Traffic Impact Study

Schoolhouse Commons

Town of Haymarket, Virginia

August 19, 2025

Prepared for:

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Executive Summary

Purpose of Report and Study Objectives

This report presents the findings of Traffic Impact Analysis conducted for the proposed Schoolhouse Commons development in the Town of Haymarket, Virginia. This study was developed in accordance with Virginia Department of Transportation ("VDOT") and the Town of Haymarket 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. Traffic Impact Analysis involves the evaluation of anticipated roadway conditions with and without the proposed development and recommend transportation improvements to offset both the impacts of the increase in future traffic volumes and the changes in traffic operations due to the development. The analysis assists public officials and developers to balance interrelations between efficient traffic movements with necessary lane access.

Site Location and Study Area

The site is located in the Town of Haymarket. The vehicular study area has six (6) existing intersections, five (5) of which are located along Washington St (Rte. 55) and one (1) located along Bleight Dr.

Description of Proposed Development

The planned development program for the site includes mix uses with approximately 26,000 SF of existing commercial/office land uses to remain and about 61 single family attached (townhome) units. Please note, for the purposes of the operational analysis, the development program analyzed 65 units to evaluate the most conservative scenario.

The site is currently occupied by approximately 32,000 SF of existing commercial uses. A portion of the commercial uses, approximately 5,900 SF of office space, are planned to be removed with this application while the remaining 26,000 SF is anticipated remain. The development currently has two access points (one entrance only and one exit only entrance) along Washington St. The current plan for the development proposes one full access entrance (inbound and outbound) along Washington St. The development is also planning a site access by constructing a fourth leg to the intersection of Bleight Dr & Dogwood Park Ln.

Principal Findings, Conclusions, and Proposed Mitigations

Discussions regarding the study assumptions and relevant background information were held with the Town of Haymarket ("The Town") and VDOT staff during a June 13, 2025, scoping meeting. A finalized scope was agreed upon and signed by VDOT and PWCDOT on June 20, 2025.

The analysis presented in this report supports the following assumptions and findings:

Analysis Components

- Existing counts, dated Tuesday June 3, 2025, were collected while schools were in session to reflect typical traffic patterns, and serve as the basis for this study. Existing traffic counts were conducted at the existing intersections on Saturday June,14, 2025. Please note there was approximately 4,700 SF of vacant commercial and church space at the time of collected counts, had the building been fully leased, the traffic volumes for the existing conditions would be slightly higher than presented in the report.
- As determined based on discussions at the scoping meeting, an inherent growth rate of 2% (compounded annually) for the period 2025-2029 has been applied to all through movements along Washington St at all intersections.
- The site is anticipated to generate approximately 26 total trips during the AM peak hour, 27 total trips during the PM peak hour, 444 total daily trips on a typical weekday and 296 Saturday daily trips.

- One (1) identified background development was included in the study – 6700 Bleight Drive – Which will consist of approximately 11 single family attached units.
- The scenarios to be included in this study are Existing Conditions (2025), Future without Development (2029), Future with Development (2029).
- The existing access to the site is served via two (2) intersections, one entrance and one egress. The development proposes to convert the existing entrance only driveway to a full access (inbound and outbound) driveway. The development also proposes to remove the existing exit only driveway as the primary bidirectional entrance would reduce driver confusion and better meet driver expectation. The proposed development is also planning to construct a fourth leg to the intersection of Bleight Dr & Dogwood Park Ln.

Conclusion

The analysis presented in this report supports the following assumptions and findings:

Infrastructure

- There is one (1) identified infrastructure change with this proposed development. Construction of a fourth leg to the intersection of Bleight Dr & Dogwood Park Ln, will serve as another site access for the proposed development. No additional background infrastructure changes were identified and agreed upon in the scope.

Analysis Results

Analysis Terms:

- Level of Service (LOS) is based upon the traffic volume present in each lane on the roadway, the capacity of each lane at the intersection and the delay (in seconds) associated with each directional movement. This evaluation is consistent in all traffic analysis scenarios. Please refer to definitions of Level of Service in Appendix J.
- The 95th percentile queue length refers to the queue length within which 95% of all observed queues are contained during a specific analysis period. This evaluation is consistent in all traffic analysis scenarios.

Existing Conditions (2025):

- All approaches and the overall intersections operate at an acceptable level of service.
- All the anticipated 95th percentile queues are contained in the available storage lane lengths for all the study intersections.

Total Future without Development (2029):

- All approaches and the overall intersections operate at an acceptable level of service.
- All the anticipated 95th percentile queues are contained in the available storage length for all the study intersections.

Total Future with Development (2029):

The results of the Future with Development Conditions (2029) analysis scenario are as follows:

- All the approaches and the overall intersection operate at acceptable levels of service for all of the study intersections.
- All the anticipated 95th percentile queues are contained in the available storage length for all the study intersections.
- Please note that while all study intersections and approaches operate at acceptable levels of service, the following lane group was observed to experience larger delay:
    - Intersection #2 Washington St (Rte. 55) & Greenhill Crossing Dr/Site Access #1 – Northbound shared left/thru lane operates at LOS E in the PM peak hour. The overall approach operates acceptably.
    - The 95th percentile queue for the northbound shared left/thru lane is approximately 23 ft (less than one car). Therefore, the queues do not extend to the downstream driveways that serve the residential community.

- The reconfigurations and mitigations for this analysis scenario are as follows:
    - The existing primary driveway entrance (Access #1) will be reconfigured to a full-access driveway (inbound & outbound).
    - The existing exit-only driveway (Access #2) is planned to be closed to address the existing safety issues due to the proximity to the driveway to the east.
    - The addition of a westbound right turn lane at Intersection #2 (Washington St (Rte. 55) & Greenhill Crossing Dr/Site Access) is a proposed mitigation. Please note only a right turn taper is warranted using VDOT Road Design Manual (RDM) Turn Lane Assessment.
- In addition to the mitigation implemented for the Future Conditions with Development (2029) scenario, an alternative scenario was provided that reviewed the capacity of the adjacent roundabout to understand the capacity if existing vehicles were to reroute to utilize the intersection. The analysis confirms that the roundabout operates acceptably if additional vehicles were to use it.

Overall Conclusion

Based on the capacity and queueing analysis results, the proposed development will not have a significant impact to the surrounding transportation and roadway network, assuming that all designs planned with the subject proposal, and mitigations discussed in this report are implemented.

Introduction

This report presents the findings of Traffic Impact Analysis conducted for the proposed Schoolhouse Commons development in the Town of Haymarket, Virginia.

The site is currently occupied with approximately 32,000 SF of commercial and office space. The planned development program for the site includes approximately 26,000 SF of commercial/office land uses and about 61 single family attached (townhome) units. Please note for the purposes of the operational analysis, the development program analyzed 65 townhome units to evaluate the most conservative scenario. Also note, a portion of the site is currently occupied by existing commercial uses. A portion of the commercial uses, approximately 5,900 SF of office space, are planned to be removed with this application while the remaining 26,000 SF is anticipated remain. The projected build-out date for the site is assumed to be 2029.

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

- A scoping meeting was held on Friday, June 13, 2025, with VDOT and the Town of Haymarket "The Town" staff to discuss the parameters of this study as well as any 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.
- Existing traffic counts conducted at the existing intersections on Tuesday, June 3, 2025, during the weekday morning and weekday afternoon peak periods were used as baseline counts. Existing traffic counts were conducted at the existing intersections on Saturday June,14, 2025. Please note there was approximately 4,700 SF of vacant commercial and church space at the time of collected counts, had the building been fully leased, the traffic volumes for the existing conditions would be slightly higher than presented in the report.
- The Future Conditions without Development (2029) scenario was projected based on the existing traffic volumes and an inherent growth rate to account for regional growth on the roadway network. There was one (1) identified background development was included in the study – 6700 Bleight Drive – Which will consist of approximately 11 single family attached units.
- Proposed site traffic volumes were derived based on the methodology outlined in the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 11th Edition, publication and were assigned to the road network based on the agreed upon direction of approach discussed during the aforementioned scoping meeting.
- The Future Conditions with Development (2029) scenario was projected based on the existing traffic volumes, regional growth, background developments, and plans for the proposed development.
- Intersection capacity and queueing analyses were performed for the identified study intersections for the Existing Conditions (2025), Future without Development (2029), and Future with Development (2029) during the weekday morning (AM), weekday afternoon (PM) peak hours, and weekend afternoon (SAT) peak hour.
- Intersection capacity and queuing analyses were performed using Synchro, version 11, with results based on the Federal Highway Administration's (FHWA) Highway Capacity Manual (HCM) 6 and (HCM) 2000 methodology and following VDOT's Traffic Operations and Safety Manual (TOSAM).

Sources of data for this study include information provided by VDOT, PWCDOT, and the office files and field reconnaissance efforts of Gorove Slade.

Description of the Existing Site

Site Location

The site is located in the Town of Haymarket. The site is generally bounded by Alexandra's Keep Ln to the north, Washington St (Rte. 55) to the south, an existing residential community and office space to the east, and Bleight Dr to the west. The development proposes to convert the existing entrance only driveway to a full access (inbound and outbound) driveway. The development also proposes to remove the existing exit-only driveway as the primary bidirectional entrance would reduce driver confusion and better meet driver expectations. The development is also planning to construct a fourth leg to the intersection of Bleight Dr & Dogwood Park Ln. The site entrances for the development are shown on Figure 1 below.

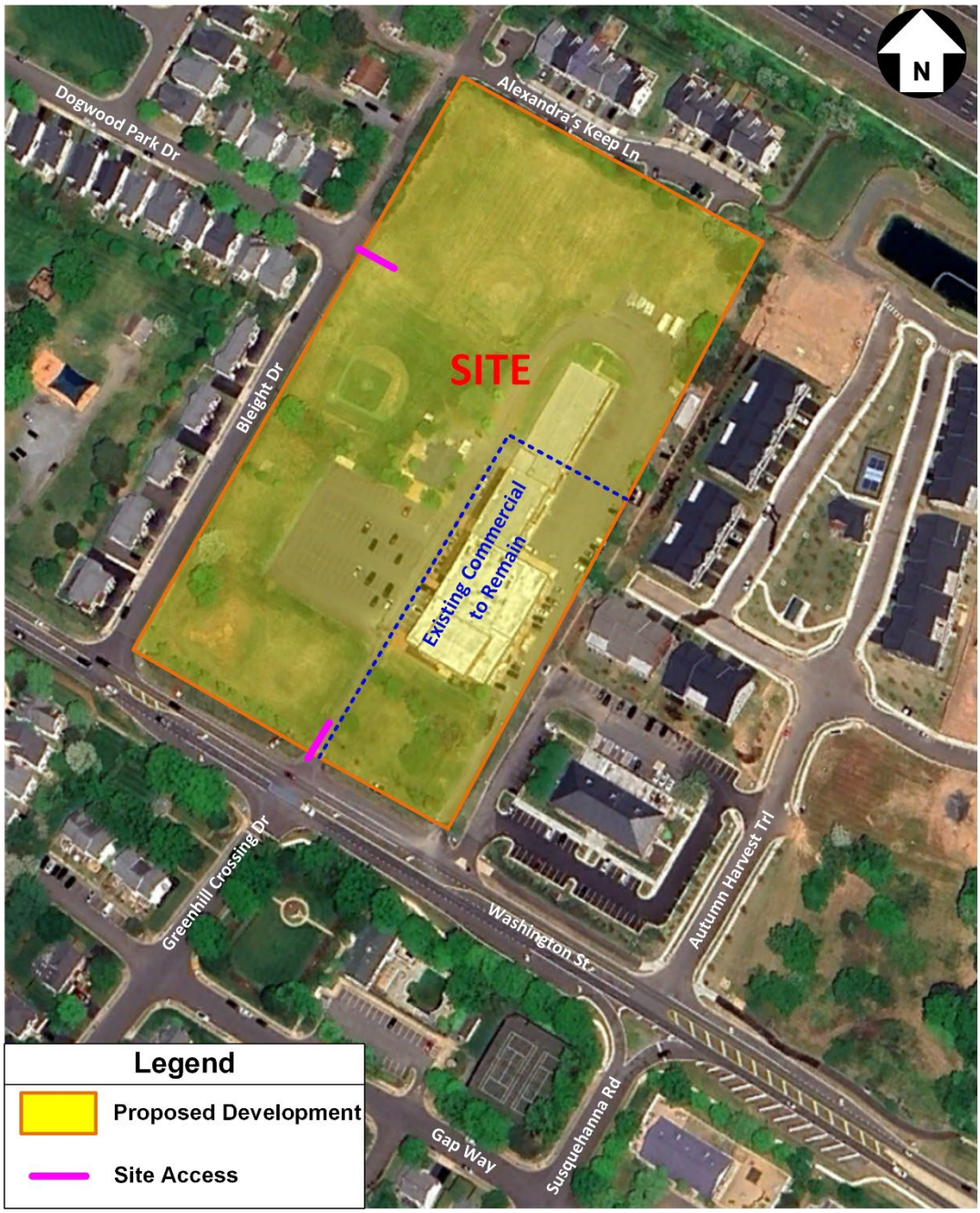


Figure 1: Site Location & Access

Location within Jurisdiction and Region

The site is located in the northeast quadrant of the intersection of Washington St (Rte. 55) & Bleight Dr and is approximately 0.9 miles from the intersection of Washington St (Rte. 55) & James Madison Hwy (US-15). The site is located approximately 1.0 mile southeast of the interchange of James Madison Hwy (US-15) and I-66 shown in Figure 3. The site is also located approximately 1.3 miles northwest of the interchange of John Marshall Hwy (Rte. 55) and Lee Hwy (US-29).

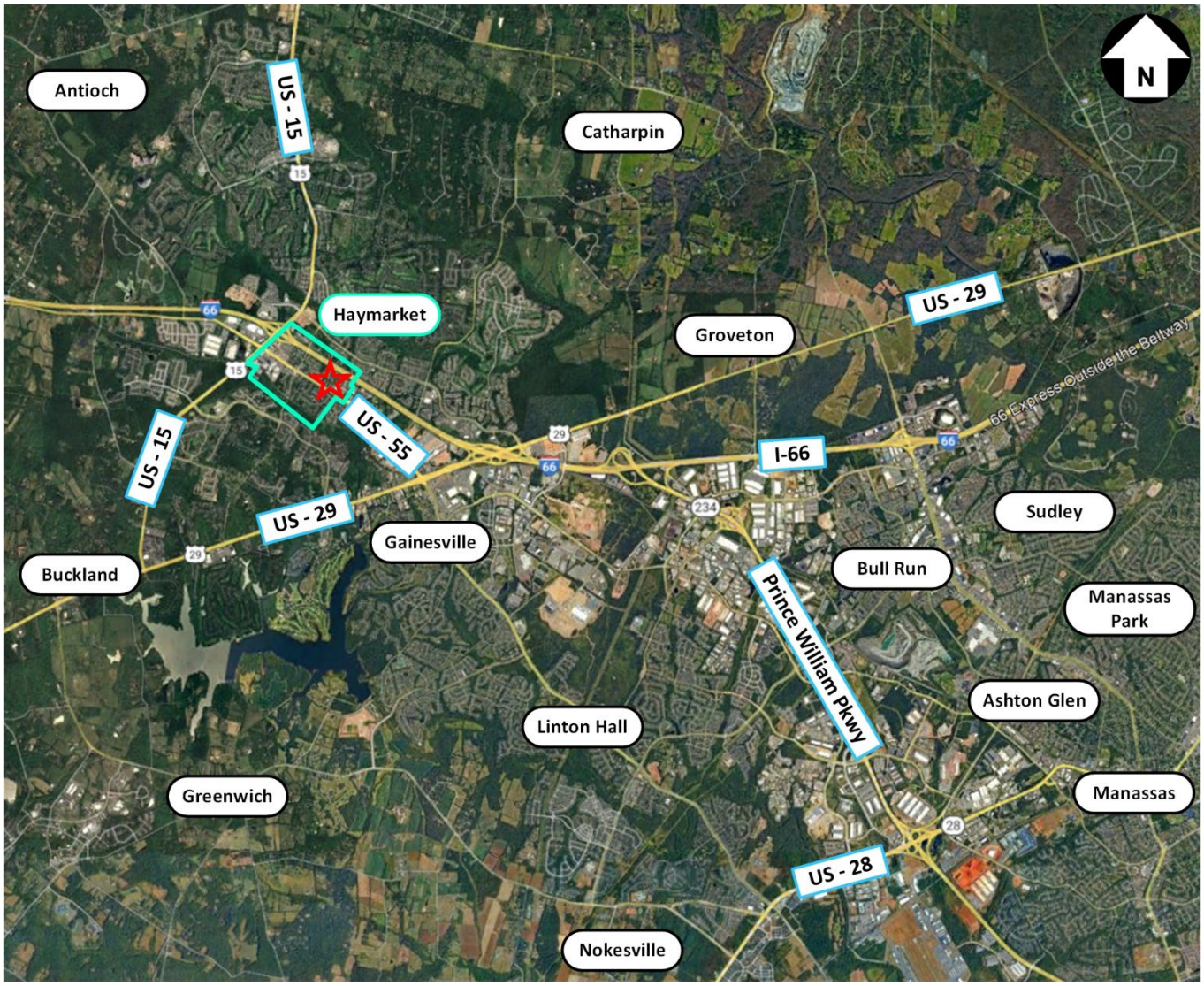


Figure 2: Regional Location

Existing Zoning and Long-Range Land-Use

The existing zoning for the site is Town Center (B-1) as shown on Figure 3 and the Town of Haymarket's Planned Use designation for the site is Public as shown on Figure 4.

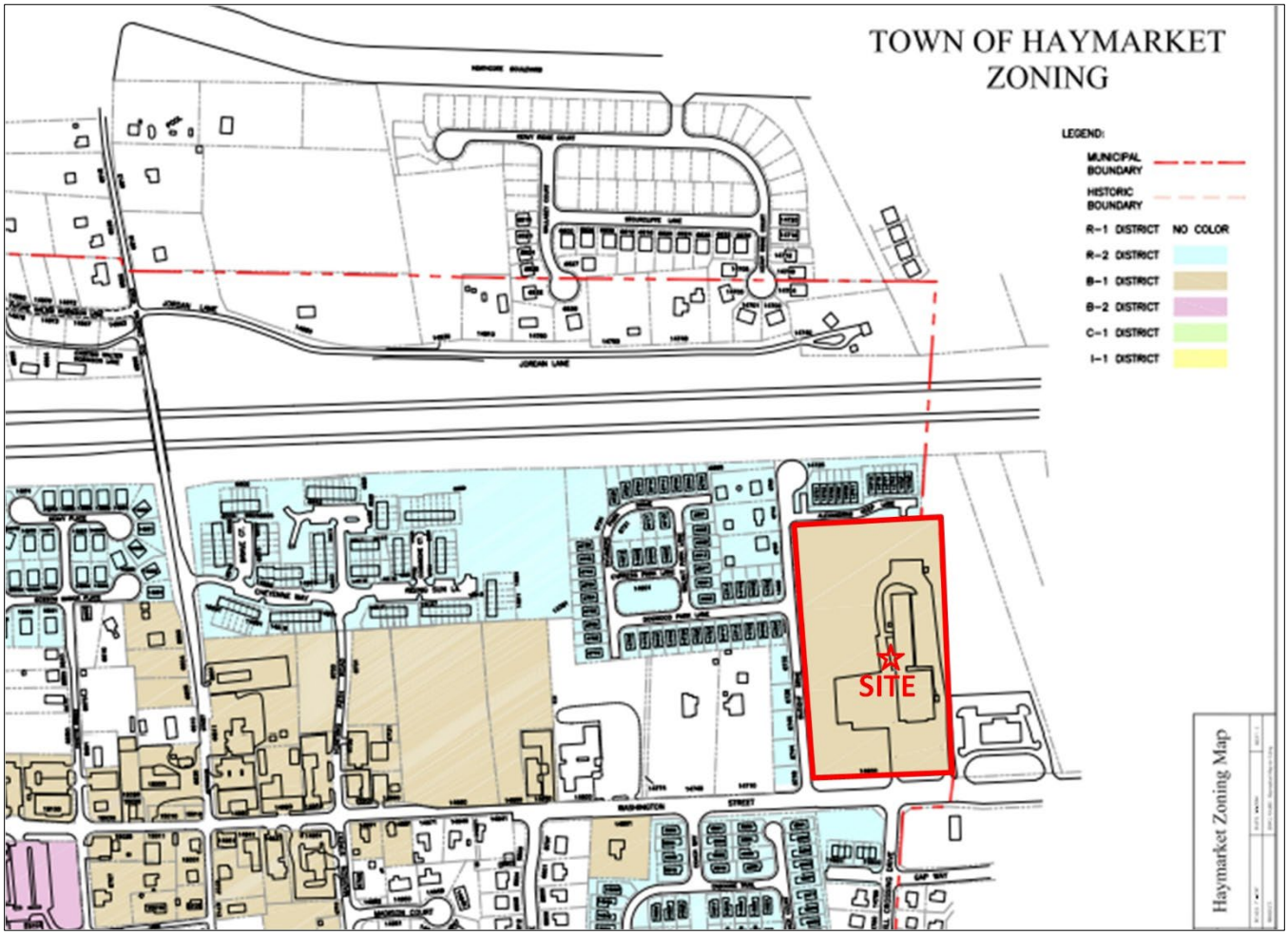


Figure 3: Zoning Map
(Source: Town of Haymarket Zoning)

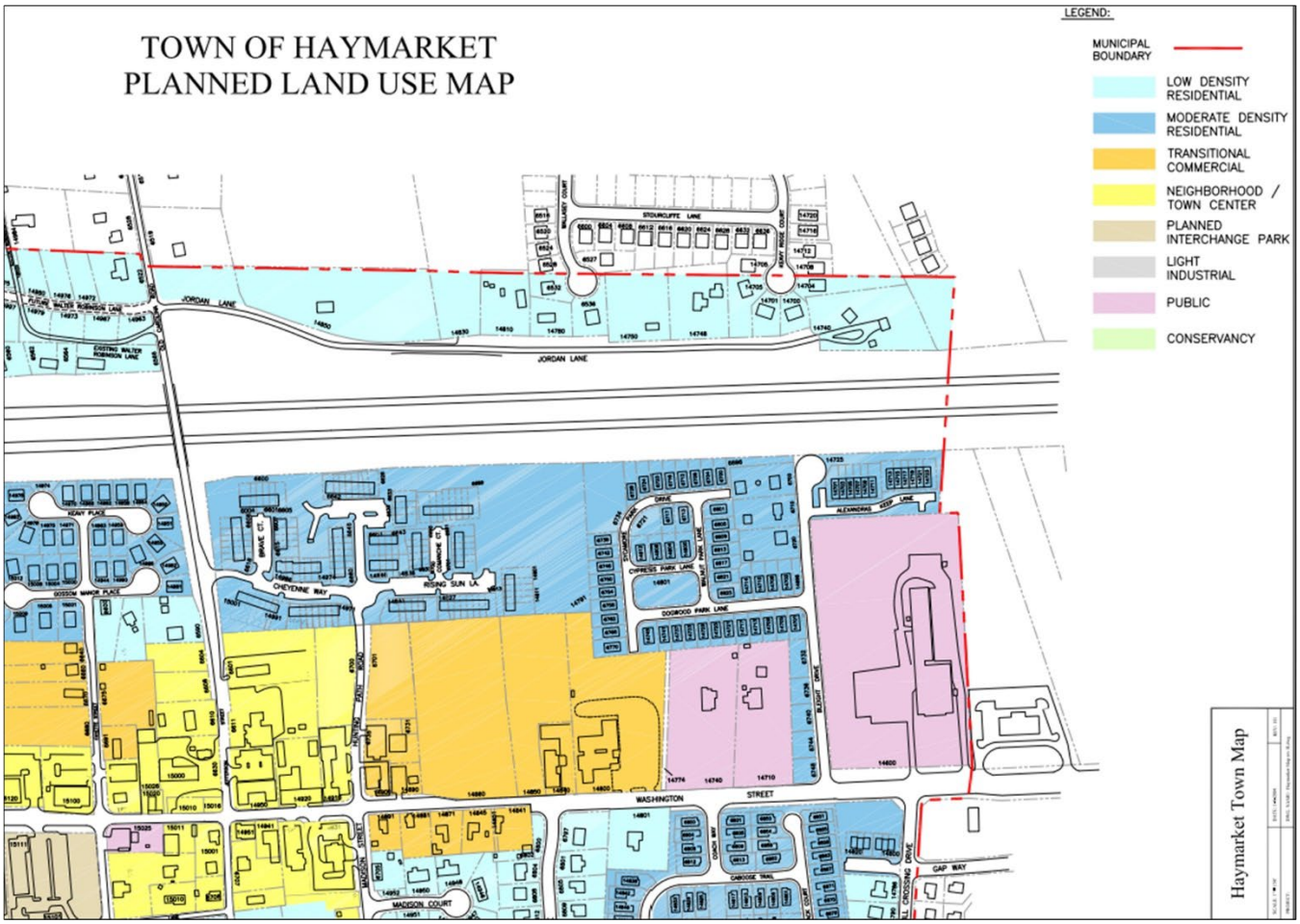


Figure 4: Planned Use Map
(Source: Town of Haymarket Planning Commission)

Descriptions of Geographic Scope of Study and Limits of the Study Area

The geographic scope of the study area was developed in accordance with VDOT and the Town guidance. The vehicular study area includes the following six (6) existing intersections:

Intersection #1: Washington St (Rte. 55) & Bleight Dr (existing full movement, two-way stop controlled);

Intersection #2: Washington St (Rte. 55) & Greenhill Crossing Dr/Site Access #1 (existing full movement on south side, one way entrance on north side, two-way stop controlled);

Intersection #3: Washington St (Rte. 55) & Site Access #2 (existing two-way stop controlled, one way exit);

Intersection #4: Washington St (Rte. 55) & Commercial Access (existing Right-In/Right-Out (RIRO));

Intersection #5: Washington St (Rte. 55) & Autumn Harvest Trl/Susquehanna Rd (existing partial movement, two-way stop controlled);

Intersection #6: Bleight Dr & Dogwood Park Dr/Future Site Access #3 (future site access proposed as fourth leg to existing intersection).

An aerial of the study intersections is provided in Figure 5.

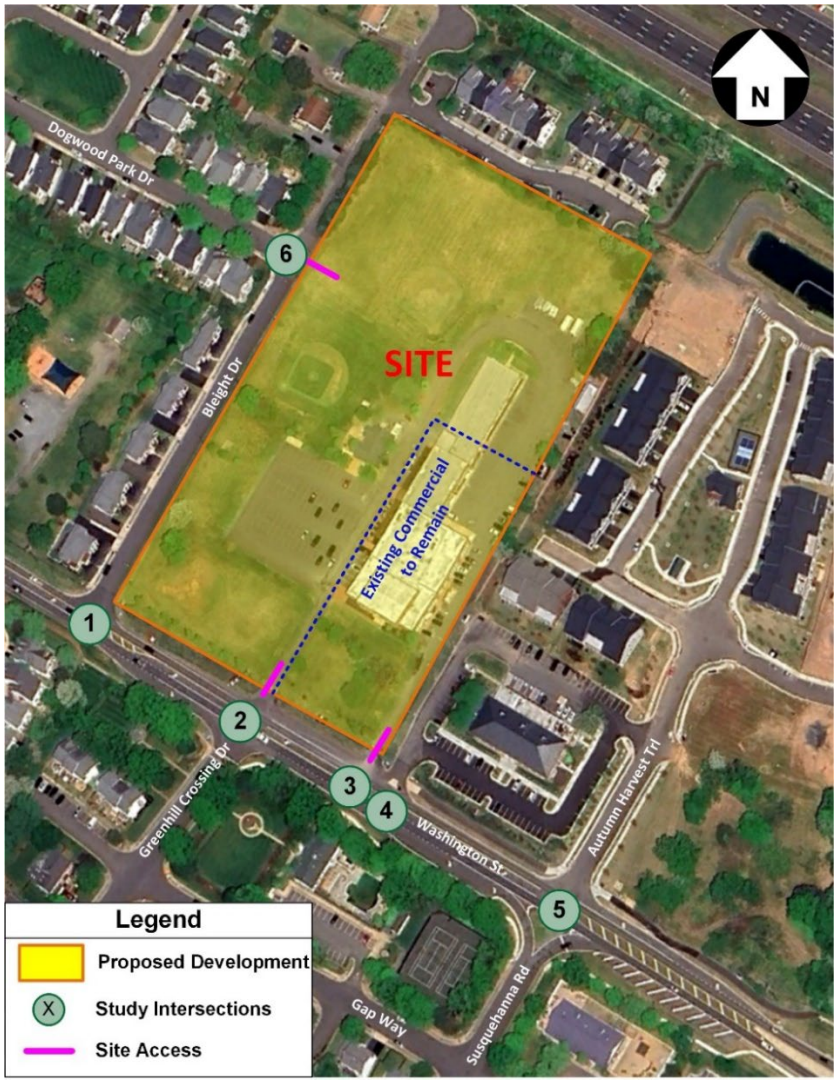


Figure 5: Aerial of Study Boundaries (Study Intersections)

Existing Roadway Network

Washington St (Rte. 55) is the major road for this transportation study and the roadway information is displayed in Table 1 below.

Table 1: Washington St (Rte. 55) Roadway Information

Roadway	RTE #	VDOT Classification	Posted Speed Limit (mph)	AADT (vpd)	k-factor
Washington St	VA 55	Major Collector	25	13,000	8.9%

Source: 2023 VDOT Published AADT Traffic Data

Planned Future Transportation Improvements

Roadway Improvements

There were no roadway improvements identified near the intersections for this transportation study. The roadway configuration for Washington St is expected to remain the same in all analyzed scenarios.

Analysis of Existing Conditions (2025)

In order to project the future traffic conditions, it was necessary to create a baseline "existing" scenario. For the purposes of this report and as agreed to by VDOT and Town staff, 2025 roadway conditions were considered to be as "existing."

Existing Roadway Safety Assessment

Historical crash data was obtained from VDOT's Crash Analysis Tool for the existing study intersections for a five-year period between January 2020 through December 2024. The summary of the reported crashes at the specified intersections are shown in Table 2.

The crash data by intersections is provided in Appendix I of this document.

Table 2: Historical Crash Data Summary (January 2020- December 2024)

	Intersection	Approximate ADT	PDO	IC	Fatality	Total	Crash Rate (Per MEV)
#2	Washington St (Rte. 55) at Greenhill Crossing Dr/Site Entrance	13,000	3	0	0	3	0.13

**Note the same ADT for each intersection was assumed for all years.*

The intersection crash rate was computed for the existing study intersections using the following formula and was calculated as crashes per one million entering vehicles ("MEV"). The approach average daily traffic volumes ($ADT_{approach}$) were derived from calculations based on the existing link ADTs.

$$Rate_{intersection} = \frac{1{,}000{,}000 * \#\ of\ Crashes}{\#\ of\ Years * 365\left(\frac{days}{year}\right) * ADT_{approach}}$$

Typically, a crash rate of 1.0 MEV or higher is an indication that further study may be required. A rate over 1.0 MEV does not necessarily mean there is a significant problem at an intersection, but rather it is a threshold used to identify which intersections may have an elevated crash rate due to operational, geometric, or other deficiencies.

Table 3: VDOT Crash Data at Washington St (Rte. 55) & Greenhill Crossing Dr/Site Entrance (Intersection #2)

Intersection Crash Analysis	Crash Data for the Intersection of Washington St (Rte. 55) and Greenhill Crossing Dr/Site Entrance (January 2020 - December 2024)						
	2020	2021	2022	2023	2024	Total	Relative Frequency
Crash Severity							
Fatal Collision (Type K)							0.00%
Injury Collision (Type A, B, and C)							0.00%
Type A							
Type B							
Type C							
Property Damage Only (Type PDO)		1		2		3	100.00%
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		1				1	33.33%
Angle Collision				2		2	66.67%
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)				*2*		*2*	*66.67%*
PM Peak Period (3 - 7 PM)		*1*				*1*	*33.33%*
Off Peak - Nighttime (7 PM - 6 AM)							*0.00%*
CALCULATED CRASH RATE***						***0.13***	***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 12400 ADT.

As shown in Table 3 above, Intersection #2 had 3 reported crashes over the five-year period. The crash report for this intersection shows 100% of the crashes were classified as PDO (Property Damage Only). Average Daily Traffic (ADT) was reported at this intersection based on existing collected counts (2025). The intersection has a calculated crash rate of 0.13 crashes per MEV. Therefore, this intersection is not considered a high crash location.

There were no reported crashes within a 150-foot radius of the other study intersections of this report.

Additionally, study intersection #3 is planned to be removed in the future condition with the proposed development as the existing spacing between the access and the commercial driveway does not meet the VDOT access management standards.

Existing Traffic Volumes

In order to determine the weekday morning (AM) and weekday afternoon (PM) peak hour turning movement traffic volumes, traffic counts were conducted at the following study intersections on Tuesday, June 3, 2025, during the weekday morning, weekday afternoon peak periods, and weekend afternoon (SAT) peak period. Please note there was approximately 4,700 SF of vacant commercial and church space at the time of collected counts, had the building been fully leased, the traffic volumes for the existing conditions would be slightly higher than presented in the report.

The system peak hours for the six (6) study intersections were determined to be:

- Weekday Morning (AM) Peak Hour: 8:00 AM to 9:00 AM
- Weekday Afternoon (PM) Peak Hour: 4:30 PM to 5:30 PM
- Saturday (SAT) Peak Hour: 5:45 PM to 6:45 PM

The 2025 existing road network lane configuration is presented in Figure 6. The 2025 existing conditions peak hour traffic volumes for the six (6) existing intersections within the study area are illustrated in Figure 7. The average daily traffic (“ADT”) volumes, depicted in this figure and in subsequent volume graphics, were calculated based on the PM peak hour turning movement volumes and multiplied by the VDOT historical k-factors from 2023. If the historic k-factor data was not available for a given roadway or roadway segment, then a k-factor of 0.10 was assumed.

Please note all vehicle maneuvers and volumes were balanced throughout the six (6) study intersections. The raw data for the existing turning count movements are provided in Appendix B.

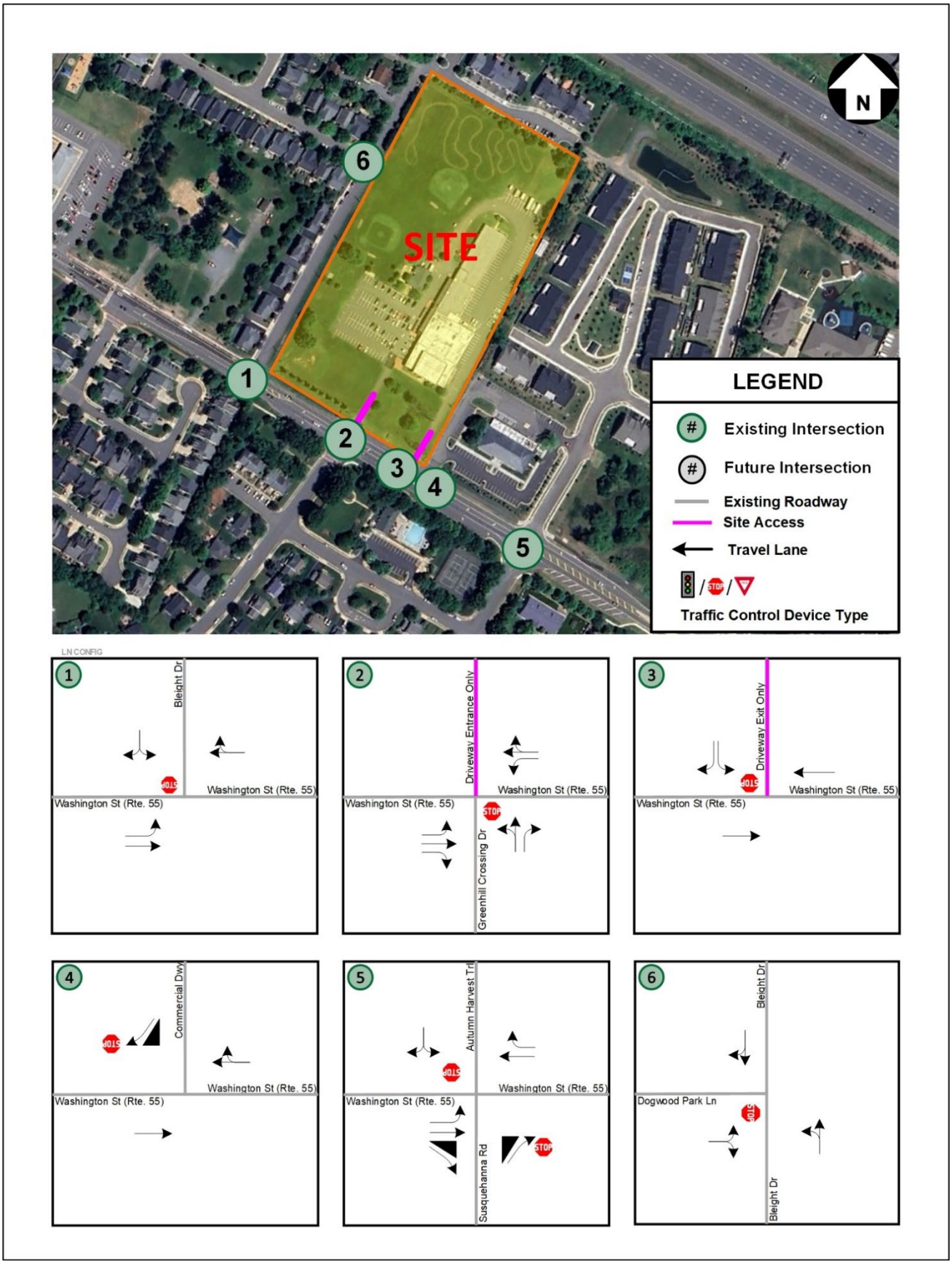


Figure 6: 2025 Existing Conditions – Roadway Network Geometric Configuration and Traffic Control Devices

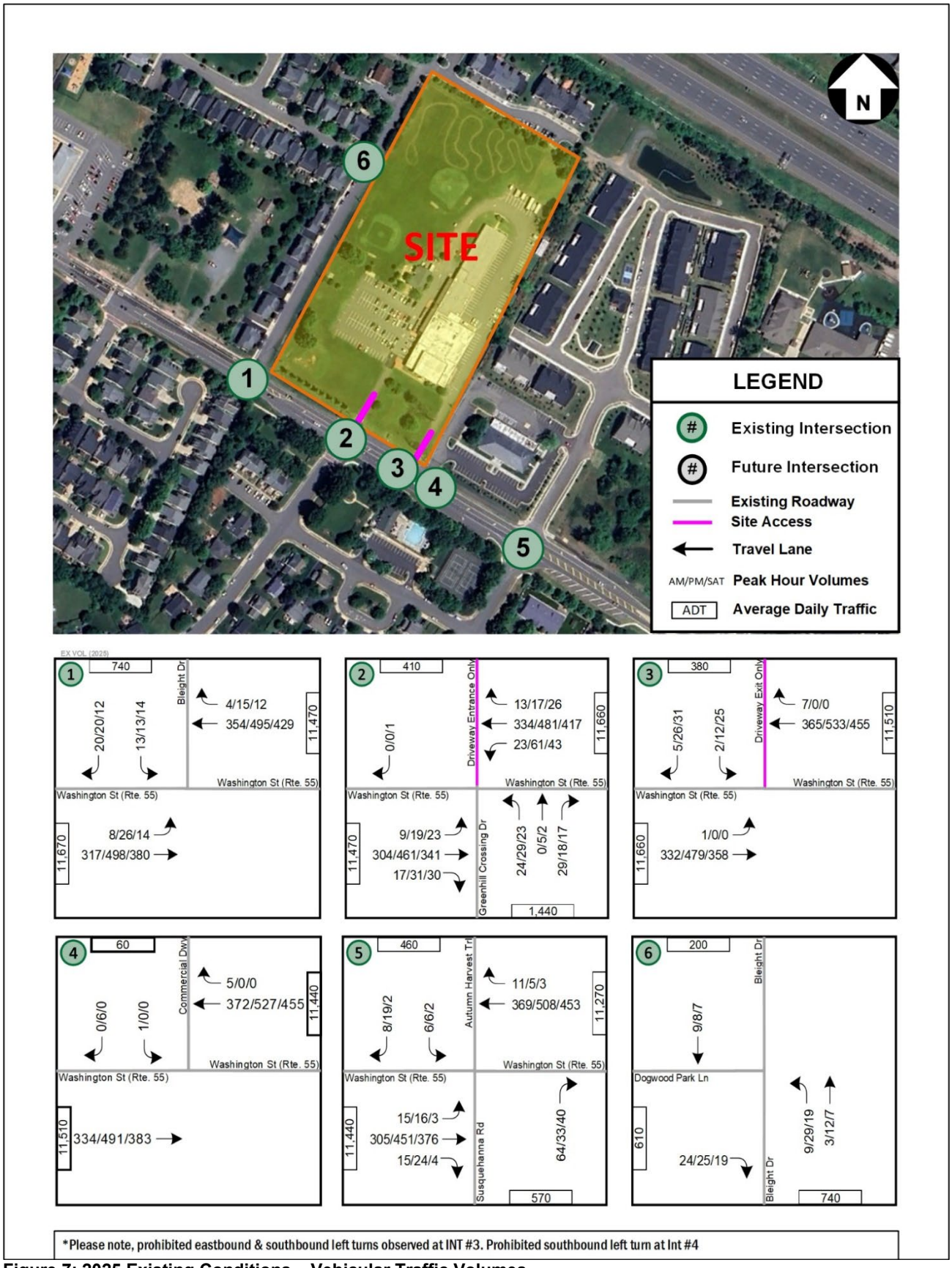


Figure 7: 2025 Existing Conditions – Vehicular Traffic Volumes

It should be noted that Figure 7 above illustrates the peak hour volumes by movement. The existing lane configuration for the study intersections should be referred from Figure 6. Please note that prohibited movements at Intersection #2 and #3 were observed as shown.

Existing Intersection Capacity and Queueing Analysis

Intersection capacity and queuing analyses were performed for the Existing Conditions (2025) scenario at the study area intersections during AM, PM, and SAT peak hours. *Synchro,* version 11, was used to analyze the study intersections with results based on the Federal Highway Administration's (FHWA) Highway Capacity Manual[1] ("HCM") and analysis guidelines provided in VDOT's Traffic Operations and Safety Analysis Manual ("TOSAM"). The analysis herein includes level of service ("LOS"), delay, and queue length comparisons for the turning movements analyzed.

Signal timings and *Synchro* files were obtained from VDOT and were utilized as base for the analysis models. Traffic operation conditions as well as lane configurations were field verified. The existing traffic volumes discussed in the aforementioned section as well as other relevant data were entered into the analysis models. For the purposes of this analysis, the existing peak hour factors ("PHF") were based on the traffic count and utilized on a by-intersection basis; PHF in the range of 0.85 to 1.00 were used for the existing scenario, consistent with VDOT analysis guidelines. Heavy vehicle percentages ("HV%") were based on existing traffic count data for each individual lane group.

Per the scoping meeting with VDOT and the Town staff, it would be considered acceptable and/or desirable to achieve an approach LOS D or better for traffic operations using HCM 6th edition methodology and HCM 2000 where applicable. The results of the intersection capacity analyses from *Synchro* are presented in Table 4 and graphically in Figure 8. The results are expressed in LOS and delay (seconds per vehicle) for overall signalized intersections and per approach and lane group for all study intersections. The overall signalized intersections and any approaches that operate at LOS F and E are displayed in red.

The 95th percentile queues were also determined from *Synchro* and are expressed in feet. The lane groups where the queue lengths exceeded the available effective storage capacity of existing turn lanes are displayed in red.

The description of different LOS and delay are included in Appendix J. The detailed analysis worksheets of 2025 Existing Conditions are contained in Appendix C.

Table 4: Existing Conditions (2025) – Intersection Capacity and Queuing Analysis Results

No.	Intersection (Movement)	Effective Storage	AM Peak Hour			PM Peak Hour			SAT Peak Hour		
			LOS	Delay (sec/veh)	95th % Queue (ft.)	LOS	Delay (sec/veh)	95th % Queue (ft.)	LOS	Delay (sec/veh)	95th % Queue (ft.)
			Synchro			Synchro			Synchro		
1	**Washington St (Rte. 55) (E/W) & Bleight Dr (N/S) (TWSC)**										
	Eastbound Approach										
	Eastbound Left	160	A	0.0	0	A	8.6	3	A	8.4	0
	Southbound Approach		***B***	***13.3***		***C***	***15.8***		***C***	***15.5***	
	Southbound Left/Right		B	13.3	8	C	15.8	8	C	15.5	8
2	**Washington St (Rte. 55) (E/W) & Greenhill Crossing Dr/Driveway Entrance Only (N/S) (TWSC)**										
	Eastbound Approach										
	Eastbound Left	145	A	8.1	0	A	8.4	3	A	8.5	3
	Westbound Approach										
	Westbound Left	195	A	8.2	3	A	8.6	5	A	8.2	3
	Northbound Approach		***B***	***13.4***		***C***	***20.9***		***C***	***16.5***	
	Northbound Left/Thru	175	C	17.0	8	D	26.1	15	C	20.6	10
	Northbound Right	175	B	10.5	5	B	11.2	3	B	10.5	3
3	**Washington St (Rte. 55) (E/W) & Driveway Exit Only (N/S) (TWSC)**										
	Eastbound Approach										
	Eastbound Left		A	8.2	0	--	--	--	--	--	--
	Southbound Approach		***B***	***11.1***		***B***	***12.1***		***B***	***12.0***	
	Southbound Left		B	13.7	0	C	16.3	3	B	14.5	5
	Southbound Right		B	10.0	0	B	10.1	3	A	9.9	3
4	**Washington St (Rte. 55) (E/W) & Commercial RIRO (N/S) (TWSC)**										
	Southbound Approach		***A***	***0.0***		***B***	***11.7***		***A***	***0.0***	
	Southbound Left/Right		A	0.0	0	B	11.7	0	A	0.0	0
5	**Washington St (Rte. 55) (E/W) & Susquehanna Rd/Autumn Harvest Trl (N/S) (TWSC)**										
	Eastbound Approach										
	Eastbound Left	230	A	8.3	0	A	8.6	0	A	8.3	0
	Northbound Approach		***B***	***10.9***		***B***	***11.4***		***B***	***10.9***	
	Northbound Right		B	10.9	10	B	11.4	5	B	10.9	5
	Southbound approach		***C***	***15.8***		***B***	***14.8***		***C***	***15.3***	
	Southbound Left/Right		C	15.8	3	B	14.8	5	C	15.3	0
6	**Dogwood Park Ln (E/W) & Bleight Dr (N/S) (TWSC)**										
	Eastbound Approach		***A***	***8.5***		***A***	***8.5***		***A***	***8.4***	
	Eastbound Left/Right		A	8.5	3	A	8.5	3	A	8.4	3
	Northbound Approach										
	Northbound Left		A	7.3	0	A	7.3	3	A	7.3	0

NOTES:

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

[2] Prohibited eastbound left turn observed at INT #3.

[3] Prohibited southbound left turns observed at INT #3.

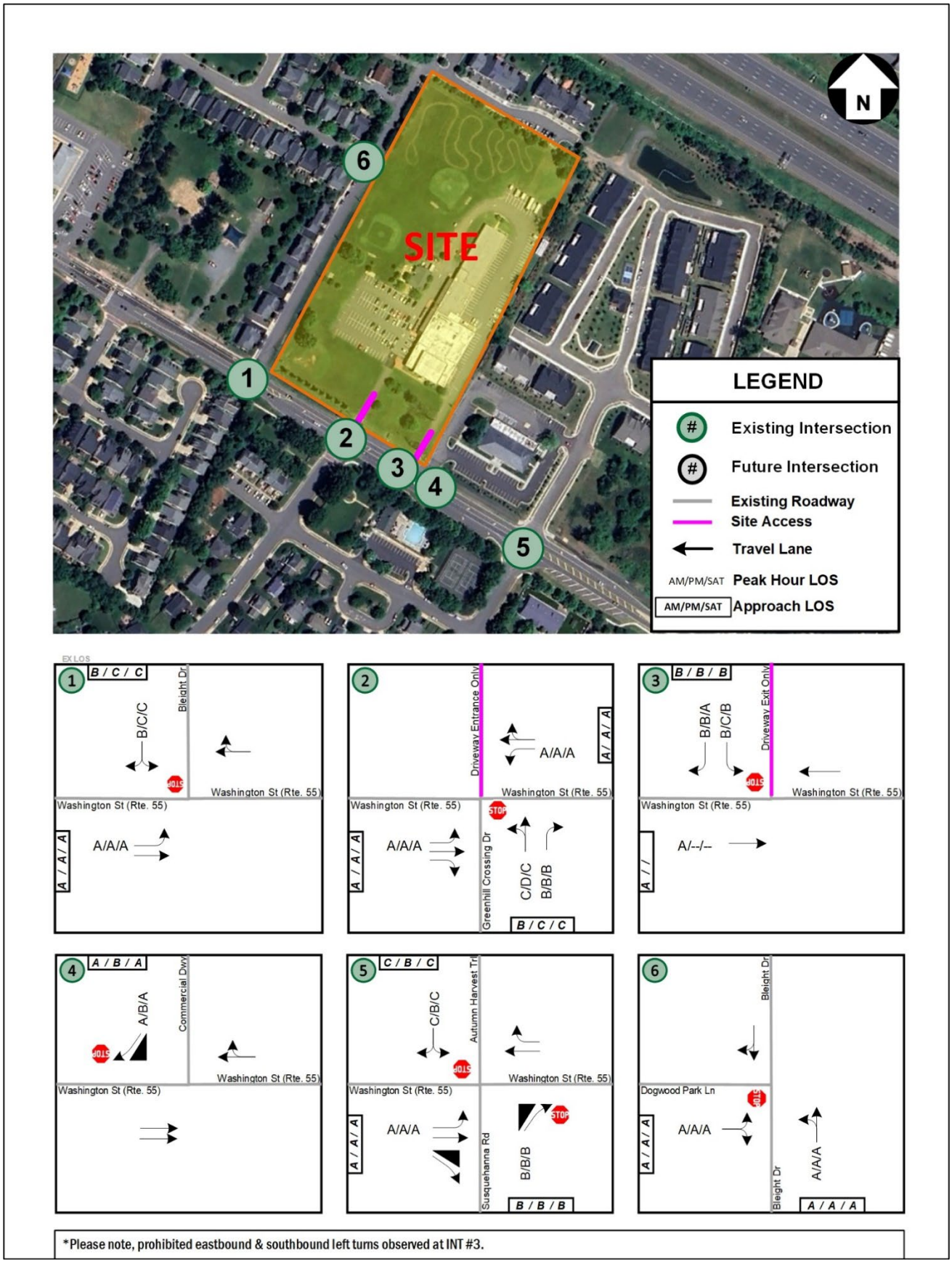


Figure 8: 2025 Existing Conditions – Level of Service Results

As mentioned previously, it would be considered acceptable and/or desirable to achieve an approach LOS D or better for traffic operations using HCM 6th edition methodology and HCM 2000 where applicable.

Analysis Terms:

- Level of Service (LOS) is based upon the traffic volume present in each lane on the roadway, the capacity of each lane at the intersection and the delay (in seconds) associated with each directional movement. This evaluation is consistent in all traffic analysis scenarios. Please refer to definitions of Level of Service in Appendix J.
- The 95th percentile queue length refers to the queue length within which 95% of all observed queues are contained during a specific analysis period. This evaluation is consistent in all traffic analysis scenarios.

The results of the Existing Conditions (2025) analysis scenario are as follows:

- All the approaches and the overall intersection operate at acceptable levels of service for all of the study intersections.
- All the anticipated 95th percentile queues are contained in the available storage length for all the study intersections.

Analysis of Future Conditions without Development 2029

For the purposes of this study, the development is anticipated to be constructed by 2029; this scenario analyzes the future without development conditions for the year 2029.

The derivation of future without development traffic volumes was based on assumptions and parameters discussed with VDOT and the Town during the scoping process for this report. The future conditions include anticipated inherent regional growth, the inclusion of any potential background developments in the pipeline around the vicinity of the site, and anticipated roadway improvements.

Inherent Regional Growth

The development is anticipated to be completed in 2029. In order to account for increased demand on the traffic network, an inherent growth rate was applied to the future scenarios. This "inherent" growth was anticipated to account for regional development within the at-large area, which would ultimately result in increased roadway demand. Furthermore, the inherent growth was anticipated to account for any potential background developments unaccounted for within the vicinity of the study area. Historical VDOT AADT data for roadways bounding the site are shown in Table 5.

Table 5: Historical Regional Growth within Vicinity of the Road Network

			Published VDOT AADT				
Road Segment:	**From:**	**To:**	**2019**	**2020**	**2021**	**2022**	**2023**
Washington St	Old Carolina Rd	Town of Haymarket Bdry	11,000	7,900	9,000	9,950	13,000

Source: VDOT Published AADT Traffic Data

As agreed upon in the scope for this study, to account for 2029 future conditions, an inherent growth rate of 2.0%, compounded annually over a four-year period, between 2025 to 2029 (and totaling 8.24% growth of the existing volumes) was applied to the mainline through movements on Washington St (Rte. 55) traveling eastbound and westbound.

The inherent regional growth volumes (for the period between 2025 and 2029) are illustrated in Figure 9.

Potential Background Development(s)

One (1) background development was identified in the scoping meeting for inclusion in this study. The 6700 Bleight Drive background development is anticipated to consist of 11 single-family attached dwelling units. Volumes associated with this development are included in the Total Future without Development (future background) scenario of the analysis. The Institute of Transportation Engineers' (ITE) Trip Generation Manual, 11th Edition, publication was used to determine the total trips going into and out of the subject study site during the weekday morning (AM), weekday afternoon (PM) peak hours, typical weekday daily trips, and weekend (SAT) peak hour and daily trips. The projected trip generation for the 6700 Bleight Drive development using ITE rates is depicted in below.

Table 6: 6700 Bleight Drive Site Trips

			------ Weekday ------							------ Weekend ------			
Land Use	**ITE Code**	**Size**	**AM Peak Hour**			**PM Peak Hour**			**Daily**	**Saturday Peak Hour**			**Sat Daily**
			In	**Out**	**Total**	**In**	**Out**	**Total**	**Total**	**In**	**Out**	**Total**	**Total**
Proposed Use													
*Single-Family Attached Housing (RATES)	215	11 DU	1	4	5	4	2	6	79	3	3	6	96
		Total Trips	**1**	**4**	**5**	**4**	**2**	**6**	**79**	**3**	**3**	**6**	**96**

**ITE equations not applicable for proposed density - ITE rates used in lieu.*

The 6700 Bleight Drive development is anticipated to generate approximately 5 trips in the AM peak hour, 6 trips in the PM peak hour, 79 typical weekday daily trips, 6 Saturday peak hour trips, and about 96 Saturday daily trips.

Potential Roadway Improvement(s)

There were no identified background transportation improvements near the proposed development.

Future without Development Lane Configuration

There were no adjustments to the roadway configuration identified for the future without development (future background) scenario. Therefore, the lane configuration is assumed to be the same as the existing lane configuration illustrated previously in Figure 6.

Future without Development (2029) Traffic Volumes

In order to forecast the future (without development) traffic volumes for the year 2029, the 2025 existing traffic volumes were combined with the inherent growth traffic volumes presented in Figure 9 and the background trips associated with the one (1) background development shown in Figure 10. The trip generation summary tables for background development will be included in Appendix D.

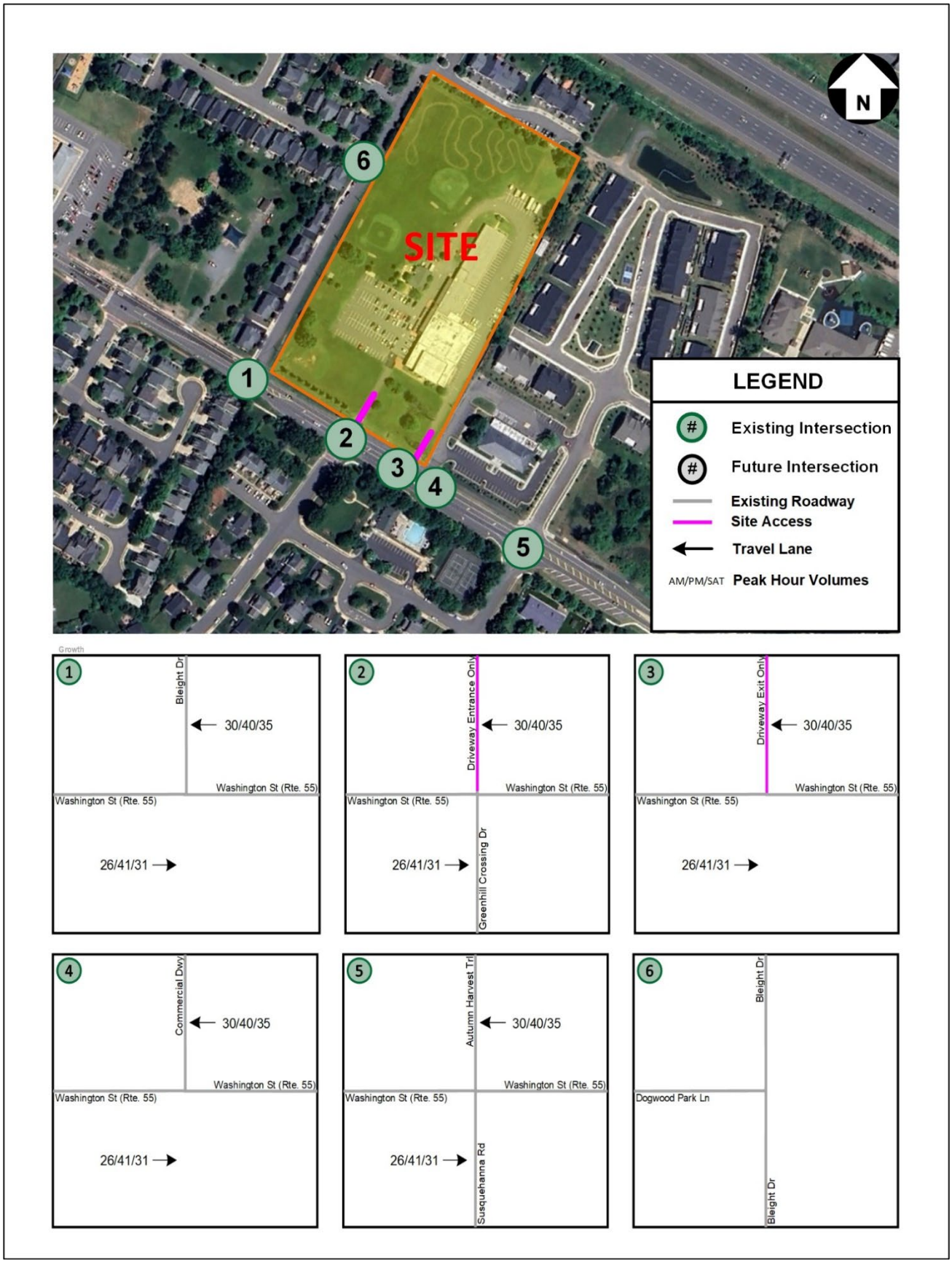


Figure 9: Projected Inherent Regional Growth Traffic Volumes (2025 to 2029)

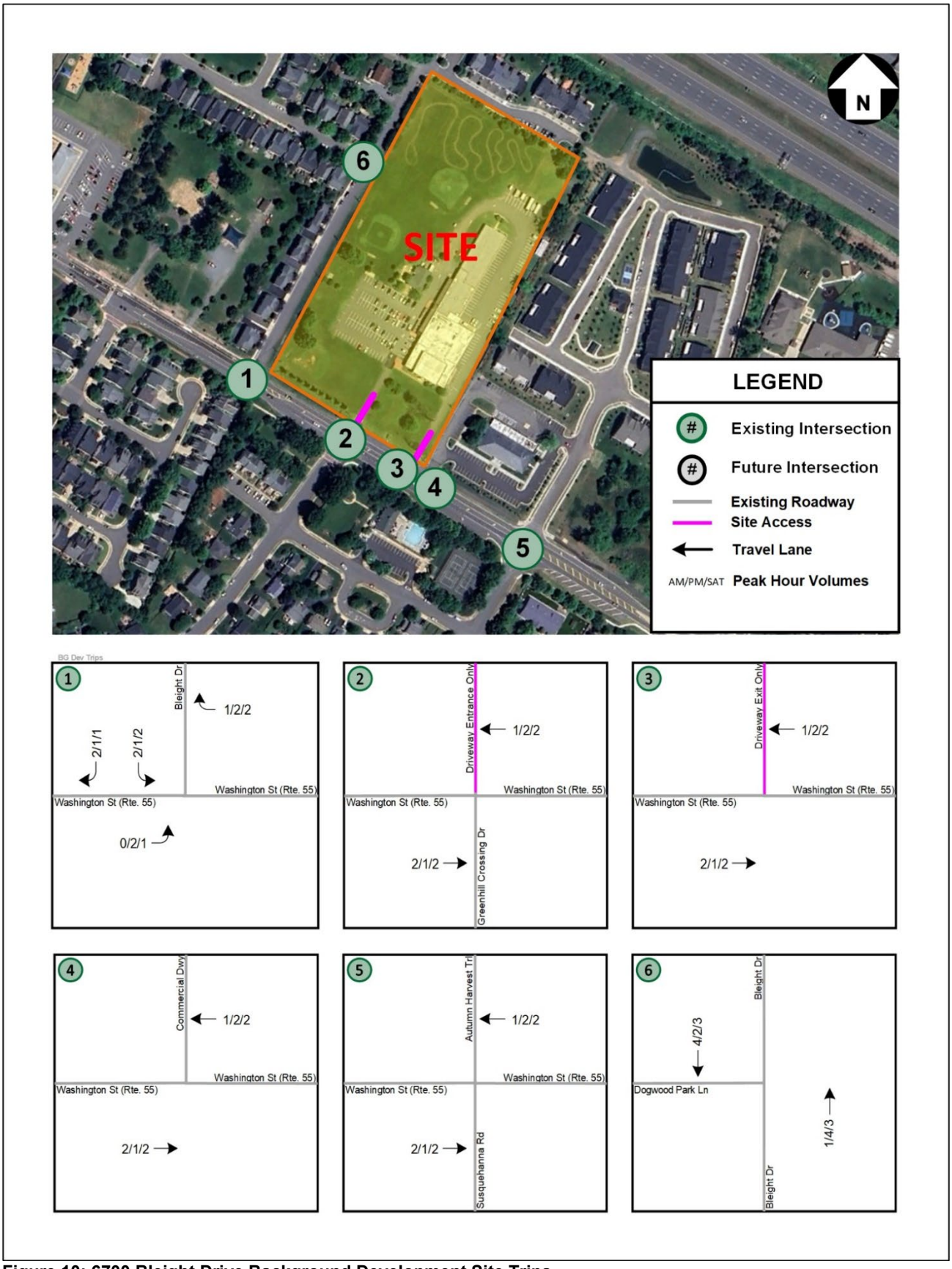


Figure 10: 6700 Bleight Drive Background Development Site Trips

The Future without Development (2029) volumes were derived by adding the projected inherent growth and background development site generated trips to the existing volumes and are illustrated in Figure 11.

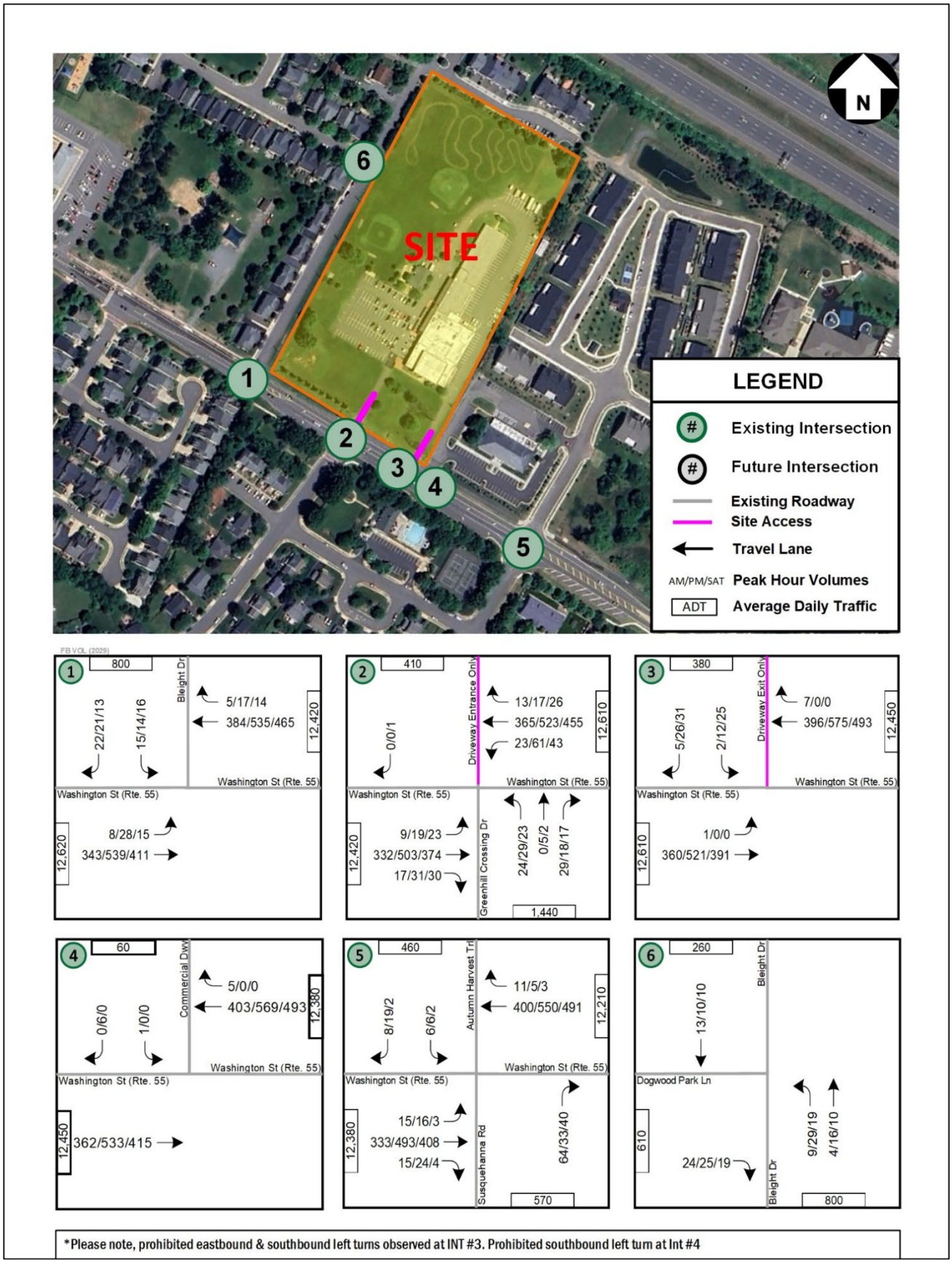


Figure 11: 2029 Future Conditions without Development – Vehicular Traffic Volumes

Future without Development Intersection Capacity and Queueing Analysis

Intersection capacity analyses were performed for the 2029 Future Conditions without Development scenario at the study area intersections during the AM, PM, and SAT peak hours. *Synchro,* version 11, was used to analyze the study intersections with results based on the HCM and analysis guidelines provided in VDOT's TOSAM. The analysis herein includes LOS, delay, and queue length comparisons for the turning movements analyzed.

The intersection PHF utilized in the analysis of future conditions was determined based on the existing traffic counts with a minimum of 0.92. The HV% were based on existing traffic count data.

The results of the intersection capacity analyses from *Synchro* are presented in Table 7 and graphically in Figure 12. The results are expressed in LOS and delay (seconds per vehicle) for overall signalized intersections and per approach and lane group for all study intersections. The overall signalized intersections and any approaches that operate at LOS F and LOS E are displayed in red.

The 95th percentile queues were also determined from *Synchro* and are expressed in feet. The lane groups where the queue lengths exceeded the available storage lengths of future turn lanes are displayed in red.

The detailed analysis worksheets of the 2029 Future Conditions without Development are contained in Appendix E.

Table 7: Future Conditions without Development (2029) – Intersection Capacity and Queuing Analysis Results

No.	Intersection (Movement)	Effective Storage	AM Peak Hour			PM Peak Hour			SAT Peak Hour		
			LOS	Delay (sec/veh)	95th % Queue (ft.)	LOS	Delay (sec/veh)	95th % Queue (ft.)	LOS	Delay (sec/veh)	95th % Queue (ft.)
			Synchro			Synchro			Synchro		
1	**Washington St (Rte. 55) (E/W) & Bleight Dr (N/S) (TWSC)**										
	Eastbound Approach										
	Eastbound Left	160	A	8.4	0	A	8.7	3	A	8.5	0
	Southbound Approach		***B***	***13.4***		***C***	***17.2***		***C***	***16.3***	
	Southbound Left/Right		B	13.4	8	C	17.2	10	C	16.3	8
2	**Washington St (Rte. 55) (E/W) & Greenhill Crossing Dr/Driveway Entrance Only (N/S) (TWSC)**										
	Eastbound Approach										
	Eastbound Left	145	A	8.1	0	A	8.5	3	A	8.6	3
	Westbound Approach										
	Westbound Left		A	8.2	3	A	8.7	5	A	8.3	3
	Northbound Approach		***B***	***13.4***		***C***	***23.1***		***C***	***17.7***	
	Northbound Left/Thru	175	C	16.9	8	D	29.2	18	C	22.4	10
	Northbound Right	175	B	10.5	3	B	11.5	3	B	10.7	3
3	**Washington St (Rte. 55) (E/W) & Driveway Exit Only (N/S) (TWSC)**										
	Eastbound Approach										
	Eastbound Left		A	8.2	0	--	--	--	--	--	--
	Southbound Approach		***B***	***11.1***		***B***	***12.5***		***B***	***12.4***	
	Southbound Left		B	13.7	0	C	17.4	3	C	15.4	5
	Southbound Right		B	10.0	0	B	10.3	3	B	10.0	3
4	**Washington St (Rte. 55) (E/W) & Commercial RIRO (N/S) (TWSC)**										
	Southbound Approach		***A***	***0.0***		***B***	***12.1***		***A***	***0.0***	
	Southbound Right		A	0.0	0	B	12.1	0	A	0.0	0
5	**Washington St (Rte. 55) (E/W) & Susquehanna Rd/Autumn Harvest Trl (N/S) (TWSC)**										
	Eastbound Approach										
	Eastbound Left	230	A	8.2	0	A	8.7	3	A	8.4	0
	Northbound Approach		***B***	***10.9***		***B***	***11.8***		***B***	***11.2***	
	Northbound Right		B	10.9	8	B	11.8	5	B	11.2	5
	Southbound approach		***C***	***15.7***		***C***	***15.9***		***C***	***16.4***	
	Southbound Left/Right		C	15.7	3	C	15.9	5	C	16.4	0
6	**Dogwood Park Ln (E/W) & Bleight Dr (N/S) (TWSC)**										
	Eastbound Approach		***A***	***8.5***		***A***	***8.5***		***A***	***8.4***	
	Eastbound Left/Right		A	8.5	3	A	8.5	3	A	8.4	3
	Northbound Approach										
	Northbound Left		A	7.3	0	A	7.3	3	A	7.3	0

NOTES:
[1] Effective storage length is based on the storage length plus one-half of the taper length per TOSAM guidelines.
[2] Prohibited eastbound left turn observed at INT #3.
[3] Prohibited southbound left turns observed at INT #3.

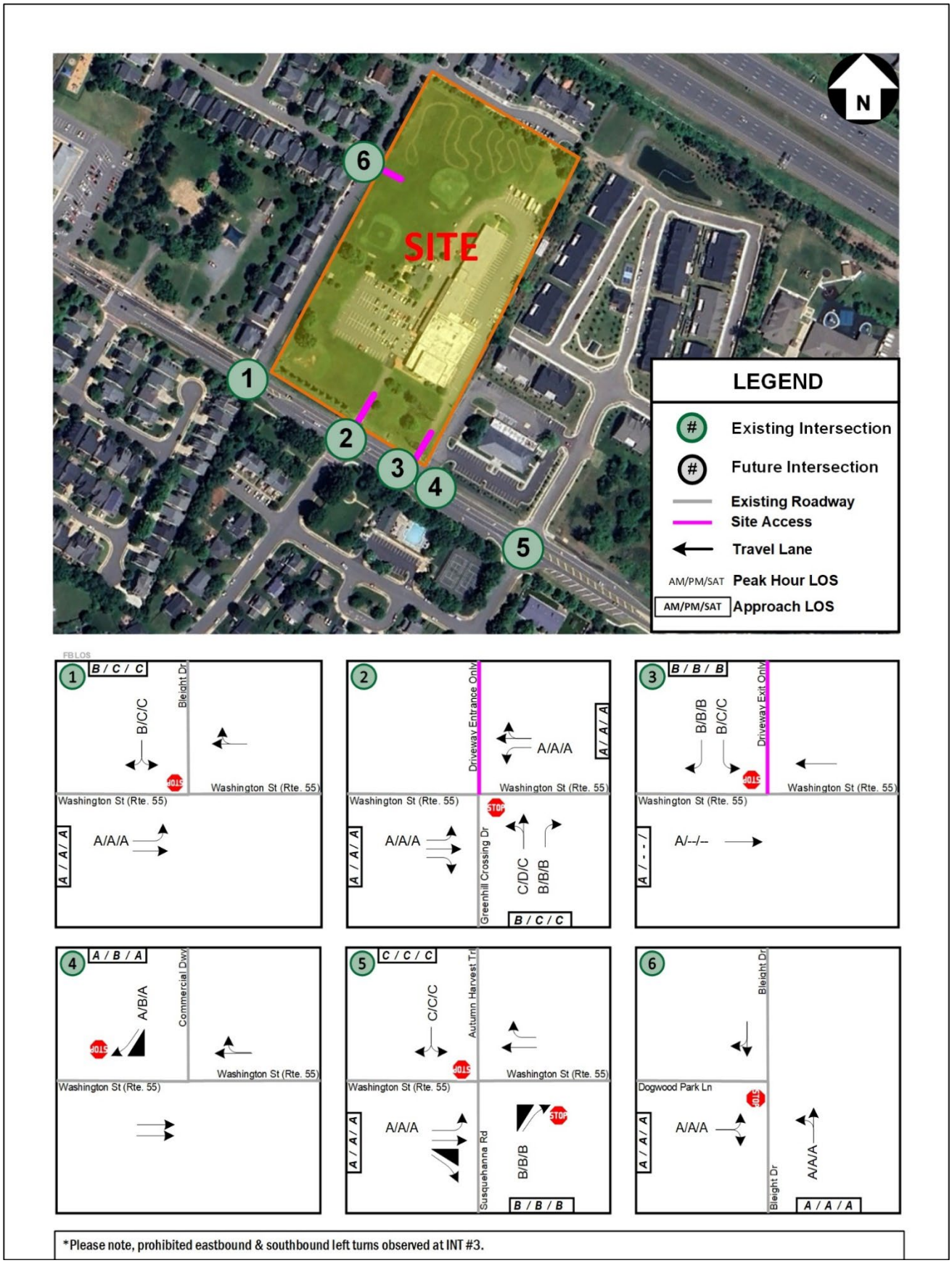


Figure 12: 2029 Future Conditions without Development – Level of Service Results

Analysis Terms:

- Level of Service (LOS) is based upon the traffic volume present in each lane on the roadway, the capacity of each lane at the intersection and the delay (in seconds) associated with each directional movement. This evaluation is consistent in all traffic analysis scenarios. Please refer to definitions of Level of Service in Appendix J.
- The 95th percentile queue length refers to the queue length within which 95% of all observed queues are contained during a specific analysis period. This evaluation is consistent in all traffic analysis scenarios.

The results of the Future without Development Conditions (2029) analysis scenario are as follows:

- All the approaches and the overall intersection operate at acceptable levels of service for all of the study intersections.
- All the anticipated 95th percentile queues are contained in the available storage length for all the study intersections.

Analysis of Future Conditions with Development (2029)

For the purposes of this study, the development is anticipated to be constructed by 2029.

Site Description

The site is located in the Town of Haymarket. The site is generally bounded by Alexandra's Keep Ln to the north, Washington St (Rte. 55) to the south, an existing residential community and office space to the east, and Bleight Dr to the west.

The planned development program for the site includes mix uses with approximately 26,000 SF of commercial/office land uses and about 61 single family attached (townhome) units. Please note, a portion of the site is currently occupied by existing commercial uses. A portion of the commercial uses, approximately 5,900 SF of office space, are planned to be removed with this application while the remaining 26,000 SF is anticipated remain.

Proposed Site Access

The current plan for the development proposes one full access entrance (inbound and outbound) along Washington St at the existing entrance which is used as a one-way loop today. The existing exit only is planned to removed due to the proximity to the existing commercial driveway to the east. The removal of the access along Washington St is anticipated to increase the safety of the vehicles using the commercial entrance to the east. The development is also planning to construct a fourth leg to the intersection of Bleight Dr & Dogwood Park Ln as illustrated in Figure 13. Please note that the plans shown in this report are subject to change.

Figure 13: Preliminary Site Layout Plan (For Illustrative Purposes Only; Subject to Change)

Projected Site Trip Generation

In order to calculate the trips generated by the proposed development, the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 11th Edition, publication was used to determine the total trips going into and out of the subject study site during the weekday morning (AM), weekday afternoon (PM) peak hours, typical weekday daily trips, and weekend (SAT) peak hour and daily trips. The projected trip generation for the proposed development is depicted in Table 8. The anticipated development program will consist of approximately 61 single-family attached dwelling units. For the purposes of evaluating a conservative operational analysis, the development program analyzed assumes 65 dwelling units.

Table 8: Site Trip Generation (Peak Hour of the Adjacent Street; ITE 11th Ed.)

Land Use	ITE Code	Size	Weekday							Weekend			
			AM Peak Hour			PM Peak Hour			Daily	Saturday Peak Hour			Sat Daily
			In	Out	Total	In	Out	Total	Total	In	Out	Total	Total
Proposed Use													
Single-Family Attached Housing (EQUA	215	65 DU	7	21	28	21	14	35	566	23	24	47	414
Total Proposed Trips without Reduction			**7**	**21**	**28**	**21**	**14**	**35**	**566**	**23**	**24**	**47**	**414**
Internal Capture Residential - Restaurant[1]		*15% PM/SAT/DAILY*	*0*	*0*	*0*	*-3*	*-2*	*-5*	*-85*	*-3*	*-4*	*-7*	*-62*
Total Proposed Trips with Reduction			**7**	**21**	**28**	**18**	**12**	**30**	**481**	**20**	**20**	**40**	**352**

The internal reduction is based on the VDOT Updated Administrative Guidelines for the Traffic Impact Analysis Regulations:
(1) residential / non-residential components - smaller of 15% of residential trips or 15% of non-residential trips

As illustrated in the table above, the proposed land use is expected to generate approximately 28 AM peak hour trips, 35 PM peak hour trips, 566 weekday trips, 47 Saturday peak hour trips and 414 Saturday daily trips. The total proposed trip generation with an assumed 15% internal capture reduction (residential to retail/restaurant) is expected to generate approximately 28 AM peak hour trips, 30 PM peak hour trips, 481 weekday trips, 40 Saturday peak hour trips and 352 Saturday daily trips.

Distribution and Assignment of Site Traffic

The distribution and assignment of the site generated trips were based on the existing traffic patterns, engineering judgement, the nature of the proposed development, and with the guidance and input from the VDOT and the Town staff. The site direction of approach for the peak hours trips is illustrated in Figure 14.

Figure 14: Global Vehicular Direction of Approach

Total Future with Development (2029) Lane Configuration

Intersection #2 (Washington St & Greenhill Crossing Dr/Future Site Access #1) which in existing conditions operates as a driveway entrance only, will be reconfigured to be a full access intersection and include a westbound right turn lane. Additionally, Intersection #3 (Washington St & Future Site Access #2) will be removed . Construction of a fourth leg at Intersection #6 (Bleight Dr & Dogwood Park Ln/Future Site Access #3), will serve as the third site access for the proposed development. The Future with Development (2029) Lane Configurations are illustrated in Figure 15.

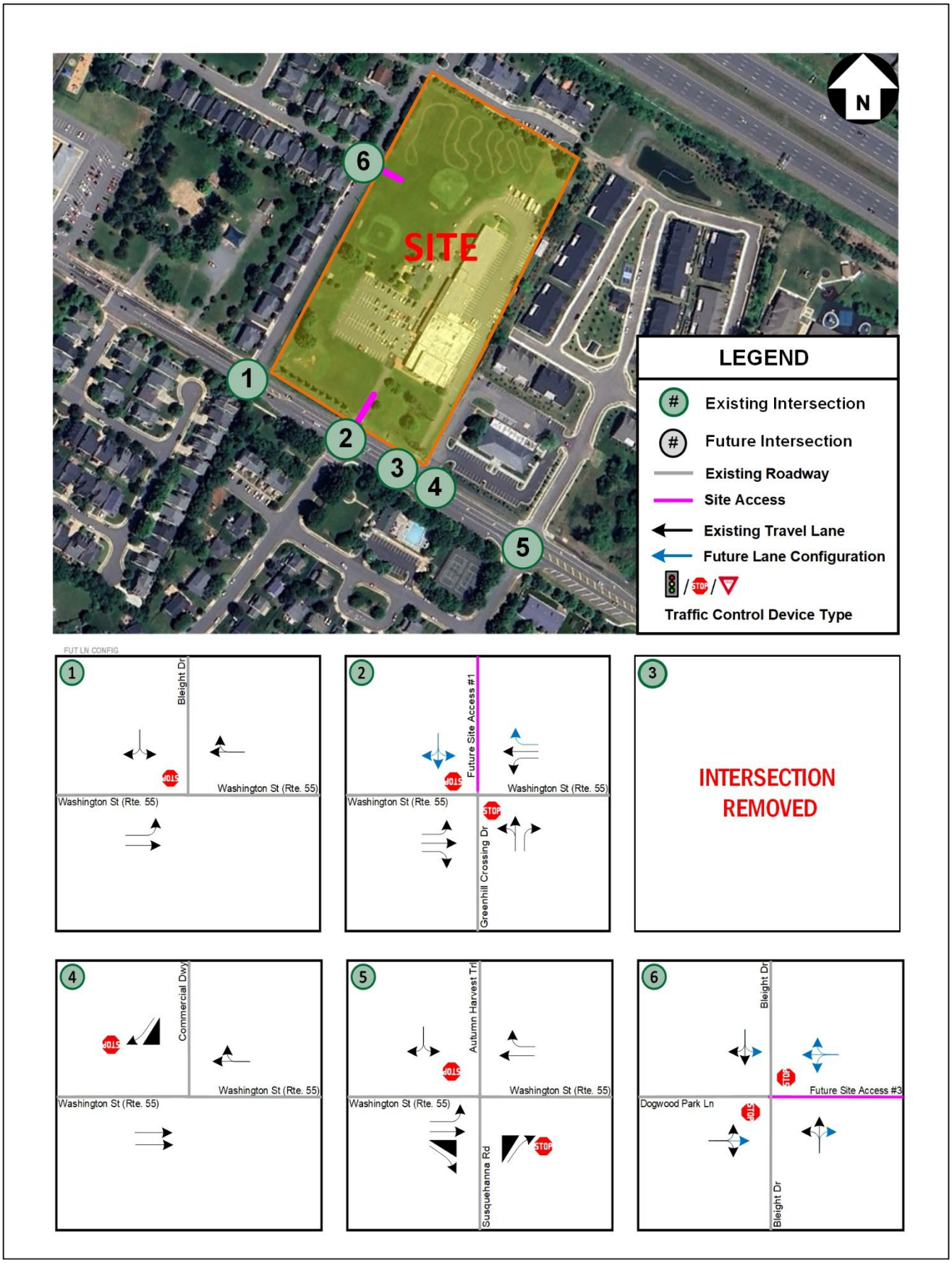


Figure 15: Future with Development 2028 (Roadway Network Geometric Configuration and Traffic Control Devices)

Analysis Scenario: Total Future with Development (2028)

Using the direction of approach, the nature of the proposed development with the associated trip generation, and the location of proposed site entrance per current plans for the development, the site generated trips were assigned to the road network as illustrated in Figure 16. The figure shows site trips assigned to the study area network for the analysis.

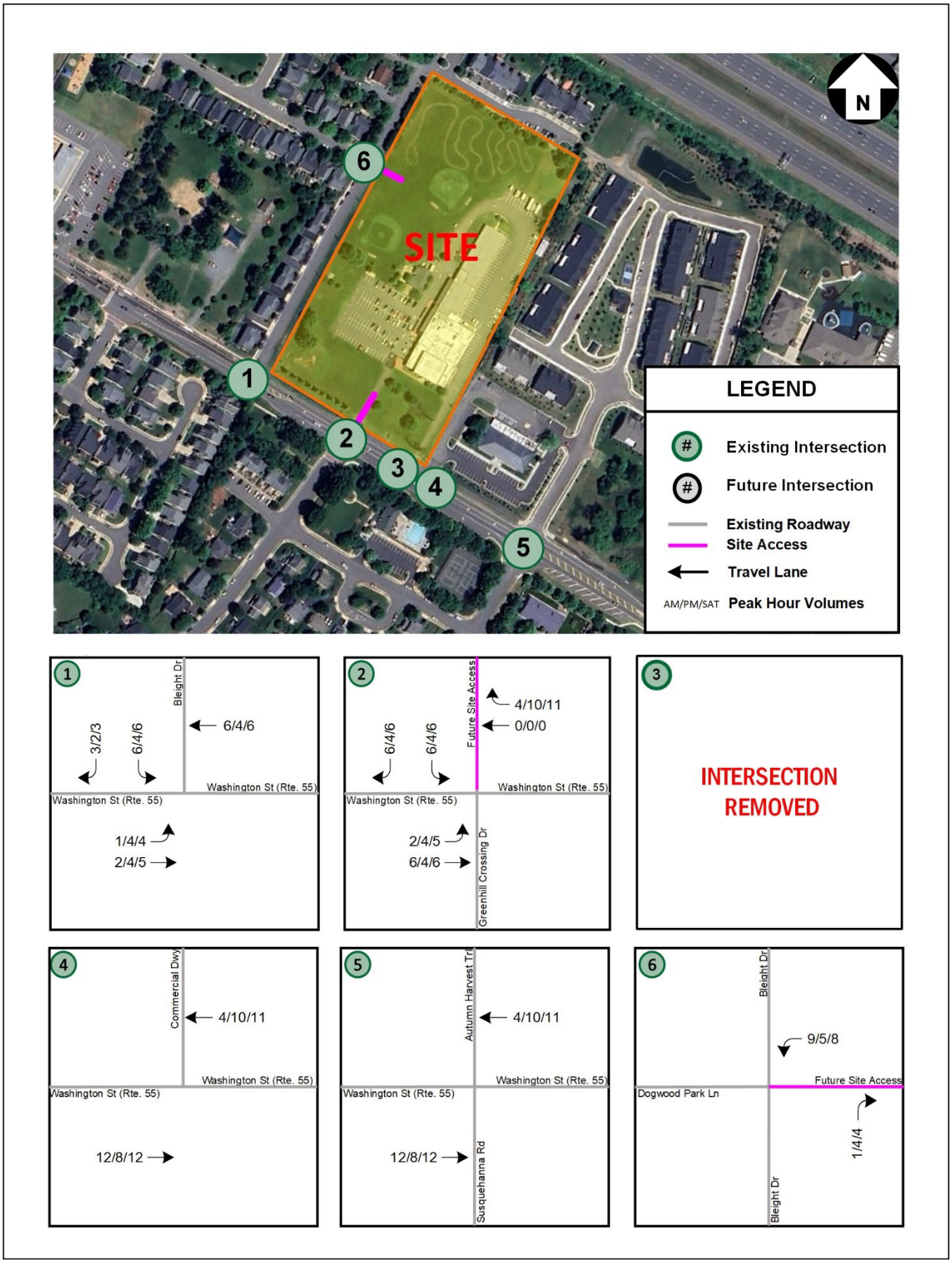


Figure 16: Site Generated Trip Assignment

Rerouted Existing Driveway Volumes

As mentioned previously, Intersection #2 (Washington St & Greenhill Crossing Dr/Future Site Access #1) which in existing conditions operates as a driveway entrance only, will be reconfigured to be a full access intersection. In order to account for the change in access, all of the existing outbound volumes at Intersection #3 were rerouted to the main entrance at Intersection #2. This assumption was made based on the existing surface parking lot located west of the existing site buildings and reconfiguration of the intersection to allow for outbound movements at Intersection 2. The rerouted existing volumes are shown in Figure 17 below.

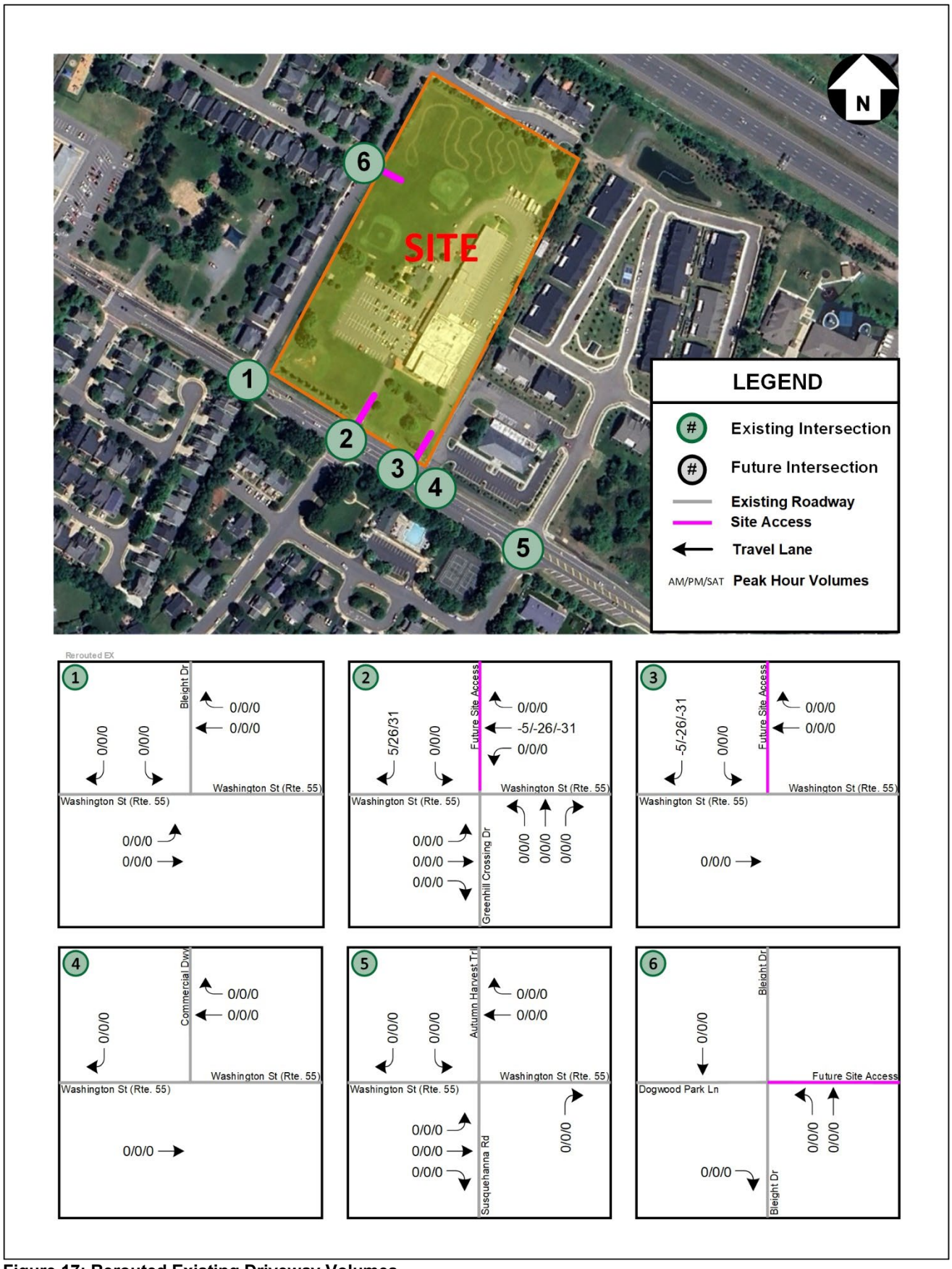


Figure 17: Rerouted Existing Driveway Volumes

Future with Development (2029) Traffic Volumes

The Future with Development (2029) traffic volumes were obtained by adding the site generated trips presented in Figure 16 to the Future without Development (2029) volumes presented previously in Figure 11 and the rerouted existing driveway volumes presented in Figure 17. The Future with Development (2029) vehicular traffic volumes are shown in Figure 18.

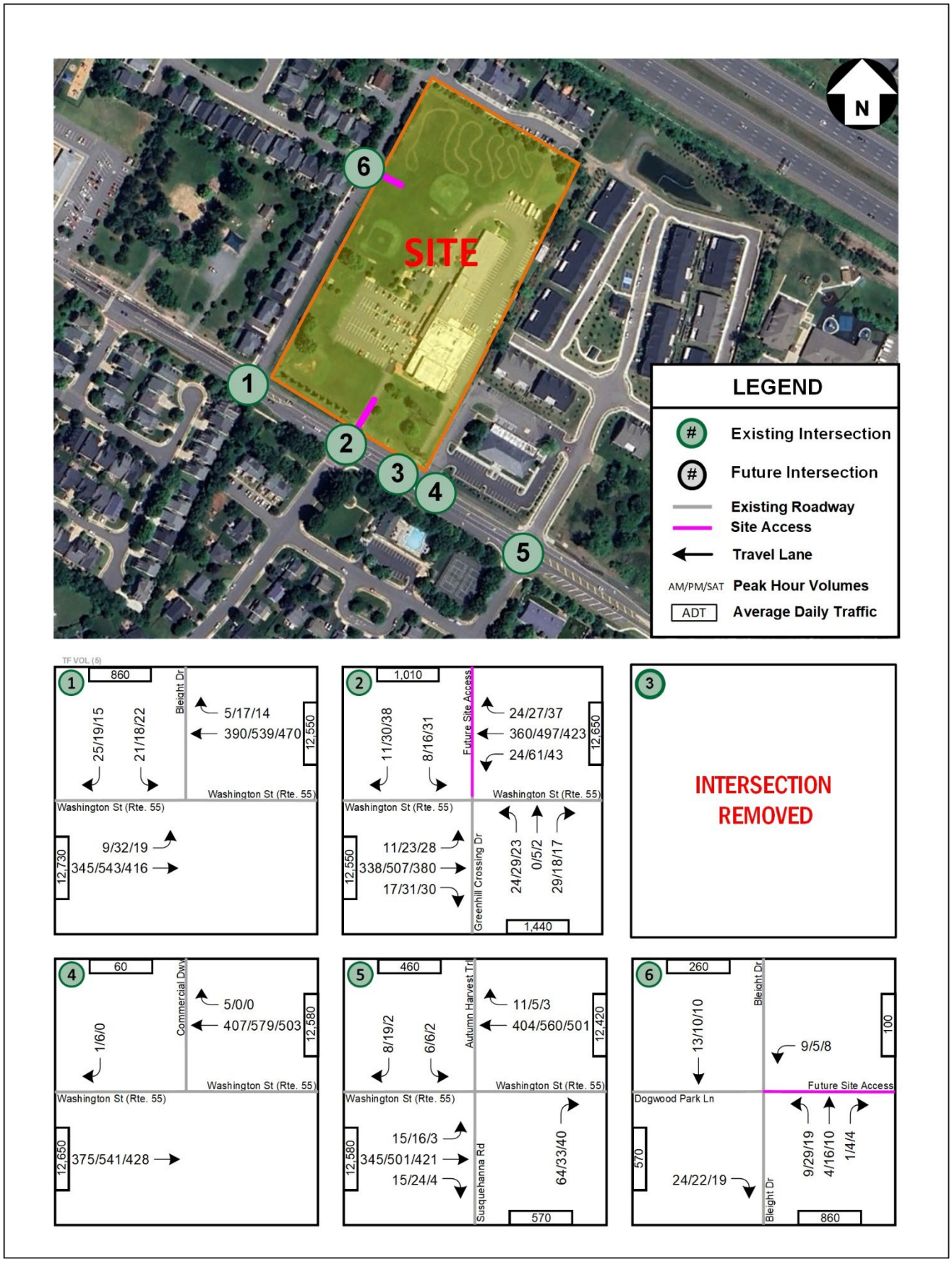


Figure 18: Total Future with Development (2029) Volumes

Future with Development (2029) Intersection Capacity and Queueing Analysis

Intersection capacity analyses were performed for the Future with Development 2029 scenario at the study area intersections during the AM and PM peak hours. *Synchro,* version 11, was used to analyze the study intersections with results based on the HCM and analysis guidelines provided in VDOT's TOSAM. The analysis herein includes LOS, delay, and queue length comparisons for the turning movements analyzed.

The intersection peak hour factor utilized in the analysis of future conditions was determined based on the existing traffic counts with a minimum of 0.92. The HV% were based on existing traffic count data.

Per the scoping meeting with VDOT and the Town staff, it would be considered acceptable and/or desirable to achieve an approach LOS of D or better for traffic operations using the HCM methodology per request by the Town of Haymarket. The results of the intersection capacity analyses from *Synchro* are presented in Table 9 and graphically in Figure 19. The results are expressed in LOS and delay (seconds per vehicle) for overall signalized intersections and per approach and lane group for all study intersections.

The overall signalized intersections and any approaches that operate at LOS E and LOS F are displayed in red.

The 95th percentile queues were also determined from *Synchro* and are expressed in feet. The lane groups where the queue lengths exceeded the available storage lengths of future turn lanes are displayed in red.

The detailed analysis worksheets of the Future with Development (2029) are contained in Appendix F of this report.

Table 9: Future Conditions with Development (2029) – Intersection Capacity and Queuing Analysis Results

No.	Intersection (Movement)	Effective Storage	AM Peak Hour			PM Peak Hour			SAT Peak Hour		
			LOS	Delay (sec/veh)	95th % Queue (ft.)	LOS	Delay (sec/veh)	95th % Queue (ft.)	LOS	Delay (sec/veh)	95th % Queue (ft.)
			Synchro			Synchro			Synchro		
1	**Washington St (Rte. 55) (E/W) & Bleight Dr (N/S) (TWSC)**										
	Eastbound Approach										
	Eastbound Left	160	A	8.4	0	A	8.7	0	A	8.5	0
	Southbound Approach		***B***	***14.0***		***C***	***18.7***		***C***	***17.3***	
	Southbound Left/Right		B	14.0	8	C	18.7	8	C	17.3	8
2	**Washington St (Rte. 55) (E/W) & Greenhill Crossing Dr/Site Access (N/S) (TWSC)**										
	Eastbound Approach										
	Eastbound Left	145	A	8.2	0	A	8.5	3	A	8.5	3
	Westbound Approach										
	Westbound Left		A	8.2	3	A	8.7	5	A	8.3	3
	Northbound Approach		***B***	***14.8***		***D***	***29.1***		***C***	***21.5***	
	Northbound Left/Thru	175	C	19.8	8	E	38.3	23	D	28.7	13
	Northbound Right	175	B	10.6	3	B	11.6	3	B	10.8	3
	Southbound Approach		***B***	***14.7***		***C***	***20.9***		***C***	***21.4***	
	Southbound Left/Thru/Right		B	14.7	5	C	20.9	15	C	21.4	25
2	**Washington St (Rte. 55) (E/W) & Greenhill Crossing Dr/Site Access (N/S) (TWSC) MIT**										
	Eastbound Approach										
	Eastbound Left	145	A	8.1	0	A	8.5	3	A	8.6	3
	Westbound Approach										
	Westbound Left		A	8.2	3	A	8.7	5	A	8.3	3
	Northbound Approach		***B***	***14.7***		***D***	***28.9***		***C***	***21.2***	
	Northbound Left/Thru	175	C	19.7	8	E	38.0	23	D	28.2	13
	Northbound Right	175	B	10.6	3	B	11.6	3	B	10.8	3
	Southbound Approach		***C***	***15.2***		***C***	***22.3***		***B***	***22.6***	
	Southbound Left/Thru/Right		C	15.2	3	C	22.3	13	C	22.6	23
3	**Washington St (Rte. 55) (E/W) & Site Access RIRO (N/S) (TWSC)**		Intersection Planned to be Removed			Intersection Planned to be Removed			Intersection Planned to be Removed		
4	**Washington St (Rte. 55) (E/W) & Commercial RIRO (N/S) (TWSC)**										
	Southbound Approach										
	Southbound Right		B	10.9	0	B	12.2	0	A	0.0	0
5	**Washington St (Rte. 55) (E/W) & Susquehanna Rd/Autumn Harvest Trl (N/S) (TWSC)**										
	Eastbound Approach										
	Eastbound Left	230	A	8.3	0	A	8.7	0	A	8.4	0
	Northbound Approach		***B***	***11.0***		***B***	***11.9***		***B***	***11.3***	
	Northbound Right		B	11.0	8	B	11.9	8	B	11.3	8
	Southbound approach		***C***	***15.9***		***C***	***16.1***		***C***	***16.7***	
	Southbound Left/Right		C	15.9	3	C	16.1	3	C	16.7	3
6	**Dogwood Park Ln (E/W) & Bleight Dr (N/S) (TWSC)**										
	Eastbound Approach		***A***	***8.5***		***A***	***8.4***		***A***	***8.4***	
	Eastbound Left/Right		A	8.5	3	A	8.4	3	A	8.4	3
	Westbound Approach		***A***	***9.0***		***A***	***9.3***		***A***	***9.1***	
	Westbound Left/Thru/Right		A	9.0	0	A	9.3	0	A	9.1	0
	Northbound Approach										
	Northbound Left/Thru/Right		A	7.3	0	A	7.3	3	A	7.3	0

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

**Intersection #2 mitigation includes the addition of a westbound right turn lane.*

The proposed mitigation for the Future with Development (2029) scenario includes the addition of a westbound right turn lane at Intersection #2 and the closing of the existing exit only driveway.

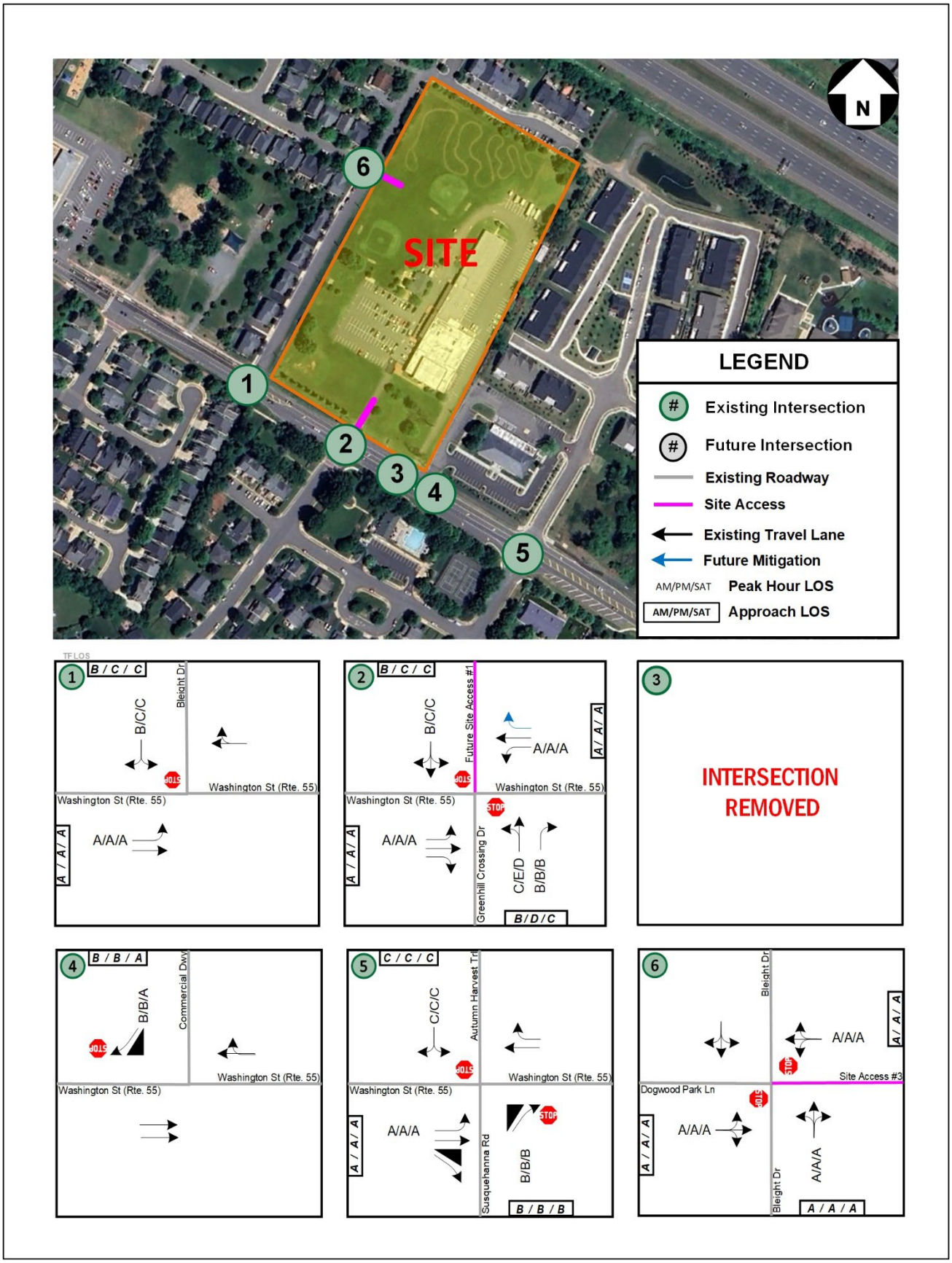


Figure 19: Total Future with Development (2029) – Level of Service Results

Analysis Terms:

- Level of Service (LOS) is based upon the traffic volume present in each lane on the roadway, the capacity of each lane at the intersection and the delay (in seconds) associated with each directional movement. This evaluation is consistent in all traffic analysis scenarios. Please refer to definitions of Level of Service in Appendix J.
- The 95th percentile queue length refers to the queue length within which 95% of all observed queues are contained during a specific analysis period. This evaluation is consistent in all traffic analysis scenarios.

The results of the Future with Development Conditions (2029) analysis scenario are as follows:

- All the approaches and the overall intersection operate at acceptable levels of service for all of the study intersections.
- All the anticipated 95th percentile queues are contained in the available storage length for all the study intersections.

Please note that while all study intersections and approaches operate at acceptable levels of service, the following lane group was observed to experience larger delay:

  - Intersection #2 Washington St (Rte. 55) & Greenhill Crossing Dr/Site Access #1 – Northbound shared left/thru lane operates at LOS D (26.1 s) in the existing PM peak hour & LOS E (38.3 s) in the future with development PM peak hour.
  - The 95th percentile queue for the northbound shared left/thru lane is approximately 23 ft (less than one car). Therefore, the queues do not extend to the downstream driveways that serve the residential community.

- The reconfigurations and mitigations for this analysis scenario are as follows:
  - The existing primary driveway entrance (Access #1) will be reconfigured to a full-access driveway (inbound & outbound).
  - The existing exit only driveway (Access #2) is planned to be closed to address the existing safety issues due to the proximity to the driveway to the east.
  - The addition of a westbound right turn lane at Intersection #2 (Washington St (Rte. 55) & Greenhill Crossing Dr/Site Access) is a proposed mitigation. Please note only a right turn taper is warranted using VDOT Road Design Manual (RDM) Turn Lane Assessment.

The detailed analysis worksheets of the Future Conditions with Development (2029) Mitigated are contained in Appendix G.

An additional section discussing the alternative route options for the vehicles making the northbound left turn at Intersection has been included below.

Alternative Routes Analysis

As noted above, the northbound approach at Intersection #2 operates at an acceptable LOS; however the northbound left movement increase to LOS E. Therefore analysis was included to show that alternative routes are available with additional capacity if those vehicles chose to use alternative routes. For the purposes of this analysis, engineering judgment was used to evaluate an alternative route where a proportion of the northbound left turn volumes (45%) were rerouted to make a northbound right turn at Intersection #2 during the weekday peak hours only (AM & PM). These volumes were rerouted to the downstream roundabout intersection of Washington St (RTE. 55) & Gillis Way/Piedmont Center Plaza.

The volumes for this alternative are shown in Figure 20 below.

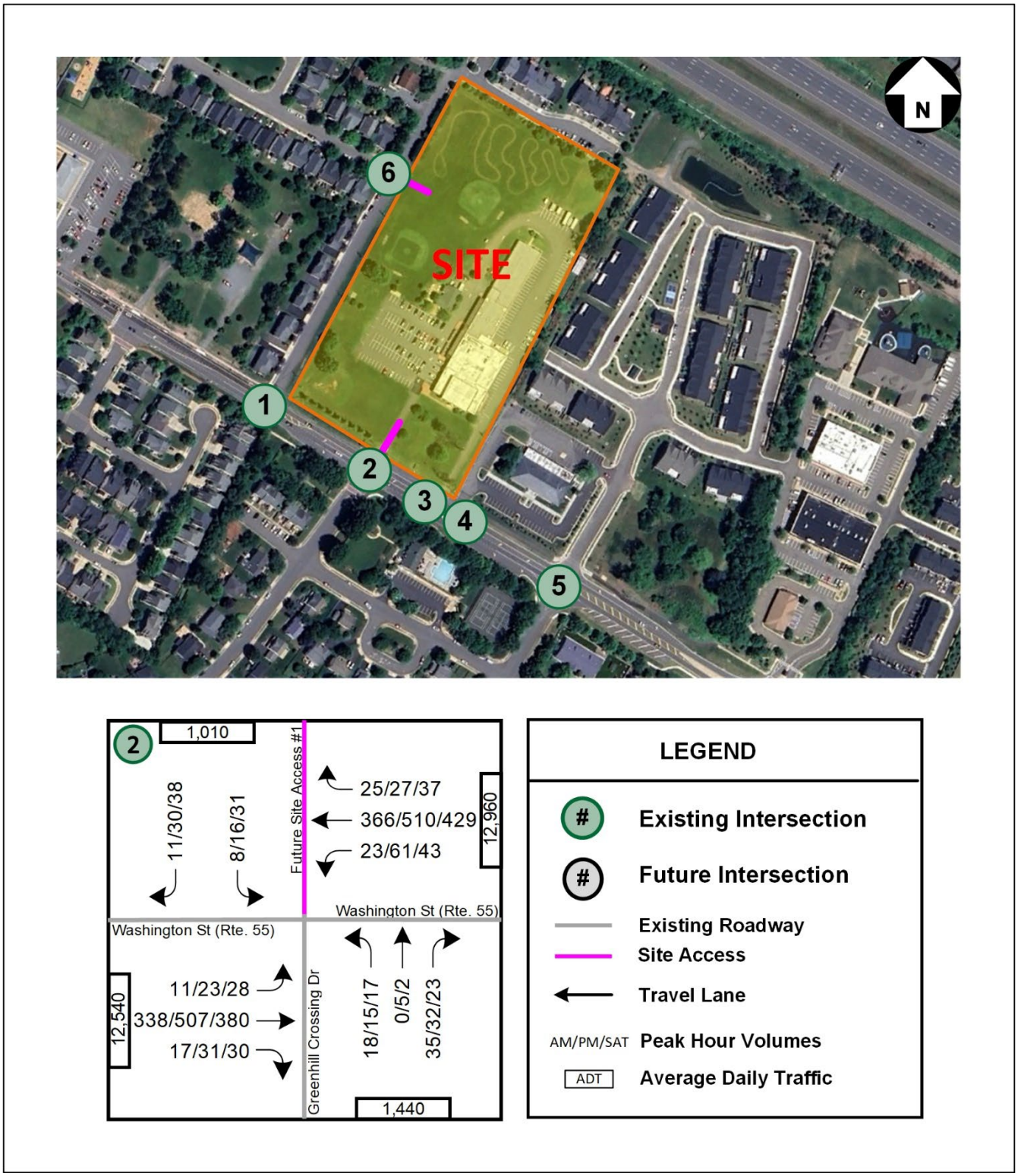


Figure 20: Total Future with Development (2029) Alternative Volumes

Per the scoping meeting with VDOT and the Town staff, it would be considered acceptable and/or desirable to achieve an approach LOS of D or better for traffic operations using the HCM methodology per request by the Town of Haymarket. The results of the intersection capacity analyses from *Synchro* are presented in Table 10 and graphically in Figure 21. The results

are expressed in LOS and delay (seconds per vehicle) for overall signalized intersections and per approach and lane group for all study intersections.

Table 10: Total Future with Development (2029) Alternative – Intersection Capacity and Queuing Analysis Results

No.	Intersection (Movement)	Effective Storage	AM Peak Hour			PM Peak Hour			SAT Peak Hour		
			LOS	Delay (sec/veh)	95th % Queue (ft.)	LOS	Delay (sec/veh)	95th % Queue (ft.)	LOS	Delay (sec/veh)	95th % Queue (ft.)
			Synchro			Synchro			Synchro		
2	**Washington St (Rte. 55) (E/W) & Greenhill Crossing Dr/Site Access (N/S) (TWSC)**										
	Eastbound Approach										
	Eastbound Left	145	A	8.2	0	A	8.6	3	A	8.5	3
	Westbound Approach										
	Westbound Left		A	8.2	3	A	8.7	5	A	8.3	3
	Northbound Approach		***B***	***13.6***		***C***	***20.5***		***C***	***18.4***	
	Northbound Left/Thru	175	C	19.5	5	D	34.5	13	D	27.7	10
	Northbound Right	175	B	10.6	5	B	11.7	5	B	10.8	3
	Southbound Approach		***B***	***14.7***		***C***	***21.2***		***C***	***21.2***	
	Southbound Left/Thru/Right		B	14.7	5	C	21.2	15	C	21.2	25

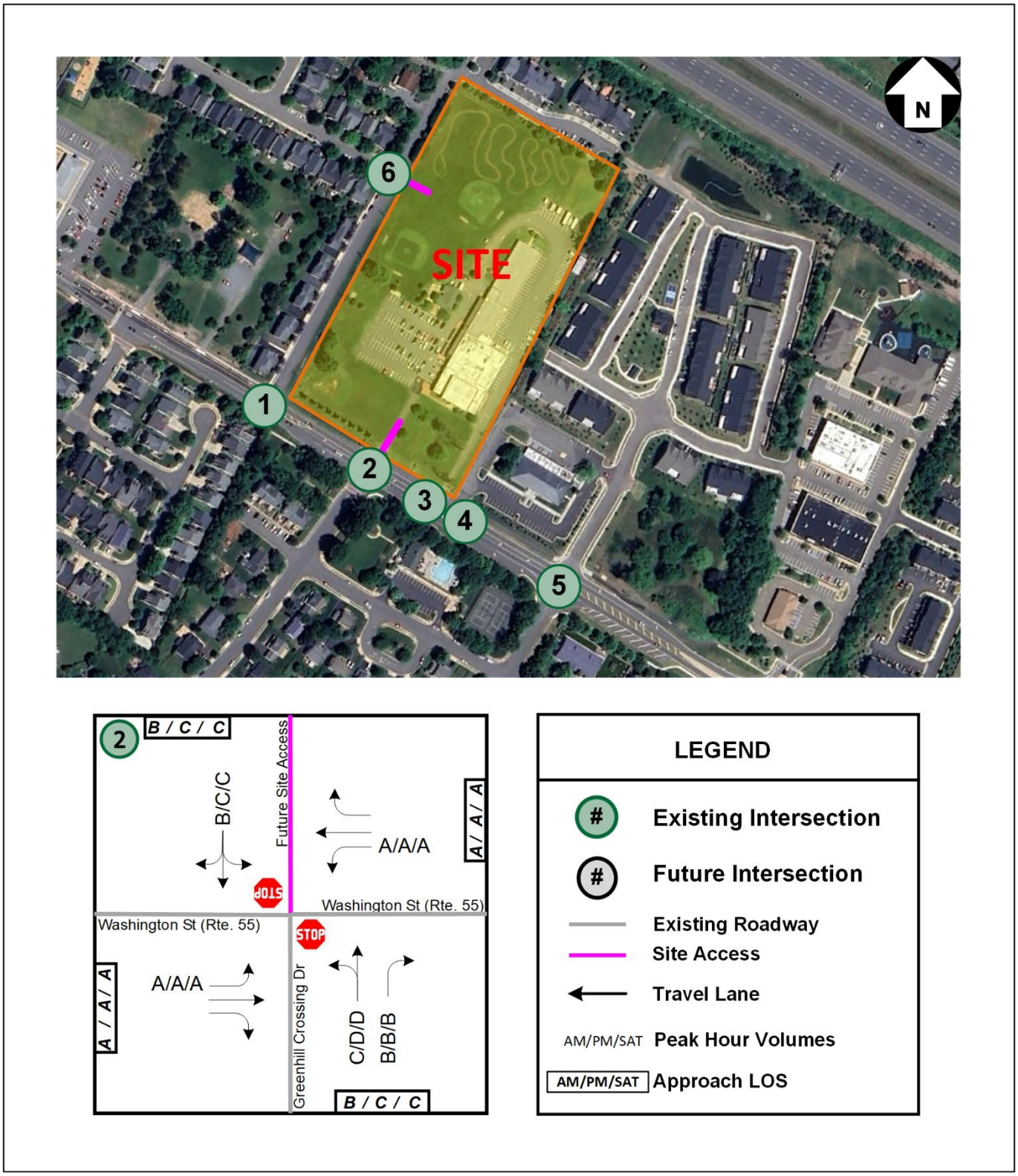


Figure 21: Total Future with Development (2029) Alternative – Level of Service

Sidra (HCM methodology) was used to analysis the existing roundabout intersection of Washington St (RTE. 55) & Gillis Way/Piedmont Center Plaza. The results of the analysis are shown in Table 11 below.

Table 11: Roundabout Analysis at Washington St (RTE. 55) & Gillis Way/Piedmont Center Plaza

No.	Intersection (Movement)	AM Peak Hour			PM Peak Hour			SAT Peak Hour		
		LOS	Delay (sec/veh)	95th % Queue (ft.)	LOS	Delay (sec/veh)	95th % Queue (ft.)	LOS	Delay (sec/veh)	95th % Queue (ft.)
		Synchro			Synchro			Synchro		
1	Gillis Way/Piedmont Center Plaza (N/S) & Washington St (Rte. 55) (E/W) (TWSC) **(Overall)**	**A**	**6.9**		**A**	**9.0**		**A**	**6.6**	
	Eastbound Approach	***A***	***7.4***	***72***	***A***	***9.1***	***100***	***A***	***6.5***	***69***
	Westbound Approach	***A***	***6.7***	***65***	***A***	***9.5***	***108***	***A***	***6.7***	***84***
	Northbound Approach	***A***	***5.7***	***12***	***A***	***7.8***	***22***	***A***	***5.0***	***2***
	Southbound Approach	***A***	***5.7***	***9***	***A***	***7.4***	***18***	***A***	***5.5***	***5***

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

The results of the roundabout analysis show that the intersection operates at acceptable levels of service and does not experience extensive queues even with additional volumes. Therefore, it would be reasonable for drivers to reroute themselves using the roundabout to travel westbound on Washington St (Rte. 55) if they did not want to wait for a gap.

The detailed analysis worksheets of the Future Conditions with Development (2029) Alternative are contained in Appendix H.

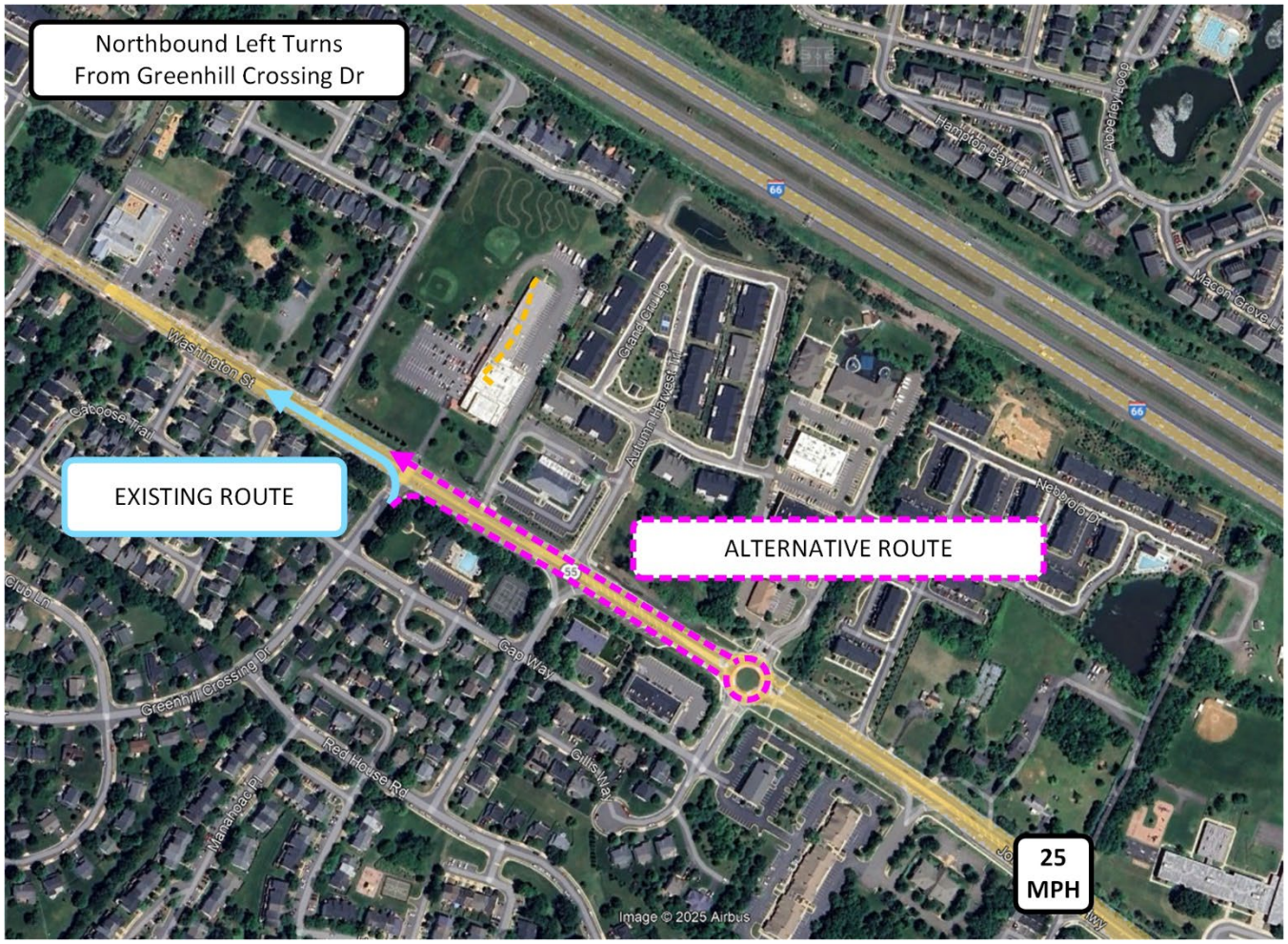


Figure 22: Assumed Reroute Time and Distance

Overall Comparison of Analysis Scenarios

A level of service and delay comparison for all scenarios is presented in Table 12 and queue length comparison is presented in Table 13.

Table 12: Intersection Level of Service and Delay Comparison

No.	Intersection (Movement)	Level of Service (LOS) (Sec./Veh.)														
		AM Peak Hour					PM Peak Hour					SAT Peak Hour				
		2025 EX	2029 FB	2029 TF	2029 TF MIT	2029 TF ALT	2025 EX	2029 FB	2029 TF	2029 TF MIT	2029 TF ALT	2025 EX	2029 FB	2029 TF	2029 TF MIT	2029 TF ALT
1	**Washington St (Rte. 55) (E/W) & Bleight Dr (N/S) (TWSC)**															
	Eastbound Approach															
	Eastbound Left	A (8.4)	A (8.4)	A (8.4)			A (8.6)	A (8.7)	A (8.7)			A (8.4)	A (8.5)	A (8.5)		
	Southbound Approach	*B (13.3)*	*B (13.4)*	*B (14)*			*C (15.8)*	*C (17.2)*	*C (18.7)*			*C (15.5)*	*C (16.3)*	*C (17.3)*		
	Southbound Left/Right	B (13.3)	B (13.4)	B (14)			C (15.8)	C (17.2)	C (18.7)			C (15.5)	C (16.3)	C (17.3)		
2	**Washington St (Rte. 55) (E/W) & Greenhill Crossing Dr/Site Access #1 (N/S) (TWSC) *MITIGATED**															
	Eastbound Approach															
	Eastbound Left	A (8.1)	A (8.1)	A (8.2)	A (8.1)	A (8.2)	A (8.4)	A (8.5)	A (8.5)	A (8.5)	A (8.6)	A (8.5)	A (8.6)	A (8.5)	A (8.6)	A (8.6)
	Westbound Approach															
	Westbound Left	A (8.2)	A (8.2)	A (8.2)	A (8.2)	A (8.2)	A (8.6)	A (8.7)	A (8.7)	A (8.7)	A (8.6)	A (8.2)	A (8.3)	A (8.3)	A (8.3)	A (8.5)
	Northbound Approach	*B (13.4)*	*B (13.4)*	*B (14.8)*	*B (14.7)*	*B (13.6)*	*C (20.9)*	*C (23.1)*	*D (29.1)*	*D (28.9)*	*C (21)*	*C (16.5)*	*C (17.7)*	*C (21.5)*	*C (21.2)*	*C (18.4)*
	Northbound Left/Thru	C (17)	C (16.9)	C (19.8)	C (19.7)	C (19.5)	D (26.1)	D (29.2)	E (38.3)	E (38)	D (34.5)	C (20.6)	C (22.4)	D (28.7)	D (28.2)	D (27.7)
	Northbound Right	B (10.5)	B (10.5)	B (10.6)	B (10.6)	B (10.6)	B (11.2)	B (11.5)	B (11.6)	B (11.6)	B (11.7)	B (10.5)	B (10.7)	B (10.8)	B (10.8)	B (10.8)
	Southbound Approach	*-- (--)*	*-- (--)*	*C (14.7)*	*C (15.2)*	*C (14.7)*	*-- (--)*	*-- (--)*	*C (20.9)*	*C (22.3)*	*C (21.2)*	*-- (--)*	*-- (--)*	*C (21.4)*	*C (22.6)*	*C (21.2)*
	Southbound Left/Thru/Right	-- (--)	-- (--)	C (14.7)	C (15.2)	C (14.7)	-- (--)	-- (--)	C (20.9)	C (22.3)	C (21.2)	-- (--)	-- (--)	C (21.4)	C (22.6)	C (21.2)
3	**Washington St (Rte. 55) (E/W) & Site Access #2 (N/S) (TWSC)**(To Remove)**															
	Eastbound Approach															
	Eastbound Left	A (8.2)	A (8.2)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)
	Southbound Approach	*B (11.1)*	*B (11.1)*	*-- (--)*	*-- (--)*	*-- (--)*	*B (12.1)*	*B (12.5)*	*-- (--)*	*-- (--)*	*-- (--)*	*B (12)*	*B (12.4)*	*-- (--)*	*-- (--)*	*-- (--)*
	Southbound Left	B (13.7)	B (13.7)	-- (--)	-- (--)	-- (--)	C (16.3)	C (17.4)	-- (--)	-- (--)	-- (--)	B (14.5)	C (15.4)	-- (--)	-- (--)	-- (--)
	Southbound Right	B (10)	B (10)	-- (--)	-- (--)	-- (--)	B (10.1)	B (10.3)	-- (--)	-- (--)	-- (--)	A (9.9)	B (10)	-- (--)	-- (--)	-- (--)
4	**Washington St (Rte. 55) (E/W) & Commercial RIRO (N/S) (TWSC)**															
	Southbound Approach	*A (0)*	*A (0)*	*B (10.9)*			*B (11.7)*	*B (12.1)*	*B (12.2)*			*A (0)*	*A (0)*	*A (0)*		
	Southbound Left/Right	A (0)	A (0)	B (10.9)			B (11.7)	B (12.1)	A (12.2)			A (0)	A (0)	A (0)		
5	**Washington St (Rte. 55) (E/W) & Susquehanna Rd/Autumn Harvest Trl (N/S) (TWSC)**															
	Eastbound Approach															
	Eastbound Left	A (8.3)	A (8.2)	A (8.3)			A (8.6)	A (8.7)	A (8.7)			A (8.3)	A (8.4)	A (8.4)		
	Northbound Approach	*B (10.9)*	*B (10.9)*	*B (11)*			*B (11.4)*	*B (11.8)*	*B (11.9)*			*B (10.9)*	*B (11.2)*	*B (11.3)*		
	Northbound Right	B (10.9)	B (10.9)	B (11)			B (11.4)	B (11.8)	B (11.9)			B (10.9)	B (11.2)	B (11.3)		
	Southbound approach	*C (15.8)*	*C (15.7)*	*C (15.9)*			*B (14.8)*	*C (15.9)*	*C (16.1)*			*C (15.3)*	*C (16.4)*	*C (16.7)*		
	Southbound Right	C (15.8)	C (15.7)	C (15.9)			B (14.8)	C (15.9)	C (16.1)			C (15.3)	C (16.4)	C (16.7)		
6	**Dogwood Park Ln/Site Access #3 (E/W) & Bleight Dr (N/S) (TWSC)**															
	Eastbound Approach															
	Eastbound Left/Right	A (8.5)	A (8.5)	A (8.5)			A (8.5)	A (8.5)	A (8.4)			A (8.4)	A (8.4)	A (8.4)		
	Westbound Approach	*-- (--)*	*-- (--)*	*A (9)*			*-- (--)*	*-- (--)*	*A (9.3)*			*-- (--)*	*-- (--)*	*A (9.1)*		
	Westbound Left/Thru/Right	-- (--)	-- (--)	A (9)			-- (--)	-- (--)	A (9.3)			-- (--)	-- (--)	A (9.1)		
	Northbound Approach															
	Northbound Left/Thru/Right	A (7.3)	A (7.3)	A (7.3)			A (7.3)	A (7.3)	A (7.3)			A (7.3)	A (7.3)	A (7.3)		

**Intersection #2 mitigation includes the addition of a westbound right turn lane.*
***Intersection #3 to be removed in future scenarios*

Table 13: Intersection Queue Length Comparison

No.	Intersection (Movement)	95th Percentile Queues (ft.)															
			AM Peak Hour					PM Peak Hour					SAT Peak Hour				
		Effective Storage Length (ft.)	2025 EX	2029 FB	2029 TF	2029 TF MIT	2029 TF ALT	2025 EX	2029 FB	2029 TF	2029 TF MIT	2029 TF ALT	2025 EX	2029 FB	2029 TF	2029 TF MIT	2029 TF ALT
1	**Washington St (Rte. 55) (E/W) & Bleight Dr (N/S) (TWSC)**																
	Eastbound Approach																
	Eastbound Left	160	0	0	0			3	3	0			0	3	0		
	Southbound Approach																
	Southbound Left/Right		8	8	8			8	10	8			8	8	8		
2	**Washington St (Rte. 55) (E/W) & Greenhill Crossing Dr/Site Access #1 (N/S) (TWSC) *MITIGATED**																
	Eastbound Approach																
	Eastbound Left	145	0	0	0	0	0	3	3	3	3	3	3	3	3	3	3
	Westbound Approach																
	Westbound Left	195	3	3	3	3	0	5	5	5	5	3	3	3	3	3	3
	Northbound Approach																
	Northbound Left/Thru	175	8	8	8	8	5	15	18	23	23	13	10	10	13	13	10
	Northbound Right	175	5	3	3	3	5	3	3	3	3	5	3	3	3	3	3
	Southbound Approach																
	Southbound Left/Thru/Right		--	--	5	3	5	--	--	10	13	15	--	--	20	23	25
3	**Washington St (Rte. 55) (E/W) & Site Access #2 (N/S) (TWSC)**(To Remove)**																
	Eastbound Approach																
	Eastbound Left		0	--	--	--	--	0	--	--	--	--	0	--	--	--	--
	Southbound Approach																
	Southbound Left		0	0	0	--	--	3	3	0	--	--	5	5	0	--	--
	Southbound Right		0	0	0	--	--	3	3	0	--	--	3	3	0	--	--
4	**Washington St (Rte. 55) (E/W) & Commercial RIRO (N/S) (TWSC)**																
	Southbound Approach																
	Southbound Left/Right		0	0	0			0	0	0			0	0	0		
5	**Washington St (Rte. 55) (E/W) & Susquehanna Rd/Autumn Harvest Trl (N/S) (TWSC)**																
	Eastbound Approach																
	Eastbound Left	230	0	0	0			0	3	3			0	0	0		
	Northbound Approach																
	Northbound Right		10	8	8			5	5	5			5	5	5		
	Southbound approach																
	Southbound Right		3	3	3			5	5	5			0	0	0		
6	**Dogwood Park Ln/Site Access #3 (E/W) & Bleight Dr (N/S) (TWSC)**																
	Eastbound Approach																
	Eastbound Left/Right		3	3	3			3	3	3			3	3	3		
	Westbound Approach																
	Westbound Left/Thru/Right		--	--	0			--	--	0			--	--	0		
	Northbound Approach																
	Northbound Left/Thru/Right		0	0	0			3	3	3			0	0	0		

**Intersection #2 mitigation includes the addition of a westbound right turn lane.*
***Intersection #3 to be removed in future scenarios*

The results of all the analysis scenarios show the proposed development is not anticipated to have a detrimental effect on the surrounding transportation network as all intersections and all approaches continue to operate at acceptable LOS. It should be noted however that the northbound left movement at Intersection #2 (Washington St (Rte. 55) & Greenhill Crossing Dr/Site Access #1) operates at LOS E. This intersection was mitigated through the conversion of the existing driveway inbound only entrance to a full access (inbound & outbound) and the addition of a westbound right turn lane. As discussed in the alternative scenario, a portion of the northbound left turns were rerouted to the existing roundabout. The evaluation of the total future with development conditions with the proposed mitigations and alternative scenario show that the development will not have a significant impact on transportation network.

Turn Lane Warrant Assessments

Left and right turn lane warrants are based off VDOT's Road Desing Manual (RDM), Appendix F. In order to determine the need for exclusive left or right turn lanes at the site entrance along Washington St (Rte. 55) and the site entrance along Bleight Dr, the traffic data and anticipated development program provided in the 2029 Future with Development scenario section were utilized to provide a conservative analysis.

Right Turn Lane Assessments

Warrants for right-turn storage lanes on two- and four-lane highways at intersections are based on Figure 3-26 and Figure 3-27 in Appendix F of VDOT's RDM. These figures provide a graphical representation for determining the necessity of a right turn lane by comparing the total volumes of a given approach with their respective right turn volumes.

The results of the northbound right (Bleight Dr) and westbound right (Washington St) turn lane warrant analysis are presented on Table 14 and Figure 23.

Table 14: Right Turn Lane Warrant Assessments at Site Entrances (VDOT RDM-F Fig. 3-27)

Study Scenario	Approach Volume	Right Turn Volume	Minimum Right Turn Taper Threshold	Minimum Right Turn Full Lane Threshold	Treatment
Intersection 2 WBR AM Peak Hour	408	24	29	65	**Not Warranted**
Intersection 2 WBR PM Peak Hour	585	27	20	42	**Taper Required**
Intersection 2 WBR SAT Peak Hour	503	37	20	53	**Taper Required**
Intersection 6 NBR AM Peak Hour	14	1	69	116	**Not Warranted**
Intersection 6 NBR PM Peak Hour	49	4	65	112	**Not Warranted**
Intersection 6 NBR SAT Peak Hour	33	4	67	114	**Not Warranted**

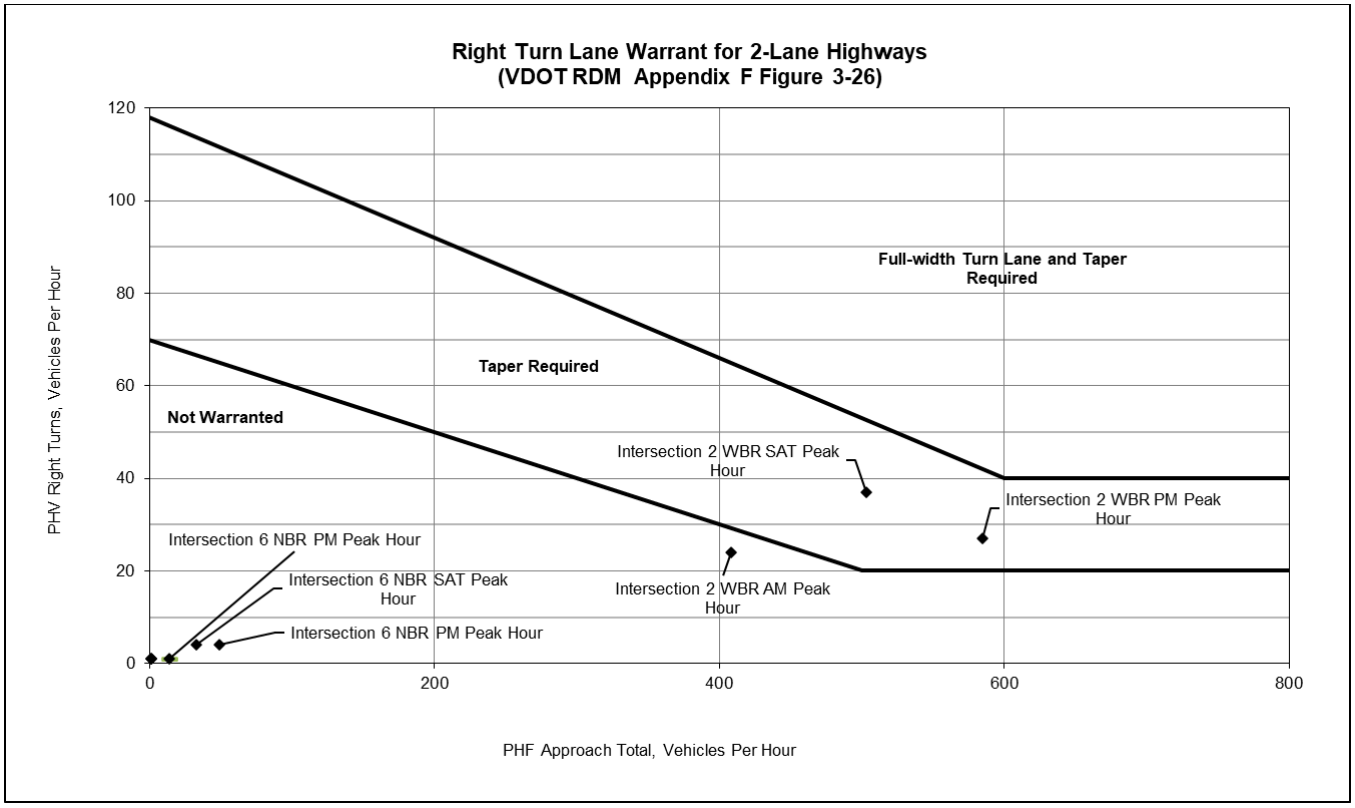


Figure 23: Right Turn Warrant Analysis Chart (VDOT RDM FIGURE 3-27)

As shown above, a westbound right taper is warranted for the site entrance at Intersection #2 (Washington St & Site Access #1) per VDOT RDM based on the Total Future with Development (2029) volumes, design speed (30 mph), and number of right turns. VDOT's RDM requires a 100' (single lane) taper for roadways with a design speed of 30 mph or less.

Intersection 2 – Greenhill Crossing Dr/Site Access #1 (N/S) & Washington St (Rte. 55) (E/W)

i. Westbound Right – Design Speed (30 mph)

100 feet taper length is required (RDM);

Left Turn Lane Assessment

Warrants for left-turn storage lanes on two-lane highways at unsignalized intersections are based on Figure 3-4 to Figure 3-21 in Appendix F of the Virginia Department of Transportation's (VDOT) Road Design Manual (RDM). Please note there is an existing left-turn lane at Intersection #2 (Washington St & Site Access) and a left-turn lane is not feasible nor needed at other proposed site access location.

Access Management Assessment (Intersection Spacing with Adjacent Intersections)

The minimum spacing standards for the Commonwealth of Virginia are specified in VDOT's Road Design Manual (RDM). Appendix F of the RDM focuses primarily on access management practices. The minimum spacing standards are particularly specified in Table 2-2 through Table 2-4. Table 2-2 provides guidance on the minimum spacing standard for commercial entrances, intersections, and median crossovers, and are based on a roadway's speed limit and functional classification. Table 2-3 and 2-4 provide guidance for minimum spacing standards for the spacing between interchanges and intersections or commercial entrances.

Washington St (Rte. 55) in the vicinity of the study area is classified as a "Major Collector" with a speed limit of 25 mph per VDOT Speed Limits Map. This section evaluates the minimum spacing requirements at the proposed site entrances. The applicable intersection spacing requirements (centerline-to-centerline) per RDM Appendix F Table 2-2 are illustrated in Figure 24 below.

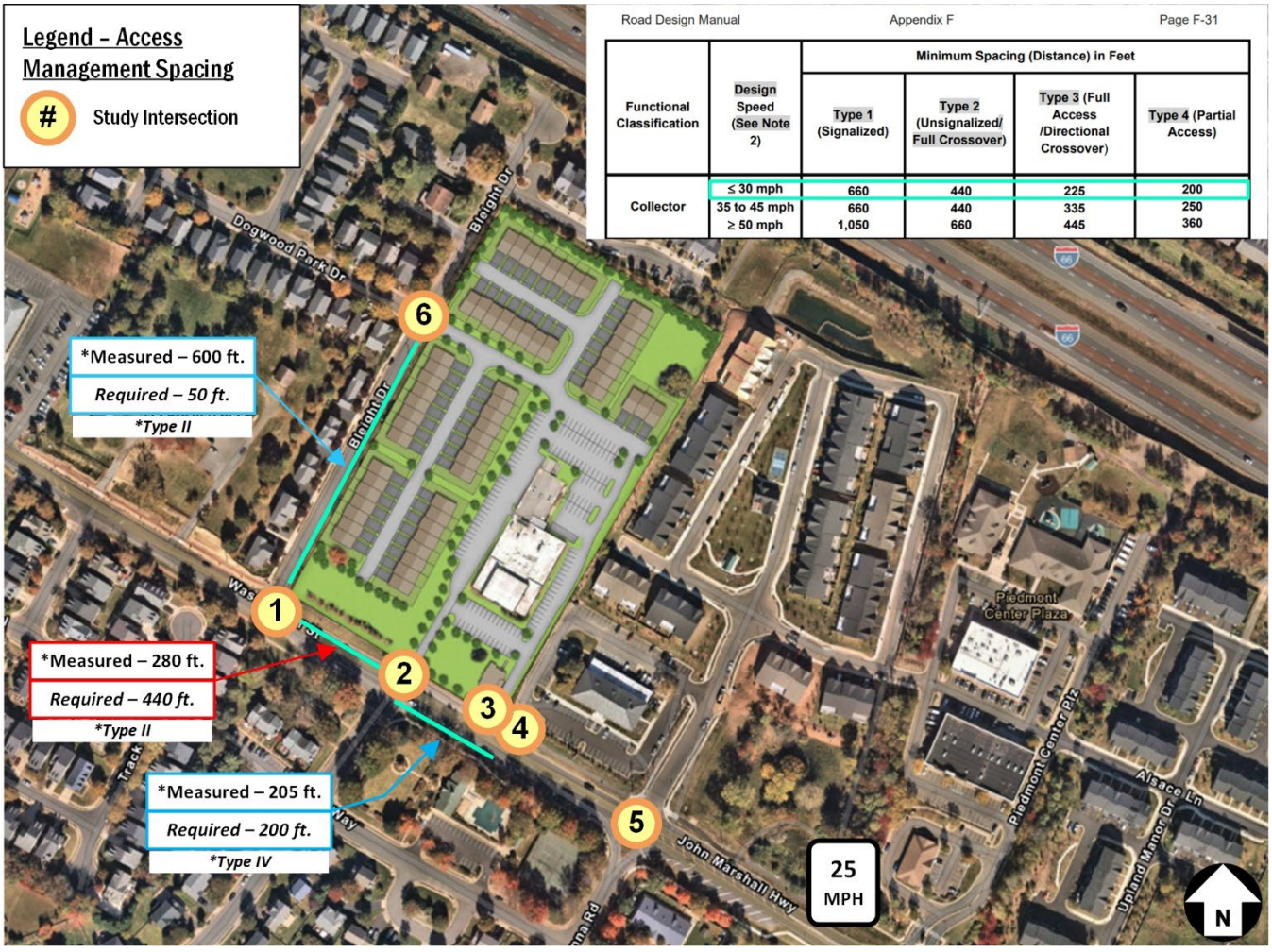


Figure 24: Proposed Intersection Spacing Evaluations

The following intersections would not meet VDOT intersection spacing requirements based on the current design:

- Washington St (Rte. 55)/Bleight Dr & Site Access #1 (Type II Intersection – Full Access)
    - Required spacing – 440 feet; Approximate measured spacing between intersections – 280 feet;
    - This is an existing intersection and is consistent with the character of historically rural towns like Haymarket.

- Washington St (Rte. 55) & Existing Exit Only Driveway – The existing intersection is planned to be removed due to the proximity to the commercial driveway to the east. The existing spacing between the intersections does not meet VDOT access management standards and presents an unsafe maneuver for the trips coming in to the development and the trips coming out of the commercial driveway.

Please note the locations of Site Access #1 already exists and is not proposed to shift locations.

Conclusion

The analysis presented in this report supports the following assumptions and findings:

Analysis Components

- Existing counts, dated Tuesday June 3, 2025, were collected while most schools were in session to reflect typical traffic patterns, and serve as the basis for this study. Existing traffic counts were conducted at the existing intersections on Saturday June,14, 2025.
- As determined based on discussions at the scoping meeting, an inherent growth rate of 2% (compounded annually) for the period 2025-2029 has been applied to all through movements along Washington St at all intersections.
- The site is anticipated to generate approximately 28 total trips during the AM peak hour, 30 total trips during the PM peak hour, 481 total daily trips on a typical weekday, 40 total trips during the Saturday peak hour, and 352 Saturday daily trips.
- One (1) identified background development was included in the study – 6700 Bleight Drive – Which will consist of approximately 11 single family attached units
- The scenarios to be included in this study are Existing Conditions (2025), Future without Development (2029), Future with Development (2029)
- The existing access to the site is served via two (2) intersections, one entrance and one egress. The development proposes to convert the existing entrance only driveway to a full access (inbound and outbound) driveway. The development also proposes to remove the existing exit only driveway as the primary bidirectional entrance would reduce driver confusion and better meet driver expectation. The proposed development is also planning to construct a fourth leg to the intersection of Bleight Dr & Dogwood Park Ln.

Infrastructure

- There is one (1) identified infrastructure change with this proposed development. Construction of a fourth leg to the intersection of Bleight Dr & Dogwood Park Ln, will serve as another site access for the proposed development. No additional infrastructure changes were identified and agreed upon in the scope.

Analysis Results

Analysis Terms:

- Level of Service (LOS) is based upon the traffic volume present in each lane on the roadway, the capacity of each lane at the intersection and the delay (in seconds) associated with each directional movement. This evaluation is consistent in all traffic analysis scenarios. Please refer to definitions of Level of Service in Appendix J.
- The 95th percentile queue length refers to the queue length within which 95% of all observed queues are contained during a specific analysis period. This evaluation is consistent in all traffic analysis scenarios.

Existing Conditions (2025):

- All approaches and the overall intersections operate at an acceptable level of service.
- All the anticipated 95th percentile queues are contained in the available storage lane lengths for all the study intersections.

Total Future without Development (2029):

- All approaches and the overall intersections operate at an acceptable level of service.
- All the anticipated 95th percentile queues are contained in the available storage length for all the study intersections.

Total Future with Development (2029):

The results of the Future with Development Conditions (2029) analysis scenario are as follows:

- All the approaches and the overall intersection operate at acceptable levels of service for all of the study intersections.
- All the anticipated 95th percentile queues are contained in the available storage length for all the study intersections.
- Please note that while all study intersections and approaches operate at acceptable levels of service, the following lane group was observed to experience larger delay:
    - Intersection #2 Washington St (Rte. 55) & Greenhill Crossing Dr/Site Access #1 – Northbound shared left/thru lane operates at LOS E in the PM peak hour. The overall approach operates acceptably.
    - The 95th percentile queue for the northbound shared left/thru lane is approximately 23 ft (less than one car). Therefore, the queues do not extend to the downstream driveways that serve the residential community.
- The reconfigurations and mitigations for this analysis scenario are as follows:
    - The existing primary driveway entrance (Access #1) will be reconfigured to a full-access driveway (inbound & outbound).
    - The existing exit-only driveway (Access #2) is planned to be closed to address the existing safety issues due to the proximity to the driveway to the east.
    - The addition of a westbound right turn lane at Intersection #2 (Washington St (Rte. 55) & Greenhill Crossing Dr/Site Access) is a proposed mitigation. Please note only a right turn taper is warranted using VDOT Road Design Manual (RDM) Turn Lane Assessment.
- In addition to the mitigation implemented for the Future Conditions with Development (2029) scenario, an alternative scenario was provided that reviewed the capacity of the adjacent roundabout to understand the capacity if existing vehicles were to reroute to utilize the intersection. The analysis confirms that the roundabout operates acceptably if additional vehicles were to use it.

Overall Conclusion

Based on the capacity and queueing analysis results, the proposed development will not have a significant impact to the surrounding transportation and roadway network, assuming that all designs planned with the subject proposal, and mitigations discussed in this report are implemented.

TECHNICAL APPENDICES

APPENDIX LIST

Appendix A – Signed Scoping Document

Appendix B – Existing Turning Movement Counts

Appendix C – Intersection Analysis Worksheets – Existing 2025

Appendix D – Background Development Trip Generation

Appendix E – Intersection Analysis Worksheets – Future without Development (2029)

Appendix F – Intersection Analysis Worksheets – Future with Development (2029)

Appendix G – Intersection Analysis Worksheets – Future with Development (2029) Mitigated

Appendix H – Intersection Analysis Worksheets – Future with Development (2029) Alternative

Appendix I – Crash Data

Appendix J – Description of Traffic Level of Service

APPENDIX A: SIGNED SCOPING DOCUMENT

THIS IS NOT A CHAPTER 870 STUDY

VDOT Virginia Department of Transportation	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 VDOT and 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:	Chad Baird, Gorove Slade cab@goroveslade.com			
Developer/Owner Name: Tele: E-mail:	Graystone Companies kjohnson@graystoneco.com			
Project Information				
Project Name:	14600 Washington St Development	Locality/County:	Town of Haymarket	
Project Location: (Attach regional and site specific location map)	The proposed development is located north of Washington St, south of I-66, and east of Bleight Dr in the Town of Haymarket.			
Submission Type	Comp Plan ☐	Rezoning ☒	Site Plan ☐	Subd Plat ☐
Project Description: (Including details on the land use, acreage, phasing, access location, etc. Attach additional sheet if necessary)	The site can be identified with the GPIN 7397-19-1734 and is currently zoned B-1 (Town Center). The development program for the site proposes mixed uses including 26,063 SF of commercial/office uses and up to 60 townhome units. The projected build-out date for the site is 2029. A portion of the site is currently occupied by existing commercial uses. A portion of the commercial uses (5,986 SF of Office) are planned to be removed with this application while the remaining 26,063 SF is anticipated to remain. The site currently has 2 access points on Washington St, one of which aligns with Greenhill Crossing Drive. One additional entrance is proposed along Bleight Dr as the fourth leg to the existing intersection of Bleight Dr and Dogwood Park Ln.			
Proposed Use(s):	Residential ☐	Commercial ☐	Mixed Use ☒	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.

(Check all that apply; attach additional pages as necessary)	**Residential Uses(s)** Number of Units: 60 ITE LU Code(s): 221 **Commercial Use(s)** ITE LU Code(s): Square Ft or Other Variable:		 **Other Use(s)** ITE LU Code(s): Independent Variable(s):	
Total Peak Hour Trip Projection:	Less than 100 ☒	100 – 499 ☐	500 – 999 ☐	1,000 or more ☐

Traffic Impact Analysis Assumptions

Study Period	Existing Year: 2025	Build-out Year: 2029	Design Year: N/A
Study Area Boundaries (Attach map)	North: I-66	South: Washington St	
	West: Bleight Dr	East: Autumn Harvest Trl	
External Factors That Could Affect Project (Planned road improvements, other nearby developments)	Residential Development along Bleight Dr will be added to the analysis as a background development.		
Consistency With Comprehensive Plan (Land use, transportation plan)	Town of Haymarket Planned Land use Map identifies the parcels' proposed land use as Public however the existing zoning is Town Center B-1.		
Available Traffic Data (Historical, forecasts)	VDOT Historical AADT Data, Turning Movement Counts collected in 2025.		
Trip Distribution (Attach sketch) Figure 2	Road Name: Washington St (to/from West) – 50%	Road Name: Washington St (to/from East) – 50%	
	Road Name: (to/from North) –	Road Name: (to/from South) –	

Annual Vehicle Trip Growth Rate: Note #10	2.0% (2025-2029)	Peak Period for Study (check all that apply)	☒ AM ☒ PM ☒ SAT
		Peak Hour of Adjacent Street Table 1	26 AM / 32 PM / 44 SAT Peak / 522 DAILY

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 refer to attached Figure 1	1. Washington St and Bleight Dr	6. Bleight Dr and Site Access/ Dogwood Park Dr
	2. Washington St and Greenhill Crossing Dr	7.
	3. Washington St and Site Access	8.
	4. Washington St and Commercial Access	9.
	5. Washington St and Autumn Harvest Trl/Susquehanna Rd	10.
Trip Adjustment Factors	Internal allowance: ☒ Yes ☐ No Reduction: 15% to existing restaurant uses in the plaza only PM/SAT/DAILY	Pass-by allowance: ☐ Yes ☒ No Reduction:
Software Methodology	☒ Synchro ☐ HCS (v.2000/+) ☐ SIDRA ☐ CORSIM ☐ Other _____	
Traffic Signal Proposed or Affected (Analysis software to be used, progression speed, cycle length) Note #8	Analysis Software: Synchro version 11 Results: HCM 6 methodology	
Improvement(s) Assumed or to be Considered	None.	
Background Traffic Studies Considered	Residential Development along Bleight Dr	
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. Turning Movement Counts collected in 2025. The through volumes on the major movements will be balanced appropriately.
2. The scenarios to be included in the study are Existing Conditions (2025), Future without Development (2029) and Future with Development (2029).
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 0.92 or existing, whichever is higher.
4. Heavy vehicle percentages will be obtained from the collected traffic count data and a minimum of 2% will be used if not specified in counts. For any new intersection, the HV% will be based on a default Synchro value of 2%.
5. Acceptable Level of Service (LOS) for intersection approaches will be per Town of Haymarket's approved Comprehensive Plan. The analysis results will show intersection, approach, and movement LOS.
6. Will provide 95th percentile queues from Synchro at analyzed locations.
7. HCM 6 methodology will be utilized where applicable; HCM 2000 methodology will be utilized if HCM 6 methodology is not applicable for a certain location.
8. Preliminary Access Management/Intersections Spacing and Turn Lanes will be evaluated for the site entrances.
9. An inherent growth rate of 2% (compounded annually) for the period 2025-2029 will be applied to through movements along Washington St at all the intersections.
10. A safety assessment for all the study intersections will be included.
11. All improvements proposed by the background developments will be considered in the study.

SIGNED:  DATE: 06/13/2025
Applicant or Consultant

PRINT NAME: Chad Baird
Applicant or Consultant

SIGNED: _____ DATE: _____
VDOT Representative

PRINT NAME: _____
VDOT Representative

SIGNED: _____ DATE: _____
Local Government Representative

PRINT NAME: _____
Local Government Representative

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.

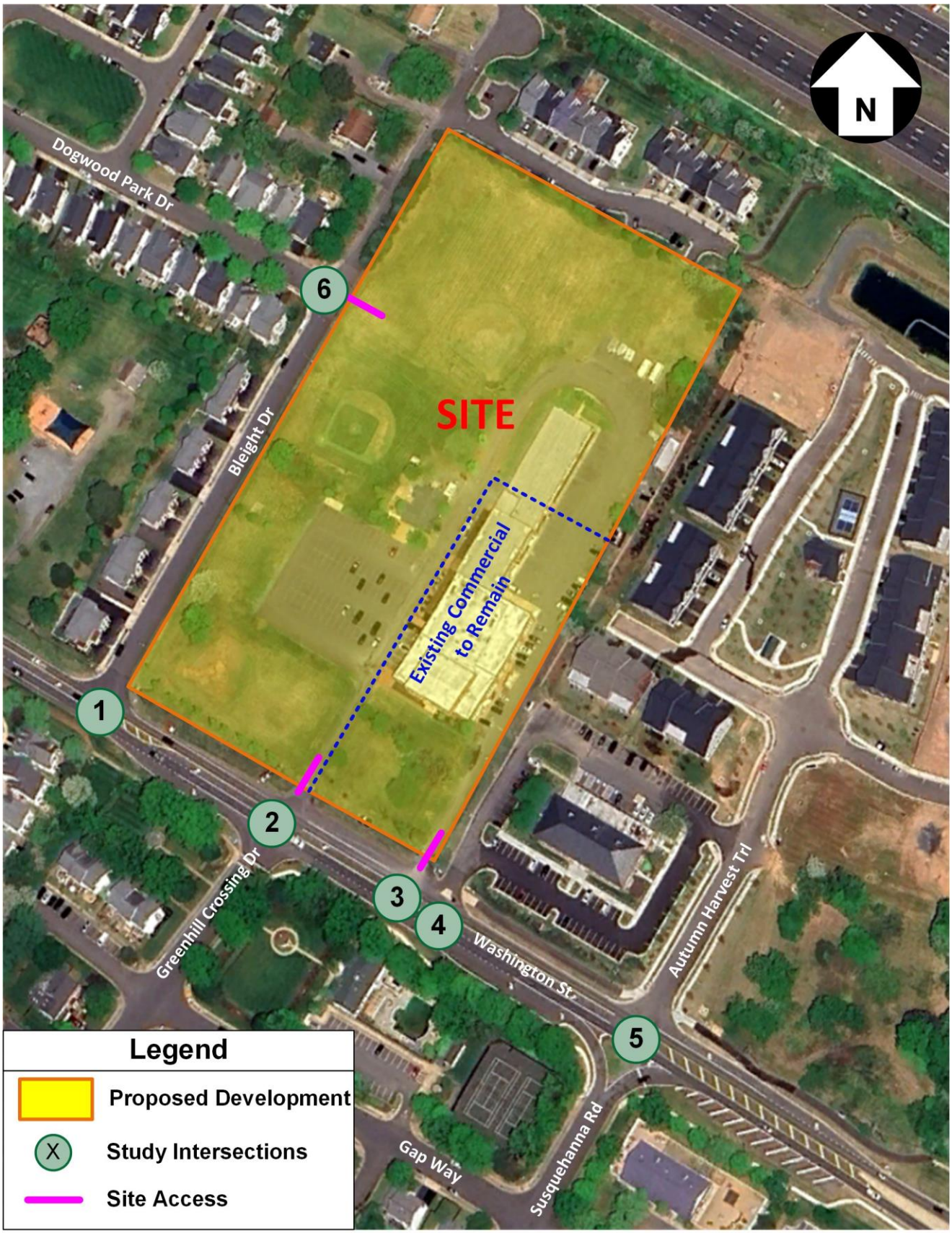


Figure 1: Area Map and Study Intersections

Figure 2: Direction of Approach

Table 1: Trip Generation for Existing Commercial to be Removed – Peak Hour of Adjacent Street Traffic (ITE 11th Edition)

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	Weekend Saturday Peak Hour In	Saturday Peak Hour Out	Saturday Peak Hour Total	Sat Daily Total
Existing Uses to be Removed														
General Office Building (EQUATIONS)	710	6.0	kSF of GFA	-13	-2	-15	-3	-13	-16	-100	-2	-1	-3	-13
Total Exsting Trips to be Removed				**-13**	**-2**	**-15**	**-3**	**-13**	**-16**	**-100**	**-2**	**-1**	**-3**	**-13**

Note - The office uses are currently vacant. The trips shown in the table represent the trips that the office uses could generate if fully occupied.

Table 2: Trip Generation for Proposed Development - Peak Hour of Adjacent Street Traffic (ITE 11th Edition)

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	Weekend Saturday Peak Hour In	Saturday Peak Hour Out	Saturday Peak Hour Total	Sat Daily Total
Proposed Use														
Single-Family Attached Housing (EQUATIONS)	215	60	DU	6	20	26	19	13	32	522	21	23	44	348
Total Proposed Trips without Reduction				**6**	**20**	**26**	**19**	**13**	**32**	**522**	**21**	**23**	**44**	**348**
Internal Capture Residential - Restaurant[1]		*15%*	*PM/SAT/DAILY*	*0*	*0*	*0*	*-3*	*-2*	*-5*	*-78*	*-3*	*-3*	*-7*	*-52*
Total Proposed Trips with Reduction				**6**	**20**	**26**	**16**	**11**	**27**	**444**	**18**	**20**	**37**	**296**
Difference in Trips (Proposed - Existing)				**-7**	**18**	**11**	**13**	**-2**	**11**	**344**	**16**	**19**	**34**	**283**

[1] *Internal capture rates consider site trips "captured" within a mixed use development, recognizing that trips from one land use can access another land use within a site development without having to access the adjacent street system. Internal capture allows reduction of site trips from adjacent intersections and roadways.*

The internal reduction is based on the VDOT Updated Administrative Guidelines for the Traffic Impact Analysis Regulations:

(1) residential / non-residential components - smaller of 15% of residential trips or 15% of non-residential trips

Table 3: VDOT Published Roadway Information (2023)

Roadway	RTE #	VDOT Classification	Posted Speed Limit (mph)	AADT (vpd)	k-factor
Washington St	VA 55	Major Collector	25	13,000	8.9%

Source: 2023 VDOT Published AADT Traffic Data

Table 4: VDOT Historical AADTs

Road Segment:	From:	To:	Published VDOT AADT 2019	2020	2021	2022	2023
Washington St	Old Carolina Rd	Town of Haymarket Bdry	11,000	7,900	9,000	9,950	13,000

Source: VDOT Published AADT Traffic Data

Figure 3: Preliminary Sketch (For Illustrative Purposes Only)

APPENDIX B: EXISTING TURNING MOVEMENT COUNTS

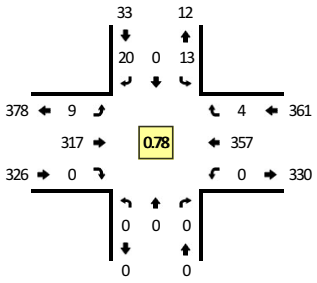
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Bleight Dr -- Rte 55
CITY/STATE: Haymarket, VA

QC JOB #: 17110501
DATE: Tue, Jun 3 2025

Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM



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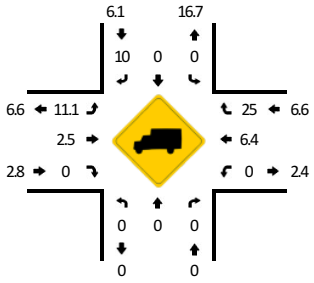
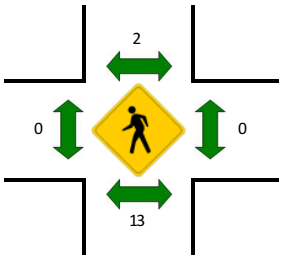
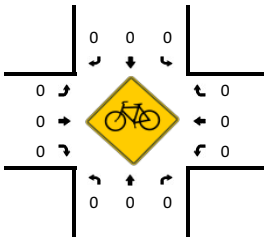
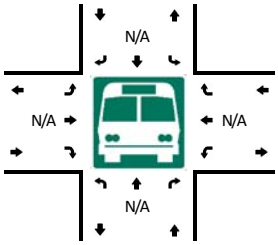
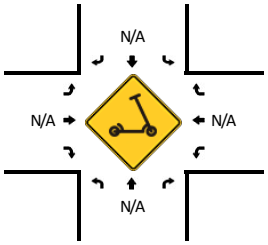










15-Min Count Period Beginning At	Bleight Dr (Northbound)				Bleight Dr (Southbound)				Rte 55 (Eastbound)				Rte 55 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	0	0	1	0	0	0	0	14	0	0	0	20	0	0	35	
6:15 AM	0	0	0	0	2	0	2	0	0	25	0	0	0	24	0	0	53	
6:30 AM	0	0	0	0	4	0	4	0	0	31	0	0	0	26	1	0	66	
6:45 AM	0	0	0	0	3	0	1	0	3	49	0	0	0	54	0	0	110	264
7:00 AM	0	0	0	0	4	0	7	0	3	63	0	0	0	55	1	0	133	362
7:15 AM	0	0	0	0	3	0	2	0	0	53	0	0	0	41	2	0	101	410
7:30 AM	0	0	0	0	3	0	4	0	1	69	0	0	0	62	1	0	140	484
7:45 AM	0	0	0	0	3	0	3	0	1	82	0	0	0	60	0	0	149	523
8:00 AM	0	0	0	0	4	0	1	0	0	71	0	0	0	63	1	0	140	530
8:15 AM	0	0	0	0	1	0	4	0	4	74	0	0	0	77	0	0	160	589
8:30 AM	0	0	0	0	2	0	5	0	1	79	0	0	0	101	2	0	190	639
8:45 AM	0	0	0	0	6	0	10	0	3	93	0	1	0	116	1	0	230	720

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	24	0	40	0	12	372	0	4	0	464	4	0	920
Heavy Trucks	0	0	0		0	0	8		4	12	0		0	12	4		40
Buses																	
Pedestrians		16				0				0				0			16
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/13/2025 9:01 AM

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

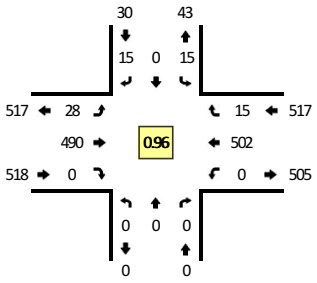
Type of peak hour being reported: Intersection Peak

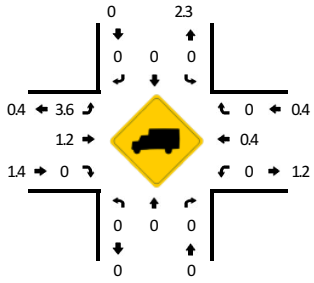
Method for determining peak hour: Total Entering Volume

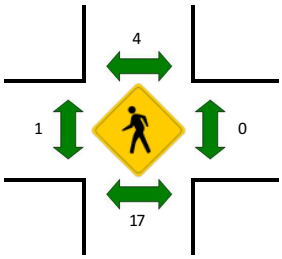
LOCATION: Bleight Dr -- Rte 55
CITY/STATE: Haymarket, VA

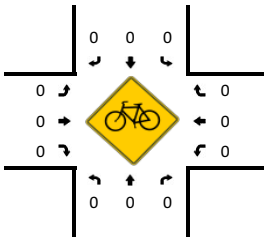
QC JOB #: 17110502
DATE: Tue, Jun 3 2025

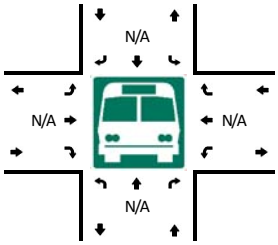
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

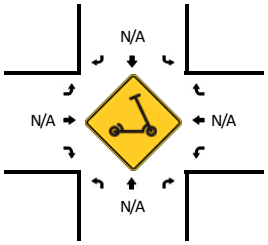












15-Min Count Period Beginning At	Bleight Dr (Northbound)				Bleight Dr (Southbound)				Rte 55 (Eastbound)				Rte 55 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	2	0	4	0	6	97	0	0	0	119	1	0	229	
4:15 PM	0	0	0	0	3	0	2	0	2	95	0	0	0	129	5	0	236	
4:30 PM	0	0	0	0	1	0	5	0	6	134	0	0	0	118	5	0	269	
4:45 PM	0	0	0	0	3	0	3	0	4	129	0	0	0	121	2	0	262	996
5:00 PM	0	0	0	0	2	0	3	0	9	102	0	0	0	133	6	0	255	1022
5:15 PM	0	0	0	0	7	0	4	0	7	133	0	0	0	117	2	0	270	1056
5:30 PM	0	0	0	0	3	0	5	0	8	126	0	0	0	131	5	0	278	1065
5:45 PM	0	0	0	0	5	0	5	0	3	132	0	0	0	110	3	0	258	1061
6:00 PM	0	0	0	0	3	0	2	0	3	111	0	0	0	120	4	0	243	1049
6:15 PM	0	0	0	0	1	0	2	0	6	107	0	0	0	136	5	0	257	1036
6:30 PM	0	0	0	0	6	0	3	0	1	90	0	0	0	130	5	0	235	993
6:45 PM	0	0	0	0	1	0	6	0	3	99	0	0	0	120	6	0	235	970

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	12	0	20	0	32	504	0	0	0	524	20	0	1112
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		8				12				0				0			20
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

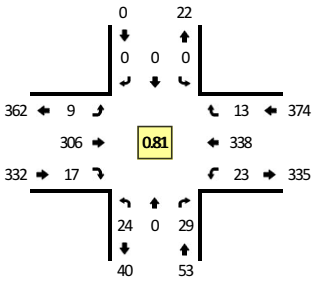
Report generated on 6/13/2025 9:01 AM

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: Greenhill Crossing Dr/Dwy -- Rte 55 | **QC JOB #:** 17110503
CITY/STATE: Haymarket, VA | **DATE:** Tue, Jun 3 2025

Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM



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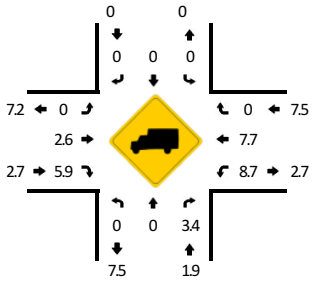
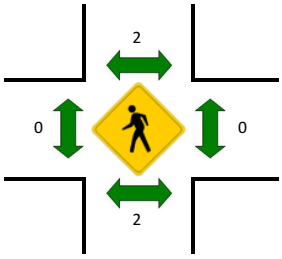
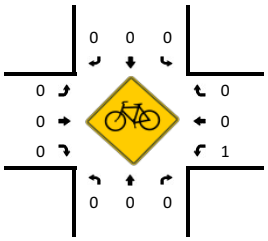
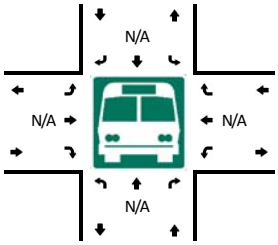
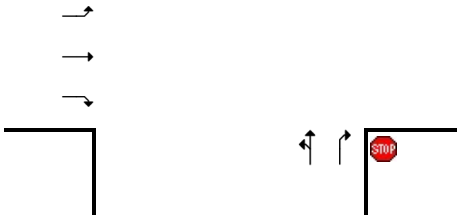
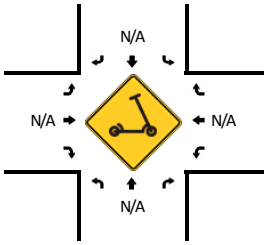












15-Min Count Period Beginning At	Greenhill Crossing Dr/Dwy (Northbound)				Greenhill Crossing Dr/Dwy (Southbound)				Rte 55 (Eastbound)				Rte 55 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	2	0	3	0	0	0	0	0	0	15	1	0	2	18	2	0	43	
6:15 AM	7	0	3	0	0	0	0	0	1	26	0	0	0	17	1	0	55	
6:30 AM	7	0	8	0	0	0	0	0	0	35	0	0	2	20	0	0	72	
6:45 AM	8	0	8	0	0	0	0	0	0	51	1	0	2	47	1	0	118	288
7:00 AM	11	0	6	0	0	0	0	0	0	64	3	0	7	45	0	0	136	381
7:15 AM	6	0	5	0	0	0	0	0	0	55	1	0	4	39	0	0	110	436
7:30 AM	7	0	5	0	0	0	0	0	1	66	4	0	3	53	2	0	141	505
7:45 AM	12	0	9	0	0	0	0	0	9	75	2	0	7	49	7	0	170	557
8:00 AM	3	0	6	0	0	0	0	0	7	61	6	0	4	61	4	0	152	573
8:15 AM	11	0	9	0	0	0	0	0	0	72	5	0	7	66	4	0	174	637
8:30 AM	5	0	6	0	0	0	0	0	1	77	2	0	7	100	1	0	199	695
8:45 AM	5	0	8	0	0	0	0	0	1	96	4	0	5	111	4	0	234	759

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	0	32	0	0	0	0	0	4	384	16	0	20	444	16	0	936
Heavy Trucks	0	0	0		0	0	0		0	12	0		0	20	0		32
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		4	0	0		4
Scooters																	

Comments:

Report generated on 6/13/2025 9:01 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

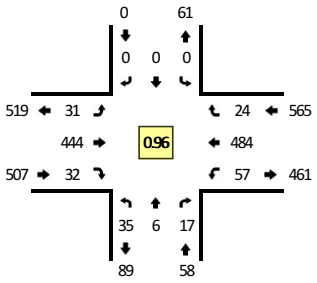
Type of peak hour being reported: Intersection Peak

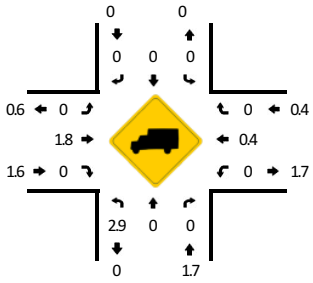
Method for determining peak hour: Total Entering Volume

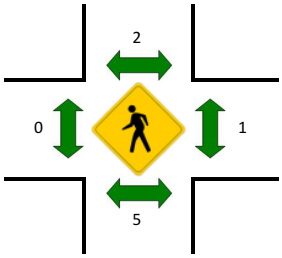
LOCATION: Greenhill Crossing Dr/Dwy -- Rte 55
CITY/STATE: Haymarket, VA

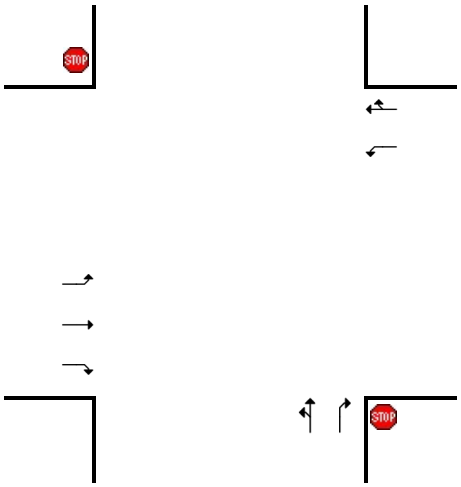
QC JOB #: 17110504
DATE: Tue, Jun 3 2025

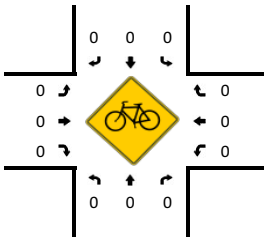
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

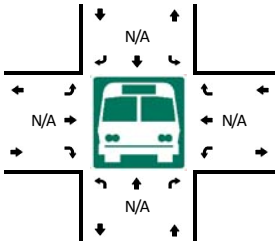


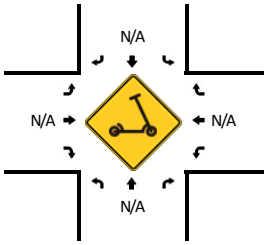












15-Min Count Period Beginning At	Greenhill Crossing Dr/Dwy (Northbound)				Greenhill Crossing Dr/Dwy (Southbound)				Rte 55 (Eastbound)				Rte 55 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	9	0	2	0	0	0	0	0	2	95	2	0	17	108	1	0	236	
4:15 PM	8	0	4	0	0	1	0	0	3	86	8	0	10	126	6	0	252	
4:30 PM	7	0	6	0	0	0	0	0	6	120	7	0	16	116	4	0	282	
4:45 PM	9	3	4	0	0	0	0	0	6	119	10	0	12	117	4	0	284	1054
5:00 PM	5	1	3	0	0	0	0	0	3	94	7	0	21	133	2	0	269	1087
5:15 PM	8	1	5	0	0	0	0	0	4	128	7	0	12	112	7	0	284	1119
5:30 PM	13	1	5	0	0	0	0	0	18	103	8	0	12	122	11	0	293	1130
5:45 PM	9	0	7	0	0	0	0	0	14	113	6	0	12	106	8	0	275	1121
6:00 PM	13	1	7	0	0	0	0	0	11	93	8	0	12	115	8	0	268	1120
6:15 PM	12	1	3	0	0	0	0	0	9	93	3	0	11	128	2	0	262	1098
6:30 PM	14	1	5	0	0	0	0	0	9	77	8	0	3	124	6	0	247	1052
6:45 PM	9	0	5	0	0	0	0	0	6	91	0	0	5	120	6	0	242	1019

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	52	4	20	0	0	0	0	0	72	412	32	0	48	488	44	0	1172
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		8				0				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

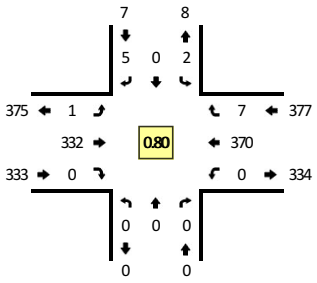
Report generated on 6/13/2025 9:01 AM

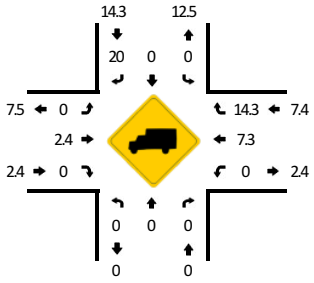
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

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

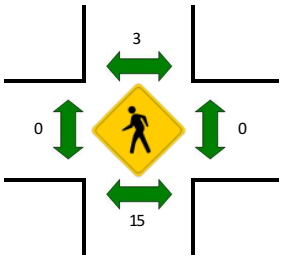
LOCATION: Private Dwy -- Rte 55 | **QC JOB #:** 17110505
CITY/STATE: Gainesville, VA | **DATE:** Tue, Jun 3 2025

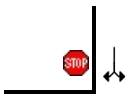
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM

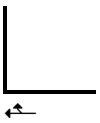


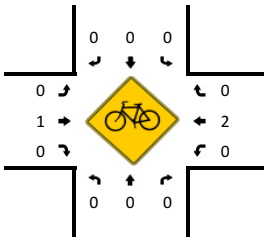


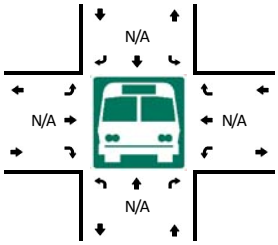
TRUE DATA TO IMPROVE MOBILITY

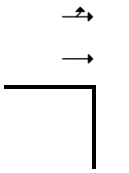


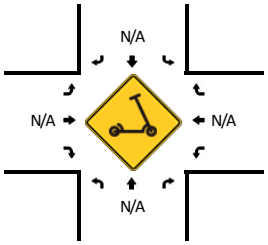












15-Min Count Period Beginning At	Private Dwy (Northbound)				Private Dwy (Southbound)				Rte 55 (Eastbound)				Rte 55 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	0	0	1	0	0	0	0	18	0	0	0	22	0	0	41	
6:15 AM	0	0	0	0	0	0	0	0	0	29	0	0	0	18	0	0	47	
6:30 AM	0	0	0	0	0	0	0	0	0	43	0	0	0	23	0	0	66	
6:45 AM	0	0	0	0	7	0	7	0	0	59	0	0	0	43	0	0	116	270
7:00 AM	0	0	0	0	2	0	3	0	0	70	0	0	0	48	0	0	123	352
7:15 AM	0	0	0	0	0	0	0	0	0	59	0	0	0	43	0	0	102	407
7:30 AM	0	0	0	0	1	0	1	0	0	71	0	0	0	57	1	0	131	472
7:45 AM	0	0	0	0	0	0	1	0	0	84	0	0	0	62	1	0	148	504
8:00 AM	0	0	0	0	0	0	0	0	0	68	0	0	0	71	2	0	141	522
8:15 AM	0	0	0	0	1	0	1	0	0	81	0	0	0	74	2	0	159	579
8:30 AM	0	0	0	0	1	0	2	0	0	82	0	0	0	108	1	0	194	642
8:45 AM	0	0	0	0	0	0	2	0	1	101	0	0	0	117	2	0	223	717

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	0	8	0	4	404	0	0	0	468	8	0	892
Heavy Trucks	0	0	0		0	0	0		0	12	0		0	20	0		32
Buses																	
Pedestrians		12				4				0				0			16
Bicycles	0	0	0		0	0	0		0	0	0		0	4	0		4
Scooters																	

Comments:

Report generated on 6/13/2025 9:01 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

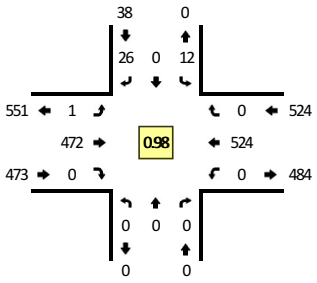
Type of peak hour being reported: Intersection Peak

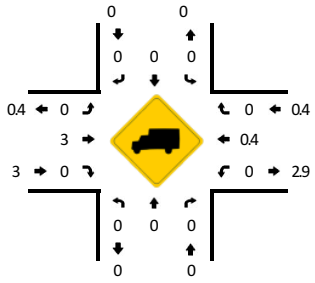
Method for determining peak hour: Total Entering Volume

LOCATION: Private Dwy -- Rte 55
CITY/STATE: Gainesville, VA

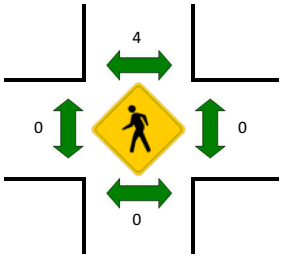
QC JOB #: 17110506
DATE: Tue, Jun 3 2025

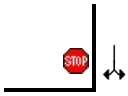
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

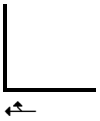


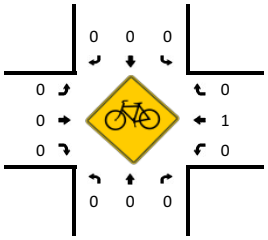


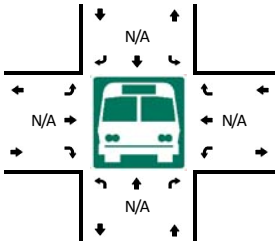
TRUE DATA TO IMPROVE MOBILITY

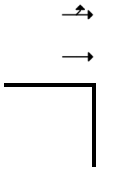


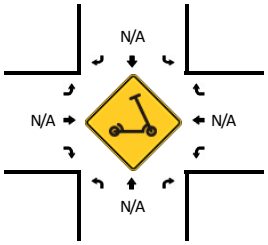












15-Min Count Period Beginning At	Private Dwy (Northbound)				Private Dwy (Southbound)				Rte 55 (Eastbound)				Rte 55 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	2	0	3	0	0	98	0	0	0	123	0	0	226	
4:15 PM	0	0	0	0	4	0	3	0	0	90	0	0	0	139	0	0	236	
4:30 PM	0	0	0	0	2	0	3	0	0	122	0	1	0	130	0	0	258	
4:45 PM	0	0	0	0	3	0	4	0	0	125	0	0	0	129	0	0	261	981
5:00 PM	0	0	0	0	2	0	11	0	0	95	0	0	0	143	0	0	251	1006
5:15 PM	0	0	0	0	5	0	8	0	0	130	0	0	0	122	0	0	265	1035
5:30 PM	0	0	0	0	2	0	5	0	0	104	0	0	0	138	0	0	249	1026
5:45 PM	0	0	0	0	4	0	6	0	1	121	0	0	0	120	0	0	252	1017
6:00 PM	0	0	0	0	2	0	6	0	0	99	0	0	0	131	1	0	239	1005
6:15 PM	0	0	0	0	5	0	11	0	0	92	0	0	0	130	0	0	238	978
6:30 PM	0	0	0	0	15	0	16	0	1	83	0	0	0	119	0	0	234	963
6:45 PM	0	0	0	0	3	0	18	0	0	95	0	0	0	113	1	0	230	941

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	20	0	32	0	0	520	0	0	0	488	0	0	1060
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	0	0		4
Buses																	
Pedestrians		0				4				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/13/2025 9:01 AM

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

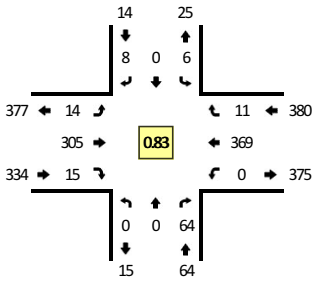
Type of peak hour being reported: Intersection Peak

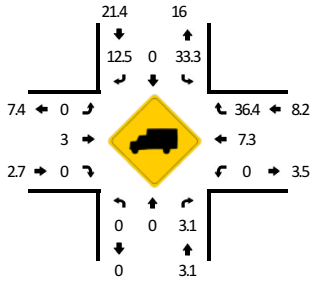
Method for determining peak hour: Total Entering Volume

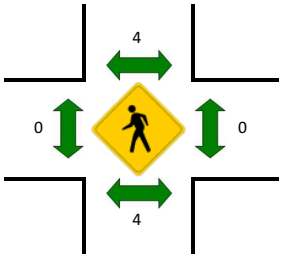
LOCATION: Autumn Harvest Trl/Susquehanna Rd -- Rte 55
CITY/STATE: Gainesville, VA

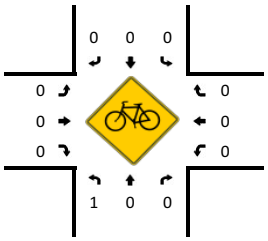
QC JOB #: 17110507
DATE: Tue, Jun 3 2025

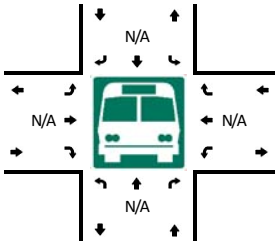
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM

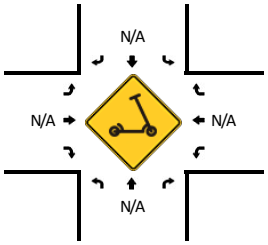












15-Min Count Period Beginning At	Autumn Harvest Trl/Susquehanna Rd (Northbound)				Autumn Harvest Trl/Susquehanna Rd (Southbound)				Rte 55 (Eastbound)				Rte 55 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	6	0	1	1	0	0	2	16	0	0	0	22	1	0	49	
6:15 AM	0	0	28	0	0	0	0	0	1	25	1	0	0	19	1	0	75	
6:30 AM	0	1	13	0	2	1	1	0	4	40	1	0	0	23	4	0	90	
6:45 AM	0	0	14	0	1	0	1	0	0	64	2	0	0	41	2	0	125	339
7:00 AM	0	0	17	0	0	0	1	0	2	67	3	0	0	47	0	0	137	427
7:15 AM	0	0	14	0	2	0	1	0	1	53	4	0	0	42	1	0	118	470
7:30 AM	0	0	10	0	0	0	0	1	0	66	6	0	0	58	0	0	141	521
7:45 AM	0	0	22	0	3	0	2	0	1	78	6	0	0	63	1	0	176	572
8:00 AM	0	0	11	0	0	0	4	0	3	60	5	0	0	68	2	0	153	588
8:15 AM	0	0	18	0	2	0	2	0	4	75	3	0	0	73	5	0	182	652
8:30 AM	0	0	21	0	2	0	1	0	5	73	4	0	0	110	2	0	218	729
8:45 AM	0	0	14	0	2	0	1	0	2	97	3	0	0	118	2	0	239	792

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	56	0	8	0	4	0	8	388	12	0	0	472	8	0	956
Heavy Trucks	0	0	0		4	0	0		0	12	0		0	20	0		36
Buses																	
Pedestrians		8				8				0				0			16
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/13/2025 9:01 AM

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

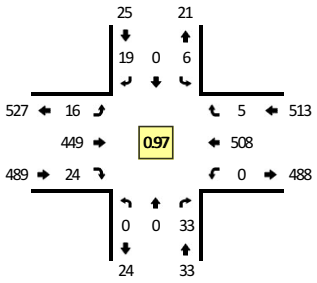
Type of peak hour being reported: Intersection Peak

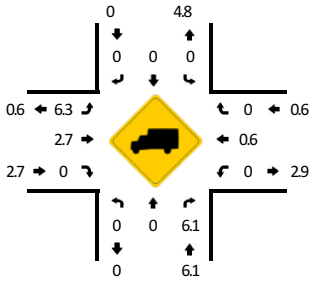
Method for determining peak hour: Total Entering Volume

LOCATION: Autumn Harvest Trl/Susquehanna Rd -- Rte 55
CITY/STATE: Gainesville, VA

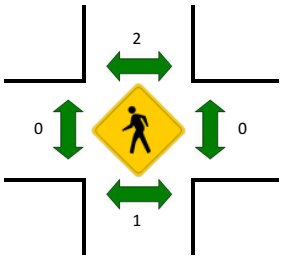
QC JOB #: 17110508
DATE: Tue, Jun 3 2025

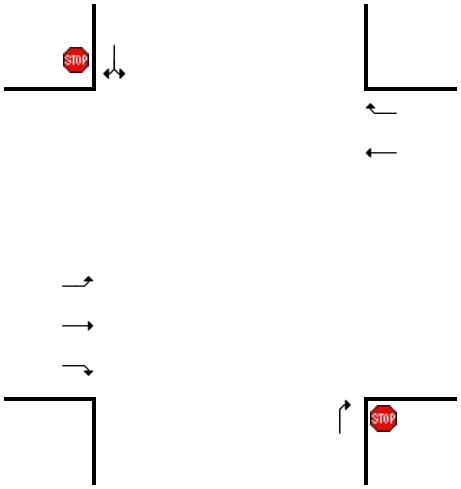
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:45 PM -- 5:00 PM

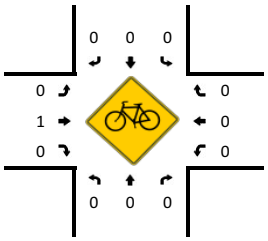


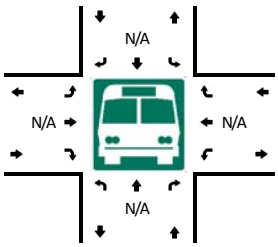


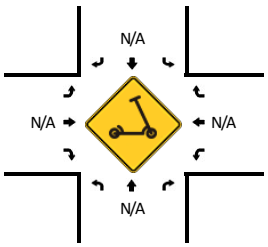
TRUE DATA TO IMPROVE MOBILITY











15-Min Count Period Beginning At	Autumn Harvest Trl/Susquehanna Rd (Northbound)				Autumn Harvest Trl/Susquehanna Rd (Southbound)				Rte 55 (Eastbound)				Rte 55 (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	7	0	0	0	1	0	4	92	4	0	0	121	2	0	231	
4:15 PM	0	0	8	0	2	0	2	0	3	88	4	0	0	138	3	0	248	
4:30 PM	0	0	10	0	0	0	4	0	1	117	6	0	0	127	1	0	266	
4:45 PM	0	0	11	0	0	0	3	0	6	117	6	0	0	127	2	0	272	1017
5:00 PM	0	0	5	0	5	0	10	0	5	90	4	0	0	133	1	0	253	1039
5:15 PM	0	0	7	0	1	0	2	0	4	125	8	0	0	121	1	0	269	1060
5:30 PM	0	0	13	0	0	0	5	0	4	98	5	0	0	137	1	0	263	1057
5:45 PM	0	0	4	0	1	0	5	0	6	114	6	0	1	115	3	0	255	1040
6:00 PM	0	0	16	0	2	0	2	0	3	97	3	0	0	131	0	0	254	1041
6:15 PM	0	0	14	0	0	0	1	0	3	95	3	0	0	131	4	0	251	1023
6:30 PM	0	0	7	0	1	0	1	0	2	98	2	0	0	121	1	0	233	993
6:45 PM	0	0	5	0	0	0	1	0	1	95	3	0	0	110	2	0	217	955

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	44	0	0	0	12	0	24	468	24	0	0	508	8	0	1088
Heavy Trucks	0	0	0		0	0	0		4	16	0		0	4	0		24
Buses																	
Pedestrians		0				4				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

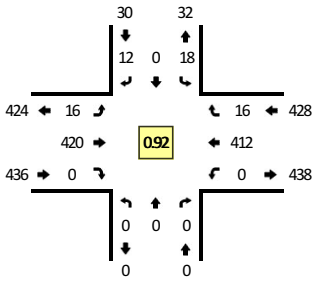
Report generated on 6/13/2025 9:01 AM

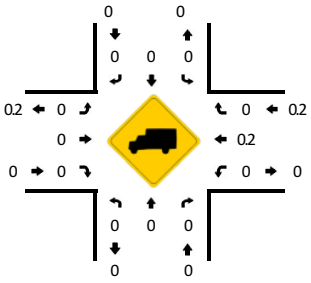
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

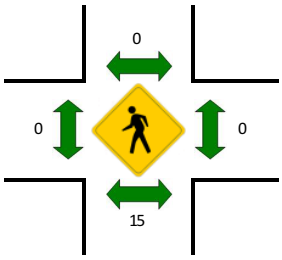
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

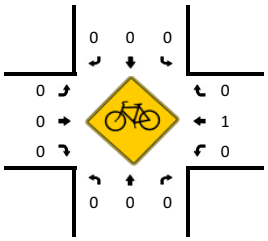
LOCATION: Bleight Dr -- Rte 55 | **QC JOB #:** 17126506
CITY/STATE: Haymarket, VA | **DATE:** Sat, Jun 14 2025

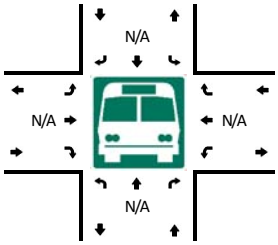
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:45 PM -- 6:00 PM

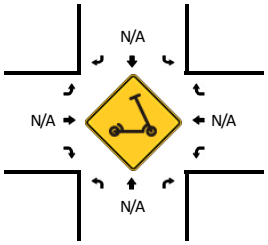












15-Min Count Period Beginning At	Bleight Dr (Northbound)				Bleight Dr (Southbound)				Rte 55 (Eastbound)				Rte 55 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:30 PM	0	0	0	0	2	0	3	0	2	95	0	0	0	95	3	0	200	
4:45 PM	0	0	0	0	1	0	5	0	3	99	0	0	0	87	1	0	196	
5:00 PM	0	0	0	0	2	0	2	0	3	109	0	0	0	107	2	0	225	
5:15 PM	0	0	0	0	4	0	1	0	3	95	0	0	0	105	6	0	214	835
5:30 PM	0	0	0	0	4	0	2	0	5	111	0	0	0	87	4	0	213	848
5:45 PM	0	0	0	0	8	0	7	0	5	105	0	0	0	113	4	0	242	894
6:00 PM	0	0	0	0	1	0	2	0	4	94	0	0	0	112	4	0	217	886
6:15 PM	0	0	0	0	3	0	0	0	2	90	0	0	0	92	0	0	187	859
6:30 PM	0	0	0	0	2	0	3	0	3	91	0	0	0	112	4	0	215	861
6:45 PM	0	0	0	0	1	0	5	0	5	82	0	0	0	87	7	0	187	806
7:00 PM	0	0	0	0	3	0	2	0	2	89	0	0	0	87	4	0	187	776
7:15 PM	0	0	0	0	2	0	3	0	2	68	0	0	0	76	3	0	154	743

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	32	0	28	0	20	420	0	0	0	452	16	0	968
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	4	0		4
Buses																	
Pedestrians		4				0				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	4	0		4
Scooters																	

Comments:

Report generated on 6/18/2025 9:05 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

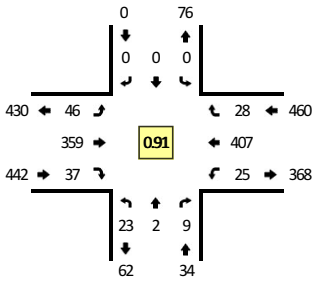
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

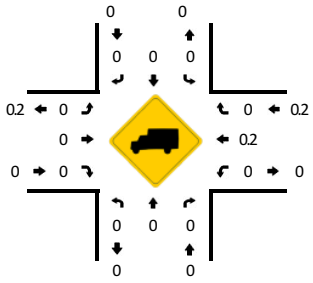
LOCATION: Greenhill Crossing Dr/Dwy -- Rte 55
CITY/STATE: Haymarket, VA

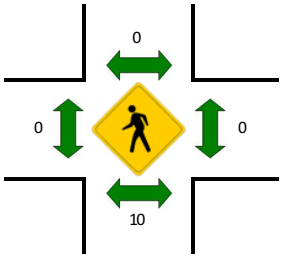
QC JOB #: 17126507
DATE: Sat, Jun 14 2025

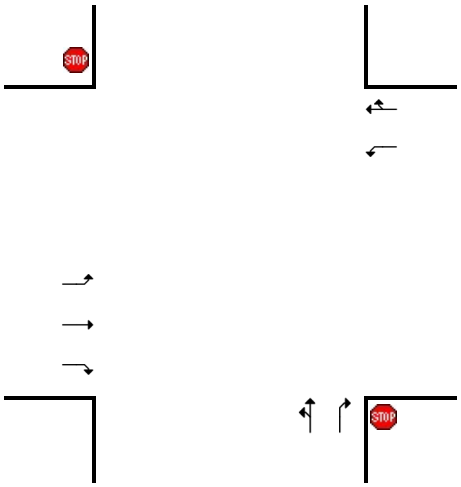
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:45 PM -- 6:00 PM

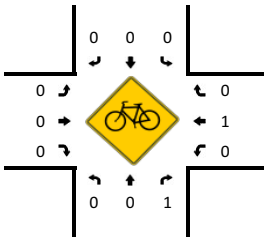


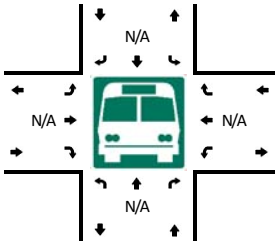
TRUE DATA TO IMPROVE MOBILITY

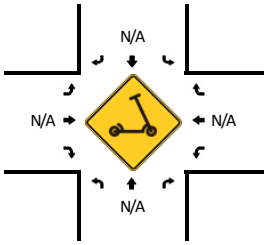












15-Min Count Period Beginning At	Greenhill Crossing Dr/Dwy (Northbound)				Greenhill Crossing Dr/Dwy (Southbound)				Rte 55 (Eastbound)				Rte 55 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:30 PM	2	0	2	0	0	0	0	0	5	83	10	0	6	97	7	0	212	
4:45 PM	6	0	4	0	0	0	0	0	4	89	7	0	11	82	4	0	207	
5:00 PM	7	0	3	0	0	0	0	0	5	101	5	0	7	103	7	0	238	
5:15 PM	6	0	2	0	0	0	0	0	16	71	13	0	6	104	6	0	224	881
5:30 PM	7	0	2	0	0	0	0	0	11	98	5	0	6	83	6	0	218	887
5:45 PM	3	2	2	0	0	0	0	0	14	89	14	0	6	117	9	0	256	936
6:00 PM	5	0	7	0	0	0	0	0	5	89	5	0	9	108	9	0	237	935
6:15 PM	7	0	2	0	0	0	1	0	2	87	4	0	11	86	6	0	206	917
6:30 PM	8	0	6	0	0	0	0	0	2	84	7	0	17	105	2	0	231	930
6:45 PM	7	1	3	0	0	0	0	0	9	73	2	0	7	88	6	0	196	870
7:00 PM	7	0	2	0	0	0	0	0	9	77	6	0	4	84	4	0	193	826
7:15 PM	4	0	5	0	0	0	0	0	5	58	8	0	8	74	8	0	170	790

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	8	8	0	0	0	0	0	56	356	56	0	24	468	36	0	1024
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	4	0		4
Buses																	
Pedestrians		12				0				0				0			12
Bicycles	0	0	4		0	0	0		0	0	0		0	4	0		8
Scooters																	

Comments:

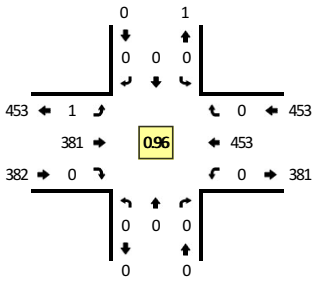
Report generated on 6/18/2025 9:05 AM

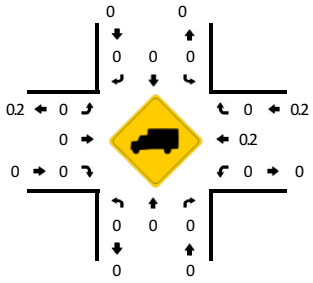
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

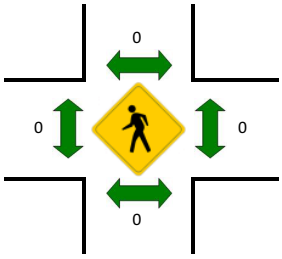
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

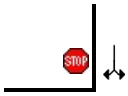
LOCATION: Private Dwy (East) -- Rte 55 | **QC JOB #:** 17126508
CITY/STATE: Gainesville, VA | **DATE:** Sat, Jun 14 2025

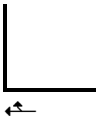
Peak-Hour: 5:45 PM -- 6:45 PM
Peak 15-Min: 6:00 PM -- 6:15 PM

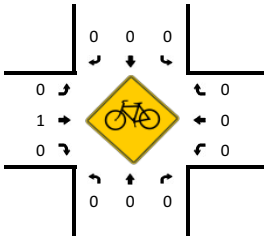


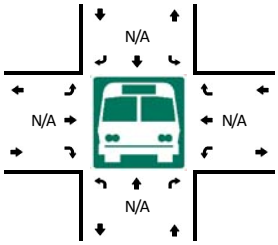


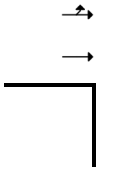


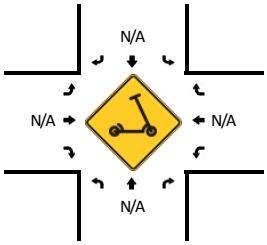












15-Min Count Period Beginning At	Private Dwy (East) (Northbound)				Private Dwy (East) (Southbound)				Rte 55 (Eastbound)				Rte 55 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:30 PM	0	0	0	0	0	0	1	0	0	88	0	0	0	104	1	0	194	
4:45 PM	0	0	0	0	0	0	2	0	0	99	0	0	0	85	1	0	187	
5:00 PM	0	0	0	0	0	0	0	0	0	110	0	0	0	108	0	0	218	
5:15 PM	0	0	0	0	0	0	0	0	0	77	0	0	0	97	0	0	174	773
5:30 PM	0	0	0	0	0	0	0	0	0	103	0	0	0	89	0	0	192	771
5:45 PM	0	0	0	0	0	0	0	0	0	90	0	0	0	125	0	0	215	799
6:00 PM	0	0	0	0	0	0	0	0	0	97	0	0	0	120	0	0	217	798
6:15 PM	0	0	0	0	0	0	0	0	1	97	0	0	0	94	0	0	192	816
6:30 PM	0	0	0	0	0	0	0	0	0	97	0	0	0	114	0	0	211	835
6:45 PM	0	0	0	0	0	0	0	0	0	81	0	0	0	92	0	0	173	793
7:00 PM	0	0	0	0	0	0	0	0	0	92	0	0	0	84	0	0	176	752
7:15 PM	0	0	0	0	0	0	0	0	0	72	0	0	0	87	0	0	159	719

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	0	0	0	0	388	0	0	0	480	0	0	868
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
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 6/18/2025 9:05 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

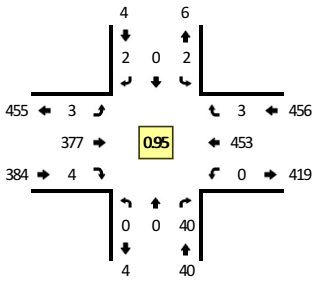
Type of peak hour being reported: Intersection Peak

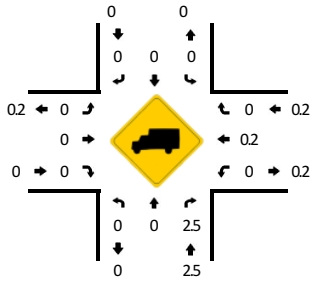
Method for determining peak hour: Total Entering Volume

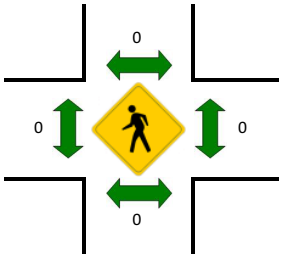
LOCATION: Autumn Harvest Trl/Susquehanna Rd -- Rte 55
CITY/STATE: Gainesville, VA

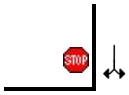
QC JOB #: 17126509
DATE: Sat, Jun 14 2025

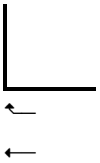
Peak-Hour: 5:45 PM -- 6:45 PM
Peak 15-Min: 6:00 PM -- 6:15 PM

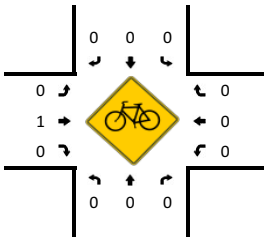


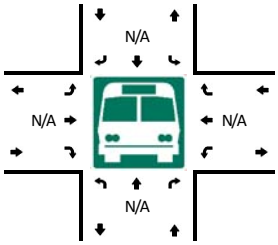


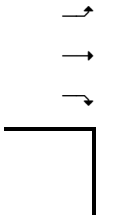


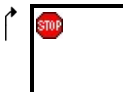


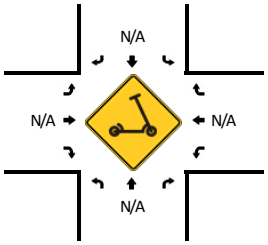












15-Min Count Period Beginning At	Autumn Harvest Trl/Susquehanna Rd (Northbound)				Autumn Harvest Trl/Susquehanna Rd (Southbound)				Rte 55 (Eastbound)				Rte 55 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:30 PM	0	0	8	0	1	0	2	0	1	86	1	0	0	103	0	0	202	
4:45 PM	0	0	6	0	2	0	1	0	1	94	3	0	0	89	2	0	198	
5:00 PM	0	0	7	0	2	0	1	0	0	108	2	0	0	103	0	0	223	
5:15 PM	0	0	5	0	0	0	1	0	1	75	0	0	0	97	1	0	180	803
5:30 PM	0	0	10	0	0	0	1	0	2	102	2	0	0	92	1	0	210	811
5:45 PM	0	0	12	0	1	0	0	0	1	90	0	0	0	123	0	0	227	840
6:00 PM	0	0	11	0	0	0	0	0	0	96	2	0	0	123	0	0	232	849
6:15 PM	0	0	7	0	0	0	2	0	0	98	1	0	0	92	3	0	203	872
6:30 PM	0	0	10	0	1	0	0	0	2	93	1	0	0	115	0	0	222	884
6:45 PM	0	0	8	0	0	0	0	0	0	84	2	0	0	94	0	0	188	845
7:00 PM	0	0	8	0	0	0	2	0	1	89	1	0	0	80	2	0	183	796
7:15 PM	0	0	1	0	1	0	0	0	1	67	4	0	0	88	0	0	162	755

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	44	0	0	0	0	0	0	384	8	0	0	492	0	0	928
Heavy Trucks	0	0	4		0	0	0		0	0	0		0	0	0		4
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 6/18/2025 9:05 AM

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

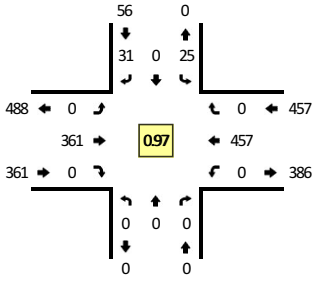
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

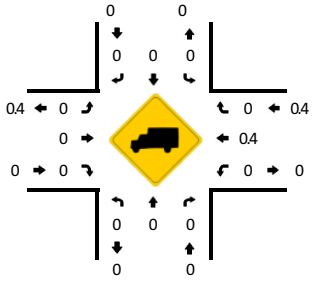
LOCATION: Private Dwy (West) -- Rte 55
CITY/STATE: Gainesville, VA

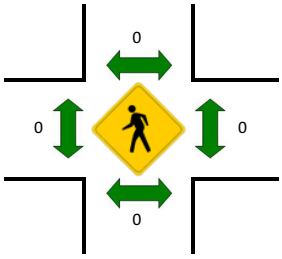
QC JOB #: 17126511
DATE: Sat, Jun 14 2025

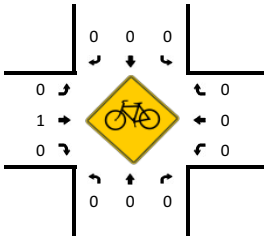
Peak-Hour: 5:45 PM -- 6:45 PM
Peak 15-Min: 6:00 PM -- 6:15 PM

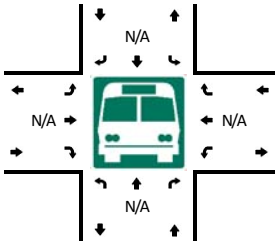


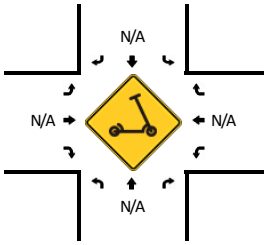
TRUE DATA TO IMPROVE MOBILITY











15-Min Count Period Beginning At	Private Dwy (West) (Northbound)				Private Dwy (West) (Southbound)				Rte 55 (Eastbound)				Rte 55 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:30 PM	0	0	0	0	4	0	5	0	0	84	0	0	0	105	0	0	198	
4:45 PM	0	0	0	0	5	0	9	0	0	94	0	0	0	87	0	0	195	
5:00 PM	0	0	0	0	6	0	11	0	0	104	0	0	0	107	1	0	229	
5:15 PM	0	0	0	0	5	0	17	0	0	73	0	0	0	98	0	0	193	815
5:30 PM	0	0	0	0	4	0	5	0	0	100	0	0	0	90	0	0	199	816
5:45 PM	0	0	0	0	3	0	6	0	0	88	0	0	0	126	0	0	223	844
6:00 PM	0	0	0	0	5	0	7	0	0	93	0	0	0	121	0	0	226	841
6:15 PM	0	0	0	0	9	0	7	0	0	90	0	0	0	95	0	0	201	849
6:30 PM	0	0	0	0	8	0	11	0	0	90	0	0	0	115	0	0	224	874
6:45 PM	0	0	0	0	6	0	8	0	0	76	0	0	0	93	0	0	183	834
7:00 PM	0	0	0	0	13	0	8	0	0	79	0	0	0	84	0	0	184	792
7:15 PM	0	0	0	0	10	0	3	0	0	63	0	0	0	87	0	0	163	754

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	20	0	28	0	0	372	0	0	0	484	0	0	904
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
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 6/18/2025 9:05 AM

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

APPENDIX C: INTERSECTION ANALYSIS WORKSHEETS (EXISTING 2025)

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	317	354	4	13	20
Future Vol, veh/h	8	317	354	4	13	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	13	3	6	25	0	10
Mvmt Flow	9	373	416	5	15	24

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	421	0	-	0	810	419
Stage 1	-	-	-	-	419	-
Stage 2	-	-	-	-	391	-
Critical Hdwy	4.23	-	-	-	6.4	6.3
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.317	-	-	-	3.5	3.39
Pot Cap-1 Maneuver	1082	-	-	-	352	617
Stage 1	-	-	-	-	668	-
Stage 2	-	-	-	-	688	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1082	-	-	-	349	617
Mov Cap-2 Maneuver	-	-	-	-	349	-
Stage 1	-	-	-	-	663	-
Stage 2	-	-	-	-	688	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	13.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1082	-	-	-	474
HCM Lane V/C Ratio	0.009	-	-	-	0.082
HCM Control Delay (s)	8.4	-	-	-	13.3
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	304	17	23	334	13	24	0	29	0	0	0
Future Vol, veh/h	9	304	17	23	334	13	24	0	29	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	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	140	-	140	-	-	-	-	-	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, %	0	3	6	9	8	0	0	0	3	0	0	0
Mvmt Flow	11	358	20	27	393	15	28	0	34	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	408	0	0	378	0	0	835	842	358
Stage 1	-	-	-	-	-	-	380	380	-
Stage 2	-	-	-	-	-	-	455	462	-
Critical Hdwy	4.1	-	-	4.19	-	-	6.4	6.5	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.2	-	-	2.281	-	-	3.5	4	3.327
Pot Cap-1 Maneuver	1162	-	-	1143	-	-	340	303	684
Stage 1	-	-	-	-	-	-	696	617	-
Stage 2	-	-	-	-	-	-	643	568	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1162	-	-	1143	-	-	329	0	684
Mov Cap-2 Maneuver	-	-	-	-	-	-	329	0	-
Stage 1	-	-	-	-	-	-	690	0	-
Stage 2	-	-	-	-	-	-	628	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.2	0.5	13.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	329	684	1162	-	-	1143	-	-
HCM Lane V/C Ratio	0.086	0.05	0.009	-	-	0.024	-	-
HCM Control Delay (s)	17	10.5	8.1	-	-	8.2	-	-
HCM Lane LOS	C	B	A	-	-	A	-	-
HCM 95th %tile Q(veh)	0.3	0.2	0	-	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰	↱
Traffic Vol, veh/h	1	332	365	7	2	5
Future Vol, veh/h	1	332	365	7	2	5
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	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	2	7	14	0	20
Mvmt Flow	1	391	429	8	2	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	437	0	-	0	631	219
Stage 1	-	-	-	-	433	-
Stage 2	-	-	-	-	198	-
Critical Hdwy	4.1	-	-	-	6.8	7.3
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.5
Pot Cap-1 Maneuver	1134	-	-	-	418	732
Stage 1	-	-	-	-	627	-
Stage 2	-	-	-	-	822	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1134	-	-	-	418	732
Mov Cap-2 Maneuver	-	-	-	-	418	-
Stage 1	-	-	-	-	626	-
Stage 2	-	-	-	-	822	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1134	-	-	-	418	732
HCM Lane V/C Ratio	0.001	-	-	-	0.006	0.008
HCM Control Delay (s)	8.2	-	-	-	13.7	10
HCM Lane LOS	A	-	-	-	B	B
HCM 95th %tile Q(veh)	0	-	-	-	0	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	334	372	5	1	0
Future Vol, veh/h	0	334	372	5	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	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	363	404	5	1	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	586	404
Stage 1	-	-	-	-	404	-
Stage 2	-	-	-	-	182	-
Critical Hdwy	-	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	-	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	0	-	-	0	457	646
Stage 1	0	-	-	0	673	-
Stage 2	0	-	-	0	832	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	457	646
Mov Cap-2 Maneuver	-	-	-	-	457	-
Stage 1	-	-	-	-	673	-
Stage 2	-	-	-	-	832	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
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	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	305	15	0	369	11	0	0	64	6	0	8
Future Vol, veh/h	15	305	15	0	369	11	0	0	64	6	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	Stop	-	-	None
Storage Length	225	-	0	-	-	225	-	-	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, %	0	3	0	0	7	36	0	0	3	33	0	13
Mvmt Flow	18	359	18	0	434	13	0	0	75	7	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	447	0	-	-	-	0	-	-	359	829	829	434
Stage 1	-	-	-	-	-	-	-	-	-	434	434	-
Stage 2	-	-	-	-	-	-	-	-	-	395	395	-
Critical Hdwy	4.1	-	-	-	-	-	-	-	6.23	7.43	6.5	6.33
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.43	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.43	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	-	-	3.327	3.797	4	3.417
Pot Cap-1 Maneuver	1124	-	0	0	-	-	0	0	683	257	308	599
Stage 1	-	-	0	0	-	-	0	0	-	544	585	-
Stage 2	-	-	0	0	-	-	0	0	-	573	608	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1124	-	-	-	-	-	-	-	683	226	303	599
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	226	303	-
Stage 1	-	-	-	-	-	-	-	-	-	535	585	-
Stage 2	-	-	-	-	-	-	-	-	-	502	598	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	10.9	15.8
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	683	1124	-	-	-	351
HCM Lane V/C Ratio	0.11	0.016	-	-	-	0.047
HCM Control Delay (s)	10.9	8.3	-	-	-	15.8
HCM Lane LOS	B	A	-	-	-	C
HCM 95th %tile Q(veh)	0.4	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	24	9	3	9	0
Future Vol, veh/h	0	24	9	3	9	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	2	2
Mvmt Flow	0	28	11	4	11	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	37	11	11	0	-	0
Stage 1	11	-	-	-	-	-
Stage 2	26	-	-	-	-	-
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	975	1070	1608	-	-	-
Stage 1	1012	-	-	-	-	-
Stage 2	997	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	968	1070	1608	-	-	-
Mov Cap-2 Maneuver	968	-	-	-	-	-
Stage 1	1005	-	-	-	-	-
Stage 2	997	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	5.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1608	-	1070	-	-
HCM Lane V/C Ratio	0.007	-	0.026	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	26	498	495	15	13	20
Future Vol, veh/h	26	498	495	15	13	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	4	3	1	0	0	0
Mvmt Flow	27	508	505	15	13	20

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	520	0	-	0	1075	513
Stage 1	-	-	-	-	513	-
Stage 2	-	-	-	-	562	-
Critical Hdwy	4.14	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.236	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1036	-	-	-	245	565
Stage 1	-	-	-	-	605	-
Stage 2	-	-	-	-	575	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1036	-	-	-	239	565
Mov Cap-2 Maneuver	-	-	-	-	239	-
Stage 1	-	-	-	-	589	-
Stage 2	-	-	-	-	575	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	15.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1036	-	-	-	368
HCM Lane V/C Ratio	0.026	-	-	-	0.092
HCM Control Delay (s)	8.6	-	-	-	15.8
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	461	31	61	481	17	29	5	18	0	0	0
Future Vol, veh/h	19	461	31	61	481	17	29	5	18	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	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	140	-	140	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	0	3	3	2	1	0	7	0	0	0	0	0
Mvmt Flow	19	466	31	62	486	17	29	5	18	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	503	0	0	497	0	0	1123	1131	466
Stage 1	-	-	-	-	-	-	504	504	-
Stage 2	-	-	-	-	-	-	619	627	-
Critical Hdwy	4.1	-	-	4.12	-	-	6.47	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.47	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.47	5.5	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.563	4	3.3
Pot Cap-1 Maneuver	1072	-	-	1067	-	-	222	205	601
Stage 1	-	-	-	-	-	-	597	544	-
Stage 2	-	-	-	-	-	-	528	479	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1072	-	-	1067	-	-	205	0	601
Mov Cap-2 Maneuver	-	-	-	-	-	-	205	0	-
Stage 1	-	-	-	-	-	-	586	0	-
Stage 2	-	-	-	-	-	-	497	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.3	0.9	20.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	205	601	1072	-	-	1067	-	-
HCM Lane V/C Ratio	0.168	0.03	0.018	-	-	0.058	-	-
HCM Control Delay (s)	26.1	11.2	8.4	-	-	8.6	-	-
HCM Lane LOS	D	B	A	-	-	A	-	-
HCM 95th %tile Q(veh)	0.6	0.1	0.1	-	-	0.2	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰	↱
Traffic Vol, veh/h	0	479	533	0	12	26
Future Vol, veh/h	0	479	533	0	12	26
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	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	3	0	0	0	0
Mvmt Flow	0	489	544	0	12	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	789	272
Stage 1	-	-	-	-	544	-
Stage 2	-	-	-	-	245	-
Critical Hdwy	-	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	332	732
Stage 1	0	-	-	0	551	-
Stage 2	0	-	-	0	779	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	332	732
Mov Cap-2 Maneuver	-	-	-	-	332	-
Stage 1	-	-	-	-	551	-
Stage 2	-	-	-	-	779	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.1
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	332	732
HCM Lane V/C Ratio	-	-	0.037	0.036
HCM Control Delay (s)	-	-	16.3	10.1
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	0.1	0.1

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↱			↗
Traffic Vol, veh/h	0	491	527	0	0	6
Future Vol, veh/h	0	491	527	0	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	501	538	0	0	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	538
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.319
Pot Cap-1 Maneuver	0	-	-	0	0	542
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	542
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	542
HCM Lane V/C Ratio	-	-	0.011
HCM Control Delay (s)	-	-	11.7
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	451	24	0	508	5	0	0	33	6	0	19
Future Vol, veh/h	16	451	24	0	508	5	0	0	33	6	0	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	Stop	-	-	None
Storage Length	225	-	0	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	5	1	0	0	0	0	0	0	3	0	0	0
Mvmt Flow	16	465	25	0	524	5	0	0	34	6	0	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	529	0	-	-	-	0	-	-	465	1021	1021	524
Stage 1	-	-	-	-	-	-	-	-	-	524	524	-
Stage 2	-	-	-	-	-	-	-	-	-	497	497	-
Critical Hdwy	4.15	-	-	-	-	-	-	-	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Follow-up Hdwy	2.245	-	-	-	-	-	-	-	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1023	-	0	0	-	-	0	0	595	217	238	557
Stage 1	-	-	0	0	-	-	0	0	-	540	533	-
Stage 2	-	-	0	0	-	-	0	0	-	559	548	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1023	-	-	-	-	-	-	-	595	202	234	557
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	202	234	-
Stage 1	-	-	-	-	-	-	-	-	-	531	533	-
Stage 2	-	-	-	-	-	-	-	-	-	519	539	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	11.4	14.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	595	1023	-	-	-	392
HCM Lane V/C Ratio	0.057	0.016	-	-	-	0.066
HCM Control Delay (s)	11.4	8.6	-	-	-	14.8
HCM Lane LOS	B	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	25	29	12	8	0
Future Vol, veh/h	0	25	29	12	8	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	2	2
Mvmt Flow	0	29	34	14	9	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	91	9	9	0	-	0
Stage 1	9	-	-	-	-	-
Stage 2	82	-	-	-	-	-
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	909	1073	1611	-	-	-
Stage 1	1014	-	-	-	-	-
Stage 2	941	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	890	1073	1611	-	-	-
Mov Cap-2 Maneuver	890	-	-	-	-	-
Stage 1	993	-	-	-	-	-
Stage 2	941	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	5.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1611	-	1073	-	-
HCM Lane V/C Ratio	0.021	-	0.027	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	14	380	429	12	14	12
Future Vol, veh/h	14	380	429	12	14	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	8	0	8
Mvmt Flow	16	427	482	13	16	13

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	495	0	-	0	948	489
Stage 1	-	-	-	-	489	-
Stage 2	-	-	-	-	459	-
Critical Hdwy	4.1	-	-	-	6.4	6.28
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.372
Pot Cap-1 Maneuver	1079	-	-	-	292	567
Stage 1	-	-	-	-	621	-
Stage 2	-	-	-	-	641	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1079	-	-	-	288	567
Mov Cap-2 Maneuver	-	-	-	-	288	-
Stage 1	-	-	-	-	612	-
Stage 2	-	-	-	-	641	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	15.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1079	-	-	-	373
HCM Lane V/C Ratio	0.015	-	-	-	0.078
HCM Control Delay (s)	8.4	-	-	-	15.5
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	341	30	43	417	26	23	2	17	0	0	1
Future Vol, veh/h	23	341	30	43	417	26	23	2	17	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	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	140	-	140	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	4	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	25	375	33	47	458	29	25	2	19	0	0	1

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	487	0	0	408	0	0	992	1006	375
Stage 1	-	-	-	-	-	-	425	425	-
Stage 2	-	-	-	-	-	-	567	581	-
Critical Hdwy	4.14	-	-	4.1	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.236	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	1066	-	-	1162	-	-	275	243	676
Stage 1	-	-	-	-	-	-	664	590	-
Stage 2	-	-	-	-	-	-	572	503	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1066	-	-	1162	-	-	258	0	676
Mov Cap-2 Maneuver	-	-	-	-	-	-	258	0	-
Stage 1	-	-	-	-	-	-	649	0	-
Stage 2	-	-	-	-	-	-	549	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.5	0.7	16.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	258	676	1066	-	-	1162	-	-
HCM Lane V/C Ratio	0.106	0.028	0.024	-	-	0.041	-	-
HCM Control Delay (s)	20.6	10.5	8.5	-	-	8.2	-	-
HCM Lane LOS	C	B	A	-	-	A	-	-
HCM 95th %tile Q(veh)	0.4	0.1	0.1	-	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰	↱
Traffic Vol, veh/h	0	358	455	0	25	31
Future Vol, veh/h	0	358	455	0	25	31
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	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	369	469	0	26	32

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	654	235
Stage 1	-	-	-	-	469	-
Stage 2	-	-	-	-	185	-
Critical Hdwy	-	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	404	773
Stage 1	0	-	-	0	602	-
Stage 2	0	-	-	0	834	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	404	773
Mov Cap-2 Maneuver	-	-	-	-	404	-
Stage 1	-	-	-	-	602	-
Stage 2	-	-	-	-	834	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	404	773
HCM Lane V/C Ratio	-	-	0.064	0.041
HCM Control Delay (s)	-	-	14.5	9.9
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	383	455	0	0	0
Future Vol, veh/h	0	383	455	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	399	474	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	474
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	0	0	595
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	595
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
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	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	376	4	0	453	3	0	0	40	2	0	2
Future Vol, veh/h	3	376	4	0	453	3	0	0	40	2	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	Stop	-	-	None
Storage Length	225	-	0	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	3	0	0	0
Mvmt Flow	3	396	4	0	477	3	0	0	42	2	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	480	0	-	-	-	0	-	-	396	879	879	477
Stage 1	-	-	-	-	-	-	-	-	-	477	477	-
Stage 2	-	-	-	-	-	-	-	-	-	402	402	-
Critical Hdwy	4.1	-	-	-	-	-	-	-	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	-	-	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1093	-	0	0	-	-	0	0	651	270	288	592
Stage 1	-	-	0	0	-	-	0	0	-	573	559	-
Stage 2	-	-	0	0	-	-	0	0	-	629	604	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1093	-	-	-	-	-	-	-	651	252	287	592
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	252	287	-
Stage 1	-	-	-	-	-	-	-	-	-	571	559	-
Stage 2	-	-	-	-	-	-	-	-	-	587	602	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	10.9	15.3
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	651	1093	-	-	-	354
HCM Lane V/C Ratio	0.065	0.003	-	-	-	0.012
HCM Control Delay (s)	10.9	8.3	-	-	-	15.3
HCM Lane LOS	B	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	-	0

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	19	19	7	7	0
Future Vol, veh/h	0	19	19	7	7	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	2	2
Mvmt Flow	0	22	22	8	8	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	60	8	8	0	-	0
Stage 1	8	-	-	-	-	-
Stage 2	52	-	-	-	-	-
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	947	1074	1612	-	-	-
Stage 1	1015	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	934	1074	1612	-	-	-
Mov Cap-2 Maneuver	934	-	-	-	-	-
Stage 1	1001	-	-	-	-	-
Stage 2	970	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	5.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1612	-	1074	-	-
HCM Lane V/C Ratio	0.014	-	0.021	-	-
HCM Control Delay (s)	7.3	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

APPENDIX D: BACKGROUND DEVELOPMENT TRIP GENERATION

6700 Bleight Drive (BG)

Land Use	ITE Code	Size	------ Weekday ------							------ Weekend ------			
			AM Peak Hour			PM Peak Hour			Daily	Saturday Peak Hour			Sat Daily
			In	Out	Total	In	Out	Total	Total	In	Out	Total	Total
Proposed Use													
*Single-Family Attached Housing (RATES)	215	11 DU	1	4	5	4	2	6	79	3	3	6	96
		Total Trips	**1**	**4**	**5**	**4**	**2**	**6**	**79**	**3**	**3**	**6**	**96**

**ITE equations not applicable for proposed density - ITE rates used in lieu.*

APPENDIX E: INTERSECTION ANALYSIS WORKSHEETS – FUTURE WITHOUT DEVELOPMENT (2029)

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	343	384	5	15	22
Future Vol, veh/h	8	343	384	5	15	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	13	3	6	25	0	10
Mvmt Flow	9	373	417	5	16	24

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	422	0	-	0	811	420
Stage 1	-	-	-	-	420	-
Stage 2	-	-	-	-	391	-
Critical Hdwy	4.23	-	-	-	6.4	6.3
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.317	-	-	-	3.5	3.39
Pot Cap-1 Maneuver	1081	-	-	-	352	617
Stage 1	-	-	-	-	667	-
Stage 2	-	-	-	-	688	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1081	-	-	-	349	617
Mov Cap-2 Maneuver	-	-	-	-	349	-
Stage 1	-	-	-	-	662	-
Stage 2	-	-	-	-	688	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	13.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1081	-	-	-	471
HCM Lane V/C Ratio	0.008	-	-	-	0.085
HCM Control Delay (s)	8.4	-	-	-	13.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

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	9	332	17	23	365	13	24	0	29	0	0	0
Future Vol, veh/h	9	332	17	23	365	13	24	0	29	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	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	140	-	140	-	-	-	-	-	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, %	0	3	6	9	8	0	0	0	3	0	0	0
Mvmt Flow	10	361	18	25	397	14	26	0	32	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	411	0	0	379	0	0	835	842	361
Stage 1	-	-	-	-	-	-	381	381	-
Stage 2	-	-	-	-	-	-	454	461	-
Critical Hdwy	4.1	-	-	4.19	-	-	6.4	6.5	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.2	-	-	2.281	-	-	3.5	4	3.327
Pot Cap-1 Maneuver	1159	-	-	1142	-	-	340	303	681
Stage 1	-	-	-	-	-	-	695	617	-
Stage 2	-	-	-	-	-	-	644	569	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1159	-	-	1142	-	-	329	0	681
Mov Cap-2 Maneuver	-	-	-	-	-	-	329	0	-
Stage 1	-	-	-	-	-	-	689	0	-
Stage 2	-	-	-	-	-	-	630	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.2	0.5	13.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	329	681	1159	-	-	1142	-	-
HCM Lane V/C Ratio	0.079	0.046	0.008	-	-	0.022	-	-
HCM Control Delay (s)	16.9	10.5	8.1	-	-	8.2	-	-
HCM Lane LOS	C	B	A	-	-	A	-	-
HCM 95th %tile Q(veh)	0.3	0.1	0	-	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰	↱
Traffic Vol, veh/h	1	360	396	7	2	5
Future Vol, veh/h	1	360	396	7	2	5
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	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	7	14	0	20
Mvmt Flow	1	391	430	8	2	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	438	0	-	0	632	219
Stage 1	-	-	-	-	434	-
Stage 2	-	-	-	-	198	-
Critical Hdwy	4.1	-	-	-	6.8	7.3
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.5
Pot Cap-1 Maneuver	1133	-	-	-	417	732
Stage 1	-	-	-	-	627	-
Stage 2	-	-	-	-	822	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1133	-	-	-	417	732
Mov Cap-2 Maneuver	-	-	-	-	417	-
Stage 1	-	-	-	-	626	-
Stage 2	-	-	-	-	822	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1133	-	-	-	417	732
HCM Lane V/C Ratio	0.001	-	-	-	0.005	0.007
HCM Control Delay (s)	8.2	-	-	-	13.7	10
HCM Lane LOS	A	-	-	-	B	B
HCM 95th %tile Q(veh)	0	-	-	-	0	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↱			↗
Traffic Vol, veh/h	0	362	403	5	1	0
Future Vol, veh/h	0	362	403	5	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	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	393	438	5	1	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	635	438
Stage 1	-	-	-	-	438	-
Stage 2	-	-	-	-	197	-
Critical Hdwy	-	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	-	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	0	-	-	0	426	618
Stage 1	0	-	-	0	650	-
Stage 2	0	-	-	0	817	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	426	618
Mov Cap-2 Maneuver	-	-	-	-	426	-
Stage 1	-	-	-	-	650	-
Stage 2	-	-	-	-	817	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
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	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	333	15	0	400	11	0	0	64	6	0	8
Future Vol, veh/h	15	333	15	0	400	11	0	0	64	6	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	Stop	-	-	None
Storage Length	225	-	0	-	-	225	-	-	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, %	0	3	0	0	7	36	0	0	3	33	0	13
Mvmt Flow	16	362	16	0	435	12	0	0	70	7	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	447	0	-	-	-	0	-	-	362	829	829	435
Stage 1	-	-	-	-	-	-	-	-	-	435	435	-
Stage 2	-	-	-	-	-	-	-	-	-	394	394	-
Critical Hdwy	4.1	-	-	-	-	-	-	-	6.23	7.43	6.5	6.33
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.43	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.43	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	-	-	3.327	3.797	4	3.417
Pot Cap-1 Maneuver	1124	-	0	0	-	-	0	0	680	257	308	598
Stage 1	-	-	0	0	-	-	0	0	-	544	584	-
Stage 2	-	-	0	0	-	-	0	0	-	573	609	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1124	-	-	-	-	-	-	-	680	228	304	598
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	228	304	-
Stage 1	-	-	-	-	-	-	-	-	-	536	584	-
Stage 2	-	-	-	-	-	-	-	-	-	507	600	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	10.9	15.7
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	680	1124	-	-	-	353
HCM Lane V/C Ratio	0.102	0.015	-	-	-	0.043
HCM Control Delay (s)	10.9	8.2	-	-	-	15.7
HCM Lane LOS	B	A	-	-	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	24	9	4	13	0
Future Vol, veh/h	0	24	9	4	13	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	26	10	4	14	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	38	14	14	0	-	0
Stage 1	14	-	-	-	-	-
Stage 2	24	-	-	-	-	-
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	974	1066	1604	-	-	-
Stage 1	1009	-	-	-	-	-
Stage 2	999	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	968	1066	1604	-	-	-
Mov Cap-2 Maneuver	968	-	-	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	999	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1604	-	1066	-	-
HCM Lane V/C Ratio	0.006	-	0.024	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	28	539	535	17	14	21
Future Vol, veh/h	28	539	535	17	14	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	4	3	1	0	0	0
Mvmt Flow	29	550	546	17	14	21

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	563	0	-	0	1163	555
Stage 1	-	-	-	-	555	-
Stage 2	-	-	-	-	608	-
Critical Hdwy	4.14	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.236	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	999	-	-	-	217	535
Stage 1	-	-	-	-	579	-
Stage 2	-	-	-	-	547	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	999	-	-	-	211	535
Mov Cap-2 Maneuver	-	-	-	-	211	-
Stage 1	-	-	-	-	562	-
Stage 2	-	-	-	-	547	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	17.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	999	-	-	-	331
HCM Lane V/C Ratio	0.029	-	-	-	0.108
HCM Control Delay (s)	8.7	-	-	-	17.2
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	503	31	61	523	17	29	5	18	0	0	0
Future Vol, veh/h	19	503	31	61	523	17	29	5	18	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	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	140	-	140	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	0	3	3	2	1	0	7	0	0	0	0	0
Mvmt Flow	19	508	31	62	528	17	29	5	18	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	545	0	0	539	0	0	1207	1215	508
Stage 1	-	-	-	-	-	-	546	546	-
Stage 2	-	-	-	-	-	-	661	669	-
Critical Hdwy	4.1	-	-	4.12	-	-	6.47	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.47	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.47	5.5	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.563	4	3.3
Pot Cap-1 Maneuver	1034	-	-	1029	-	-	198	183	569
Stage 1	-	-	-	-	-	-	571	521	-
Stage 2	-	-	-	-	-	-	504	459	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1034	-	-	1029	-	-	183	0	569
Mov Cap-2 Maneuver	-	-	-	-	-	-	183	0	-
Stage 1	-	-	-	-	-	-	561	0	-
Stage 2	-	-	-	-	-	-	474	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.3	0.9	23.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	183	569	1034	-	-	1029	-	-
HCM Lane V/C Ratio	0.188	0.032	0.019	-	-	0.06	-	-
HCM Control Delay (s)	29.2	11.5	8.5	-	-	8.7	-	-
HCM Lane LOS	D	B	A	-	-	A	-	-
HCM 95th %tile Q(veh)	0.7	0.1	0.1	-	-	0.2	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰	↱
Traffic Vol, veh/h	0	521	575	0	12	26
Future Vol, veh/h	0	521	575	0	12	26
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	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	3	0	0	0	0
Mvmt Flow	0	532	587	0	12	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	853	294
Stage 1	-	-	-	-	587	-
Stage 2	-	-	-	-	266	-
Critical Hdwy	-	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	302	708
Stage 1	0	-	-	0	524	-
Stage 2	0	-	-	0	760	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	302	708
Mov Cap-2 Maneuver	-	-	-	-	302	-
Stage 1	-	-	-	-	524	-
Stage 2	-	-	-	-	760	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.5
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	302	708
HCM Lane V/C Ratio	-	-	0.041	0.037
HCM Control Delay (s)	-	-	17.4	10.3
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	0.1	0.1

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	533	569	0	0	6
Future Vol, veh/h	0	533	569	0	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	544	581	0	0	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	581
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.319
Pot Cap-1 Maneuver	0	-	-	0	0	513
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	513
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.1
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	513
HCM Lane V/C Ratio	-	-	0.012
HCM Control Delay (s)	-	-	12.1
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0

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	16	493	24	0	550	5	0	0	33	6	0	19
Future Vol, veh/h	16	493	24	0	550	5	0	0	33	6	0	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	Stop	-	-	None
Storage Length	225	-	0	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	5	1	0	0	0	0	0	0	3	0	0	0
Mvmt Flow	16	508	25	0	567	5	0	0	34	6	0	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	572	0	-	-	-	0	-	-	508	1107	1107	567
Stage 1	-	-	-	-	-	-	-	-	-	567	567	-
Stage 2	-	-	-	-	-	-	-	-	-	540	540	-
Critical Hdwy	4.15	-	-	-	-	-	-	-	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Follow-up Hdwy	2.245	-	-	-	-	-	-	-	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	986	-	0	0	-	-	0	0	563	189	212	527
Stage 1	-	-	0	0	-	-	0	0	-	512	510	-
Stage 2	-	-	0	0	-	-	0	0	-	530	524	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	986	-	-	-	-	-	-	-	563	175	209	527
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	175	209	-
Stage 1	-	-	-	-	-	-	-	-	-	504	510	-
Stage 2	-	-	-	-	-	-	-	-	-	490	516	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	11.8	15.9
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	563	986	-	-	-	355
HCM Lane V/C Ratio	0.06	0.017	-	-	-	0.073
HCM Control Delay (s)	11.8	8.7	-	-	-	15.9
HCM Lane LOS	B	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	0.1	-	-	-	0.2

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	25	29	16	10	0
Future Vol, veh/h	0	25	29	16	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	27	32	17	11	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	92	11	11	0	-	0
Stage 1	11	-	-	-	-	-
Stage 2	81	-	-	-	-	-
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	908	1070	1608	-	-	-
Stage 1	1012	-	-	-	-	-
Stage 2	942	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	890	1070	1608	-	-	-
Mov Cap-2 Maneuver	890	-	-	-	-	-
Stage 1	992	-	-	-	-	-
Stage 2	942	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	4.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1608	-	1070	-	-
HCM Lane V/C Ratio	0.02	-	0.025	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	411	465	14	16	13
Future Vol, veh/h	15	411	465	14	16	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	8	0	8
Mvmt Flow	16	447	505	15	17	14

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	520	0	-	0	992	513
Stage 1	-	-	-	-	513	-
Stage 2	-	-	-	-	479	-
Critical Hdwy	4.1	-	-	-	6.4	6.28
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.372
Pot Cap-1 Maneuver	1056	-	-	-	275	549
Stage 1	-	-	-	-	605	-
Stage 2	-	-	-	-	627	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1056	-	-	-	271	549
Mov Cap-2 Maneuver	-	-	-	-	271	-
Stage 1	-	-	-	-	596	-
Stage 2	-	-	-	-	627	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	16.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1056	-	-	-	351
HCM Lane V/C Ratio	0.015	-	-	-	0.09
HCM Control Delay (s)	8.5	-	-	-	16.3
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	374	30	43	455	26	23	2	17	0	0	1
Future Vol, veh/h	23	374	30	43	455	26	23	2	17	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	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	140	-	140	-	-	-	-	-	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, %	4	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	25	407	33	47	495	28	25	2	18	0	0	1

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	523	0	0	440	0	0	1060	1074	407
Stage 1	-	-	-	-	-	-	457	457	-
Stage 2	-	-	-	-	-	-	603	617	-
Critical Hdwy	4.14	-	-	4.1	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.236	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	1033	-	-	1131	-	-	250	222	648
Stage 1	-	-	-	-	-	-	642	571	-
Stage 2	-	-	-	-	-	-	550	484	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1033	-	-	1131	-	-	234	0	648
Mov Cap-2 Maneuver	-	-	-	-	-	-	234	0	-
Stage 1	-	-	-	-	-	-	627	0	-
Stage 2	-	-	-	-	-	-	527	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.5	0.7	17.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	234	648	1033	-	-	1131	-	-
HCM Lane V/C Ratio	0.116	0.029	0.024	-	-	0.041	-	-
HCM Control Delay (s)	22.4	10.7	8.6	-	-	8.3	-	-
HCM Lane LOS	C	B	A	-	-	A	-	-
HCM 95th %tile Q(veh)	0.4	0.1	0.1	-	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰	↱
Traffic Vol, veh/h	0	391	493	0	25	31
Future Vol, veh/h	0	391	493	0	25	31
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	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	403	508	0	26	32

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	710	254
Stage 1	-	-	-	-	508	-
Stage 2	-	-	-	-	202	-
Critical Hdwy	-	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	372	752
Stage 1	0	-	-	0	575	-
Stage 2	0	-	-	0	818	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	372	752
Mov Cap-2 Maneuver	-	-	-	-	372	-
Stage 1	-	-	-	-	575	-
Stage 2	-	-	-	-	818	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.4
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	372	752
HCM Lane V/C Ratio	-	-	0.069	0.042
HCM Control Delay (s)	-	-	15.4	10
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	0.2	0.1

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↱			↗
Traffic Vol, veh/h	1	415	493	0	0	0
Future Vol, veh/h	1	415	493	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	432	514	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	514	0	-	0	-	514
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.1	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.2	-	-	-	-	3.3
Pot Cap-1 Maneuver	1062	-	-	0	0	564
Stage 1	-	-	-	0	0	-
Stage 2	-	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	1062	-	-	-	-	564
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1
Capacity (veh/h)	1062	-	-	-
HCM Lane V/C Ratio	0.001	-	-	-
HCM Control Delay (s)	8.4	-	-	0
HCM Lane LOS	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	408	4	0	491	3	0	0	40	2	0	2
Future Vol, veh/h	3	408	4	0	491	3	0	0	40	2	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	Stop	-	-	None
Storage Length	225	-	0	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	3	0	0	0
Mvmt Flow	3	429	4	0	517	3	0	0	42	2	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	520	0	-	-	-	0	-	-	429	952	952	517
Stage 1	-	-	-	-	-	-	-	-	-	517	517	-
Stage 2	-	-	-	-	-	-	-	-	-	435	435	-
Critical Hdwy	4.1	-	-	-	-	-	-	-	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	-	-	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1056	-	0	0	-	-	0	0	624	241	261	562
Stage 1	-	-	0	0	-	-	0	0	-	545	537	-
Stage 2	-	-	0	0	-	-	0	0	-	604	584	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1056	-	-	-	-	-	-	-	624	224	260	562
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	224	260	-
Stage 1	-	-	-	-	-	-	-	-	-	543	537	-
Stage 2	-	-	-	-	-	-	-	-	-	562	582	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	11.2	16.4
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	624	1056	-	-	-	320
HCM Lane V/C Ratio	0.067	0.003	-	-	-	0.013
HCM Control Delay (s)	11.2	8.4	-	-	-	16.4
HCM Lane LOS	B	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	-	0

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	19	19	10	10	0
Future Vol, veh/h	0	19	19	10	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	21	21	11	11	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	64	11	11	0	-	0
Stage 1	11	-	-	-	-	-
Stage 2	53	-	-	-	-	-
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	942	1070	1608	-	-	-
Stage 1	1012	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	930	1070	1608	-	-	-
Mov Cap-2 Maneuver	930	-	-	-	-	-
Stage 1	999	-	-	-	-	-
Stage 2	970	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	4.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1608	-	1070	-	-
HCM Lane V/C Ratio	0.013	-	0.019	-	-
HCM Control Delay (s)	7.3	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

APPENDIX F: INTERSECTION ANALYSIS WORKSHEETS – FUTURE WITH DEVELOPMENT (2029)

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	345	390	5	21	25
Future Vol, veh/h	9	345	390	5	21	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	13	3	6	25	0	10
Mvmt Flow	10	375	424	5	23	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	429	0	-	0	822	427
Stage 1	-	-	-	-	427	-
Stage 2	-	-	-	-	395	-
Critical Hdwy	4.23	-	-	-	6.4	6.3
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.317	-	-	-	3.5	3.39
Pot Cap-1 Maneuver	1074	-	-	-	346	611
Stage 1	-	-	-	-	662	-
Stage 2	-	-	-	-	685	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1074	-	-	-	343	611
Mov Cap-2 Maneuver	-	-	-	-	343	-
Stage 1	-	-	-	-	656	-
Stage 2	-	-	-	-	685	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	14
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1074	-	-	-	450
HCM Lane V/C Ratio	0.009	-	-	-	0.111
HCM Control Delay (s)	8.4	-	-	-	14
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	338	17	24	360	24	24	0	29	8	0	11
Future Vol, veh/h	11	338	17	24	360	24	24	0	29	8	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0	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	140	-	140	-	-	-	-	-	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, %	0	3	6	9	8	0	0	0	3	0	0	0
Mvmt Flow	12	367	18	26	391	26	26	0	32	9	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	417	0	0	385	0	0	853	860	367	872	865	404
Stage 1	-	-	-	-	-	-	391	391	-	456	456	-
Stage 2	-	-	-	-	-	-	462	469	-	416	409	-
Critical Hdwy	4.1	-	-	4.19	-	-	7.1	6.5	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.281	-	-	3.5	4	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1153	-	-	1136	-	-	281	296	676	273	294	651
Stage 1	-	-	-	-	-	-	637	611	-	588	572	-
Stage 2	-	-	-	-	-	-	584	564	-	618	600	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1153	-	-	1136	-	-	269	286	676	254	284	651
Mov Cap-2 Maneuver	-	-	-	-	-	-	269	286	-	254	284	-
Stage 1	-	-	-	-	-	-	631	605	-	582	559	-
Stage 2	-	-	-	-	-	-	560	551	-	583	594	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.5	14.8	14.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	269	676	1153	-	-	1136	-	-	393
HCM Lane V/C Ratio	0.097	0.047	0.01	-	-	0.023	-	-	0.053
HCM Control Delay (s)	19.8	10.6	8.2	-	-	8.2	-	-	14.7
HCM Lane LOS	C	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0.1	0	-	-	0.1	-	-	0.2

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	375	407	5	0	1
Future Vol, veh/h	0	375	407	5	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	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	408	442	5	0	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	442
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.319
Pot Cap-1 Maneuver	0	-	-	0	0	615
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	615
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	615
HCM Lane V/C Ratio	-	-	0.002
HCM Control Delay (s)	-	-	10.9
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	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	15	345	15	0	404	11	0	0	64	6	0	8
Future Vol, veh/h	15	345	15	0	404	11	0	0	64	6	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	Stop	-	-	None
Storage Length	225	-	0	-	-	225	-	-	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, %	0	3	0	0	7	36	0	0	3	33	0	13
Mvmt Flow	16	375	16	0	439	12	0	0	70	7	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	451	0	-	-	-	0	-	-	375	846	846	439
Stage 1	-	-	-	-	-	-	-	-	-	439	439	-
Stage 2	-	-	-	-	-	-	-	-	-	407	407	-
Critical Hdwy	4.1	-	-	-	-	-	-	-	6.23	7.43	6.5	6.33
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.43	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.43	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	-	-	3.327	3.797	4	3.417
Pot Cap-1 Maneuver	1120	-	0	0	-	-	0	0	669	250	301	595
Stage 1	-	-	0	0	-	-	0	0	-	541	582	-
Stage 2	-	-	0	0	-	-	0	0	-	564	601	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1120	-	-	-	-	-	-	-	669	222	297	595
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	222	297	-
Stage 1	-	-	-	-	-	-	-	-	-	533	582	-
Stage 2	-	-	-	-	-	-	-	-	-	498	593	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	11	15.9
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	669	1120	-	-	-	346
HCM Lane V/C Ratio	0.104	0.015	-	-	-	0.044
HCM Control Delay (s)	11	8.3	-	-	-	15.9
HCM Lane LOS	B	A	-	-	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	24	9	0	0	9	4	1	0	13	0
Future Vol, veh/h	0	0	24	9	0	0	9	4	1	0	13	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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	26	10	0	0	10	4	1	0	14	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	39	39	14	52	39	5	14	0	0	5	0	0
Stage 1	14	14	-	25	25	-	-	-	-	-	-	-
Stage 2	25	25	-	27	14	-	-	-	-	-	-	-
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	966	853	1066	947	853	1078	1604	-	-	1616	-	-
Stage 1	1006	884	-	993	874	-	-	-	-	-	-	-
Stage 2	993	874	-	990	884	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	961	848	1066	920	848	1078	1604	-	-	1616	-	-
Mov Cap-2 Maneuver	961	848	-	920	848	-	-	-	-	-	-	-
Stage 1	1000	884	-	987	869	-	-	-	-	-	-	-
Stage 2	987	869	-	966	884	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.5	9	4.7	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1604	-	-	1066	920	1616	-	-
HCM Lane V/C Ratio	0.006	-	-	0.024	0.011	-	-	-
HCM Control Delay (s)	7.3	0	-	8.5	9	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	32	543	539	17	18	19
Future Vol, veh/h	32	543	539	17	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	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	4	3	1	0	0	0
Mvmt Flow	33	554	550	17	18	19

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	567	0	-	0	1179	559
Stage 1	-	-	-	-	559	-
Stage 2	-	-	-	-	620	-
Critical Hdwy	4.14	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.236	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	995	-	-	-	212	532
Stage 1	-	-	-	-	576	-
Stage 2	-	-	-	-	540	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	995	-	-	-	205	532
Mov Cap-2 Maneuver	-	-	-	-	205	-
Stage 1	-	-	-	-	557	-
Stage 2	-	-	-	-	540	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	18.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	995	-	-	-	300
HCM Lane V/C Ratio	0.033	-	-	-	0.126
HCM Control Delay (s)	8.7	-	-	-	18.7
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	507	31	61	497	27	29	5	18	16	0	30
Future Vol, veh/h	23	507	31	61	497	27	29	5	18	16	0	30
Conflicting Peds, #/hr	0	0	0	0	0	0	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	140	-	140	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	0	3	3	2	1	0	7	0	0	0	0	0
Mvmt Flow	23	512	31	62	502	27	29	5	18	16	0	30

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	529	0	0	543	0	0	1213	1211	512	1225	1229	516
Stage 1	-	-	-	-	-	-	558	558	-	640	640	-
Stage 2	-	-	-	-	-	-	655	653	-	585	589	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.17	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.17	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.17	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.563	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1048	-	-	1026	-	-	155	184	566	157	179	563
Stage 1	-	-	-	-	-	-	505	515	-	467	473	-
Stage 2	-	-	-	-	-	-	447	467	-	501	499	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1048	-	-	1026	-	-	138	169	566	139	165	563
Mov Cap-2 Maneuver	-	-	-	-	-	-	138	169	-	139	165	-
Stage 1	-	-	-	-	-	-	494	504	-	457	445	-
Stage 2	-	-	-	-	-	-	397	439	-	470	488	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.9	29.1	20.9
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	142	566	1048	-	-	1026	-	-	273
HCM Lane V/C Ratio	0.242	0.032	0.022	-	-	0.06	-	-	0.17
HCM Control Delay (s)	38.3	11.6	8.5	-	-	8.7	-	-	20.9
HCM Lane LOS	E	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.9	0.1	0.1	-	-	0.2	-	-	0.6

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	541	579	0	0	6
Future Vol, veh/h	0	541	579	0	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	552	591	0	0	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	591
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.319
Pot Cap-1 Maneuver	0	-	-	0	0	506
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	506
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.2
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	506
HCM Lane V/C Ratio	-	-	0.012
HCM Control Delay (s)	-	-	12.2
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0

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	16	501	24	0	560	5	0	0	33	6	0	19
Future Vol, veh/h	16	501	24	0	560	5	0	0	33	6	0	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	Stop	-	-	None
Storage Length	225	-	0	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	5	1	0	0	0	0	0	0	3	0	0	0
Mvmt Flow	16	516	25	0	577	5	0	0	34	6	0	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	582	0	-	-	-	0	-	-	516	1125	1125	577
Stage 1	-	-	-	-	-	-	-	-	-	577	577	-
Stage 2	-	-	-	-	-	-	-	-	-	548	548	-
Critical Hdwy	4.15	-	-	-	-	-	-	-	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Follow-up Hdwy	2.245	-	-	-	-	-	-	-	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	978	-	0	0	-	-	0	0	557	184	207	520
Stage 1	-	-	0	0	-	-	0	0	-	506	505	-
Stage 2	-	-	0	0	-	-	0	0	-	524	520	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	978	-	-	-	-	-	-	-	557	171	204	520
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	171	204	-
Stage 1	-	-	-	-	-	-	-	-	-	498	505	-
Stage 2	-	-	-	-	-	-	-	-	-	484	512	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	11.9	16.1
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	557	978	-	-	-	349
HCM Lane V/C Ratio	0.061	0.017	-	-	-	0.074
HCM Control Delay (s)	11.9	8.7	-	-	-	16.1
HCM Lane LOS	B	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	0.1	-	-	-	0.2

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	22	5	0	0	29	16	4	0	10	0
Future Vol, veh/h	0	0	22	5	0	0	29	16	4	0	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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	24	5	0	0	32	17	4	0	11	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	94	96	11	106	94	19	11	0	0	21	0	0
Stage 1	11	11	-	83	83	-	-	-	-	-	-	-
Stage 2	83	85	-	23	11	-	-	-	-	-	-	-
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	889	794	1070	873	796	1059	1608	-	-	1595	-	-
Stage 1	1010	886	-	925	826	-	-	-	-	-	-	-
Stage 2	925	824	-	995	886	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	876	778	1070	841	780	1059	1608	-	-	1595	-	-
Mov Cap-2 Maneuver	876	778	-	841	780	-	-	-	-	-	-	-
Stage 1	990	886	-	907	809	-	-	-	-	-	-	-
Stage 2	907	808	-	973	886	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.4	9.3	4.3	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1608	-	-	1070	841	1595	-	-
HCM Lane V/C Ratio	0.02	-	-	0.022	0.006	-	-	-
HCM Control Delay (s)	7.3	0	-	8.4	9.3	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	416	470	14	22	15
Future Vol, veh/h	19	416	470	14	22	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	8	0	8
Mvmt Flow	21	452	511	15	24	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	526	0	-	0	1013	519
Stage 1	-	-	-	-	519	-
Stage 2	-	-	-	-	494	-
Critical Hdwy	4.1	-	-	-	6.4	6.28
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.372
Pot Cap-1 Maneuver	1051	-	-	-	267	545
Stage 1	-	-	-	-	601	-
Stage 2	-	-	-	-	617	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1051	-	-	-	262	545
Mov Cap-2 Maneuver	-	-	-	-	262	-
Stage 1	-	-	-	-	589	-
Stage 2	-	-	-	-	617	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	17.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1051	-	-	-	332
HCM Lane V/C Ratio	0.02	-	-	-	0.121
HCM Control Delay (s)	8.5	-	-	-	17.3
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	380	30	43	423	37	23	2	17	31	0	38
Future Vol, veh/h	28	380	30	43	423	37	23	2	17	31	0	38
Conflicting Peds, #/hr	0	0	0	0	0	0	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	140	-	140	-	-	-	-	-	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, %	4	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	30	413	33	47	460	40	25	2	18	34	0	41

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	500	0	0	446	0	0	1068	1067	413	1074	1080	480
Stage 1	-	-	-	-	-	-	473	473	-	574	574	-
Stage 2	-	-	-	-	-	-	595	594	-	500	506	-
Critical Hdwy	4.14	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.236	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1054	-	-	1125	-	-	201	224	643	199	220	590
Stage 1	-	-	-	-	-	-	576	562	-	507	506	-
Stage 2	-	-	-	-	-	-	494	496	-	557	543	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1054	-	-	1125	-	-	177	209	643	182	205	590
Mov Cap-2 Maneuver	-	-	-	-	-	-	177	209	-	182	205	-
Stage 1	-	-	-	-	-	-	560	546	-	493	485	-
Stage 2	-	-	-	-	-	-	440	475	-	524	528	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.7	21.5	21.4
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	179	643	1054	-	-	1125	-	-	294
HCM Lane V/C Ratio	0.152	0.029	0.029	-	-	0.042	-	-	0.255
HCM Control Delay (s)	28.7	10.8	8.5	-	-	8.3	-	-	21.4
HCM Lane LOS	D	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.5	0.1	0.1	-	-	0.1	-	-	1

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	428	503	0	0	0
Future Vol, veh/h	0	428	503	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	446	524	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	524
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	0	0	557
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	557
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
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	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	421	4	0	501	3	0	0	40	2	0	2
Future Vol, veh/h	3	421	4	0	501	3	0	0	40	2	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	Stop	-	-	None
Storage Length	225	-	0	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	3	0	0	0
Mvmt Flow	3	443	4	0	527	3	0	0	42	2	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	530	0	-	-	-	0	-	-	443	976	976	527
Stage 1	-	-	-	-	-	-	-	-	-	527	527	-
Stage 2	-	-	-	-	-	-	-	-	-	449	449	-
Critical Hdwy	4.1	-	-	-	-	-	-	-	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	-	-	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1048	-	0	0	-	-	0	0	613	232	253	555
Stage 1	-	-	0	0	-	-	0	0	-	538	532	-
Stage 2	-	-	0	0	-	-	0	0	-	593	576	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1048	-	-	-	-	-	-	-	613	216	252	555
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	216	252	-
Stage 1	-	-	-	-	-	-	-	-	-	536	532	-
Stage 2	-	-	-	-	-	-	-	-	-	551	574	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	11.3	16.7
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	613	1048	-	-	-	311
HCM Lane V/C Ratio	0.069	0.003	-	-	-	0.014
HCM Control Delay (s)	11.3	8.4	-	-	-	16.7
HCM Lane LOS	B	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	-	0

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	19	8	0	0	19	10	4	0	10	0
Future Vol, veh/h	0	0	19	8	0	0	19	10	4	0	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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	21	9	0	0	21	11	4	0	11	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	66	68	11	77	66	13	11	0	0	15	0	0
Stage 1	11	11	-	55	55	-	-	-	-	-	-	-
Stage 2	55	57	-	22	11	-	-	-	-	-	-	-
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	927	823	1070	912	825	1067	1608	-	-	1603	-	-
Stage 1	1010	886	-	957	849	-	-	-	-	-	-	-
Stage 2	957	847	-	996	886	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	918	812	1070	886	814	1067	1608	-	-	1603	-	-
Mov Cap-2 Maneuver	918	812	-	886	814	-	-	-	-	-	-	-
Stage 1	997	886	-	945	838	-	-	-	-	-	-	-
Stage 2	945	836	-	977	886	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.4	9.1	4.2	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1608	-	-	1070	886	1603	-	-
HCM Lane V/C Ratio	0.013	-	-	0.019	0.01	-	-	-
HCM Control Delay (s)	7.3	0	-	8.4	9.1	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

APPENDIX G: INTERSECTION ANALYSIS WORKSHEETS – FUTURE WITH DEVELOPMENT (2029) MITIGATED

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	345	390	5	21	25
Future Vol, veh/h	9	345	390	5	21	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	13	3	6	25	0	10
Mvmt Flow	10	375	424	5	23	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	429	0	-	0	822	427
Stage 1	-	-	-	-	427	-
Stage 2	-	-	-	-	395	-
Critical Hdwy	4.23	-	-	-	6.4	6.3
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.317	-	-	-	3.5	3.39
Pot Cap-1 Maneuver	1074	-	-	-	346	611
Stage 1	-	-	-	-	662	-
Stage 2	-	-	-	-	685	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1074	-	-	-	343	611
Mov Cap-2 Maneuver	-	-	-	-	343	-
Stage 1	-	-	-	-	656	-
Stage 2	-	-	-	-	685	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	14
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1074	-	-	-	450
HCM Lane V/C Ratio	0.009	-	-	-	0.111
HCM Control Delay (s)	8.4	-	-	-	14
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	338	17	24	360	24	24	0	29	8	0	11
Future Vol, veh/h	11	338	17	24	360	24	24	0	29	8	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0	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	140	-	140	-	-	0	-	-	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, %	0	3	6	9	8	0	0	0	3	0	0	0
Mvmt Flow	12	367	18	26	391	26	26	0	32	9	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	417	0	0	385	0	0	853	860	367	859	852	391
Stage 1	-	-	-	-	-	-	391	391	-	443	443	-
Stage 2	-	-	-	-	-	-	462	469	-	416	409	-
Critical Hdwy	4.1	-	-	4.19	-	-	7.1	6.5	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.281	-	-	3.5	4	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1153	-	-	1136	-	-	281	296	676	279	299	662
Stage 1	-	-	-	-	-	-	637	611	-	598	579	-
Stage 2	-	-	-	-	-	-	584	564	-	618	600	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1153	-	-	1136	-	-	269	286	676	259	289	662
Mov Cap-2 Maneuver	-	-	-	-	-	-	269	286	-	259	289	-
Stage 1	-	-	-	-	-	-	631	605	-	592	566	-
Stage 2	-	-	-	-	-	-	560	551	-	583	594	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.5	14.8	14.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	269	676	1153	-	-	1136	-	-	400
HCM Lane V/C Ratio	0.097	0.047	0.01	-	-	0.023	-	-	0.052
HCM Control Delay (s)	19.8	10.6	8.2	-	-	8.2	-	-	14.5
HCM Lane LOS	C	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0.1	0	-	-	0.1	-	-	0.2

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↱			↗
Traffic Vol, veh/h	0	375	407	5	0	1
Future Vol, veh/h	0	375	407	5	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	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	408	442	5	0	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	442
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.319
Pot Cap-1 Maneuver	0	-	-	0	0	615
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	615
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	615
HCM Lane V/C Ratio	-	-	0.002
HCM Control Delay (s)	-	-	10.9
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	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	15	345	15	0	404	11	0	0	64	6	0	8
Future Vol, veh/h	15	345	15	0	404	11	0	0	64	6	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	Stop	-	-	None
Storage Length	225	-	0	-	-	225	-	-	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, %	0	3	0	0	7	36	0	0	3	33	0	13
Mvmt Flow	16	375	16	0	439	12	0	0	70	7	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	451	0	-	-	-	0	-	-	375	846	846	439
Stage 1	-	-	-	-	-	-	-	-	-	439	439	-
Stage 2	-	-	-	-	-	-	-	-	-	407	407	-
Critical Hdwy	4.1	-	-	-	-	-	-	-	6.23	7.43	6.5	6.33
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.43	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.43	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	-	-	3.327	3.797	4	3.417
Pot Cap-1 Maneuver	1120	-	0	0	-	-	0	0	669	250	301	595
Stage 1	-	-	0	0	-	-	0	0	-	541	582	-
Stage 2	-	-	0	0	-	-	0	0	-	564	601	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1120	-	-	-	-	-	-	-	669	222	297	595
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	222	297	-
Stage 1	-	-	-	-	-	-	-	-	-	533	582	-
Stage 2	-	-	-	-	-	-	-	-	-	498	593	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	11	15.9
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	669	1120	-	-	-	346
HCM Lane V/C Ratio	0.104	0.015	-	-	-	0.044
HCM Control Delay (s)	11	8.3	-	-	-	15.9
HCM Lane LOS	B	A	-	-	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	24	9	0	0	9	4	1	0	13	0
Future Vol, veh/h	0	0	24	9	0	0	9	4	1	0	13	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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	26	10	0	0	10	4	1	0	14	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	39	39	14	52	39	5	14	0	0	5	0	0
Stage 1	14	14	-	25	25	-	-	-	-	-	-	-
Stage 2	25	25	-	27	14	-	-	-	-	-	-	-
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	966	853	1066	947	853	1078	1604	-	-	1616	-	-
Stage 1	1006	884	-	993	874	-	-	-	-	-	-	-
Stage 2	993	874	-	990	884	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	961	848	1066	920	848	1078	1604	-	-	1616	-	-
Mov Cap-2 Maneuver	961	848	-	920	848	-	-	-	-	-	-	-
Stage 1	1000	884	-	987	869	-	-	-	-	-	-	-
Stage 2	987	869	-	966	884	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.5	9	4.7	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1604	-	-	1066	920	1616	-	-
HCM Lane V/C Ratio	0.006	-	-	0.024	0.011	-	-	-
HCM Control Delay (s)	7.3	0	-	8.5	9	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	32	543	539	17	18	19
Future Vol, veh/h	32	543	539	17	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	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	4	3	1	0	0	0
Mvmt Flow	33	554	550	17	18	19

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	567	0	-	0	1179	559
Stage 1	-	-	-	-	559	-
Stage 2	-	-	-	-	620	-
Critical Hdwy	4.14	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.236	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	995	-	-	-	212	532
Stage 1	-	-	-	-	576	-
Stage 2	-	-	-	-	540	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	995	-	-	-	205	532
Mov Cap-2 Maneuver	-	-	-	-	205	-
Stage 1	-	-	-	-	557	-
Stage 2	-	-	-	-	540	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	18.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	995	-	-	-	300
HCM Lane V/C Ratio	0.033	-	-	-	0.126
HCM Control Delay (s)	8.7	-	-	-	18.7
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	507	31	61	497	27	29	5	18	16	0	30
Future Vol, veh/h	23	507	31	61	497	27	29	5	18	16	0	30
Conflicting Peds, #/hr	0	0	0	0	0	0	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	140	-	140	-	-	0	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	0	3	3	2	1	0	7	0	0	0	0	0
Mvmt Flow	23	512	31	62	502	27	29	5	18	16	0	30

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	529	0	0	543	0	0	1213	1211	512	1211	1215	502
Stage 1	-	-	-	-	-	-	558	558	-	626	626	-
Stage 2	-	-	-	-	-	-	655	653	-	585	589	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.17	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.17	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.17	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.563	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1048	-	-	1026	-	-	155	184	566	161	183	573
Stage 1	-	-	-	-	-	-	505	515	-	475	480	-
Stage 2	-	-	-	-	-	-	447	467	-	501	499	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1048	-	-	1026	-	-	138	169	566	143	168	573
Mov Cap-2 Maneuver	-	-	-	-	-	-	138	169	-	143	168	-
Stage 1	-	-	-	-	-	-	494	504	-	465	451	-
Stage 2	-	-	-	-	-	-	398	439	-	470	488	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.9	29.1	20.4
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	142	566	1048	-	-	1026	-	-	280
HCM Lane V/C Ratio	0.242	0.032	0.022	-	-	0.06	-	-	0.166
HCM Control Delay (s)	38.3	11.6	8.5	-	-	8.7	-	-	20.4
HCM Lane LOS	E	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.9	0.1	0.1	-	-	0.2	-	-	0.6

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	541	579	0	0	6
Future Vol, veh/h	0	541	579	0	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	552	591	0	0	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	591
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.319
Pot Cap-1 Maneuver	0	-	-	0	0	506
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	506
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.2
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	506
HCM Lane V/C Ratio	-	-	0.012
HCM Control Delay (s)	-	-	12.2
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0

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	16	501	24	0	560	5	0	0	33	6	0	19
Future Vol, veh/h	16	501	24	0	560	5	0	0	33	6	0	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	Stop	-	-	None
Storage Length	225	-	0	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	5	1	0	0	0	0	0	0	3	0	0	0
Mvmt Flow	16	516	25	0	577	5	0	0	34	6	0	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	582	0	-	-	-	0	-	-	516	1125	1125	577
Stage 1	-	-	-	-	-	-	-	-	-	577	577	-
Stage 2	-	-	-	-	-	-	-	-	-	548	548	-
Critical Hdwy	4.15	-	-	-	-	-	-	-	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Follow-up Hdwy	2.245	-	-	-	-	-	-	-	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	978	-	0	0	-	-	0	0	557	184	207	520
Stage 1	-	-	0	0	-	-	0	0	-	506	505	-
Stage 2	-	-	0	0	-	-	0	0	-	524	520	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	978	-	-	-	-	-	-	-	557	171	204	520
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	171	204	-
Stage 1	-	-	-	-	-	-	-	-	-	498	505	-
Stage 2	-	-	-	-	-	-	-	-	-	484	512	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	11.9	16.1
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	557	978	-	-	-	349
HCM Lane V/C Ratio	0.061	0.017	-	-	-	0.074
HCM Control Delay (s)	11.9	8.7	-	-	-	16.1
HCM Lane LOS	B	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	0.1	-	-	-	0.2

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	22	5	0	0	29	16	4	0	10	0
Future Vol, veh/h	0	0	22	5	0	0	29	16	4	0	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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	24	5	0	0	32	17	4	0	11	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	94	96	11	106	94	19	11	0	0	21	0	0
Stage 1	11	11	-	83	83	-	-	-	-	-	-	-
Stage 2	83	85	-	23	11	-	-	-	-	-	-	-
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	889	794	1070	873	796	1059	1608	-	-	1595	-	-
Stage 1	1010	886	-	925	826	-	-	-	-	-	-	-
Stage 2	925	824	-	995	886	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	876	778	1070	841	780	1059	1608	-	-	1595	-	-
Mov Cap-2 Maneuver	876	778	-	841	780	-	-	-	-	-	-	-
Stage 1	990	886	-	907	809	-	-	-	-	-	-	-
Stage 2	907	808	-	973	886	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.4	9.3	4.3	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1608	-	-	1070	841	1595	-	-
HCM Lane V/C Ratio	0.02	-	-	0.022	0.006	-	-	-
HCM Control Delay (s)	7.3	0	-	8.4	9.3	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	416	470	14	22	15
Future Vol, veh/h	19	416	470	14	22	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	8	0	8
Mvmt Flow	21	452	511	15	24	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	526	0	-	0	1013	519
Stage 1	-	-	-	-	519	-
Stage 2	-	-	-	-	494	-
Critical Hdwy	4.1	-	-	-	6.4	6.28
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.372
Pot Cap-1 Maneuver	1051	-	-	-	267	545
Stage 1	-	-	-	-	601	-
Stage 2	-	-	-	-	617	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1051	-	-	-	262	545
Mov Cap-2 Maneuver	-	-	-	-	262	-
Stage 1	-	-	-	-	589	-
Stage 2	-	-	-	-	617	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	17.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1051	-	-	-	332
HCM Lane V/C Ratio	0.02	-	-	-	0.121
HCM Control Delay (s)	8.5	-	-	-	17.3
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	380	30	43	423	37	23	2	17	31	0	38
Future Vol, veh/h	28	380	30	43	423	37	23	2	17	31	0	38
Conflicting Peds, #/hr	0	0	0	0	0	0	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	140	-	140	-	-	0	-	-	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, %	4	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	30	413	33	47	460	40	25	2	18	34	0	41

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	500	0	0	446	0	0	1068	1067	413	1054	1060	460
Stage 1	-	-	-	-	-	-	473	473	-	554	554	-
Stage 2	-	-	-	-	-	-	595	594	-	500	506	-
Critical Hdwy	4.14	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.236	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1054	-	-	1125	-	-	201	224	643	206	226	605
Stage 1	-	-	-	-	-	-	576	562	-	520	517	-
Stage 2	-	-	-	-	-	-	494	496	-	557	543	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1054	-	-	1125	-	-	177	209	643	188	210	605
Mov Cap-2 Maneuver	-	-	-	-	-	-	177	209	-	188	210	-
Stage 1	-	-	-	-	-	-	560	546	-	505	495	-
Stage 2	-	-	-	-	-	-	441	475	-	524	528	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.7	21.5	20.7
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	179	643	1054	-	-	1125	-	-	303
HCM Lane V/C Ratio	0.152	0.029	0.029	-	-	0.042	-	-	0.248
HCM Control Delay (s)	28.7	10.8	8.5	-	-	8.3	-	-	20.7
HCM Lane LOS	D	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.5	0.1	0.1	-	-	0.1	-	-	1

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	428	503	0	0	0
Future Vol, veh/h	0	428	503	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	446	524	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	524
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	0	0	557
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	557
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
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	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	421	4	0	501	3	0	0	40	2	0	2
Future Vol, veh/h	3	421	4	0	501	3	0	0	40	2	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	Stop	-	-	None
Storage Length	225	-	0	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	3	0	0	0
Mvmt Flow	3	443	4	0	527	3	0	0	42	2	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	530	0	-	-	-	0	-	-	443	976	976	527
Stage 1	-	-	-	-	-	-	-	-	-	527	527	-
Stage 2	-	-	-	-	-	-	-	-	-	449	449	-
Critical Hdwy	4.1	-	-	-	-	-	-	-	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	-	-	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1048	-	0	0	-	-	0	0	613	232	253	555
Stage 1	-	-	0	0	-	-	0	0	-	538	532	-
Stage 2	-	-	0	0	-	-	0	0	-	593	576	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1048	-	-	-	-	-	-	-	613	216	252	555
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	216	252	-
Stage 1	-	-	-	-	-	-	-	-	-	536	532	-
Stage 2	-	-	-	-	-	-	-	-	-	551	574	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	11.3	16.7
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	613	1048	-	-	-	311
HCM Lane V/C Ratio	0.069	0.003	-	-	-	0.014
HCM Control Delay (s)	11.3	8.4	-	-	-	16.7
HCM Lane LOS	B	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	-	0

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	19	8	0	0	19	10	4	0	10	0
Future Vol, veh/h	0	0	19	8	0	0	19	10	4	0	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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	21	9	0	0	21	11	4	0	11	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	66	68	11	77	66	13	11	0	0	15	0	0
Stage 1	11	11	-	55	55	-	-	-	-	-	-	-
Stage 2	55	57	-	22	11	-	-	-	-	-	-	-
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	927	823	1070	912	825	1067	1608	-	-	1603	-	-
Stage 1	1010	886	-	957	849	-	-	-	-	-	-	-
Stage 2	957	847	-	996	886	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	918	812	1070	886	814	1067	1608	-	-	1603	-	-
Mov Cap-2 Maneuver	918	812	-	886	814	-	-	-	-	-	-	-
Stage 1	997	886	-	945	838	-	-	-	-	-	-	-
Stage 2	945	836	-	977	886	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.4	9.1	4.2	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1608	-	-	1070	886	1603	-	-
HCM Lane V/C Ratio	0.013	-	-	0.019	0.01	-	-	-
HCM Control Delay (s)	7.3	0	-	8.4	9.1	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

APPENDIX H: TERSECTION ANALYSIS WORKSHEETS – FUTURE WITH DEVELOPMENT (2029) ALTERNATIVE

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	345	390	5	21	25
Future Vol, veh/h	9	345	390	5	21	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	13	3	6	25	0	10
Mvmt Flow	10	375	424	5	23	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	429	0	-	0	822	427
Stage 1	-	-	-	-	427	-
Stage 2	-	-	-	-	395	-
Critical Hdwy	4.23	-	-	-	6.4	6.3
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.317	-	-	-	3.5	3.39
Pot Cap-1 Maneuver	1074	-	-	-	346	611
Stage 1	-	-	-	-	662	-
Stage 2	-	-	-	-	685	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1074	-	-	-	343	611
Mov Cap-2 Maneuver	-	-	-	-	343	-
Stage 1	-	-	-	-	656	-
Stage 2	-	-	-	-	685	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	14
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1074	-	-	-	450
HCM Lane V/C Ratio	0.009	-	-	-	0.111
HCM Control Delay (s)	8.4	-	-	-	14
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4

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	11	338	17	23	366	25	18	0	35	8	0	11
Future Vol, veh/h	11	338	17	23	366	25	18	0	35	8	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0	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	140	-	140	-	-	0	-	-	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, %	0	3	6	9	8	0	0	0	3	0	0	0
Mvmt Flow	12	367	18	25	398	27	20	0	38	9	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	425	0	0	385	0	0	859	866	367	867	857	398
Stage 1	-	-	-	-	-	-	391	391	-	448	448	-
Stage 2	-	-	-	-	-	-	468	475	-	419	409	-
Critical Hdwy	4.1	-	-	4.19	-	-	7.1	6.5	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.281	-	-	3.5	4	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1145	-	-	1136	-	-	279	293	676	275	297	656
Stage 1	-	-	-	-	-	-	637	611	-	594	576	-
Stage 2	-	-	-	-	-	-	579	561	-	616	600	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1145	-	-	1136	-	-	267	284	676	253	287	656
Mov Cap-2 Maneuver	-	-	-	-	-	-	267	284	-	253	287	-
Stage 1	-	-	-	-	-	-	631	605	-	588	563	-
Stage 2	-	-	-	-	-	-	556	549	-	575	594	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.5	13.6	14.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	267	676	1145	-	-	1136	-	-	393
HCM Lane V/C Ratio	0.073	0.056	0.01	-	-	0.022	-	-	0.053
HCM Control Delay (s)	19.5	10.6	8.2	-	-	8.2	-	-	14.7
HCM Lane LOS	C	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0.2	0	-	-	0.1	-	-	0.2

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	381	413	5	0	1
Future Vol, veh/h	0	381	413	5	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	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	414	449	5	0	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	449
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.319
Pot Cap-1 Maneuver	0	-	-	0	0	609
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	609
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	609
HCM Lane V/C Ratio	-	-	0.002
HCM Control Delay (s)	-	-	10.9
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	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	15	351	15	0	410	11	0	0	64	6	0	8
Future Vol, veh/h	15	351	15	0	410	11	0	0	64	6	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	Stop	-	-	None
Storage Length	225	-	0	-	-	225	-	-	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, %	0	3	0	0	7	36	0	0	3	33	0	13
Mvmt Flow	16	382	16	0	446	12	0	0	70	7	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	458	0	-	-	-	0	-	-	382	860	860	446
Stage 1	-	-	-	-	-	-	-	-	-	446	446	-
Stage 2	-	-	-	-	-	-	-	-	-	414	414	-
Critical Hdwy	4.1	-	-	-	-	-	-	-	6.23	7.43	6.5	6.33
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.43	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.43	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	-	-	3.327	3.797	4	3.417
Pot Cap-1 Maneuver	1114	-	0	0	-	-	0	0	663	244	296	590
Stage 1	-	-	0	0	-	-	0	0	-	536	577	-
Stage 2	-	-	0	0	-	-	0	0	-	559	597	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1114	-	-	-	-	-	-	-	663	216	292	590
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	216	292	-
Stage 1	-	-	-	-	-	-	-	-	-	528	577	-
Stage 2	-	-	-	-	-	-	-	-	-	493	589	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	11.1	16.1
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	663	1114	-	-	-	339
HCM Lane V/C Ratio	0.105	0.015	-	-	-	0.045
HCM Control Delay (s)	11.1	8.3	-	-	-	16.1
HCM Lane LOS	B	A	-	-	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	24	9	0	0	9	4	1	0	13	0
Future Vol, veh/h	0	0	24	9	0	0	9	4	1	0	13	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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	26	10	0	0	10	4	1	0	14	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	39	39	14	52	39	5	14	0	0	5	0	0
Stage 1	14	14	-	25	25	-	-	-	-	-	-	-
Stage 2	25	25	-	27	14	-	-	-	-	-	-	-
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	966	853	1066	947	853	1078	1604	-	-	1616	-	-
Stage 1	1006	884	-	993	874	-	-	-	-	-	-	-
Stage 2	993	874	-	990	884	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	961	848	1066	920	848	1078	1604	-	-	1616	-	-
Mov Cap-2 Maneuver	961	848	-	920	848	-	-	-	-	-	-	-
Stage 1	1000	884	-	987	869	-	-	-	-	-	-	-
Stage 2	987	869	-	966	884	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.5	9	4.7	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1604	-	-	1066	920	1616	-	-
HCM Lane V/C Ratio	0.006	-	-	0.024	0.011	-	-	-
HCM Control Delay (s)	7.3	0	-	8.5	9	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	32	543	539	17	18	18
Future Vol, veh/h	32	543	539	17	18	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	4	3	1	0	0	0
Mvmt Flow	33	554	550	17	18	18

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	567	0	-	0	1179	559
Stage 1	-	-	-	-	559	-
Stage 2	-	-	-	-	620	-
Critical Hdwy	4.14	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.236	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	995	-	-	-	212	532
Stage 1	-	-	-	-	576	-
Stage 2	-	-	-	-	540	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	995	-	-	-	205	532
Mov Cap-2 Maneuver	-	-	-	-	205	-
Stage 1	-	-	-	-	557	-
Stage 2	-	-	-	-	540	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	18.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	995	-	-	-	296
HCM Lane V/C Ratio	0.033	-	-	-	0.124
HCM Control Delay (s)	8.7	-	-	-	18.9
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	507	31	61	510	27	15	5	32	16	0	30
Future Vol, veh/h	23	507	31	61	510	27	15	5	32	16	0	30
Conflicting Peds, #/hr	0	0	0	0	0	0	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	140	-	140	-	-	0	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	0	3	3	2	1	0	7	0	0	0	0	0
Mvmt Flow	23	512	31	62	515	27	15	5	32	16	0	30

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	542	0	0	543	0	0	1226	1224	512	1231	1228	515
Stage 1	-	-	-	-	-	-	558	558	-	639	639	-
Stage 2	-	-	-	-	-	-	668	666	-	592	589	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.17	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.17	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.17	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.563	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1037	-	-	1026	-	-	152	181	566	156	180	564
Stage 1	-	-	-	-	-	-	505	515	-	468	474	-
Stage 2	-	-	-	-	-	-	439	460	-	496	499	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1037	-	-	1026	-	-	135	166	566	135	165	564
Mov Cap-2 Maneuver	-	-	-	-	-	-	135	166	-	135	165	-
Stage 1	-	-	-	-	-	-	494	504	-	458	446	-
Stage 2	-	-	-	-	-	-	390	432	-	453	488	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.9	20.5	21.2
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	142	566	1037	-	-	1026	-	-	268
HCM Lane V/C Ratio	0.142	0.057	0.022	-	-	0.06	-	-	0.173
HCM Control Delay (s)	34.5	11.7	8.6	-	-	8.7	-	-	21.2
HCM Lane LOS	D	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.5	0.2	0.1	-	-	0.2	-	-	0.6

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑			↱
Traffic Vol, veh/h	0	554	592	0	0	6
Future Vol, veh/h	0	554	592	0	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	565	604	0	0	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	604
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.319
Pot Cap-1 Maneuver	0	-	-	0	0	497
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	497
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.3
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	497
HCM Lane V/C Ratio	-	-	0.012
HCM Control Delay (s)	-	-	12.3
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0

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	16	514	24	0	573	5	0	0	33	6	0	19
Future Vol, veh/h	16	514	24	0	573	5	0	0	33	6	0	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	Stop	-	-	None
Storage Length	225	-	0	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	5	1	0	0	0	0	0	0	3	0	0	0
Mvmt Flow	16	530	25	0	591	5	0	0	34	6	0	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	596	0	-	-	-	0	-	-	530	1153	1153	591
Stage 1	-	-	-	-	-	-	-	-	-	591	591	-
Stage 2	-	-	-	-	-	-	-	-	-	562	562	-
Critical Hdwy	4.15	-	-	-	-	-	-	-	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Follow-up Hdwy	2.245	-	-	-	-	-	-	-	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	966	-	0	0	-	-	0	0	547	176	199	511
Stage 1	-	-	0	0	-	-	0	0	-	497	498	-
Stage 2	-	-	0	0	-	-	0	0	-	515	513	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	966	-	-	-	-	-	-	-	547	163	196	511
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	163	196	-
Stage 1	-	-	-	-	-	-	-	-	-	489	498	-
Stage 2	-	-	-	-	-	-	-	-	-	475	504	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	12	16.5
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	547	966	-	-	-	338
HCM Lane V/C Ratio	0.062	0.017	-	-	-	0.076
HCM Control Delay (s)	12	8.8	-	-	-	16.5
HCM Lane LOS	B	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	0.1	-	-	-	0.2

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	21	5	0	0	29	16	4	0	10	0
Future Vol, veh/h	0	0	21	5	0	0	29	16	4	0	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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	23	5	0	0	32	17	4	0	11	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	94	96	11	106	94	19	11	0	0	21	0	0
Stage 1	11	11	-	83	83	-	-	-	-	-	-	-
Stage 2	83	85	-	23	11	-	-	-	-	-	-	-
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	889	794	1070	873	796	1059	1608	-	-	1595	-	-
Stage 1	1010	886	-	925	826	-	-	-	-	-	-	-
Stage 2	925	824	-	995	886	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	876	778	1070	842	780	1059	1608	-	-	1595	-	-
Mov Cap-2 Maneuver	876	778	-	842	780	-	-	-	-	-	-	-
Stage 1	990	886	-	907	809	-	-	-	-	-	-	-
Stage 2	907	808	-	974	886	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.4	9.3	4.3	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1608	-	-	1070	842	1595	-	-
HCM Lane V/C Ratio	0.02	-	-	0.021	0.006	-	-	-
HCM Control Delay (s)	7.3	0	-	8.4	9.3	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	416	470	14	22	15
Future Vol, veh/h	19	416	470	14	22	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	8	0	8
Mvmt Flow	21	452	511	15	24	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	526	0	-	0	1013	519
Stage 1	-	-	-	-	519	-
Stage 2	-	-	-	-	494	-
Critical Hdwy	4.1	-	-	-	6.4	6.28
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.372
Pot Cap-1 Maneuver	1051	-	-	-	267	545
Stage 1	-	-	-	-	601	-
Stage 2	-	-	-	-	617	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1051	-	-	-	262	545
Mov Cap-2 Maneuver	-	-	-	-	262	-
Stage 1	-	-	-	-	589	-
Stage 2	-	-	-	-	617	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	17.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1051	-	-	-	332
HCM Lane V/C Ratio	0.02	-	-	-	0.121
HCM Control Delay (s)	8.5	-	-	-	17.3
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	380	30	43	429	37	17	2	23	31	0	38
Future Vol, veh/h	28	380	30	43	429	37	17	2	23	31	0	38
Conflicting Peds, #/hr	0	0	0	0	0	0	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	140	-	140	-	-	0	-	-	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, %	4	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	30	413	33	47	466	40	18	2	25	34	0	41

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	506	0	0	446	0	0	1074	1073	413	1063	1066	466
Stage 1	-	-	-	-	-	-	473	473	-	560	560	-
Stage 2	-	-	-	-	-	-	601	600	-	503	506	-
Critical Hdwy	4.14	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.236	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1049	-	-	1125	-	-	199	222	643	203	224	601
Stage 1	-	-	-	-	-	-	576	562	-	516	514	-
Stage 2	-	-	-	-	-	-	491	493	-	555	543	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1049	-	-	1125	-	-	176	206	643	183	208	601
Mov Cap-2 Maneuver	-	-	-	-	-	-	176	206	-	183	208	-
Stage 1	-	-	-	-	-	-	559	546	-	501	492	-
Stage 2	-	-	-	-	-	-	438	472	-	516	527	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.7	18.4	21.2
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	179	643	1049	-	-	1125	-	-	297
HCM Lane V/C Ratio	0.115	0.039	0.029	-	-	0.042	-	-	0.253
HCM Control Delay (s)	27.7	10.8	8.5	-	-	8.3	-	-	21.2
HCM Lane LOS	D	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.4	0.1	0.1	-	-	0.1	-	-	1

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	434	509	0	0	0
Future Vol, veh/h	0	434	509	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	452	530	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	530
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	0	0	553
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	553
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
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	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	427	4	0	507	3	0	0	40	2	0	2
Future Vol, veh/h	3	427	4	0	507	3	0	0	40	2	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	Stop	-	-	None
Storage Length	225	-	0	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	3	0	0	0
Mvmt Flow	3	449	4	0	534	3	0	0	42	2	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	537	0	-	-	-	0	-	-	449	989	989	534
Stage 1	-	-	-	-	-	-	-	-	-	534	534	-
Stage 2	-	-	-	-	-	-	-	-	-	455	455	-
Critical Hdwy	4.1	-	-	-	-	-	-	-	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	-	-	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1041	-	0	0	-	-	0	0	608	228	249	550
Stage 1	-	-	0	0	-	-	0	0	-	534	528	-
Stage 2	-	-	0	0	-	-	0	0	-	589	572	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1041	-	-	-	-	-	-	-	608	212	248	550
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	212	248	-
Stage 1	-	-	-	-	-	-	-	-	-	532	528	-
Stage 2	-	-	-	-	-	-	-	-	-	547	570	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	11.4	16.9
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	608	1041	-	-	-	306
HCM Lane V/C Ratio	0.069	0.003	-	-	-	0.014
HCM Control Delay (s)	11.4	8.5	-	-	-	16.9
HCM Lane LOS	B	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	-	0

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	19	8	0	0	19	10	4	0	10	0
Future Vol, veh/h	0	0	19	8	0	0	19	10	4	0	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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	21	9	0	0	21	11	4	0	11	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	66	68	11	77	66	13	11	0	0	15	0	0
Stage 1	11	11	-	55	55	-	-	-	-	-	-	-
Stage 2	55	57	-	22	11	-	-	-	-	-	-	-
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	927	823	1070	912	825	1067	1608	-	-	1603	-	-
Stage 1	1010	886	-	957	849	-	-	-	-	-	-	-
Stage 2	957	847	-	996	886	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	918	812	1070	886	814	1067	1608	-	-	1603	-	-
Mov Cap-2 Maneuver	918	812	-	886	814	-	-	-	-	-	-	-
Stage 1	997	886	-	945	838	-	-	-	-	-	-	-
Stage 2	945	836	-	977	886	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.4	9.1	4.2	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1608	-	-	1070	886	1603	-	-
HCM Lane V/C Ratio	0.013	-	-	0.019	0.01	-	-	-
HCM Control Delay (s)	7.3	0	-	8.4	9.1	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

APPENDIX I: CRASH DATA

VDOT Crash Data Summary Table

Crash Data for the Intersection of Washington St (Rte. 55) and Greenhill Crossing Dr/Site Entrance (January 2020 - December 2024)									
Document Number	**Date**	**Crash Severity**	**Collsion Type**	**Pedestrain Injury**	**Persons Injured**	**Fatalities**	**Work Zone Related**	**Adverse Weather Conditions**	**Distracted Driver**
210355168	2/3/2021	PDO. Property Damage Only	1. Rear End	0	0	0		no	no
233305159	11/21/2023	PDO. Property Damage Only	2. Angle	0	0	0		yes	no
231355164	5/13/2023	PDO. Property Damage Only	2. Angle	0	0	0		no	no

APPENDIX J: DESCRIPTION OF TRAFFIC LEVEL OF SERVICE

TECHNICAL MEMORANDUM

Subject: Level of Service Definitions

Introduction

The purpose of this memorandum is to define the level of service (LOS) metric that commonly used as a measure of effectiveness (MOE) for traffic operations.

All capacity analyses are based on the procedures specified by the Transportation Research Board's (TRB) Highway Capacity Manual (HCM), which is currently on its sixth edition. Level of service ranges from A to F. A brief description of each level of service for signalized and unsignalized intersections is provided below.

Signalized Intersections

Level of service is based upon the traffic volume present in each lane on the roadway, the capacity of each lane at the intersection and the delay associated with each directional movement. The levels of service for signalized intersections are defined below:

- **Level of Service A** describes operations with very low average delay per vehicle, i.e., less than 10.0 seconds. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop. Short signal cycle lengths may also contribute to low delay.
- **Level of Service B** describes operations with average delay in the range of 10.1 to 20.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
- **Level of Service C** describes operations with delay in the range of 20.1 to 35.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level although many still pass through the intersection without stopping. This is generally considered the lower end of the range of the acceptable level of service in rural areas.
- **Level of Service D** describes operations with delay in the range of 35.1 to 55.0 seconds per vehicle. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, and/or high traffic volumes as compared to the roadway capacity. Many vehicles are required to stop and the number of vehicles that do not have to stop declines. Individual signal cycle failures, where all waiting vehicles do not clear the intersection during a single green time, are noticeable. This is generally considered the lower end of the range of the acceptable level of service in urban areas.
- **Level of Service E** describes operations with delay in the range of 55.1 to 80.0 seconds per vehicle. These higher delay values generally indicate poor progression, long cycle lengths, and high traffic volumes. Individual cycle failures are frequent occurrences. LOS E has been set as the limit of acceptable conditions.
- **Level of Service F** describes operations with average delay in excess of 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with over-saturation, i.e., when traffic arrives at a flow rate that exceeds the capacity of the intersection. It may also occur at high volumes with many individual cycle failures. Poor progression and long cycle lengths may also contribute to such delays.

Unsignalized Intersections

At an unsignalized intersection, the major street through traffic and right-turns are assumed to operate unimpeded and therefore receive no level of service rating. The level of service for the minor street and the major street left-turn traffic is dependent on the volume and capacity of the available lanes, and, the number and frequency of acceptable gaps in the major street traffic to make a conflicting turn. The level of service grade is provided for each conflicting movement at an unsignalized intersection and is based on the total average delay experienced by each vehicle. The delay includes the time it takes a vehicle to move from the back of a queue through the intersection.

The unsignalized intersection level of service analysis does not account for variations in driver behavior or the effects of nearby traffic signals. Therefore, the results from this analysis usually indicate worse levels of service than may be experienced in the field. The unsignalized intersection level of service descriptions are provided below:

- **Level of Service A** describes operations where there is very little to no conflicting traffic for a minor side street movement, i.e., an average total delay of less than 10.0 seconds per vehicle.
- **Level of Service B** describes operations with average total delay in the range of 10.1 to 15.0 seconds per vehicle.
- **Level of Service C** describes operations with average total delay in the range of 15.1 to 25.0 second per vehicle.
- **Level of Service D** describes operations with average total delay in the range of 25.1 to 35.0 seconds per vehicle.
- **Level of Service E** describes operations with average total delay in the range of 35.1 to 50.0 seconds per vehicle.
- **Level of Service F** describes operations with average total delay of 50 seconds per vehicle. LOS F exists when there are insufficient gaps of suitable size to allow a side street demand to cross safely through or enter a major street traffic stream. This level of service is generally evident from extremely long total delays experienced by side street traffic and by queuing on the minor approaches. It is important to note that LOS F may not always result in long queues but may result in adjustments to normal driver behavior.