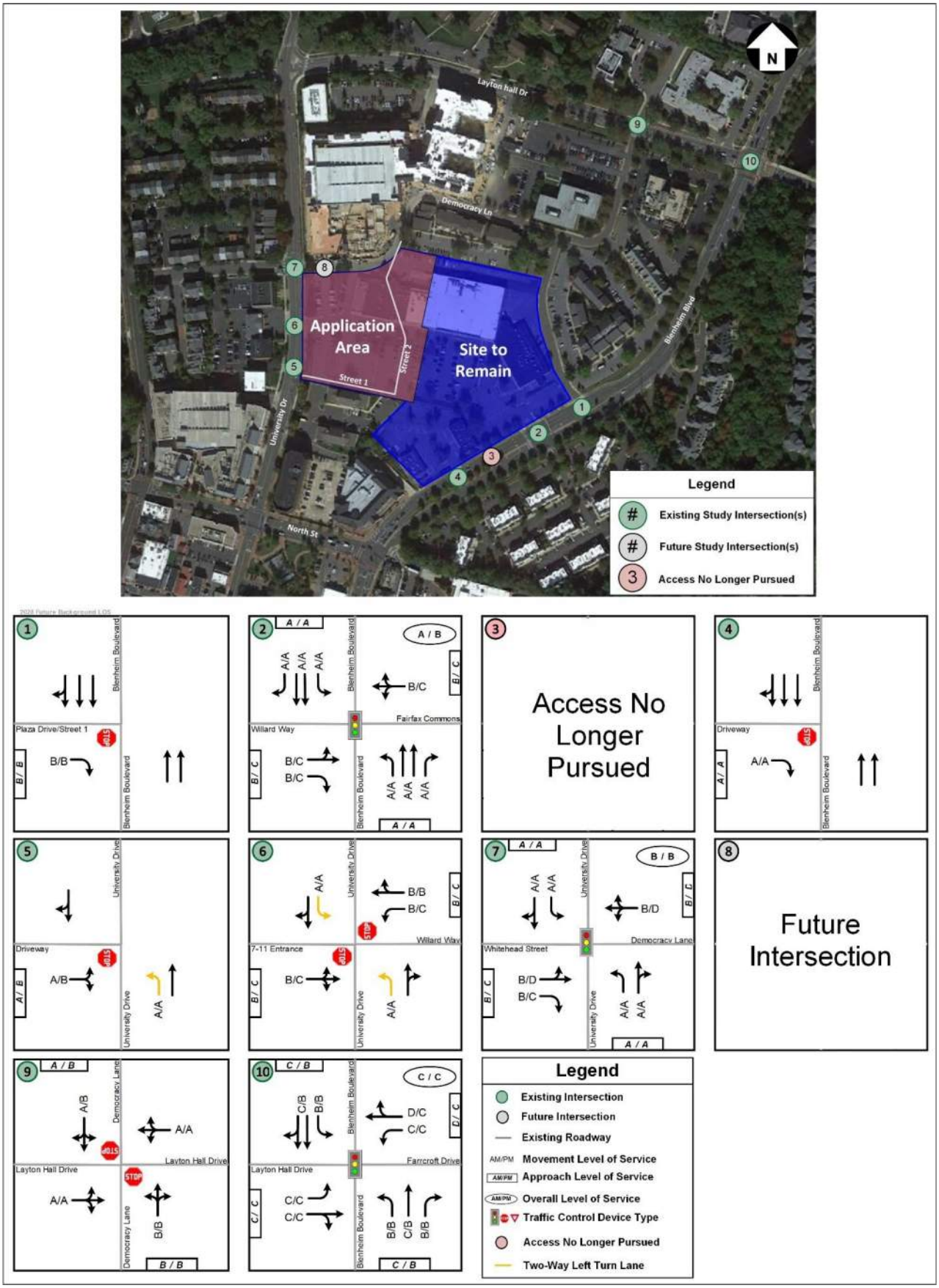

Figure 25: Future Without Development (2028) Level of Service

Future with Development (Full-Build 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 25k SF of existing retail uses will be removed and replaced with the residential building leaving approximately 67k SF of existing retail remaining with the addition of some ground floor retail of up to 13,000 SF in the proposed building.

The plan for the development (subject to change) is shown below in Figure 26.

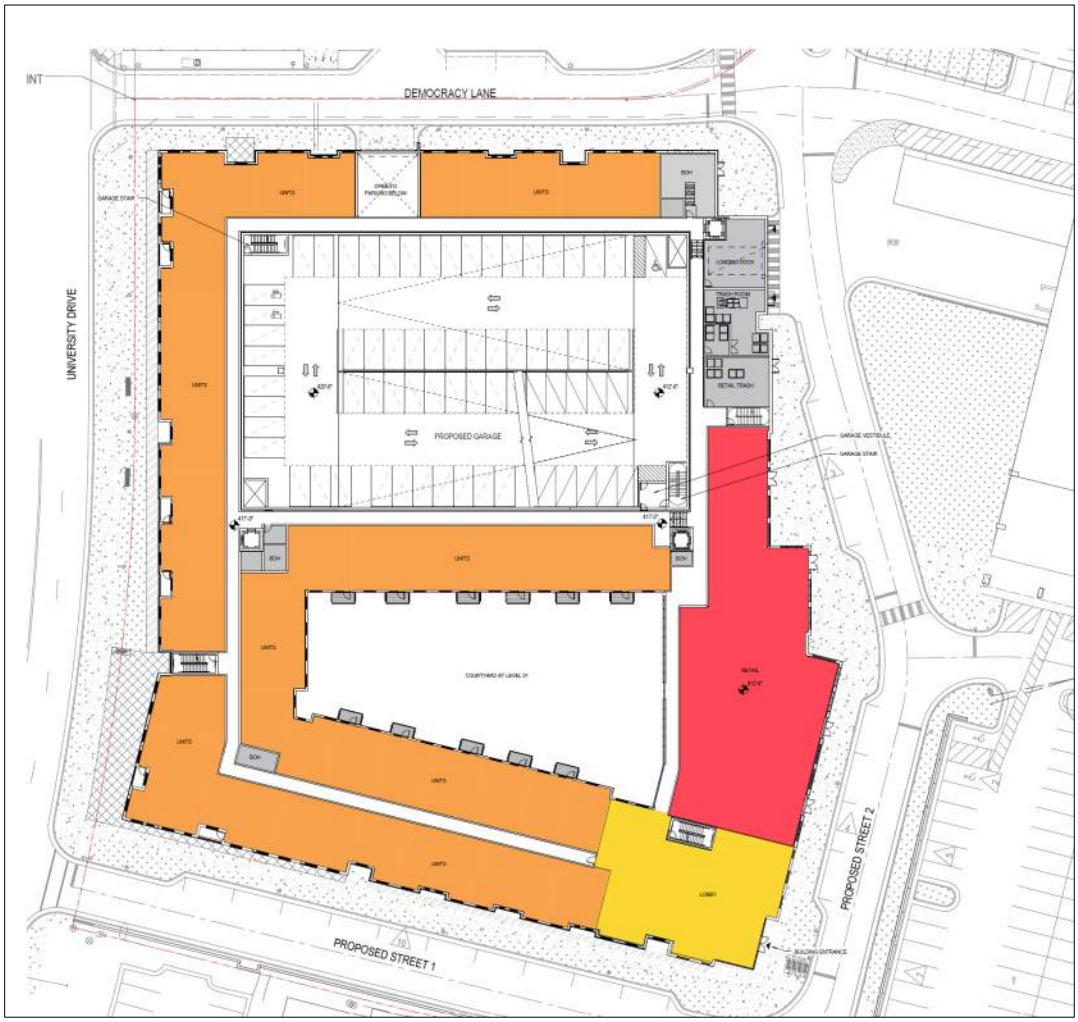

Figure 26: Concept Plan (Subject to Change)

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 2028 future conditions (Full Build) are shown in Figure 27.

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 13,000 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). Therefore, 2 pedestrian trips are added in the AM peak hour and 3 pedestrian trips are added in the PM peak hour Synchro analysis to account for site generated pedestrian trips in the model. Please note that there may be existing pedestrian volumes from the existing retail that are being removed from the network that were not included in this analysis to be conservative.

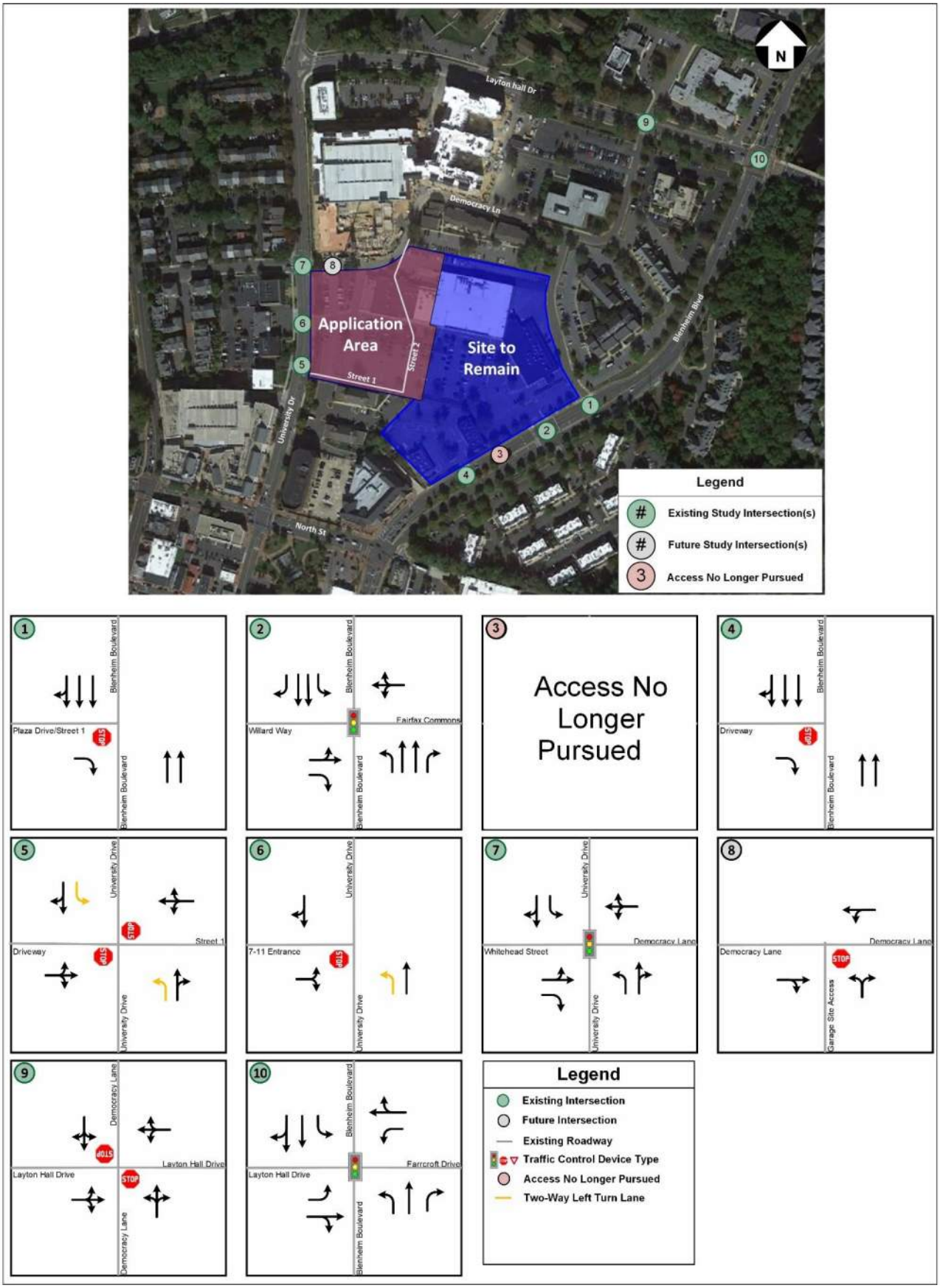

Figure 27: 2028 Future with Development (Full-Build) Lane Configuration

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 58 kSF of inline retail (exclusive of pad sites) and approximately 25.17 kSF of the existing inline retail uses will be removed (43% removed). Based on ITE 11th Edition Trip Generation Manual, approximately 5,876 daily trips could be generated by the existing 58.0 KSF inline retail uses (with supermarket) and approximately 1,292 daily trips could be generated by the 25.17 kSF of existing inline retail uses to be removed. This represents an approximately 22% reduction in trips due to the removal of the portion of the existing inline retail. 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 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 28 and Figure 29.

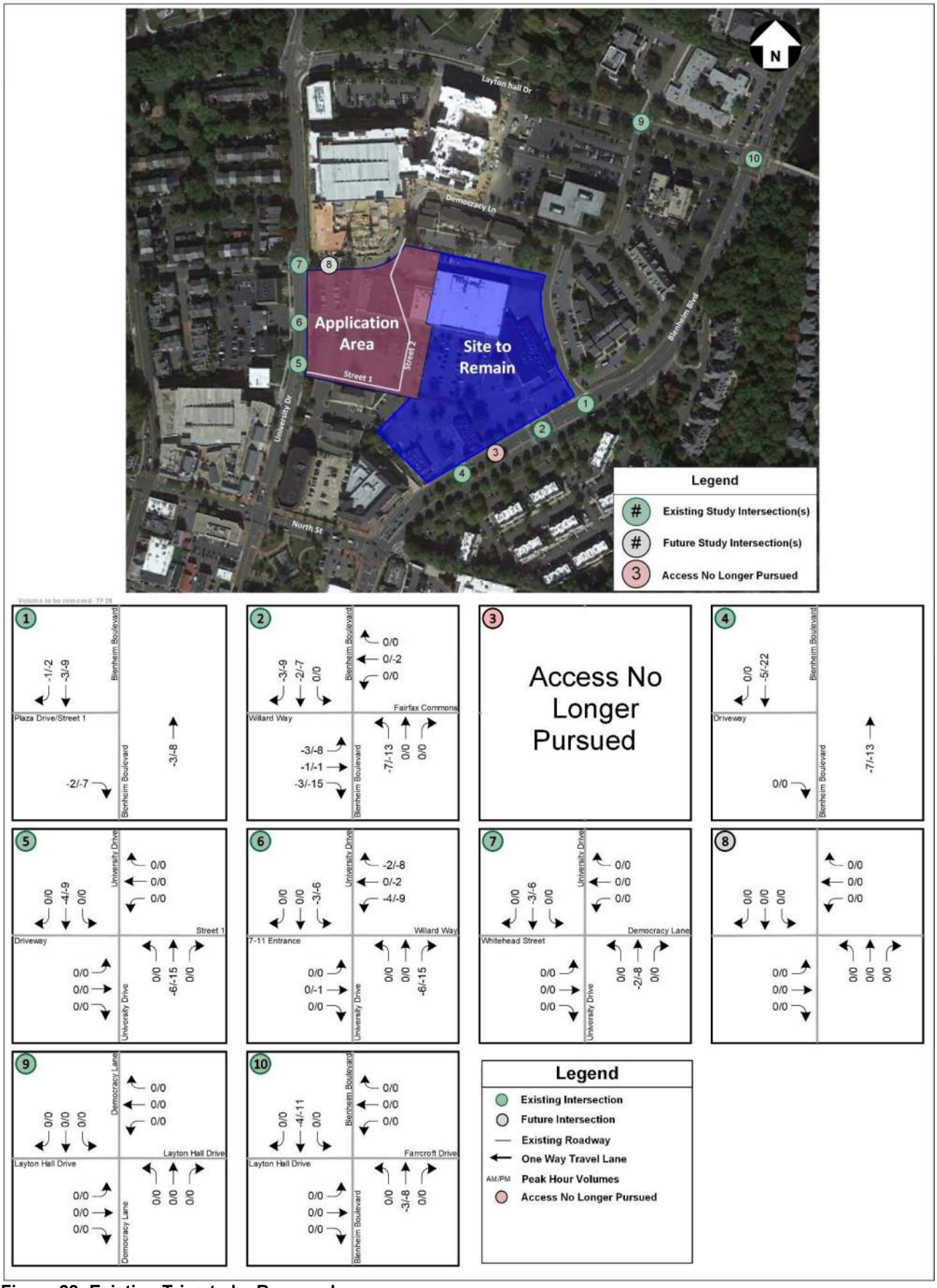

Figure 28: Existing Trips to be Removed

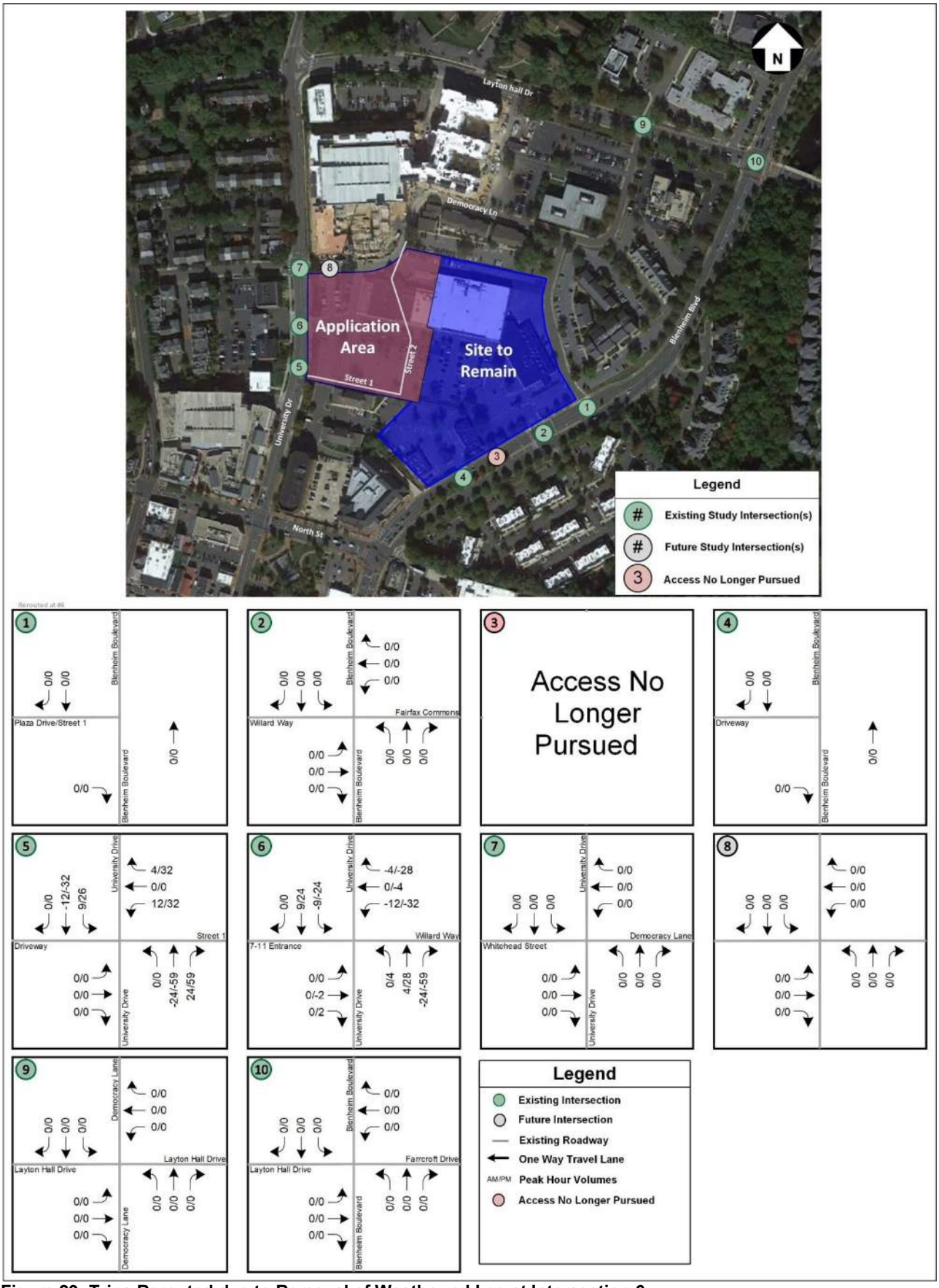

Figure 29: Trips Rerouted due to Removal of Westbound Leg at Intersection 6

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 residential development as shown in Table 11. As discussed during the scoping meeting, a TDM Reduction/Mode Spilt 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. Please note that the proposed development has changed slightly from what was scoped and has been updated to be consistent with the proposed application. The addition of up to 13,000 SF of retail use is analyzed in this revised submission of the TIS with approximately 66.7 kSF of existing retail uses to remain at the site.

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

Land Use	ITE Code	Size		Weekday AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily Total
Proposed Development										
Multifamily Housing (Mid-Rise)	221	315 DU		29	98	127	75	48	123	1,456
Internal Capture Residential - Retail[1]			(1)	-1	-2	-3	-5	-5	-10	-78
Mode Split/TDM Reduction			15%	-4	-14	-19	-11	-6	-17	-207
Residential Subtotal (with Reductions)				24	82	105	59	37	96	1,171
Shopping Center (<40 kSF)	822	13.0 kSF of GFA		20	14	34	47	47	94	778
Internal Capture Retail - Residential[1]			(1)	-2	-1	-3	-5	-5	-10	-78
Pass-By Reduction[2]			25% AM/40% PM/25% Daily	-4	-4	-8	-17	-17	-34	-175
Currently Analyzed Retail Subtotal (with Reductions)				14	9	23	25	25	50	525
Total Proposed Trips (with Reductions)				**38**	**91**	**127**	**84**	**62**	**146**	**1,696**

[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 (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 ITE Pass-By Tables for the ITE 11th Edition Trip Generation Handbook. The average rate for Shopping Centers is 40% for the PM Peak. For all other time periods, the default Pass-By rate of 25% is assumed

As shown, the proposed development will generate approximately 127 trips in the AM peak hour, 146 trips in the PM peak hour and 1,696 trips on a typical weekday, after reductions. Please note that this proposed development represents an overall reduction of trips on the property. Table 12 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 12: Trip Generation Comparison (Existing vs. Proposed with Retail to Remain)

Land Use	ITE Code	Size		Weekday AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily 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 (with portion remaining)										
Multifamily Housing (Mid-Rise)	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				**22**	**75**	**97**	**58**	**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	13.0 kSF of GFA		20	14	34	47	47	94	778
Internal Capture Residential - Retail[1]			(1)	-10	-3	-13	-5	-8	-12	-146
Retail Subtotal				**156**	**100**	**256**	**344**	**368**	**712**	**7,178**
Subtotal (Proposed)(Residential+Retail)				**178**	**175**	**354**	**402**	**405**	**805**	**8,292**
Net New Trips (Proposed - Existing)				**-23**	**52**	**30**	**6**	**-23**	**-19**	**-193**

As seen from Table 12, the proposed development with the existing uses to remain generates approximately 193 fewer overall typical daily trips as compared to the existing retail uses at the Courthouse Plaza site.

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 30.

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.

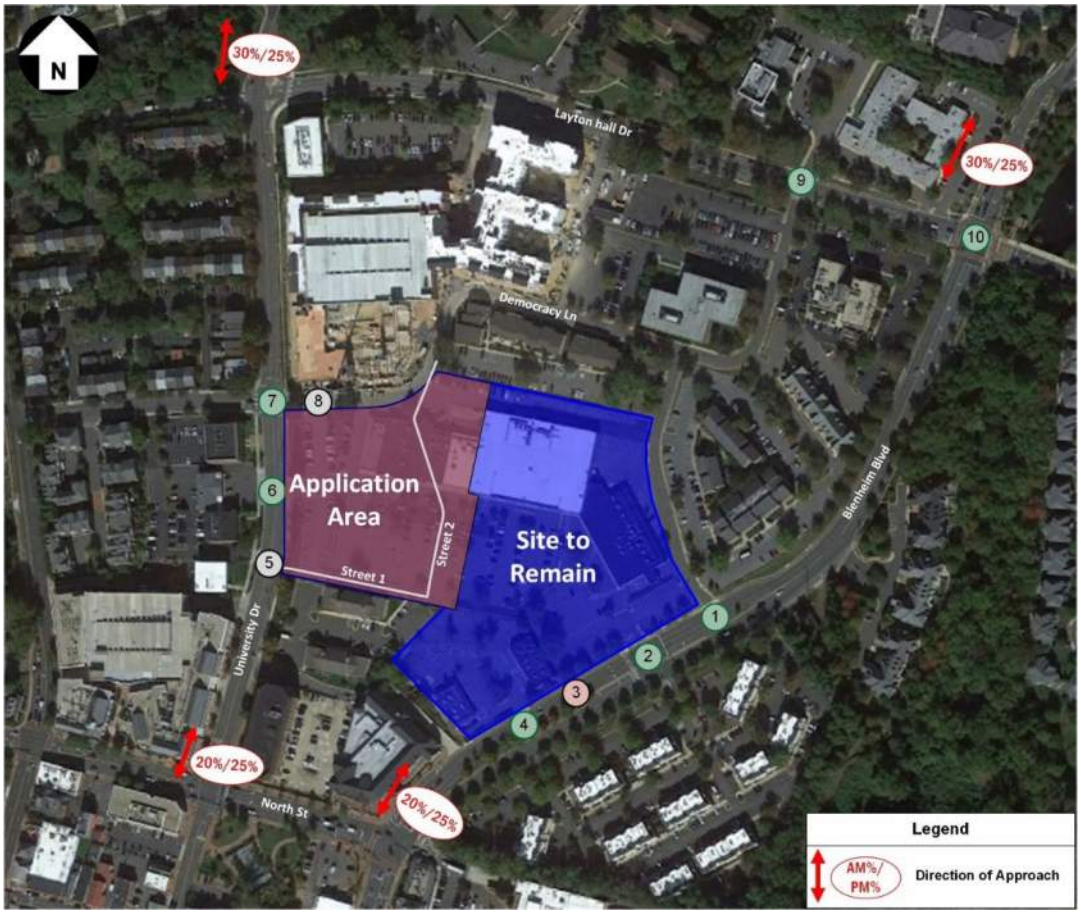

Figure 30: Site Trip Distribution/Direction of Approach (DOA)

Future with Development Traffic Volumes

In order to determine the traffic volumes on the roadways in the vicinity of the development at full build, the site generated traffic volumes presented in Figure 31, the existing volumes removed presented in Figure 28 and pass-by trips shown in Figure 32 were added to the 2028 Future without Development traffic volumes presented in Figure 24. It is noted that a portion of trips continuing north on University Drive towards Layton Hall Drive and continuing south towards North Street are now assigned via Chain Bridge Road with Eastbound Thru and Westbound Thru movements on Democracy Lane and Whitehead Street based on feedback received from City Staff. 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).

The 2028 future with development (Full-Build) volumes are shown in Figure 33.

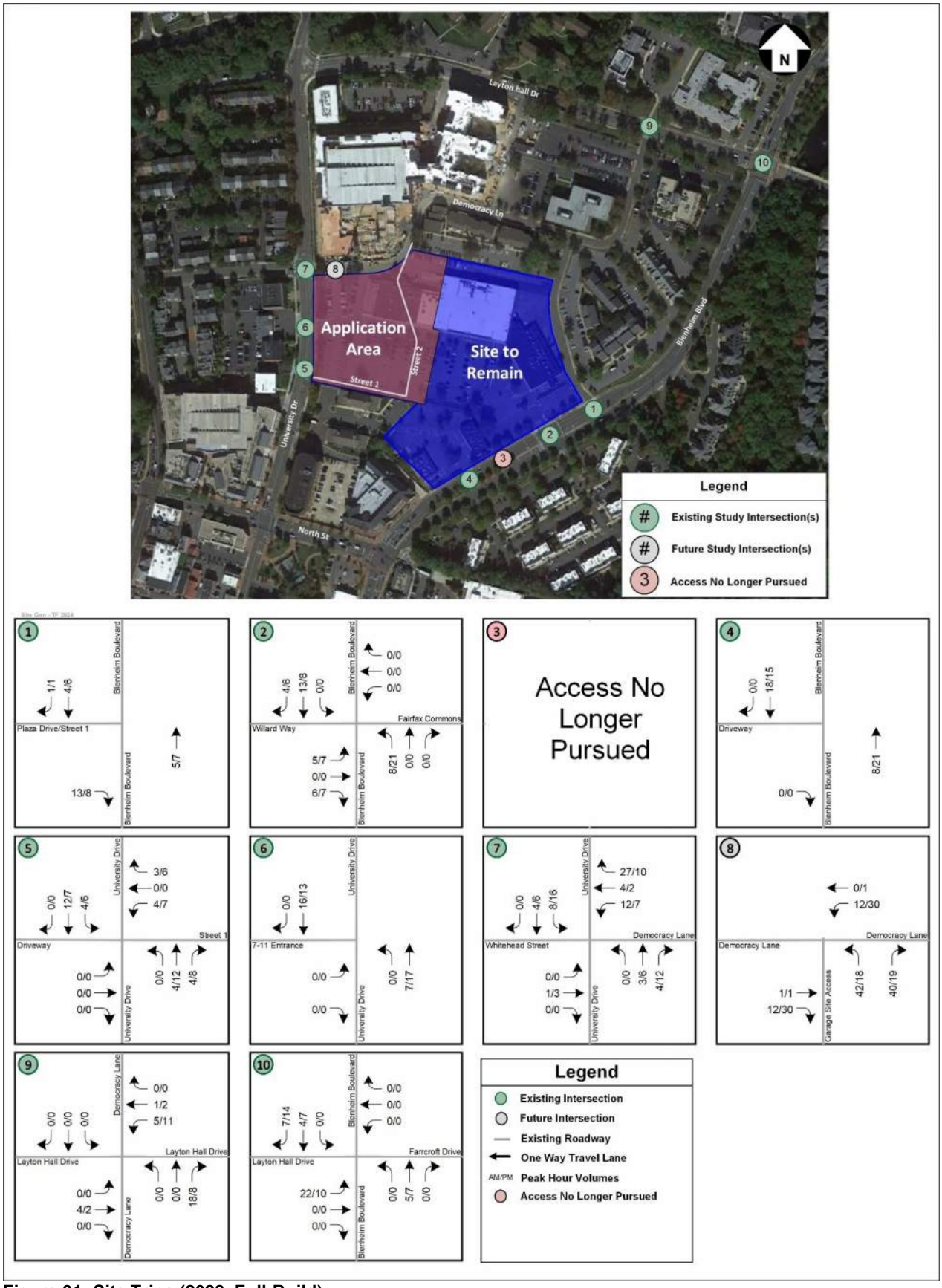

Figure 31: Site Trips (2028, Full-Build)

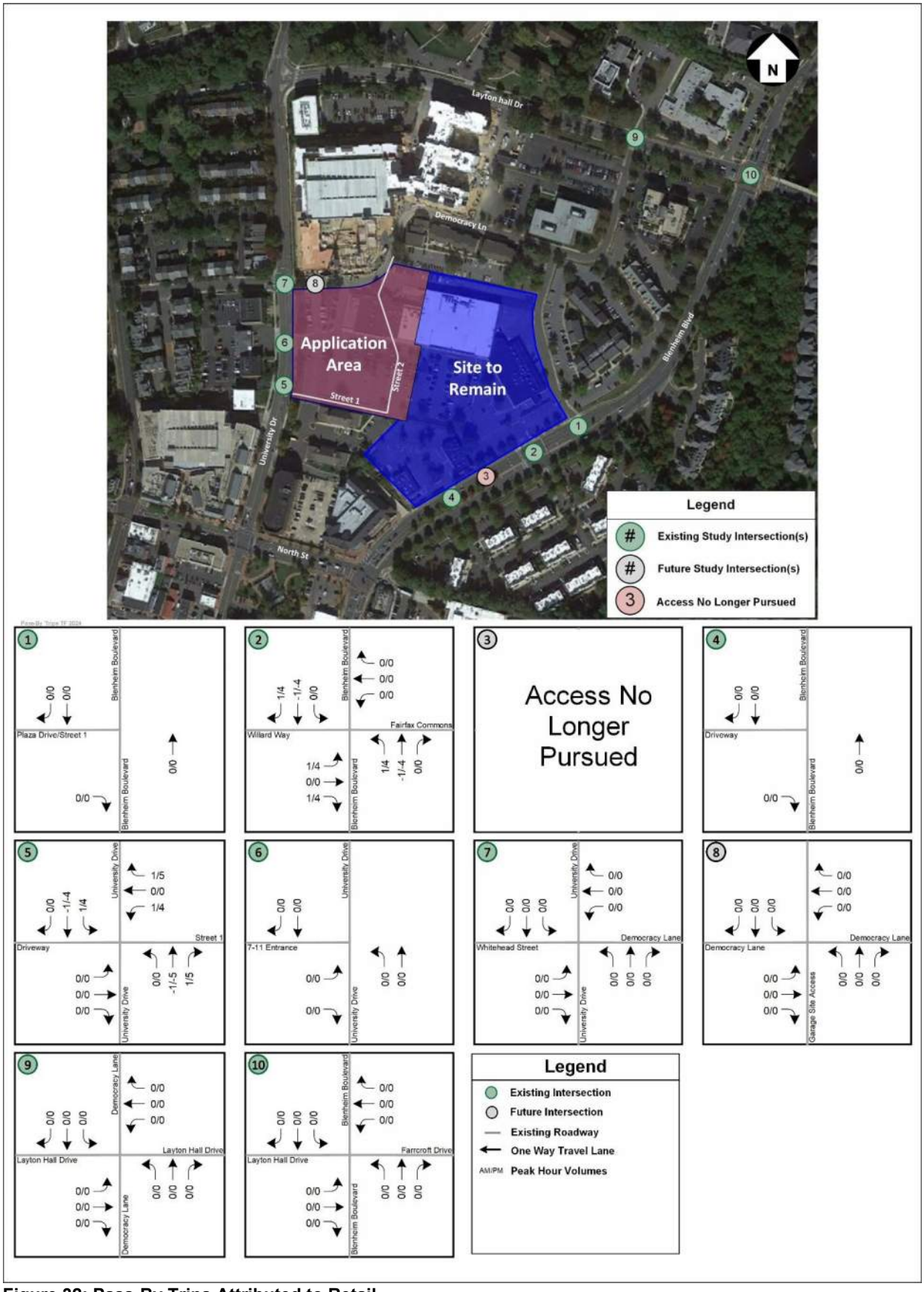

Figure 32: Pass-By Trips Attributed to Retail

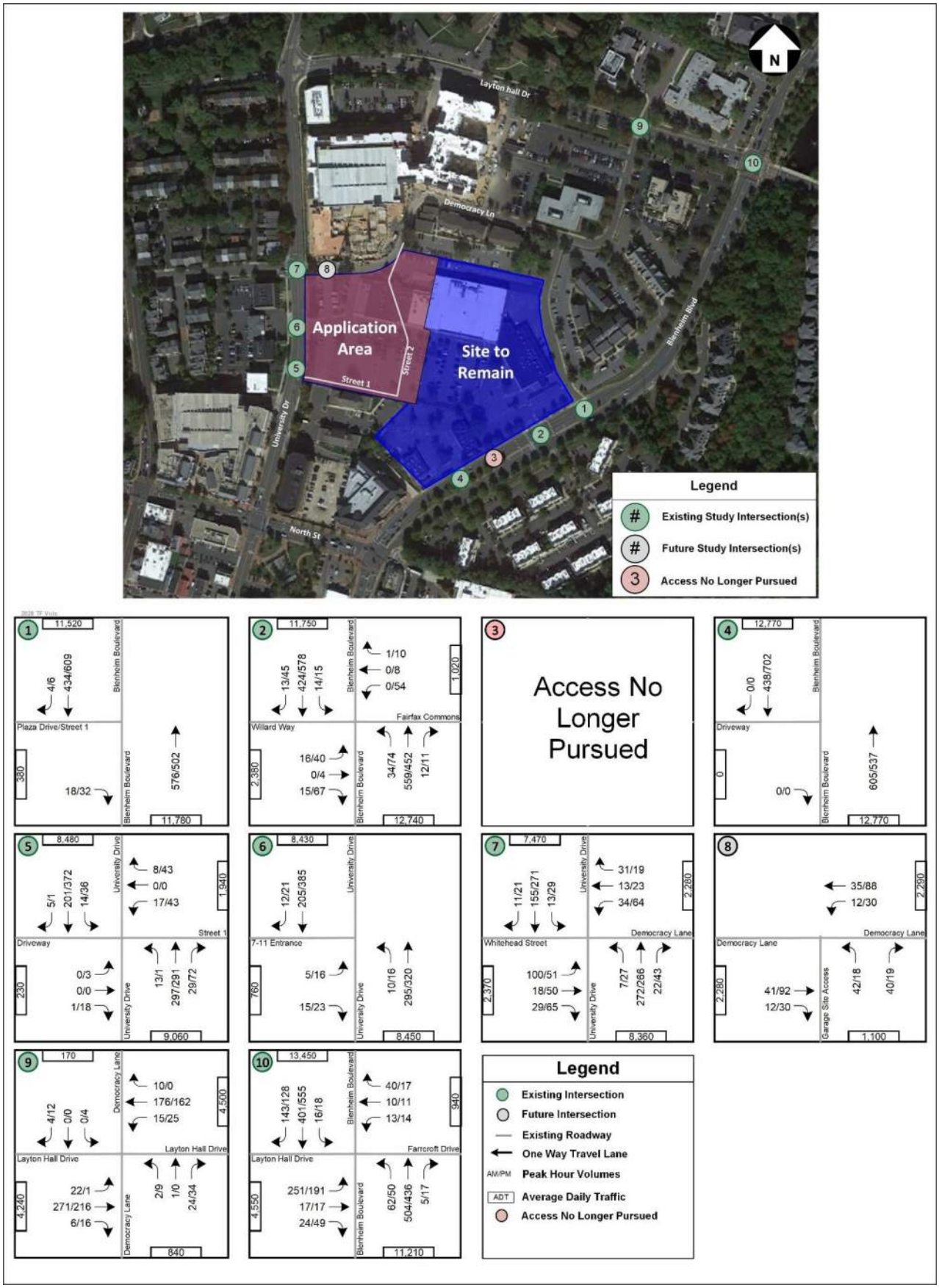

Figure 33: 2028 Future with Development (Full-Build) Volumes

Future with Development (2028) (Full-Build) 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 13 and Figure 34 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 10 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 13: Future with Development Intersection Analysis (2028 Full-Build)

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***	***10.1***			***B***	***10.7***		
	Eastbound Right		B	10.1		3	B	10.7		5
2	**Blenheim Boulevard (N/S) at Fairfax Commons (E/W) Overall Intersection (Signalized)**		**A**	**8.8**			**B**	**11.2**		
	Eastbound Approach		***B***	***18.2***			***C***	***26.1***		
	Eastbound Thru/Left		B	17.8	1	19	C	25.1	18	47
	Eastbound Right		B	18.7	0	0	C	26.8	0	15
	Westbound Approach		***B***	***17.6***			***C***	***26.8***		
	Westbound Left/Thru/Right		B	17.6	0	0	C	26.8	27	65
	Northbound Approach		***A***	***8.5***			***A***	***7.6***		
	Northbound Left	120	A	6.9	0	12	A	6.9	9	25
	Northbound Thru		A	8.6	0	114	A	7.7	33	98
	Northbound Right		A	7.0	0	0	A	6.7	0	0
	Southbound Approach		***A***	***8.7***			***A***	***9.9***		
	Southbound Left	120	A	7.3	1	7	A	7.4	2	8
	Southbound Thru		A	8.8	0	89	B	10.1	85	141
	Southbound Right		A	7.6	0	0	A	8.2	0	1
3	**Access No Longer Pursued**									
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 Street 1(E/W) Overall Intersection (TWSC)**									
	Eastbound Approach		***A***	***9.4***			***B***	***12.2***		
	Eastbound Left/Thru/Right		A	9.4		0	B	12.2		3
	Westbound Approach		***B***	***13.4***			***C***	***17.5***		
	Westbound Left/Thru/Right		B	13.4		0	C	17.5		3
	Northbound Approach									
	Northbound Left		A	7.7		0	A	8.1		0
	Southbound Approach									
	Southbound Left		A	8.0		5	A	8.2		23

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)		**B**	**10.1**			**B**	**12.2**		
	Eastbound Approach		**B**	**10.1**			**B**	**12.2**		
	Eastbound Left/Thru/Right		B	10.1		3	B	12.2		8
	Northbound Approach									
	Northbound Left		A	7.8		0	A	8.3		0
7	**University Drive (N/S) at Whitehead Street/Democracy Lane (E/W)**									
	Overall Intersection (Signalized)		**B**	**11.3**			**B**	**11.0**		
	Eastbound Approach		**B**	**15.4**			**B**	**14.5**		
	Eastbound Left/Thru		B	16.1	17	108	B	15.2	13	91
	Eastbound Right		B	12.8	0	10	B	13.3	0	32
	Westbound Approach		**B**	**13.8**			**B**	**15.6**		
	Westbound Left/Thru/Right		B	13.8	7	60	B	15.6	13	93
	Northbound Approach		**A**	**9.9**			**A**	**9.5**		
	Northbound Left		A	7.9	1	12	A	7.8	3	27
	Northbound Thru/Right		A	10.0	37	203	A	9.6	37	205
	Southbound Approach		**A**	**9.1**			**A**	**9.4**		
	Southbound Left	150	A	8.0	1	17	A	7.8	3	30
	Southbound Thru/Right		A	9.2	20	120	A	9.5	35	195
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
	Northbound Approach		**A**	**9.2**			**A**	**9.7**		
	Northbound Left/Right		A	9.2		8	A	9.7		5
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	7.9		3
	Northbound Approach		**B**	**10.8**			**B**	**10.5**		
	Northbound Left/Thru/Right		B	10.8		3	B	10.5		5
	Southbound Approach		**A**	**9.4**			**B**	**10.3**		
	Southbound Left/Thru/Right		A	9.4		0	B	10.3		3
10	**Blenheim Boulevard (N/S) at Layton Hall Drive (E/W)**									
	Overall Intersection (Signalized)		**C**	**25.1**			**C**	**21.5**		
	Eastbound Approach		**C**	**32.1**			**C**	**27.5**		
	Eastbound Left		C	33.2	130	313	C	28.7	91	196
	Eastbound Thru/Right		C	25.0	7	44	C	24.1	8	47
	Westbound Approach		**D**	**38.1**			**C**	**31.2**		
	Westbound Left		C	33.8	7	33	C	29.8	7	30
	Westbound Thru/Right		D	39.2	6	52	C	31.9	5	37
	Northbound Approach		**C**	**23.9**			**B**	**19.3**		
	Northbound Left	250	B	16.2	21	51	B	14.8	14	38
	Northbound Thru		C	25.0	232	517	C	20.0	150	368
	Northbound Right	230	B	15.5	0	0	B	14.2	0	0
	Southbound Approach		**C**	**21.3**			**C**	**20.2**		
	Southbound Left	150	B	18.5	5	19	B	15.5	5	19
	Southbound Thru/Right		C	21.3	140	228	C	20.3	158	262

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.

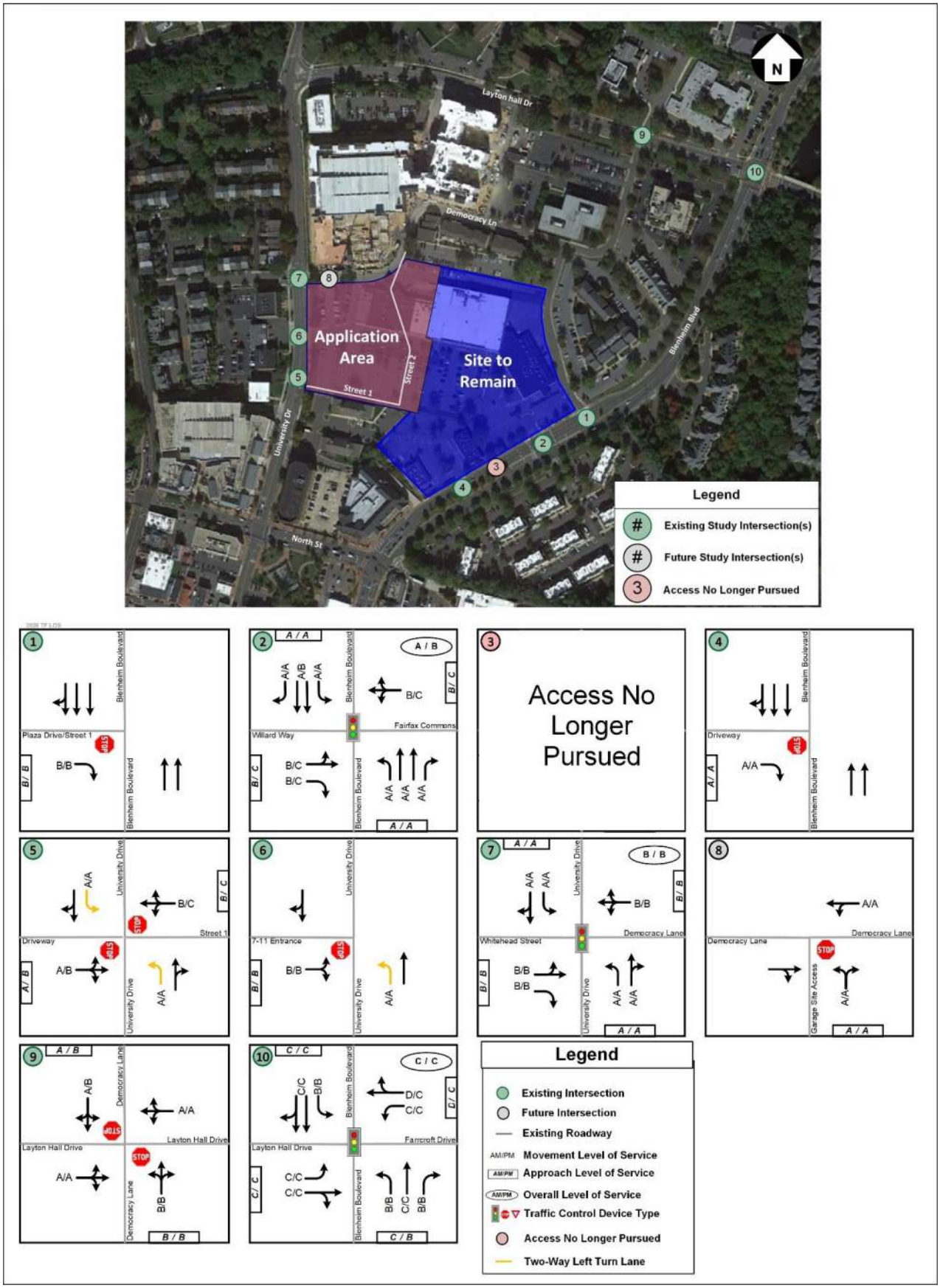

Figure 34: 2028 Future with Development Level of Service Results (Full-Build)

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 (Full-Build)

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 35 shows the locations of these internal intersections with respect to the application area.

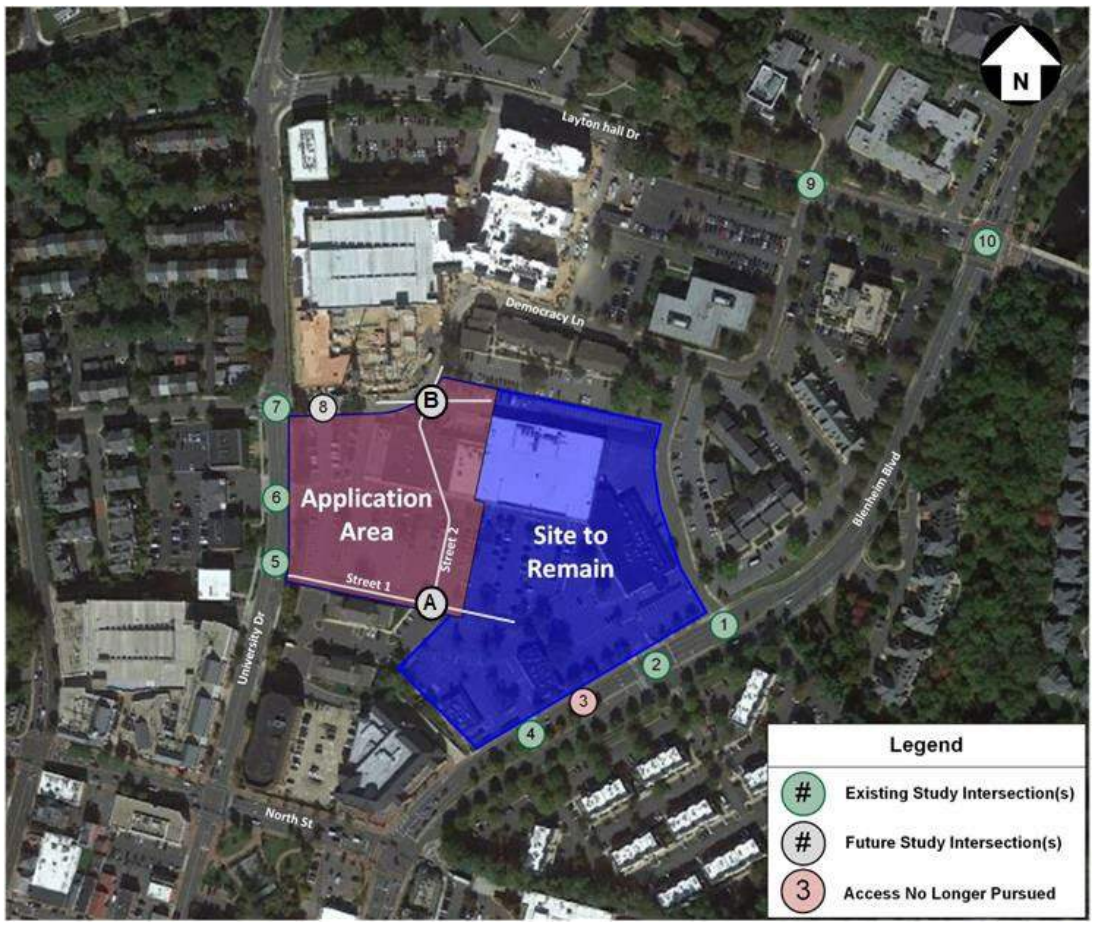

Figure 35: Internal Intersections Locations

The volumes at Intersection A were developed based on the westbound approach volumes at Study Intersection 5 for the 2028 Future Conditions with Development (Full Build) analysis scenario. Based on engineering judgement, 50% of the retail volumes were assigned to turn to/from Street 2 and 50% of the volumes were assigned to continue straight on Street 1. For Intersection B, the site trips from the residential building and a portion of site retail trips destined to/from the south on University Drive were assigned to the intersection. Approximately 90% of the remaining volume was assigned onto Democracy Lane and 10% as going eastward towards the back of the shopping center. Figure 36 shows the volumes at the two internal intersections.

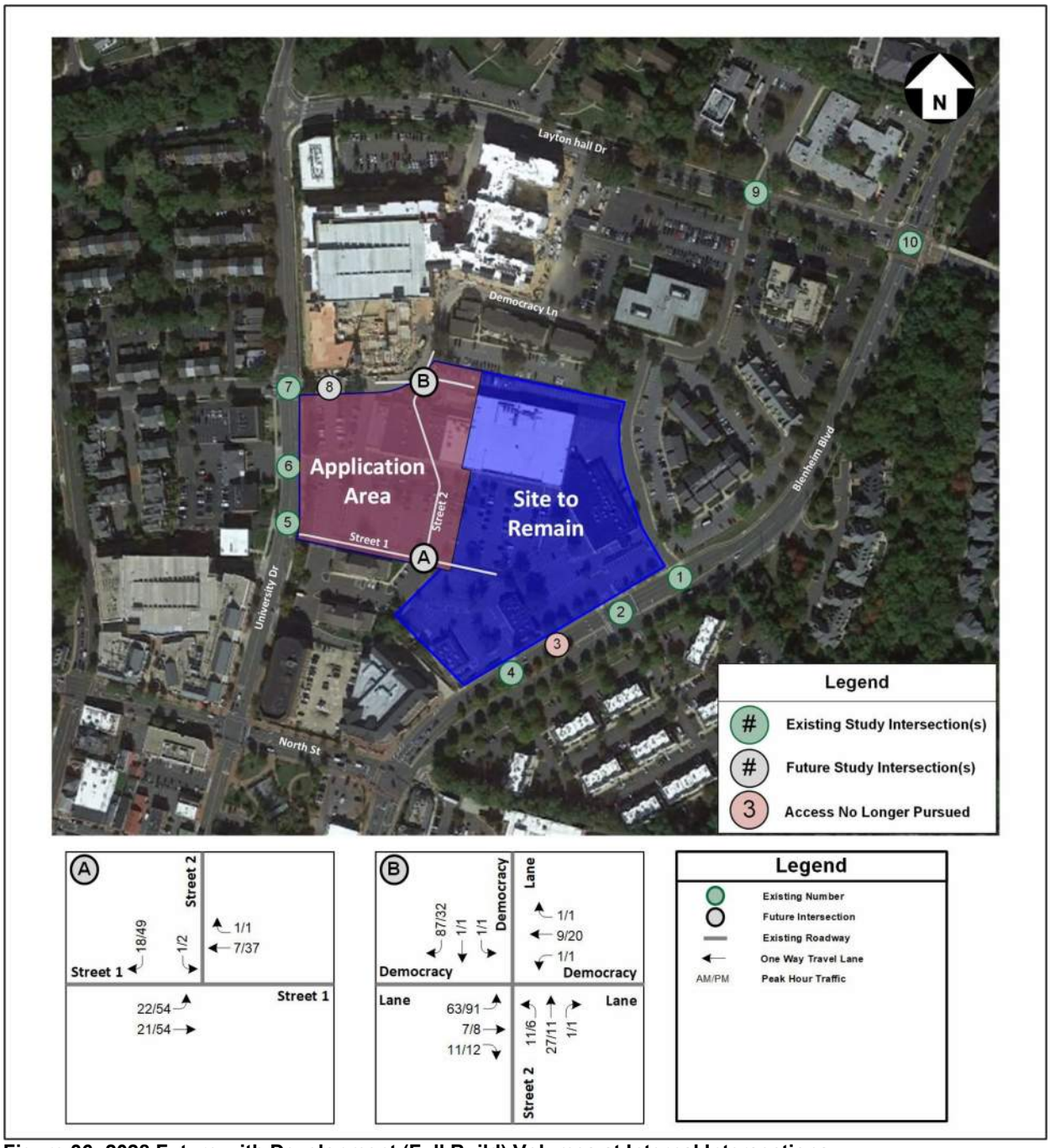

Figure 36: 2028 Future with Development (Full Build) Volumes at Internal Intersections

It is noted that both Intersection A and Intersection B are planned to be All Way Stop Controlled intersections. All-Way Stop Controlled intersections are preferred at these locations as they provide for lower speed vehicular operation and safer pedestrian crossings within the site.

Future with Development (2028) (Full-Build) - 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 14 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 14 and are expressed in feet. The detailed analysis worksheets are included in Appendix J.

Table 14: Future with Development Internal Intersection Analysis (2028 Full-Build)

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)		**A**	**7.3**		**A**	**7.6**	
	Eastbound Approach		***A***	***7.6***		***A***	***8.1***	
	Eastboud Left/Thru/Right		A	7.6	8	A	8.1	13
	Westbound Approach		***A***	***7.2***		***A***	***7.5***	
	Westbound Left/Thru/Right		A	7.2	0	A	7.5	3
	Northbound Approach		***A***	***7.3***		***A***	***7.6***	
	Northbound Left/Thru/Right		A	7.3	3	A	7.6	5
	Southbound Approach		***A***	***6.8***		***A***	***7.1***	
	Southbound Left/Thru/Right		A	6.8	3	A	7.1	8
B	**Democracy Lane (E/W) and Street 2 (N/S)**							
	Overall Intersection (AWSC)		**A**	**7.1**		**A**	**7.5**	
	Eastbound Approach		***A***	***7.3***		***A***	***7.8***	
	Eastboud Left/Thru/Right		A	7.3	5	A	7.8	13
	Westbound Approach		***A***	***7.0***		***A***	***7.4***	
	Westbound Left/Thru/Right		A	7.0	0	A	7.4	5
	Southbound Approach		***A***	***6.6***		***A***	***6.9***	
	Southbound Left/Thru/Right		A	6.6	0	A	6.9	5

As observed from Table 14, all intersection approaches and movements operate at LOS A with minimal queuing.

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 (2023) Scenario** – assumes existing traffic volume based on the counts.
- **Future without Development 2028** – assumes existing traffic volume plus additional traffic due to a 1% annual growth rate.
- **Future with Development 2028 (Full-Build)** – assumes Future without Development 2028 traffic plus traffic generated by the proposed Courthouse Plaza Development (Full Build). 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 15 and the queue comparison for the study scenarios is included in Table 16 and Table 17.

Table 15: Delay Comparison Table

No.	Intersection (Movement)	Level of Service (LOS) (Sec./Veh.)					
		AM Peak Hour			PM Peak Hour		
		2023 EX	2028 FB	2028 TF	2023 EX	2028 FB	2028 TF
1	**Blenheim Boulevard (N/S) at Plaza Drive (E/W)**						
	Overall Intersection (TWSC)						
	Eastbound Approach	*B (10.9)*	*B (10)*	*B (10.1)*	*B (11.7)*	*B (10.7)*	*B (10.7)*
	Eastbound Right	B (10.9)	B (10)	B (10.1)	B (11.7)	B (10.7)	B (10.7)
2	**Blenheim Boulevard (N/S) at Fairfax Commons (E/W)**						
	Overall Intersection (Signalized)	**A (8.8)**	**A (8.6)**	**A (8.8)**	**B (11.2)**	**B (11.2)**	**B (11.2)**
	Eastbound Approach	*B (18.3)*	*B (18.3)*	*B (18.2)*	*C (26.1)*	*C (26.1)*	*C (26.1)*
	Eastbound Thru/Left	B (17.9)	B (17.9)	B (17.8)	C (24.9)	C (24.9)	C (25.1)
	Eastbound Right	B (18.7)	B (18.8)	B (18.7)	C (26.8)	C (26.8)	C (26.8)
	Westbound Approach	*B (17.7)*	*B (17.7)*	*B (17.6)*	*C (26.5)*	*C (26.5)*	*C (26.8)*
	Westbound Left/Thru/Right	B (17.7)	B (17.7)	B (17.6)	C (26.5)	C (26.5)	C (26.8)
	Northbound Approach	*A (8.4)*	*A (8.3)*	*A (8.5)*	*A (7.6)*	*A (7.6)*	*A (7.6)*
	Northbound Left	A (6.8)	A (6.7)	A (6.9)	A (6.8)	A (6.8)	A (6.9)
	Northbound Thru	A (8.6)	A (8.4)	A (8.6)	A (7.7)	A (7.8)	A (7.7)
	Northbound Right	A (6.9)	A (6.9)	A (7)	A (6.7)	A (6.7)	A (6.7)
	Southbound Approach	*A (8.6)*	*A (8.5)*	*A (8.7)*	*A (9.6)*	*A (9.7)*	*A (9.9)*
	Southbound Left	A (7.2)	A (7.1)	A (7.3)	A (7.2)	A (7.3)	A (7.4)
	Southbound Thru	A (8.7)	A (8.5)	A (8.8)	A (9.8)	A (9.9)	B (10.1)
	Southbound Right	A (7.5)	A (7.4)	A (7.6)	A (8.1)	A (8.1)	A (8.2)
4	**Blenheim Boulevard (N/S) at Existing Driveway (E/W)**						
	Overall Intersection (TWSC)						
	Eastbound Approach	*A (0)*	*A (0)*	*A (0)*	*A (0)*	*A (0)*	*A (0)*
	Eastbound Right	A (0)	A (0)	A (0)	A (0)	A (0)	A (0)
5	**University Drive (N/S) at Existing Driveway (E/W) (3-Legged)**						
	Overall Intersection (TWSC)						
	Eastbound Approach	*A (8.9)*	*A (9.4)*		*B (10.3)*	*B (11.4)*	
	Eastbound Left/Right	A (8.9)	A (9.4)		B (10.3)	B (11.4)	
	Northbound Approach						
	Northbound Left	A (7.7)	A (7.7)		A (8.2)	A (8.2)	
5	**University Drive (N/S) at Street 1(E/W) (4-Legged)**						
	Overall Intersection (TWSC)						
	Eastbound Approach			*A (9.4)*			*B (12.2)*
	Eastbound Left/Thru/Right			A (9.4)			B (12.2)
	Westbound Approach			*B (13.4)*			*C (17.5)*
	Westbound Left/Thru/Right			B (13.4)			C (17.5)
	Northbound Approach						
	Northbound Left			A (7.7)			A (8.1)
	Southbound Approach						
	Southbound Left			A (8)			A (8.2)

No.	Intersection (Movement)	Level of Service (LOS) (Sec./Veh.)					
		AM Peak Hour			PM Peak Hour		
		2023 EX	2028 FB	2028 TF	2023 EX	2028 FB	2028 TF
6	**University Drive (N/S) at 7-11 Driveway (E/W) (4-Legged)**						
	Overall Intersection (TWSC)						
	Eastbound Approach	*A (9.9)*	*B (10.6)*		*B (13.2)*	*C (15.7)*	
	Eastbound Left/Thru/Right	A (9.9)	B (10.6)		B (13.2)	C (15.7)	
	Westbound Approach	*B (12.4)*	*B (13.1)*		*B (13.6)*	*C (16.4)*	
	Westbound Left	B (13.5)	B (14.2)		C (16.4)	C (21.2)	
	Westbound Thru/Right	A (9.3)	B (10.1)		B (10.8)	B (11.7)	
	Northbound Approach						
	Northbound Thru/Left (Northbound Left in 2028)	A (7.8)	A (7.8)		A (8.1)	A (8.1)	
	Southbound Approach						
	Southbound Thru/Left (EX Only)	A (8)	A (8)		A (8.1)	A (8.2)	
6	**University Drive (N/S) at 7-11 Driveway (N/S) (3-Legged)**						
	Overall Intersection (TWSC)						
	Eastbound Approach			*B (10.1)*			*B (12.2)*
	Eastbound Left/Thru/Right			B (10.1)			B (12.2)
	Northbound Approach						
	Northbound Thru/Left			A (7.8)			A (8.3)
7	**University Drive (N/S) at Whitehead Street/Democracy Lane (E/**						
	Overall Intersection (Signalized)	**B (10.4)**	**B (11)**	**B (11.3)**	**B (10.3)**	**B (10.8)**	**B (11)**
	Eastbound Approach	*B (13.5)*	*B (14.9)*	*B (15.4)*	*B (12.8)*	*B (14.2)*	*B (14.5)*
	Eastbound Left/Thru	B (14)	B (15.5)	B (16.1)	B (13.5)	B (14.9)	B (15.2)
	Eastbound Right	B (11.3)	B (12.7)	B (12.8)	B (11.7)	B (13)	B (13.3)
	Westbound Approach	*B (11.8)*	*B (13.2)*	*B (13.8)*	*B (13.4)*	*B (14.9)*	*B (15.6)*
	Westbound Left/Thru/Right	B (11.8)	B (13.2)	B (13.8)	B (13.4)	B (14.9)	B (15.6)
	Northbound Approach	*A (9.5)*	*A (9.9)*	*A (9.9)*	*A (9.2)*	*A (9.4)*	*A (9.5)*
	Northbound Thru/Left (Northbound Left in 2028)	A (9.5)	A (7.9)	A (7.9)	A (9.2)	A (9.5)	A (7.8)
	Northbound Thru/Right	A (9.5)	A (9.9)	A (10)	A (9.2)	A (9.5)	A (9.6)
	Southbound Approach	*A (9.1)*	*A (9.2)*	*A (9.1)*	*A (9.1)*	*A (9.4)*	*A (9.4)*
	Southbound Thru/Left (Southbound Left in 2028)	A (9.1)	A (7.9)	A (8)	A (9.1)	A (9.5)	A (7.8)
	Southbound Thru/Right	A (9.1)	A (9.2)	A (9.2)	A (9.1)	A (9.5)	A (9.5)
8	**Democracy Lane (E/W) at Garage Entrance (N/S)**						
	Overall Intersection (TWSC)						
	Westbound Approach						
	Westbound Left			A (7.3)			A (7.5)
	Northbound Approach			*A (9.2)*			*A (9.7)*
	Northbound Left/Right			A (9.2)			A (9.7)
9	**Layton Hall Drive (E/W) at Democracy Lane (N/S)**						
	Overall Intersection (TWSC)						
	Eastbound Approach						
	Eastbound Left	A (7.7)	A (7.7)	A (7.7)	A (7.6)	A (7.6)	A (7.6)
	Westbound Approach						
	Westbound Left	A (7.9)	A (7.9)	A (7.9)	A (7.8)	A (7.8)	A (7.9)
	Northbound Approach	*B (11.5)*	*B (11.3)*	*B (10.8)*	*B (10.5)*	*B (10.5)*	*B (10.5)*
	Northbound Left/Thru/Right	B (11.5)	B (11.3)	B (10.8)	B (10.5)	B (10.5)	B (10.5)
	Southbound Approach	*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		
		2023 EX	2028 FB	2028 TF	2023 EX	2028 FB	2028 TF
10	**Blenheim Boulevard (N/S) at Layton Hall Drive (E/W)**						
	Overall Intersection (Signalized)	**C (24.9)**	**C (24.3)**	**C (25.1)**	**C (20.7)**	**C (21.2)**	**C (21.5)**
	Eastbound Approach	*C (32.4)*	*C (31.4)*	*C (32.1)*	*C (26.8)*	*C (27.3)*	*C (27.5)*
	Eastbound Left	C (33.6)	C (32.6)	C (33.2)	C (27.9)	C (28.5)	C (28.7)
	Eastbound Thru/Right	C (25.8)	C (25.1)	C (25)	C (23.8)	C (24.2)	C (24.1)
	Westbound Approach	*D (38.7)*	*D (36.9)*	*D (38.1)*	*C (30)*	*C (30.8)*	*C (31.2)*
	Westbound Left	C (33.9)	C (32.8)	C (33.8)	C (28.6)	C (29.4)	C (29.8)
	Westbound Thru/Right	D (39.9)	D (37.9)	D (39.2)	C (30.7)	C (31.5)	C (31.9)
	Northbound Approach	*C (23.7)*	*C (23.2)*	*C (23.9)*	*B (18.7)*	*B (19.1)*	*B (19.3)*
	Northbound Left	B (15.9)	B (15.7)	B (16.2)	B (14.4)	B (14.6)	B (14.8)
	Northbound Thru	C (24.8)	C (24.2)	C (25)	B (19.3)	B (19.9)	C (20)
	Northbound Right	B (15.2)	B (15)	B (15.5)	B (14)	B (14.1)	B (14.2)
	Southbound Approach	*C (20.9)*	*C (20.6)*	*C (21.3)*	*B (19.3)*	*B (19.8)*	*C (20.2)*
	Southbound Left	B (18.3)	B (18)	B (18.5)	B (15.1)	B (15.4)	B (15.5)
	Southbound Thru/Right	C (20.9)	C (20.7)	C (21.3)	B (19.4)	B (19.9)	C (20.3)

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

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 15 shows that the capacity analysis results indicate that all movements operate at acceptable LOS under all analysis scenarios.

Table 16: Queue Comparison Table (50th Percentile – for Signalized Intersections Only)

No.	Intersection (Movement)	50th Percentile Queue (ft.)						
			AM Peak Hour			PM Peak Hour		
		Effective Storage Length (ft.)	2023 EX	2028 FB	2028 TF	2023 EX	2028 FB	2028 TF
2	**Blenheim Boulevard (N/S) at Fairfax Commons (E/W)**							
	Overall Intersection (Signalized)							
	Eastbound Approach							
	Eastbound Thru/Left		1	1	1	17	17	14
	Eastbound Right		0	0	0	0	0	0
	Westbound Approach							
	Westbound Left/Thru/Right		0	0	0	27	27	27
	Northbound Approach							
	Northbound Left	120	0	0	0	8	8	8
	Northbound Thru		0	0	0	32	34	33
	Northbound Right		0	0	0	0	0	0
	Southbound Approach							
	Southbound Left	120	1	1	1	2	2	2
	Southbound Thru		0	0	0	80	85	85
	Southbound Right		0	0	0	0	0	0
7	**University Drive (N/S) at Whitehead Street/Democracy Lane (E/**							
	Overall Intersection (Signalized)							
	Eastbound Approach							
	Eastbound Left/Thru		15	16	16	11	13	13
	Eastbound Right		0	0	0	0	0	0
	Westbound Approach							
	Westbound Left/Thru/Right		4	4	7	10	11	14
	Northbound Approach							
	Northbound Thru/Left (Northbound Left in 2028)	150	17	1	1	17	3	3
	Northbound Thru/Right		17	36	37	17	35	37
	Southbound Approach							
	Southbound Thru/Left (Southbound Left in 2028)		9	1	1	16	1	3
	Southbound Thru/Right		9	19	19	16	34	35
10	**Blenheim Boulevard (N/S) at Layton Hall Drive (E/W)**							
	Overall Intersection (Signalized)							
	Eastbound Approach							
	Eastbound Left		125	115	128	78	86	90
	Eastbound Thru/Right		8	7	7	7	7	7
	Westbound Approach							
	Westbound Left		8	7	7	6	7	7
	Westbound Thru/Right		6	5	6	5	5	5
	Northbound Approach							
	Northbound Left	250	22	20	21	12	14	14
	Northbound Thru		248	218	231	136	150	148
	Northbound Right	230	0	0	0	0	0	0
	Southbound Approach							
	Southbound Left	150	6	5	5	5	5	5
	Southbound Thru/Right		147	133	139	142	155	156

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

Table 16 shows that all 50th percentile queues are accommodated within the available storage for all movements at the signalized intersections in the study area.

Table 17: Queue Comparison Table (95th Percentile)

No.	Intersection (Movement)	95th Percentile Queues (ft.)						
			AM Peak Hour			PM Peak Hour		
		Effective Storage Length (ft.)	2023 EX	2028 FB	2028 TF	2023 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	5
2	**Blenheim Boulevard (N/S) at Fairfax Commons (E/W)**							
	Overall Intersection (Signalized)							
	Eastbound Approach							
	Eastbound Thru/Left		17	17	19	45	45	47
	Eastbound Right		0	0	0	18	18	15
	Westbound Approach							
	Westbound Left/Thru/Right		0	0	0	66	66	65
	Northbound Approach							
	Northbound Left	120	11	11	12	22	22	25
	Northbound Thru		108	113	114	94	100	98
	Northbound Right		0	0	0	0	0	0
	Southbound Approach							
	Southbound Left	120	6	7	7	8	8	8
	Southbound Thru		83	86	89	132	140	141
	Southbound Right		0	0	0	0	0	1
4	**Blenheim Boulevard (N/S) at Existing Driveway (E/W)**							
	Overall Intersection (TWSC)							
	Eastbound Approach							
	Eastbound Right		0	0	0	0	0	0
5	**University Drive (N/S) at Existing Driveway (E/W) (3-Legged)**							
	Overall Intersection (TWSC)							
	Eastbound Approach							
	Eastbound Left/Right		0	0		3	3	
	Northbound Approach							
	Northbound Left		0	0		0	0	
5	**University Drive (N/S) at Street 1(E/W) (4-Legged)**							
	Overall Intersection (TWSC)							
	Eastbound Approach							
	Eastbound Left/Thru/Right				0			3
	Westbound Approach							
	Westbound Left/Thru/Right				0			3
	Northbound Approach							
	Northbound Left				0			0
	Southbound Approach							
	Southbound Left				5			23

No.	Intersection (Movement)	95th Percentile Queues (ft.)						
			AM Peak Hour			PM Peak Hour		
		Effective Storage Length (ft.)	2023 EX	2028 FB	2028 TF	2023 EX	2028 FB	2028 TF
6	**University Drive (N/S) at 7-11 Driveway (E/W) (4-Legged)**							
	Overall Intersection (TWSC)							
	Eastbound Approach							
	Eastbound Left/Thru/Right		3	3		8	10	
	Westbound Approach							
	Westbound Left		3	3		10	15	
	Westbound Thru/Right		0	0		5	8	
	Northbound Approach							
	Northbound Thru/Left (Northbound Left in 2028)		0	0		0	0	
	Southbound Approach							
	Southbound Thru/Left (EX Only)		0	0		3	3	
6	**University Drive (N/S) at 7-11 Driveway (N/S) (3-Legged)**							
	Overall Intersection (TWSC)							
	Eastbound Approach							
	Eastbound Left/Thru/Right				3			8
	Northbound Approach							
	Northbound Thru/Left				0			0
7	**University Drive (N/S) at Whitehead Street/Democracy Lane (E/**							
	Overall Intersection (Signalized)							
	Eastbound Approach							
	Eastbound Left/Thru		91	105	108	79	88	91
	Eastbound Right		9	10	10	28	32	32
	Westbound Approach							
	Westbound Left/Thru/Right		33	38	60	70	79	93
	Northbound Approach							
	Northbound Thru/Left (Northbound Left in 2028)	150	89	12	12	92	27	27
	Northbound Thru/Right		89	200	203	92	193	205
	Southbound Approach							
	Southbound Thru/Left (Southbound Left in 2028)		55	9	17	87	16	30
	Southbound Thru/Right		55	118	120	87	189	195
8	**Democracy Lane (E/W) at Garage Entrance (N/S)**							
	Overall Intersection (TWSC)							
	Westbound Approach							
	Westbound Left				0			3
	Northbound Approach							
	Northbound Left/Right				8			5
9	**Layton Hall Drive (E/W) at Democracy Lane (N/S)**							
	Overall Intersection (TWSC)							
	Eastbound Approach							
	Eastbound Left		3	3	3	0	0	0
	Westbound Approach							
	Westbound Left		0	0	0	0	0	3
	Northbound Approach							
	Northbound Left/Thru/Right		3	3	3	5	5	5
	Southbound Approach							
	Southbound Left/Thru/Right		0	0	0	3	3	3

No.	Intersection (Movement)	95th Percentile Queues (ft.)						
			AM Peak Hour			PM Peak Hour		
		Effective Storage Length (ft.)	2023 EX	2028 FB	2028 TF	2023 EX	2028 FB	2028 TF
10	**Blenheim Boulevard (N/S) at Layton Hall Drive (E/W)**							
	Overall Intersection (Signalized)							
	Eastbound Approach							
	Eastbound Left		279	284	313	172	187	196
	Eastbound Thru/Right		44	44	44	46	47	47
	Westbound Approach							
	Westbound Left		34	33	33	29	29	30
	Westbound Thru/Right		50	52	52	35	36	37
	Northbound Approach							
	Northbound Left	250	49	51	51	35	38	38
	Northbound Thru		490	515	517	338	366	368
	Northbound Right	230	0	0	0	0	0	0
	Southbound Approach							
	Southbound Left	150	19	19	19	18	18	19
	Southbound Thru/Right		217	226	228	234	254	262

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

Table 17 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.

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 Monday, May 22, 2023. 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 with the application submission.

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

Analysis Components

- 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.
- At full build-out (2028), the proposed development, will generate approximately 127 AM peak hour trips, 146 PM peak hour trips and 1,696 trips on a typical weekday per ITE Trip General 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.
- Please note that the application has evolved throughout the process, and as such the TIA has evolved to reflect the current plans. As compared to the previous TIA submission dated May 17, 2024, the development program has changed to include up to 13,000 SF of retail within the proposed building. The proposed access points to the development are unchanged, however, internally Street 2 has been extended to the north to intersect Democracy Lane. This configuration achieves the City's Comprehensive Plan vision of a grid system of streets within the Courthouse Plaza site. Lastly, in the latest submission, the analysis scenario with an adjacent separate Special Use Permit (SUP) application which included a coffee shop has been removed from the TIA, as that SUP is no longer being pursued and is no longer applicable.

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 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 (Full-Build 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 internal intersections within the development with the introduced Street 1 and Street 2 operate with minimal delays and queuing.

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.

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TECHNICAL ATTACHMENTS

Appendix A – Signed Scoping Document

Appendix B – CUE Bus Schedules

Appendix C – Crash Data

Appendix D – Existing Turning Movement Counts

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

Appendix F – Intersection Analysis Worksheets – Existing 2023

Appendix G – Intersection Analysis Worksheets – 2028 Future without Development

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

Appendix I – Site Visit Photographs

Appendix J – Intersection Analysis Worksheet – Internal Intersections

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

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 10.4-acre site consists of one (1) parcel (Tax Map # 57-2-20-004 D). The existing site is currently occupied by 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 300 multifamily units residential building on the west side of the property with approximately 64,000 SF of existing retail to remain. Phase 2 is planned to approximately consist of an additional 300 multifamily units (600 total units) along with approximately 62,000 SF of future retail which will replace the existing retail. Phase 1 is anticipated to be in place by 2028 and Phase 2 is anticipated to be completed by 2038 for the purposes of this analysis. Under both phases, the proposed trip differential between existing and proposed is considered negligible. An alternative scenario is also being included with Phase 1 which includes a Coffee Shop Drive-Thru which is being considered on the site in a separate application. Site access is planned to be provided via two curb cuts along University Drive and three 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**: (Ultimate Scenario) • 600 DU (ITE LUC 221) • 57,800 SF (ITE LUC 821) • 4,200 SF (ITE LUC 937)	
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 - 2038	Design Year: N/A
Study Area Boundaries (Attach map) **PLEASE SEE FIGURE 2**	North: Democracy Lane	South: North St	
	East: Blenheim Road	West: University Drive	
External Factors That Could Affect Project (Planned road improvements, other nearby developments)	• Old Lee Highway Multimodal Improvements • University Drive Road Diet		
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 0.5% - 2029 to 2038 On all major roadways	Peak Period for Study (check all that apply)	☒ AM ☒ PM ☐ SAT

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.

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 Dr	
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 Bike Lanes (City of Fairfax Publication August 2021)	
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 _____	

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.

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. Old Synchro files and 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 2018 through 2022 will be obtained from VDOT.
9. Transportation Demand Management (TDM) discussion will be provided.
10. Relevant Pages on guidance from ITE and VDOT TIA Administrative Guidelines 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.

SIGNED: _____ DATE: 07/11/2023
Applicant or Consultant

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

SIGNED: _____ DATE: 7/14/23
City of Fairfax

PRINT NAME: Curt McCullough, PE
City of Fairfax

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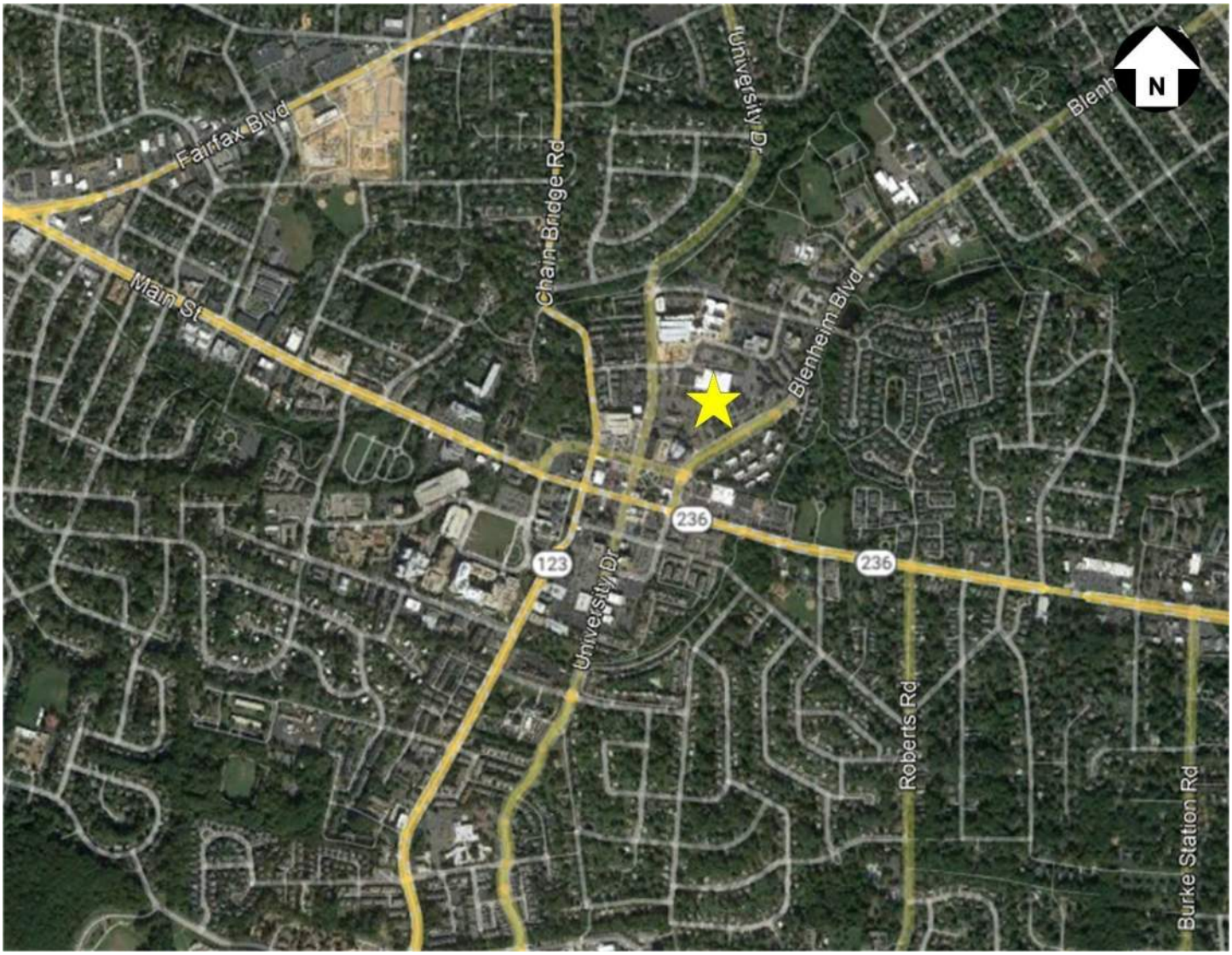


FIGURE 1: REGIONAL MAP

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.

FIGURE 2: STUDY INTERSECTIONS

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.

FIGURE 3: SITE TRIP DISTRIBUTION

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.

TABLE 1: HISTORICAL AADT COMPARISON

Road Segment:	From:	To:	Published VDOT AADT 2017	2018	2019	2020	2021	Annual Growth Rate 2017 - 2018	2018 - 2019	2019 - 2020	2020 - 2021
University Dr	SR-236 Main St	Whitehead St	11,000	11,000	11,000	4,900	5,700	0%	0%	-55%	16%
North St	SR-236 W Main St	SR-236 E Main St	20,000	20,000	20,000	15,000	17,000	0%	0%	-25%	13%
Blenheim Blvd (Old Lee Hwy)	SR-236 Main St	Layton Hall Rd	16,000	16,000	17,000	8,300	9,600	0%	6%	-51%	16%
Democracy Ln	SR-236 Main St	Layton Hall Rd	840	840	840	590	670	0%	0%	-30%	14%

Source; VDOT Traffic Data (http://www.viriginiadot.org/info/ct-trafficcounts.asp)

TABLE 2: TRIP GENERATION: EXISTING DEVELOPMENT

Land Use	ITE Code	Size	Weekday AM Peak Hour In	Out	Total	PM Peak Hour In	Out	Total	Daily Total
Existing Development									
Shopping Center (40 kSF<X<150 kSF) (with Supermarket)	821	91.9 kSF of GFA	201	123	324	395	428	823	8,482
Subtotal (Existing)			**201**	**123**	**324**	**395**	**428**	**823**	**8,482**

TABLE 3: TRIP GENERATION: PHASE 1 WITH NO REDUCTIONS

Land Use	ITE Code	Size	Weekday AM Peak Hour In	Out	Total	PM Peak Hour In	Out	Total	Daily Total
Proposed Development - Phase 1									
Multifamily Housing (Mid-Rise) (Apartments, Townhomes, Condo)	221	300 DU	28	92	120	71	46	117	1,385
Shopping Center (40 kSF<X<150 kSF) (with Supermarket)	821	64.0 kSF of GFA	140	86	226	293	317	610	6,338
Subtotal (Proposed Phase 1)			**168**	**178**	**346**	**364**	**363**	**727**	**7,723**

TABLE 4: TRIP GENERATION: PHASE 1 WITH REDUCTIONS

Land Use	ITE Code	Size	Weekday AM Peak Hour In	Out	Total	PM Peak Hour In	Out	Total	Daily Total
Existing Development									
Shopping Center (40 kSF<X<150 kSF) (with Supermarket)	821	91.9 kSF of GFA	201	123	324	395	428	823	8,482
Subtotal (Existing)			**201**	**123**	**324**	**395**	**428**	**823**	**8,482**
Proposed Development - Proposed Concept (Phase 1)									
Multifamily Housing (Mid-Rise) (Apartments, Townhomes, Condo)	221	300 DU	28	92	120	71	46	117	1,385
Internal Capture Residential - Retail[1] (1)			-3	-9	-12	-7	-5	-12	-139
Mode Split/TDM Reduction 15%			-4	-12	-16	-10	-6	-16	-187
Residential Subtotal (with Reductions)			21	71	92	54	35	89	1,059
Shopping Center (40 kSF<X<150 kSF) (with Supermarket)	821	64.0 kSF of GFA	140	86	226	293	317	610	6,338
Internal Capture Retail - Residential[1] (1)			-9	-3	-12	-5	-7	-12	-139
Pass-By Reduction[2] 25%/40%/25%			-27	-27	-54	-120	-119	-239	-1,550
Retail Subtotal (with Reductions)			104	56	160	168	191	359	4,649
Total Proposed Trips (with Reductions)			**125**	**127**	**252**	**222**	**226**	**448**	**5,708**
Total Trips (Proposed - Existing)			**-76**	**4**	**-72**	**-173**	**-202**	**-375**	**-2,774**

[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 (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 ITE Pass-By Tables for the ITE 11th Edition Trip Generation Handbook. The average rate for Shopping Centers is 40% for the PM Peak. For all other time periods, the default Pass-By rate of 25% is assumed*

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.

TABLE 5: TRIP GENERATION: PHASE 1 WITH COFFEE SHOP ALTERNATIVE SCENARIO

Land Use	ITE Code	Size		Weekday AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily Total
Proposed Development - Proposed Concept (Phase 1)										
Multifamily Housing (Mid-Rise) (Apartments, Townhomes, Condo)	221	300	DU	28	92	120	71	46	117	1,385
Internal Capture Residential - Retail[1]			(1)	-3	-9	-12	-7	-5	-12	-139
Mode Split/TDM Reduction			15%	-4	-12	-16	-10	-6	-16	-187
Residential Subtotal (with Reductions)				21	71	92	54	35	89	1,059
Shopping Center (40 kSF<X<150 kSF) (with Supermarket)	821	64.0	kSF of GFA	140	86	226	293	317	610	6,338
Coffee/Donut Shop with Drive-Thru Window	937	4.2	kSF of GFA	191	183	374	91	91	182	3,446
Internal Capture Retail - Residential[1]			(1)	-9	-3	-12	-5	-7	-12	-139
Retail Pass-By Reduction[2]			25%/40%/25%	-27	-27	-54	-120	-119	-239	-1,550
Coffee Shop w/Drive Thru Pass-By Reduction[3]			25%/40%/25%	-48	-46	-94	-36	-36	-73	-862
Coffee Shop and Retail Subtotal (with Reductions)				247	193	440	223	246	468	7,233
Total Proposed Trips (with Reductions)				**268**	**264**	**532**	**277**	**281**	**557**	**8,292**

[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
(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 ITE Pass-By Tables for the ITE 11th Edition Trip Generation Handbook. The average rate for Shopping Centers is 40% for the PM Peak. For all other time periods, the default Pass-By rate of 25% is assumed
3 Assumed since no data available in ITE Trip Generation Handbook

TABLE 6: TRIP GENERATION: PHASE 2 WITH NO REDUCTIONS

Land Use	ITE Code	Size		Weekday AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily Total
Proposed Development - Phase 2										
Multifamily Housing (Mid-Rise) (Apartments, Townhomes, Condo)	221	600	DU	58	194	252	143	91	234	2,816
Shopping Center (40 kSF<X<150 kSF) (with Supermarket)	821	62.0	kSF of GFA	136	83	219	285	309	594	6,184
Subtotal (Proposed Phase 2)				**194**	**277**	**471**	**428**	**400**	**828**	**9,000**

TABLE 7: TRIP GENERATION: PHASE 2 WITH REDUCTIONS

Land Use	ITE Code	Size		Weekday AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily Total
Existing Development										
Shopping Center (40 kSF<X<150 kSF) (with Supermarket)	821	91.9	kSF of GFA	201	123	324	395	428	823	8,482
Subtotal (Existing)				**201**	**123**	**324**	**395**	**428**	**823**	**8,482**
Proposed Development - Proposed Concept (Phase 2)										
Multifamily Housing (Mid-Rise) (Apartments, Townhomes, Condo)	221	600	DU	58	194	252	143	91	234	2,816
Internal Capture Residential - Retail[1]			(1)	-6	-19	-25	-14	-9	-23	-282
Mode Split/TDM Reduction			15%	-8	-26	-34	-19	-12	-32	-380
Residential Subtotal (with Reductions)				44	149	193	110	70	179	2,154
Shopping Center (40 kSF<X<150 kSF) (with Supermarket)	821	62.0	kSF of GFA	136	83	219	285	309	594	6,184
Internal Capture Retail -Residential[1]			(1)	-19	-6	-25	-9	-14	-23	-282
Retail Pass-By Reduction[2]			25%/40%/25%	-25	-24	-49	-114	-114	-228	-1,476
Retail Subtotal (with Reductions)				92	53	145	162	181	343	4,426
Total Proposed Trips (with Reductions)				**136**	**202**	**338**	**272**	**251**	**522**	**6,580**
Total Trips (Proposed - Existing)				**-65**	**79**	**14**	**-123**	**-177**	**-301**	**-1,902**

[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
(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 ITE Pass-By Tables for the ITE 11th Edition Trip Generation Handbook. The average rate for Shopping Centers is 40% for the PM Peak. For all other time periods, the default Pass-By rate of 25% is assumed

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.

TABLE 8: TRIP GENERATION: PHASE 2 WITH COFFEE SHOP ALTERNATIVE SCENARIO

Land Use	ITE Code	Size		Weekday AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily Total
Proposed Development - Proposed Concept (Phase 2)										
Multifamily Housing (Mid-Rise) (Apartments, Townhomes, Condo)	221	600	DU	58	194	252	143	91	234	2,816
Internal Capture Residential - Retail[1]			(1)	-6	-19	-25	-14	-9	-23	-282
Mode Split/TDM Reduction			15%	-8	-26	-34	-19	-12	-32	-380
Residential Subtotal (with Reductions)				44	149	193	110	70	179	2,154
Shopping Center (40 kSF<X<150 kSF) (with Supermarket)	821	57.8	kSF of GFA	126	78	204	270	292	562	5,861
Coffee/Donut Shop with Drive-Thru Window	937	4.2	kSF of GFA	191	183	374	91	91	182	3,446
Internal Capture Coffee Shop + Retail and Residential[1]			(1)	-19	-6	-25	-9	-14	-23	-282
Retail Pass-By Reduction[2]			25%/40%/25%	-23	-22	-45	-108	-108	-216	-1,395
Coffee Shop w/Drive Thru Pass-By Reduction [3]			25%/40%/25%	-48	-46	-94	-36	-36	-73	-862
Coffee Shop and Retail Subtotal (with Reductions)				227	187	414	208	225	432	6,768
Total Proposed Trips (with Reductions)				**271**	**336**	**607**	**318**	**295**	**611**	**8,922**

[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 (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 34% for the PM Peak. For all other time periods, the default pass by rate is 25%

3 Assumed since no data available in ITE Trip Generation Handbook

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.

FIGURE 4: MULTIMODAL ITEMS INCLUDED IN STUDY

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.

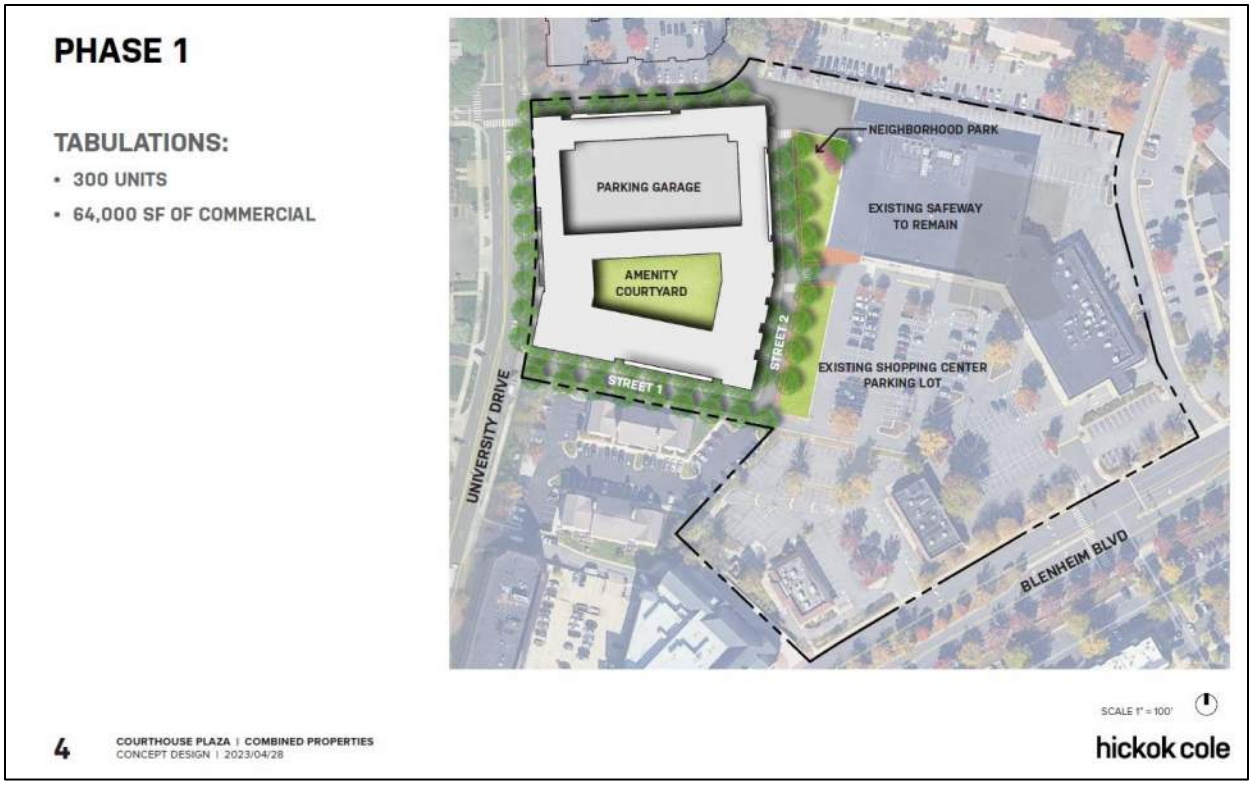


FIGURE 5: CONCEPT PLAN (PHASE 1)

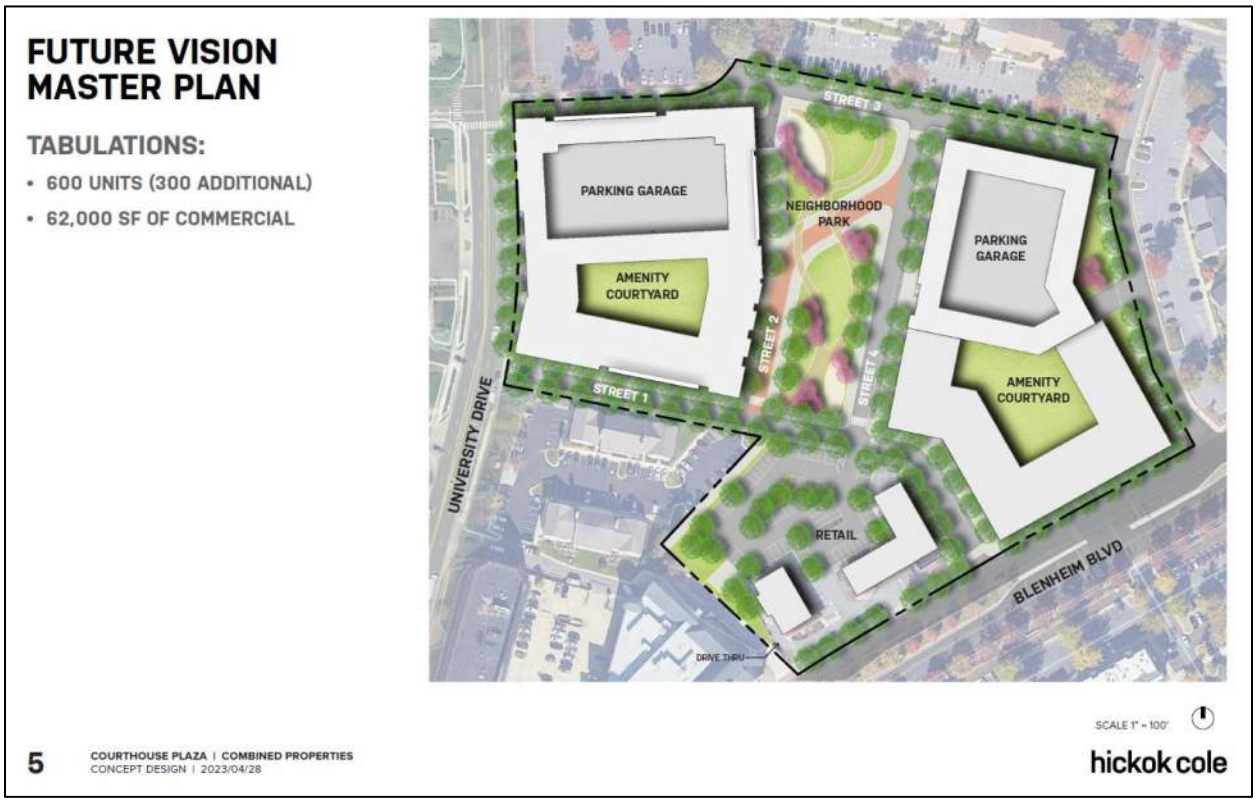


FIGURE 6: CONCEPT PLAN (FULL BUILDOUT)

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.

Appendix B – CUE Bus Schedules

TRANSIT GUIDE

Bus Routes, Schedules & Rider Information

FREE TO RIDE

703-385-7859

cuebus.org

Check cue.transloc.com for real-time arrivals!

Effective August 1, 2022

Information for CUE BUS Riders

The CUE Bus service provides free transit service within the City of Fairfax and to the Vienna/Fairfax-GMU Metrorail Station and George Mason University. Buses operate seven days a week according to this schedule.

Información para viajeros de los buses CUE

El servicio de bus CUE ofrece servicio de transporte gratuito dentro de la ciudad de Fairfax y a la estación de Metrorail de Viena / Fairfax-GMU y la Universidad George Mason. Los buses operan siete días a la semana de acuerdo con este horario.

Contact Information

CUE Bus General Information..... 703-385-7859; TTY: 711
City Wheels..... 703-385-7859; TTY: 711
Metro Access..... 301-562-5360; TTY: 711, 301-588-7535
Metro Disability ID.... 202-962-2700; TTY: 711, 202-628-8973

Información de Contacto

Información sobre buses CUE..... 703-385-7859; TTY: 711
City Wheels..... 703-385-7859; TTY: 711
Metro Access..... 301-562-5360; TTY: 711, 301-588-7535
Metro Disability ID... 202-962-2700; TTY: 711, 202-628-8973

cuebus.org

Check cue.transloc.com for real-time arrivals!

CUE FAIRFAX CITY

FAIRFAX CITY

CUE FAIRFAX CITY

Vienna/Fairfax-GMU Metrorail Station

CITY OF FAIRFAX

GEORGE MASON UNIVERSITY

Oakton High School
Providence Elementary School
Fairfax High School
Daniels Run Elementary School
Fire Station #33
Fire Station #3
Inova Access
City Hall
Library
Courthouse Plaza
Post Office
Home Depot
City Property Yard
Fairfax Circle
Katherine Johnson Middle School
Kamp Washington Shopping Center
Historic Blenheim
Turnpike Shopping Center
Fair City Mall
Pickett Shopping Center
Woodson High School

Dale Lestina Park
Cardinal Park
Draper Drive Park
Shiloh Street Park
Stafford Park
Cobbdale Park
Fairchester Woods Park
Kutner Park
Pat Rodio Park
Van Dyck Park
Daniels Run Park
Army/Navy Country Club
Ashby Pond Conservatory
Thaiss Park
Gateway Regional Park
Westmore Park
Westmore School
Old Town Fairfax
Old Town Square
Fairfax County Judicial Center
Ratcliffe Park
Providence Park
School Street Park
Ted Grefe Park
Green Acres Center

Jermantown Rd
Blake Ln
Sutton Rd
Five Oaks Rd
Bel Glade Stn
Lindenbrook St
Mission Square Dr
Kingsbridge Dr
Country Creek Rd
Village Spring Ln
Vaden Dr
Virginia Center Blvd
Nutley St
Hermosa Dr
Barrick St
Stonehurst Dr
Arlington Blvd
Hume Ave
Old Pickett Rd
Draper Dr
Spring St
Campbell Dr
Roanoke Ave
Ridge Ave
Great Oak Dr
Lion Run
Blenheim Blvd
Cornell Rd
Brookwood Dr
Country Hill Dr
Queen Anne Dr
Embassy Ln
Parklane Rd
Heritage Ln
Colony Rd
Layton Hall Dr
Democracy Ln
Willard Way
Whitehead St
North St
Main St
Fairview Dr
Tedrich Blvd
Stonewall Ave
Burke Station Rd
Maple Ave
Estel Rd
Williamsburg Ct
Lyndhurst Dr
Trapp Rd
Wilcoxson Dr
Whitacre Rd
Bradwater St
Mathy Dr
Pickett Rd
Colonial Ave
Barristers Keepe Cir
Silver King Ct
Post Office
Chain Bridge Rd
Eaton Pl
Northfax St
Stratford Ave
Orchard St
Scott Dr
Warwick Ave
Woodhaven Dr
Meredith Dr
Fairfax Blvd
Burrows Ave
McLean Ave
Providence Way
Cedar Ave
Center St
Kenmore Dr
University Dr
Jenny Lynne Lane
Fair Woods Pkwy
Stafford Dr
Eaton Pl
Hill St
Warwick Cir
Bevan Dr
Gainsborough Ct
Cavalier Ct
Little Rock Ln
Rock Garden Dr
Snug Haven Ln
Fair Haven Ct
Copper Ln
Church St
Government Center Pkwy
Fairfax Blvd
Fairchester Dr
Hallman St
Walnut St
Oak St
Main St
Keith Ave
Railroad Ave
Fern St
Holly St
Chestnut St
Maple St
Poplar St
Woodland Dr
Yorktown Dr
Rust Rd
Page Ave
West St
Judicial Dr
East St
South St
Fire Station #3
Breckenridge Court
Barbour Dr
Armstrong St
Sideburn Rd
George Mason Blvd
University Dr
West Dr
Canfield St
School St
Cleveland St
Forest Ave
Laurel St
Patriot Circle
Ox Rd
Old Post Rd
Daniels Run Elementary School
Locust St
Roberts Rd
Sager Ave
Dwight Ave
Virginia St
Orchard Dr
Chain Bridge Road
Old Town Square
Ratcliffe Park
Fairfax High School
Historic Blenheim
Army/Navy Country Club
Ted Grefe Park
Daniels Run Park
Ashby Pond Conservatory
Thaiss Park
Gateway Regional Park
Pickett Shopping Center
Woodson High School
Fair City Mall
Turnpike Shopping Center
Kamp Washington Shopping Center
Government Center Pkwy
Rust Rd
Holly St
Fern St
Chestnut St
Maple St
Hallman St
Poplar St
Woodland Dr
Yorktown Dr
Judicial Dr
Page Ave
West St
Railroad Ave
Keith Ave
Main St
Oak St
Walnut St
Hallman St
Fairfax Blvd
Fairchester Dr
Meredith Dr
Bevan Dr
Gainsborough Ct
Cavalier Ct
Little Rock Ln
Rock Garden Dr
Snug Haven Ln
Fair Haven Ct
Copper Ln
Church St
Providence Elementary School
Jermantown Rd
Warwick Cir
Hill St
Orchard St
Scott Dr
Warwick Ave
Woodhaven Dr
Burrows Ave
McLean Ave
Northfax St
Eaton Pl
Chain Bridge Rd
Stratford Ave
Fair Woods Pkwy
Stafford Dr
Providence Way
Cedar Ave
Center St
Kenmore Dr
University Dr
Jenny Lynne Lane
Layton Hall Dr
Democracy Ln
Courthouse Plaza
Willard Way
Whitehead St
North St
Library
Old Town Square
Fairview Dr
Tedrich Blvd
Main St
Locust St
Roberts Rd
Sager Ave
Dwight Ave
Virginia St
Orchard Dr
Stonewall Ave
Burke Station Rd
Maple Ave
Estel Rd
Williamsburg Ct
Lyndhurst Dr
Trapp Rd
Wilcoxson Dr
Whitacre Rd
Bradwater St
Mathy Dr
Pickett Rd
Colonial Ave
Barristers Keepe Cir
Silver King Ct
Post Office
Nutley St
Hermosa Dr
Barrick St
Stonehurst Dr
Arlington Blvd
Hume Ave
Old Pickett Rd
Draper Dr
Spring St
Campbell Dr
Roanoke Ave
Ridge Ave
Great Oak Dr
Lion Run
Blenheim Blvd
Cornell Rd
Brookwood Dr
Country Hill Dr
Queen Anne Dr
Embassy Ln
Parklane Rd
Heritage Ln
Colony Rd
Daniels Run Elementary School
Layton Hall Dr
Democracy Ln
Willard Way
Whitehead St
North St
Main St
Fairview Dr
Tedrich Blvd
Stonewall Ave
Burke Station Rd
Maple Ave
Estel Rd
Williamsburg Ct
Lyndhurst Dr
Trapp Rd
Wilcoxson Dr
Whitacre Rd
Bradwater St
Mathy Dr
Pickett Rd
Colonial Ave
Barristers Keepe Cir
Silver King Ct
Post Office
Nutley St
Hermosa Dr
Barrick St
Stonehurst Dr
Arlington Blvd
Hume Ave
Old Pickett Rd
Draper Dr
Spring St
Campbell Dr
Roanoke Ave
Ridge Ave
Great Oak Dr
Lion Run
Blenheim Blvd
Cornell Rd
Brookwood Dr
Country Hill Dr
Queen Anne Dr
Embassy Ln
Parklane Rd
Heritage Ln
Colony Rd
Daniels Run Elementary School
Layton Hall Dr
Democracy Ln
Willard Way
Whitehead St
North St
Main St
Fairview Dr
Tedrich Blvd
Stonewall Ave
Burke Station Rd
Maple Ave
Estel Rd
Williamsburg Ct
Lyndhurst Dr
Trapp Rd
Wilcoxson Dr
Whitacre Rd
Bradwater St
Mathy Dr
Pickett Rd
Colonial Ave
Barristers Keepe Cir
Silver King Ct
Post Office

LEGEND

Bus routes | Direction of travel
See schedules on back of map.

Rutas de buses | Dirección del viaje
Ver horarios en el reverso.

Schedule timepoint
Punto de tiempo en el horario

Bus stops
Parada del bus

Landmark
Punto de interés

0 1/2 1
Mile

See schedules on back. Ver horarios en el reverso.

Get real-time bus information with TransLoc.
Se puede obtener información de autobuses en tiempo real con TransLoc.

TransLoc®

Rider Guide

Routes

Four bus routes operate during weekdays and weekends according to the published schedules. The Green 1 and Gold 1 routes operate in a clockwise direction, while the Green 2 and Gold 2 routes run counterclockwise (see Route Map).

Bus Stops

CUE Bus stop signs are posted at convenient locations along all routes. Buses will only stop at designated bus stops.

Services for Persons with Disabilities

Specialized transportation services for individuals who are unable to use the CUE Bus because of a disability are provided through the City Wheels 703-385-7859; TTY: 711 and Metro Access 301-562-5360; TTY: 711, 301-588-7535 programs.

Accessibility

All CUE buses are wheelchair accessible. Service animals are welcome on board CUE buses. The information in this brochure is also available in alternative formats and may be obtained by calling 703-385-7859; TTY: 711.

Holiday Service

Holiday	Type of Service
New Year's Day	None
Martin Luther King Day	Modified Weekday**
Washington's Birthday	Modified Weekday**
Memorial Day	Saturday
Juneteenth	Modified Weekday**
Independence Day	Special*
Labor Day	Saturday
Columbus Day	Regular
Veterans Day	Modified Weekday**
Thanksgiving Day	None
Day after Thanksgiving	Modified Weekday**
Christmas Eve	Normal weekday schedule, except that all CUE service will end at 7:00 p.m.
Christmas Day	None

*CUE buses provide extensive special event service within the City during its Independence Day activities; therefore, no regular service is provided on that day.

**Modified weekday service consists of one bus on each route. Refer to the unshaded portion of the weekday schedule.

Green Route 1 / Ruta 1 Verde — MONDAY–FRIDAY / LUNES–VIERNES

Vienna/ Fairfax-GMU (Departs) · Fairfax Circle · Main Street & Pickett Road · GMU Campus · Fairfax Blvd & Chain Bridge Rd · Fairfax Circle · Vienna/ Fairfax-GMU (Arrives)

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

Green Route 2 / Ruta 2 Verde — MONDAY–FRIDAY / LUNES–VIERNES

Vienna/ Fairfax-GMU (Departs) · Fairfax Circle · Fairfax Blvd & Chain Bridge Rd · GMU Campus · Main Street & Pickett Road · Fairfax Circle · Vienna/ Fairfax-GMU (Arrives)

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

Shaded trips do not operate on Modified Weekdays. See Holiday Service for more information. / Los viajes marcados con color en sombra no operan en días de semana modificados. Para mayor información consulte la seccion Servicio en Días Festivos.

Gold Route 1 / Ruta 1 Dorada — MONDAY–FRIDAY / LUNES–VIERNES

Vienna/ Fairfax-GMU (Departs) · Fairfax High School · GMU Campus · Jermantown Rd & Fairfax Blvd · Fairfax Blvd & Chain Bridge Rd · Draper Dr & Fairfax Blvd · Vienna/ Fairfax-GMU (Arrives)

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

Gold Route 2 / Ruta 2 Dorada — MONDAY–FRIDAY / LUNES–VIERNES

Vienna/ Fairfax-GMU (Departs) · Draper Dr & Fairfax Blvd · Fairfax Blvd & Chain Bridge Rd · Jermantown Rd & Fairfax Blvd · GMU Campus · Fairfax High School · Vienna/ Fairfax-GMU (Arrives)

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

Green Route 1 / Ruta 1 Verde — SATURDAY / SÁBADO

Vienna/ Fairfax-GMU (Departs) · Fairfax Circle · Main Street & Pickett Road · GMU Campus · Fairfax Blvd & Chain Bridge Rd · Fairfax Circle · Vienna/ Fairfax-GMU (Arrives)

AM	8:25	8:37	8:44	8:57	9:05	9:13	9:25
	9:30	9:42	9:49	10:02	10:10	10:18	10:30
	10:35	10:47	10:54	11:07	11:15	11:23	11:35
	11:50	12:02	12:09	12:22	12:30	12:38	12:50
PM	12:55	1:07	1:14	1:27	1:35	1:43	1:55
	2:00	2:12	2:19	2:32	2:40	2:48	3:00
	3:05	3:17	3:24	3:37	3:45	3:53	4:05
	4:10	4:22	4:29	4:42	4:50	4:58	5:10
	5:25	5:37	5:44	5:57	6:06	6:13	6:25
	6:30	6:42	6:49	7:02	7:10	7:18	7:30
	7:35	7:47	7:54	8:07	8:15	8:23	8:35

Green Route 2 / Ruta 2 Verde — SATURDAY / SÁBADO

Vienna/ Fairfax-GMU (Departs) · Fairfax Circle · Fairfax Blvd & Chain Bridge Rd · GMU Campus · Main Street & Pickett Road · Fairfax Circle · Vienna/ Fairfax-GMU (Arrives)

AM	8:02	8:14	8:22	8:30	8:43	8:50	9:02
	9:07	9:19	9:27	9:35	9:48	9:55	10:07
	10:12	10:24	10:32	10:40	10:53	11:00	11:12
	11:27	11:39	11:47	11:55	12:08	12:15	12:27
PM	12:32	12:44	12:52	1:00	1:13	1:20	1:32
	1:37	1:49	1:57	2:05	2:18	2:25	2:37
	2:42	2:54	3:02	3:10	3:23	3:30	3:42
	3:47	3:59	4:07	4:15	4:28	4:35	4:47
	4:52	5:04	5:12	5:20	5:33	5:40	5:52
	6:07	6:19	6:27	6:35	6:48	6:55	7:07
	7:12	7:24	7:32	7:40	7:53	8:00	8:12

Gold Route 1 / Ruta 1 Dorada — SATURDAY / SÁBADO

Vienna/ Fairfax-GMU (Departs) · Fairfax High School · GMU Campus · Jermantown Rd & Fairfax Blvd · Fairfax Blvd & Chain Bridge Rd · Draper Dr & Fairfax Blvd · Vienna/ Fairfax-GMU (Arrives)

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

Gold Route 2 / Ruta 2 Dorada — SATURDAY / SÁBADO

Vienna/ Fairfax-GMU (Departs) · Draper Dr & Fairfax Blvd · Fairfax Blvd & Chain Bridge Rd · Jermantown Rd & Fairfax Blvd · GMU Campus · Fairfax High School · Vienna/ Fairfax-GMU (Arrives)

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

Green Route 1 / Ruta 1 Verde — SUNDAY / DOMINGO

Vienna/ Fairfax-GMU (Departs) · Fairfax Circle · Main Street & Pickett Road · GMU Campus · Fairfax Blvd & Chain Bridge Rd · Fairfax Circle · Vienna/ Fairfax-GMU (Arrives)

AM	10:00	10:12	10:19	10:32	10:40	10:48	11:00
	11:05	11:17	11:24	11:37	11:45	11:53	12:05
PM	12:10	12:22	12:29	12:42	12:50	12:58	1:10
	1:40	1:52	1:59	2:12	2:20	2:28	2:40
	2:45	2:57	3:04	3:17	3:25	3:33	3:45
	3:50	4:02	4:09	4:22	4:30	4:38	4:50
	4:55	5:07	5:14	5:27	5:35	5:43	5:55

Green Route 2 / Ruta 2 Verde — SUNDAY / DOMINGO

Vienna/ Fairfax-GMU (Departs) · Fairfax Circle · Fairfax Blvd & Chain Bridge Rd · GMU Campus · Main Street & Pickett Road · Fairfax Circle · Vienna/ Fairfax-GMU (Arrives)

AM	9:37	9:49	9:57	10:05	10:18	10:25	10:37
	10:42	10:54	11:02	11:10	11:23	11:30	11:42
PM	11:47	11:59	12:07	12:15	12:28	12:35	12:47
	1:17	1:29	1:37	1:45	1:58	2:05	2:17
	2:22	2:34	2:42	2:50	3:03	3:10	3:22
	3:27	3:39	3:47	3:55	4:08	4:15	4:27
	4:32	4:44	4:52	5:00	5:13	5:20	5:32

Gold Route 1 / Ruta 1 Dorada — SUNDAY / DOMINGO

Vienna/ Fairfax-GMU (Departs) · Fairfax High School · GMU Campus · Jermantown Rd & Fairfax Blvd · Fairfax Blvd & Chain Bridge Rd · Draper Dr & Fairfax Blvd · Vienna/ Fairfax-GMU (Arrives)

AM	10:00	10:08	10:20	10:33	10:42	10:49	10:56
	11:01	11:09	11:21	11:34	11:43	11:50	11:57
PM	12:02	12:10	12:22	12:35	12:44	12:51	12:58
	1:28	1:36	1:48	2:01	2:10	2:17	2:24
	2:29	2:37	2:49	3:02	3:11	3:18	3:25
	3:30	3:38	3:50	4:03	4:12	4:19	4:26
	4:31	4:39	4:51	5:04	5:13	5:20	5:27
	5:32	5:40	5:52	6:05	6:14	6:21	6:28

Gold Route 2 / Ruta 2 Dorada — SUNDAY / DOMINGO

Vienna/ Fairfax-GMU (Departs) · Draper Dr & Fairfax Blvd · Fairfax Blvd & Chain Bridge Rd · Jermantown Rd & Fairfax Blvd · GMU Campus · Fairfax High School · Vienna/ Fairfax-GMU (Arrives)

AM	9:33	9:40	9:47	9:56	10:09	10:21	10:29
	10:34	10:41	10:48	10:57	11:10	11:22	11:30
	11:35	11:42	11:49	11:58	12:11	12:23	12:31
	12:36	12:43	12:50	12:59	1:12	1:24	1:32
PM	2:02	2:09	2:16	2:25	2:38	2:50	2:58
	3:03	3:10	3:17	3:26	3:39	3:51	3:59
	4:04	4:11	4:18	4:27	4:40	4:52	5:00
	5:05	5:12	5:19	5:28	5:41	5:53	6:01

Riding Tips

Waiting for the Bus

- When waiting for the bus, stand at the nearest bus stop sign.
- Please try to arrive at least five minutes before the scheduled arrival time.
- Make sure that the bus driver can see you.

Boarding the Bus

- Please board the bus carefully. Your driver is able to lower the bus or deploy the wheelchair ramp if requested.
- Please limit the amount of items brought onboard. Drivers are not able to assist you with loading and unloading of items. For safety reasons, no items can block the aisle.
- Please have strollers and carts collapsed before stepping on the bus.

Riding the Bus

- Move to the rear of the bus. Please make front seats available for elderly or disabled passengers.
- Please take your seat as quickly as possible. This allows the driver to start moving and maintain the schedule. When walking on a bus, hold on to the grab rails or seat backs. Do not move around on a moving bus. Wait until the bus has stopped to get out of your seat.
- Please observe the rules posted on the bus prohibiting smoking, eating, drinking or using audio devices without earphones.
- Help keep your buses clean by keeping your feet off the seats and taking all trash with you.
- If you find an item on the bus, please give it to the driver. All items left on the bus are turned in at the end of the day. If you leave an item on the bus, please call 703-385-7992.
- Please do not engage the bus driver in conversation. A bus driver's job requires that he or she concentrate fully on driving the bus; he or she may be distracted by talking.

Exiting the Bus

- Give the driver adequate notice that you want to exit the bus by pulling the bell cord at least one block before you want to get off.
- Use the rear exit door, if possible. This allows boarding passengers to use the front door.
- After you exit, do not cross the street in front of the bus. Stand away from the bus and wait until it has left before attempting to cross the street.

CUE bus drivers may refuse service to passengers who do not observe the rules.

CUE is **FREE** to ride for Everyone!

No ID or pass is required, just hop on and take your CUE!

Guia para el Pasajero

Rutas

Cuatro rutas de buses operan durante la semana y fin de semana de acuerdo con los horarios publicados. Las rutas Verde 1 y Dorado 1 operan en el sentido de las agujas del reloj, mientras que las rutas Verde 2 y Dorada 2 operan en el sentido contrario de las agujas del reloj (ver Mapa de Rutas).

Paradas de Bus

Las señales de parada de bus de CUE están ubicados en lugares convenientes a lo largo de todas las rutas. Los buses solo pueden parar en las paradas designadas.

Servicio para Personas con Discapacidad

El servicio de transporte especializado para personas que no son capaces de usar el bus CUE debido a una discapacidad es ofrecido a través de los programas City Wheels 703-385-7859; TTY: 711 y Metro Access 301-562-5360; TTY: 711, 301-588-7535.

Accesibilidad

Todos los buses CUE tienen acceso para sillas de ruedas. Los animales de servicio son bienvenidos abordo de los buses CUE. La información contenida en este folleto también está disponible en otros formatos y se puede solicitar llamando al 703-385-7859; TTY: 711.

Servicio en Días Festivos

Día de Fiesta	Tipo de Servicio
Víspera de Año Nuevo	Ninguno
Martin Luther King	Día entre semana modificado**
Cumpleaños de Washington	Día entre semana modificado**
Día de Homenaje a los Caídos	Sábado
Juneteenth	Día entre semana modificado**
Día de la Independencia	Especial*
Día del Trabajo	Sábado
Columbus (Colón)	Regular
Veteranos	Día entre semana modificado**
Acción de gracias	Ninguno
Día después de acción de gracias	Día entre semana modificado**
Noche buena (Diciembre 24)	Horario normal entre semana, salvo que todos los servicios de CUE terminarán a las 7:00 p.m.
Navidad (Diciembre 25)	Ninguno

*Los buses CUE ofrecen un servicio especial extensivo dentro de la ciudad durante las actividades del día de Independencia; por lo tanto no se presta servicio regular ese dia.

**Día entre semana modificado consistirá en un bus en cada ruta. Consulte la parte sin sombrear del horario entre semana.

¡CUE es **GRATIS** para todos!

No se requiere identificación o pase, ¡solo súbete y toma tu CUE!

Consejos para Viajar

Esperando el bus

- Cuando esté esperando el bus, párese en la señal de parada de bus más cercana.
- Por favor trate de llegar por lo menos cinco minutos antes de la hora estimada de llegada del bus.
- Asegúrese de que el conductor del bus lo pueda ver.

Abordando el bus

- Por favor, subir al autobús con cuidado. El conductor puede bajar el autobús o desplegar la rampa para sillas de ruedas si así se solicita.
- Por favor, limitar la cantidad de artículos traídos a bordo. Los conductores no pueden ayudar a subir o bajar artículos. Por razones de seguridad, ningún artículo puede bloquear el pasillo.
- Por favor, colapsar los cochecitos para niños y caretillas antes de subir al autobús.

Viajando en el bus

- Muévete a la parte trasera del autobús. Por favor deje las sillas delanteras para los adultos mayores y personas con discapacidad.
- Por favor tome asiento lo más pronto posible. Esto le permite al conductor arrancar y le ayuda a mantener el horario. Cuando camine dentro del bus, sosténgase del pasamanos o de la parte trasera del asiento. No camine dentro del bus cuando esté en movimiento. Espere a que el bus se detenga para pararse de su asiento.
- Por favor tenga en cuenta las normas dispuestas dentro del bus donde se prohíbe fumar, comer, beber o usar dispositivos de audio sin audífonos.
- Ayude a mantener sus buses limpios al no subir sus pies a los asientos y bajar con usted toda basura.
- Si encuentra algún artículo en el bus, por favor entregarlo al conductor. Todos los artículos dejados en el bus son entregados al final del día. Si usted deja un artículo en el bus, por favor llame al 703-385-7992.
- Por favor no sostenga conversación con el conductor. El trabajo de un conductor requiere que él o ella se concentren completamente en la conducción del bus; él o ella se podrían distraer por la conversación.

Saliendo del bus

- Anuncie al conductor que desea bajarse del bus jalando la cuerda del timbre por lo menos con una cuadra de anticipación al punto donde se quiere bajar.
- Use la puerta de salida trasera si es posible. Esto permite que los pasajeros abordando utilicen la puerta delantera.
- Después de bajarse, no cruce la calle por delante del bus. Aléjese del bus y espere a que haya partido antes de intentar cruzar la calle.

Los conductores de bus CUE pueden rehusar brindar servicio a pasajeros que no obedezcan las normas.

Appendix C – Crash Data

VDOT Crash Data Summary Table

Intersection Crash Analysis	Crash Data for the Intersection of Blenheim Blvd and Fairfax Commons Entrance (January 2018 - December 2022)						
	2018	2019	2020	2021	2022	Total	Relative Frequency
Crash Severity							
Fatal Collision (Type K)							0.00%
Injury Collision (Type A, B, and C)		1				1	50.00%
Type A							
Type B		*1*				*1*	
Type C							
Property Damage Only (Type PDO)				1		1	50.00%
TOTAL*		***1***		***1***		***2***	***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							0.00%
Angle Collision		1		1		2	100.00%
Backed Into							0.00%
Pedestrian Collision							0.00%
Deer/Animal							0.00%
Other							0.00%
TOTAL*		***1***		***1***		***2***	***100.00%***
Other Factors							
Distracted Driver							0.00%
Alcohol**							0.00%
Work-Zone							0.00%
Inclement Weather (Non-Dry)				1		1	50.00%
Speeding		1				1	50.00%
Pedestrian Injury***							N/A
Time of Day							
AM Peak Period (6 - 10 AM)							*0.00%*
Off Peak - Daytime (10 AM - 3 PM)							*0.00%*
PM Peak Period (3 - 7 PM)	*1*			*1*		*2*	*100.00%*
Off Peak - Nighttime (7 PM - 6 AM)							*0.00%*
CALCULATED CRASH RATE***						***0.08***	***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").

VDOT Crash Data Summary Table

Intersection Crash Analysis	Crash Data for the Intersection of University Drive and Existing Courthouse Plaza Entrance/7-11 Entrance (January 2018 - December 2022)						
	2018	2019	2020	2021	2022	Total	Relative Frequency
Crash Severity							
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***		***2***			***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							0.00%
Angle Collision	1		2			3	100.00%
Backed Into							0.00%
Pedestrian Collision							0.00%
Deer/Animal							0.00%
Other							0.00%
TOTAL*	***1***		***2***			***3***	***100.00%***
Other Factors							
Distracted Driver							0.00%
Alcohol**							0.00%
Work-Zone							0.00%
Inclement Weather (Non-Dry)			1			1	33.33%
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*	*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*						***0.17***	***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").

VDOT Crash Data Summary Table

Intersection Crash Analysis	Crash Data for the Intersection of University Drive and Democracy Ln/Whitehead St (January 2018 - December 2022)						
	2018	2019	2020	2021	2022	Total	Relative Frequency
Crash Severity							
Fatal Collision (Type K)							0.00%
Injury Collision (Type A, B, and C)					1	1	14.29%
Type A							
Type B					*1*	*1*	
Type C							
Property Damage Only (Type PDO)	1	3	1	1		6	85.71%
TOTAL*	***1***	***3***	***1***	***1***	***1***	***7***	***100.00%***
Crash Type							
Fixed Object/ Single-Vehicle Crash	1					1	14.29%
Head-On							0.00%
Sideswipe / Same Direction		1				1	14.29%
Sideswipe / Opposite Direction							0.00%
Rear-End Collision			1			1	14.29%
Angle Collision		2		1	1	4	57.14%
Backed Into							0.00%
Pedestrian Collision							0.00%
Deer/Animal							0.00%
Other							0.00%
TOTAL*	***1***	***3***	***1***	***1***	***1***	***7***	***100.00%***
Other Factors							
Distracted Driver							0.00%
Alcohol**							0.00%
Work-Zone							0.00%
Inclement Weather (Non-Dry)	1				1	2	28.57%
Speeding							0.00%
Pedestrian Injury***							N/A
Time of Day							
AM Peak Period (6 - 10 AM)	*1*					*1*	*14.29%*
Off Peak - Daytime (10 AM - 3 PM)		*1*				*1*	*14.29%*
PM Peak Period (3 - 7 PM)		*2*	*1*		*1*	*4*	*57.14%*
Off Peak - Nighttime (7 PM - 6 AM)				*1*		*1*	*14.29%*
CALCULATED CRASH RATE***						***0.41***	***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").

VDOT Crash Data Summary Table

Intersection Crash Analysis	Crash Data for the Intersection of Layton Hall Drive and Democracy Ln (January 2018 - December 2022)						
	2018	2019	2020	2021	2022	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)	2				1	3	100.00%
TOTAL*	***2***				***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	33.33%
Angle Collision	1					1	33.33%
Backed Into							0.00%
Pedestrian Collision							0.00%
Deer/Animal							0.00%
Other	1					1	33.33%
TOTAL*	***2***				***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*	*33.33%*
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)	*1*					*1*	*33.33%*
CALCULATED CRASH RATE***						***0.37***	***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").

VDOT Crash Data Summary Table

Intersection Crash Analysis	Crash Data for the Intersection of Blenheim Blvd and Layton Hall Dr (January 2018 - December 2022)						
	2018	2019	2020	2021	2022	Total	Relative Frequency
Crash Severity							
Fatal Collision (Type K)							0.00%
Injury Collision (Type A, B, and C)	1	1				2	25.00%
Type A		*1*				*1*	
Type B	*1*					*1*	
Type C							
Property Damage Only (Type PDO)	1	3		2		6	75.00%
TOTAL*	***2***	***4***		***2***		***8***	***100.00%***
Crash Type							
Fixed Object/ Single-Vehicle Crash							0.00%
Head-On							0.00%
Sideswipe / Same Direction	1					1	12.50%
Sideswipe / Opposite Direction							0.00%
Rear-End Collision	1	2		2		5	62.50%
Angle Collision		2				2	25.00%
Backed Into							0.00%
Pedestrian Collision							0.00%
Deer/Animal							0.00%
Other							0.00%
TOTAL*	***2***	***4***		***2***		***8***	***100.00%***
Other Factors							
Distracted Driver							0.00%
Alcohol**							0.00%
Work-Zone							0.00%
Inclement Weather (Non-Dry)		1		1		2	25.00%
Speeding							0.00%
Pedestrian Injury***							N/A
Time of Day							
AM Peak Period (6 - 10 AM)	*1*			*2*		*3*	*37.50%*
Off Peak - Daytime (10 AM - 3 PM)	*1*	*2*				*3*	*37.50%*
PM Peak Period (3 - 7 PM)		*2*				*2*	*25.00%*
Off Peak - Nighttime (7 PM - 6 AM)							*0.00%*
CALCULATED CRASH RATE***						***0.31***	***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").

Appendix D – Existing Turning Movement Counts

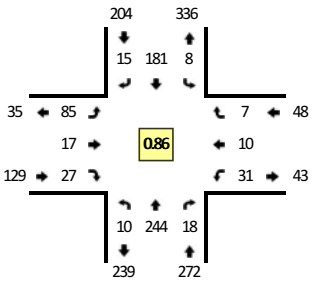
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

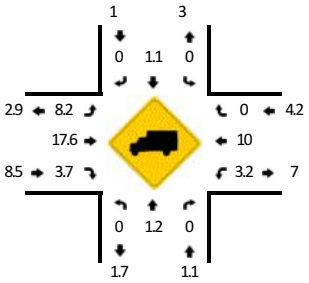
LOCATION: University Dr -- Whitehead St/Democracy Ln
CITY/STATE: Fairfax, VA

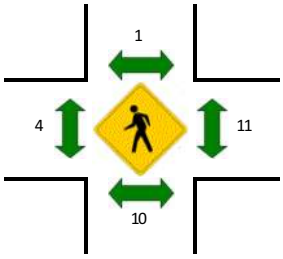
QC JOB #: 16704605
DATE: Thu, Mar 30 2023

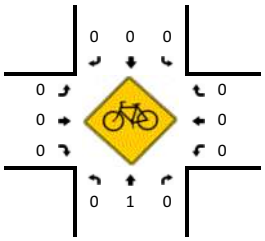
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

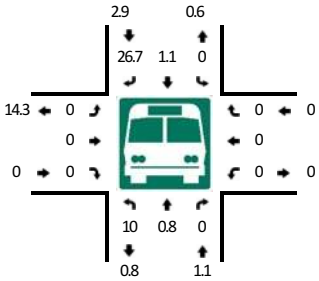


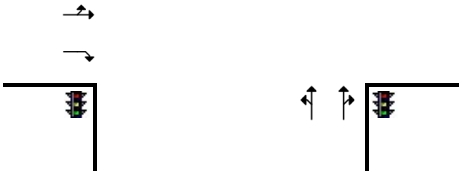
TRUE DATA TO IMPROVE MOBILITY

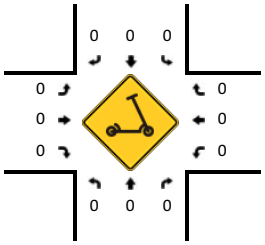












15-Min Count Period Beginning At	University Dr (Northbound)				University Dr (Southbound)				Whitehead St/Democracy Ln (Eastbound)				Whitehead St/Democracy Ln (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	2	27	2	0	0	18	2	0	10	1	3	0	2	1	1	0	69	
7:15 AM	2	24	2	0	0	28	4	0	20	6	10	0	2	1	0	0	99	
7:30 AM	3	64	3	0	0	26	1	0	25	2	9	0	5	2	0	0	140	
7:45 AM	2	77	3	0	2	51	2	0	31	6	10	0	3	1	2	0	190	498
8:00 AM	1	51	6	0	1	30	5	0	24	7	5	0	3	2	0	0	135	564
8:15 AM	1	65	6	0	2	38	3	0	20	2	5	0	11	4	2	0	159	624
8:30 AM	6	51	3	0	3	62	5	0	10	2	7	0	14	3	3	0	169	653
8:45 AM	4	46	4	0	5	56	4	0	21	11	11	0	10	5	1	0	178	641

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	8	308	12	0	8	204	8	0	124	24	40	0	12	4	8	0	760
Heavy Trucks	0	0	0		0	0	0		20	4	0		0	0	0		24
Buses	0	0	0		0	0	4		0	0	0		0	0	0		4
Pedestrians		0				4				12				8			24
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters	0	0	0		0	0	0		0	0	0		0	0	0		0

Comments:

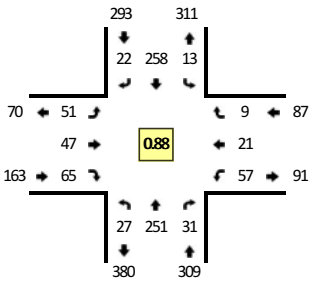
Report generated on 8/6/2024 1:53 PM

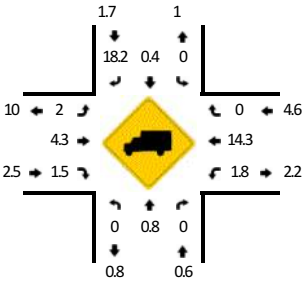
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

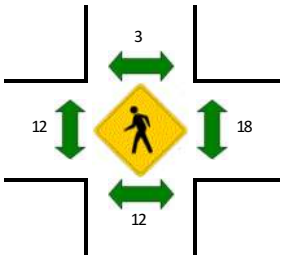
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

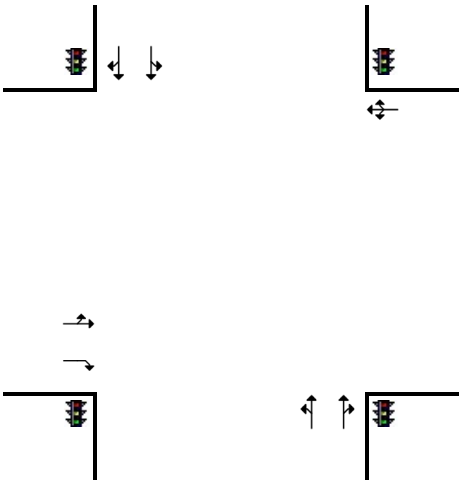
LOCATION: University Dr -- Whitehead St/Democracy Ln | **QC JOB #:** 16704606
CITY/STATE: Fairfax, VA | **DATE:** Thu, Mar 30 2023

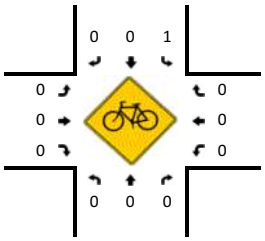
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

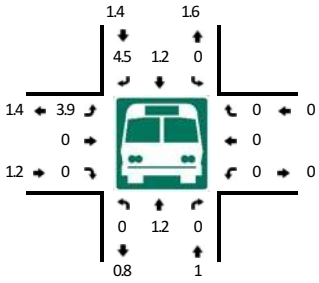


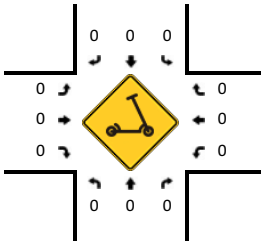












15-Min Count Period Beginning At	University Dr (Northbound)				University Dr (Southbound)				Whitehead St/Democracy Ln (Eastbound)				Whitehead St/Democracy Ln (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	6	40	5	0	1	86	10	0	11	5	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	3	0	15	10	22	0	6	2	1	0	169	806
5:00 PM	6	54	11	0	2	82	8	0	9	10	17	0	12	11	2	0	224	834
5:15 PM	5	76	8	0	6	62	8	0	19	16	19	0	15	4	4	0	242	849
5:30 PM	7	76	7	0	2	66	3	0	8	11	7	0	24	4	2	0	217	852
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	0	0		0	0	8		0	4	4		0	0	0		16
Buses	0	4	0		0	4	0		0	0	0		0	0	0		8
Pedestrians		16				0				28				20			64
Bicycles	0	0	0		4	0	0		0	0	0		0	0	0		4
Scooters	0	0	0		0	0	0		0	0	0		0	0	0		0

Comments:

Report generated on 8/6/2024 1:53 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

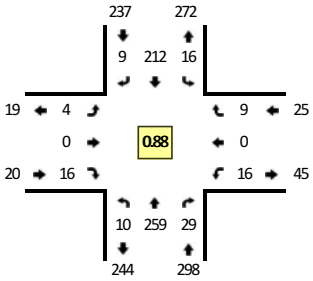
Type of peak hour being reported: Intersection Peak

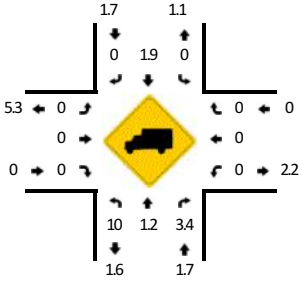
Method for determining peak hour: Total Entering Volume

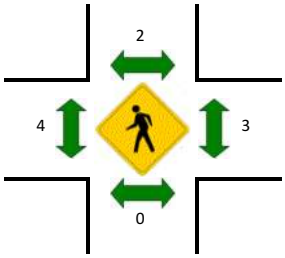
LOCATION: University Dr -- Existing Site Dwy
CITY/STATE: Fairfax, VA

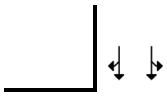
QC JOB #: 16704607
DATE: Thu, Mar 30 2023

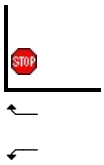
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

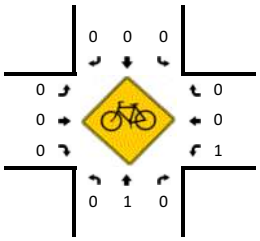


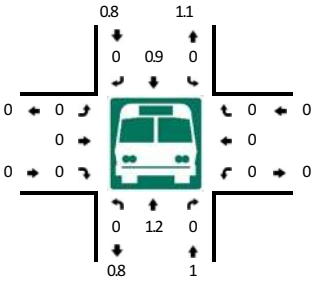


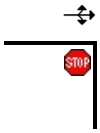


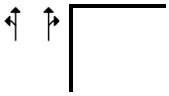


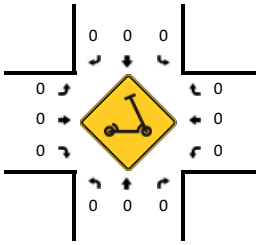












15-Min Count Period Beginning At	University Dr (Northbound)				University Dr (Southbound)				Existing Site Dwy (Eastbound)				Existing Site Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	30	0	0	5	18	0	0	0	0	1	0	2	0	0	0	57	
7:15 AM	3	28	0	0	1	40	1	0	2	0	0	0	2	0	0	0	77	
7:30 AM	3	67	6	0	3	32	4	0	1	0	4	0	3	0	0	0	123	
7:45 AM	3	79	10	0	6	53	3	0	2	0	5	0	2	0	1	0	164	421
8:00 AM	1	56	5	0	1	37	0	0	0	0	2	0	5	0	3	0	110	474
8:15 AM	3	68	9	0	2	49	5	0	2	0	4	0	6	0	2	0	150	547
8:30 AM	3	56	5	0	7	73	1	0	0	0	5	0	3	0	3	0	156	580
8:45 AM	0	52	11	0	3	75	1	0	0	0	0	0	3	0	2	0	147	563

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	316	40	0	24	212	12	0	8	0	20	0	8	0	4	0	656
Heavy Trucks	4	0	0		0	0	0		0	0	0		0	0	0		4
Buses	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				8				4			12
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters	0	0	0		0	0	0		0	0	0		0	0	0		0

Comments:

Report generated on 8/6/2024 1:54 PM

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

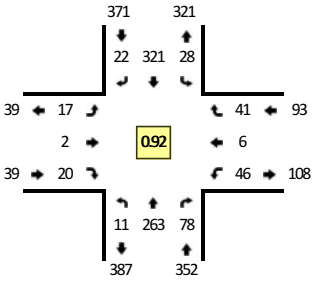
Type of peak hour being reported: Intersection Peak

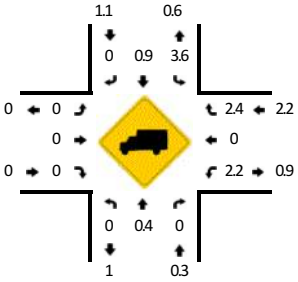
Method for determining peak hour: Total Entering Volume

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

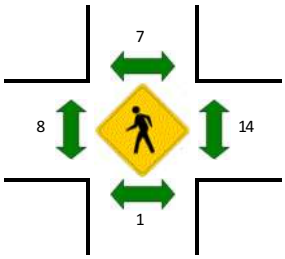
QC JOB #: 16704608
DATE: Thu, Mar 30 2023

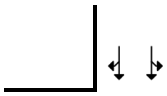
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

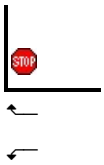


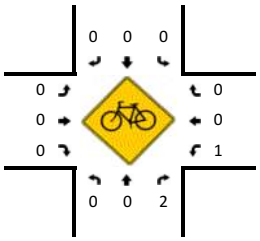


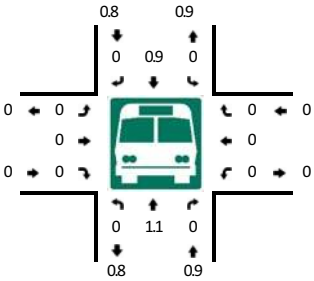
TRUE DATA TO IMPROVE MOBILITY

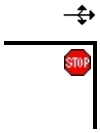


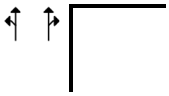


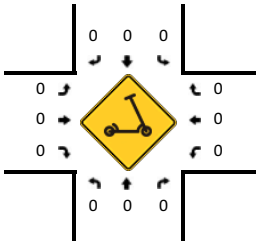












15-Min Count Period Beginning At	University Dr (Northbound)				University Dr (Southbound)				Existing Site Dwy (Eastbound)				Existing Site Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	4	44	11	0	8	100	3	0	0	1	4	0	8	0	8	0	191	
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	8	0		0	0	0		0	0	0		8
Buses	0	0	0		0	4	0		0	0	0		0	0	0		4
Pedestrians		0				0				8				16			24
Bicycles	0	0	4		0	0	0		0	0	0		4	0	0		8
Scooters	0	0	0		0	0	0		0	0	0		0	0	0		0

Comments:

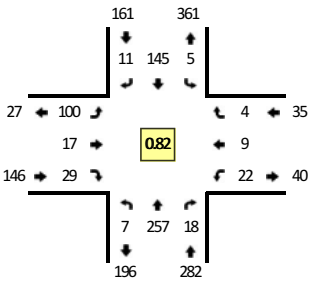
Report generated on 8/6/2024 1:54 PM

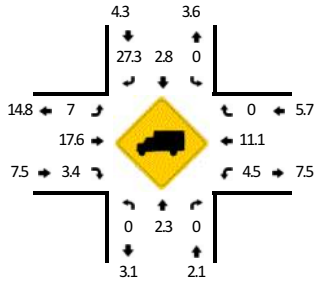
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

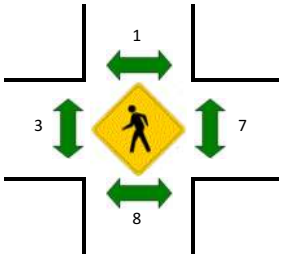
Type of peak hour being reported: System-wide Peak | Method for determining peak hour: Total Entering Volume

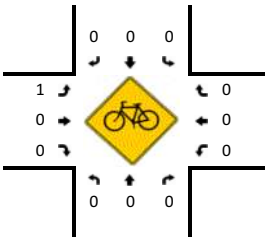
LOCATION: University Dr -- Whitehead St/Democracy Ln | **QC JOB #:** 16229801
CITY/STATE: Fairfax, VA | **DATE:** Thu, Mar 30 2023

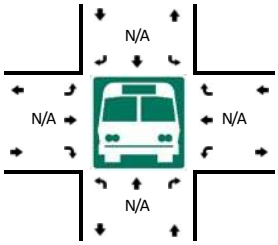
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

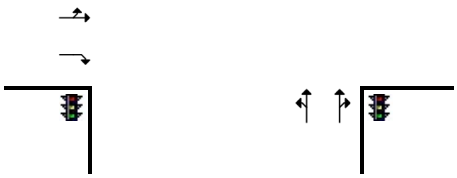


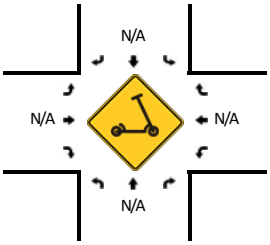












15-Min Count Period Beginning At	University Dr (Northbound)				University Dr (Southbound)				Whitehead St/Democracy Ln (Eastbound)				Whitehead St/Democracy Ln (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	2	25	2	0	0	18	2	0	10	1	3	0	2	1	1	0	67	
7:15 AM	2	26	2	0	0	28	4	0	20	6	10	0	2	1	0	0	101	
7:30 AM	3	64	3	0	0	26	1	0	25	2	9	0	5	2	0	0	140	
7:45 AM	2	77	3	0	2	51	2	0	31	6	10	0	3	1	2	0	190	498
8:00 AM	1	51	6	0	1	30	5	0	24	7	5	0	3	2	0	0	135	566
8:15 AM	1	65	6	0	2	38	3	0	20	2	5	0	11	4	2	0	159	624
8:30 AM	6	51	3	0	3	62	5	0	10	2	7	0	14	3	3	0	169	653
8:45 AM	4	46	4	0	5	56	4	0	21	11	11	0	10	5	1	0	178	641

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	8	308	12	0	8	204	8	0	124	24	40	0	12	4	8	0	760
Heavy Trucks	0	0	0		0	0	4		20	4	0		0	0	0		28
Buses																	
Pedestrians		0				4				12				8			24
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

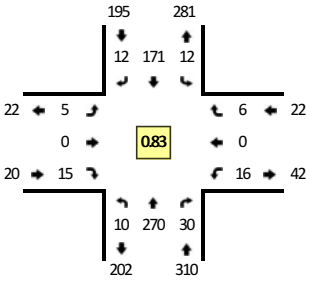
Comments:

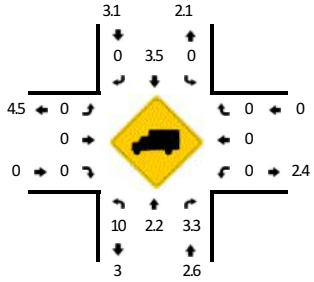
Report generated on 8/13/2024 2:47 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: System-wide Peak | Method for determining peak hour: Total Entering Volume

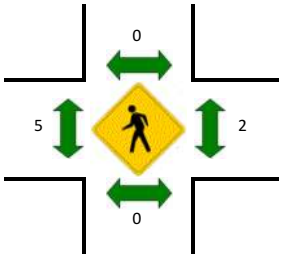
LOCATION: University Dr -- Existing Site Dwy | **QC JOB #:** 16229802
CITY/STATE: Fairfax, VA | **DATE:** Thu, Mar 30 2023

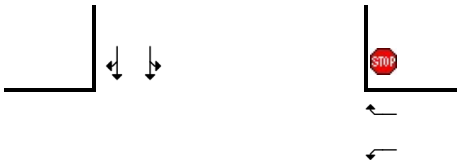
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

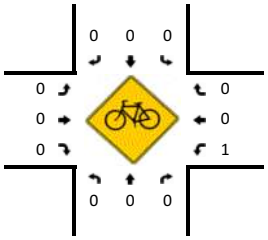


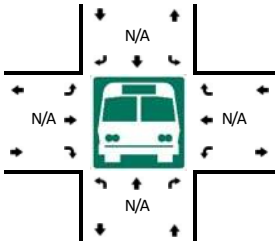


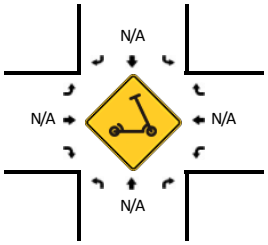
TRUE DATA TO IMPROVE MOBILITY











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		
7:00 AM	1	30	0	0	5	18	0	0	0	0	1	0	2	0	0	0	57	
7:15 AM	3	28	0	0	1	40	1	0	2	0	0	0	2	0	0	0	77	
7:30 AM	3	67	6	0	3	32	4	0	1	0	4	0	3	0	0	0	123	
7:45 AM	3	79	10	0	6	53	3	0	2	0	5	0	2	0	1	0	164	421
8:00 AM	1	56	5	0	1	37	0	0	0	0	2	0	5	0	3	0	110	474
8:15 AM	3	68	9	0	2	49	5	0	2	0	4	0	6	0	2	0	150	547
8:30 AM	3	56	5	0	7	73	1	0	0	0	5	0	3	0	3	0	156	580
8:45 AM	0	52	11	0	3	75	1	0	0	0	0	0	3	0	2	0	147	563

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	316	40	0	24	212	12	0	8	0	20	0	8	0	4	0	656
Heavy Trucks	4	0	0		0	0	0		0	0	0		0	0	0		4
Buses																	
Pedestrians		0				0				8				4			12
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

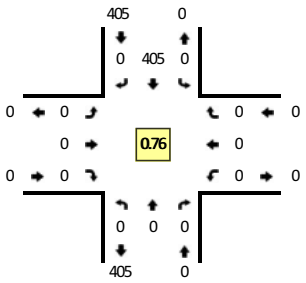
Comments:

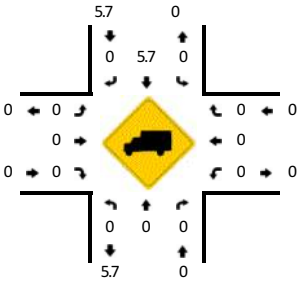
Report generated on 8/13/2024 2:47 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

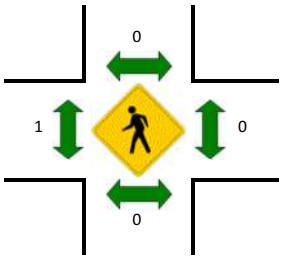
Type of peak hour being reported: System-wide Peak | Method for determining peak hour: Total Entering Volume

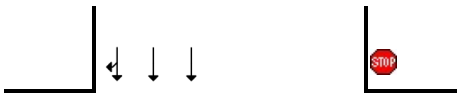
LOCATION: Blenheim Blvd -- Site Entrance 2 | **QC JOB #:** 16229803
CITY/STATE: Fairfax, VA | **DATE:** Thu, Mar 30 2023

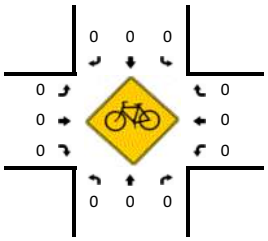
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

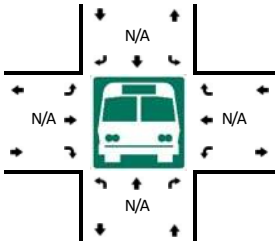


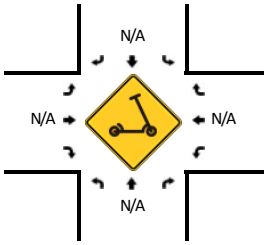












15-Min Count Period Beginning At	Blenheim Blvd (Northbound)				Blenheim Blvd (Southbound)				Site Entrance 2 (Eastbound)				Site Entrance 2 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	41	0	0	0	0	0	0	0	0	0	0	41	
7:15 AM	0	0	0	0	0	58	0	0	0	0	0	0	0	0	0	0	58	
7:30 AM	0	0	0	0	0	70	0	0	0	0	0	0	0	0	0	0	70	
7:45 AM	0	0	0	0	0	134	0	0	0	0	0	0	0	0	0	0	134	303
8:00 AM	0	0	0	0	0	121	0	0	0	0	0	0	0	0	0	0	121	383
8:15 AM	0	0	0	0	0	80	0	0	0	0	0	0	0	0	0	0	80	405
8:30 AM	0	0	0	0	0	77	0	0	0	0	0	0	0	0	0	0	77	412
8:45 AM	0	0	0	0	0	114	0	0	0	0	0	0	0	0	0	0	114	392

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	536	0	0	0	0	0	0	0	0	0	0	536
Heavy Trucks	0	0	0		0	12	0		0	0	0		0	0	0		12
Buses																	
Pedestrians		0				0				4				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

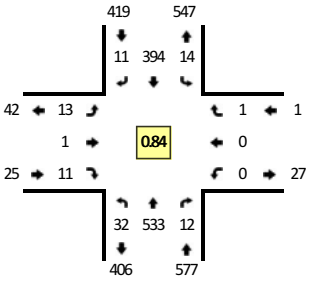
Comments:

Report generated on 8/13/2024 2:47 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

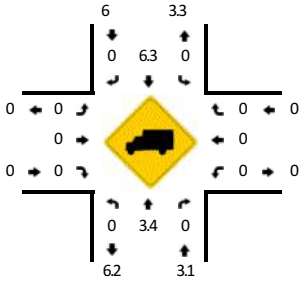
Type of peak hour being reported: System-wide Peak | Method for determining peak hour: Total Entering Volume

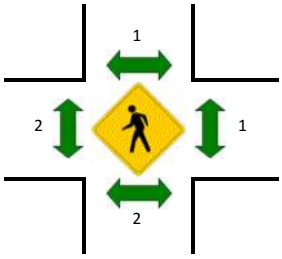
LOCATION: Blenheim Blvd -- Driveway/Site Entrance | **QC JOB #:** 16229804
CITY/STATE: Fairfax, VA | **DATE:** Thu, Mar 30 2023

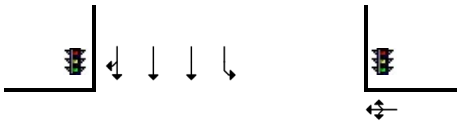
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

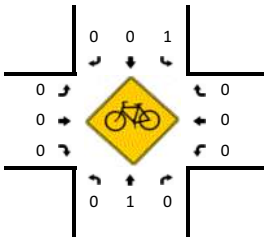


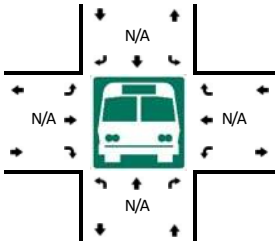
TRUE DATA TO IMPROVE MOBILITY

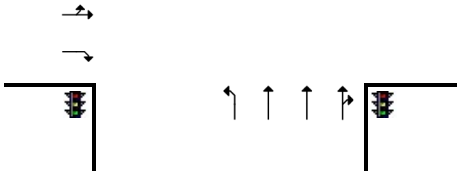


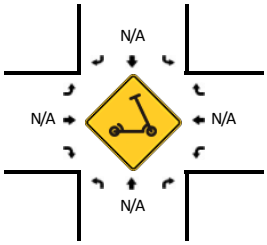












15-Min Count Period Beginning At	Blenheim Blvd (Northbound)				Blenheim Blvd (Southbound)				Driveway/Site Entrance (Eastbound)				Driveway/Site Entrance (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	4	43	0	0	0	41	1	0	1	0	0	0	0	0	1	0	91	
7:15 AM	2	75	1	0	1	54	1	0	0	0	4	0	0	0	0	0	138	
7:30 AM	2	159	2	0	0	72	3	0	4	0	0	0	0	0	0	0	242	
7:45 AM	3	147	5	0	5	125	3	0	7	1	6	0	0	0	1	0	303	774
8:00 AM	13	118	2	1	3	117	4	0	0	0	3	0	0	0	0	0	261	944
8:15 AM	13	109	3	0	6	80	1	0	2	0	2	0	0	0	0	0	216	1022
8:30 AM	7	121	3	0	1	72	2	0	0	2	2	0	2	0	1	0	213	993
8:45 AM	11	121	9	0	5	110	1	0	3	2	3	0	3	1	1	0	270	960

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	588	20	0	20	500	12	0	28	4	24	0	0	0	4	0	1212
Heavy Trucks	0	4	0		0	8	0		0	0	0		0	0	0		12
Buses																	
Pedestrians		4				0				4				4			12
Bicycles	0	0	0		4	0	0		0	0	0		0	0	0		4
Scooters																	

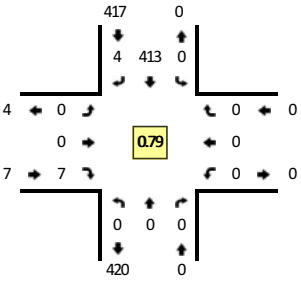
Comments:

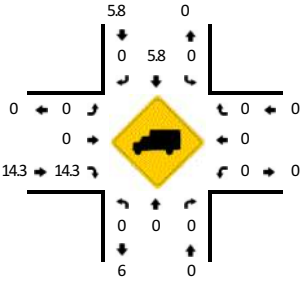
Report generated on 8/13/2024 2:47 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

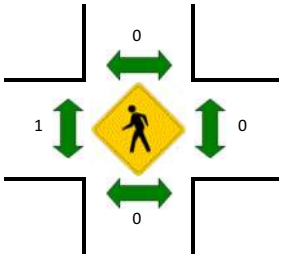
Type of peak hour being reported: System-wide Peak | Method for determining peak hour: Total Entering Volume

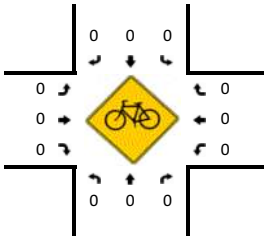
LOCATION: Blenheim Blvd -- Site Entrance 4 | **QC JOB #:** 16229805
CITY/STATE: Fairfax, VA | **DATE:** Thu, Mar 30 2023

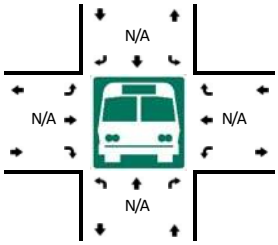
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

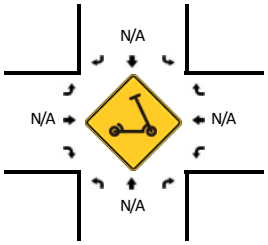












15-Min Count Period Beginning At	Blenheim Blvd (Northbound)				Blenheim Blvd (Southbound)				Site Entrance 4 (Eastbound)				Site Entrance 4 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	39	0	0	0	0	3	0	0	0	0	0	42	
7:15 AM	0	0	0	0	0	55	1	0	0	0	1	0	0	0	0	0	57	
7:30 AM	0	0	0	0	0	74	1	0	0	0	1	0	0	0	0	0	76	
7:45 AM	0	0	0	0	0	131	0	0	0	0	3	0	0	0	0	0	134	309
8:00 AM	0	0	0	0	0	123	3	0	0	0	1	0	0	0	0	0	127	394
8:15 AM	0	0	0	0	0	85	0	0	0	0	2	0	0	0	0	0	87	424
8:30 AM	0	0	0	0	0	71	1	0	0	0	4	0	0	0	0	0	76	424
8:45 AM	0	0	0	0	0	115	0	0	0	0	2	0	0	0	0	0	117	407

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	524	0	0	0	0	12	0	0	0	0	0	536
Heavy Trucks	0	0	0		0	8	0		0	0	0		0	0	0		8
Buses																	
Pedestrians		0				0				4				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

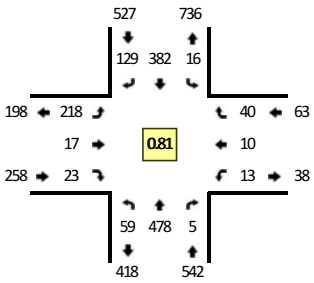
Comments:

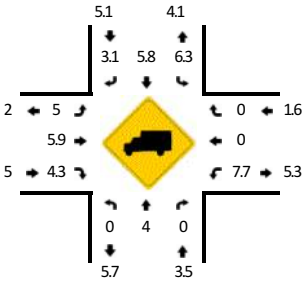
Report generated on 8/13/2024 2:47 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: System-wide Peak | Method for determining peak hour: Total Entering Volume

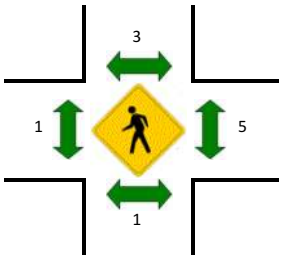
LOCATION: Blenheim Blvd -- Farrcroft Dr | **QC JOB #:** 16229806
CITY/STATE: Fairfax, VA | **DATE:** Thu, Mar 30 2023

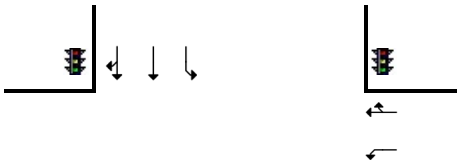
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

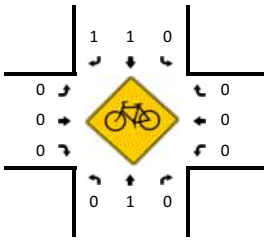


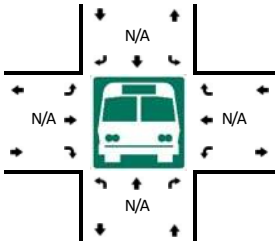


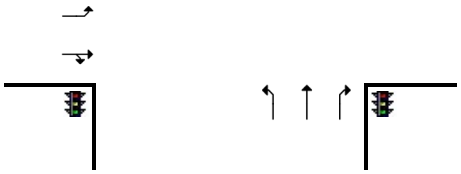
TRUE DATA TO IMPROVE MOBILITY

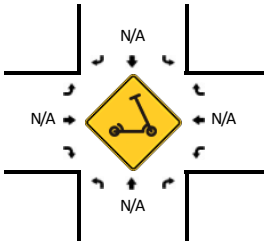












15-Min Count Period Beginning At	Blenheim Blvd (Northbound)				Blenheim Blvd (Southbound)				Farrcroft Dr (Eastbound)				Farrcroft Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	3	45	0	0	1	31	16	0	26	2	4	0	2	3	5	0	138	
7:15 AM	7	65	1	0	0	47	14	0	41	3	6	0	2	2	7	0	195	
7:30 AM	15	140	1	0	1	70	21	0	68	1	5	0	2	1	6	0	331	
7:45 AM	14	128	1	0	1	122	47	0	78	9	6	0	1	3	20	0	430	1094
8:00 AM	23	108	2	0	13	119	42	0	38	5	6	0	5	3	14	0	378	1334
8:15 AM	7	102	1	0	1	71	19	0	34	2	6	0	5	3	0	0	251	1390
8:30 AM	21	92	1	0	2	56	14	0	35	2	4	0	8	4	10	0	249	1308
8:45 AM	8	104	2	0	4	111	32	0	47	1	6	0	3	1	6	0	325	1203

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	56	512	4	0	4	488	188	0	312	36	24	0	4	12	80	0	1720
Heavy Trucks	0	12	0		0	8	8		20	0	0		0	0	0		48
Buses																	
Pedestrians		0				4				4				0			8
Bicycles	0	0	0		0	4	0		0	0	0		0	0	0		4
Scooters																	

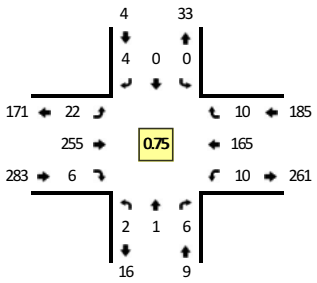
Comments:

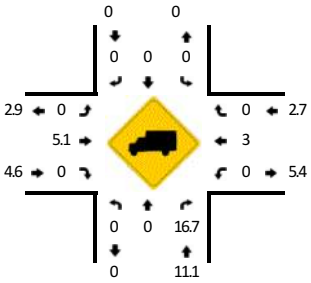
Report generated on 8/13/2024 2:47 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

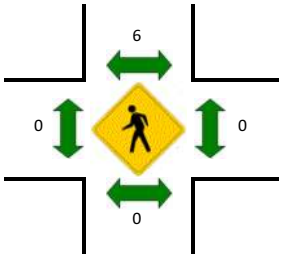
Type of peak hour being reported: System-wide Peak | Method for determining peak hour: Total Entering Volume

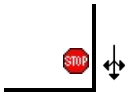
LOCATION: Democracy Ln -- Layton Hall Dr | **QC JOB #:** 16229807
CITY/STATE: Fairfax, VA | **DATE:** Thu, Mar 30 2023

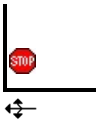
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

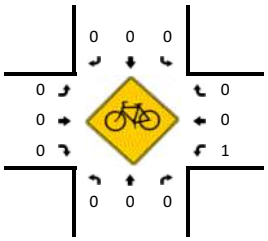


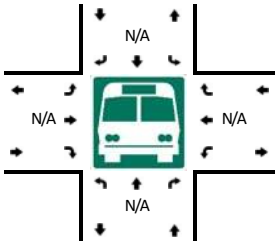


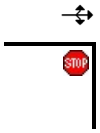


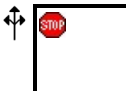


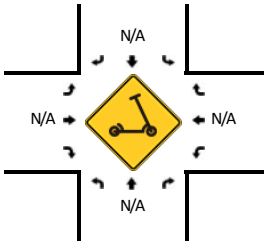












15-Min Count Period Beginning At	Democracy Ln (Northbound)				Democracy Ln (Southbound)				Layton Hall Dr (Eastbound)				Layton Hall Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	1	0	0	2	30	1	0	1	21	1	0	57	
7:15 AM	0	0	0	0	0	2	0	0	0	52	0	0	0	22	0	0	76	
7:30 AM	0	0	0	0	0	0	0	0	5	80	1	0	2	30	2	0	120	
7:45 AM	0	1	4	0	0	0	2	0	4	93	1	0	2	52	2	0	161	414
8:00 AM	1	0	2	0	0	0	1	0	8	39	0	0	4	59	4	0	118	475
8:15 AM	1	0	0	0	0	0	1	0	5	43	4	0	2	24	2	0	82	481
8:30 AM	0	0	1	0	0	0	0	0	4	35	5	0	4	29	4	0	82	443
8:45 AM	0	0	3	0	0	0	1	0	2	50	10	0	4	37	0	0	107	389

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	4	16	0	0	0	8	0	16	372	4	0	8	208	8	0	644
Heavy Trucks	0	0	0		0	0	0		0	20	0		0	8	0		28
Buses																	
Pedestrians		0				8				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

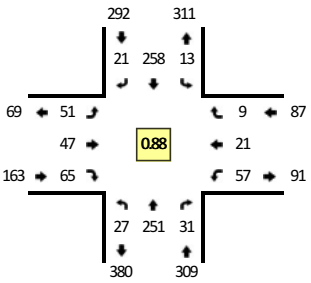
Report generated on 8/13/2024 2:47 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

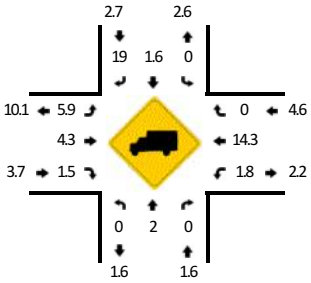
Type of peak hour being reported: System-wide Peak | Method for determining peak hour: Total Entering Volume

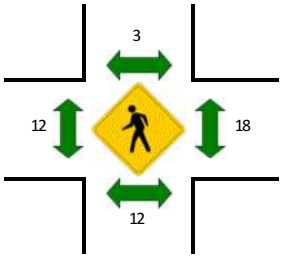
LOCATION: University Dr -- Whitehead St/Democracy Ln
CITY/STATE: Fairfax, VA

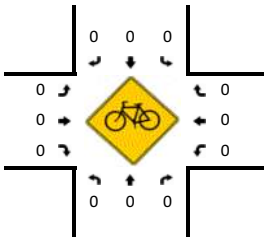
QC JOB #: 16229808
DATE: Thu, Mar 30 2023

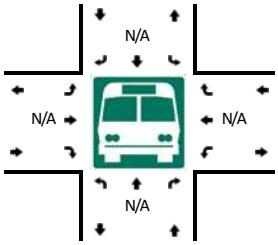
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

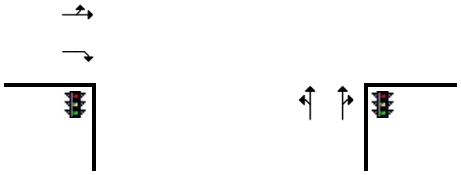


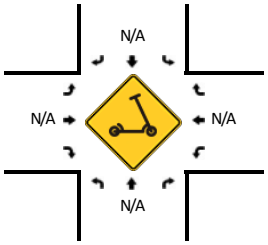












15-Min Count Period Beginning At	University Dr (Northbound)				University Dr (Southbound)				Whitehead St/Democracy Ln (Eastbound)				Whitehead St/Democracy Ln (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	6	40	5	0	1	86	10	0	11	5	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	4	8		0	4	4		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:

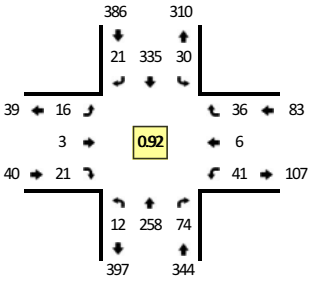
Report generated on 8/13/2024 2:49 PM

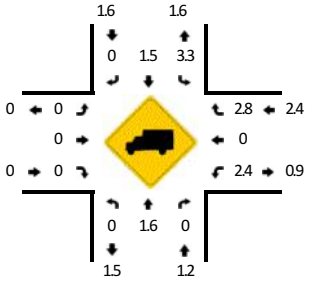
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

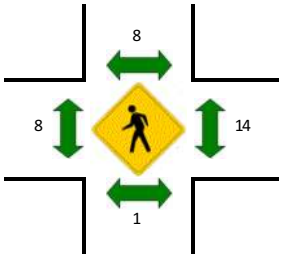
Type of peak hour being reported: System-wide Peak | Method for determining peak hour: Total Entering Volume

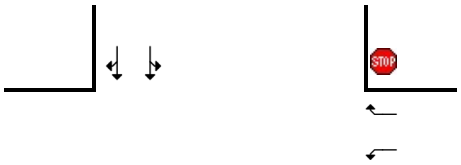
LOCATION: University Dr -- Existing Site Dwy | **QC JOB #:** 16229809
CITY/STATE: Fairfax, VA | **DATE:** Thu, Mar 30 2023

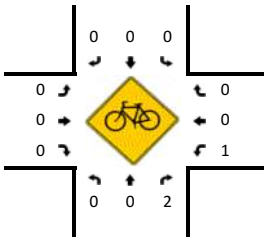
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

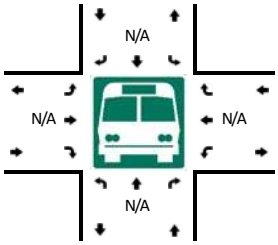


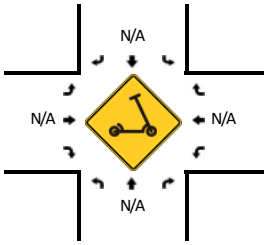












15-Min Count Period Beginning At	University Dr (Northbound)				University Dr (Southbound)				Existing Site Dwy (Eastbound)				Existing Site Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	4	44	11	0	8	100	3	0	0	1	4	0	8	0	8	0	191	
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	12	0		0	0	0		0	0	0		12
Buses																	
Pedestrians		0				0				8				16			24
Bicycles	0	0	4		0	0	0		0	0	0		4	0	0		8
Scooters																	

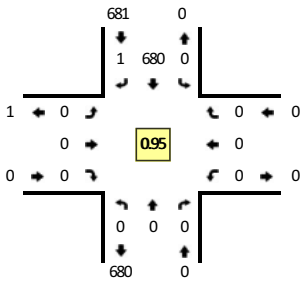
Comments:

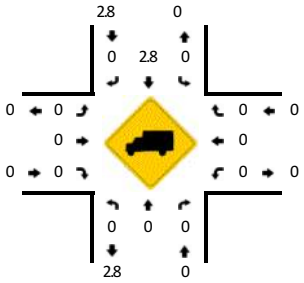
Report generated on 8/13/2024 2:49 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: System-wide Peak | Method for determining peak hour: Total Entering Volume

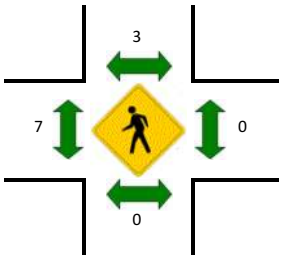
LOCATION: Blenheim Blvd -- Site Entrance 2 | **QC JOB #:** 16229810
CITY/STATE: Fairfax, VA | **DATE:** Thu, Mar 30 2023

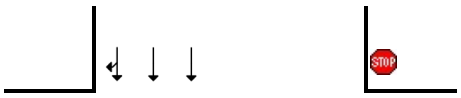
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 4:45 PM -- 5:00 PM

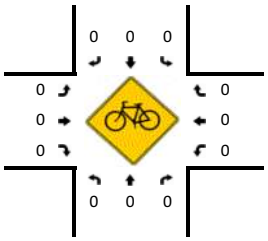


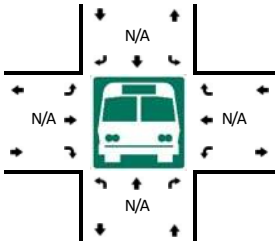


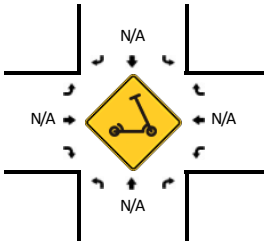
TRUE DATA TO IMPROVE MOBILITY











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	20	0		0	0	0		0	0	0		20
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

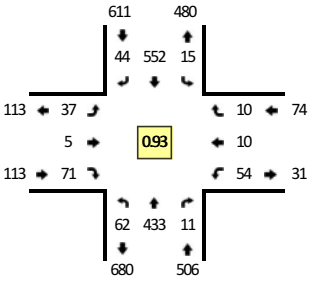
Report generated on 8/13/2024 2:49 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: System-wide Peak | Method for determining peak hour: Total Entering Volume

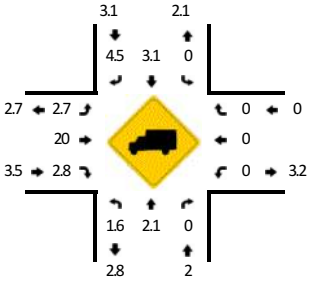
LOCATION: Blenheim Blvd -- Driveway/Site Entrance
CITY/STATE: Fairfax, VA

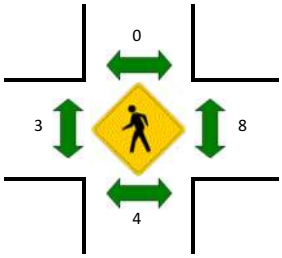
QC JOB #: 16229811
DATE: Thu, Mar 30 2023

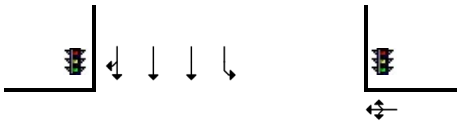
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 4:45 PM -- 5:00 PM

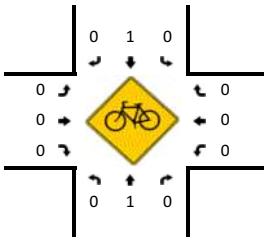


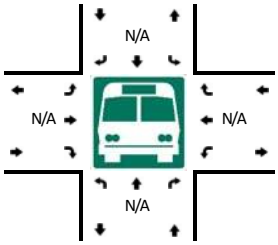
TRUE DATA TO IMPROVE MOBILITY

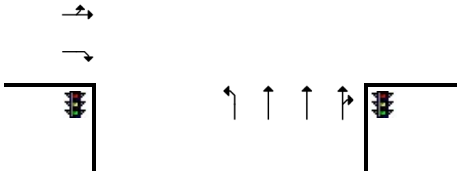


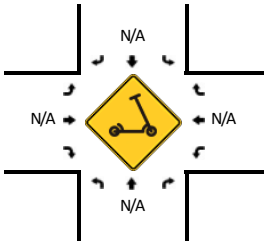












15-Min Count Period Beginning At	Blenheim Blvd (Northbound)				Blenheim Blvd (Southbound)				Driveway/Site Entrance (Eastbound)				Driveway/Site Entrance (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	13	77	8	0	5	170	9	0	4	0	7	0	15	1	5	0	314	
4:15 PM	18	79	6	3	1	134	7	0	4	0	17	0	14	0	7	0	290	
4:30 PM	12	77	3	0	4	145	10	0	8	1	7	0	12	2	2	0	283	
4:45 PM	16	122	4	0	5	158	7	0	8	1	12	0	16	2	1	0	352	1239
5:00 PM	16	100	3	1	3	133	13	0	12	1	19	0	19	6	6	0	332	1257
5:15 PM	13	104	2	1	2	129	13	0	6	3	16	0	9	1	1	0	300	1267
5:30 PM	14	107	2	1	5	132	11	0	11	0	24	0	10	1	2	0	320	1304
5:45 PM	16	115	2	1	4	139	10	1	13	2	21	0	12	3	4	0	343	1295
6:00 PM	15	110	1	2	3	107	2	0	6	1	19	0	18	2	5	0	291	1254
6:15 PM	10	117	2	0	1	118	2	0	4	0	14	0	24	1	3	0	296	1250
6:30 PM	7	103	4	1	1	130	11	1	2	0	10	0	10	3	5	0	288	1218
6:45 PM	16	90	4	1	3	127	12	0	21	0	11	0	11	1	3	0	300	1175

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	64	488	16	0	20	632	28	0	32	4	48	0	64	8	4	0	1408
Heavy Trucks	0	8	0		0	20	0		0	0	0		0	0	0		28
Buses																	
Pedestrians		4				0				4				0			8
Bicycles	0	4	0		0	0	0		0	0	0		0	0	0		4
Scooters																	

Comments:

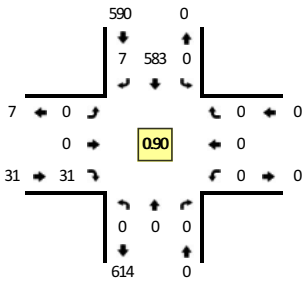
Report generated on 8/13/2024 2:49 PM

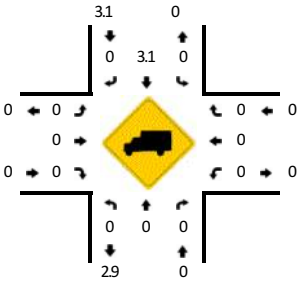
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: System-wide Peak | Method for determining peak hour: Total Entering Volume

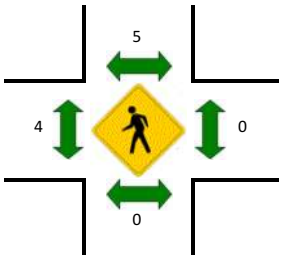
LOCATION: Blenheim Blvd -- Site Entrance 4 | **QC JOB #:** 16229812
CITY/STATE: Fairfax, VA | **DATE:** Thu, Mar 30 2023

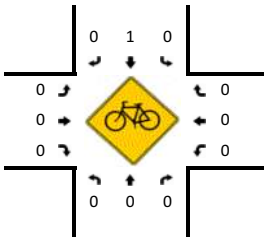
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 4:45 PM -- 5:00 PM

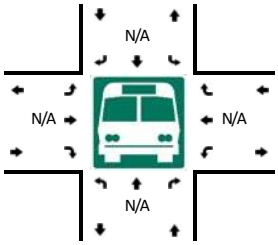


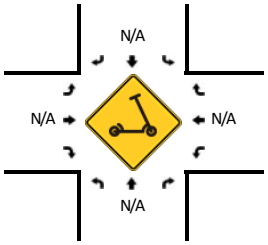


TRUE DATA TO IMPROVE MOBILITY









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	16	0		0	0	0		0	0	0		16
Buses																	
Pedestrians		0				12				4				0			16
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

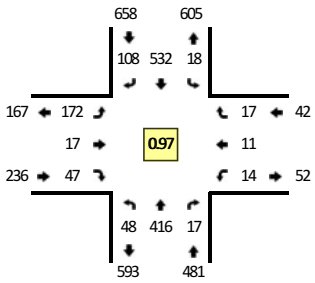
Comments:

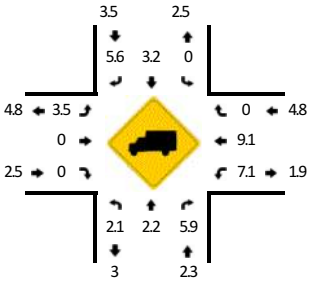
Report generated on 8/13/2024 2:49 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: System-wide Peak | Method for determining peak hour: Total Entering Volume

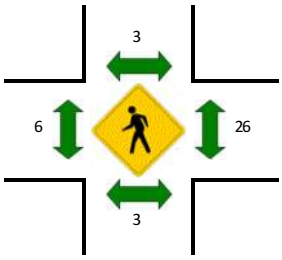
LOCATION: Blenheim Blvd -- Farrcroft Dr | **QC JOB #:** 16229813
CITY/STATE: Fairfax, VA | **DATE:** Thu, Mar 30 2023

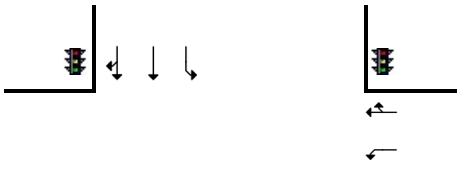
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 4:45 PM -- 5:00 PM

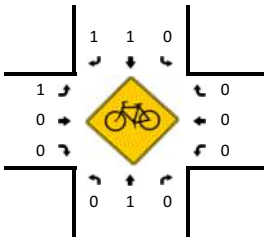


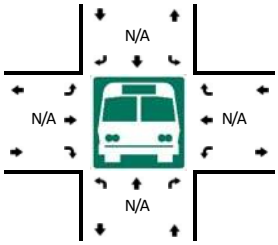


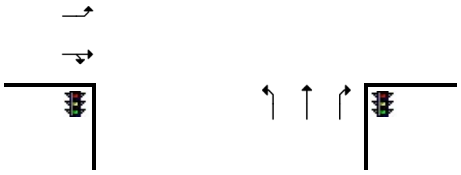
TRUE DATA TO IMPROVE MOBILITY

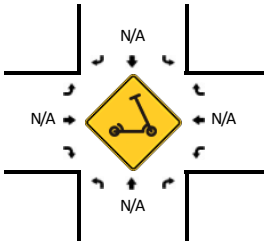












15-Min Count Period Beginning At	Blenheim Blvd (Northbound)				Blenheim Blvd (Southbound)				Farrcroft Dr (Eastbound)				Farrcroft Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	14	69	4	0	8	155	46	0	26	3	14	0	7	2	2	0	350	
4:15 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																	

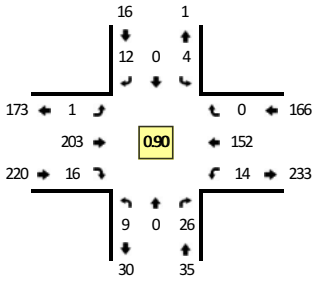
Comments:

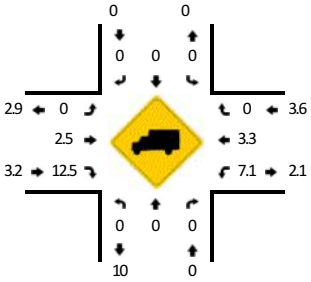
Report generated on 8/13/2024 2:49 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

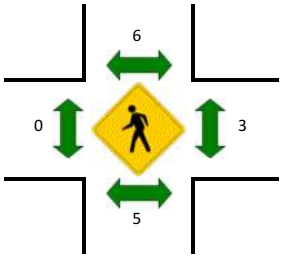
Type of peak hour being reported: System-wide Peak | Method for determining peak hour: Total Entering Volume

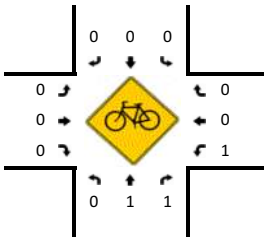
LOCATION: Democracy Ln -- Layton Hall Dr | **QC JOB #:** 16229814
CITY/STATE: Fairfax, VA | **DATE:** Thu, Mar 30 2023

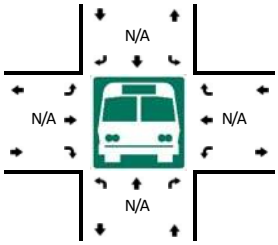
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

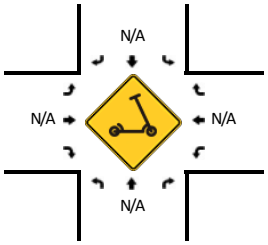












15-Min Count Period Beginning At	Democracy Ln (Northbound)				Democracy Ln (Southbound)				Layton Hall Dr (Eastbound)				Layton Hall Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	7	0	7	0	1	0	1	0	0	34	1	0	4	59	0	0	114	
4:15 PM	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	4	0		4	0	0		8
Buses																	
Pedestrians		8				4				0				0			12
Bicycles	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

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

Land Use	ITE Code	Size	------ Weekday ------						
			AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	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%**

Appendix F – Intersection Analysis Worksheets – Existing 2023

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	7	0	547	413	4
Future Vol, veh/h	0	7	0	547	413	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	644	486	5

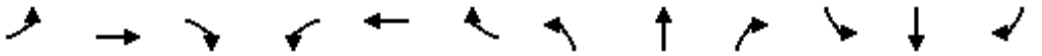
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	246	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.38	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	4.04	-	-	-	-
Pot Cap-1 Maneuver	0	616	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	616	-	-	-	-
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)	-	616	-	-
HCM Lane V/C Ratio	-	0.013	-	-
HCM Control Delay (s)	-	10.9	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0	-	-

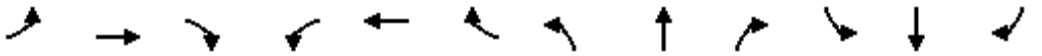
Lane Group	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	16	13	1	38	627	14	16	464	13
v/c Ratio	0.03	0.03	0.00	0.05	0.23	0.01	0.02	0.19	0.01
Control Delay	17.7	0.1	0.0	4.0	5.6	0.0	4.4	8.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.7	0.1	0.0	4.0	5.6	0.0	4.4	8.0	0.0
Queue Length 50th (ft)	1	0	0	0	0	0	1	0	0
Queue Length 95th (ft)	17	0	0	11	108	0	6	83	0
Internal Link Dist (ft)	124		135		259			157	
Turn Bay Length (ft)				120			120		
Base Capacity (vph)	1568	1351	1431	1320	2923	1339	1313	2841	1339
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	0.21	0.01	0.01	0.16	0.01

Intersection Summary



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	533	12	14	394	11
Future Volume (vph)	13	1	11	0	0	1	32	533	12	14	394	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		860	3505	1583	771	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	627	14	16	464	13
RTOR Reduction (vph)	0	0	12	0	1	0	0	0	7	0	0	7
Lane Group Flow (vph)	0	16	1	0	0	0	38	627	7	16	464	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)		1.9	1.9		1.9		22.1	20.3	20.3	20.1	19.3	19.3
Effective Green, g (s)		1.9	1.9		1.9		22.1	20.3	20.3	20.1	19.3	19.3
Actuated g/C Ratio		0.04	0.04		0.04		0.51	0.47	0.47	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)		81	69		70		475	1639	740	375	1514	703
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		0.20	0.01		0.00		0.08	0.38	0.01	0.04	0.31	0.01
Uniform Delay, d1		20.0	19.8		19.8		5.4	7.5	6.2	6.3	7.7	6.7
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.2	0.0		0.0		0.1	0.1	0.0	0.0	0.1	0.0
Delay (s)		21.2	19.9		19.8		5.4	7.6	6.2	6.4	7.9	6.7
Level of Service		C	B		B		A	A	A	A	A	A
Approach Delay (s)		20.6			19.8			7.5			7.8	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	43.4	Sum of lost time (s)	20.4
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



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	533	12	14	394	11
Future Volume (veh/h)	13	1	11	0	0	1	32	533	12	14	394	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	627	14	16	464	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	526	1435	645	441	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	627	14	16	464	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	5.0	0.2	0.2	3.7	0.2
Cycle Q Clear(g_c), s	0.4	0.0	0.3	0.0	0.0	0.0	0.5	5.0	0.2	0.2	3.7	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	526	1435	645	441	1322	609
V/C Ratio(X)	0.06	0.00	0.16	0.00	0.00	0.01	0.07	0.44	0.02	0.04	0.35	0.02
Avail Cap(c_a), veh/h	1320	0	1259	0	0	1259	1362	2710	1218	1317	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	8.3	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	1.0	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	7.2	8.7	7.5
LnGrp LOS	B	A	B	A	A	B	A	A	A	A	A	A
Approach Vol, veh/h		29			1			679			493	
Approach Delay, s/veh		18.3			17.7			8.4			8.6	
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	7.0		2.0	2.5	5.7		2.4				
Green Ext Time (p_c), s	0.0	4.5		0.0	0.1	3.2		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.

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	577	405	0
Future Vol, veh/h	0	0	0	577	405	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	679	476	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	238	-	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	650	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	650	-	-	-	-
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)	-	-	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1	13	310	197	5
Future Vol, veh/h	0	1	13	310	197	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	337	214	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	414	110	219	0	-	0
Stage 1	217	-	-	-	-	-
Stage 2	197	-	-	-	-	-
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	566	922	1348	-	-	-
Stage 1	798	-	-	-	-	-
Stage 2	817	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	559	922	1348	-	-	-
Mov Cap-2 Maneuver	559	-	-	-	-	-
Stage 1	788	-	-	-	-	-
Stage 2	817	-	-	-	-	-

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)	1348	-	922	-	-
HCM Lane V/C Ratio	0.01	-	0.001	-	-
HCM Control Delay (s)	7.7	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

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	270	30	12	171	12
Future Vol, veh/h	5	0	15	16	0	6	10	270	30	12	171	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	318	35	14	201	14

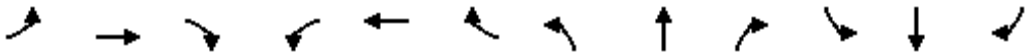
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	419	613	108	489	-	177	215	0	0	353	0	0
Stage 1	236	236	-	360	-	-	-	-	-	-	-	-
Stage 2	183	377	-	129	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	-	6.94	4.3	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	-	-	-	-	-	-	-	-
Critical 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	518	406	925	462	0	835	1296	-	-	1202	-	-
Stage 1	746	708	-	631	0	-	-	-	-	-	-	-
Stage 2	801	614	-	861	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	504	396	925	444	-	835	1296	-	-	1202	-	-
Mov Cap-2 Maneuver	504	396	-	444	-	-	-	-	-	-	-	-
Stage 1	737	699	-	623	-	-	-	-	-	-	-	-
Stage 2	785	607	-	834	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	12.4	0.3	0.5
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1296	-	-	765	444	835	1202	-	-
HCM Lane V/C Ratio	0.009	-	-	0.031	0.042	0.008	0.012	-	-
HCM Control Delay (s)	7.8	0	-	9.9	13.5	9.3	8	0	-
HCM Lane LOS	A	A	-	A	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	0	-	-

Lane Group	EBT	EBR	WBT	NBT	SBT
Lane Group Flow (vph)	138	34	42	331	190
v/c Ratio	0.31	0.06	0.09	0.29	0.20
Control Delay	15.7	3.2	12.8	12.5	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	15.7	3.2	12.8	12.5	12.5
Queue Length 50th (ft)	15	0	4	17	9
Queue Length 95th (ft)	91	9	33	89	55
Internal Link Dist (ft)	232		226	114	218
Turn Bay Length (ft)					
Base Capacity (vph)	1021	1244	1029	3128	2547
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	0.07

Intersection Summary



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	257	18	5	145	11
Future Volume (vph)	100	17	29	22	9	4	7	257	18	5	145	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	1532		1695			3495			2860	
Flt Permitted		0.73	1.00		0.73			0.95			0.94	
Satd. Flow (perm)		1271	1532		1279			3311			2692	
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	302	21	6	171	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	326	0	0	184	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)		7.7	7.7		7.7			11.5			11.5	
Effective Green, g (s)		7.7	7.7		7.7			11.5			11.5	
Actuated g/C Ratio		0.21	0.21		0.21			0.32			0.32	
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)		271	326		272			1054			857	
v/s Ratio Prot												
v/s Ratio Perm		c0.11	0.00		0.03			c0.10			0.07	
v/c Ratio		0.51	0.02		0.14			0.31			0.21	
Uniform Delay, d1		12.5	11.2		11.5			9.3			9.0	
Progression Factor		1.00	1.00		1.00			1.00			1.00	
Incremental Delay, d2		1.5	0.0		0.2			0.2			0.1	
Delay (s)		14.0	11.3		11.8			9.5			9.1	
Level of Service		B	B		B			A			A	
Approach Delay (s)		13.5			11.8			9.5			9.1	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	36.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	32.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

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	255	6	10	165	10	2	1	6	0	0	4
Future Vol, veh/h	22	255	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	300	7	12	194	12	2	1	7	0	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	215	0	0	307	0	0	583	595	304	593	592	209
Stage 1	-	-	-	-	-	-	356	356	-	233	233	-
Stage 2	-	-	-	-	-	-	227	239	-	360	359	-
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	-	-	1254	-	-	424	417	702	417	419	831
Stage 1	-	-	-	-	-	-	661	629	-	770	712	-
Stage 2	-	-	-	-	-	-	776	708	-	658	627	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1343	-	-	1254	-	-	411	399	702	398	401	824
Mov Cap-2 Maneuver	-	-	-	-	-	-	411	399	-	398	401	-
Stage 1	-	-	-	-	-	-	646	615	-	746	698	-
Stage 2	-	-	-	-	-	-	763	694	-	635	613	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.4	11.5	9.4
HCM LOS			B	A

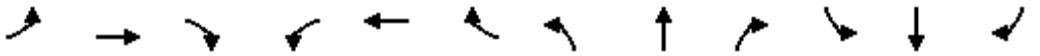
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	565	1343	-	-	1254	-	-	824
HCM Lane V/C Ratio	0.019	0.019	-	-	0.009	-	-	0.006
HCM Control Delay (s)	11.5	7.7	0	-	7.9	0	-	9.4
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0

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)	256	47	15	59	69	562	6	19	601
v/c Ratio	0.61	0.11	0.10	0.33	0.18	0.74	0.01	0.07	0.52
Control Delay	43.8	20.8	53.5	25.9	15.7	31.7	0.0	15.0	26.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.8	20.8	53.5	25.9	15.7	31.7	0.0	15.0	26.0
Queue Length 50th (ft)	125	8	8	6	22	248	0	6	147
Queue Length 95th (ft)	279	44	34	50	49	490	0	19	217
Internal Link Dist (ft)		305		220		842			355
Turn Bay Length (ft)							230	150	
Base Capacity (vph)	669	656	542	551	502	1252	1081	451	2259
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	0.38	0.07	0.03	0.11	0.14	0.45	0.01	0.04	0.27

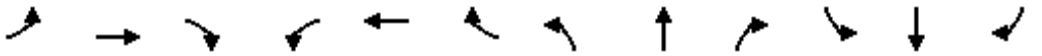
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	218	17	23	13	10	40	59	478	5	16	382	129
Future Volume (vph)	218	17	23	13	10	40	59	478	5	16	382	129
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	1643		1671	1606		1769	1827	1533	1702	3282	
Flt Permitted	0.95	1.00		0.95	1.00		0.32	1.00	1.00	0.25	1.00	
Satd. Flow (perm)	1719	1643		1671	1606		587	1827	1533	447	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)	256	20	27	15	12	47	69	562	6	19	449	152
RTOR Reduction (vph)	0	21	0	0	44	0	0	0	4	0	22	0
Lane Group Flow (vph)	256	26	0	15	15	0	69	562	2	19	579	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)	22.2	22.2		5.4	5.4		44.0	38.1	38.1	36.6	34.4	
Effective Green, g (s)	22.2	22.2		5.4	5.4		44.0	38.1	38.1	36.6	34.4	
Actuated g/C Ratio	0.23	0.23		0.06	0.06		0.46	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)	399	381		94	90		343	728	611	200	1182	
v/s Ratio Prot	c0.15	0.02		0.01	c0.01		c0.01	c0.31		0.00	0.18	
v/s Ratio Perm							0.08		0.00	0.03		
v/c Ratio	0.64	0.07		0.16	0.16		0.20	0.77	0.00	0.10	0.49	
Uniform Delay, d1	33.1	28.6		42.9	42.9		15.0	24.9	17.3	19.6	23.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.5	0.1		0.8	0.9		0.3	5.1	0.0	0.2	0.3	
Delay (s)	36.6	28.7		43.7	43.8		15.3	30.0	17.3	19.9	24.1	
Level of Service	D	C		D	D		B	C	B	B	C	
Approach Delay (s)		35.3			43.7			28.3			23.9	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	95.5	Sum of lost time (s)	27.6
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	218	17	23	13	10	40	59	478	5	16	382	129
Future Volume (veh/h)	218	17	23	13	10	40	59	478	5	16	382	129
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	256	20	27	15	12	47	69	562	6	19	449	152
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	321	128	173	103	20	78	341	669	572	202	844	283
Arrive On Green	0.18	0.18	0.18	0.06	0.06	0.06	0.05	0.36	0.36	0.02	0.33	0.33
Sat Flow, veh/h	1739	695	938	1697	329	1289	1781	1841	1574	1725	2524	847
Grp Volume(v), veh/h	256	0	47	15	0	59	69	562	6	19	305	296
Grp Sat Flow(s),veh/h/ln	1739	0	1633	1697	0	1618	1781	1841	1574	1725	1721	1651
Q Serve(g_s), s	10.5	0.0	1.8	0.6	0.0	2.7	1.9	20.9	0.2	0.5	10.7	10.9
Cycle Q Clear(g_c), s	10.5	0.0	1.8	0.6	0.0	2.7	1.9	20.9	0.2	0.5	10.7	10.9
Prop In Lane	1.00		0.57	1.00		0.80	1.00		1.00	1.00		0.51
Lane Grp Cap(c), veh/h	321	0	302	103	0	98	341	669	572	202	575	552
V/C Ratio(X)	0.80	0.00	0.16	0.15	0.00	0.60	0.20	0.84	0.01	0.09	0.53	0.54
Avail Cap(c_a), veh/h	698	0	655	567	0	541	608	1477	1263	510	1380	1325
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	29.1	0.0	25.6	33.3	0.0	34.2	15.6	21.8	15.2	18.1	20.1	20.2
Incr Delay (d2), s/veh	4.5	0.0	0.2	0.6	0.0	5.7	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	4.7	0.0	0.7	0.3	0.0	1.2	0.7	8.9	0.1	0.2	4.2	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.6	0.0	25.8	33.9	0.0	39.9	15.9	24.8	15.2	18.3	20.9	21.0
LnGrp LOS	C	A	C	C	A	D	B	C	B	B	C	C
Approach Vol, veh/h		303			74			637			620	
Approach Delay, s/veh		32.4			38.7			23.7			20.9	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.7	31.9		20.3	8.5	34.1		11.9				
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	3.9	12.9		12.5	2.5	22.9		4.7				
Green Ext Time (p_c), s	0.1	4.3		1.0	0.0	4.3		0.3				

Intersection Summary			
HCM 6th Ctrl Delay		24.9	
HCM 6th LOS		C	

Notes

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

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	31	0	480	583	7
Future Vol, veh/h	0	31	0	480	583	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	527	641	8

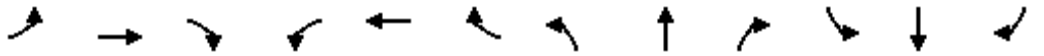
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	325	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	572	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	572	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	572	-	-
HCM Lane V/C Ratio	-	0.06	-	-
HCM Control Delay (s)	-	11.7	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.2	-	-

Lane Group	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	45	76	80	67	466	12	16	594	47
v/c Ratio	0.25	0.23	0.38	0.11	0.20	0.01	0.03	0.29	0.05
Control Delay	29.3	4.4	29.7	5.0	6.8	0.0	5.1	11.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.3	4.4	29.7	5.0	6.8	0.0	5.1	11.3	0.1
Queue Length 50th (ft)	17	0	27	8	32	0	2	80	0
Queue Length 95th (ft)	45	18	66	22	94	0	8	132	0
Internal Link Dist (ft)	173		199		207			142	
Turn Bay Length (ft)				120			120		
Base Capacity (vph)	641	856	710	840	2383	1103	902	2027	938
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	0.09	0.11	0.08	0.20	0.01	0.02	0.29	0.05

Intersection Summary



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	433	11	15	552	44
Future Volume (vph)	37	5	71	54	10	10	62	433	11	15	552	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		0.39	1.00	1.00	0.48	1.00	1.00
Satd. Flow (perm)		1256	1568		1384		729	3539	1583	902	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	466	12	16	594	47
RTOR Reduction (vph)	0	0	68	0	7	0	0	0	5	0	0	22
Lane Group Flow (vph)	0	45	8	0	73	0	67	466	7	16	594	25
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)		7.3	7.3		7.3		44.6	40.1	40.1	37.8	36.7	36.7
Effective Green, g (s)		7.3	7.3		7.3		44.6	40.1	40.1	37.8	36.7	36.7
Actuated g/C Ratio		0.11	0.11		0.11		0.65	0.58	0.58	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)		133	166		146		539	2059	921	508	1866	819
v/s Ratio Prot							c0.01	c0.13		0.00	c0.17	
v/s Ratio Perm		0.04	0.01		c0.05		0.07		0.00	0.02		0.02
v/c Ratio		0.34	0.05		0.50		0.12	0.23	0.01	0.03	0.32	0.03
Uniform Delay, d1		28.6	27.7		29.1		4.5	6.9	6.0	7.1	9.1	7.6
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		2.7		0.1	0.1	0.0	0.0	0.4	0.1
Delay (s)		30.1	27.8		31.7		4.6	7.0	6.0	7.1	9.5	7.7
Level of Service		C	C		C		A	A	A	A	A	A
Approach Delay (s)		28.6			31.7			6.7			9.3	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	11.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	68.9	Sum of lost time (s)	20.4
Intersection Capacity Utilization	47.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

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	433	11	15	552	44
Future Volume (veh/h)	37	5	71	54	10	10	62	433	11	15	552	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	466	12	16	594	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	246	23	176	189	36	20	528	1890	843	576	1747	767
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.06	0.53	0.53	0.02	0.50	0.50
Sat Flow, veh/h	1199	209	1572	777	322	175	1781	3554	1585	1781	3526	1547
Grp Volume(v), veh/h	45	0	76	80	0	0	67	466	12	16	594	47
Grp Sat Flow(s),veh/h/ln	1408	0	1572	1274	0	0	1781	1777	1585	1781	1763	1547
Q Serve(g_s), s	0.0	0.0	2.7	2.3	0.0	0.0	1.1	4.3	0.2	0.3	6.2	1.0
Cycle Q Clear(g_c), s	1.6	0.0	2.7	3.9	0.0	0.0	1.1	4.3	0.2	0.3	6.2	1.0
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	270	0	176	245	0	0	528	1890	843	576	1747	767
V/C Ratio(X)	0.17	0.00	0.43	0.33	0.00	0.00	0.13	0.25	0.01	0.03	0.34	0.06
Avail Cap(c_a), veh/h	761	0	805	808	0	0	1017	1890	843	1130	1747	767
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	24.6	0.0	25.1	25.7	0.0	0.0	6.7	7.6	6.7	7.2	9.3	7.9
Incr Delay (d2), s/veh	0.3	0.0	1.7	0.8	0.0	0.0	0.1	0.1	0.0	0.0	0.5	0.2
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	0.6	0.0	1.1	1.1	0.0	0.0	0.3	1.4	0.1	0.1	2.1	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.9	0.0	26.8	26.5	0.0	0.0	6.8	7.7	6.7	7.2	9.8	8.1
LnGrp LOS	C	A	C	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		121			80			545			657	
Approach Delay, s/veh		26.1			26.5			7.6			9.6	
Approach LOS		C			C			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	39.0		13.6	10.2	36.8		13.6				
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	2.3	6.3		5.9	3.1	8.2		4.7				
Green Ext Time (p_c), s	0.0	3.2		0.4	0.1	4.3		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		11.2	
HCM 6th LOS		B	

Notes

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

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	506	680	0
Future Vol, veh/h	0	0	0	506	680	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	533	716	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	358	-	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	545	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	545	-	-	-	-
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)	-	-	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	18	1	341	397	1
Future Vol, veh/h	3	18	1	341	397	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	371	432	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	621	217	433	0	-	0
Stage 1	433	-	-	-	-	-
Stage 2	188	-	-	-	-	-
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	419	787	1123	-	-	-
Stage 1	621	-	-	-	-	-
Stage 2	825	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	419	787	1123	-	-	-
Mov Cap-2 Maneuver	419	-	-	-	-	-
Stage 1	620	-	-	-	-	-
Stage 2	825	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1123	-	699	-	-
HCM Lane V/C Ratio	0.001	-	0.033	-	-
HCM Control Delay (s)	8.2	0	10.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	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	16	3	21	41	6	36	12	258	74	30	335	21
Future Vol, veh/h	16	3	21	41	6	36	12	258	74	30	335	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	280	80	33	364	23

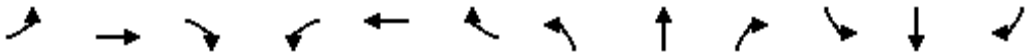
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	612	828	194	596	799	180	387	0	0	360	0	0
Stage 1	442	442	-	346	346	-	-	-	-	-	-	-
Stage 2	170	386	-	250	453	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.16	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
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	377	305	815	387	317	832	1168	-	-	1188	-	-
Stage 1	564	575	-	643	634	-	-	-	-	-	-	-
Stage 2	815	609	-	732	568	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	340	290	815	359	301	832	1168	-	-	1188	-	-
Mov Cap-2 Maneuver	340	290	-	359	301	-	-	-	-	-	-	-
Stage 1	556	555	-	634	625	-	-	-	-	-	-	-
Stage 2	758	600	-	683	548	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.2	13.6	0.4	0.7
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1168	-	-	481	359	665	1188	-	-
HCM Lane V/C Ratio	0.011	-	-	0.09	0.124	0.069	0.027	-	-
HCM Control Delay (s)	8.1	0.1	-	13.2	16.4	10.8	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	-	-

Lane Group	EBT	EBR	WBT	NBT	SBT
Lane Group Flow (vph)	111	74	99	351	332
v/c Ratio	0.24	0.13	0.23	0.26	0.23
Control Delay	15.3	6.0	14.9	11.3	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	15.3	6.0	14.9	11.3	11.3
Queue Length 50th (ft)	11	0	10	17	16
Queue Length 95th (ft)	79	28	70	92	87
Internal Link Dist (ft)	245		249	117	232
Turn Bay Length (ft)					
Base Capacity (vph)	1169	1285	1074	2963	3046
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	0.09	0.06	0.09	0.12	0.11

Intersection Summary



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	251	31	13	258	21
Future Volume (vph)	51	47	65	57	21	9	27	251	31	13	258	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			3455			3442	
Flt Permitted		0.78	1.00		0.74			0.90			0.93	
Satd. Flow (perm)		1414	1535		1298			3123			3203	
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	285	35	15	293	24
RTOR Reduction (vph)	0	0	60	0	4	0	0	9	0	0	7	0
Lane Group Flow (vph)	0	111	14	0	95	0	0	342	0	0	325	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)		6.7	6.7		6.7			11.4			11.4	
Effective Green, g (s)		6.7	6.7		6.7			11.4			11.4	
Actuated g/C Ratio		0.19	0.19		0.19			0.32			0.32	
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)		269	293		247			1014			1040	
v/s Ratio Prot												
v/s Ratio Perm		c0.08	0.01		0.07			c0.11			0.10	
v/c Ratio		0.41	0.05		0.38			0.34			0.31	
Uniform Delay, d1		12.5	11.6		12.4			9.0			8.9	
Progression Factor		1.00	1.00		1.00			1.00			1.00	
Incremental Delay, d2		1.0	0.1		1.0			0.2			0.2	
Delay (s)		13.5	11.7		13.4			9.2			9.1	
Level of Service		B	B		B			A			A	
Approach Delay (s)		12.8			13.4			9.2			9.1	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	35.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

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	203	16	14	152	0	9	0	26	4	0	12
Future Vol, veh/h	1	203	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	226	18	16	169	0	10	0	29	4	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	171	0	0	244	0	0	446	440	235	455	449	172
Stage 1	-	-	-	-	-	-	237	237	-	203	203	-
Stage 2	-	-	-	-	-	-	209	203	-	252	246	-
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	-	-	1293	-	-	523	511	804	515	505	872
Stage 1	-	-	-	-	-	-	766	709	-	799	733	-
Stage 2	-	-	-	-	-	-	793	733	-	752	703	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1403	-	-	1293	-	-	508	502	804	490	496	870
Mov Cap-2 Maneuver	-	-	-	-	-	-	508	502	-	490	496	-
Stage 1	-	-	-	-	-	-	765	708	-	797	721	-
Stage 2	-	-	-	-	-	-	769	721	-	724	702	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.7	10.5	10.1
HCM LOS			B	B

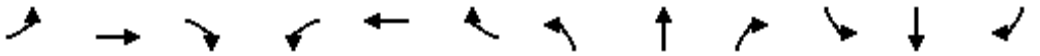
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	699	1403	-	-	1293	-	-	729
HCM Lane V/C Ratio	0.056	0.001	-	-	0.012	-	-	0.024
HCM Control Delay (s)	10.5	7.6	0	-	7.8	0	-	10.1
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1

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)	177	66	14	29	49	429	18	19	659
v/c Ratio	0.47	0.17	0.08	0.16	0.13	0.57	0.03	0.05	0.53
Control Delay	34.8	15.3	41.5	27.4	13.0	23.4	0.1	12.8	22.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.8	15.3	41.5	27.4	13.0	23.4	0.1	12.8	22.2
Queue Length 50th (ft)	78	7	6	5	12	136	0	5	142
Queue Length 95th (ft)	172	46	29	35	35	338	0	18	234
Internal Link Dist (ft)		305		220		864			293
Turn Bay Length (ft)							230	150	
Base Capacity (vph)	884	851	710	690	566	1501	1103	597	2724
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	0.20	0.08	0.02	0.04	0.09	0.29	0.02	0.03	0.24

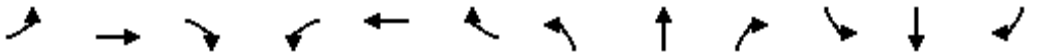
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	17	47	14	11	17	48	416	17	18	532	108
Future Volume (vph)	172	17	47	14	11	17	48	416	17	18	532	108
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	1419	1755	3382	
Flt Permitted	0.95	1.00		0.95	1.00		0.31	1.00	1.00	0.39	1.00	
Satd. Flow (perm)	1752	1642		1687	1621		574	1863	1419	716	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)	177	18	48	14	11	18	49	429	18	19	548	111
RTOR Reduction (vph)	0	39	0	0	17	0	0	0	11	0	11	0
Lane Group Flow (vph)	177	27	0	14	12	0	49	429	7	19	648	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)	15.0	15.0		3.4	3.4		31.9	28.3	28.3	28.7	26.7	
Effective Green, g (s)	15.0	15.0		3.4	3.4		31.9	28.3	28.3	28.7	26.7	
Actuated g/C Ratio	0.20	0.20		0.04	0.04		0.42	0.37	0.37	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)	344	322		75	72		296	690	526	296	1183	
v/s Ratio Prot	c0.10	0.02		c0.01	0.01		c0.01	c0.23		0.00	0.19	
v/s Ratio Perm							0.06		0.00	0.02		
v/c Ratio	0.51	0.09		0.19	0.16		0.17	0.62	0.01	0.06	0.55	
Uniform Delay, d1	27.4	25.0		35.1	35.1		13.6	19.6	15.2	15.3	19.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.3	0.1		1.2	1.1		0.3	1.7	0.0	0.1	0.5	
Delay (s)	28.7	25.2		36.3	36.2		13.9	21.4	15.2	15.4	20.5	
Level of Service	C	C		D	D		B	C	B	B	C	
Approach Delay (s)		27.7			36.2			20.4			20.3	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	76.3	Sum of lost time (s)	27.6
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	172	17	47	14	11	17	48	416	17	18	532	108
Future Volume (veh/h)	172	17	47	14	11	17	48	416	17	18	532	108
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	177	18	48	14	11	18	49	429	18	19	548	111
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	259	66	175	88	31	50	309	615	484	277	884	178
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	1193	1711	598	979	1781	1870	1474	1781	2898	584
Grp Volume(v), veh/h	177	0	66	14	0	29	49	429	18	19	332	327
Grp Sat Flow(s),veh/h/ln	1767	0	1641	1711	0	1578	1781	1870	1474	1781	1763	1720
Q Serve(g_s), s	5.8	0.0	2.2	0.5	0.0	1.1	1.1	12.2	0.5	0.4	9.9	10.0
Cycle Q Clear(g_c), s	5.8	0.0	2.2	0.5	0.0	1.1	1.1	12.2	0.5	0.4	9.9	10.0
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	259	0	241	88	0	81	309	615	484	277	538	525
V/C Ratio(X)	0.68	0.00	0.27	0.16	0.00	0.36	0.16	0.70	0.04	0.07	0.62	0.62
Avail Cap(c_a), veh/h	866	0	804	699	0	644	663	1833	1445	674	1728	1685
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	24.8	0.0	23.2	27.8	0.0	28.1	14.1	17.9	14.0	15.0	18.2	18.3
Incr Delay (d2), s/veh	3.2	0.0	0.6	0.8	0.0	2.7	0.2	1.4	0.0	0.1	1.2	1.2
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	2.6	0.0	0.9	0.2	0.0	0.5	0.4	5.0	0.2	0.2	3.8	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.9	0.0	23.8	28.6	0.0	30.7	14.4	19.3	14.0	15.1	19.4	19.5
LnGrp LOS	C	A	C	C	A	C	B	B	B	B	B	B
Approach Vol, veh/h		243			43			496			678	
Approach Delay, s/veh		26.8			30.0			18.7			19.3	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.7	25.6		15.5	8.3	27.0		10.4				
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	3.1	12.0		7.8	2.4	14.2		3.1				
Green Ext Time (p_c), s	0.1	4.8		0.9	0.0	3.1		0.1				

Intersection Summary		
HCM 6th Ctrl Delay		20.7
HCM 6th LOS		C

Notes

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

Appendix G – Intersection Analysis Worksheets – 2028 Future without Development

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

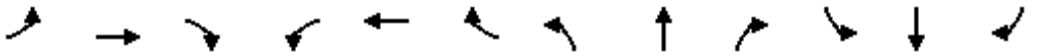
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	236	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.18	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.44	-	-	-	-
Pot Cap-1 Maneuver	0	730	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
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	-	-

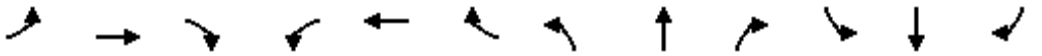
Lane Group	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	15	12	1	35	609	13	15	450	12
v/c Ratio	0.03	0.02	0.00	0.04	0.20	0.01	0.02	0.18	0.01
Control Delay	15.4	0.1	0.0	2.8	4.2	0.0	3.3	6.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.4	0.1	0.0	2.8	4.2	0.0	3.3	6.2	0.0
Queue Length 50th (ft)	1	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)	1663	1425	1489	1389	3095	1411	1382	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



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		857	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	7	0	0	7
Lane Group Flow (vph)	0	15	0	0	0	0	35	609	6	15	450	5
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)		0.8	0.8		0.8		21.9	19.9	19.9	19.3	18.6	18.6
Effective Green, g (s)		0.8	0.8		0.8		21.9	19.9	19.9	19.3	18.6	18.6
Actuated g/C Ratio		0.02	0.02		0.02		0.52	0.48	0.48	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)		35	30		30		492	1668	753	378	1515	704
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		0.43	0.01		0.00		0.07	0.37	0.01	0.04	0.30	0.01
Uniform Delay, d1		20.3	20.1		20.1		4.9	6.9	5.8	6.1	7.4	6.5
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		8.2	0.1		0.0		0.1	0.1	0.0	0.0	0.1	0.0
Delay (s)		28.5	20.2		20.1		4.9	7.1	5.8	6.2	7.5	6.5
Level of Service		C	C		C		A	A	A	A	A	A
Approach Delay (s)		24.8			20.1			6.9			7.5	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	41.8	Sum of lost time (s)	20.4
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



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	1330	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	1330	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 computational engine requires equal clearance times for the phases crossing the barrier.

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)	-	-	-	-

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	-	-

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

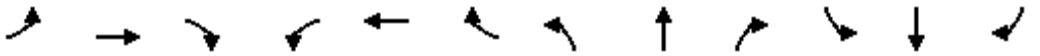
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	580	593	203	585	583	326	209	0	0	342	0	0
Stage 1	229	229	-	348	348	-	-	-	-	-	-	-
Stage 2	351	364	-	237	235	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.2	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
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	EBLn1	WBLn1	WBLn2	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	-	-

Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	127	32	38	8	315	5	179
v/c Ratio	0.31	0.06	0.09	0.02	0.43	0.01	0.30
Control Delay	18.3	3.0	15.4	12.9	14.1	13.0	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.3	3.0	15.4	12.9	14.1	13.0	13.5
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		218
Turn Bay Length (ft)				50		150	
Base Capacity (vph)	947	1138	952	1104	1706	944	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	0.13	0.03	0.04	0.01	0.18	0.01	0.13

Intersection Summary



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	1506		1687		1765	1842		1743	1498	
Flt Permitted		0.73	1.00		0.73		0.64	1.00		0.56	1.00	
Satd. Flow (perm)		1274	1506		1277		1197	1842		1023	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	25	0	3	0	0	3	0	0	3	0
Lane Group Flow (vph)	0	127	7	0	35	0	8	312	0	5	176	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)		8.1	8.1		8.1		14.8	14.8		14.8	14.8	
Effective Green, g (s)		8.1	8.1		8.1		14.8	14.8		14.8	14.8	
Actuated g/C Ratio		0.20	0.20		0.20		0.37	0.37		0.37	0.37	
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)		259	306		259		445	684		380	557	
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		0.49	0.02		0.13		0.02	0.46		0.01	0.32	
Uniform Delay, d1		14.0	12.7		13.0		7.9	9.5		7.9	8.9	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.5	0.0		0.2		0.0	0.5		0.0	0.3	
Delay (s)		15.5	12.7		13.2		7.9	9.9		7.9	9.2	
Level of Service		B	B		B		A	A		A	A	
Approach Delay (s)		14.9			13.2			9.9			9.2	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	39.8	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

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

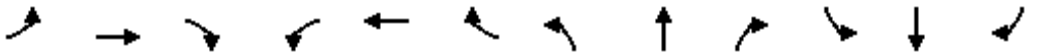
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	249	44	14	54	67	546	5	17	584
v/c Ratio	0.61	0.11	0.10	0.30	0.18	0.73	0.01	0.06	0.52
Control Delay	42.9	20.1	51.7	25.4	15.3	30.9	0.0	14.8	25.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.9	20.1	51.7	25.4	15.3	30.9	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

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



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.

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	31	0	503	612	7
Future Vol, veh/h	0	31	0	503	612	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	547	665	8

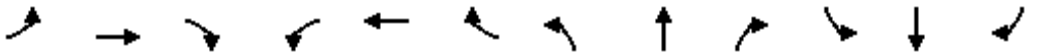
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	333	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	663	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	663	-	-	-	-
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)	-	663	-	-
HCM Lane V/C Ratio	-	0.051	-	-
HCM Control Delay (s)	-	10.7	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.2	-	-

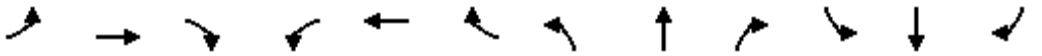
Lane Group	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	45	76	80	67	490	12	16	625	47
v/c Ratio	0.25	0.23	0.38	0.11	0.21	0.01	0.03	0.31	0.05
Control Delay	29.3	4.4	29.7	5.0	6.8	0.0	5.1	11.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.3	4.4	29.7	5.0	6.8	0.0	5.1	11.4	0.1
Queue Length 50th (ft)	17	0	27	8	34	0	2	85	0
Queue Length 95th (ft)	45	18	66	22	100	0	8	140	0
Internal Link Dist (ft)	173		199		207			142	
Turn Bay Length (ft)				120			120		
Base Capacity (vph)	641	857	710	831	2382	1103	895	2028	938
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	0.09	0.11	0.08	0.21	0.01	0.02	0.31	0.05

Intersection Summary



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	456	11	15	581	44
Future Volume (vph)	37	5	71	54	10	10	62	456	11	15	581	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		0.38	1.00	1.00	0.47	1.00	1.00
Satd. Flow (perm)		1256	1568		1384		702	3539	1583	881	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	490	12	16	625	47
RTOR Reduction (vph)	0	0	68	0	7	0	0	0	5	0	0	22
Lane Group Flow (vph)	0	45	8	0	73	0	67	490	7	16	625	25
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)		7.3	7.3		7.3		44.5	40.1	40.1	37.9	36.8	36.8
Effective Green, g (s)		7.3	7.3		7.3		44.5	40.1	40.1	37.9	36.8	36.8
Actuated g/C Ratio		0.11	0.11		0.11		0.65	0.58	0.58	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)		133	166		146		521	2059	921	498	1872	821
v/s Ratio Prot							c0.01	c0.14		0.00	c0.18	
v/s Ratio Perm		0.04	0.01		c0.05		0.07		0.00	0.02		0.02
v/c Ratio		0.34	0.05		0.50		0.13	0.24	0.01	0.03	0.33	0.03
Uniform Delay, d1		28.6	27.7		29.1		4.6	7.0	6.0	7.0	9.1	7.6
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		2.7		0.1	0.1	0.0	0.0	0.5	0.1
Delay (s)		30.1	27.8		31.7		4.7	7.0	6.0	7.1	9.6	7.7
Level of Service		C	C		C		A	A	A	A	A	A
Approach Delay (s)		28.6			31.7			6.8			9.4	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	11.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	68.9	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			



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	456	11	15	581	44
Future Volume (veh/h)	37	5	71	54	10	10	62	456	11	15	581	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	490	12	16	625	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	246	23	176	189	36	20	515	1890	843	563	1747	767
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.06	0.53	0.53	0.02	0.50	0.50
Sat Flow, veh/h	1199	209	1572	777	322	175	1781	3554	1585	1781	3526	1547
Grp Volume(v), veh/h	45	0	76	80	0	0	67	490	12	16	625	47
Grp Sat Flow(s),veh/h/ln	1408	0	1572	1274	0	0	1781	1777	1585	1781	1763	1547
Q Serve(g_s), s	0.0	0.0	2.7	2.3	0.0	0.0	1.1	4.5	0.2	0.3	6.6	1.0
Cycle Q Clear(g_c), s	1.6	0.0	2.7	3.9	0.0	0.0	1.1	4.5	0.2	0.3	6.6	1.0
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	270	0	176	245	0	0	515	1890	843	563	1747	767
V/C Ratio(X)	0.17	0.00	0.43	0.33	0.00	0.00	0.13	0.26	0.01	0.03	0.36	0.06
Avail Cap(c_a), veh/h	761	0	805	808	0	0	1004	1890	843	1117	1747	767
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	24.6	0.0	25.1	25.7	0.0	0.0	6.7	7.7	6.7	7.2	9.4	7.9
Incr Delay (d2), s/veh	0.3	0.0	1.7	0.8	0.0	0.0	0.1	0.1	0.0	0.0	0.6	0.2
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	0.6	0.0	1.1	1.1	0.0	0.0	0.3	1.4	0.1	0.1	2.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.9	0.0	26.8	26.5	0.0	0.0	6.8	7.8	6.7	7.3	9.9	8.1
LnGrp LOS	C	A	C	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		121			80			569			688	
Approach Delay, s/veh		26.1			26.5			7.6			9.7	
Approach LOS		C			C			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	39.0		13.6	10.2	36.8		13.6				
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	2.3	6.5		5.9	3.1	8.6		4.7				
Green Ext Time (p_c), s	0.0	3.4		0.4	0.1	4.5		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		11.2	
HCM 6th LOS		B	

Notes

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

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	529	709	0
Future Vol, veh/h	0	0	0	529	709	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	557	746	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	373	-	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	624	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	624	-	-	-	-
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)	-	-	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	18	1	358	410	1
Future Vol, veh/h	3	18	1	358	410	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	389	446	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	838	447	447	0	-	0
Stage 1	447	-	-	-	-	-
Stage 2	391	-	-	-	-	-
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	336	612	1113	-	-	-
Stage 1	644	-	-	-	-	-
Stage 2	683	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	336	612	1113	-	-	-
Mov Cap-2 Maneuver	455	-	-	-	-	-
Stage 1	643	-	-	-	-	-
Stage 2	683	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1113	-	583	-	-
HCM Lane V/C Ratio	0.001	-	0.039	-	-
HCM Control Delay (s)	8.2	-	11.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

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	275	74	30	348	21
Future Vol, veh/h	16	3	21	41	6	36	12	275	74	30	348	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	299	80	33	378	23

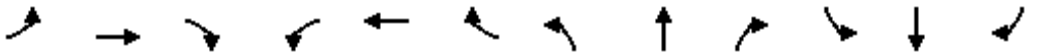
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	844	861	390	834	832	339	401	0	0	379	0	0
Stage 1	456	456	-	365	365	-	-	-	-	-	-	-
Stage 2	388	405	-	469	467	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.13	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
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	283	293	658	288	305	703	1158	-	-	1174	-	-
Stage 1	584	568	-	654	623	-	-	-	-	-	-	-
Stage 2	636	598	-	575	562	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	255	282	658	267	293	703	1158	-	-	1174	-	-
Mov Cap-2 Maneuver	255	282	-	267	293	-	-	-	-	-	-	-
Stage 1	578	552	-	647	616	-	-	-	-	-	-	-
Stage 2	588	591	-	536	546	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.7	16.4	0.3	0.6
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1158	-	-	380	267	586	1174	-	-
HCM Lane V/C Ratio	0.011	-	-	0.114	0.167	0.078	0.028	-	-
HCM Control Delay (s)	8.1	-	-	15.7	21.2	11.7	8.2	-	-
HCM Lane LOS	A	-	-	C	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.6	0.3	0.1	-	-

Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	106	71	95	29	325	14	318
v/c Ratio	0.24	0.14	0.24	0.06	0.37	0.03	0.36
Control Delay	17.6	6.9	17.1	12.0	12.5	11.9	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.6	6.9	17.1	12.0	12.5	11.9	12.5
Queue Length 50th (ft)	13	0	11	3	35	1	34
Queue Length 95th (ft)	88	32	79	27	193	16	189
Internal Link Dist (ft)	245		249		117		232
Turn Bay Length (ft)				50		150	
Base Capacity (vph)	1092	1179	999	962	1700	937	1695
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	0.19	0.01	0.19

Intersection Summary



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	268	31	13	271	21
Future Volume (vph)	51	47	65	57	21	9	27	268	31	13	271	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)		1757	1501		1692		1754	1826		1747	1816	
Flt Permitted		0.79	1.00		0.74		0.56	1.00		0.55	1.00	
Satd. Flow (perm)		1418	1501		1292		1039	1826		1018	1816	
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	291	34	14	295	23
RTOR Reduction (vph)	0	0	58	0	4	0	0	4	0	0	3	0
Lane Group Flow (vph)	0	106	13	0	91	0	29	321	0	14	315	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)		7.0	7.0		7.0		14.5	14.5		14.5	14.5	
Effective Green, g (s)		7.0	7.0		7.0		14.5	14.5		14.5	14.5	
Actuated g/C Ratio		0.18	0.18		0.18		0.38	0.38		0.38	0.38	
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)		258	273		235		392	689		384	685	
v/s Ratio Prot								c0.18			0.17	
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	0.47		0.04	0.46	
Uniform Delay, d1		13.9	12.9		13.8		7.7	9.0		7.5	9.0	
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	0.5		0.0	0.5	
Delay (s)		14.9	13.0		14.9		7.7	9.5		7.6	9.5	
Level of Service		B	B		B		A	A		A	A	
Approach Delay (s)		14.2			14.9			9.4			9.4	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	38.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	43.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

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	214	16	14	160	0	9	0	26	4	0	12
Future Vol, veh/h	1	214	16	14	160	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	233	17	15	174	0	10	0	28	4	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	176	0	0	250	0	0	456	450	242	464	458	177
Stage 1	-	-	-	-	-	-	244	244	-	206	206	-
Stage 2	-	-	-	-	-	-	212	206	-	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	1400	-	-	1287	-	-	515	504	797	508	499	866
Stage 1	-	-	-	-	-	-	760	704	-	796	731	-
Stage 2	-	-	-	-	-	-	790	731	-	747	698	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1397	-	-	1287	-	-	501	496	797	484	491	864
Mov Cap-2 Maneuver	-	-	-	-	-	-	501	496	-	484	491	-
Stage 1	-	-	-	-	-	-	759	703	-	794	720	-
Stage 2	-	-	-	-	-	-	767	720	-	720	697	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.6	10.5	10.1
HCM LOS			B	B

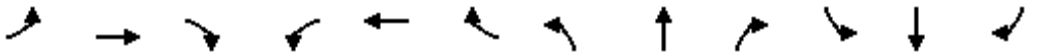
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	692	1397	-	-	1287	-	-	722
HCM Lane V/C Ratio	0.055	0.001	-	-	0.012	-	-	0.024
HCM Control Delay (s)	10.5	7.6	0	-	7.8	0	-	10.1
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1

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)	187	69	14	29	52	451	18	19	694
v/c Ratio	0.52	0.18	0.09	0.17	0.14	0.56	0.03	0.05	0.58
Control Delay	37.3	15.0	43.4	28.0	13.0	23.1	0.1	12.9	24.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.3	15.0	43.4	28.0	13.0	23.1	0.1	12.9	24.1
Queue Length 50th (ft)	86	7	7	5	14	150	0	5	155
Queue Length 95th (ft)	187	47	29	36	38	366	0	18	254
Internal Link Dist (ft)		305		220		864			293
Turn Bay Length (ft)							230	150	
Base Capacity (vph)	872	839	650	633	540	1475	1086	600	2675
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	0.21	0.08	0.02	0.05	0.10	0.31	0.02	0.03	0.26

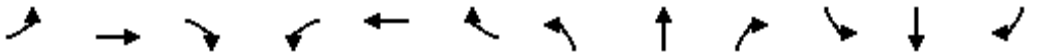
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	181	17	49	14	11	17	50	437	17	18	559	114
Future Volume (vph)	181	17	49	14	11	17	50	437	17	18	559	114
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	1414	1754	3381	
Flt Permitted	0.95	1.00		0.95	1.00		0.27	1.00	1.00	0.40	1.00	
Satd. Flow (perm)	1752	1638		1687	1621		507	1863	1414	733	3381	
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)	187	18	51	14	11	18	52	451	18	19	576	118
RTOR Reduction (vph)	0	41	0	0	17	0	0	0	11	0	12	0
Lane Group Flow (vph)	187	28	0	14	12	0	52	451	7	19	682	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)	15.6	15.6		3.6	3.6		38.0	32.6	32.6	31.4	29.3	
Effective Green, g (s)	15.6	15.6		3.6	3.6		38.0	32.6	32.6	31.4	29.3	
Actuated g/C Ratio	0.19	0.19		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)	335	313		74	71		319	745	565	308	1215	
v/s Ratio Prot	c0.11	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	0.56	0.09		0.19	0.17		0.16	0.61	0.01	0.06	0.56	
Uniform Delay, d1	29.8	27.1		37.5	37.5		12.6	19.4	14.7	15.8	20.9	
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	1.4	0.0	0.1	0.6	
Delay (s)	31.8	27.2		38.8	38.6		12.8	20.8	14.8	15.9	21.5	
Level of Service	C	C		D	D		B	C	B	B	C	
Approach Delay (s)		30.6			38.7			19.8			21.4	
Approach LOS		C			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	81.5	Sum of lost time (s)	27.6
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	181	17	49	14	11	17	50	437	17	18	559	114
Future Volume (veh/h)	181	17	49	14	11	17	50	437	17	18	559	114
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	187	18	51	14	11	18	52	451	18	19	576	118
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	269	65	184	87	30	50	301	626	494	267	896	183
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	427	1211	1711	598	979	1781	1870	1475	1781	2891	590
Grp Volume(v), veh/h	187	0	69	14	0	29	52	451	18	19	350	344
Grp Sat Flow(s),veh/h/ln	1767	0	1638	1711	0	1577	1781	1870	1475	1781	1763	1719
Q Serve(g_s), s	6.3	0.0	2.3	0.5	0.0	1.1	1.2	13.3	0.5	0.5	10.7	10.8
Cycle Q Clear(g_c), s	6.3	0.0	2.3	0.5	0.0	1.1	1.2	13.3	0.5	0.5	10.7	10.8
Prop In Lane	1.00		0.74	1.00		0.62	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	269	0	249	87	0	80	301	626	494	267	546	533
V/C Ratio(X)	0.70	0.00	0.28	0.16	0.00	0.36	0.17	0.72	0.04	0.07	0.64	0.65
Avail Cap(c_a), veh/h	845	0	783	681	0	628	642	1788	1410	653	1685	1643
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	25.2	0.0	23.6	28.5	0.0	28.8	14.4	18.3	14.1	15.3	18.7	18.7
Incr Delay (d2), s/veh	3.2	0.0	0.6	0.9	0.0	2.7	0.3	1.6	0.0	0.1	1.3	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	2.8	0.0	0.9	0.2	0.0	0.5	0.5	5.4	0.2	0.2	4.2	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.5	0.0	24.2	29.4	0.0	31.5	14.6	19.9	14.1	15.4	19.9	20.0
LnGrp LOS	C	A	C	C	A	C	B	B	B	B	B	C
Approach Vol, veh/h		256			43			521			713	
Approach Delay, s/veh		27.3			30.8			19.1			19.8	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.9	26.3		16.0	8.3	27.9		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	12.8		8.3	2.5	15.3		3.1				
Green Ext Time (p_c), s	0.1	5.1		0.9	0.0	3.3		0.1				

Intersection Summary		
HCM 6th Ctrl Delay		21.2
HCM 6th LOS		C

Notes

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

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

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	18	0	576	434	4
Future Vol, veh/h	0	18	0	576	434	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	20	0	626	472	4

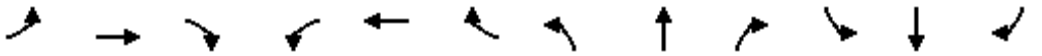
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	236	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.18	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.44	-	-	-	-
Pot Cap-1 Maneuver	0	730	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	730	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	730	-	-
HCM Lane V/C Ratio	-	0.027	-	-
HCM Control Delay (s)	-	10.1	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

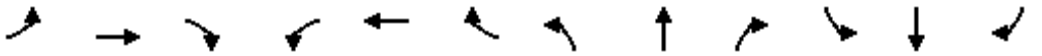
Lane Group	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	17	16	1	37	608	13	15	461	14
v/c Ratio	0.04	0.03	0.00	0.05	0.22	0.01	0.02	0.19	0.01
Control Delay	17.6	0.1	0.0	4.0	5.6	0.0	4.4	8.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.6	0.1	0.0	4.0	5.6	0.0	4.4	8.0	0.0
Queue Length 50th (ft)	1	0	0	0	0	0	1	0	0
Queue Length 95th (ft)	19	0	0	12	114	0	7	89	0
Internal Link Dist (ft)	124		135		259			157	
Turn Bay Length (ft)				120			120		
Base Capacity (vph)	1569	1351	1432	1320	2925	1340	1314	2842	1340
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	0.21	0.01	0.01	0.16	0.01

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	0	15	0	0	1	34	559	12	14	424	13
Future Volume (vph)	16	0	15	0	0	1	34	559	12	14	424	13
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		862	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)	17	0	16	0	0	1	37	608	13	15	461	14
RTOR Reduction (vph)	0	0	15	0	1	0	0	0	7	0	0	8
Lane Group Flow (vph)	0	17	1	0	0	0	37	608	6	15	461	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)		1.9	1.9		1.9		22.0	20.2	20.2	20.0	19.2	19.2
Effective Green, g (s)		1.9	1.9		1.9		22.0	20.2	20.2	20.0	19.2	19.2
Actuated g/C Ratio		0.04	0.04		0.04		0.51	0.47	0.47	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)		81	69		70		475	1635	738	381	1510	701
v/s Ratio Prot					0.00		c0.00	c0.17		0.00	0.14	
v/s Ratio Perm		c0.01	0.00				0.04		0.00	0.02		0.00
v/c Ratio		0.21	0.01		0.00		0.08	0.37	0.01	0.04	0.31	0.01
Uniform Delay, d1		20.0	19.8		19.8		5.4	7.5	6.2	6.3	7.8	6.7
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.3	0.1		0.0		0.1	0.1	0.0	0.0	0.1	0.0
Delay (s)		21.3	19.9		19.8		5.4	7.6	6.2	6.4	7.9	6.7
Level of Service		C	B		B		A	A	A	A	A	A
Approach Delay (s)		20.6			19.8			7.4			7.8	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	43.3	Sum of lost time (s)	20.4
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	0	15	0	0	1	34	559	12	14	424	13
Future Volume (veh/h)	16	0	15	0	0	1	34	559	12	14	424	13
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	17	0	16	0	0	1	37	608	13	15	461	14
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	261	0	88	0	0	88	523	1429	643	444	1316	606
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	1401	0	1585	0	0	1585	1781	3526	1585	1781	3441	1585
Grp Volume(v), veh/h	17	0	16	0	0	1	37	608	13	15	461	14
Grp Sat Flow(s),veh/h/ln	1401	0	1585	0	0	1585	1781	1763	1585	1781	1721	1585
Q Serve(g_s), s	0.5	0.0	0.4	0.0	0.0	0.0	0.5	4.9	0.2	0.2	3.7	0.2
Cycle Q Clear(g_c), s	0.5	0.0	0.4	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	261	0	88	0	0	88	523	1429	643	444	1316	606
V/C Ratio(X)	0.07	0.00	0.18	0.00	0.00	0.01	0.07	0.43	0.02	0.03	0.35	0.02
Avail Cap(c_a), veh/h	1302	0	1253	0	0	1253	1355	2696	1212	1318	2632	1212
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	17.7	0.0	17.7	0.0	0.0	17.5	6.8	8.4	7.0	7.3	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	0.0	0.1	1.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.8	0.0	18.7	0.0	0.0	17.6	6.9	8.6	7.0	7.3	8.8	7.6
LnGrp LOS	B	A	B	A	A	B	A	A	A	A	A	A
Approach Vol, veh/h		33			1			658			490	
Approach Delay, s/veh		18.2			17.6			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		9.0	8.5	21.8		9.0				
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		2.5				
Green Ext Time (p_c), s	0.0	4.3		0.0	0.0	3.2		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.

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	605	438	0
Future Vol, veh/h	0	0	0	605	438	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	658	476	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	238	-	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	763	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	763	-	-	-	-
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)	-	-	-	-

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	8	13	297	29	14	201	5
Future Vol, veh/h	0	0	1	17	0	8	13	297	29	14	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	9	14	323	32	15	218	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	623	634	221	618	620	339	223	0	0	355	0	0
Stage 1	251	251	-	367	367	-	-	-	-	-	-	-
Stage 2	372	383	-	251	253	-	-	-	-	-	-	-
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	398	397	819	402	404	703	1346	-	-	1204	-	-
Stage 1	753	699	-	653	622	-	-	-	-	-	-	-
Stage 2	648	612	-	753	698	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	386	388	819	394	395	703	1346	-	-	1204	-	-
Mov Cap-2 Maneuver	386	388	-	394	395	-	-	-	-	-	-	-
Stage 1	745	691	-	646	616	-	-	-	-	-	-	-
Stage 2	633	606	-	743	690	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.4	13.4	0.3	0.5
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1346	-	-	819	458	1204	-	-
HCM Lane V/C Ratio	0.01	-	-	0.001	0.059	0.013	-	-
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	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	15	10	295	205	12
Future Vol, veh/h	5	15	10	295	205	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	321	223	13

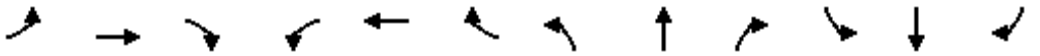
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	573	230	236	0	-	0
Stage 1	230	-	-	-	-	-
Stage 2	343	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.2	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.29	-	-	-
Pot Cap-1 Maneuver	481	809	1286	-	-	-
Stage 1	808	-	-	-	-	-
Stage 2	719	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	477	809	1286	-	-	-
Mov Cap-2 Maneuver	562	-	-	-	-	-
Stage 1	801	-	-	-	-	-
Stage 2	719	-	-	-	-	-

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)	1286	-	729	-	-
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	-	-

Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	129	32	85	8	320	14	180
v/c Ratio	0.33	0.06	0.19	0.02	0.43	0.03	0.30
Control Delay	18.7	3.0	13.0	12.9	14.2	12.8	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.7	3.0	13.0	12.9	14.2	12.8	13.5
Queue Length 50th (ft)	17	0	7	1	37	1	20
Queue Length 95th (ft)	108	10	60	12	203	17	119
Internal Link Dist (ft)	232		266		127		218
Turn Bay Length (ft)				50		150	
Base Capacity (vph)	903	1131	1004	1103	1701	931	1388
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	0.08	0.01	0.19	0.02	0.13

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	18	29	34	13	31	7	272	22	13	155	11
Future Volume (vph)	100	18	29	34	13	31	7	272	22	13	155	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		0.99		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		0.95		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	1506		1652		1765	1838		1743	1498	
Flt Permitted		0.70	1.00		0.80		0.64	1.00		0.55	1.00	
Satd. Flow (perm)		1222	1506		1349		1196	1838		1010	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	34	8	296	24	14	168	12
RTOR Reduction (vph)	0	0	25	0	22	0	0	3	0	0	2	0
Lane Group Flow (vph)	0	129	7	0	63	0	8	317	0	14	178	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)		8.2	8.2		8.2		15.1	15.1		15.1	15.1	
Effective Green, g (s)		8.2	8.2		8.2		15.1	15.1		15.1	15.1	
Actuated g/C Ratio		0.20	0.20		0.20		0.38	0.38		0.38	0.38	
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)		249	307		275		449	690		379	562	
v/s Ratio Prot								c0.17			0.12	
v/s Ratio Perm		c0.11	0.00		0.05		0.01			0.01		
v/c Ratio		0.52	0.02		0.23		0.02	0.46		0.04	0.32	
Uniform Delay, d1		14.2	12.8		13.4		7.9	9.5		7.9	8.9	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.8	0.0		0.4		0.0	0.5		0.0	0.3	
Delay (s)		16.1	12.8		13.8		7.9	10.0		8.0	9.2	
Level of Service		B	B		B		A	A		A	A	
Approach Delay (s)		15.4			13.8			9.9			9.1	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	40.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	36.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	4.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	41	12	12	35	42	40
Future Vol, veh/h	41	12	12	35	42	40
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	43

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)	937	-	-	1546	-
HCM Lane V/C Ratio	0.095	-	-	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	-

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	15	176	10	2	1	24	0	0	4
Future Vol, veh/h	22	271	6	15	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	16	191	11	2	1	26	0	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	211	0	0	302	0	0	578	590	299	598	588	206
Stage 1	-	-	-	-	-	-	347	347	-	238	238	-
Stage 2	-	-	-	-	-	-	231	243	-	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	-	-	427	420	707	414	421	835
Stage 1	-	-	-	-	-	-	669	635	-	765	708	-
Stage 2	-	-	-	-	-	-	772	705	-	658	633	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1348	-	-	1259	-	-	413	402	707	384	403	828
Mov Cap-2 Maneuver	-	-	-	-	-	-	413	402	-	384	403	-
Stage 1	-	-	-	-	-	-	655	622	-	743	692	-
Stage 2	-	-	-	-	-	-	757	689	-	619	620	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.6	10.8	9.4
HCM LOS			B	A

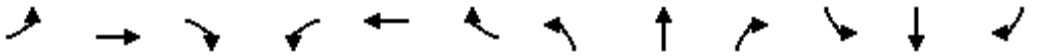
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	654	1348	-	-	1259	-	-	828
HCM Lane V/C Ratio	0.045	0.018	-	-	0.013	-	-	0.005
HCM Control Delay (s)	10.8	7.7	0	-	7.9	0	-	9.4
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0

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)	273	44	14	54	67	548	5	17	591
v/c Ratio	0.63	0.10	0.10	0.31	0.18	0.74	0.01	0.06	0.53
Control Delay	42.9	19.8	52.5	25.8	16.0	32.2	0.0	15.3	26.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.9	19.8	52.5	25.8	16.0	32.2	0.0	15.3	26.4
Queue Length 50th (ft)	130	7	7	6	21	232	0	5	140
Queue Length 95th (ft)	313	44	33	52	51	517	0	19	228
Internal Link Dist (ft)		305		220		842			355
Turn Bay Length (ft)							230	150	
Base Capacity (vph)	671	655	543	549	497	1264	1090	449	2280
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	0.13	0.43	0.00	0.04	0.26

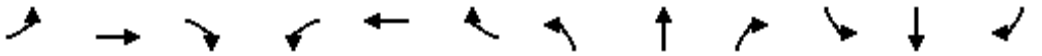
Intersection Summary



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	504	5	16	401	143
Future Volume (vph)	251	17	24	13	10	40	62	504	5	16	401	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	3277	
Flt Permitted	0.95	1.00		0.95	1.00		0.31	1.00	1.00	0.26	1.00	
Satd. Flow (perm)	1719	1639		1671	1607		586	1827	1533	458	3277	
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	548	5	17	436	155
RTOR Reduction (vph)	0	20	0	0	41	0	0	0	3	0	24	0
Lane Group Flow (vph)	273	24	0	14	13	0	67	548	2	17	567	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		42.6	36.7	36.7	35.0	32.9	
Effective Green, g (s)	22.8	22.8		5.3	5.3		42.6	36.7	36.7	35.0	32.9	
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)	414	395		93	90		338	709	595	197	1140	
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	32.3	27.6		42.5	42.5		15.4	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	3.8	0.1		0.8	0.8		0.3	5.2	0.0	0.2	0.3	
Delay (s)	36.1	27.7		43.2	43.2		15.7	30.5	17.7	20.3	24.6	
Level of Service	D	C		D	D		B	C	B	C	C	
Approach Delay (s)		35.0			43.2			28.8			24.5	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	29.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	94.5	Sum of lost time (s)	27.6
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



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	504	5	16	401	143
Future Volume (veh/h)	251	17	24	13	10	40	62	504	5	16	401	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	548	5	17	436	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	20	76	335	654	559	199	809	285
Arrive On Green	0.19	0.19	0.19	0.06	0.06	0.06	0.05	0.36	0.36	0.02	0.32	0.32
Sat Flow, veh/h	1739	666	963	1697	330	1288	1781	1841	1574	1725	2489	876
Grp Volume(v), veh/h	273	0	44	14	0	54	67	548	5	17	300	291
Grp Sat Flow(s),veh/h/ln	1739	0	1629	1697	0	1618	1781	1841	1574	1725	1721	1645
Q Serve(g_s), s	11.2	0.0	1.7	0.6	0.0	2.4	1.8	20.3	0.2	0.5	10.6	10.8
Cycle Q Clear(g_c), s	11.2	0.0	1.7	0.6	0.0	2.4	1.8	20.3	0.2	0.5	10.6	10.8
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	335	654	559	199	559	535
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	0.54
Avail Cap(c_a), veh/h	701	0	657	570	0	544	604	1484	1269	513	1388	1327
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	28.6	0.0	24.8	33.2	0.0	34.1	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	2.9	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	0.6	0.3	0.0	1.1	0.7	8.7	0.1	0.2	4.1	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.2	0.0	25.0	33.8	0.0	39.2	16.2	25.0	15.5	18.5	21.3	21.5
LnGrp LOS	C	A	C	C	A	D	B	C	B	B	C	C
Approach Vol, veh/h		317			68			620			608	
Approach Delay, s/veh		32.1			38.1			23.9			21.3	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.6	31.1		21.0	8.4	33.3		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	12.8		13.2	2.5	22.3		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		25.1
HCM 6th LOS		C

Notes

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

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	32	0	502	609	6
Future Vol, veh/h	0	32	0	502	609	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	35	0	546	662	7

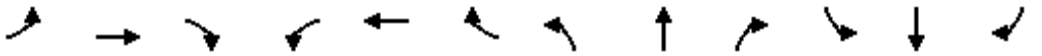
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	331	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	665	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	665	-	-	-	-
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)	-	665	-	-
HCM Lane V/C Ratio	-	0.052	-	-
HCM Control Delay (s)	-	10.7	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.2	-	-

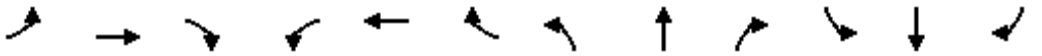
Lane Group	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	47	72	78	80	486	12	16	622	48
v/c Ratio	0.27	0.23	0.40	0.13	0.20	0.01	0.03	0.32	0.05
Control Delay	30.7	4.1	31.1	4.9	6.5	0.0	5.1	12.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.7	4.1	31.1	4.9	6.5	0.0	5.1	12.6	0.1
Queue Length 50th (ft)	18	0	27	9	33	0	2	85	0
Queue Length 95th (ft)	47	15	65	25	98	0	8	141	1
Internal Link Dist (ft)	173		199		207			142	
Turn Bay Length (ft)				120			120		
Base Capacity (vph)	605	817	667	814	2453	1132	898	1935	900
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	0.08	0.09	0.12	0.10	0.20	0.01	0.02	0.32	0.05

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	4	67	54	8	10	74	452	11	15	578	45
Future Volume (vph)	40	4	67	54	8	10	74	452	11	15	578	45
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)		1740	1568		1762		1770	3539	1583	1770	3505	1538
Flt Permitted		0.69	1.00		0.75		0.36	1.00	1.00	0.48	1.00	1.00
Satd. Flow (perm)		1252	1568		1372		669	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)	43	4	72	58	9	11	80	486	12	16	622	48
RTOR Reduction (vph)	0	0	65	0	7	0	0	0	5	0	0	23
Lane Group Flow (vph)	0	47	7	0	71	0	80	486	7	16	622	25
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)		7.2	7.2		7.2		49.6	43.3	43.3	39.2	38.1	38.1
Effective Green, g (s)		7.2	7.2		7.2		49.6	43.3	43.3	39.2	38.1	38.1
Actuated g/C Ratio		0.10	0.10		0.10		0.69	0.60	0.60	0.54	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)		125	156		137		557	2128	951	495	1854	813
v/s Ratio Prot							c0.01	c0.14		0.00	c0.18	
v/s Ratio Perm		0.04	0.00		c0.05		0.09		0.00	0.02		0.02
v/c Ratio		0.38	0.05		0.52		0.14	0.23	0.01	0.03	0.34	0.03
Uniform Delay, d1		30.3	29.3		30.7		3.9	6.6	5.7	7.5	9.7	8.1
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.9	0.1		3.3		0.1	0.1	0.0	0.0	0.5	0.1
Delay (s)		32.2	29.4		34.0		4.0	6.7	5.7	7.6	10.2	8.2
Level of Service		C	C		C		A	A	A	A	B	A
Approach Delay (s)		30.5			34.0			6.3			10.0	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	11.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	72.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	4	67	54	8	10	74	452	11	15	578	45
Future Volume (veh/h)	40	4	67	54	8	10	74	452	11	15	578	45
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	43	4	72	58	9	11	80	486	12	16	622	48
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	252	18	174	190	31	19	522	1899	847	567	1738	763
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.06	0.53	0.53	0.02	0.49	0.49
Sat Flow, veh/h	1250	160	1572	780	280	174	1781	3554	1585	1781	3526	1547
Grp Volume(v), veh/h	47	0	72	78	0	0	80	486	12	16	622	48
Grp Sat Flow(s),veh/h/ln	1410	0	1572	1234	0	0	1781	1777	1585	1781	1763	1547
Q Serve(g_s), s	0.0	0.0	2.6	2.3	0.0	0.0	1.3	4.5	0.2	0.3	6.6	1.0
Cycle Q Clear(g_c), s	1.7	0.0	2.6	4.0	0.0	0.0	1.3	4.5	0.2	0.3	6.6	1.0
Prop In Lane	0.91		1.00	0.74		0.14	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	270	0	174	240	0	0	522	1899	847	567	1738	763
V/C Ratio(X)	0.17	0.00	0.41	0.32	0.00	0.00	0.15	0.26	0.01	0.03	0.36	0.06
Avail Cap(c_a), veh/h	756	0	801	799	0	0	999	1899	847	1118	1738	763
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	24.8	0.0	25.2	26.0	0.0	0.0	6.7	7.6	6.6	7.3	9.5	8.1
Incr Delay (d2), s/veh	0.3	0.0	1.6	0.8	0.0	0.0	0.1	0.1	0.0	0.0	0.6	0.2
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	0.6	0.0	1.0	1.1	0.0	0.0	0.4	1.4	0.1	0.1	2.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.1	0.0	26.8	26.8	0.0	0.0	6.9	7.7	6.7	7.4	10.1	8.2
LnGrp LOS	C	A	C	C	A	A	A	A	A	A	B	A
Approach Vol, veh/h		119			78			578			686	
Approach Delay, s/veh		26.1			26.8			7.6			9.9	
Approach LOS		C			C			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	39.3		13.5	10.5	36.8		13.5				
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	2.3	6.5		6.0	3.3	8.6		4.6				
Green Ext Time (p_c), s	0.0	3.4		0.4	0.1	4.5		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		11.2	
HCM 6th LOS		B	

Notes

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

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	537	702	0
Future Vol, veh/h	0	0	0	537	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	-	-	-	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	565	739	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	370	-	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	627	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	627	-	-	-	-
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)	-	-	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	18	43	0	43	1	291	72	36	372	1
Future Vol, veh/h	3	0	18	43	0	43	1	291	72	36	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	47	1	316	78	39	404	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	864	879	405	850	840	355	405	0	0	394	0	0
Stage 1	483	483	-	357	357	-	-	-	-	-	-	-
Stage 2	381	396	-	493	483	-	-	-	-	-	-	-
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	274	286	646	280	302	689	1154	-	-	1165	-	-
Stage 1	565	553	-	661	628	-	-	-	-	-	-	-
Stage 2	641	604	-	558	553	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	249	276	646	264	292	689	1154	-	-	1165	-	-
Mov Cap-2 Maneuver	249	276	-	264	292	-	-	-	-	-	-	-
Stage 1	564	535	-	660	627	-	-	-	-	-	-	-
Stage 2	597	603	-	523	535	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.2	17.5	0	0.7
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1154	-	-	526	382	1165	-	-
HCM Lane V/C Ratio	0.001	-	-	0.043	0.245	0.034	-	-
HCM Control Delay (s)	8.1	-	-	12.2	17.5	8.2	-	-
HCM Lane LOS	A	-	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.9	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	320	385	21
Future Vol, veh/h	16	23	16	320	385	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	348	418	23

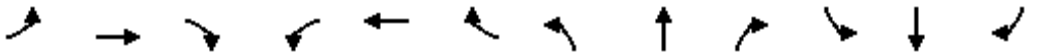
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	812	430	441	0	-	0
Stage 1	430	-	-	-	-	-
Stage 2	382	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	348	625	1119	-	-	-
Stage 1	656	-	-	-	-	-
Stage 2	690	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	343	625	1119	-	-	-
Mov Cap-2 Maneuver	461	-	-	-	-	-
Stage 1	646	-	-	-	-	-
Stage 2	690	-	-	-	-	-

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)	1119	-	545	-	-
HCM Lane V/C Ratio	0.016	-	0.078	-	-
HCM Control Delay (s)	8.3	-	12.2	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	109	71	116	29	336	32	318
v/c Ratio	0.19	0.11	0.22	0.06	0.38	0.07	0.35
Control Delay	17.3	6.7	16.7	12.2	12.7	12.2	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.3	6.7	16.7	12.2	12.7	12.2	12.7
Queue Length 50th (ft)	13	0	13	3	37	3	35
Queue Length 95th (ft)	91	32	93	27	205	30	195
Internal Link Dist (ft)	245		267		117		232
Turn Bay Length (ft)				50		150	
Base Capacity (vph)	1052	1146	981	948	1676	904	1684
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	0.12	0.03	0.20	0.04	0.19

Intersection Summary



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	266	43	29	271	21
Future Volume (vph)	51	50	65	64	23	19	27	266	43	29	271	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		0.99		1.00	0.99		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		0.98		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)		1759	1502		1683		1754	1813		1747	1816	
Flt Permitted		0.78	1.00		0.75		0.56	1.00		0.54	1.00	
Satd. Flow (perm)		1408	1502		1305		1032	1813		987	1816	
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	289	47	32	295	23
RTOR Reduction (vph)	0	0	58	0	7	0	0	6	0	0	3	0
Lane Group Flow (vph)	0	109	13	0	109	0	29	330	0	32	315	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)		7.5	7.5		7.5		15.4	15.4		15.4	15.4	
Effective Green, g (s)		7.5	7.5		7.5		15.4	15.4		15.4	15.4	
Actuated g/C Ratio		0.19	0.19		0.19		0.39	0.39		0.39	0.39	
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)		265	283		245		399	701		381	702	
v/s Ratio Prot								c0.18			0.17	
v/s Ratio Perm		0.08	0.01		c0.08		0.03			0.03		
v/c Ratio		0.41	0.05		0.44		0.07	0.47		0.08	0.45	
Uniform Delay, d1		14.2	13.2		14.3		7.7	9.1		7.7	9.1	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.0	0.1		1.3		0.1	0.5		0.1	0.5	
Delay (s)		15.2	13.3		15.6		7.8	9.6		7.8	9.5	
Level of Service		B	B		B		A	A		A	A	
Approach Delay (s)		14.5			15.6			9.5			9.4	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	39.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	92	30	30	88	18	19
Future Vol, veh/h	92	30	30	88	18	19
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	33	33	96	20	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	133	0	279	117
Stage 1	-	-	-	-	117	-
Stage 2	-	-	-	-	162	-
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	-	-	1452	-	711	935
Stage 1	-	-	-	-	908	-
Stage 2	-	-	-	-	867	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1452	-	694	935
Mov Cap-2 Maneuver	-	-	-	-	694	-
Stage 1	-	-	-	-	908	-
Stage 2	-	-	-	-	846	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.9	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	800	-	-	1452	-
HCM Lane V/C Ratio	0.05	-	-	0.022	-
HCM Control Delay (s)	9.7	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	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

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

Timing Plan: PM Peak

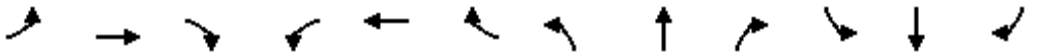
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	197	69	14	29	52	449	18	19	704
v/c Ratio	0.53	0.18	0.09	0.17	0.14	0.55	0.03	0.05	0.59
Control Delay	37.6	14.9	43.9	28.3	13.3	23.2	0.1	13.2	24.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.6	14.9	43.9	28.3	13.3	23.2	0.1	13.2	24.4
Queue Length 50th (ft)	91	8	7	5	14	150	0	5	158
Queue Length 95th (ft)	196	47	30	37	38	368	0	19	262
Internal Link Dist (ft)		305		220		864			293
Turn Bay Length (ft)							230	150	
Base Capacity (vph)	799	772	641	625	533	1462	1078	597	2644
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

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	436	17	18	555	128
Future Volume (vph)	191	17	49	14	11	17	50	436	17	18	555	128
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	3368	
Flt Permitted	0.95	1.00		0.95	1.00		0.27	1.00	1.00	0.40	1.00	
Satd. Flow (perm)	1752	1638		1687	1621		497	1863	1413	735	3368	
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	449	18	19	572	132
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	449	7	19	691	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)	16.1	16.1		3.6	3.6		38.5	33.1	33.1	31.9	29.8	
Effective Green, g (s)	16.1	16.1		3.6	3.6		38.5	33.1	33.1	31.9	29.8	
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)	341	319		73	70		315	747	566	310	1216	
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	0.60	0.01	0.06	0.57	
Uniform Delay, d1	30.1	27.2		38.0	38.0		12.8	19.5	14.9	15.9	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	2.4	0.1		1.3	1.1		0.2	1.4	0.0	0.1	0.6	
Delay (s)	32.5	27.3		39.3	39.1		13.0	20.9	14.9	16.0	21.8	
Level of Service	C	C		D	D		B	C	B	B	C	
Approach Delay (s)		31.1			39.2			19.9			21.6	
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)	82.5	Sum of lost time (s)	27.6
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



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	436	17	18	555	128
Future Volume (veh/h)	191	17	49	14	11	17	50	436	17	18	555	128
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	449	18	19	572	132
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	296	628	495	268	877	202
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	1475	1781	2820	648
Grp Volume(v), veh/h	197	0	69	14	0	29	52	449	18	19	357	347
Grp Sat Flow(s),veh/h/ln	1767	0	1639	1711	0	1577	1781	1870	1475	1781	1763	1705
Q Serve(g_s), s	6.7	0.0	2.4	0.5	0.0	1.1	1.2	13.4	0.5	0.5	11.1	11.2
Cycle Q Clear(g_c), s	6.7	0.0	2.4	0.5	0.0	1.1	1.2	13.4	0.5	0.5	11.1	11.2
Prop In Lane	1.00		0.74	1.00		0.62	1.00		1.00	1.00		0.38
Lane Grp Cap(c), veh/h	278	0	258	87	0	80	296	628	495	268	548	530
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	833	0	773	672	0	620	632	1764	1392	648	1663	1609
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	25.4	0.0	23.6	28.9	0.0	29.2	14.6	18.5	14.2	15.4	18.9	19.0
Incr Delay (d2), s/veh	3.3	0.0	0.6	0.9	0.0	2.7	0.3	1.5	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	5.5	0.2	0.2	4.4	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.7	0.0	24.1	29.8	0.0	31.9	14.8	20.0	14.2	15.5	20.3	20.4
LnGrp LOS	C	A	C	C	A	C	B	C	B	B	C	C
Approach Vol, veh/h		266			43			519			723	
Approach Delay, s/veh		27.5			31.2			19.3			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	26.7		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	13.2		8.7	2.5	15.4		3.1				
Green Ext Time (p_c), s	0.1	5.2		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.

Appendix I – 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

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

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	63	7	11	1	9	1	6	11	1	1	1	32
Future Vol, veh/h	63	7	11	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	12	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%	78%	9%	3%
Vol Thru, %	61%	9%	82%	3%
Vol Right, %	6%	14%	9%	94%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	18	81	11	34
LT Vol	6	63	1	1
Through Vol	11	7	9	1
RT Vol	1	11	1	32
Lane Flow Rate	20	88	12	37
Geometry Grp	1	1	1	1
Degree of Util (X)	0.023	0.101	0.013	0.037
Departure Headway (Hd)	4.17	4.115	4.062	3.563
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	853	872	878	996
Service Time	2.223	2.136	2.101	1.617
HCM Lane V/C Ratio	0.023	0.101	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	0.3	0	0.1

Intersection	
Intersection Delay, s/veh	7.1
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	22	21	12	1	1	13
Future Vol, veh/h	22	21	12	1	1	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	23	13	1	1	14
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	7.3	7	6.6
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	51%	0%	7%
Vol Thru, %	49%	92%	0%
Vol Right, %	0%	8%	93%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	43	13	14
LT Vol	22	0	1
Through Vol	21	12	0
RT Vol	0	1	13
Lane Flow Rate	47	14	15
Geometry Grp	1	1	1
Degree of Util (X)	0.053	0.016	0.015
Departure Headway (Hd)	4.075	3.951	3.498
Convergence, Y/N	Yes	Yes	Yes
Cap	883	909	1022
Service Time	2.079	1.962	1.525
HCM Lane V/C Ratio	0.053	0.015	0.015
HCM Control Delay	7.3	7	6.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.2	0	0

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

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	54	54	43	1	2	43
Future Vol, veh/h	54	54	43	1	2	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	59	59	47	1	2	47
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	7.8	7.4	6.9
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	50%	0%	4%
Vol Thru, %	50%	98%	0%
Vol Right, %	0%	2%	96%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	108	44	45
LT Vol	54	0	2
Through Vol	54	43	0
RT Vol	0	1	43
Lane Flow Rate	117	48	49
Geometry Grp	1	1	1
Degree of Util (X)	0.136	0.054	0.05
Departure Headway (Hd)	4.156	4.094	3.652
Convergence, Y/N	Yes	Yes	Yes
Cap	863	871	965
Service Time	2.179	2.135	1.734
HCM Lane V/C Ratio	0.136	0.055	0.051
HCM Control Delay	7.8	7.4	6.9
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.5	0.2	0.2