University Heights

Burlington, Vermont

TRAFFIC STUDY

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1.0 Introduction

This Traffic Study has been prepared to evaluate the traffic operations and safety conditions related to the movement of all forms of traffic in the area of the intersection of University Heights and Upper Main Street (US 2) in the City of Burlington, Vermont. The focus of this initial study was to identify and evaluate potential improvements to the existing traffic signal control and/or other related pedestrian upgrades to address existing congestion and safety concerns pertaining to the interaction of vehicle traffic with the heavy movement of college students crossing at the intersection. The study involved a program of data compilation, traffic counts, site visits, traffic operations modeling, safety analysis, and other traffic engineering analyses. The study site is shown on Figure 1.

Figure 1: Study Location Map

2.0 Area Context

2.1 Area Land Use

The University of Vermont (UVM) campus surrounds the study intersection. The University's Central Campus, which is the academic core, is located on the north side of Main Street. University Heights is located south of Main Street, and features the UVM Living and Learning Complex, Residence Halls, and Athletic Complex. The study intersection is located about 1 mile east of downtown Burlington.

2.2 Roadway Network

Main Street is an east-west Principal Arterial and is US Route 2 in the study area. The roadway consists of two travel lanes in each direction with a curbed and landscaped center median. The posted speed limit is 25 mph, which is the statutory speed limit within Burlington city limits (with some exceptions). Sidewalks are provided on both sides of Main Street in the study area. Separated 4-foot wide (unbuffered) on-road bike lanes are provided on Main Street east of University Heights but they begin/end at the intersection. A 12-ft. wide shared-use path is provided along the north side of Main Street from the University Heights intersection west to University Place, where the trail connects to the University Green pathway network. The sidewalk on the south side of Main Street varies in width between 8 feet and 10 feet.

University Heights is a collector road that serves the UVM's south side campus facilities and residence halls. The roadway consists of one travel lane in each direction. The northbound approach of University Heights at Main Street widens to provide a second travel lane for turns at the intersection. The speed limit is 25 mph. There is a 10-ft. wide shared-use path along the east side of the road. There is no sidewalk or shared-use path on the west side of the street, although a worn 'herd-path' is evidence of pedestrian activity on this side of the street. On-street permit parking is available along the east side of University Heights road beginning 300 feet +/- south of Main Street and ending at the UVM PFG Road (27 spaces).

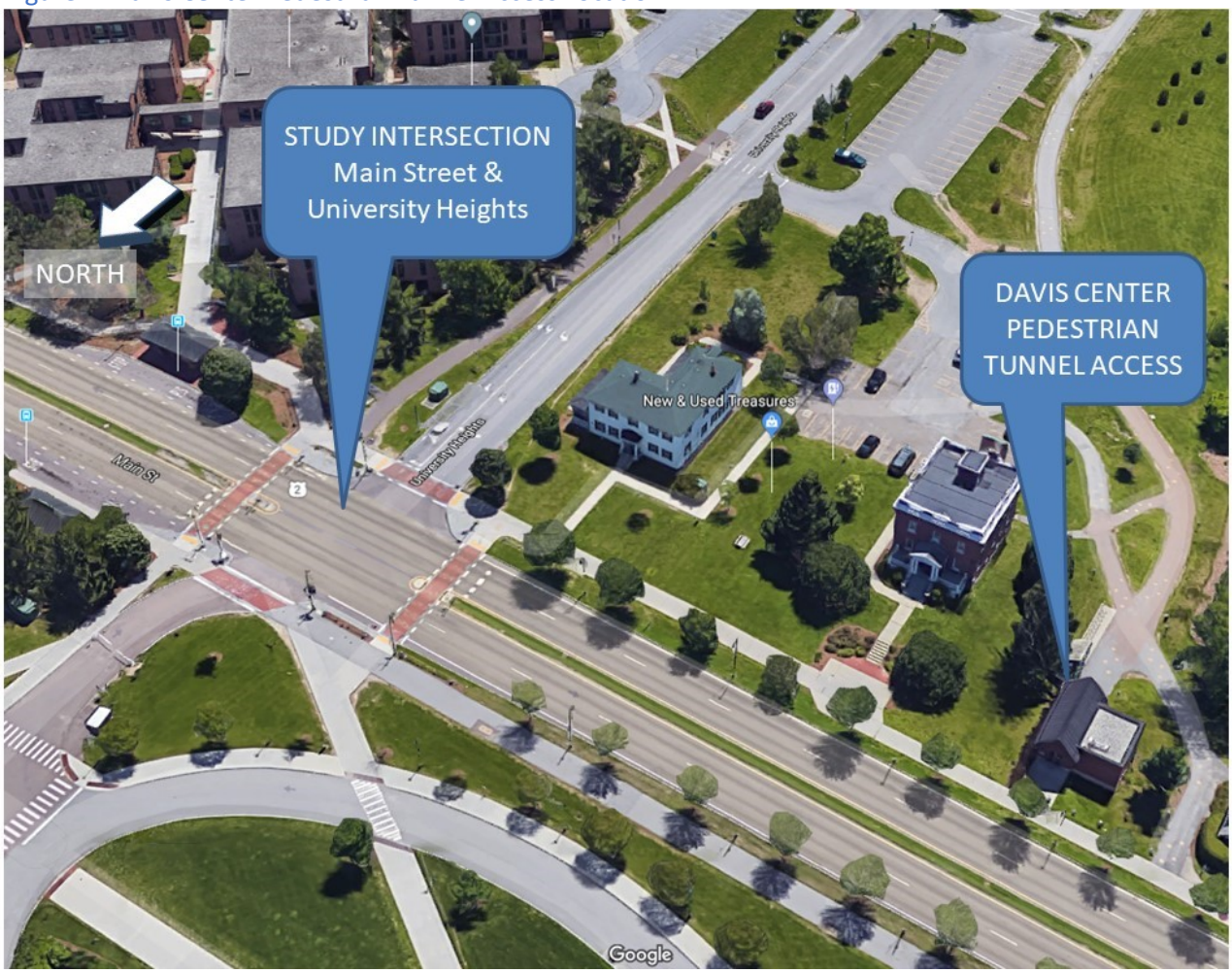
The existing characteristics of the study intersection of Main Street and University Heights are summarized in Table 1. The traffic signal operates in a two-phase cycle alternating between service to Main Street and University Heights traffic. Pedestrian crossings are marked across all legs of the intersection and have a WALK signal with Countdown timer that operates concurrently with the respective vehicle traffic phase.

Table 1: Intersection Characteristics

NO.	INTERSECTION	INTERSECTION CONTROL	NO. LEGS	Non-Motorized Accommodations			APPROACH GEOMETRIES				NOTABLE FEATURES
				Pedestrian	Bicycle	Transit	Northbound	Southbound	Eastbound	Westbound	
1	Main Street & University Heights	SIGNAL	4	●	●	●					NB Thru and SB Left-Thru-Right are Restricted (Gated) Access for Buses and Emergency Vehicles

There is a pedestrian tunnel under Main Street approximately 300 feet west of the Main Street/University Heights intersection (See Figure 2). This tunnel connects the UVM Davis Center on the north side of Main Street to the UVM Redstone Campus and other UVM facilities on the south side via the sidewalk and shared-use path network. The tunnel was constructed prior to the UVM Davis Center and Central Campus redevelopment projects. As a result of these campus improvements, the tunnel is no longer part of a regular travel route for many students.

Figure 2: Davis Center Pedestrian Tunnel Access Location



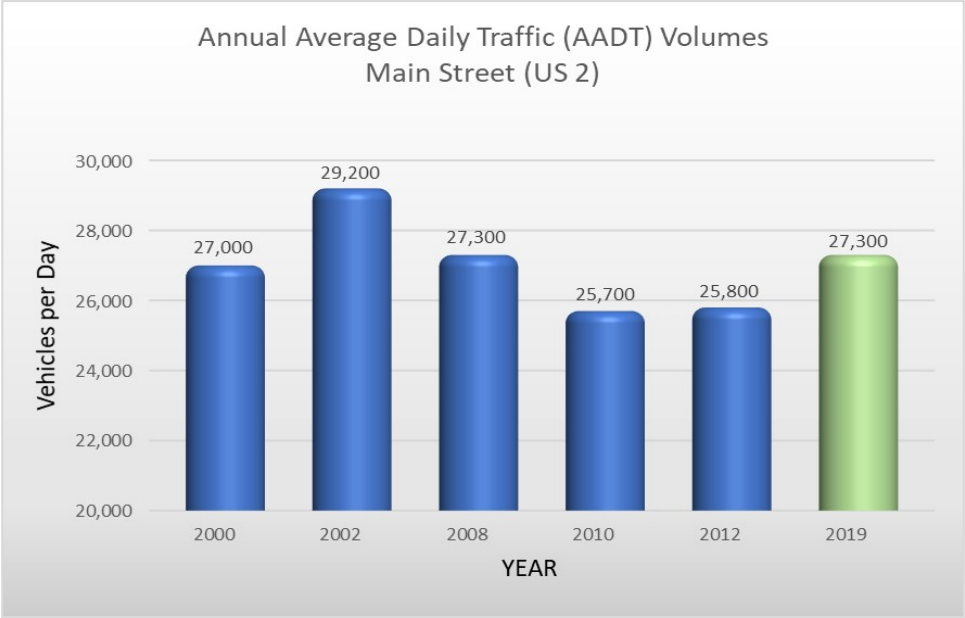
3.0 Traffic Characteristics

3.1 Vehicle Traffic Volumes

Traffic data was collected on Main Street from Tuesday Sep 3, 2019 to Friday Sep 7, 2019 using a road tube recorder. The count station was located on Main Street between University Terrace and University Heights. The recorded data included vehicle volume by direction and vehicle type. The average daily weekday traffic volume recorded during this time was 30,600 vehicles per day. The count data is provided in Appendix A. This traffic volume is very similar to volumes recorded in 2012[1], when the average weekday volume was 30,790 vehicles per day.

The 2019 weekday volume data was adjusted to represent Annual Average Daily Traffic (AADT) conditions following the procedures outlined in the VTrans Redbook[2]. These procedures consider factors such as Day-of-Week and Month-of-Year applied to the data sample to estimate the annual average daily conditions, including consideration of weekday and weekend volumes. Figure 3 shows the estimated 2019 AADT for Main Street from the 2019 count data collected by CHA (shown in green) and the AADT volumes reported by the Vermont Agency of Transportation for prior years (shown in blue).

Figure 3: Annual Average Daily Traffic (AADT)

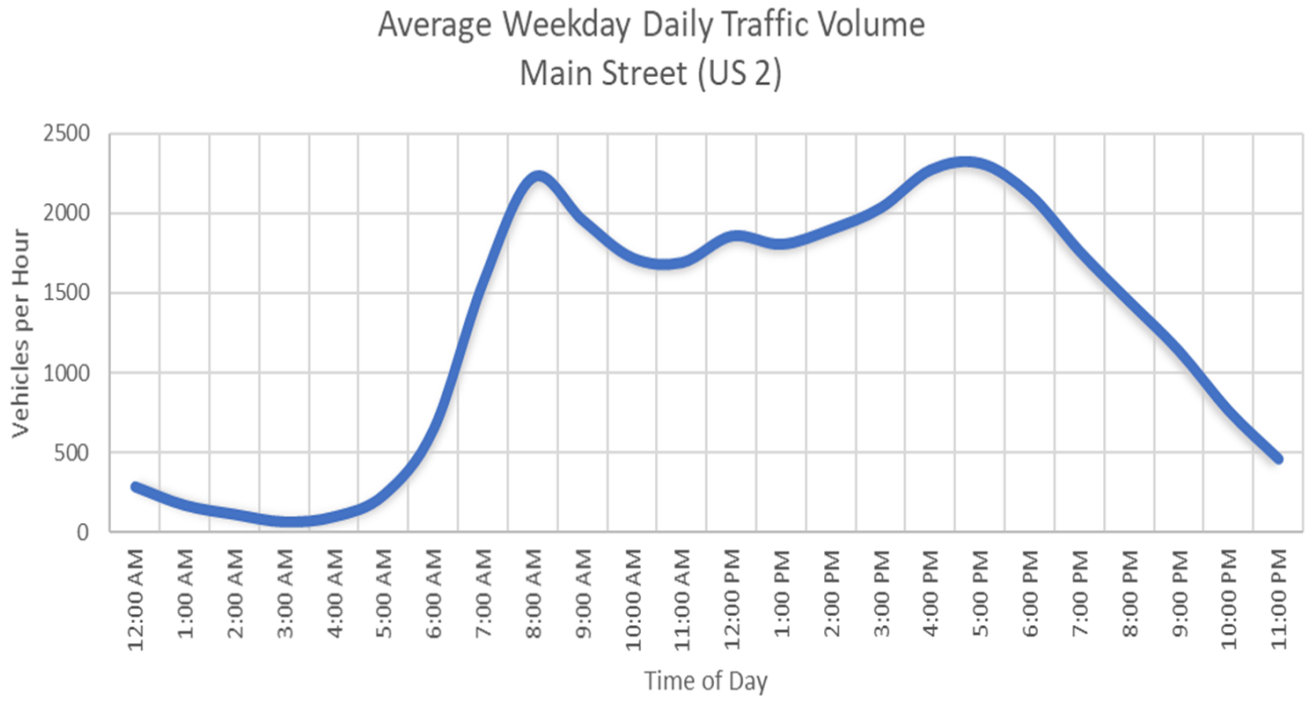


[1] Transportation Data Management System, Vermont Agency of Transportation, Count Station ID D058
[2] Continuous Traffic Counter Report (The Redbook), Vermont Agency of Transportation, February 2019

It is noted that the 2019 AADT is higher than the 2012 AADT even though the weekday daily volumes recorded in 2019 (September) are slightly lower than the weekday daily volumes recorded in 2012 (June). This is attributed to differences in the seasonal (monthly and day-of-week) factors used to estimate the AADTs for the various years.

The hourly variation of daily traffic from the weekday samples in September 2019 is shown on Figure 4. The data shows that the peak hour vehicle volumes on Main Street generally occur from 8:15-9:15 am and 4:45-5:45 pm. The average recorded volume during the weekday AM peak hour was 2,230 and the PM peak hour volume was 2,340. Trucks and buses comprise approximately 7% of the weekday traffic volume on Main Street, and 5% of the volume during the AM and PM peak hours.

Figure 4: Hourly Variation of Weekday Traffic - Main Street



Intersection Vehicular Volumes

Traffic counts at the intersection of Main Street and University Heights were extracted from video recordings on Wednesday September 4, 2019 and Thursday September 5, 2019 for the periods 7 am to 10 am and 4 pm to 7 pm. This data recorded vehicle volumes by turning movement and vehicle type.

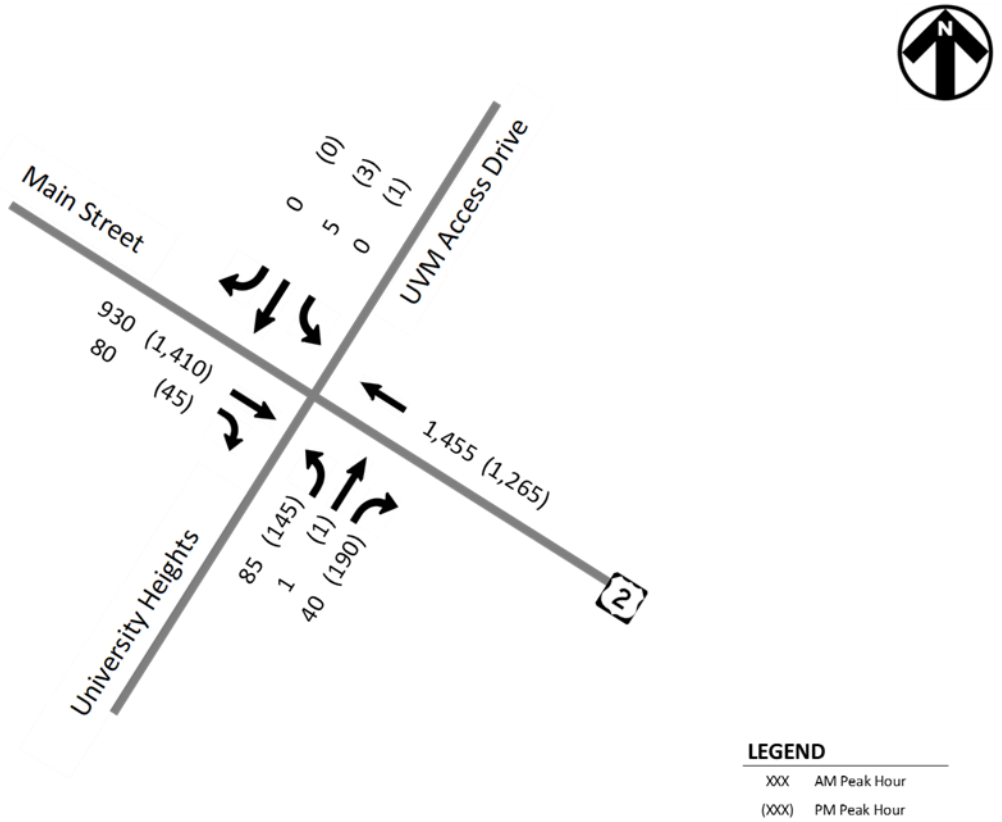
The peak hours of vehicle traffic volume at the intersection from these data samples occurred at the following times:

Peak Hours:	AM	PM
	WED: 7:45 to 8:45	WED: 4:45 to 5:45
	THU: 7:30 to 8:30	THU: 4:15 to 5:15

The times of peak traffic demand at the intersection are influenced by the volumes entering the intersection from Main Street and from University Heights. As noted above, the time of day of the AM and PM peak hourly volumes at the intersection are slightly different than for Main Street itself. However, the peak traffic conditions occur within the same context of a typical AM and PM commuter peak period.

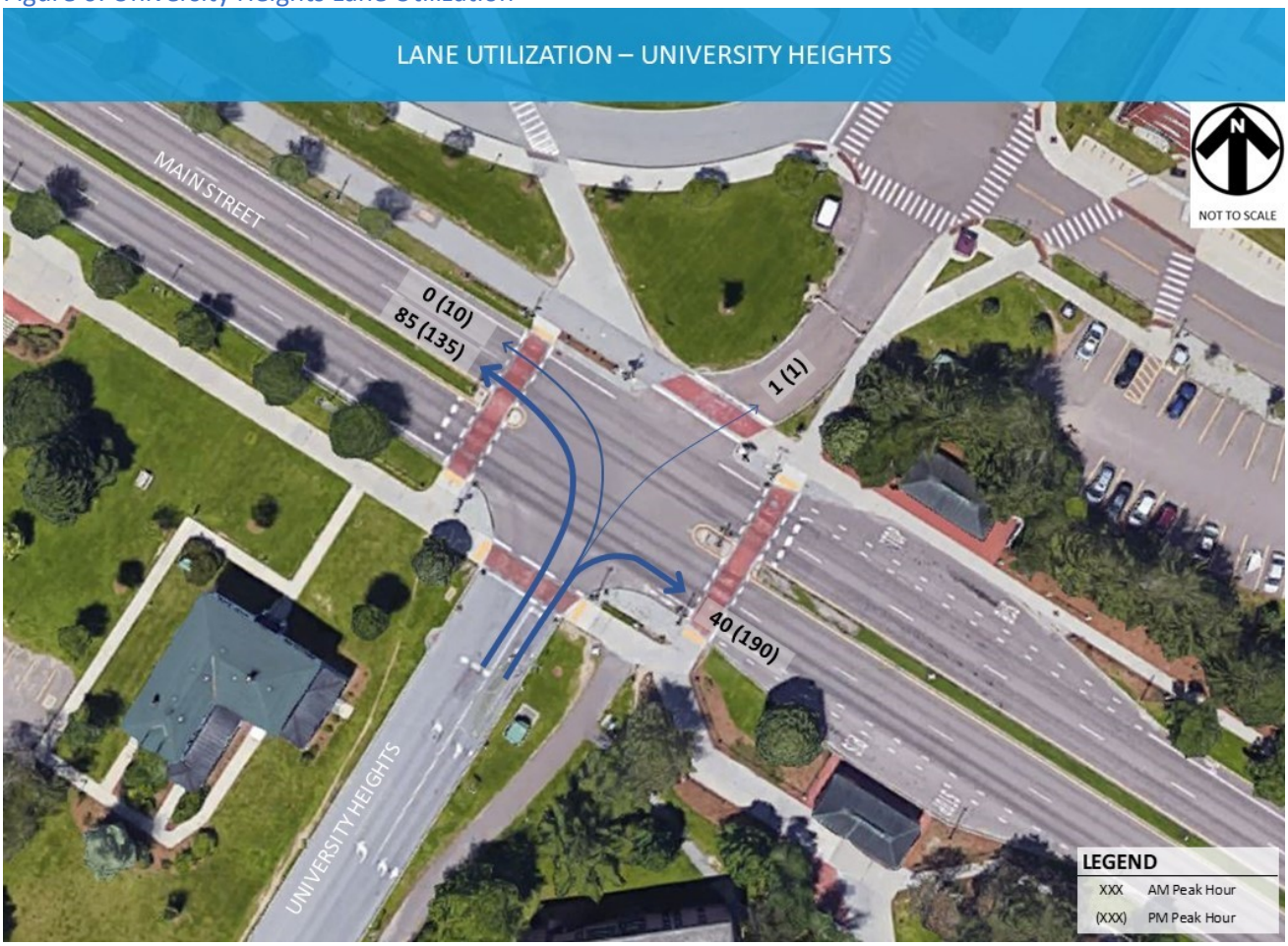
The existing weekday AM and PM peak hour volumes at the intersection of Main Street and University Heights are shown on Figure 5. These volumes have not been seasonally adjusted (downward) for annual average conditions, and thus present a more conservative basis for the analysis.

Figure 5: Peak Hour Traffic Volumes – 2019 Existing Condition



The northbound approach of University Heights consists of two lanes: one designated for left-turns only and the other (curbside lane) designated for shared left-turn/through/right-turn movements. The pattern of volume distribution using these lanes is shown on Figure 6. The left-turn traffic using the curbside lane is predominantly buses which use this lane to minimize lane changes along their route. This curbside lane is also used by buses to enter the UVM Central Campus via the north leg of the intersection.

Figure 6: University Heights Lane Utilization



3.2 Vehicle Traffic Speed

Vehicle operating speeds on Main Street were recorded concurrently with the traffic volume data (from Tuesday Sep 3, 2019 to Friday Sep 7, 2019) using the same recording device. The speed data collected on Main Street indicates that the speeds on Main Street are as follows:

50th percentile speed: Eastbound direction: 21 mph
Westbound direction: 27 mph

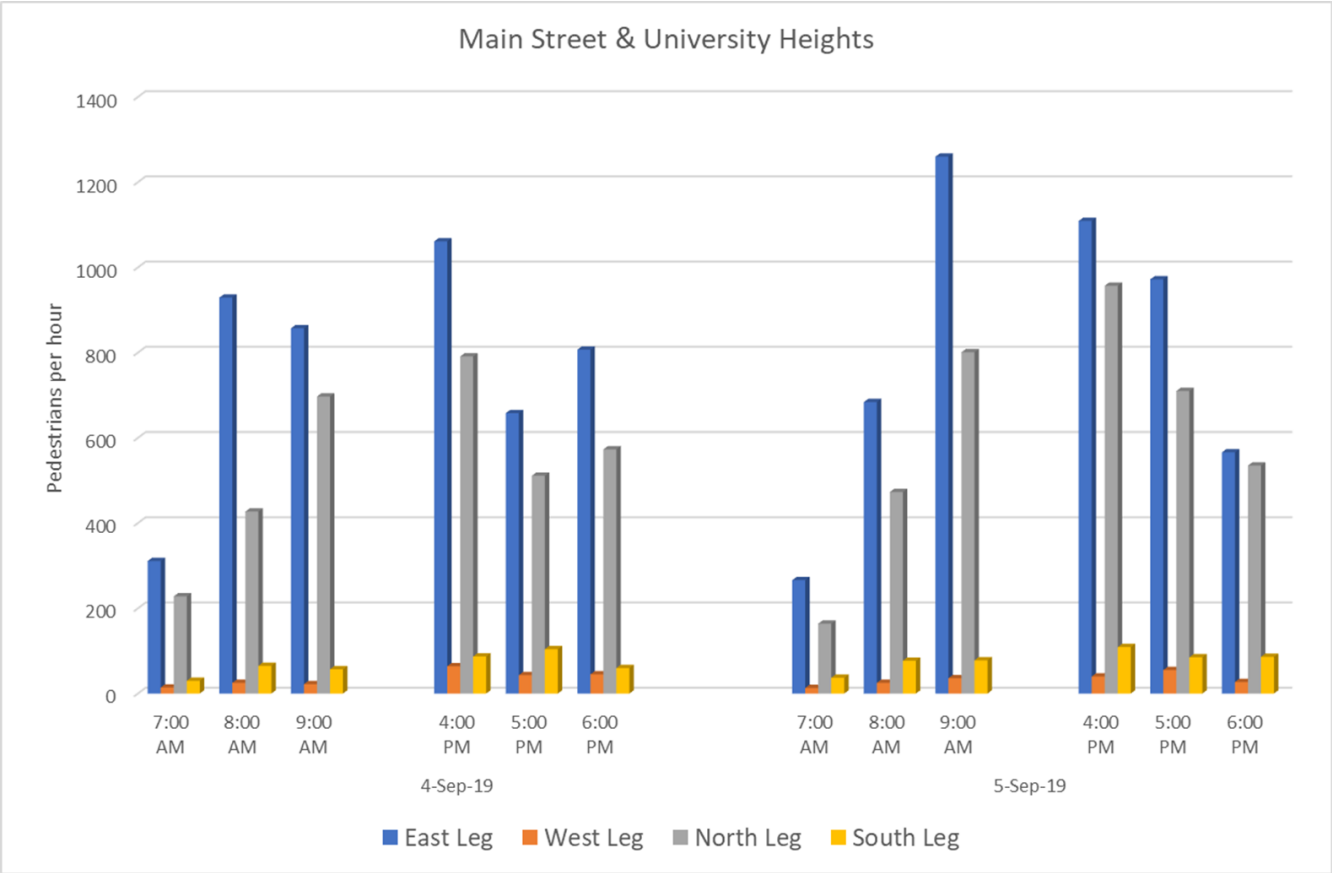
85th percentile speed: Eastbound direction: 30 mph
Westbound direction: 33 mph

The 85th percentile speed is the speed at which 85 percent of all traffic on Main Street is traveling at or below. This percentile threshold is a typical standard used for many aspects of a roadway's design. The data shows that there is generally good compliance with the 25-mph speed limit, but vehicle speeds in the westbound direction are higher than in the eastbound direction. This is likely to be because westbound traffic is transitioning from a higher speed roadway environment at the I-89 interchange, and the roadway and intersections between the interchange and University Heights have higher-speed suburban design characteristics.

3.3 Pedestrian & Bicyclist Traffic

Pedestrian and bicyclist volumes and flow patterns were documented at the same time as the vehicle counts. The count data is provided in Appendix A. The volume of pedestrians crossing at the intersection are high, with as many as 2,200 pedestrians crossing at the intersection in an hour. The most-used crosswalk is the one crossing the east leg of Main Street. The hourly volume of pedestrian crossings in each crosswalk are shown on Figure 7.

Figure 7: Pedestrian Crossing Volume



The pedestrian volumes were also reviewed to identify the crossing volumes for the following conditions:

- AM and PM peak hours of vehicle traffic at the intersection
- AM and PM peak hour of pedestrian volumes.

Figure 8 below shows the pedestrian volumes during the hour of peak vehicle traffic. Figure 9 (next page) shows the pedestrian volumes during the hour of peak pedestrian demand.

Figure 8: Pedestrian Volumes during Peak Hour of Vehicle Traffic

Figure 9: Pedestrian Volumes during Peak Hour of Pedestrian Traffic

Bicyclists recorded at the intersection include people who used the crosswalks (either riding or dismounted) mixed with pedestrians, and on-road bicyclists who traveled with vehicular traffic. The peak hourly volume of all bicyclists recorded moving through the intersection was 230, which occurred during the PM peak hour. Approximately 80% of bicyclists travel through the intersection using the crosswalks and following the pedestrian signals. These bicyclists also generally follow the same pattern of movements as pedestrians (i.e., favoring the east and north crosswalks). The hourly volume of bicyclists moving through the intersection are shown on Figure 10. The volumes of on-road and in-crosswalk bicyclists are shown for the AM and PM peak hours of vehicle traffic (Figure 11) and for the AM and PM peak hours of bicycle traffic (Figure 12).

Figure 10: Bicyclist Volumes

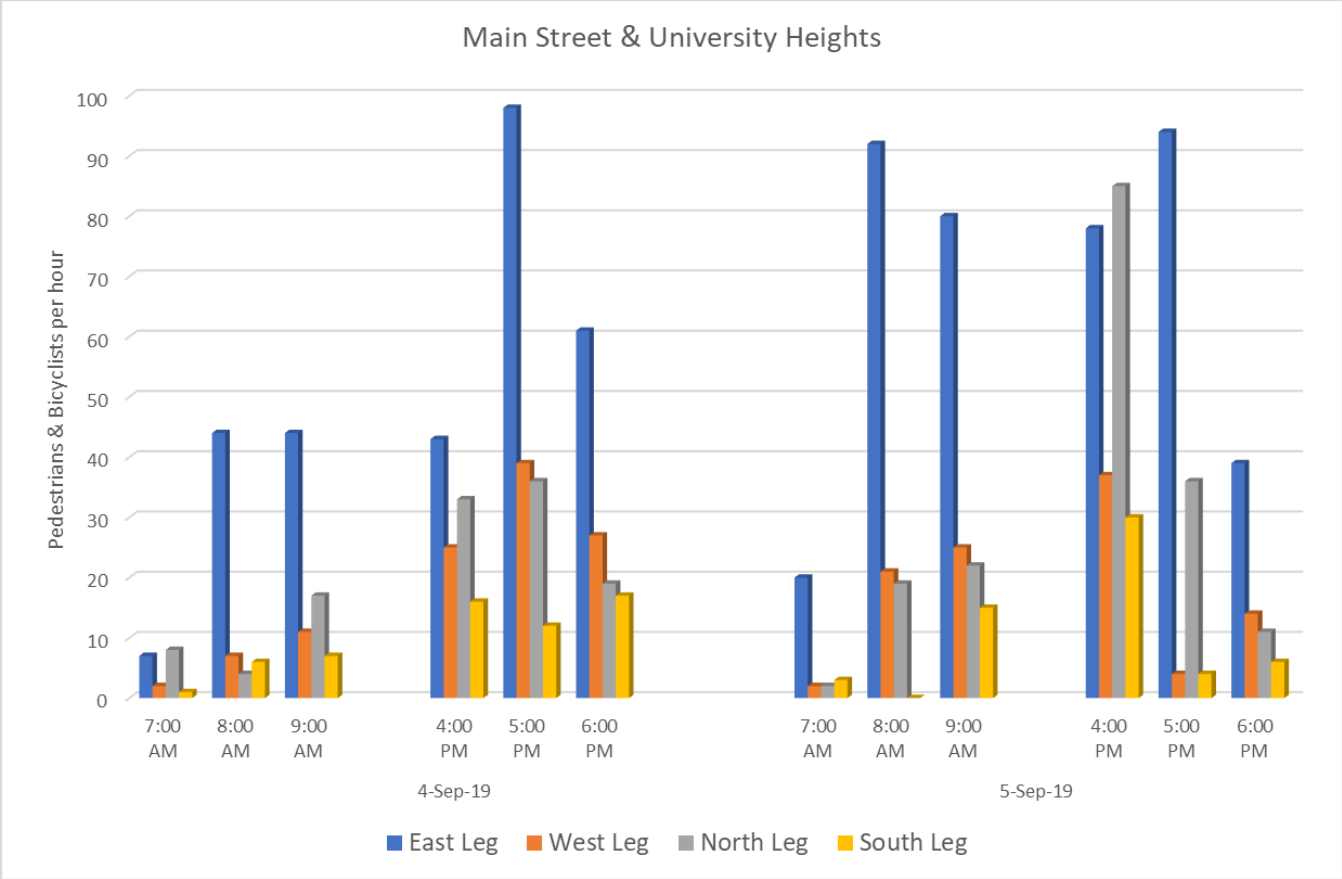


Figure 11: Bicyclist Volumes during Peak Hour of Vehicle Traffic

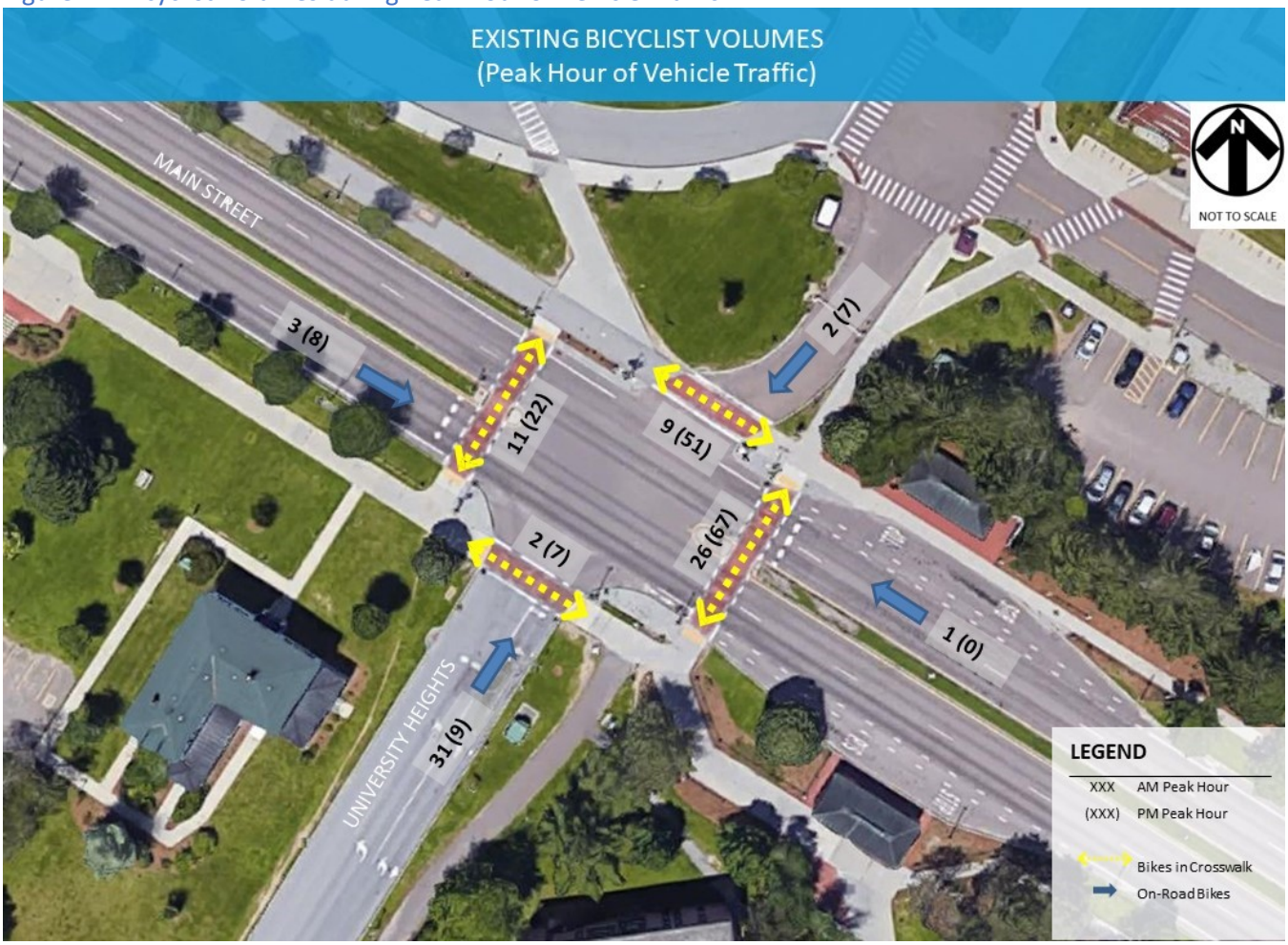


Figure 12: Bicyclist Volumes during Peak Hour of Bike Traffic

The travel paths of pedestrians and bicyclists within the intersection were observed, and these patterns are shown on Figure 13. As shown in this figure, pedestrians and bicyclists crossing at the east crosswalk show a greater tendency for walking outside of the marked crosswalk and for "cutting the corner" at the northeast corner. Pedestrians and bicyclists crossing the west and south crosswalks generally stay within the marked boundaries of the crosswalks.

Figure 13: Pedestrian Travel Paths

General pedestrian movement patterns beyond the intersection crosswalks were also documented and are shown on Figure 14. These patterns show the heavy orientation of pedestrian movement between the University Heights Living Center/Residence Halls located southeast of the intersection and the UVM Davis Center located northwest of the intersection.

Figure 14: Pedestrian Origin-Destination Pattern

3.4 Transit Services

Fixed-route public transit is provided along Main Street by the Green Mountain Transit (GMT) Red Line between downtown Burlington and North Avenue-Williston. The general service characteristics are shown in Table 2. Bus stops for eastbound and westbound travel are located east of the intersection of University Heights, and feature bus shelters and bus turnout lanes. Green Mountain Transit collaborates with UVM to provide fare-free, unlimited access to the GMT system for all UVM full-time students, staff, and faculty.

Table 2: Green Mountain Bus Transit Service

Bus Route	Terminals	Weekday Service Hours	Service Headway
Red Line	Northgate to Burlington Downtown Transit Center	Inbound: 5:55 am to 11:50 pm Outbound: 6:00 am to 11:30 pm	20 min (until 4:50 pm) 30-60 min other times
	Walmart to Burlington Downtown Transit Center	Inbound: 6:00 am to 12:20 am Outbound: 5:35 am to 11:25 pm	20 min (until 5:00 pm) 30-60 min other times

Source: ridegmt.com

UVM also provides campus shuttle bus services (CATSride) that connects off-campus UVM facilities with one another and also with the main UVM campus. The service routes available are: Orange (Gym/Library/Given), Green (On-Campus), and Red (Redstone Express). Both the Orange and Green routes provide service through the Main Street/University Heights intersection.

The Shuttle bus service has stops northbound and southbound on University Heights located 300 feet south of Main Street. CATSride shuttle services are provided at 10-minute intervals on weekdays from 7:30 am to 6:30 pm, and at 30-minute intervals during weekday evenings and weekends.

The locations of area transit stops are shown on Figure 15 (next page).

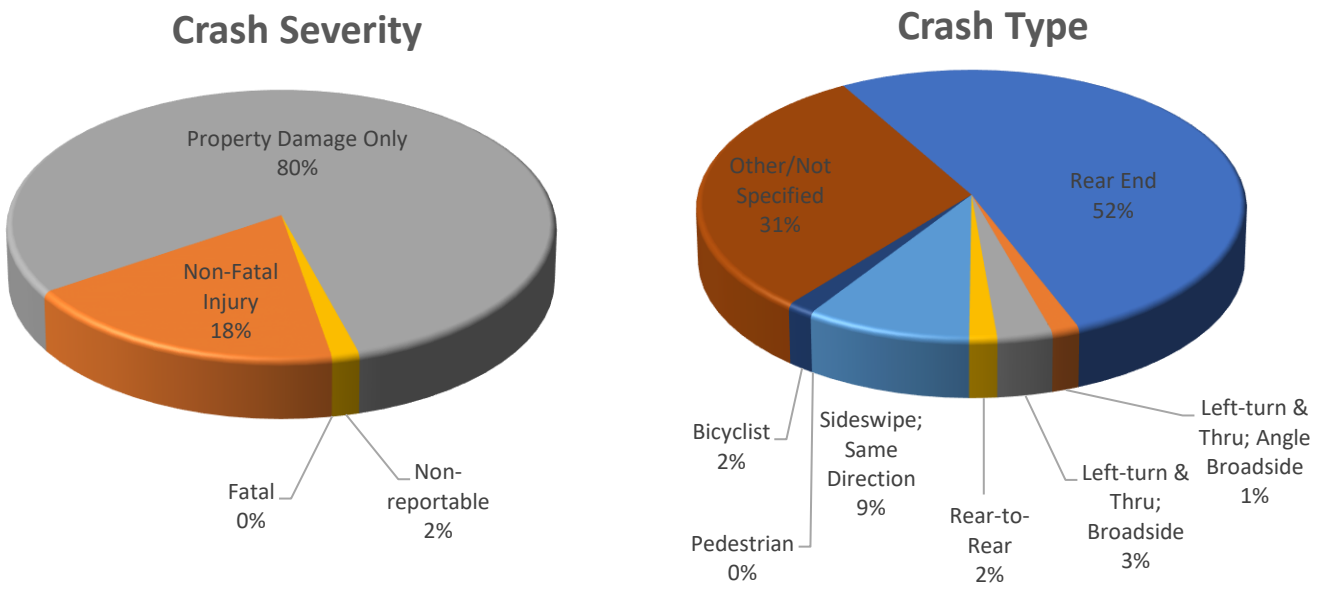
Figure 15: Area Transit Stop Locations

Sources:
https://ridegmt.com/
https://www.uvm.edu/transportation/bus-services

4.0 Traffic Safety

Crash History data was compiled for the 5-year period from Sep 24, 2014 to Sep 23, 2019 for the study intersection using the VTrans online Crash Query Tool. There was a total of 65 crashes over these 5 years: 50 at the intersection and 15 on the adjoining roadway segments. A summary of the severity and crash types are shown on Figure 16.

Figure 16: Crash History Summary



There was 1 crash over the 5 years involving a bicyclist and zero crashes involving pedestrians. The two predominant crash types are rear-end and same-direction sideswipe crashes. These two types of crashes account for 60% +/- of the total crashes. Crashes recorded as “Other” or where the type was not specified comprise 30% +/- of the total crashes. The rear-end and sideswipe crash patterns may be related to factors such as traffic congestion and/or signal timings, which are reviewed as part of this study. However, this intersection is not identified as a High Crash Location in VTrans’ latest available statewide High Crash Locations Report published in 2017 (2012-2016 data). This is because the crash rate at this intersection, which correlates the number of crashes to the volume of traffic, is equal to or lower than the statewide average rate for comparable roadway facilities.

5.0 Traffic Operations

The operating conditions of the study intersection were analyzed with Synchro 10 software using the methodologies of the Highway Capacity Manual (HCM), published by the Transportation Research Board (TRB). These procedures provide a quantitative basis to characterize the quality of traffic flow based on a Level of Service (LOS) concept, where, LOS "A" generally represents unconstrained operations and LOS "F" represents highly congested conditions.

The HCM methodology for signalized intersections defines LOS in terms of average control delay. Control delay is a measure of the amount of stopped delay and the associated delay of slowing and queuing experienced by vehicles moving through an intersection. At signalized intersections, control delay is determined for the traffic movements for each distinct lane group or movement, each approach, and for the intersection as a whole. The LOS thresholds for signalized intersections are shown in Table 3 below. In urban areas, LOS E operations during peak hours may be acceptable depending on the tradeoffs at the intersection for consideration of mobility and safety for all users.

Table 3: Intersection Level of Service (LOS) Criteria

Level of Service (LOS)	Characteristics	Signalized Control Delay per Vehicle (sec)
A	Little or no delay	≤ 10
B	short delays	> 10 and ≤ 20
C	Average delays	> 20 and ≤ 35
D	Long delays	> 35 and ≤ 55
E	Very long delays	> 55 and ≤ 80
F	Extreme delays	> 80

The traffic operations of the intersection were analyzed for the following conditions for the 2019 existing conditions:

- AM Peak Hour of Vehicle Traffic
- AM Peak Hour of Pedestrian/Bicycle Traffic
- PM Peak Hour of Vehicle Traffic
- PM Peak Hour of Pedestrian/Bicycle Traffic

The traffic signal operates in a two-phase sequence for vehicle traffic, with an advance Walk interval providing a protected phase for pedestrians to start crossing Main Street without conflict with vehicle traffic. Pedestrians cross University Heights concurrently with Main Street vehicle traffic flow. The vehicle-pedestrian conflicts for this crossing are low because of the following characteristics:

- The pedestrian crossing involves interaction with only one concurrent vehicle traffic movement: the eastbound right-turn. Left turns from Main Street to University Heights are prohibited.

- The right-turn vehicle traffic volume is low: the average hourly volume is less than 60 vehicles and the peak hour volume is 80 vehicles, such that interactions between pedestrians and vehicles are not frequent.
- The speed of the right-turn vehicles is slow because of the turning movement.

The capacity analysis results are shown in Table 4 for the AM and PM peak hours. The analysis documentation is provided in Appendix B. As shown in Table 4, the overall intersection operates at LOS A in the AM peak hours and LOS C in the PM peak hours. The signal is timed to favor traffic flow along Main Street because of its arterial function. The operation of the shared Left-Thru-Right lane on University Heights is a LOS F in the PM peak vehicle and pedestrian hours. This condition is a result of the interaction of the higher volume of right-turn traffic in the afternoon with the high volume of pedestrian traffic at the crosswalk and the longer green time allocation to Main Street.

Table 4: Level of Service Summary – Existing Conditions

Scenario	Approach Geometries	Peak	Street	Approach	Lane Group	Weekday AM Peak Hour		Weekday PM Peak Hour	
						LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
Existing Geometry & Signal Phasing	Northbound	Vehicle Peak Hour	University Heights	NB	Left-turn	C	32.1	C	24.7
					Left-Thru-Right	C	28.2	F	138.5
			UVM Access	SB	Left-Thru-Right	C	25.4	C	21.0
	Southbound		Main Street	EB	Thru-Right	A	6.6	B	16.1
				WB	Thru	A	8.6	B	13.1
			Overall Intersection			**A**	**8.9**	**C**	**22.9**
	Eastbound	Pedestrian Peak Hour	University Heights	NB	Left-turn	C	26.0	C	25.3
					Left-Thru-Right	C	30.1	F	135.9
			UVM Access	SB	Left-Thru-Right	C	23.3	C	20.7
	Westbound		Main Street	EB	Thru-Right	A	6.6	B	15.4
				WB	Thru	A	7.5	B	13.4
			Overall Intersection			**A**	**8.4**	**C**	**22.7**

6.0 Vehicle Queues

Vehicle queue conditions can affect the efficiency and safety of traffic operations if the queues extend beyond the length of existing turn lanes or to adjacent intersections. Queue report outputs from the Synchro models were used to identify the queue conditions at the Main Street/University Heights intersection. The queue characteristics are identified for 50th percentile and 95th percentile traffic volumes, which accounts for fluctuations in traffic flow within the analysis periods. The 50th percentile queue represents the maximum back of queue during a typical cycle in the respective peak hour, and the 95th percentile queue represents the maximum back of queue that has only a 5% probability of being exceeded during the hour. Most of the time, the queue will be shorter than the 95th percentile queue, and the chances of a longer queue occurring are very small. The 95th percentile queue is typically used for design where feasible. The existing queue characteristics from the Synchro models are shown in Table 5.

Table 5: Queue Summary - Existing Conditions

Scenario	Condition	Street	Approach	Lane Group	Link Distance (feet)	Turn Lane Length (feet)	Weekday AM Peak Hour		Weekday PM Peak Hour	
							50th %tile Queue (feet)	95th %tile Queue (feet)	50th %tile Queue (feet)	95th %tile Queue (feet)
Existing Condition	Vehicle Peak Hour	University Heights	NB	Left	245		50	75	75	125
				Left-Thru-Right		100	25	50	125	250
		UVM Access	SB	Left-Thru-Right	30		25	25	25	25
		Main Stret	EB	Thru-Right	400		150	225	300	400
			WB	Thru	1000		225	375	225	300
	Pedestrian Peak Hour	University Heights	NB	Left	245		25	75	75	150
				Left-Thru-Right		100	25	75	125	250
		UVM Access	SB	Left-Thru-Right	30		25	25	25	25
		Main Stret	EB	Thru-Right	400		100	175	275	375
			WB	Thru	1000		150	250	225	300

Vehicle queues on the northbound curbside lane (Shared Left-Thru-Right lane) on University Heights exceed the available storage capacity during the PM peak hours at both the 50th percentile and 95th percentile levels. The lengths of these queues are illustrated on Figure 17 (next page). These queues indicate that the traffic in the curbside lane will frequently impede traffic trying to access the left-turn lane during the PM peak vehicle and pedestrian traffic hours. The 95th percentile queues in the eastbound direction extends back to the adjacent upstream intersection of University Terrace in the PM peak hours which may occasionally affect the operations at this upstream intersection. This condition illustrates the importance of corridor-level considerations of traffic operations along Main Street when considering options for improvements at the local intersection level at Main Street and University Heights.

Figure 17: University Heights Back-of Queues

7.0 'No Right Turn' Blank-out Sign

There is an existing Blank-out 'No Right Turn' (NRT) sign facing the northbound approach traffic on University Heights. This sign is 'On' during the advance leading Walk phase for pedestrians crossing Main Street, which provides pedestrians an exclusive interval to start crossing Main Street without conflict with vehicle traffic.

The NRT Blank-out sign is located on the northeast corner of the intersection, adjacent to the vehicle signal display. The sign location was confirmed to be consistent with the applicable design criteria for placement and visibility.

View of NRT Blank-out sign facing northbound traffic on University Heights

8.0 Signal Compliance (Red-Light Running)

Driver compliance with the traffic signal at Main Street and University Heights was reviewed to identify the pattern of driver response approaching the signal during the yellow change interval and the red phase. This analysis was conducted in response to community input of perceived and/or anecdotal concern of a Red-Light Running RLR) issue. This analysis was conducted using the same video recordings that were used to document the traffic counts. The focus of this analysis was the traffic on the eastbound and westbound approaches of Main Street.

Driver compliance was evaluated in terms of conformance to the section of Vermont's Motor Vehicle Law governing traffic-control signals (§ 1022) which states that "*vehicle traffic facing a steady yellow signal is thereby warned that the related green signal is being terminated or that a red signal will be exhibited immediately thereafter, when vehicle traffic shall not enter the intersection*". This law, which is consistent with the Uniform Vehicle Code[3] and the Manual on Uniform Traffic Control Devices (MUTCD)[4], means that a driver can enter the intersection during any part of the yellow interval and be in the intersection during the red indication as long as they entered the intersection during the yellow interval. In this context, vehicles entering the intersection during the yellow interval are considered to be in compliance with the traffic signal. The traffic signal is programmed to provide an 'All-Red' interval following the yellow signal as an additional margin of safety to enable traffic to clear the intersection prior to releasing the next phase of traffic (pedestrian and/or vehicle). Traffic moving through the intersection during this 'All-Red' period is not considered a RLR violation, but this could be the basis of the safety issue perceived by the public.

The signal compliance analysis used three one-hour samples from the same video used to record the traffic counts: representing AM peak hour, PM peak hour, and non-peak hour conditions. The video data was viewed to separately record vehicles entering the intersection during the yellow interval or red phase of the signal for each travel direction. For the purposes of the study, the stop bar in advance of the crosswalk was used as the reference point for considering a vehicle to have entered the intersection.

The study sampled almost 7,300 vehicles approaching the intersection in both directions over the 3 study hours. The study recorded 337 vehicles entering the intersection during the yellow interval (188 EB/149 WB) and 33 vehicles entering after the signal changed to red (18 EB/15 WB). The red-light violations accounted for 0.4% of the total traffic approaching the intersection on Main Street, with a standard error (95% confidence) of 0.2% +/-. In other words, more than 99% of the drivers complied with the signal control.

The red-light violations were also correlated to the total volume of entering vehicles and to the number of signal cycles in the hour to provide additional context. These analyses are summarized in Table 6. The

[3] Uniform Vehicle Code, National Committee on Uniform Traffic Laws and Ordinances (NCUTLO), 2000.

[4] Manual of Uniform Traffic Control Devices for Streets and Highways, Federal Highway Administration, 2009 (including May 2012 Revisions 1 & 2)

results of this analysis indicate that red-light running occurs about 5 times for every 1,000 entering vehicles and 1 time in every 4-5 cycles of the signal.

Table 6: Signal Compliance Summary

Hour of Day	Observed Red-Light Violations			Total Approach Volume			Violations per 1,000 Entering Vehicles			Violations per Signal Cycle		
	Eastbound	Westbound	Total	Eastbound	Westbound	Total	Eastbound	Westbound	Total	Eastbound	Westbound	Total
AM Peak	4	7	11	1,045	1,428	2,473	3.83	4.90	4.45	0.08	0.15	0.23
PM Peak	9	6	15	1,472	1,267	2,739	6.11	4.74	5.48	0.19	0.13	0.31
Off Peak	5	2	7	1,070	1,014	2,084	4.67	1.97	3.36	0.10	0.04	0.15
3-hr Total	18	15	33	3,587	3,709	7,296	5.02	4.04	4.52	0.13	0.10	0.23

The extent that Red-Light Running (RLR) is a factor contributing to crashes at the intersection could not be ascertained from the crash history data compiled and reviewed for this study. However, there were not many occurrences of the types of crashes that are typically associated with RLR, such as right-angle (side impact) or left-turn crashes. Rear end crashes may be associated with RLR issues (such as when the lead vehicle stops for the signal while a following vehicle is intending to proceed ahead), but there can be other factors contributing to this crash type. Consequently, the available information is not conclusive that this crash pattern is associated with RLR behavior.

Strategies to address red-light running issues may include engineering, education and/or enforcement. This study considers the engineering aspect. The engineering countermeasures to reduce red-light running generally fall under the following categories:

- Improve signal visibility/conspicuity
- Improve line of sight
- Improve signal timing
- Increase likelihood of stopping
- Reduce the need to stop

Signal Visibility/Conspicuity: The existing signal displays were reviewed for consistency with the applicable standards of VTrans and the MUTCD pertaining to the number of signal heads, size of the signal lenses, and signal placement. This review determined that the signal displays are consistent with these standards. The signals feature LED lighting modules that offer better visibility of the signal indications. The primary signal heads facing each travel approach also include backplates that enhance the conspicuity of the signals. These backplates are typically applied only on higher-speed roadways (above 40 mph), and their use at this intersection exceeds the minimum standards.

Line of Sight: The sight distance conditions along Main Street were reviewed to identify how far in advance of the stop line a driver can see the traffic signals. The sight distance conditions were reviewed in relation to the MUTCD criteria for a 25-mph speed condition (the posted speed limit) and for a 35-mph speed condition (posted limit plus 10 mph). The roadway alignment of Main Street is straight and both approaches are on an uphill grade to a crest vertical curve near the intersection. The review indicates that the current sight lines exceed the recommended distance for the posted speed limit and meet the distance for a 35-mph speed in both directions. It is noted that the canopy of street trees along the south side of Main Street has the potential to limit views of the curbside signal for the eastbound approach in the future as these trees mature. This condition should be monitored periodically for tree trimming/management to maintain the sight line.

Signal Timing: The signal timing intervals used to transfer the right-of-way at an intersection can be a factor related to RLR issues. The existing timing plans that govern the sequencing and timing parameters of the signal at Main Street and University Heights were reviewed for compliance with MUTCD criteria and industry best practice. This review identified that the existing Yellow and All Red intervals are properly timed, with a 4-second Yellow change interval and 1-second All Red interval. However, the crosswalks at this intersection are placed further from the edges of the intersection than at a typical intersection. This can cause a situation where a vehicle on Main Street is still approaching the crosswalk after the WALK signal has started even though that vehicle legally entered the intersection. This can create unexpected conflict between motorists and pedestrians. Extending the duration of the All Red interval can address this right-of-way transfer conflict but will have a cascading effect that may increase vehicle delays due to the increased red time.

Increased Likelihood of Stopping: This countermeasure strategy is primarily related to locations where the roadway alignment or other physical conditions reduce the sight distance such that drivers do not have enough time to see and react to the traffic signal. Improvements associated with this condition typically involve placement of advance warning signs (signs, flashing beacons, etc.) or supplemental signal heads. This type of countermeasure is not applicable to the study intersection.

Reduce the Need to Stop: This countermeasure relates to locations where there may be an opportunity to remove the traffic signal because it is no longer needed or to convert the intersection to some other configuration (such as a roundabout) that does not require signal control. The study intersection is not a candidate for signal removal because of the high volumes of vehicular, pedestrian and bicyclist traffic. A roundabout was not specifically evaluated for this study, but this location is not considered to be a good candidate for this type of treatment because of the imbalance of main street and side street volumes, the high pedestrian/bicyclist crossing volumes and right-of-way constraints.

9.0 Improvement Alternatives

The analysis of the existing conditions has identified several traffic operations and safety issues at the intersection of Main Street and University Heights. These issues pertain to the interactions of the high vehicle and pedestrian traffic volumes. In particular, the issues relate to the following:

- Concentration of high volumes of pedestrians on east crosswalk
- Interaction of the concurrent movement of right-turn volume from University Heights with pedestrians crossing Main Street
- Interaction of Main Street through vehicle traffic at right-of-way transition to pedestrian WALK phase to cross Main Street

Several improvement alternatives have been identified to address these issues. These alternatives are described below. It is noted than one improvement strategy that was considered was to create vehicle access connections between the UVM University Heights campus and the adjacent local streets to expand the access/circulation opportunities for University Heights traffic. However, research into this option revealed that there are permit conditions associated with the development of the University Heights facilities that restrict access connections to the local street network because of potential impacts to the adjacent residential neighborhoods. UVM is considering options to modify these access restrictions in a separate effort outside of the context of this study.

9.1 Signal Phasing/Timing

Modifications of the existing signal timing and/or phasing can be implemented to address safety and congestion issues at the intersection. These signal timing/phasing options consider the balance of mobility interests for all users, including pedestrians, bicyclists, motorists, and transit operators. It is noted that these improvements address the localized issues of the intersection but may have other impacts at the corridor level for traffic along Main Street. These corridor-level issues have not been investigated as part of this study.

- ***Extend All Red interval***

  This improvement would increase the duration of the All Red interval on Main Street from 1.0 second to 2.3 seconds. This additional red time would help to address the conflicts associated with the right-of-way transfer between Main Street vehicle and pedestrian crossing traffic by providing enough time for vehicles lawfully entering the intersection to clear the crosswalk before the beginning of the WALK phase. This safety improvement would not significantly affect the overall operational performance of the intersection, although there would be relatively minor increases in motorist delay associated with the increased “lost time” in each cycle.

- ***Extend Northbound Green Phase***

  This improvement would modify the signal phasing to allow a lagging protected interval for northbound vehicle traffic. This operational improvement would provide additional time for vehicles to exit University Heights without conflict with pedestrians. This operational improvement

would maintain the existing leading/ concurrent pedestrian phasing. The signal timing modifications for this alternative could result in either reduced green time for Main Street traffic or a longer overall cycle length. These changes would increase delays and queues for traffic on Main Street. Changes in the cycle length could also impact the operations at other intersections along Main Street to manage arterial traffic progression, which should be considered and further studied if this alternative is pursued.

- ***Increase WALK Time***

This alternative would increase the amount of WALK time allocated for crossing Main Street. The amount of time currently allocated for the leading WALK interval is 7 seconds, which is an industry-standard default value. Signal timing guidelines for locations with high pedestrian demand suggest that this value could be increased to as much as 15 seconds. However, increasing the time allocated to the WALK interval would require either a reduction of the amount of green time available to vehicular movements (with corresponding increases in delay and queues) or an increase in the cycle length. An increased cycle length would reduce the number of times in each hour that the WALK signal would be received to cross the intersection. Changes to the signal timing would also have the same arterial management impact issues that would need to be evaluated for this alternative.

- ***Exclusive Pedestrian Phase***

This improvement alternative would modify the signal phasing to provide an exclusive pedestrian phase for crossing all legs of the intersection at the same time. This improvement would enable pedestrians to cross Main Street and University Heights without interacting with vehicular traffic. This option would make the cycle length longer, which would increase vehicle delays and queues. A longer cycle length would also affect the operations at adjacent signalized intersections along Main Street, requiring further corridor-level analysis of these operations. While this alternative would improve the quality of the pedestrian crossing, it would reduce the number of opportunities to cross in each hour because of the longer overall cycle length. It would also increase delays for pedestrians waiting for the next pedestrian crossing if they are crossing more than one leg of the intersection. This alternative may also reduce compliance with the signal control. These changes to the signal timing would also involve the same considerations for the balance of mobility needs for all users as noted for the other signal phasing/timing options. Additional No Right Turn/No Turn On Red signing would be needed where signs do not already exist.

The traffic operations associated with these signal phasing/timing alternatives are summarized in Table 7 (next page).

Table 7: Level of Service Summary - Signal Timing Alternatives

Scenario	Approach Geometries	Peak	Street	Approach	Lane Group	Weekday AM Peak Hour LOS	Weekday AM Peak Hour Delay (sec/veh)	Weekday PM Peak Hour LOS	Weekday PM Peak Hour Delay (sec/veh)
Existing Condition	Northbound	Vehicle Peak Hour	University Heights	NB	Left-turn	C	32.1	C	24.7
					Left-Thru-Right	C	28.2	F	138.5
	Southbound		UVM Access	SB	Left-Thru-Right	C	25.4	C	21.0
			Main Street	EB	Thru-Right	A	6.6	B	16.1
				WB	Thru	A	8.6	B	13.1
			Overall Intersection			**A**	**8.9**	**C**	**22.9**
	Eastbound	Pedestrian Peak Hour	University Heights	NB	Left-turn	C	26.0	C	25.3
					Left-Thru-Right	C	30.1	F	135.9
	Westbound		UVM Access	SB	Left-Thru-Right	C	23.3	C	20.7
			Main Street	EB	Thru-Right	A	6.6	B	15.4
				WB	Thru	A	7.5	B	13.4
			Overall Intersection			**A**	**8.4**	**C**	**22.7**
Extended NB Phase	Northbound	Vehicle Peak Hour	University Heights	NB	Left-turn	C	32.3	C	26.3
					Left-Thru-Right	C	29.1	C	28.3
	Southbound		UVM Access	SB	Left-Thru-Right	C	30.7	C	29.1
			Main Street	EB	Thru-Right	B	10.1	C	23.7
				WB	Thru	B	13.4	B	17.9
			Overall Intersection			**B**	**13.0**	**C**	**21.7**
	Eastbound	Pedestrian Peak Hour	University Heights	NB	Left-turn	C	28.6	C	26.6
					Left-Thru-Right	C	27.4	C	28.2
	Westbound		UVM Access	SB	Left-Thru-Right	C	28.6	C	29.0
			Main Street	EB	Thru-Right	A	9.7	B	22.2
				WB	Thru	B	11.2	B	18.3
			Overall Intersection			**B**	**11.7**	**C**	**21.2**
Increase Ped WALK interval	Northbound	Vehicle Peak Hour	University Heights	NB	Left-turn	D	45.5	C	26.8
					Left-Thru-Right	C	34.3	F	155.4
	Southbound		UVM Access	SB	Left-Thru-Right	C	28.7	C	22.3
			Main Street	EB	Thru-Right	A	8.0	C	21.6
				WB	Thru	B	10.5	B	16.8
			Overall Intersection			**B**	**11.0**	**C**	**28.2**
	Eastbound	Pedestrian Peak Hour	University Heights	NB	Left-turn	C	30.9	C	27.5
					Left-Thru-Right	D	37.2	F	152.5
	Westbound		UVM Access	SB	Left-Thru-Right	C	25.7	C	22.1
			Main Street	EB	Thru-Right	A	8.1	C	20.4
				WB	Thru	A	9.3	B	17.1
			Overall Intersection			**B**	**10.3**	**C**	**27.7**
Exclusive Ped Phase	Northbound	Vehicle Peak Hour	University Heights	NB	Left-turn	D	41.3	C	31.0
					Left-Thru-Right	C	32.3	C	34.1
	Southbound		UVM Access	SB	Left-Thru-Right	C	31.4	C	25.6
			Main Street	EB	Thru-Right	B	11.8	C	26.3
				WB	Thru	B	16.1	B	19.5
			Overall Intersection			**B**	**15.5**	**C**	**24.2**
	Eastbound	Pedestrian Peak Hour	University Heights	NB	Left-turn	D	37.2	C	32.9
					Left-Thru-Right	C	31.4	C	34.2
	Westbound		UVM Access	SB	Left-Thru-Right	C	30.2	C	25.5
			Main Street	EB	Thru-Right	B	10.5	C	24.2
				WB	Thru	B	12.3	B	19.8
			Overall Intersection			**B**	**13.0**	**C**	**23.5**

9.2 Extend Northbound Right-turn lane

The existing queue conditions for the northbound curbside lane (Shared Left-Thru-Right-turn lane) on University Heights exceeds the available storage capacity during the PM peak hours. An extension of this lane to provide additional storage will reduce congestion and improve traffic safety by reducing the conflict that occurs because of the spillback of the curb-lane traffic into the left-turn lane. The specific amount of added storage to be provided will be influenced by the choices made for signal phasing/timing improvements discussed in Section 9.1.

9.3 Widen East Crosswalk

Many pedestrians using the east crosswalk to cross Main Street walk outside the marked boundaries of the crosswalk. This is partly due to the high pedestrian volumes and also to overall origin-destination desire lines that minimize the overall walking distance. The improvement alternative would widen the crosswalk to better accommodate the demand volumes. A concept of this improvement is shown on Figure 18.

Figure 18: Crosswalk Widening Concept

This improvement will better accommodate the high pedestrian volume which will also improve pedestrian levels of service. It may also improve pedestrian compliance with the crosswalk limits. The wider crosswalk might also produce an attendant reduction in vehicle traffic delay for the northbound right-turn traffic

separate from any signal phasing/timing improvements. However, these secondary improvements are likely to be random because the bi-directional pedestrian crossings do not ensure there would be more gaps in pedestrian traffic that would be suitable for vehicle movement. A wider crosswalk also may reduce the target value for motorists recognizing pedestrians in the crossing during times of low pedestrian activity and/or during low light conditions, which could be a potential safety impact.

Specific design options for widening the east crosswalk should consider the following:

Widen Crosswalk away from the intersection: This option is likely to have a lower construction cost, but this option does not follow the natural desire lines of pedestrian movement which could reduce the effectiveness and compliance with the crosswalk. This option would also move the stop line for vehicle traffic which may increase delays because of added lost time associated with a longer Yellow change interval.

Widen Crosswalk toward the intersection: This option would have a higher cost associated with potential impacts to drainage structures, median modifications and/or lighting/signal relocations. The benefits of this option are that it would better match the natural desire lines of pedestrian movements and would not have the impacts to traffic delays noted for the Widen East option because the stop line would not be moved.

9.4 University Heights Sidewalk

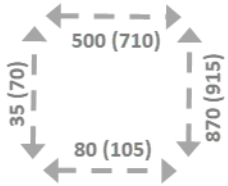
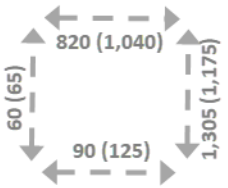
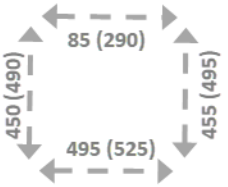
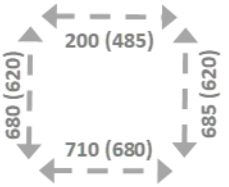
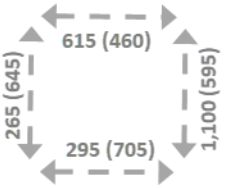
This improvement would provide a new sidewalk or shared-use path on the west side of University Heights between Main Street and the Adams Building/Johnson House access drive. A concept of this improvement is shown on Figure 19.

Figure 19: University Heights Sidewalk

This improvement will provide an accessible route for people who are walking along this side of the street and it improves connectivity to the existing shared use path and Davis Center pedestrian tunnel. This improvement is also expected to divert some of the existing people who use the east crosswalk to the west crosswalk providing better pedestrian/bicyclist accommodation at the intersection. This redistribution of pedestrian/bicyclist volumes at the crosswalks may also reduce the high PM peak hour delays for northbound right-turn vehicles. However, increased ped/bike volume using the west side crosswalk will increase the amount of vehicle-ped/bike conflicts and delays for the northbound left-turn vehicle traffic and may increase delays for eastbound traffic on Main Street associated with right-turn conflicts attendant to more people using the crosswalk across University Heights.

Traffic operations were evaluated to consider the impacts and benefits associated with the potential redistribution of ped/bike traffic at the crosswalks. The two scenarios considered were [1] an equal distribution of people using the eastside and westside crosswalks, and [2] a distribution that approximates an equalized delay for the northbound left-turn and right-turn vehicle traffic. The traffic operations for existing conditions and these two scenarios are provided in Table 8 (next page). These analyses are not projections of actual shifts in ped/bike movements that might occur but provide a context for understanding the interactions of peds/bikes with vehicular traffic. These scenarios illustrate the trends noted above in terms of changes in traffic delays.

Table 8: Level of Service Summary - Alternative Pedestrian* Distribution Scenarios

Scenario	Peak	Street	Approach	Lane Group	Weekday AM Peak Hour LOS	Weekday AM Peak Hour Delay (sec/veh)	Weekday PM Peak Hour LOS	Weekday PM Peak Hour Delay (sec/veh)
Existing Conditions	**Vehicle Peak Hour** 	University Heights	NB	Left-turn	C	32.1	C	24.7
				Left-Thru-Right	C	28.2	F	138.5
		UMV Access	SB	Left-Thru-Right	C	25.4	C	21.0
		Main Street	EB	Thru-Right	A	6.6	B	16.1
			WB	Thru	B	8.6	B	13.1
		Overall Intersection			**B**	**8.9**	**C**	**22.9**
	Pedestrian Peak Hour 	University Heights	NB	Left-turn	C	26.0	C	25.3
				Left-Thru-Right	C	30.1	F	135.9
		UMV Access	SB	Left-Thru-Right	C	23.3	C	20.7
		Main Street	EB	Thru-Right	A	6.6	B	15.4
			WB	Thru	B	7.5	B	13.4
		Overall Intersection			**B**	**8.4**	**C**	**22.7**
50-50 Pedestrian Distribution Crossing Main Street	**Vehicle Peak Hour** 	University Heights	NB	Left-Thru	D	50.5	D	40.7
				Right-turn	C	25.4	E	59.0
		UMV Access	SB	Left-Thru-Right	C	24.0	C	20.4
		Main Street	EB	Thru-Right	A	7.9	B	17.3
			WB	Thru	B	10.2	B	13.7
		Overall Intersection			**B**	**10.9**	**B**	**19.5**
	Pedestrian Peak Hour 	University Heights	NB	Left-Thru	D	43.5	E	62.6
				Right-turn	C	24.6	E	75.5
		UMV Access	SB	Left-Thru-Right	C	22.4	C	20.1
		Main Street	EB	Thru-Right	A	7.7	B	16.8
			WB	Thru	A	8.7	B	14.3
		Overall Intersection			**A**	**10.0**	**C**	**21.8**
Pedestrian Distribution for Balanced Delay for NB Movements	**Vehicle Peak Hour** 	University Heights	NB	Left-Thru	C	34.0	D	53.3
				Right-turn	C	27.9	D	51.4
		UMV Access	SB	Left-Thru-Right	C	25.3	C	20.6
		Main Street	EB	Thru-Right	A	6.8	B	16.8
			WB	Thru	A	8.8	B	13.3
		Overall Intersection			**A**	**9.2**	**B**	**19.2**
	Pedestrian Peak Hour 	University Heights	NB	Left-Thru	C	33.6	E	68.0
				Right-turn	C	27.3	E	71.6
		UMV Access	SB	Left-Thru-Right	C	23.0	C	20.1
		Main Street	EB	Thru-Right	A	6.9	B	16.8
			WB	Thru	A	7.9	B	14.3
		Overall Intersection			**A**	**8.9**	**C**	**21.8**

** Note: The volumes shown in this table represent pedestrians and bicyclists in the crosswalk.*

9.5 Traffic Calming

Opportunities for traffic calming strategies for Main Street traffic were also explored. Because Main Street is a Principal Arterial and is on the federal-aid highway system, the types of strategies that were looked at were focused on those that would be consistent with the primary mobility function of this roadway but could help to promote compliance with the roadway's 25 mph speed limit. Speed data collected on Main Street was analyzed to identify the prevailing speed characteristics. This data indicates that the speeds on Main Street are as follows:

50th percentile speed:	Eastbound direction: 21 mph Westbound direction: 27 mph
85th percentile speed:	Eastbound direction: 30 mph Westbound direction: 33 mph

The 85th percentile speed is the speed at which 85 percent of all traffic on Main Street is traveling at or below. This percentile threshold is a typical standard used for many aspects of a roadway's design. The data shows that there is generally good compliance with the 25-mph speed limit, but vehicle speeds in the westbound direction are higher than in the eastbound direction. This is likely to be because westbound traffic is transitioning from a higher speed roadway environment at the I-89 interchange, and the roadway and intersections between the interchange and University Heights have higher-speed suburban design characteristics.

Traffic calming options that might be considered for Main Street include Transverse Speed Markings and Driver Feedback Speed Signs.

Transverse Speed Markings

Transverse Speed Markings are intended to encourage slower speeds by giving motorists the perception that their speed is increasing. Variations of this concept, which can be applied on both single-lane and multilane roadways, include Optical Speed Bars (shown at left), and Converging Chevron Markings.

Evaluations of these treatments have shown that they can be effective in inducing small reductions in speed, but some of these studies have also shown diminishing results over time particularly at locations where there are many local and familiar drivers.

Driver Feedback Signs

Driver Feedback Signs are traffic calming devices designed to slow the speed of motorists by alerting drivers of their speed. They are often used in school zones but can also be effective in areas of speed zone transitions.

A 2013 study conducted in Shelburne, VT[5] showed that these devices were successful in reducing vehicle speeds. It is noted that those case study sites had pre-deployment 85th percentile speeds that exceeded the posted speed limit by more than 10 mph, which is not the case on Main Street at University Heights.

The existing speed characteristics on Main Street are not indicative of a significant rate of non-compliance with the legal speed limit. The crash history at the intersection also does not indicate speeding as a significant contributing factor and the intersection is not identified as a High Crash Location. However, these traffic calming tools might be effective in lowering the prevailing speeds.

10.0 Conclusions and Next Steps

This transportation study evaluated mobility and safety at the intersection of Main Street and University Heights, in the City of Burlington, VT. Pedestrian/bicyclist volumes at the intersection are high, with about 2,400 people crossing at the intersection during peak hours. These pedestrian/bicyclist volumes are comparable to the peak hour vehicular volumes moving through the intersection (2,500-3,000 vehicles per hour).

The analysis of the existing conditions has identified several traffic operations and safety issues at the intersection. These issues primarily relate to the following:

- Concentration of high volumes of pedestrians on east crosswalk
- Interaction of the concurrent movement of right-turn volume from University Heights with high volume of pedestrians crossing Main Street
- Interaction of Main Street through vehicle traffic at right-of-way transition to pedestrian WALK phase to cross Main Street

Overall vehicle traffic operations at the intersection are level of service C or better during peak hours, but the northbound right-turn movement operates at a LOS F during the afternoon peak hours. This condition results from the interaction of this turn traffic with the high volume of people crossing the street at the same time. Long traffic delays for individual movements such as this where motorists wait through two cycles of the signal is not uncommon at urban intersections during peak hour conditions, and often reflects a balance between vehicle and ped/bike mobility.

[5] Effectiveness of Radar Speed Feedback Signs & Other Traffic Calming Techniques, Addison County Regional Planning Commission, 2013

Improvements identified for consideration at the intersection considered the balance of mobility and safety interests for all users, including pedestrians, bicyclists, motorists, and transit operators. It is noted that these improvements address the localized issues of the intersection but may have other impacts at the corridor level for traffic along Main Street. These corridor-level issues have not been investigated as part of this study.

An initial implementation strategy for intersection improvements has been identified by the City Department of Public Works and the University of Vermont based on considerations of need, opportunity, cost, potential benefits and UVM stakeholder input. This strategy includes progressing a selected set of improvements followed by monitoring and reevaluation. The Initial Improvements are as follows:

Initial Implementation Improvements

- Construct sidewalk on west side of University Heights
- Widen east crosswalk to increase crossing capacity (using temporary materials as a test case)
- Provide opportunities/incentives to balance pedestrian volumes over both crossings
- Revise signal timing of the All-Red interval for Main Street traffic
- Install speed feedback signs

The sidewalk on the west side of University Heights was installed by UVM in the summer of 2020. At this time, more comprehensive timing/phasing changes or physical improvements will not be implemented until after the other improvements listed above are deployed and adequate time is allowed for people to acclimate to them.

An 'After Study' will be conducted to collect and evaluate new data and re-assess conditions to consider the additional timing/phasing improvements and/or other strategies.

University Heights Traffic Study

City of Burlington, Vermont

APPENDIX A

Traffic Count Data

CHA Project # 058017.000

CHA Consulting, Inc.
3 Winners Circle P.O. Box 5269

Albany, New York, United States 12205
518 453 4586 THughes@chacompanies.com

Count Name: Main Street & University Heights
Site Code:
Start Date: 09/04/2019
Page No: 1

Turning Movement Data

Start Time	UVM Exit Southbound						Main Street Westbound						University Heights Northbound						Main Street Eastbound						
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Int. Total
7:00 AM	0	1	0	0	16	1	0	213	0	0	18	213	10	0	8	0	2	18	5	174	0	0	1	179	411
7:15 AM	0	2	0	0	35	2	0	280	0	0	42	280	8	0	9	0	2	17	5	197	0	0	2	202	501
7:30 AM	0	2	0	0	77	2	0	359	0	0	106	359	8	0	14	0	10	22	11	205	0	0	8	216	599
7:45 AM	0	2	0	0	108	2	0	383	0	0	152	383	10	0	21	0	16	31	22	247	0	0	5	269	685
Hourly Total	0	7	0	0	236	7	0	1235	0	0	318	1235	36	0	52	0	30	88	43	823	0	0	16	866	2196
8:00 AM	0	3	1	0	170	4	0	360	0	0	341	360	5	3	26	0	20	34	18	197	0	0	4	215	613
8:15 AM	0	3	0	0	140	3	0	340	0	0	357	340	11	6	38	0	33	55	20	236	0	0	14	256	654
8:30 AM	0	2	0	0	52	2	0	394	1	0	105	395	10	2	19	0	7	31	19	223	0	0	7	242	670
8:45 AM	1	3	1	0	68	5	0	356	0	0	139	356	10	1	27	0	8	38	12	194	0	0	5	206	605
Hourly Total	1	11	2	0	430	14	0	1450	1	0	942	1451	36	12	110	0	68	158	69	850	0	0	30	919	2542
9:00 AM	0	2	0	0	107	2	0	258	0	0	144	258	9	2	15	0	12	26	12	174	0	0	6	186	472
9:15 AM	0	1	0	0	393	1	0	237	1	0	462	238	14	1	22	0	25	37	19	167	0	0	15	186	462
9:30 AM	0	1	0	0	147	1	0	228	0	0	188	228	25	6	31	0	18	62	14	189	1	1	10	205	496
9:45 AM	0	1	0	0	66	1	0	264	0	0	89	264	11	0	22	0	6	33	9	194	0	0	2	203	501
Hourly Total	0	5	0	0	713	5	0	987	1	0	883	988	59	9	90	0	61	158	54	724	1	1	33	780	1931
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	1	0	0	96	1	0	250	0	0	138	250	32	1	22	0	7	55	9	325	0	0	7	334	640
4:15 PM	0	2	0	0	139	2	0	308	0	0	185	308	33	0	31	0	24	64	8	345	0	0	19	353	727
4:30 PM	0	1	0	0	195	1	0	288	0	0	269	288	37	1	39	0	29	77	13	349	0	0	18	362	728
4:45 PM	0	4	0	0	394	4	0	318	0	0	499	318	45	2	44	0	32	91	24	319	0	0	40	343	756
Hourly Total	0	8	0	0	824	8	0	1164	0	0	1091	1164	147	4	136	0	92	287	54	1338	0	0	84	1392	2851
5:00 PM	0	3	3	0	169	6	0	315	0	0	201	315	62	0	35	0	31	97	8	357	0	0	20	365	783
5:15 PM	0	1	0	0	137	1	0	306	1	0	209	307	34	1	39	0	45	74	9	351	0	0	27	360	742
5:30 PM	0	2	0	0	147	2	0	321	0	0	186	321	39	0	25	0	16	64	23	358	0	0	7	381	768
5:45 PM	0	0	0	0	94	0	0	263	0	0	156	263	34	0	40	0	12	74	21	349	0	0	20	370	707
Hourly Total	0	6	3	0	547	9	0	1205	1	0	752	1206	169	1	139	0	104	309	61	1415	0	0	74	1476	3000
6:00 PM	0	2	0	0	165	2	0	290	0	0	142	290	20	2	29	0	27	51	8	269	0	0	16	277	620
6:15 PM	0	1	0	0	160	1	0	253	0	0	304	253	28	0	30	0	18	58	17	276	0	0	21	293	605
6:30 PM	0	3	0	0	144	3	0	216	1	0	245	217	37	0	25	0	13	62	13	249	0	0	14	262	544
6:45 PM	0	5	0	0	121	5	0	236	1	0	170	237	25	0	27	0	15	52	19	258	0	0	13	277	571
Hourly Total	0	11	0	0	590	11	0	995	2	0	861	997	110	2	111	0	73	223	57	1052	0	0	64	1109	2340
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7:00 AM	0	1	0	0	17	1	0	224	0	0	34	224	3	0	6	0	3	9	8	153	0	0	1	161	395
7:15 AM	0	2	0	0	16	2	0	269	0	0	24	269	2	0	7	0	10	9	4	212	0	0	1	216	496
7:30 AM	0	3	0	0	45	3	0	363	0	0	72	363	9	0	21	0	11	30	10	280	0	0	3	290	686

7:45 AM	0	2	0	0	87	2	0	374	0	0	147	374	14	3	20	0	14	37	24	233	0	0	9	257	670
Hourly Total	0	8	0	0	165	8	0	1230	0	0	277	1230	28	3	54	0	38	85	46	878	0	0	14	924	2247
8:00 AM	0	1	0	0	245	1	0	341	0	0	278	341	9	11	21	0	28	41	19	216	0	0	9	235	618
8:15 AM	0	0	1	0	155	1	0	350	0	0	291	350	11	5	29	0	31	45	30	233	0	0	24	263	659
8:30 AM	0	2	0	0	41	2	0	382	0	0	86	382	16	0	23	0	8	39	15	218	0	0	6	233	656
8:45 AM	1	2	0	0	51	3	0	389	0	0	89	389	15	2	19	0	10	36	9	220	0	0	6	229	657
Hourly Total	1	5	1	0	492	7	0	1462	0	0	744	1462	51	18	92	0	77	161	73	887	0	0	45	960	2590
9:00 AM	0	2	0	0	65	2	0	245	0	0	91	245	8	0	17	0	11	25	15	180	0	0	11	195	467
9:15 AM	0	1	0	0	125	1	0	253	0	0	150	253	10	2	14	0	14	26	19	167	0	0	4	186	466
9:30 AM	0	2	0	0	259	2	0	293	0	0	374	293	13	2	25	0	25	40	13	181	0	0	15	194	529
9:45 AM	2	3	0	0	373	5	0	284	0	0	690	284	21	0	44	0	38	65	21	197	0	1	28	219	573
Hourly Total	2	8	0	0	822	10	0	1075	0	0	1305	1075	52	4	100	0	88	156	68	725	0	1	58	794	2035
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	4	7	0	0	554	11	1	280	0	0	567	281	29	4	30	0	47	63	15	286	0	0	32	301	656
4:15 PM	0	1	1	0	232	2	1	306	0	0	275	307	56	0	42	0	28	98	9	333	0	0	15	342	749
4:30 PM	0	1	0	0	131	1	0	312	0	0	186	312	56	0	44	0	24	100	8	343	0	0	12	351	764
4:45 PM	0	1	0	0	124	1	0	328	0	0	144	328	43	1	42	0	27	86	10	379	0	0	7	389	804
Hourly Total	4	10	1	0	1041	15	2	1226	0	0	1172	1228	184	5	158	0	126	347	42	1341	0	0	66	1383	2973
5:00 PM	0	3	0	0	86	3	0	321	0	0	127	321	47	2	27	0	8	76	12	378	0	0	14	390	790
5:15 PM	0	0	0	0	163	0	0	312	0	0	214	312	28	1	22	0	27	51	11	357	0	0	13	368	731
5:30 PM	0	1	0	0	180	1	0	356	0	0	286	356	33	0	27	0	23	60	10	336	0	0	16	346	763
5:45 PM	0	1	0	0	316	1	0	337	0	0	427	337	38	7	37	0	27	82	13	321	0	0	14	334	754
Hourly Total	0	5	0	0	745	5	0	1326	0	0	1054	1326	146	10	113	0	85	269	46	1392	0	0	57	1438	3038
6:00 PM	2	2	0	0	122	4	0	282	0	0	123	282	43	0	33	0	31	76	15	314	0	0	6	329	691
6:15 PM	0	0	1	0	150	1	0	277	0	0	175	277	26	1	34	0	18	61	21	243	0	0	6	264	603
6:30 PM	0	0	0	0	140	0	0	239	0	0	171	239	22	0	26	0	16	48	20	253	0	0	12	273	560
6:45 PM	0	1	0	0	132	1	0	216	0	0	129	216	26	3	41	0	25	70	16	188	0	0	14	204	491
Hourly Total	2	3	1	0	544	6	0	1014	0	0	598	1014	117	4	134	0	90	255	72	998	0	0	38	1070	2345
Grand Total	10	87	8	0	7149	105	2	14369	5	0	9997	14376	1135	72	1289	0	932	2496	685	12423	1	2	579	13111	30088
Approach %	9.5	82.9	7.6	0.0	-	-	0.0	100.0	0.0	0.0	-	-	45.5	2.9	51.6	0.0	-	-	5.2	94.8	0.0	0.0	-	-	-
Total %	0.0	0.3	0.0	0.0	-	0.3	0.0	47.8	0.0	0.0	-	47.8	3.8	0.2	4.3	0.0	-	8.3	2.3	41.3	0.0	0.0	-	43.6	-
Lights	7	1	0	0	-	8	0	14051	1	0	-	14052	1115	1	1105	0	-	2221	624	12156	1	2	-	12783	29064
% Lights	70.0	1.1	0.0	-	-	7.6	0.0	97.8	20.0	-	-	97.7	98.2	1.4	85.7	-	-	89.0	91.1	97.9	100.0	100.0	-	97.5	96.6
Buses	0	51	2	0	-	53	1	104	0	0	-	105	2	2	64	0	-	68	3	84	0	0	-	87	313
% Buses	0.0	58.6	25.0	-	-	50.5	50.0	0.7	0.0	-	-	0.7	0.2	2.8	5.0	-	-	2.7	0.4	0.7	0.0	0.0	-	0.7	1.0
Single-Unit Trucks	0	0	0	0	-	0	0	186	0	0	-	186	9	1	10	0	-	20	3	150	0	0	-	153	359
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	0.0	1.3	0.0	-	-	1.3	0.8	1.4	0.8	-	-	0.8	0.4	1.2	0.0	0.0	-	1.2	1.2
Articulated Trucks	0	0	0	0	-	0	0	23	0	0	-	23	1	0	3	0	-	4	2	26	0	0	-	28	55
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.2	0.0	-	-	0.2	0.1	0.0	0.2	-	-	0.2	0.3	0.2	0.0	0.0	-	0.2	0.2
Bicycles on Road	3	35	6	0	-	44	1	5	4	0	-	10	8	68	107	0	-	183	53	7	0	0	-	60	297
% Bicycles on Road	30.0	40.2	75.0	-	-	41.9	50.0	0.0	80.0	-	-	0.1	0.7	94.4	8.3	-	-	7.3	7.7	0.1	0.0	0.0	-	0.5	1.0
Bicycles on Crosswalk	-	-	-	-	282	-	-	-	-	-	517	-	-	-	-	-	57	-	-	-	-	-	170	-	-
% Bicycles on Crosswalk	-	-	-	-	3.9	-	-	-	-	-	5.2	-	-	-	-	-	6.1	-	-	-	-	-	29.4	-	-
Pedestrians	-	-	-	-	6867	-	-	-	-	-	9480	-	-	-	-	-	875	-	-	-	-	-	409	-	-
% Pedestrians	-	-	-	-	96.1	-	-	-	-	-	94.8	-	-	-	-	-	93.9	-	-	-	-	-	70.6	-	-

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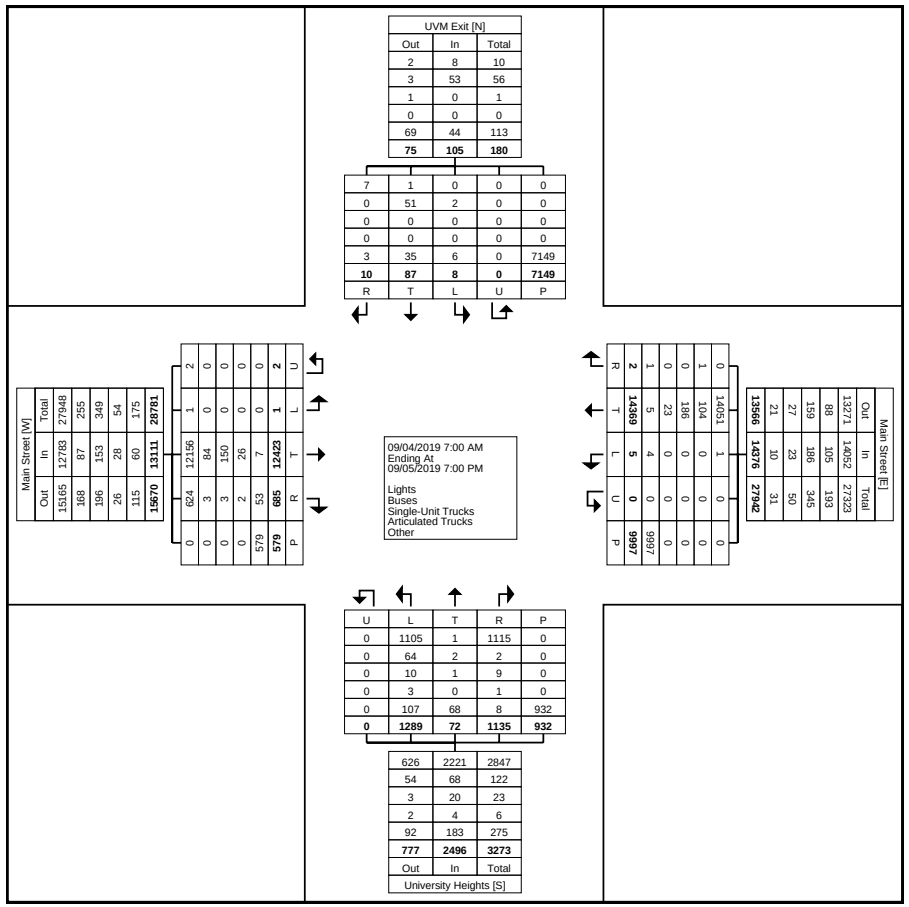

Turning Movement Data Plot

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518 453 4586 THughes@chacompanies.com

Count Name: Main Street & University Heights
Site Code:
Start Date: 09/04/2019

Turning Movement Peak Hour Data (7:45 AM)

Start Time	UVM Exit Southbound						Main Street Westbound						University Heights Northbound						Main Street Eastbound						
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Int. Total
7:45 AM	0	2	0	0	108	2	0	383	0	0	152	383	10	0	21	0	16	31	22	247	0	0	5	269	685
8:00 AM	0	3	1	0	170	4	0	360	0	0	341	360	5	3	26	0	20	34	18	197	0	0	4	215	613
8:15 AM	0	3	0	0	140	3	0	340	0	0	357	340	11	6	38	0	33	55	20	236	0	0	14	256	654
8:30 AM	0	2	0	0	52	2	0	394	1	0	105	395	10	2	19	0	7	31	19	223	0	0	7	242	670
Total	0	10	1	0	470	11	0	1477	1	0	955	1478	36	11	104	0	76	151	79	903	0	0	30	982	2622
Approach %	0.0	90.9	9.1	0.0	-	-	0.0	99.9	0.1	0.0	-	-	23.8	7.3	68.9	0.0	-	-	8.0	92.0	0.0	0.0	-	-	-
Total %	0.0	0.4	0.0	0.0	-	0.4	0.0	56.3	0.0	0.0	-	56.4	1.4	0.4	4.0	0.0	-	5.8	3.0	34.4	0.0	0.0	-	37.5	-
PHF	0.000	0.833	0.250	0.000	-	0.688	0.000	0.937	0.250	0.000	-	0.935	0.818	0.458	0.684	0.000	-	0.686	0.898	0.914	0.000	0.000	-	0.913	0.957
Lights	0	0	0	0	-	0	0	1439	0	0	-	1439	33	1	74	0	-	108	75	878	0	0	-	953	2500
% Lights	-	0.0	0.0	-	-	0.0	-	97.4	0.0	-	-	97.4	91.7	9.1	71.2	-	-	71.5	94.9	97.2	-	-	-	97.0	95.3
Buses	0	9	0	0	-	9	0	3	0	0	-	3	0	0	9	0	-	9	1	5	0	0	-	6	27
% Buses	-	90.0	0.0	-	-	81.8	-	0.2	0.0	-	-	0.2	0.0	0.0	8.7	-	-	6.0	1.3	0.6	-	-	-	0.6	1.0
Single-Unit Trucks	0	0	0	0	-	0	0	33	0	0	-	33	2	0	3	0	-	5	0	13	0	0	-	13	51
% Single-Unit Trucks	-	0.0	0.0	-	-	0.0	-	2.2	0.0	-	-	2.2	5.6	0.0	2.9	-	-	3.3	0.0	1.4	-	-	-	1.3	1.9
Articulated Trucks	0	0	0	0	-	0	0	2	0	0	-	2	0	0	1	0	-	1	1	6	0	0	-	7	10
% Articulated Trucks	-	0.0	0.0	-	-	0.0	-	0.1	0.0	-	-	0.1	0.0	0.0	1.0	-	-	0.7	1.3	0.7	-	-	-	0.7	0.4
Bicycles on Road	0	1	1	0	-	2	0	0	1	0	-	1	1	10	17	0	-	28	2	1	0	0	-	3	34
% Bicycles on Road	-	10.0	100.0	-	-	18.2	-	0.0	100.0	-	-	0.1	2.8	90.9	16.3	-	-	18.5	2.5	0.1	-	-	-	0.3	1.3
Bicycles on Crosswalk	-	-	-	-	3	-	-	-	-	-	9	-	-	-	-	-	3	-	-	-	-	-	5	-	-
% Bicycles on Crosswalk	-	-	-	-	0.6	-	-	-	-	-	0.9	-	-	-	-	-	3.9	-	-	-	-	-	16.7	-	-
Pedestrians	-	-	-	-	467	-	-	-	-	-	946	-	-	-	-	-	73	-	-	-	-	-	25	-	-
% Pedestrians	-	-	-	-	99.4	-	-	-	-	-	99.1	-	-	-	-	-	96.1	-	-	-	-	-	83.3	-	-

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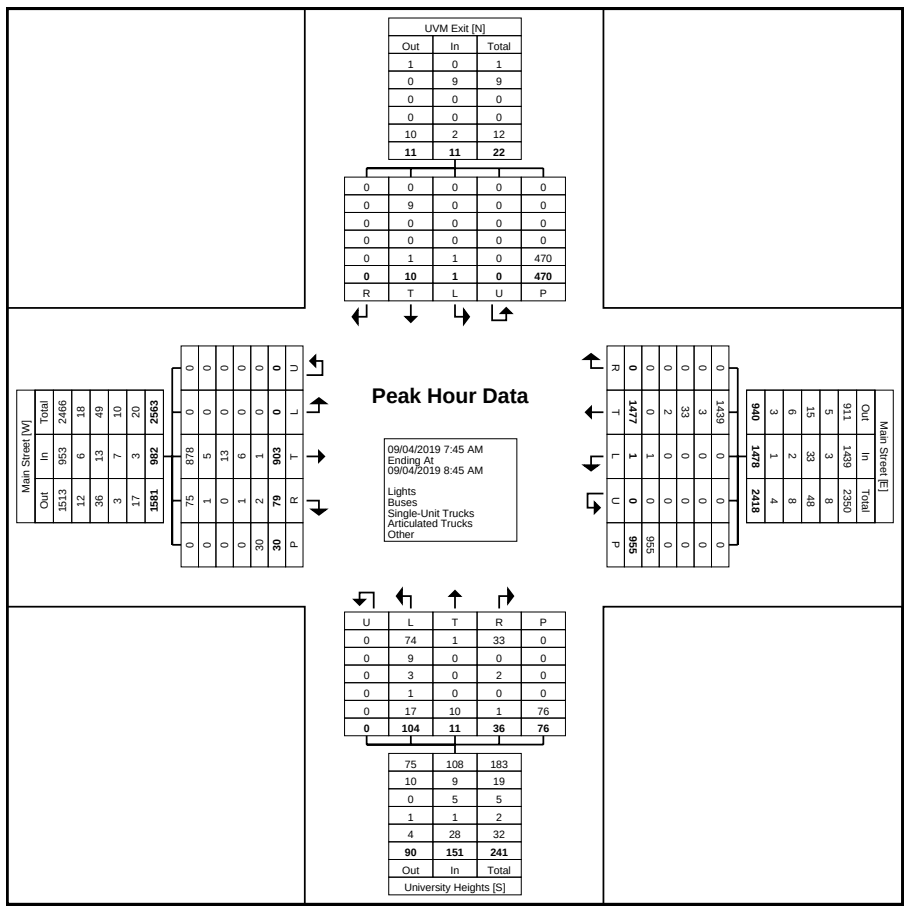

Turning Movement Peak Hour Data Plot (7:45 AM)

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Count Name: Main Street & University Heights
Site Code:
Start Date: 09/04/2019

Turning Movement Peak Hour Data (4:45 PM)

Start Time	UVM Exit Southbound						Main Street Westbound						University Heights Northbound						Main Street Eastbound						
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Int. Total
4:45 PM	0	4	0	0	394	4	0	318	0	0	499	318	45	2	44	0	32	91	24	319	0	0	40	343	756
5:00 PM	0	3	3	0	169	6	0	315	0	0	201	315	62	0	35	0	31	97	8	357	0	0	20	365	783
5:15 PM	0	1	0	0	137	1	0	306	1	0	209	307	34	1	39	0	45	74	9	351	0	0	27	360	742
5:30 PM	0	2	0	0	147	2	0	321	0	0	186	321	39	0	25	0	16	64	23	358	0	0	7	381	768
Total	0	10	3	0	847	13	0	1260	1	0	1095	1261	180	3	143	0	124	326	64	1385	0	0	94	1449	3049
Approach %	0.0	76.9	23.1	0.0	-	-	0.0	99.9	0.1	0.0	-	-	55.2	0.9	43.9	0.0	-	-	4.4	95.6	0.0	0.0	-	-	-
Total %	0.0	0.3	0.1	0.0	-	0.4	0.0	41.3	0.0	0.0	-	41.4	5.9	0.1	4.7	0.0	-	10.7	2.1	45.4	0.0	0.0	-	47.5	-
PHF	0.000	0.625	0.250	0.000	-	0.542	0.000	0.981	0.250	0.000	-	0.982	0.726	0.375	0.813	0.000	-	0.840	0.667	0.967	0.000	0.000	-	0.951	0.973
Lights	0	0	0	0	-	0	0	1245	1	0	-	1246	180	0	132	0	-	312	53	1370	0	0	-	1423	2981
% Lights	-	0.0	0.0	-	-	0.0	-	98.8	100.0	-	-	98.8	100.0	0.0	92.3	-	-	95.7	82.8	98.9	-	-	-	98.2	97.8
Buses	0	1	0	0	-	1	0	9	0	0	-	9	0	1	4	0	-	5	0	4	0	0	-	4	19
% Buses	-	10.0	0.0	-	-	7.7	-	0.7	0.0	-	-	0.7	0.0	33.3	2.8	-	-	1.5	0.0	0.3	-	-	-	0.3	0.6
Single-Unit Trucks	0	0	0	0	-	0	0	6	0	0	-	6	0	0	0	0	-	0	0	10	0	0	-	10	16
% Single-Unit Trucks	-	0.0	0.0	-	-	0.0	-	0.5	0.0	-	-	0.5	0.0	0.0	0.0	-	-	0.0	0.0	0.7	-	-	-	0.7	0.5
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0
Bicycles on Road	0	9	3	0	-	12	0	0	0	0	-	0	0	2	7	0	-	9	11	1	0	0	-	12	33
% Bicycles on Road	-	90.0	100.0	-	-	92.3	-	0.0	0.0	-	-	0.0	0.0	66.7	4.9	-	-	2.8	17.2	0.1	-	-	-	0.8	1.1
Bicycles on Crosswalk	-	-	-	-	43	-	-	-	-	-	75	-	-	-	-	-	5	-	-	-	-	-	31	-	-
% Bicycles on Crosswalk	-	-	-	-	5.1	-	-	-	-	-	6.8	-	-	-	-	-	4.0	-	-	-	-	-	33.0	-	-
Pedestrians	-	-	-	-	804	-	-	-	-	-	1020	-	-	-	-	-	119	-	-	-	-	-	63	-	-
% Pedestrians	-	-	-	-	94.9	-	-	-	-	-	93.2	-	-	-	-	-	96.0	-	-	-	-	-	67.0	-	-

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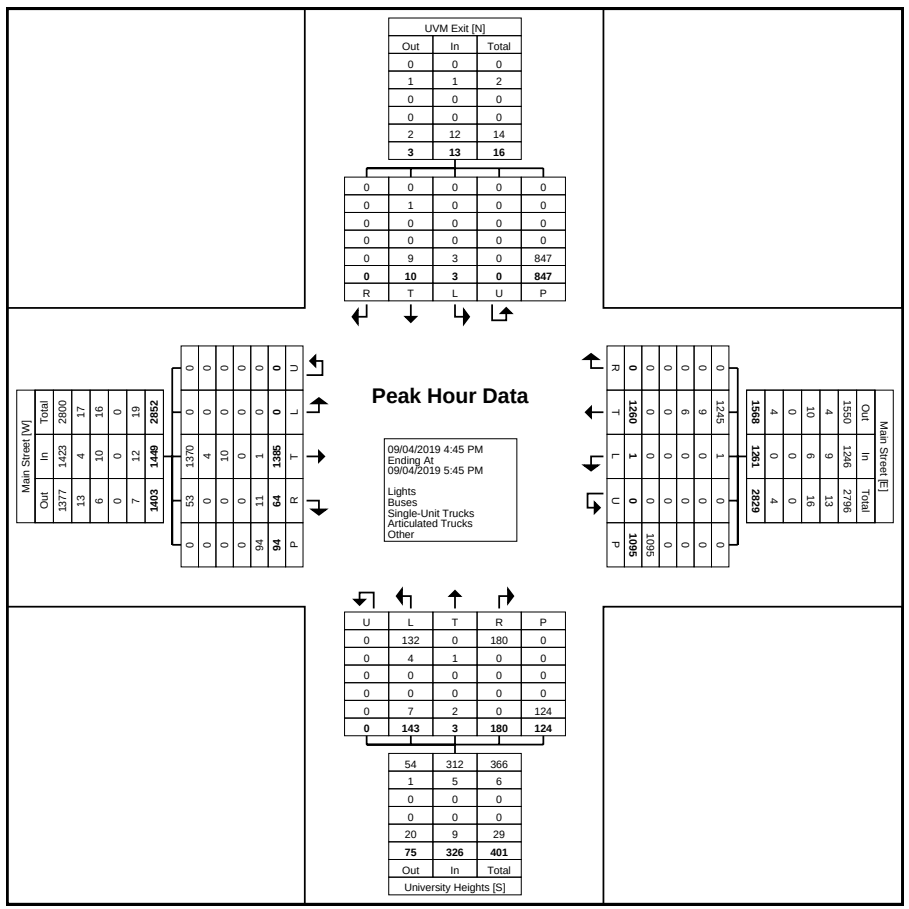

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Count Name: Main Street & University Heights
Site Code:
Start Date: 09/04/2019

Turning Movement Peak Hour Data (7:30 AM)

Start Time	UVM Exit Southbound						Main Street Westbound						University Heights Northbound						Main Street Eastbound						
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Int. Total
7:30 AM	0	3	0	0	45	3	0	363	0	0	72	363	9	0	21	0	11	30	10	280	0	0	3	290	686
7:45 AM	0	2	0	0	87	2	0	374	0	0	147	374	14	3	20	0	14	37	24	233	0	0	9	257	670
8:00 AM	0	1	0	0	245	1	0	341	0	0	278	341	9	11	21	0	28	41	19	216	0	0	9	235	618
8:15 AM	0	0	1	0	155	1	0	350	0	0	291	350	11	5	29	0	31	45	30	233	0	0	24	263	659
Total	0	6	1	0	532	7	0	1428	0	0	788	1428	43	19	91	0	84	153	83	962	0	0	45	1045	2633
Approach %	0.0	85.7	14.3	0.0	-	-	0.0	100.0	0.0	0.0	-	-	28.1	12.4	59.5	0.0	-	-	7.9	92.1	0.0	0.0	-	-	-
Total %	0.0	0.2	0.0	0.0	-	0.3	0.0	54.2	0.0	0.0	-	54.2	1.6	0.7	3.5	0.0	-	5.8	3.2	36.5	0.0	0.0	-	39.7	-
PHF	0.000	0.500	0.250	0.000	-	0.583	0.000	0.955	0.000	0.000	-	0.955	0.768	0.432	0.784	0.000	-	0.850	0.692	0.859	0.000	0.000	-	0.901	0.960
Lights	0	0	0	0	-	0	0	1398	0	0	-	1398	41	0	67	0	-	108	80	939	0	0	-	1019	2525
% Lights	-	0.0	0.0	-	-	0.0	-	97.9	-	-	-	97.9	95.3	0.0	73.6	-	-	70.6	96.4	97.6	-	-	-	97.5	95.9
Buses	0	5	0	0	-	5	0	6	0	0	-	6	0	0	9	0	-	9	0	4	0	0	-	4	24
% Buses	-	83.3	0.0	-	-	71.4	-	0.4	-	-	-	0.4	0.0	0.0	9.9	-	-	5.9	0.0	0.4	-	-	-	0.4	0.9
Single-Unit Trucks	0	0	0	0	-	0	0	23	0	0	-	23	0	0	2	0	-	2	1	17	0	0	-	18	43
% Single-Unit Trucks	-	0.0	0.0	-	-	0.0	-	1.6	-	-	-	1.6	0.0	0.0	2.2	-	-	1.3	1.2	1.8	-	-	-	1.7	1.6
Articulated Trucks	0	0	0	0	-	0	0	1	0	0	-	1	1	0	0	0	-	1	0	2	0	0	-	2	4
% Articulated Trucks	-	0.0	0.0	-	-	0.0	-	0.1	-	-	-	0.1	2.3	0.0	0.0	-	-	0.7	0.0	0.2	-	-	-	0.2	0.2
Bicycles on Road	0	1	1	0	-	2	0	0	0	0	-	0	1	19	13	0	-	33	2	0	0	0	-	2	37
% Bicycles on Road	-	16.7	100.0	-	-	28.6	-	0.0	-	-	-	0.0	2.3	100.0	14.3	-	-	21.6	2.4	0.0	-	-	-	0.2	1.4
Bicycles on Crosswalk	-	-	-	-	14	-	-	-	-	-	42	-	-	-	-	-	0	-	-	-	-	-	17	-	-
% Bicycles on Crosswalk	-	-	-	-	2.6	-	-	-	-	-	5.3	-	-	-	-	-	0.0	-	-	-	-	-	37.8	-	-
Pedestrians	-	-	-	-	518	-	-	-	-	-	746	-	-	-	-	-	84	-	-	-	-	-	28	-	-
% Pedestrians	-	-	-	-	97.4	-	-	-	-	-	94.7	-	-	-	-	-	100.0	-	-	-	-	-	62.2	-	-

CHA Consulting, Inc.
3 Winners Circle P.O. Box 5269

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Count Name: Main Street & University Heights
Site Code:
Start Date: 09/04/2019
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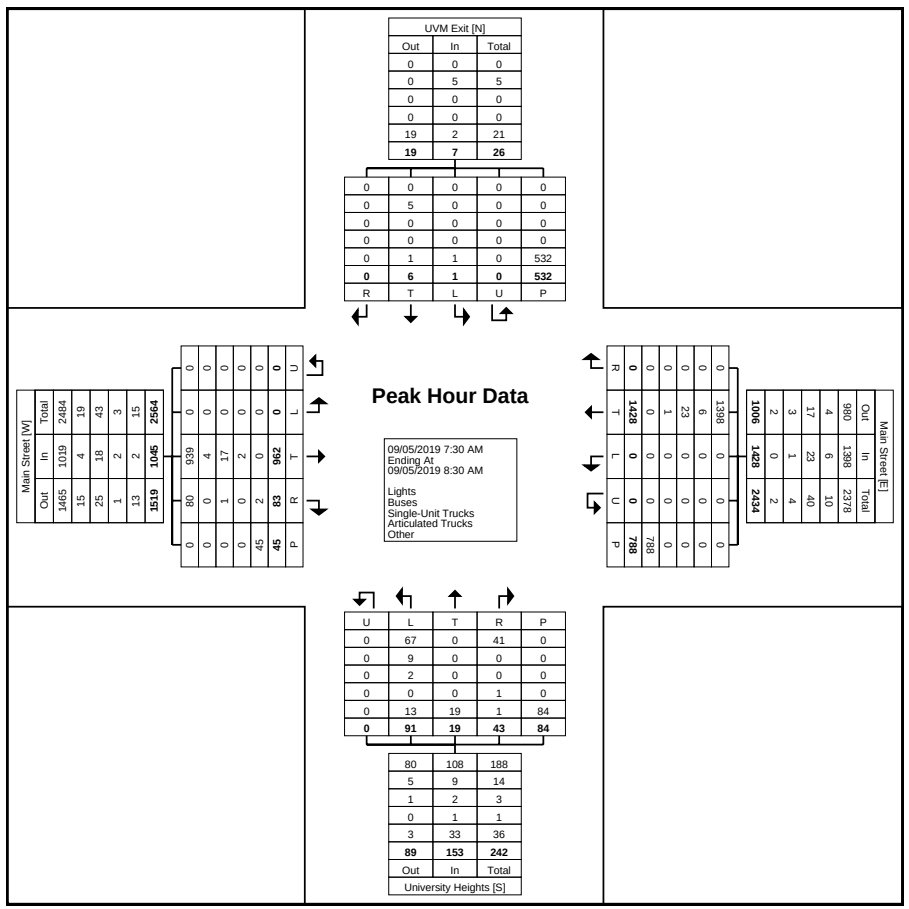

Turning Movement Peak Hour Data Plot (7:30 AM)

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Count Name: Main Street & University Heights
Site Code:
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Page No: 10

Turning Movement Peak Hour Data (4:15 PM)

Start Time	UVM Exit Southbound						Main Street Westbound						University Heights Northbound						Main Street Eastbound						
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Int. Total
4:15 PM	0	1	1	0	232	2	1	306	0	0	275	307	56	0	42	0	28	98	9	333	0	0	15	342	749
4:30 PM	0	1	0	0	131	1	0	312	0	0	186	312	56	0	44	0	24	100	8	343	0	0	12	351	764
4:45 PM	0	1	0	0	124	1	0	328	0	0	144	328	43	1	42	0	27	86	10	379	0	0	7	389	804
5:00 PM	0	3	0	0	86	3	0	321	0	0	127	321	47	2	27	0	8	76	12	378	0	0	14	390	790
Total	0	6	1	0	573	7	1	1267	0	0	732	1268	202	3	155	0	87	360	39	1433	0	0	48	1472	3107
Approach %	0.0	85.7	14.3	0.0	-	-	0.1	99.9	0.0	0.0	-	-	56.1	0.8	43.1	0.0	-	-	2.6	97.4	0.0	0.0	-	-	-
Total %	0.0	0.2	0.0	0.0	-	0.2	0.0	40.8	0.0	0.0	-	40.8	6.5	0.1	5.0	0.0	-	11.6	1.3	46.1	0.0	0.0	-	47.4	-
PHF	0.000	0.500	0.250	0.000	-	0.583	0.250	0.966	0.000	0.000	-	0.966	0.902	0.375	0.881	0.000	-	0.900	0.813	0.945	0.000	0.000	-	0.944	0.966
Lights	0	0	0	0	-	0	0	1253	0	0	-	1253	200	0	147	0	-	347	35	1420	0	0	-	1455	3055
% Lights	-	0.0	0.0	-	-	0.0	0.0	98.9	-	-	-	98.8	99.0	0.0	94.8	-	-	96.4	89.7	99.1	-	-	-	98.8	98.3
Buses	0	4	1	0	-	5	1	6	0	0	-	7	1	1	2	0	-	4	0	6	0	0	-	6	22
% Buses	-	66.7	100.0	-	-	71.4	100.0	0.5	-	-	-	0.6	0.5	33.3	1.3	-	-	1.1	0.0	0.4	-	-	-	0.4	0.7
Single-Unit Trucks	0	0	0	0	-	0	0	7	0	0	-	7	0	0	0	0	-	0	0	6	0	0	-	6	13
% Single-Unit Trucks	-	0.0	0.0	-	-	0.0	0.0	0.6	-	-	-	0.6	0.0	0.0	0.0	-	-	0.0	0.0	0.4	-	-	-	0.4	0.4
Articulated Trucks	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	1	0	0	-	1	2
% Articulated Trucks	-	0.0	0.0	-	-	0.0	0.0	0.1	-	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0	0.1	-	-	-	0.1	0.1
Bicycles on Road	0	2	0	0	-	2	0	0	0	0	-	0	1	2	6	0	-	9	4	0	0	0	-	4	15
% Bicycles on Road	-	33.3	0.0	-	-	28.6	0.0	0.0	-	-	-	0.0	0.5	66.7	3.9	-	-	2.5	10.3	0.0	-	-	-	0.3	0.5
Bicycles on Crosswalk	-	-	-	-	58	-	-	-	-	-	59	-	-	-	-	-	9	-	-	-	-	-	12	-	-
% Bicycles on Crosswalk	-	-	-	-	10.1	-	-	-	-	-	8.1	-	-	-	-	-	10.3	-	-	-	-	-	25.0	-	-
Pedestrians	-	-	-	-	515	-	-	-	-	-	673	-	-	-	-	-	78	-	-	-	-	-	36	-	-
% Pedestrians	-	-	-	-	89.9	-	-	-	-	-	91.9	-	-	-	-	-	89.7	-	-	-	-	-	75.0	-	-

CHA Consulting, Inc.
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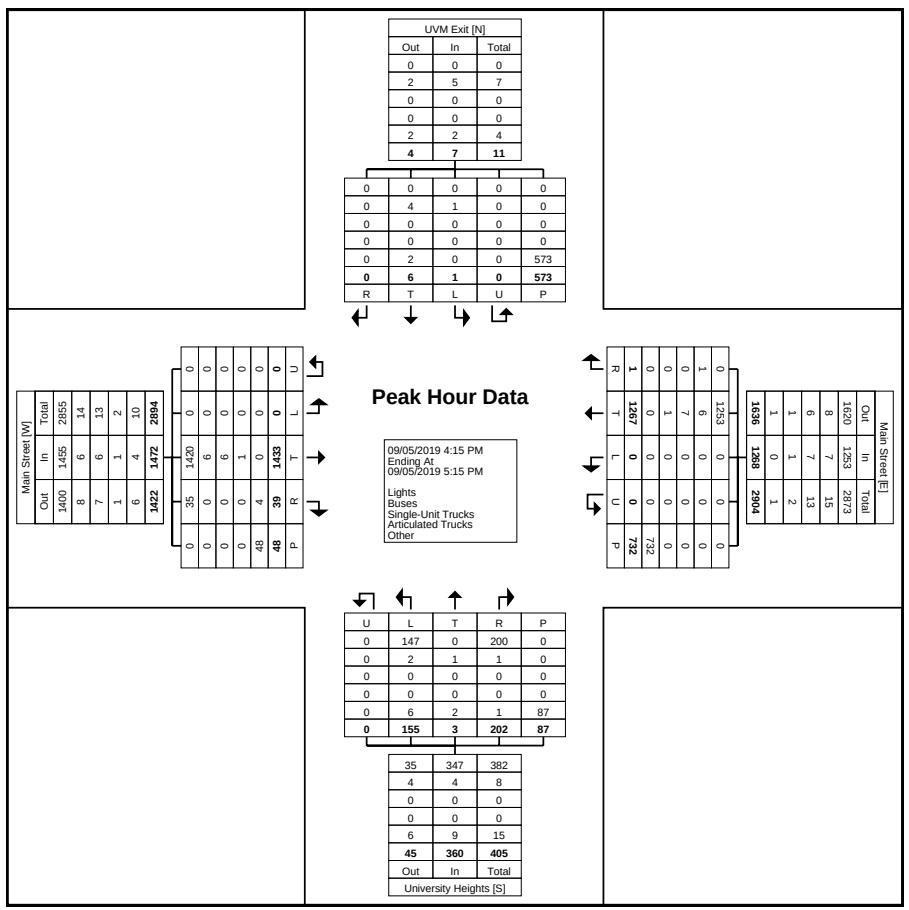

Turning Movement Peak Hour Data Plot (4:15 PM)

3 Winners Circle
Albany, NY 12205
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Site Code: 05801702
Station ID:

Latitude: 0' 0.0000 Undefined

Start	02-Sep-19		Tue		Wed		Thu		Fri		Sat		Sun		Average Da	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	*	*	*	*	38	205	54	235	57	*	*	*	*	*	50	220
12:15	*	*	*	*	22	198	41	216	58	*	*	*	*	*	40	207
12:30	*	*	*	*	24	212	34	227	50	*	*	*	*	*	36	220
12:45	*	*	*	*	30	197	41	210	39	*	*	*	*	*	37	204
01:00	*	*	*	*	25	239	41	231	39	*	*	*	*	*	35	235
01:15	*	*	*	*	13	210	18	216	31	*	*	*	*	*	21	213
01:30	*	*	*	*	14	223	22	213	41	*	*	*	*	*	26	218
01:45	*	*	*	*	17	210	22	207	18	*	*	*	*	*	19	208
02:00	*	*	*	205	12	235	20	240	32	*	*	*	*	*	21	227
02:15	*	*	*	191	6	221	12	232	27	*	*	*	*	*	15	215
02:30	*	*	*	220	6	238	11	230	34	*	*	*	*	*	17	229
02:45	*	*	*	258	3	231	14	242	31	*	*	*	*	*	16	244
03:00	*	*	*	256	5	253	4	237	20	*	*	*	*	*	10	249
03:15	*	*	*	255	8	268	8	244	21	*	*	*	*	*	12	256
03:30	*	*	*	241	2	273	7	245	18	*	*	*	*	*	9	253
03:45	*	*	*	285	8	260	4	252	13	*	*	*	*	*	8	266
04:00	*	*	*	**275**	7	275	7	251	15	*	*	*	*	*	10	267
04:15	*	*	*	**272**	2	270	10	280	9	*	*	*	*	*	7	**274**
04:30	*	*	*	**302**	2	**273**	6	252	14	*	*	*	*	*	7	**276**
04:45	*	*	*	**286**	2	**288**	11	259	16	*	*	*	*	*	10	**278**
05:00	*	*	*	271	3	**283**	17	260	20	*	*	*	*	*	13	**271**
05:15	*	*	*	251	13	**291**	22	255	32	*	*	*	*	*	22	266
05:30	*	*	*	240	18	258	17	**278**	30	*	*	*	*	*	22	259
05:45	*	*	*	261	23	270	20	**267**	29	*	*	*	*	*	24	266
06:00	*	*	*	296	35	259	32	**260**	33	*	*	*	*	*	33	272
06:15	*	*	*	273	45	278	46	**266**	41	*	*	*	*	*	44	272
06:30	*	*	*	267	57	280	63	271	85	*	*	*	*	*	68	273
06:45	*	*	*	254	70	244	59	239	56	*	*	*	*	*	62	246
07:00	*	*	*	234	88	250	79	264	87	*	*	*	*	*	85	249
07:15	*	*	*	218	106	225	125	223	107	*	*	*	*	*	113	222
07:30	*	*	*	238	156	261	142	230	146	*	*	*	*	*	148	243
07:45	*	*	*	191	160	227	135	213	146	*	*	*	*	*	147	210
08:00	*	*	*	208	200	192	190	244	193	*	*	*	*	*	194	215
08:15	*	*	*	204	184	214	**229**	194	**217**	*	*	*	*	*	210	204
08:30	*	*	*	203	**240**	176	**289**	217	**236**	*	*	*	*	*	**255**	199
08:45	*	*	*	197	**231**	183	**223**	210	**213**	*	*	*	*	*	**222**	197
09:00	*	*	*	201	**243**	194	**267**	195	**247**	*	*	*	*	*	**252**	197
09:15	*	*	*	157	**216**	151	226	190	207	*	*	*	*	*	**216**	166
09:30	*	*	*	138	210	139	213	184	215	*	*	*	*	*	213	154
09:45	*	*	*	109	184	131	200	152	203	*	*	*	*	*	196	131
10:00	*	*	*	128	194	119	168	148	*	*	*	*	*	*	181	132
10:15	*	*	*	97	185	112	183	132	*	*	*	*	*	*	184	114
10:30	*	*	*	88	208	92	198	114	*	*	*	*	*	*	203	98
10:45	*	*	*	78	201	89	203	108	*	*	*	*	*	*	202	92
11:00	*	*	*	67	184	74	189	93	*	*	*	*	*	*	186	78
11:15	*	*	*	55	191	71	195	71	*	*	*	*	*	*	193	66
11:30	*	*	*	60	204	42	191	80	*	*	*	*	*	*	198	61
11:45	*	*	*	46	206	53	211	78	*	*	*	*	*	*	208	59
Total	0	0	0	8076	4301	9937	4519	10155	3126	0	0	0	0	0	4500	9971
Day Total	0		8076		14238		14674		3126		0		0		14471	
% Splits	0.0%	0.0%	0.0%	100.0%	30.2%	69.8%	30.8%	69.2%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	31.1%	68.9%
Peak	-	-	-	04:00	08:30	04:30	08:15	05:30	08:15	-	-	-	-	-	08:30	04:15
Vol.	-	-	-	1135	930	1135	1008	1071	913	-	-	-	-	-	945	1099
P.H.F.				0.940	0.957	0.975	0.872	0.963	0.924						0.926	0.988

ADT ADT 14,466 AADT 14,466

3 Winners Circle
Albany, NY 12205
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Site Code: 05801701
Station ID:

Latitude: 0' 0.0000 Undefined

Start	02-Sep-19		Tue		Wed		Thu		Fri		Sat		Sun		Average Da	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	*	*	*	*	33	236	45	249	40	*	*	*	*	*	39	242
12:15	*	*	*	*	27	253	30	247	49	*	*	*	*	*	35	250
12:30	*	*	*	*	16	246	28	238	36	*	*	*	*	*	27	242
12:45	*	*	*	*	12	275	17	262	28	*	*	*	*	*	19	268
01:00	*	*	*	214	15	267	22	269	30	*	*	*	*	*	22	250
01:15	*	*	*	275	9	239	17	238	24	*	*	*	*	*	17	251
01:30	*	*	*	213	8	212	12	218	18	*	*	*	*	*	13	214
01:45	*	*	*	221	7	230	12	187	23	*	*	*	*	*	14	213
02:00	*	*	*	236	4	221	6	221	29	*	*	*	*	*	13	226
02:15	*	*	*	226	6	270	9	221	19	*	*	*	*	*	11	239
02:30	*	*	*	257	10	242	8	267	12	*	*	*	*	*	10	255
02:45	*	*	*	284	5	236	1	266	14	*	*	*	*	*	7	262
03:00	*	*	*	251	5	239	6	243	10	*	*	*	*	*	7	244
03:15	*	*	*	225	0	263	7	252	7	*	*	*	*	*	5	247
03:30	*	*	*	236	8	246	8	248	9	*	*	*	*	*	8	243
03:45	*	*	*	297	5	284	4	242	3	*	*	*	*	*	4	274
04:00	*	*	*	277	11	272	8	274	11	*	*	*	*	*	10	274
04:15	*	*	*	278	9	301	9	294	10	*	*	*	*	*	9	291
04:30	*	*	*	287	17	278	14	299	20	*	*	*	*	*	17	288
04:45	*	*	*	**318**	20	**330**	26	319	29	*	*	*	*	*	25	**322**
05:00	*	*	*	**293**	26	**333**	27	303	25	*	*	*	*	*	26	**310**
05:15	*	*	*	**333**	34	**346**	25	270	32	*	*	*	*	*	30	**316**
05:30	*	*	*	**334**	29	**319**	38	**300**	31	*	*	*	*	*	33	**318**
05:45	*	*	*	297	67	316	59	**302**	60	*	*	*	*	*	62	305
06:00	*	*	*	260	59	281	76	**309**	67	*	*	*	*	*	67	283
06:15	*	*	*	239	81	265	98	**308**	78	*	*	*	*	*	86	271
06:30	*	*	*	260	119	253	134	240	127	*	*	*	*	*	127	251
06:45	*	*	*	246	155	249	178	244	136	*	*	*	*	*	156	246
07:00	*	*	*	231	182	227	224	254	182	*	*	*	*	*	196	237
07:15	*	*	*	207	250	196	238	207	228	*	*	*	*	*	239	203
07:30	*	*	*	194	325	182	307	216	294	*	*	*	*	*	309	197
07:45	*	*	*	190	327	211	329	190	**333**	*	*	*	*	*	**330**	197
08:00	*	*	*	181	**360**	185	**312**	206	**360**	*	*	*	*	*	**344**	191
08:15	*	*	*	175	**311**	173	**342**	167	**351**	*	*	*	*	*	**335**	172
08:30	*	*	*	130	**383**	125	**312**	145	**304**	*	*	*	*	*	**333**	133
08:45	*	*	*	129	**377**	139	**331**	127	281	*	*	*	*	*	330	132
09:00	*	*	*	131	280	128	308	128	288	*	*	*	*	*	292	129
09:15	*	*	*	131	262	125	236	168	261	*	*	*	*	*	253	141
09:30	*	*	*	104	258	103	279	124	263	*	*	*	*	*	267	110
09:45	*	*	*	101	242	108	284	105	271	*	*	*	*	*	266	105
10:00	*	*	*	85	240	91	268	112	*	*	*	*	*	*	254	96
10:15	*	*	*	82	213	74	226	124	*	*	*	*	*	*	220	93
10:30	*	*	*	73	206	58	230	77	*	*	*	*	*	*	218	69
10:45	*	*	*	70	275	63	237	59	*	*	*	*	*	*	256	64
11:00	*	*	*	44	216	56	189	84	*	*	*	*	*	*	202	61
11:15	*	*	*	43	205	52	224	60	*	*	*	*	*	*	214	52
11:30	*	*	*	35	220	35	215	49	*	*	*	*	*	*	218	40
11:45	*	*	*	38	250	29	282	54	*	*	*	*	*	*	266	40
Total	0	0	0	8731	6179	9862	6297	9986	4393	0	0	0	0	0	6241	9857
Day Total	0		8731		16041		16283		4393		0		0		16098	
% Splits	0.0%	0.0%	0.0%	100.0 %	38.5 %	61.5 %	38.7 %	61.3 %	100.0 %	0.0%	0.0%	0.0%	0.0%	0.0%	38.8 %	61.2%
Peak	-	-	-	04:45	08:00	04:45	08:00	05:30	07:45	-	-	-	-	-	07:45	04:45
Vol.	-	-	-	1278	1431	1328	1297	1219	1348	-	-	-	-	-	1342	1266
P.H.F.				0.957	0.934	0.960	0.948	0.955	0.936						0.975	0.983

ADT ADT 16,099 AADT 16,099

3 Winners Circle
Albany, NY 12205
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Site Code: 05801702
Station ID:

Latitude: 0' 0.0000 Undefined

Eastbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
09/03/19	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	22	622	91	4	25	8	3	4	1	0	0	0	0	94	874
15:00	50	686	118	8	15	7	0	5	2	0	0	1	1	144	1037
16:00	47	705	90	7	17	10	0	8	0	0	0	0	0	251	1135
17:00	79	511	55	6	15	13	1	2	0	3	1	1	0	336	1023
18:00	65	610	56	4	13	12	1	6	1	3	0	0	1	318	1090
19:00	26	696	56	4	11	0	1	3	0	0	0	0	0	84	881
20:00	28	646	57	5	10	3	0	1	0	1	0	0	0	61	812
21:00	11	484	50	7	10	0	0	2	0	0	0	0	0	41	605
22:00	10	320	39	2	1	0	0	0	0	0	0	0	0	19	391
23:00	5	195	23	0	3	0	0	0	0	0	0	0	0	2	228
Total	343	5475	635	47	120	53	6	31	4	7	1	2	2	1350	8076
Percent	4.2%	67.8%	7.9%	0.6%	1.5%	0.7%	0.1%	0.4%	0.0%	0.1%	0.0%	0.0%	0.0%	16.7%	
AM Peak Vol.															
PM Peak	17:00	16:00	15:00	15:00	14:00	17:00	14:00	16:00	15:00	17:00	17:00	15:00	15:00	17:00	16:00
Vol.	79	705	118	8	25	13	3	8	2	3	1	1	1	336	1135

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Eastbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
09/04/19	3	94	13	1	0	0	0	0	0	0	0	0	0	3	114
01:00	0	53	10	3	2	0	0	0	0	0	0	0	0	1	69
02:00	0	26	1	0	0	0	0	0	0	0	0	0	0	0	27
03:00	0	17	5	0	0	0	0	1	0	0	0	0	0	0	23
04:00	0	11	2	0	0	0	0	0	0	0	0	0	0	0	13
05:00	0	38	15	0	3	0	0	0	0	0	0	0	0	1	57
06:00	8	153	30	1	4	3	0	2	1	0	0	0	0	5	207
07:00	17	377	77	4	13	1	0	2	2	0	1	1	0	15	510
08:00	25	660	76	6	17	3	0	5	2	2	0	0	0	59	855
09:00	37	620	80	6	22	4	2	4	2	3	0	0	0	73	853
10:00	28	540	113	10	22	6	0	4	1	0	1	0	0	63	788
11:00	27	554	85	5	25	2	0	8	2	2	0	0	2	73	785
12 PM	21	574	87	6	22	6	0	5	3	3	0	0	0	85	812
13:00	20	637	92	3	22	7	2	8	0	1	0	0	0	90	882
14:00	19	662	108	3	17	4	1	11	2	0	1	0	0	97	925
15:00	34	681	98	6	23	7	2	8	0	3	2	0	0	190	1054
16:00	31	693	99	3	19	10	1	3	0	1	1	0	0	245	1106
17:00	45	709	72	3	14	6	0	3	1	1	0	0	1	247	1102
18:00	73	616	62	8	14	5	1	5	1	2	0	0	0	274	1061
19:00	14	731	70	4	9	4	1	3	1	2	0	0	0	124	963
20:00	25	596	58	2	5	3	0	4	0	0	0	0	0	72	765
21:00	9	485	64	5	6	1	0	1	0	1	0	0	0	43	615
22:00	11	334	44	3	1	0	0	2	1	0	0	0	0	16	412
23:00	6	212	17	1	1	0	0	0	0	0	0	0	0	3	240
Total	453	10073	1378	83	261	72	10	79	19	21	6	1	3	1779	14238
Percent	3.2%	70.7%	9.7%	0.6%	1.8%	0.5%	0.1%	0.6%	0.1%	0.1%	0.0%	0.0%	0.0%	12.5%	
AM Peak	09:00	08:00	10:00	10:00	11:00	10:00	09:00	11:00	07:00	09:00	07:00	07:00	11:00	09:00	08:00
Vol.	37	660	113	10	25	6	2	8	2	3	1	1	2	73	855
PM Peak	18:00	19:00	14:00	18:00	15:00	16:00	13:00	14:00	12:00	12:00	15:00		17:00	18:00	16:00
Vol.	73	731	108	8	23	10	2	11	3	3	2		1	274	1106

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Station ID:

Latitude: 0' 0.0000 Undefined

Eastbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
09/05/19	2	149	12	2	1	0	0	1	0	0	0	0	0	3	170
01:00	0	90	11	2	0	0	0	0	0	0	0	0	0	0	103
02:00	1	47	8	0	1	0	0	0	0	0	0	0	0	0	57
03:00	0	20	3	0	0	0	0	0	0	0	0	0	0	0	23
04:00	0	30	3	1	0	0	0	0	0	0	0	0	0	0	34
05:00	0	52	18	0	3	0	0	1	0	1	0	0	0	1	76
06:00	5	152	25	3	6	0	0	0	2	1	0	1	1	4	200
07:00	16	369	63	5	11	0	0	2	0	2	0	0	0	13	481
08:00	25	717	92	9	13	7	0	1	0	1	0	0	0	66	931
09:00	37	671	83	8	19	6	3	8	0	1	0	0	0	70	906
10:00	21	517	85	5	27	5	2	4	1	0	0	0	0	85	752
11:00	15	545	106	10	21	4	0	2	3	4	0	0	0	76	786
12 PM	17	626	104	5	20	10	1	6	2	0	1	0	1	95	888
13:00	20	630	107	8	24	6	0	7	1	0	0	1	0	63	867
14:00	27	643	120	5	15	5	0	5	2	1	1	0	0	120	944
15:00	34	640	90	6	28	6	1	5	0	1	0	0	0	167	978
16:00	47	608	108	4	17	8	3	8	0	2	0	0	0	237	1042
17:00	72	558	53	8	16	14	1	2	1	1	1	0	1	332	1060
18:00	67	543	61	5	4	17	3	3	3	2	0	0	0	328	1036
19:00	35	702	77	4	18	1	1	6	1	0	0	0	0	85	930
20:00	23	678	64	6	5	5	1	4	0	0	0	0	0	79	865
21:00	16	556	61	4	8	4	0	2	0	0	1	0	0	69	721
22:00	7	433	33	3	3	0	0	1	0	0	0	0	0	22	502
23:00	3	275	28	1	5	0	0	0	0	0	0	0	0	10	322
Total	490	10251	1415	104	265	98	16	68	16	17	4	2	3	1925	14674
Percent	3.3%	69.9%	9.6%	0.7%	1.8%	0.7%	0.1%	0.5%	0.1%	0.1%	0.0%	0.0%	0.0%	13.1%	
AM Peak	09:00	08:00	11:00	11:00	10:00	08:00	09:00	09:00	11:00	11:00		06:00	06:00	10:00	08:00
Vol.	37	717	106	10	27	7	3	8	3	4		1	1	85	931
PM Peak	17:00	19:00	14:00	13:00	15:00	18:00	16:00	16:00	18:00	16:00	12:00	13:00	12:00	17:00	17:00
Vol.	72	702	120	8	28	17	3	8	3	2	1	1	1	332	1060

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Eastbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
09/06/19	3	173	21	2	1	0	0	0	0	0	0	0	0	4	204
01:00	0	104	20	3	0	0	0	1	0	0	0	0	0	1	129
02:00	4	98	17	0	4	0	0	0	0	0	0	0	0	1	124
03:00	0	60	10	1	1	0	0	0	0	0	0	0	0	0	72
04:00	0	41	8	1	3	0	0	1	0	0	0	0	0	0	54
05:00	1	84	22	1	1	0	0	1	0	0	0	0	0	1	111
06:00	2	165	33	3	6	0	0	2	1	0	0	0	0	3	215
07:00	11	357	77	3	9	3	0	1	2	1	0	1	1	20	486
08:00	36	635	84	9	21	6	2	5	1	0	0	0	0	60	859
09:00	21	631	97	6	21	9	3	5	4	3	0	0	0	72	872
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	78	2348	389	29	67	18	5	16	8	4	0	1	1	162	3126
Percent	2.5%	75.1%	12.4%	0.9%	2.1%	0.6%	0.2%	0.5%	0.3%	0.1%	0.0%	0.0%	0.0%	5.2%	
AM Peak	08:00	08:00	09:00	08:00	08:00	09:00	09:00	08:00	09:00	09:00		07:00	07:00	09:00	09:00
Vol.	36	635	97	9	21	9	3	5	4	3		1	1	72	872
PM Peak															
Vol.															
Grand Total	1364	28147	3817	263	713	241	37	194	47	49	11	6	9	5216	40114
Percent	3.4%	70.2%	9.5%	0.7%	1.8%	0.6%	0.1%	0.5%	0.1%	0.1%	0.0%	0.0%	0.0%	13.0%	

3 Winners Circle
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Site Code: 05801701
Station ID:

Latitude: 0' 0.0000 Undefined

Westbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
09/03/19	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	34	627	130	13	38	2	5	23	0	0	0	1	0	50	923
14:00	32	671	137	13	58	4	1	24	0	5	3	0	0	55	1003
15:00	34	681	88	10	35	4	2	18	0	5	0	0	0	132	1009
16:00	49	846	112	5	35	6	3	22	0	7	1	2	0	72	1160
17:00	41	939	104	12	35	5	2	20	1	5	1	2	0	90	1257
18:00	35	757	103	11	29	5	1	14	1	2	1	0	0	46	1005
19:00	25	656	65	9	23	4	1	5	0	0	1	0	1	32	822
20:00	12	494	54	9	11	0	1	6	0	1	0	0	0	27	615
21:00	12	372	44	6	13	0	0	4	0	1	0	0	0	15	467
22:00	3	249	30	5	10	0	0	2	0	0	1	0	0	10	310
23:00	6	110	22	5	9	0	0	1	1	0	0	0	0	6	160
Total	283	6402	889	98	296	30	16	139	3	26	8	5	1	535	8731
Percent	3.2%	73.3%	10.2%	1.1%	3.4%	0.3%	0.2%	1.6%	0.0%	0.3%	0.1%	0.1%	0.0%	6.1%	
AM Peak Vol.															
PM Peak	16:00	17:00	14:00	13:00	14:00	16:00	13:00	14:00	17:00	16:00	14:00	16:00	19:00	15:00	17:00
Vol.	49	939	137	13	58	6	5	24	1	7	3	2	1	132	1257

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Westbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
09/04/19	2	67	9	4	3	0	0	0	0	0	0	0	0	3	88
01:00	0	33	5	0	0	0	0	0	0	0	0	0	0	1	39
02:00	0	16	5	1	2	0	0	0	1	0	0	0	0	0	25
03:00	0	14	3	1	0	0	0	0	0	0	0	0	0	0	18
04:00	0	37	10	2	6	0	0	1	1	0	0	0	0	0	57
05:00	0	100	34	1	16	2	0	0	2	0	0	0	0	1	156
06:00	7	255	67	8	56	1	1	7	3	1	0	0	1	7	414
07:00	26	720	117	12	72	9	1	22	4	6	1	0	0	94	1084
08:00	55	932	137	10	54	12	5	12	1	2	1	0	0	210	1431
09:00	36	711	116	12	49	10	3	21	4	3	2	1	0	74	1042
10:00	22	644	118	11	55	5	3	28	3	1	0	0	0	44	934
11:00	25	602	118	12	41	10	5	19	4	2	0	0	0	53	891
12 PM	28	692	121	8	62	1	1	23	3	5	1	1	0	64	1010
13:00	24	601	151	14	42	6	3	27	2	5	2	0	1	70	948
14:00	36	602	128	17	61	3	1	19	1	3	3	0	1	94	969
15:00	30	679	117	12	52	3	1	34	0	4	2	1	0	97	1032
16:00	45	774	138	13	46	5	2	27	1	4	2	1	2	121	1181
17:00	38	930	130	18	40	6	1	32	0	3	3	0	2	111	1314
18:00	23	709	111	19	35	2	1	32	0	3	2	0	0	111	1048
19:00	15	575	92	15	24	0	1	13	3	0	0	2	0	76	816
20:00	6	434	76	9	18	1	0	9	0	1	0	0	0	68	622
21:00	6	326	48	6	11	3	0	7	0	2	0	0	0	55	464
22:00	1	177	47	5	10	1	0	3	0	0	0	0	0	42	286
23:00	2	106	29	3	4	0	0	0	0	0	0	0	0	28	172
Total	427	10736	1927	213	759	80	29	336	33	45	19	6	7	1424	16041
Percent	2.7%	66.9%	12.0%	1.3%	4.7%	0.5%	0.2%	2.1%	0.2%	0.3%	0.1%	0.0%	0.0%	8.9%	
AM Peak	08:00	08:00	08:00	07:00	07:00	08:00	08:00	10:00	07:00	07:00	09:00	09:00	06:00	08:00	08:00
Vol.	55	932	137	12	72	12	5	28	4	6	2	1	1	210	1431
PM Peak	16:00	17:00	13:00	18:00	12:00	13:00	13:00	15:00	12:00	12:00	14:00	19:00	16:00	16:00	17:00
Vol.	45	930	151	19	62	6	3	34	3	5	3	2	2	121	1314

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Latitude: 0' 0.0000 Undefined

Westbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
09/05/19	0	74	14	3	3	0	0	0	0	0	0	0	0	26	120
01:00	0	23	16	0	2	0	0	0	0	0	0	0	0	22	63
02:00	0	5	6	1	1	0	0	0	0	0	0	0	0	11	24
03:00	0	5	1	0	1	0	0	0	0	0	0	0	0	18	25
04:00	0	18	5	1	2	1	0	0	1	0	0	0	0	29	57
05:00	1	42	25	3	10	0	0	0	1	0	0	0	0	67	149
06:00	6	239	80	8	55	1	0	6	3	1	0	2	0	85	486
07:00	33	608	146	10	73	5	3	28	0	2	0	0	0	190	1098
08:00	46	698	144	16	56	8	0	15	0	4	1	0	1	308	1297
09:00	30	582	162	20	53	7	3	31	4	5	1	0	0	209	1107
10:00	13	434	148	17	58	8	3	28	0	6	1	0	1	244	961
11:00	6	295	168	22	36	5	0	23	0	1	0	0	2	352	910
12 PM	9	270	188	28	43	4	0	28	2	1	0	0	1	422	996
13:00	18	297	151	18	41	3	1	27	0	3	1	0	0	352	912
14:00	11	274	174	28	40	4	1	26	2	0	4	0	0	411	975
15:00	5	261	187	18	52	4	0	29	0	1	1	1	0	426	985
16:00	22	392	190	23	34	2	0	36	2	1	3	1	0	480	1186
17:00	18	439	168	15	34	6	0	28	0	5	2	0	1	459	1175
18:00	13	549	158	18	27	2	0	21	1	0	1	0	0	311	1101
19:00	10	433	135	20	27	2	0	24	0	1	1	0	0	214	867
20:00	2	312	97	11	17	1	0	8	0	1	0	0	0	196	645
21:00	2	253	83	9	16	1	0	5	0	0	0	0	0	156	525
22:00	0	135	60	5	7	1	0	5	0	0	0	0	0	159	372
23:00	1	85	44	5	3	0	0	2	0	0	0	0	0	107	247
Total	246	6723	2550	299	691	65	11	370	16	32	16	4	6	5254	16283
Percent	1.5%	41.3%	15.7%	1.8%	4.2%	0.4%	0.1%	2.3%	0.1%	0.2%	0.1%	0.0%	0.0%	32.3%	
AM Peak	08:00	08:00	11:00	11:00	07:00	08:00	07:00	09:00	09:00	10:00	08:00	06:00	11:00	11:00	08:00
Vol.	46	698	168	22	73	8	3	31	4	6	1	2	2	352	1297
PM Peak	16:00	18:00	16:00	12:00	15:00	17:00	13:00	16:00	12:00	17:00	14:00	15:00	12:00	16:00	16:00
Vol.	22	549	190	28	52	6	1	36	2	5	4	1	1	480	1186

3 Winners Circle
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Site Code: 05801701
Station ID:

Latitude: 0' 0.0000 Undefined

Westbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
09/06/19	0	49	26	2	2	0	0	0	0	0	0	0	0	74	153
01:00	0	10	16	0	0	0	0	0	0	0	0	0	0	69	95
02:00	0	5	10	0	1	0	0	0	0	0	0	0	0	58	74
03:00	0	1	5	2	0	0	0	0	0	0	0	0	0	21	29
04:00	1	4	7	0	5	0	0	0	0	0	0	0	0	53	70
05:00	0	27	21	4	13	0	0	1	0	0	0	0	0	82	148
06:00	0	115	81	10	36	2	0	6	0	1	0	1	0	156	408
07:00	19	465	155	13	54	3	5	27	2	2	3	0	2	287	1037
08:00	31	723	179	16	49	9	0	32	2	2	3	1	0	249	1296
09:00	32	519	156	27	57	4	2	38	1	1	1	0	0	245	1083
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	83	1918	656	74	217	18	7	104	5	6	7	2	2	1294	4393
Percent	1.9%	43.7%	14.9%	1.7%	4.9%	0.4%	0.2%	2.4%	0.1%	0.1%	0.2%	0.0%	0.0%	29.5%	
AM Peak	09:00	08:00	08:00	09:00	09:00	08:00	07:00	09:00	07:00	07:00	07:00	06:00	07:00	07:00	08:00
Vol.	32	723	179	27	57	9	5	38	2	2	3	1	2	287	1296
PM Peak															
Vol.															
Grand Total	1039	25779	6022	684	1963	193	63	949	57	109	50	17	16	8507	45448
Percent	2.3%	56.7%	13.3%	1.5%	4.3%	0.4%	0.1%	2.1%	0.1%	0.2%	0.1%	0.0%	0.0%	18.7%	

3 Winners Circle
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Site Code: 05801702
Station ID:

Latitude: 0' 0.0000 Undefined

Eastbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
09/03/19	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	139	146	158	**248**	**145**	**33**	3	**2**	0	0	0	0	0	0	874	21-30	406
15:00	321	249	**253**	150	51	13	0	0	0	0	0	0	0	0	1037	16-25	502
16:00	460	**330**	180	126	36	3	0	0	0	0	0	0	0	0	**1135**	16-25	510
17:00	584	310	110	16	3	0	0	0	0	0	0	0	0	0	1023	11-20	505
18:00	**591**	295	154	38	12	0	0	0	0	0	0	0	0	0	1090	11-20	492
19:00	161	140	192	247	108	28	**4**	1	0	0	0	0	0	0	881	21-30	439
20:00	153	113	227	188	108	21	1	1	0	0	0	0	0	0	812	21-30	415
21:00	105	86	137	195	64	18	0	0	0	0	0	0	0	0	605	21-30	332
22:00	43	58	94	124	63	9	0	0	0	0	0	0	0	0	391	21-30	218
23:00	12	25	54	79	47	9	1	1	0	0	0	0	0	0	228	21-30	133
Total	2569	1752	1559	1411	637	134	9	5	0	0	0	0	0	0	8076		
Percent	31.8%	21.7%	19.3%	17.5%	7.9%	1.7%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak Vol.																	
PM Peak Vol.	18:00 591	16:00 330	15:00 253	14:00 248	14:00 145	14:00 33	19:00 4	14:00 2							16:00 1135		

3 Winners Circle
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Station ID:

Latitude: 0' 0.0000 Undefined

Eastbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
09/04/19	4	13	26	42	21	5	1	**1**	**1**	0	0	0	0	0	114	21-30	68
01:00	1	0	14	25	22	5	2	0	0	0	0	0	0	0	69	26-35	47
02:00	0	0	2	17	6	2	0	0	0	0	0	0	0	0	27	26-35	23
03:00	0	1	1	12	7	0	1	0	1	0	0	0	0	0	23	26-35	19
04:00	0	0	3	7	3	0	0	0	0	0	0	0	0	0	13	21-30	10
05:00	1	1	6	20	16	12	1	0	0	0	0	0	0	0	57	26-35	36
06:00	4	2	12	69	85	29	6	0	0	0	0	0	0	0	207	26-35	154
07:00	34	27	72	155	164	**47**	11	0	0	0	0	0	0	0	510	26-35	319
08:00	104	96	201	219	**176**	45	**13**	1	0	0	0	0	0	0	**855**	21-30	420
09:00	**125**	106	181	**270**	140	29	2	0	0	0	0	0	0	0	853	21-30	451
10:00	109	**115**	**221**	225	94	21	3	0	0	0	0	0	0	0	788	21-30	446
11:00	123	103	193	224	117	22	3	0	0	0	0	0	0	0	785	21-30	417
12 PM	151	115	192	233	104	14	3	0	0	0	0	0	0	0	812	21-30	425
13:00	181	130	211	212	122	24	1	**1**	0	0	0	0	0	0	882	21-30	423
14:00	171	118	216	**258**	**135**	**25**	2	0	0	0	0	0	0	0	925	21-30	474
15:00	412	282	207	107	44	2	0	0	0	0	0	0	0	0	1054	16-25	489
16:00	476	299	162	126	38	5	0	0	0	0	0	0	0	0	**1106**	16-25	461
17:00	483	**343**	178	79	18	1	0	0	0	0	0	0	0	0	1102	16-25	521
18:00	**557**	301	147	42	12	2	0	0	0	0	0	0	0	0	1061	11-20	487
19:00	283	194	**230**	180	64	10	2	0	0	0	0	0	0	0	963	16-25	424
20:00	145	140	187	192	84	14	3	0	0	0	0	0	0	0	765	21-30	379
21:00	75	92	171	177	85	9	**5**	0	**1**	0	0	0	0	0	615	21-30	348
22:00	51	56	94	128	68	13	2	0	0	0	0	0	0	0	412	21-30	222
23:00	8	19	41	86	73	9	3	1	0	0	0	0	0	0	240	26-35	159
Total	3498	2553	2968	3105	1698	345	64	4	3	0	0	0	0	0	14238		
Percent	24.6%	17.9%	20.8%	21.8%	11.9%	2.4%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	09:00	10:00	10:00	09:00	08:00	07:00	08:00	00:00	00:00						08:00		
Vol.	125	115	221	270	176	47	13	1	1						855		
PM Peak	18:00	17:00	19:00	14:00	14:00	14:00	21:00	13:00	21:00						16:00		
Vol.	557	343	230	258	135	25	5	1	1						1106		

3 Winners Circle
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Site Code: 05801702
Station ID:

Latitude: 0' 0.0000 Undefined

Eastbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
09/05/19	11	18	33	57	44	3	1	2	0	0	**1**	0	0	0	170	26-35	101
01:00	0	3	14	42	35	7	2	0	0	0	0	0	0	0	103	26-35	77
02:00	0	0	4	34	14	2	2	1	0	0	0	0	0	0	57	26-35	48
03:00	0	0	1	11	9	1	0	0	1	0	0	0	0	0	23	26-35	20
04:00	0	0	2	17	8	3	4	0	0	0	0	0	0	0	34	26-35	25
05:00	1	1	6	25	29	10	4	0	0	0	0	0	0	0	76	26-35	54
06:00	4	2	11	61	77	36	8	0	1	0	0	0	0	0	200	26-35	138
07:00	40	30	63	147	113	67	**15**	**4**	**2**	0	0	0	0	0	481	26-35	260
08:00	100	73	150	**280**	**250**	**71**	6	1	0	0	0	0	0	0	**931**	26-35	530
09:00	96	118	**223**	270	152	39	7	1	0	0	0	0	0	0	906	21-30	493
10:00	**166**	**126**	158	185	90	21	5	1	0	0	0	0	0	0	752	21-30	343
11:00	142	114	151	196	143	30	10	0	0	0	0	0	0	0	786	21-30	347
12 PM	181	122	192	**269**	106	18	0	0	0	0	0	0	0	0	888	21-30	461
13:00	116	139	182	226	**162**	**37**	**5**	0	0	0	0	0	0	0	867	21-30	408
14:00	227	200	201	189	101	24	2	0	0	0	0	0	0	0	944	16-25	401
15:00	309	242	199	164	54	10	0	0	0	0	0	0	0	0	978	16-25	441
16:00	433	305	174	99	28	3	0	0	0	0	0	0	0	0	1042	16-25	479
17:00	**625**	**329**	75	27	4	0	0	0	0	0	0	0	0	0	**1060**	11-20	537
18:00	597	317	103	17	2	0	0	0	0	0	0	0	0	0	1036	11-20	516
19:00	183	163	**261**	197	101	24	1	0	0	0	0	0	0	0	930	21-30	458
20:00	196	160	232	207	55	13	2	0	0	0	0	0	0	0	865	21-30	439
21:00	192	110	178	169	61	9	2	0	0	0	0	0	0	0	721	21-30	347
22:00	58	66	103	200	59	13	3	0	0	0	0	0	0	0	502	21-30	303
23:00	31	30	95	114	43	8	1	0	0	0	0	0	0	0	322	21-30	209
Total	3708	2668	2811	3203	1740	449	80	10	4	0	1	0	0	0	14674		
Percent	25.3%	18.2%	19.2%	21.8%	11.9%	3.1%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	10:00	10:00	09:00	08:00	08:00	08:00	07:00	07:00	07:00		00:00				08:00		
Vol.	166	126	223	280	250	71	15	4	2		1				931		
PM Peak	17:00	17:00	19:00	12:00	13:00	13:00	13:00								17:00		
Vol.	625	329	261	269	162	37	5								1060		

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Eastbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
09/06/19	14	32	43	72	32	9	2	0	0	0	0	0	0	0	204	21-30	115
01:00	2	2	24	60	35	6	0	0	0	0	0	0	0	0	129	26-35	95
02:00	1	0	18	70	28	4	2	0	**1**	0	0	0	0	0	124	26-35	98
03:00	0	0	10	34	21	6	1	0	0	0	0	0	0	0	72	26-35	55
04:00	0	0	3	27	20	4	0	0	0	0	0	0	0	0	54	26-35	47
05:00	1	1	7	45	37	17	3	0	0	0	0	0	0	0	111	26-35	82
06:00	3	3	15	70	87	29	8	0	0	0	0	0	0	0	215	26-35	157
07:00	45	27	62	116	139	**81**	**12**	**4**	0	0	0	0	0	0	486	26-35	255
08:00	102	**86**	165	259	**177**	60	7	3	0	0	0	0	0	0	859	26-35	436
09:00	**103**	75	**198**	**297**	155	39	4	1	0	0	0	0	0	0	**872**	21-30	495
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	271	226	545	1050	731	255	39	8	1	0	0	0	0	0	3126		
Percent	8.7%	7.2%	17.4%	33.6%	23.4%	8.2%	1.2%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	09:00	08:00	09:00	09:00	08:00	07:00	07:00	07:00	02:00						09:00		
Vol.	103	86	198	297	177	81	12	4	1						872		
PM Peak Vol.																	
Total	10046	7199	7883	8769	4806	1183	192	27	8	0	1	0	0	0	40114		
Percent	25.0%	17.9%	19.7%	21.9%	12.0%	2.9%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile :	8 MPH
50th Percentile :	21 MPH
85th Percentile :	30 MPH
95th Percentile :	34 MPH

Stats

10 MPH Pace Speed :	21-30 MPH
Number in Pace :	16652
Percent in Pace :	41.5%
Number of Vehicles > 55 MPH :	1
Percent of Vehicles > 55 MPH :	0.0%
Mean Speed(Average) :	21 MPH

3 Winners Circle
Albany, NY 12205
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Site Code: 05801701
Station ID:

Latitude: 0' 0.0000 Undefined

Westbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
09/03/19	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	45	16	64	457	298	39	4	0	0	0	0	0	0	0	923	26-35	755
14:00	63	25	167	435	248	**60**	**5**	0	0	0	0	0	0	0	1003	26-35	683
15:00	**231**	24	109	360	235	47	3	0	0	0	0	0	0	0	1009	26-35	595
16:00	79	20	199	**631**	203	26	2	0	0	0	0	0	0	0	1160	26-35	834
17:00	97	**39**	**321**	625	156	17	2	0	0	0	0	0	0	0	**1257**	21-30	946
18:00	50	12	90	502	**312**	34	5	0	0	0	0	0	0	0	1005	26-35	814
19:00	32	2	61	407	274	44	2	0	0	0	0	0	0	0	822	26-35	681
20:00	27	1	58	308	179	37	2	**2**	**1**	0	0	0	0	0	615	26-35	487
21:00	14	1	25	203	180	41	3	0	0	0	0	0	0	0	467	26-35	383
22:00	9	0	29	131	114	25	2	0	0	0	0	0	0	0	310	26-35	245
23:00	7	0	17	65	52	17	2	0	0	0	0	0	0	0	160	26-35	117
Total	654	140	1140	4124	2251	387	32	2	1	0	0	0	0	0	8731		
Percent	7.5%	1.6%	13.1%	47.2%	25.8%	4.4%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak Vol.																	
PM Peak Vol.	15:00 231	17:00 39	17:00 321	16:00 631	18:00 312	14:00 60	14:00 5	20:00 2	20:00 1						17:00 1257		

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Westbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
09/04/19	3	1	8	36	28	10	1	0	0	0	**1**	0	0	0	88	26-35	64
01:00	1	0	2	16	15	3	2	0	0	0	0	0	0	0	39	26-35	31
02:00	0	0	0	9	10	4	0	**2**	0	0	0	0	0	0	25	26-35	19
03:00	0	1	3	7	4	3	0	0	0	0	0	0	0	0	18	24-33	11
04:00	0	0	4	20	24	8	1	0	0	0	0	0	0	0	57	26-35	44
05:00	1	0	2	41	68	36	7	1	0	0	0	0	0	0	156	26-35	109
06:00	6	0	9	92	225	**64**	**17**	1	0	0	0	0	0	0	414	26-35	317
07:00	136	38	170	437	243	52	7	1	0	0	0	0	0	0	1084	26-35	680
08:00	**399**	**144**	**350**	**472**	62	4	0	0	0	0	0	0	0	0	**1431**	21-30	822
09:00	88	49	257	471	150	26	1	0	0	0	0	0	0	0	1042	21-30	728
10:00	44	16	153	422	**265**	30	4	0	0	0	0	0	0	0	934	26-35	687
11:00	50	11	106	467	216	39	2	0	0	0	0	0	0	0	891	26-35	683
12 PM	64	17	112	516	270	29	2	0	0	0	0	0	0	0	1010	26-35	786
13:00	67	11	96	436	**295**	39	4	0	0	0	0	0	0	0	948	26-35	731
14:00	96	10	116	433	264	39	11	0	0	0	0	0	0	0	969	26-35	697
15:00	97	18	154	493	238	29	3	0	0	0	0	0	0	0	1032	26-35	731
16:00	**134**	36	233	574	182	19	3	0	0	0	0	0	0	0	1181	21-30	807
17:00	117	**48**	**275**	**633**	206	34	0	0	0	0	0	0	0	**1**	**1314**	21-30	908
18:00	107	7	124	545	229	32	3	1	0	0	0	0	0	0	1048	26-35	774
19:00	72	2	68	421	223	25	4	1	0	0	0	0	0	0	816	26-35	644
20:00	65	3	37	254	210	**43**	8	1	**1**	0	0	0	0	0	622	26-35	464
21:00	55	1	45	152	163	43	5	0	0	0	0	0	0	0	464	26-35	315
22:00	42	1	14	91	91	33	**12**	**2**	0	0	0	0	0	0	286	26-35	182
23:00	28	0	12	44	70	13	5	0	0	0	0	0	0	0	172	26-35	114
Total	1672	414	2350	7082	3751	657	102	10	1	0	1	0	0	1	16041		
Percent	10.4%	2.6%	14.6%	44.1%	23.4%	4.1%	0.6%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	08:00	08:00	10:00	06:00	06:00	02:00			00:00				08:00		
Vol.	399	144	350	472	265	64	17	2			1				1431		
PM Peak	16:00	17:00	17:00	17:00	13:00	20:00	22:00	22:00	20:00					17:00	17:00		
Vol.	134	48	275	633	295	43	12	2	1					1	1314		

3 Winners Circle
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Site Code: 05801701
Station ID:

Latitude: 0' 0.0000 Undefined

Westbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
09/05/19	26	0	5	28	37	16	6	0	**2**	0	0	0	0	0	120	26-35	65
01:00	22	0	1	6	14	8	8	**4**	0	0	0	0	0	0	63	31-40	22
02:00	11	0	0	4	1	5	1	1	0	0	**1**	0	0	0	24	6-15	7
03:00	18	0	0	4	2	1	0	0	0	0	0	0	0	0	25	6-15	12
04:00	29	0	0	5	10	9	2	1	0	0	1	0	0	0	57	6-15	19
05:00	67	0	0	8	33	30	7	4	0	0	0	0	0	0	149	31-40	63
06:00	85	1	5	101	168	**96**	**28**	2	0	0	0	0	0	0	486	26-35	269
07:00	256	75	85	299	283	85	14	1	0	0	0	0	0	0	1098	26-35	582
08:00	**522**	**123**	**314**	267	64	7	0	0	0	0	0	0	0	0	**1297**	21-30	581
09:00	238	43	145	**417**	221	36	7	0	0	0	0	0	0	0	1107	26-35	638
10:00	242	4	58	296	**285**	62	11	2	1	0	0	0	0	0	961	26-35	581
11:00	351	3	45	251	208	46	6	0	0	0	0	0	0	0	910	26-35	459
12 PM	419	2	25	203	**254**	**77**	12	3	1	0	0	0	0	0	996	26-35	457
13:00	352	2	49	243	205	51	4	**4**	**2**	0	0	0	0	0	912	26-35	448
14:00	407	9	66	232	187	63	9	0	2	0	0	0	0	0	975	26-35	419
15:00	422	2	32	212	231	64	**21**	1	0	0	0	0	0	0	985	26-35	443
16:00	477	13	122	367	163	32	11	1	0	0	0	0	0	0	**1186**	26-35	530
17:00	**597**	**86**	**180**	237	64	11	0	0	0	0	0	0	0	0	1175	21-30	417
18:00	323	21	121	**379**	207	42	5	2	1	0	0	0	0	0	1101	26-35	586
19:00	217	1	60	284	232	58	10	4	1	0	0	0	0	0	867	26-35	516
20:00	196	0	36	186	174	40	11	2	0	0	0	0	0	0	645	26-35	360
21:00	156	2	18	146	138	53	10	2	0	0	0	0	0	0	525	26-35	284
22:00	159	0	8	73	81	40	7	3	1	0	0	0	0	0	372	26-35	154
23:00	107	1	12	42	54	22	7	2	0	0	0	0	0	0	247	26-35	96
Total	5699	388	1387	4290	3316	954	197	39	11	0	2	0	0	0	16283		
Percent	35.0%	2.4%	8.5%	26.3%	20.4%	5.9%	1.2%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	08:00	09:00	10:00	06:00	06:00	01:00	00:00		02:00				08:00		
Vol.	522	123	314	417	285	96	28	4	2		1				1297		
PM Peak	17:00	17:00	17:00	18:00	12:00	12:00	15:00	13:00	13:00						16:00		
Vol.	597	86	180	379	254	77	21	4	2						1186		

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Westbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
09/06/19	73	1	1	20	32	19	4	2	1	0	0	0	0	0	153	26-35	52
01:00	69	0	0	5	9	6	4	1	0	**1**	0	0	0	0	95	6-15	46
02:00	58	0	0	1	4	9	1	0	1	0	0	0	0	0	74	1-10	39
03:00	21	0	0	0	2	2	1	2	1	0	0	0	0	0	29	1-10	14
04:00	53	0	0	0	4	7	5	0	0	0	**1**	0	0	0	70	6-15	35
05:00	82	0	0	7	19	22	14	4	0	0	0	0	0	0	148	1-10	55
06:00	155	0	2	40	99	**68**	**30**	**10**	**2**	1	0	0	**1**	0	408	31-40	167
07:00	291	30	117	300	209	62	18	8	2	0	0	0	0	0	1037	26-35	509
08:00	**338**	**79**	**264**	**442**	159	14	0	0	0	0	0	0	0	0	**1296**	21-30	706
09:00	244	8	128	389	**253**	51	9	1	0	0	0	0	0	0	1083	26-35	642
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	1384	118	512	1204	790	260	86	28	7	2	1	0	1	0	4393		
Percent	31.5%	2.7%	11.7%	27.4%	18.0%	5.9%	2.0%	0.6%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	08:00	08:00	09:00	06:00	06:00	06:00	06:00	01:00	04:00		06:00		08:00		
Vol.	338	79	264	442	253	68	30	10	2	1	1		1		1296		
PM Peak Vol.																	
Total	9409	1060	5389	16700	10108	2258	417	79	20	2	4	0	1	1	45448		
Percent	20.7%	2.3%	11.9%	36.7%	22.2%	5.0%	0.9%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile :	10 MPH
50th Percentile :	27 MPH
85th Percentile :	33 MPH
95th Percentile :	36 MPH

Stats

10 MPH Pace Speed :	26-35 MPH
Number in Pace :	26808
Percent in Pace :	59.0%
Number of Vehicles > 55 MPH :	8
Percent of Vehicles > 55 MPH :	0.0%
Mean Speed(Average) :	25 MPH

University Heights Traffic Study

City of Burlington, Vermont

APPENDIX B

Capacity Analysis

CHA Project # 058017.000

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	930	80	0	1455	0	85	1	40	0	5	0
Future Volume (vph)	0	930	80	0	1455	0	85	1	40	0	5	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		6.0	6.0			6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00			1.00	
Frpb, ped/bikes		0.98			1.00		1.00	0.47			1.00	
Flpb, ped/bikes		1.00			1.00		0.94	1.00			1.00	
Frt		0.99			1.00		1.00	0.85			1.00	
Flt Protected		1.00			1.00		0.95	1.00			1.00	
Satd. Flow (prot)		3401			3539		1471	736			950	
Flt Permitted		1.00			1.00		0.75	1.00			1.00	
Satd. Flow (perm)		3401			3539		1169	736			950	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	979	84	0	1532	0	89	1	42	0	5	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1063	0	0	1532	0	89	43	0	0	5	0
Confl. Peds. (#/hr)	500		80	80		500	35		870	870		35
Heavy Vehicles (%)	0%	3%	2%	0%	2%	0%	15%	0%	4%	0%	100%	0%
Turn Type		NA			NA		Perm	NA			NA	
Protected Phases		2			6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)		42.0			42.0		8.3	8.3			8.3	
Effective Green, g (s)		42.0			42.0		8.3	8.3			8.3	
Actuated g/C Ratio		0.64			0.64		0.13	0.13			0.13	
Clearance Time (s)		5.0			5.0		6.0	6.0			6.0	
Vehicle Extension (s)		4.0			4.0		2.0	2.0			2.0	
Lane Grp Cap (vph)		2164			2252		147	92			119	
v/s Ratio Prot		0.31			c0.43			0.06			0.01	
v/s Ratio Perm							c0.08					
v/c Ratio		0.49			0.68		0.61	0.47			0.04	
Uniform Delay, d1		6.3			7.7		27.3	26.8			25.4	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		0.2			0.9		4.8	1.4			0.1	
Delay (s)		6.6			8.6		32.1	28.2			25.4	
Level of Service		A			A		C	C			C	
Approach Delay (s)		6.6			8.6			30.8			25.4	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	66.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1410	45	0	1265	0	145	1	190	1	3	0
Future Volume (vph)	0	1410	45	0	1265	0	145	1	190	1	3	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		6.0	6.0			6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00			1.00	
Frpb, ped/bikes		0.99			1.00		1.00	0.46			1.00	
Flpb, ped/bikes		1.00			1.00		0.86	1.00			0.90	
Frt		1.00			1.00		1.00	0.85			1.00	
Flt Protected		1.00			1.00		0.95	1.00			0.99	
Satd. Flow (prot)		3523			3574		1529	742			846	
Flt Permitted		1.00			1.00		0.76	1.00			0.94	
Satd. Flow (perm)		3523			3574		1215	742			803	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1484	47	0	1332	0	153	1	200	1	3	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1531	0	0	1332	0	153	201	0	0	4	0
Confl. Peds. (#/hr)	710		105	105		710	70		915	915		70
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	2%	100%	0%	100%	100%	0%
Turn Type		NA			NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)		38.8			38.8		17.1	17.1			17.1	
Effective Green, g (s)		38.8			38.8		17.1	17.1			17.1	
Actuated g/C Ratio		0.54			0.54		0.24	0.24			0.24	
Clearance Time (s)		5.0			5.0		6.0	6.0			6.0	
Vehicle Extension (s)		4.0			4.0		2.0	2.0			2.0	
Lane Grp Cap (vph)		1906			1934		289	176			191	
v/s Ratio Prot		c0.43			0.37			c0.27				
v/s Ratio Perm							0.13				0.00	
v/c Ratio		0.80			0.69		0.53	1.14			0.02	
Uniform Delay, d1		13.4			12.0		23.8	27.3			20.9	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		2.7			1.1		0.8	111.2			0.0	
Delay (s)		16.0			13.2		24.6	138.5			20.9	
Level of Service		B			B		C	F			C	
Approach Delay (s)		16.0			13.2			89.3			20.9	
Approach LOS		B			B			F			C	

Intersection Summary			
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	71.7	Sum of lost time (s)	13.0
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	725	65	0	1075	0	70	0	50	0	5	2
Future Volume (vph)	0	725	65	0	1075	0	70	0	50	0	5	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		6.0	6.0			6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00			1.00	
Frpb, ped/bikes		0.98			1.00		1.00	0.46			0.97	
Flpb, ped/bikes		1.00			1.00		0.90	1.00			1.00	
Frt		0.99			1.00		1.00	0.85			0.97	
Flt Protected		1.00			1.00		0.95	1.00			1.00	
Satd. Flow (prot)		3394			3539		1412	712			1020	
Flt Permitted		1.00			1.00		0.75	1.00			1.00	
Satd. Flow (perm)		3394			3539		1119	712			1020	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	815	73	0	1208	0	79	0	56	0	6	2
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	888	0	0	1208	0	79	56	0	0	8	0
Confl. Peds. (#/hr)	825		90	90		825	60		1305	1305		60
Heavy Vehicles (%)	0%	3%	2%	0%	2%	0%	15%	0%	4%	0%	100%	0%
Turn Type		NA			NA		Perm	NA			NA	
Protected Phases		2			6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)		37.8			37.8		8.5	8.5			8.5	
Effective Green, g (s)		37.8			37.8		8.5	8.5			8.5	
Actuated g/C Ratio		0.61			0.61		0.14	0.14			0.14	
Clearance Time (s)		5.0			5.0		6.0	6.0			6.0	
Vehicle Extension (s)		4.0			4.0		2.0	2.0			2.0	
Lane Grp Cap (vph)		2072			2161		153	97			140	
v/s Ratio Prot		0.26			c0.34			c0.08			0.01	
v/s Ratio Perm							0.07					
v/c Ratio		0.43			0.56		0.52	0.58			0.06	
Uniform Delay, d1		6.4			7.1		24.8	25.0			23.2	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		0.2			0.4		1.2	5.1			0.1	
Delay (s)		6.5			7.5		26.0	30.1			23.3	
Level of Service		A			A		C	C			C	
Approach Delay (s)		6.5			7.5			27.7			23.3	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	8.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	61.9	Sum of lost time (s)	13.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1340	30	0	1225	0	150	0	185	1	2	1
Future Volume (vph)	0	1340	30	0	1225	0	150	0	185	1	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		6.0	6.0			6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00			1.00	
Frpb, ped/bikes		0.99			1.00		1.00	0.46			0.97	
Flpb, ped/bikes		1.00			1.00		0.87	1.00			0.90	
Frt		1.00			1.00		1.00	0.85			0.97	
Flt Protected		1.00			1.00		0.95	1.00			0.99	
Satd. Flow (prot)		3532			3539		1532	741			1053	
Flt Permitted		1.00			1.00		0.76	1.00			0.94	
Satd. Flow (perm)		3532			3539		1218	741			999	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1457	33	0	1332	0	163	0	201	1	2	1
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1490	0	0	1332	0	163	201	0	0	4	0
Confl. Peds. (#/hr)	1040		125	125		1040	65		1170	1170		65
Heavy Vehicles (%)	0%	1%	1%	0%	2%	0%	3%	0%	0%	0%	100%	0%
Turn Type		NA			NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)		38.5			38.5		17.1	17.1			17.1	
Effective Green, g (s)		38.5			38.5		17.1	17.1			17.1	
Actuated g/C Ratio		0.54			0.54		0.24	0.24			0.24	
Clearance Time (s)		5.0			5.0		6.0	6.0			6.0	
Vehicle Extension (s)		4.0			4.0		2.0	2.0			2.0	
Lane Grp Cap (vph)		1904			1908		291	177			239	
v/s Ratio Prot		c0.42			0.38			c0.27				
v/s Ratio Perm							0.13				0.00	
v/c Ratio		0.78			0.70		0.56	1.14			0.02	
Uniform Delay, d1		13.1			12.2		23.8	27.2			20.7	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		2.3			1.2		1.5	108.8			0.0	
Delay (s)		15.4			13.4		25.3	135.9			20.7	
Level of Service		B			B		C	F			C	
Approach Delay (s)		15.4			13.4			86.4			20.7	
Approach LOS		B			B			F			C	

Intersection Summary			
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	13.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	930	80	0	1455	0	85	1	40	0	5	0
Future Volume (vph)	0	930	80	0	1455	0	85	1	40	0	5	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			6.0	6.0		6.0	
Lane Util. Factor		0.95			0.95			1.00	1.00		1.00	
Frpb, ped/bikes		0.98			1.00			1.00	0.60		1.00	
Flpb, ped/bikes		1.00			1.00			0.95	1.00		1.00	
Frt		0.99			1.00			1.00	0.85		1.00	
Flt Protected		1.00			1.00			0.95	1.00		1.00	
Satd. Flow (prot)		3393			3539			1498	931		950	
Flt Permitted		1.00			1.00			0.73	1.00		1.00	
Satd. Flow (perm)		3393			3539			1141	931		950	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	979	84	0	1532	0	89	1	42	0	5	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1063	0	0	1532	0	0	90	42	0	5	0
Confl. Peds. (#/hr)	500		80	80		500	35		870	870		35
Heavy Vehicles (%)	0%	3%	2%	0%	2%	0%	15%	0%	4%	0%	100%	0%
Turn Type		NA			NA		pm+pt	NA	custom		NA	
Protected Phases		2			6		9	8	9		4	
Permitted Phases							8		8	4		
Actuated Green, G (s)		43.3			43.3			10.0	10.0		7.4	
Effective Green, g (s)		43.3			43.3			10.0	10.0		7.4	
Actuated g/C Ratio		0.58			0.58			0.13	0.13		0.10	
Clearance Time (s)		5.0			5.0			6.0	6.0		6.0	
Vehicle Extension (s)		4.0			4.0			2.0	2.0		2.0	
Lane Grp Cap (vph)		1961			2045			164	198		93	
v/s Ratio Prot		0.31			c0.43			c0.02	0.01		0.01	
v/s Ratio Perm								c0.05	0.04			
v/c Ratio		0.54			0.75			0.55	0.21		0.05	
Uniform Delay, d1		9.7			11.8			30.3	28.9		30.6	
Progression Factor		1.00			1.00			1.00	1.00		1.00	
Incremental Delay, d2		0.4			1.6			2.0	0.2		0.1	
Delay (s)		10.1			13.4			32.3	29.1		30.7	
Level of Service		B			B			C	C		C	
Approach Delay (s)		10.1			13.4			31.3			30.7	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	13.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	74.9	Sum of lost time (s)	19.0
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1410	45	0	1265	0	145	1	190	1	3	0
Future Volume (vph)	0	1410	45	0	1265	0	145	1	190	1	3	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			6.0	6.0		6.0	
Lane Util. Factor		0.95			0.95			1.00	1.00		1.00	
Frpb, ped/bikes		0.99			1.00			1.00	0.69		1.00	
Flpb, ped/bikes		1.00			1.00			0.90	1.00		0.89	
Frt		1.00			1.00			1.00	0.85		1.00	
Flt Protected		1.00			1.00			0.95	1.00		0.99	
Satd. Flow (prot)		3521			3574			1584	1116		836	
Flt Permitted		1.00			1.00			0.73	1.00		0.91	
Satd. Flow (perm)		3521			3574			1206	1116		768	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1484	47	0	1332	0	153	1	200	1	3	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1531	0	0	1332	0	0	154	200	0	4	0
Confl. Peds. (#/hr)	710		105	105		710	70		915	915		70
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	2%	100%	0%	100%	100%	0%
Turn Type		NA			NA		pm+pt	NA	custom	Perm	NA	
Protected Phases		2			6		9	8	9		4	
Permitted Phases							8		8	4		
Actuated Green, G (s)		37.2			37.2			17.0	17.0		9.7	
Effective Green, g (s)		37.2			37.2			17.0	17.0		9.7	
Actuated g/C Ratio		0.49			0.49			0.22	0.22		0.13	
Clearance Time (s)		5.0			5.0			6.0	6.0		6.0	
Vehicle Extension (s)		4.0			4.0			2.0	2.0		2.0	
Lane Grp Cap (vph)		1723			1749			306	337		98	
v/s Ratio Prot		c0.43			0.37			0.05	c0.06			
v/s Ratio Perm								0.06	0.12		0.01	
v/c Ratio		0.89			0.76			0.50	0.59		0.04	
Uniform Delay, d1		17.5			15.8			25.8	26.4		29.1	
Progression Factor		1.00			1.00			1.00	1.00		1.00	
Incremental Delay, d2		6.2			2.1			0.5	1.9		0.1	
Delay (s)		23.7			17.9			26.3	28.3		29.1	
Level of Service		C			B			C	C		C	
Approach Delay (s)		23.7			17.9			27.4			29.1	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	21.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	87.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	725	65	0	1075	0	70	0	50	0	5	2
Future Volume (vph)	0	725	65	0	1075	0	70	0	50	0	5	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			6.0	6.0		6.0	
Lane Util. Factor		0.95			0.95			1.00	1.00		1.00	
Frpb, ped/bikes		0.98			1.00			1.00	0.60		0.97	
Flpb, ped/bikes		1.00			1.00			0.92	1.00		1.00	
Frt		0.99			1.00			1.00	0.85		0.97	
Flt Protected		1.00			1.00			0.95	1.00		1.00	
Satd. Flow (prot)		3385			3539			1437	927		1016	
Flt Permitted		1.00			1.00			0.75	1.00		1.00	
Satd. Flow (perm)		3385			3539			1138	927		1016	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	815	73	0	1208	0	79	0	56	0	6	2
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	888	0	0	1208	0	0	79	56	0	8	0
Confl. Peds. (#/hr)	825		90	90		825	60		1305	1305		60
Heavy Vehicles (%)	0%	3%	2%	0%	2%	0%	15%	0%	4%	0%	100%	0%
Turn Type		NA			NA		pm+pt	NA	custom		NA	
Protected Phases		2			6		9	8	9		4	
Permitted Phases							8		8	4		
Actuated Green, G (s)		39.1			39.1			9.8	9.8		7.3	
Effective Green, g (s)		39.1			39.1			9.8	9.8		7.3	
Actuated g/C Ratio		0.56			0.56			0.14	0.14		0.10	
Clearance Time (s)		5.0			5.0			6.0	6.0		6.0	
Vehicle Extension (s)		4.0			4.0			2.0	2.0		2.0	
Lane Grp Cap (vph)		1880			1965			169	208		105	
v/s Ratio Prot		0.26			c0.34			0.02	c0.01		0.01	
v/s Ratio Perm								c0.05	0.05			
v/c Ratio		0.47			0.61			0.47	0.27		0.08	
Uniform Delay, d1		9.4			10.6			27.9	27.1		28.5	
Progression Factor		1.00			1.00			1.00	1.00		1.00	
Incremental Delay, d2		0.3			0.7			0.7	0.3		0.1	
Delay (s)		9.7			11.2			28.6	27.4		28.6	
Level of Service		A			B			C	C		C	
Approach Delay (s)		9.7			11.2			28.1			28.6	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	11.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	70.4	Sum of lost time (s)	19.0
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1340	30	0	1225	0	150	0	185	1	2	1
Future Volume (vph)	0	1340	30	0	1225	0	150	0	185	1	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			6.0	6.0		6.0	
Lane Util. Factor		0.95			0.95			1.00	1.00		1.00	
Frpb, ped/bikes		0.99			1.00			1.00	0.69		0.96	
Flpb, ped/bikes		1.00			1.00			0.90	1.00		0.89	
Frt		1.00			1.00			1.00	0.85		0.97	
Flt Protected		1.00			1.00			0.95	1.00		0.99	
Satd. Flow (prot)		3530			3539			1578	1114		1040	
Flt Permitted		1.00			1.00			0.76	1.00		0.91	
Satd. Flow (perm)		3530			3539			1254	1114		954	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1457	33	0	1332	0	163	0	201	1	2	1
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1490	0	0	1332	0	0	163	201	0	4	0
Confl. Peds. (#/hr)	1040		125	125		1040	65		1170	1170		65
Heavy Vehicles (%)	0%	1%	1%	0%	2%	0%	3%	0%	0%	0%	100%	0%
Turn Type		NA			NA		pm+pt	NA	custom	Perm	NA	
Protected Phases		2			6		9	8	9		4	
Permitted Phases							8		8	4		
Actuated Green, G (s)		37.1			37.1			17.1	17.1		9.8	
Effective Green, g (s)		37.1			37.1			17.1	17.1		9.8	
Actuated g/C Ratio		0.49			0.49			0.23	0.23		0.13	
Clearance Time (s)		5.0			5.0			6.0	6.0		6.0	
Vehicle Extension (s)		4.0			4.0			2.0	2.0		2.0	
Lane Grp Cap (vph)		1723			1727			313	338		123	
v/s Ratio Prot		c0.42			0.38			0.05	c0.06			
v/s Ratio Perm								0.07	0.12		0.00	
v/c Ratio		0.86			0.77			0.52	0.59		0.03	
Uniform Delay, d1		17.2			16.0			25.9	26.3		29.0	
Progression Factor		1.00			1.00			1.00	1.00		1.00	
Incremental Delay, d2		5.0			2.3			0.7	1.9		0.0	
Delay (s)		22.2			18.3			26.6	28.2		29.0	
Level of Service		C			B			C	C		C	
Approach Delay (s)		22.2			18.3			27.5			29.0	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	21.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	930	80	0	1455	0	85	1	40	0	5	0
Future Volume (vph)	0	930	80	0	1455	0	85	1	40	0	5	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		6.0	6.0			6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00			1.00	
Frpb, ped/bikes		0.98			1.00		1.00	0.47			1.00	
Flpb, ped/bikes		1.00			1.00		0.93	1.00			1.00	
Frt		0.99			1.00		1.00	0.85			1.00	
Flt Protected		1.00			1.00		0.95	1.00			1.00	
Satd. Flow (prot)		3397			3539		1463	736			950	
Flt Permitted		1.00			1.00		0.75	1.00			1.00	
Satd. Flow (perm)		3397			3539		1162	736			950	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	979	84	0	1532	0	89	1	42	0	5	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1063	0	0	1532	0	89	43	0	0	5	0
Confl. Peds. (#/hr)	500		80	80		500	35		870	870		35
Heavy Vehicles (%)	0%	3%	2%	0%	2%	0%	15%	0%	4%	0%	100%	0%
Turn Type		NA			NA		Perm	NA			NA	
Protected Phases		2			6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)		44.0			44.0		7.7	7.7			7.7	
Effective Green, g (s)		44.0			44.0		7.7	7.7			7.7	
Actuated g/C Ratio		0.62			0.62		0.11	0.11			0.11	
Clearance Time (s)		5.0			5.0		6.0	6.0			6.0	
Vehicle Extension (s)		4.0			4.0		2.0	2.0			2.0	
Lane Grp Cap (vph)		2090			2177		125	79			102	
v/s Ratio Prot		0.31			c0.43			0.06			0.01	
v/s Ratio Perm							c0.08					
v/c Ratio		0.51			0.70		0.71	0.54			0.05	
Uniform Delay, d1		7.7			9.3		30.8	30.2			28.6	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		0.3			1.1		14.7	4.1			0.1	
Delay (s)		8.0			10.5		45.5	34.3			28.7	
Level of Service		A			B		D	C			C	
Approach Delay (s)		8.0			10.5			41.9			28.7	
Approach LOS		A			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	71.5	Sum of lost time (s)	13.0
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1410	45	0	1265	0	145	1	190	1	3	0
Future Volume (vph)	0	1410	45	0	1265	0	145	1	190	1	3	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		6.0	6.0			6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00			1.00	
Frpb, ped/bikes		0.99			1.00		1.00	0.46			1.00	
Flpb, ped/bikes		1.00			1.00		0.86	1.00			0.90	
Frt		1.00			1.00		1.00	0.85			1.00	
Flt Protected		1.00			1.00		0.95	1.00			0.99	
Satd. Flow (prot)		3522			3574		1518	742			848	
Flt Permitted		1.00			1.00		0.76	1.00			0.94	
Satd. Flow (perm)		3522			3574		1207	742			805	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1484	47	0	1332	0	153	1	200	1	3	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1531	0	0	1332	0	153	201	0	0	4	0
Confl. Peds. (#/hr)	710		105	105		710	70		915	915		70
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	2%	100%	0%	100%	100%	0%
Turn Type		NA			NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)		37.4			37.4		17.2	17.2			17.2	
Effective Green, g (s)		37.4			37.4		17.2	17.2			17.2	
Actuated g/C Ratio		0.50			0.50		0.23	0.23			0.23	
Clearance Time (s)		5.0			5.0		6.0	6.0			6.0	
Vehicle Extension (s)		4.0			4.0		2.0	2.0			2.0	
Lane Grp Cap (vph)		1761			1787		277	170			185	
v/s Ratio Prot		c0.43			0.37			c0.27				
v/s Ratio Perm							0.13				0.00	
v/c Ratio		0.87			0.75		0.55	1.18			0.02	
Uniform Delay, d1		16.5			14.9		25.4	28.8			22.3	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		5.0			1.8		1.4	126.6			0.0	
Delay (s)		21.6			16.8		26.8	155.4			22.3	
Level of Service		C			B		C	F			C	
Approach Delay (s)		21.6			16.8			99.8			22.3	
Approach LOS		C			B			F			C	

Intersection Summary			
HCM 2000 Control Delay	28.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	74.8	Sum of lost time (s)	13.0
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	725	65	0	1075	0	70	0	50	0	5	2
Future Volume (vph)	0	725	65	0	1075	0	70	0	50	0	5	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		6.0	6.0			6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00			1.00	
Frpb, ped/bikes		0.98			1.00		1.00	0.46			0.97	
Flpb, ped/bikes		1.00			1.00		0.89	1.00			1.00	
Frt		0.99			1.00		1.00	0.85			0.97	
Flt Protected		1.00			1.00		0.95	1.00			1.00	
Satd. Flow (prot)		3389			3539		1401	712			1018	
Flt Permitted		1.00			1.00		0.75	1.00			1.00	
Satd. Flow (perm)		3389			3539		1110	712			1018	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	815	73	0	1208	0	79	0	56	0	6	2
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	888	0	0	1208	0	79	56	0	0	8	0
Confl. Peds. (#/hr)	825		90	90		825	60		1305	1305		60
Heavy Vehicles (%)	0%	3%	2%	0%	2%	0%	15%	0%	4%	0%	100%	0%
Turn Type		NA			NA		Perm	NA			NA	
Protected Phases		2			6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)		38.7			38.7		8.3	8.3			8.3	
Effective Green, g (s)		38.7			38.7		8.3	8.3			8.3	
Actuated g/C Ratio		0.58			0.58		0.12	0.12			0.12	
Clearance Time (s)		5.0			5.0		6.0	6.0			6.0	
Vehicle Extension (s)		4.0			4.0		2.0	2.0			2.0	
Lane Grp Cap (vph)		1975			2062		138	89			127	
v/s Ratio Prot		0.26			c0.34			c0.08			0.01	
v/s Ratio Perm							0.07					
v/c Ratio		0.45			0.59		0.57	0.63			0.06	
Uniform Delay, d1		7.8			8.8		27.4	27.6			25.6	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		0.2			0.5		3.5	9.6			0.1	
Delay (s)		8.1			9.3		30.9	37.2			25.7	
Level of Service		A			A		C	D			C	
Approach Delay (s)		8.1			9.3			33.5			25.7	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	66.4	Sum of lost time (s)	13.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1340	30	0	1225	0	150	0	185	1	2	1
Future Volume (vph)	0	1340	30	0	1225	0	150	0	185	1	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		6.0	6.0			6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00			1.00	
Frpb, ped/bikes		0.99			1.00		1.00	0.46			0.96	
Flpb, ped/bikes		1.00			1.00		0.87	1.00			0.90	
Frt		1.00			1.00		1.00	0.85			0.97	
Flt Protected		1.00			1.00		0.95	1.00			0.99	
Satd. Flow (prot)		3531			3539		1522	741			1054	
Flt Permitted		1.00			1.00		0.76	1.00			0.94	
Satd. Flow (perm)		3531			3539		1210	741			1000	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1457	33	0	1332	0	163	0	201	1	2	1
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1490	0	0	1332	0	163	201	0	0	4	0
Confl. Peds. (#/hr)	1040		125	125		1040	65		1170	1170		65
Heavy Vehicles (%)	0%	1%	1%	0%	2%	0%	3%	0%	0%	0%	100%	0%
Turn Type		NA			NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)		37.1			37.1		17.2	17.2			17.2	
Effective Green, g (s)		37.1			37.1		17.2	17.2			17.2	
Actuated g/C Ratio		0.50			0.50		0.23	0.23			0.23	
Clearance Time (s)		5.0			5.0		6.0	6.0			6.0	
Vehicle Extension (s)		4.0			4.0		2.0	2.0			2.0	
Lane Grp Cap (vph)		1758			1762		279	171			230	
v/s Ratio Prot		c0.42			0.38			c0.27				
v/s Ratio Perm							0.13				0.00	
v/c Ratio		0.85			0.76		0.58	1.18			0.02	
Uniform Delay, d1		16.2			15.1		25.5	28.6			22.1	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		4.2			2.0		2.0	123.9			0.0	
Delay (s)		20.4			17.1		27.5	152.5			22.1	
Level of Service		C			B		C	F			C	
Approach Delay (s)		20.4			17.1			96.5			22.1	
Approach LOS		C			B			F			C	

Intersection Summary			
HCM 2000 Control Delay	27.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	74.5	Sum of lost time (s)	13.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	930	80	0	1455	0	85	1	40	0	5	0
Future Volume (vph)	0	930	80	0	1455	0	85	1	40	0	5	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		6.0	6.0			6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00			1.00	
Frt		0.99			1.00		1.00	0.85			1.00	
Flt Protected		1.00			1.00		0.95	1.00			1.00	
Satd. Flow (prot)		3466			3539		1570	1561			950	
Flt Permitted		1.00			1.00		0.75	1.00			1.00	
Satd. Flow (perm)		3466			3539		1247	1561			950	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	979	84	0	1532	0	89	1	42	0	5	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1063	0	0	1532	0	89	43	0	0	5	0
Heavy Vehicles (%)	0%	3%	2%	0%	2%	0%	15%	0%	4%	0%	100%	0%
Turn Type		NA			NA		Perm	NA			NA	
Protected Phases		2			6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)		43.6			43.6		8.7	8.7			8.7	
Effective Green, g (s)		43.6			43.6		8.7	8.7			8.7	
Actuated g/C Ratio		0.55			0.55		0.11	0.11			0.11	
Clearance Time (s)		5.0			5.0		6.0	6.0			6.0	
Vehicle Extension (s)		4.0			4.0		2.0	2.0			2.0	
Lane Grp Cap (vph)		1917			1958		137	172			104	
v/s Ratio Prot		0.31			c0.43			0.03			0.01	
v/s Ratio Perm							c0.07					
v/c Ratio		0.55			0.78		0.65	0.25			0.05	
Uniform Delay, d1		11.3			13.9		33.6	32.1			31.3	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		0.4			2.2		7.7	0.3			0.1	
Delay (s)		11.8			16.1		41.3	32.3			31.4	
Level of Service		B			B		D	C			C	
Approach Delay (s)		11.8			16.1			38.4			31.4	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	78.8	Sum of lost time (s)	14.0
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1410	45	0	1265	0	145	1	190	1	3	0
Future Volume (vph)	0	1410	45	0	1265	0	145	1	190	1	3	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		6.0	6.0			6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00			1.00	
Frt		1.00			1.00		1.00	0.85			1.00	
Flt Protected		1.00			1.00		0.95	1.00			0.99	
Satd. Flow (prot)		3558			3574		1770	1616			938	
Flt Permitted		1.00			1.00		0.76	1.00			0.92	
Satd. Flow (perm)		3558			3574		1407	1616			879	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1484	47	0	1332	0	153	1	200	1	3	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1531	0	0	1332	0	153	201	0	0	4	0
Heavy Vehicles (%)	0%	1%	1%	0%	1%	0%	2%	0%	0%	100%	100%	0%
Turn Type		NA			NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)		36.0			36.0		13.9	13.9			13.9	
Effective Green, g (s)		36.0			36.0		13.9	13.9			13.9	
Actuated g/C Ratio		0.47			0.47		0.18	0.18			0.18	
Clearance Time (s)		5.0			5.0		6.0	6.0			6.0	
Vehicle Extension (s)		4.0			4.0		2.0	2.0			2.0	
Lane Grp Cap (vph)		1683			1690		256	295			160	
v/s Ratio Prot		c0.43			0.37			c0.12				
v/s Ratio Perm							0.11				0.00	
v/c Ratio		0.91			0.79		0.60	0.68			0.03	
Uniform Delay, d1		18.5			16.8		28.5	29.0			25.5	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		7.8			2.7		2.5	5.1			0.0	
Delay (s)		26.3			19.5		31.0	34.1			25.6	
Level of Service		C			B		C	C			C	
Approach Delay (s)		26.3			19.5			32.8			25.6	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	24.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	76.1	Sum of lost time (s)	14.0
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	725	65	0	1075	0	70	0	50	0	5	2
Future Volume (vph)	0	725	65	0	1075	0	70	0	50	0	5	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		6.0	6.0			6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00			1.00	
Frt		0.99			1.00		1.00	0.85			0.97	
Flt Protected		1.00			1.00		0.95	1.00			1.00	
Satd. Flow (prot)		3464			3539		1570	1553			1049	
Flt Permitted		1.00			1.00		0.75	1.00			1.00	
Satd. Flow (perm)		3464			3539		1243	1553			1049	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	815	73	0	1208	0	79	0	56	0	6	2
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	888	0	0	1208	0	79	56	0	0	8	0
Heavy Vehicles (%)	0%	3%	2%	0%	2%	0%	15%	0%	4%	0%	100%	0%
Turn Type		NA			NA		Perm	NA			NA	
Protected Phases		2			6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)		40.9			40.9		7.9	7.9			7.9	
Effective Green, g (s)		40.9			40.9		7.9	7.9			7.9	
Actuated g/C Ratio		0.55			0.55		0.11	0.11			0.11	
Clearance Time (s)		5.0			5.0		6.0	6.0			6.0	
Vehicle Extension (s)		4.0			4.0		2.0	2.0			2.0	
Lane Grp Cap (vph)		1896			1937		131	164			110	
v/s Ratio Prot		0.26			c0.34			0.04			0.01	
v/s Ratio Perm							c0.06					
v/c Ratio		0.47			0.62		0.60	0.34			0.07	
Uniform Delay, d1		10.3			11.6		31.9	31.0			30.1	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		0.3			0.7		5.3	0.5			0.1	
Delay (s)		10.5			12.3		37.2	31.4			30.2	
Level of Service		B			B		D	C			C	
Approach Delay (s)		10.5			12.3			34.8			30.2	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	13.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	74.7	Sum of lost time (s)	14.0
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1340	30	0	1225	0	150	0	185	1	2	1
Future Volume (vph)	0	1340	30	0	1225	0	150	0	185	1	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		6.0	6.0			6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00			1.00	
Frt		1.00			1.00		1.00	0.85			0.97	
Flt Protected		1.00			1.00		0.95	1.00			0.99	
Satd. Flow (prot)		3562			3539		1752	1615			1209	
Flt Permitted		1.00			1.00		0.76	1.00			0.92	
Satd. Flow (perm)		3562			3539		1393	1615			1132	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1457	33	0	1332	0	163	0	201	1	2	1
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1490	0	0	1332	0	163	201	0	0	4	0
Heavy Vehicles (%)	0%	1%	1%	0%	2%	0%	3%	0%	0%	0%	100%	0%
Turn Type		NA			NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)		36.0			36.0		13.9	13.9			13.9	
Effective Green, g (s)		36.0			36.0		13.9	13.9			13.9	
Actuated g/C Ratio		0.47			0.47		0.18	0.18			0.18	
Clearance Time (s)		5.0			5.0		6.0	6.0			6.0	
Vehicle Extension (s)		4.0			4.0		2.0	2.0			2.0	
Lane Grp Cap (vph)		1685			1674		254	294			206	
v/s Ratio Prot		c0.42			0.38			c0.12				
v/s Ratio Perm							0.12				0.00	
v/c Ratio		0.88			0.80		0.64	0.68			0.02	
Uniform Delay, d1		18.2			16.9		28.8	29.0			25.5	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		6.1			2.9		4.1	5.2			0.0	
Delay (s)		24.2			19.8		32.9	34.2			25.5	
Level of Service		C			B		C	C			C	
Approach Delay (s)		24.2			19.8			33.6			25.5	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	76.1	Sum of lost time (s)	14.0
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	930	80	0	1455	0	85	1	40	0	5	0
Future Volume (vph)	0	930	80	0	1455	0	85	1	40	0	5	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		6.0	6.0			6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00			1.00	
Frpb, ped/bikes		0.95			1.00		1.00	0.60			1.00	
Flpb, ped/bikes		1.00			1.00		0.60	1.00			1.00	
Frt		0.99			1.00		1.00	0.85			1.00	
Flt Protected		1.00			1.00		0.95	1.00			1.00	
Satd. Flow (prot)		3279			3539		939	935			950	
Flt Permitted		1.00			1.00		0.75	1.00			1.00	
Satd. Flow (perm)		3279			3539		746	935			950	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	979	84	0	1532	0	89	1	42	0	5	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1063	0	0	1532	0	89	43	0	0	5	0
Confl. Peds. (#/hr)	85		495	495		85	450		455	455		450
Heavy Vehicles (%)	0%	3%	2%	0%	2%	0%	15%	0%	4%	0%	100%	0%
Turn Type		NA			NA		Perm	NA			NA	
Protected Phases		2			6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)		40.9			40.9		10.5	10.5			10.5	
Effective Green, g (s)		40.9			40.9		10.5	10.5			10.5	
Actuated g/C Ratio		0.61			0.61		0.16	0.16			0.16	
Clearance Time (s)		5.0			5.0		6.0	6.0			6.0	
Vehicle Extension (s)		4.0			4.0		2.0	2.0			2.0	
Lane Grp Cap (vph)		1998			2157		116	146			148	
v/s Ratio Prot		0.32			c0.43			0.05			0.01	
v/s Ratio Perm							c0.12					
v/c Ratio		0.53			0.71		0.77	0.29			0.03	
Uniform Delay, d1		7.6			9.0		27.1	25.0			24.0	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		0.3			1.2		23.4	0.4			0.0	
Delay (s)		7.9			10.2		50.5	25.4			24.0	
Level of Service		A			B		D	C			C	
Approach Delay (s)		7.9			10.2			42.4			24.0	
Approach LOS		A			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	10.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	67.1	Sum of lost time (s)	13.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1410	45	0	1265	0	145	1	190	1	3	0
Future Volume (vph)	0	1410	45	0	1265	0	145	1	190	1	3	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		6.0	6.0			6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00			1.00	
Frpb, ped/bikes		0.98			1.00		1.00	0.57			1.00	
Flpb, ped/bikes		1.00			1.00		0.57	1.00			0.92	
Frt		1.00			1.00		1.00	0.85			1.00	
Flt Protected		1.00			1.00		0.95	1.00			0.99	
Satd. Flow (prot)		3480			3574		1010	909			864	
Flt Permitted		1.00			1.00		0.76	1.00			0.94	
Satd. Flow (perm)		3480			3574		803	909			822	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1484	47	0	1332	0	153	1	200	1	3	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1531	0	0	1332	0	153	201	0	0	4	0
Confl. Peds. (#/hr)	290		525	525		290	490		495	495		490
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	2%	100%	0%	100%	100%	0%
Turn Type		NA			NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)		38.2			38.2		17.7	17.7			17.7	
Effective Green, g (s)		38.2			38.2		17.7	17.7			17.7	
Actuated g/C Ratio		0.53			0.53		0.25	0.25			0.25	
Clearance Time (s)		5.0			5.0		6.0	6.0			6.0	
Vehicle Extension (s)		4.0			4.0		2.0	2.0			2.0	
Lane Grp Cap (vph)		1854			1904		198	224			202	
v/s Ratio Prot		c0.44			0.37			c0.22				
v/s Ratio Perm							0.19				0.00	
v/c Ratio		0.83			0.70		0.77	0.90			0.02	
Uniform Delay, d1		14.0			12.5		25.1	26.1			20.4	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		3.3			1.2		15.6	32.9			0.0	
Delay (s)		17.3			13.7		40.7	59.0			20.4	
Level of Service		B			B		D	E			C	
Approach Delay (s)		17.3			13.7			51.1			20.4	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	71.7	Sum of lost time (s)	13.0
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	725	65	0	1075	0	70	0	50	0	5	2
Future Volume (vph)	0	725	65	0	1075	0	70	0	50	0	5	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		6.0	6.0			6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00			1.00	
Frpb, ped/bikes		0.94			1.00		1.00	0.52			0.88	
Flpb, ped/bikes		1.00			1.00		0.53	1.00			1.00	
Frt		0.99			1.00		1.00	0.85			0.97	
Flt Protected		1.00			1.00		0.95	1.00			1.00	
Satd. Flow (prot)		3241			3539		829	805			923	
Flt Permitted		1.00			1.00		0.75	1.00			1.00	
Satd. Flow (perm)		3241			3539		656	805			923	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	815	73	0	1208	0	79	0	56	0	6	2
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	888	0	0	1208	0	79	56	0	0	8	0
Confl. Peds. (#/hr)	200		710	710		200	680		685	685		680
Heavy Vehicles (%)	0%	3%	2%	0%	2%	0%	15%	0%	4%	0%	100%	0%
Turn Type		NA			NA		Perm	NA			NA	
Protected Phases		2			6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)		37.7			37.7		10.7	10.7			10.7	
Effective Green, g (s)		37.7			37.7		10.7	10.7			10.7	
Actuated g/C Ratio		0.59			0.59		0.17	0.17			0.17	
Clearance Time (s)		5.0			5.0		6.0	6.0			6.0	
Vehicle Extension (s)		4.0			4.0		2.0	2.0			2.0	
Lane Grp Cap (vph)		1909			2084		109	134			154	
v/s Ratio Prot		0.27			c0.34			0.07			0.01	
v/s Ratio Perm							c0.12					
v/c Ratio		0.47			0.58		0.72	0.42			0.05	
Uniform Delay, d1		7.4			8.2		25.3	23.9			22.4	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		0.2			0.5		18.2	0.8			0.1	
Delay (s)		7.7			8.7		43.5	24.6			22.4	
Level of Service		A			A		D	C			C	
Approach Delay (s)		7.7			8.7			35.6			22.4	
Approach LOS		A			A			D			C	

Intersection Summary			
HCM 2000 Control Delay	10.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	64.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1340	30	0	1225	0	150	0	185	1	2	1
Future Volume (vph)	0	1340	30	0	1225	0	150	0	185	1	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		6.0	6.0			6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00			1.00	
Frpb, ped/bikes		0.98			1.00		1.00	0.52			0.88	
Flpb, ped/bikes		1.00			1.00		0.52	1.00			0.91	
Frt		1.00			1.00		1.00	0.85			0.97	
Flt Protected		1.00			1.00		0.95	1.00			0.99	
Satd. Flow (prot)		3498			3539		912	832			969	
Flt Permitted		1.00			1.00		0.76	1.00			0.94	
Satd. Flow (perm)		3498			3539		725	832			922	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1457	33	0	1332	0	163	0	201	1	2	1
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1490	0	0	1332	0	163	201	0	0	4	0
Confl. Peds. (#/hr)	485		680	485		680	620		620	620		620
Heavy Vehicles (%)	0%	1%	1%	0%	2%	0%	3%	0%	0%	0%	100%	0%
Turn Type		NA			NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)		37.8			37.8		18.1	18.1			18.1	
Effective Green, g (s)		37.8			37.8		18.1	18.1			18.1	
Actuated g/C Ratio		0.53			0.53		0.25	0.25			0.25	
Clearance Time (s)		5.0			5.0		6.0	6.0			6.0	
Vehicle Extension (s)		4.0			4.0		2.0	2.0			2.0	
Lane Grp Cap (vph)		1844			1865		183	210			232	
v/s Ratio Prot		c0.43			0.38			c0.24				
v/s Ratio Perm							0.22				0.00	
v/c Ratio		0.81			0.71		0.89	0.96			0.02	
Uniform Delay, d1		14.0			12.9		25.8	26.4			20.1	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		2.9			1.4		36.8	49.1			0.0	
Delay (s)		16.8			14.3		62.6	75.5			20.1	
Level of Service		B			B		E	E			C	
Approach Delay (s)		16.8			14.3			69.8			20.1	
Approach LOS		B			B			E			C	

Intersection Summary			
HCM 2000 Control Delay	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	71.7	Sum of lost time (s)	13.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	930	80	0	1455	0	85	1	40	0	5	0
Future Volume (vph)	0	930	80	0	1455	0	85	1	40	0	5	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		6.0	6.0			6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00			1.00	
Frpb, ped/bikes		0.97			1.00		1.00	0.47			1.00	
Flpb, ped/bikes		1.00			1.00		0.86	1.00			1.00	
Frt		0.99			1.00		1.00	0.85			1.00	
Flt Protected		1.00			1.00		0.95	1.00			1.00	
Satd. Flow (prot)		3371			3539		1358	736			950	
Flt Permitted		1.00			1.00		0.75	1.00			1.00	
Satd. Flow (perm)		3371			3539		1078	736			950	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	979	84	0	1532	0	89	1	42	0	5	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1063	0	0	1532	0	89	43	0	0	5	0
Confl. Peds. (#/hr)	460		120	120		460	75		830	830		75
Heavy Vehicles (%)	0%	3%	2%	0%	2%	0%	15%	0%	4%	0%	100%	0%
Turn Type		NA			NA		Perm	NA			NA	
Protected Phases		2			6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)		42.1			42.1		8.7	8.7			8.7	
Effective Green, g (s)		42.1			42.1		8.7	8.7			8.7	
Actuated g/C Ratio		0.63			0.63		0.13	0.13			0.13	
Clearance Time (s)		5.0			5.0		6.0	6.0			6.0	
Vehicle Extension (s)		4.0			4.0		2.0	2.0			2.0	
Lane Grp Cap (vph)		2134			2240		141	96			124	
v/s Ratio Prot		0.32			c0.43			0.06			0.01	
v/s Ratio Perm							c0.08					
v/c Ratio		0.50			0.68		0.63	0.45			0.04	
Uniform Delay, d1		6.5			7.9		27.4	26.7			25.3	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		0.3			1.0		6.6	1.2			0.0	
Delay (s)		6.8			8.8		34.0	27.9			25.3	
Level of Service		A			A		C	C			C	
Approach Delay (s)		6.8			8.8			32.0			25.3	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	9.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	66.5	Sum of lost time (s)	13.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1410	45	0	1265	0	145	1	190	1	3	0
Future Volume (vph)	0	1410	45	0	1265	0	145	1	190	1	3	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		6.0	6.0			6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00			1.00	
Frpb, ped/bikes		0.98			1.00		1.00	0.60			1.00	
Flpb, ped/bikes		1.00			1.00		0.54	1.00			0.93	
Frt		1.00			1.00		1.00	0.85			1.00	
Flt Protected		1.00			1.00		0.95	1.00			0.99	
Satd. Flow (prot)		3475			3574		950	971			871	
Flt Permitted		1.00			1.00		0.76	1.00			0.94	
Satd. Flow (perm)		3475			3574		755	971			826	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1484	47	0	1332	0	153	1	200	1	3	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1531	0	0	1332	0	153	201	0	0	4	0
Confl. Peds. (#/hr)	195		620	620		195	585		400	400		585
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	2%	100%	0%	100%	100%	0%
Turn Type		NA			NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)		38.0			38.0		17.0	17.0			17.0	
Effective Green, g (s)		38.0			38.0		17.0	17.0			17.0	
Actuated g/C Ratio		0.54			0.54		0.24	0.24			0.24	
Clearance Time (s)		5.0			5.0		6.0	6.0			6.0	
Vehicle Extension (s)		4.0			4.0		2.0	2.0			2.0	
Lane Grp Cap (vph)		1865			1918		181	233			198	
v/s Ratio Prot		c0.44			0.37			c0.21				
v/s Ratio Perm							0.20				0.00	
v/c Ratio		0.82			0.69		0.85	0.86			0.02	
Uniform Delay, d1		13.6			12.1		25.6	25.8			20.5	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		3.2			1.2		27.7	25.7			0.0	
Delay (s)		16.8			13.3		53.3	51.4			20.6	
Level of Service		B			B		D	D			C	
Approach Delay (s)		16.8			13.3			52.3			20.6	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	70.8	Sum of lost time (s)	13.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	725	65	0	1075	0	70	0	50	0	5	2
Future Volume (vph)	0	725	65	0	1075	0	70	0	50	0	5	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		6.0	6.0			6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00			1.00	
Frpb, ped/bikes		0.95			1.00		1.00	0.46			0.92	
Flpb, ped/bikes		1.00			1.00		0.67	1.00			1.00	
Frt		0.99			1.00		1.00	0.85			0.97	
Flt Protected		1.00			1.00		0.95	1.00			1.00	
Satd. Flow (prot)		3304			3539		1057	712			961	
Flt Permitted		1.00			1.00		0.75	1.00			1.00	
Satd. Flow (perm)		3304			3539		837	712			961	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	815	73	0	1208	0	79	0	56	0	6	2
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	888	0	0	1208	0	79	56	0	0	8	0
Confl. Peds. (#/hr)	615		295	295		615	265		1100	1100		265
Heavy Vehicles (%)	0%	3%	2%	0%	2%	0%	15%	0%	4%	0%	100%	0%
Turn Type		NA			NA		Perm	NA			NA	
Protected Phases		2			6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)		37.6			37.6		9.1	9.1			9.1	
Effective Green, g (s)		37.6			37.6		9.1	9.1			9.1	
Actuated g/C Ratio		0.60			0.60		0.15	0.15			0.15	
Clearance Time (s)		5.0			5.0		6.0	6.0			6.0	
Vehicle Extension (s)		4.0			4.0		2.0	2.0			2.0	
Lane Grp Cap (vph)		1994			2135		122	104			140	
v/s Ratio Prot		0.27			c0.34			0.08			0.01	
v/s Ratio Perm							c0.09					
v/c Ratio		0.45			0.57		0.65	0.54			0.06	
Uniform Delay, d1		6.7			7.4		25.1	24.7			22.9	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		0.2			0.4		8.5	2.7			0.1	
Delay (s)		6.9			7.9		33.6	27.3			23.0	
Level of Service		A			A		C	C			C	
Approach Delay (s)		6.9			7.9			31.0			23.0	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	62.3	Sum of lost time (s)	13.0
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1340	30	0	1225	0	150	0	185	1	2	1
Future Volume (vph)	0	1340	30	0	1225	0	150	0	185	1	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		6.0	6.0			6.0	
Lane Util. Factor		0.95			0.95		1.00	1.00			1.00	
Frpb, ped/bikes		0.98			1.00		1.00	0.52			0.88	
Flpb, ped/bikes		1.00			1.00		0.51	1.00			0.91	
Frt		1.00			1.00		1.00	0.85			0.97	
Flt Protected		1.00			1.00		0.95	1.00			0.99	
Satd. Flow (prot)		3497			3539		895	847			968	
Flt Permitted		1.00			1.00		0.76	1.00			0.94	
Satd. Flow (perm)		3497			3539		711	847			921	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1457	33	0	1332	0	163	0	201	1	2	1
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1490	0	0	1332	0	163	201	0	0	4	0
Confl. Peds. (#/hr)	460		705	705		460	645		595	595		645
Heavy Vehicles (%)	0%	1%	1%	0%	2%	0%	3%	0%	0%	0%	100%	0%
Turn Type		NA			NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)		37.8			37.8		18.1	18.1			18.1	
Effective Green, g (s)		37.8			37.8		18.1	18.1			18.1	
Actuated g/C Ratio		0.53			0.53		0.25	0.25			0.25	
Clearance Time (s)		5.0			5.0		6.0	6.0			6.0	
Vehicle Extension (s)		4.0			4.0		2.0	2.0			2.0	
Lane Grp Cap (vph)		1843			1865		179	213			232	
v/s Ratio Prot		c0.43			0.38			c0.24				
v/s Ratio Perm							0.23				0.00	
v/c Ratio		0.81			0.71		0.91	0.94			0.02	
Uniform Delay, d1		14.0			12.9		26.0	26.3			20.1	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		2.9			1.4		42.0	45.3			0.0	
Delay (s)		16.8			14.3		68.0	71.6			20.1	
Level of Service		B			B		E	E			C	
Approach Delay (s)		16.8			14.3			70.0			20.1	
Approach LOS		B			B			E			C	

Intersection Summary			
HCM 2000 Control Delay	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	71.7	Sum of lost time (s)	13.0
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	1063	1532	89	43	5
v/c Ratio	0.46	0.63	0.49	0.37	0.03
Control Delay	8.6	10.9	36.0	35.4	24.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	8.6	10.9	36.0	35.4	24.4
Queue Length 50th (ft)	130	227	35	17	2
Queue Length 95th (ft)	207	357	76	45	10
Internal Link Dist (ft)	688	555		483	85
Turn Bay Length (ft)					
Base Capacity (vph)	2273	2371	321	203	263
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.47	0.65	0.28	0.21	0.02

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	1531	1332	153	201	4
v/c Ratio	0.79	0.68	0.53	1.13	0.02
Control Delay	17.3	14.3	32.7	137.6	23.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	17.3	14.3	32.7	137.6	23.0
Queue Length 50th (ft)	287	225	63	~115	1
Queue Length 95th (ft)	381	298	123	#240	9
Internal Link Dist (ft)	688	555		483	85
Turn Bay Length (ft)					
Base Capacity (vph)	1995	2026	290	178	194
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.77	0.66	0.53	1.13	0.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	888	1208	79	56	8
v/c Ratio	0.40	0.52	0.42	0.46	0.05
Control Delay	8.5	9.7	31.9	37.7	24.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	8.5	9.7	31.9	37.7	24.0
Queue Length 50th (ft)	101	154	28	20	3
Queue Length 95th (ft)	171	253	68	55	13
Internal Link Dist (ft)	688	555		483	85
Turn Bay Length (ft)					
Base Capacity (vph)	2394	2505	328	214	304
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.37	0.48	0.24	0.26	0.03

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	1490	1332	163	201	4
v/c Ratio	0.78	0.69	0.56	1.12	0.02
Control Delay	16.6	14.5	33.6	136.4	23.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	16.6	14.5	33.6	136.4	23.0
Queue Length 50th (ft)	273	226	68	~116	1
Queue Length 95th (ft)	362	301	#133	#240	9
Internal Link Dist (ft)	688	555		483	85
Turn Bay Length (ft)					
Base Capacity (vph)	2015	2019	293	179	242
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.74	0.66	0.56	1.12	0.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	1063	1532	90	42	5
v/c Ratio	0.49	0.67	0.43	0.22	0.04
Control Delay	12.2	15.7	31.0	25.9	30.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	12.2	15.7	31.0	25.9	30.8
Queue Length 50th (ft)	192	336	34	16	2
Queue Length 95th (ft)	256	440	72	40	12
Internal Link Dist (ft)	688	555	483		85
Turn Bay Length (ft)				110	
Base Capacity (vph)	2105	2198	243	192	157
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.50	0.70	0.37	0.22	0.03

Intersection Summary

Lane Group	EBT	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	1531	1332	154	200	4
v/c Ratio	0.88	0.75	0.48	0.79	0.04
Control Delay	26.2	19.9	28.2	51.2	31.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	26.2	19.9	28.2	51.2	31.2
Queue Length 50th (ft)	367	287	57	78	2
Queue Length 95th (ft)	#530	375	105	#171	10
Internal Link Dist (ft)	688	555	483		85
Turn Bay Length (ft)				110	
Base Capacity (vph)	1738	1765	339	268	112
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.88	0.75	0.45	0.75	0.04

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	888	1208	79	56	8
v/c Ratio	0.42	0.55	0.37	0.27	0.06
Control Delay	11.6	13.2	27.8	26.1	30.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	13.2	27.8	26.1	30.9
Queue Length 50th (ft)	150	227	30	21	4
Queue Length 95th (ft)	201	297	62	48	16
Internal Link Dist (ft)	688	555	483		85
Turn Bay Length (ft)				110	
Base Capacity (vph)	2187	2293	258	234	184
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.41	0.53	0.31	0.24	0.04

Intersection Summary

Lane Group	EBT	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	1490	1332	163	201	4
v/c Ratio	0.86	0.76	0.50	0.79	0.03
Control Delay	24.5	20.3	28.5	51.2	30.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	24.5	20.3	28.5	51.2	30.8
Queue Length 50th (ft)	348	288	61	78	2
Queue Length 95th (ft)	#504	378	110	#172	10
Internal Link Dist (ft)	688	555	483		85
Turn Bay Length (ft)				110	
Base Capacity (vph)	1746	1750	346	269	139
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.85	0.76	0.47	0.75	0.03

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	1063	1532	89	43	5
v/c Ratio	0.48	0.66	0.56	0.42	0.04
Control Delay	11.0	14.0	45.3	44.2	30.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.0	14.0	45.3	44.2	30.0
Queue Length 50th (ft)	175	306	42	20	2
Queue Length 95th (ft)	241	413	#89	52	12
Internal Link Dist (ft)	688	555		483	85
Turn Bay Length (ft)					
Base Capacity (vph)	2200	2297	210	134	173
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.48	0.67	0.42	0.32	0.03

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	1531	1332	153	201	4
v/c Ratio	0.86	0.74	0.55	1.17	0.02
Control Delay	24.5	19.0	36.1	154.3	25.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	24.5	19.0	36.1	154.3	25.5
Queue Length 50th (ft)	367	287	69	~129	2
Queue Length 95th (ft)	#530	375	#136	#256	9
Internal Link Dist (ft)	688	555		483	85
Turn Bay Length (ft)					
Base Capacity (vph)	1777	1805	277	172	187
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.86	0.74	0.55	1.17	0.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	888	1208	79	56	8
v/c Ratio	0.42	0.55	0.46	0.50	0.05
Control Delay	11.3	12.9	37.9	44.8	28.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.3	12.9	37.9	44.8	28.0
Queue Length 50th (ft)	136	207	35	25	3
Queue Length 95th (ft)	204	302	76	62	15
Internal Link Dist (ft)	688	555		483	85
Turn Bay Length (ft)					
Base Capacity (vph)	2216	2324	273	179	255
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.40	0.52	0.29	0.31	0.03

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	1490	1332	163	201	4
v/c Ratio	0.84	0.75	0.58	1.17	0.02
Control Delay	23.1	19.3	37.5	152.8	25.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	23.1	19.3	37.5	152.8	25.2
Queue Length 50th (ft)	348	288	75	~129	2
Queue Length 95th (ft)	#504	378	#155	#256	9
Internal Link Dist (ft)	688	555		483	85
Turn Bay Length (ft)					
Base Capacity (vph)	1793	1797	279	172	233
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.83	0.74	0.58	1.17	0.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

1: University Heights/UVM Exit & Main Street

AM Pk Hr

Lane Group	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	1063	1532	89	43	5
v/c Ratio	0.52	0.73	0.53	0.20	0.04
Control Delay	17.1	22.7	45.8	34.9	32.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	17.1	22.7	45.8	34.9	32.8
Queue Length 50th (ft)	237	418	46	21	2
Queue Length 95th (ft)	341	#640	93	51	12
Internal Link Dist (ft)	688	555		483	85
Turn Bay Length (ft)					
Base Capacity (vph)	2043	2087	255	319	194
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.52	0.73	0.35	0.13	0.03

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	1531	1332	153	201	4
v/c Ratio	0.90	0.78	0.59	0.67	0.02
Control Delay	32.7	25.7	41.1	43.3	29.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	32.7	25.7	41.1	43.3	29.8
Queue Length 50th (ft)	~507	364	79	105	2
Queue Length 95th (ft)	#674	#544	142	179	11
Internal Link Dist (ft)	688	555		483	85
Turn Bay Length (ft)					
Base Capacity (vph)	1701	1710	356	409	222
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.90	0.78	0.43	0.49	0.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	888	1208	79	56	8
v/c Ratio	0.43	0.58	0.46	0.26	0.05
Control Delay	15.8	18.2	42.6	35.9	33.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	15.8	18.2	42.6	35.9	33.3
Queue Length 50th (ft)	182	279	40	28	4
Queue Length 95th (ft)	264	396	83	62	16
Internal Link Dist (ft)	688	555		483	85
Turn Bay Length (ft)					
Base Capacity (vph)	1999	2041	284	355	240
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.44	0.59	0.28	0.16	0.03

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	1490	1332	163	201	4
v/c Ratio	0.87	0.79	0.63	0.67	0.02
Control Delay	30.7	26.1	43.2	43.3	29.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	30.7	26.1	43.2	43.3	29.5
Queue Length 50th (ft)	~481	366	85	105	2
Queue Length 95th (ft)	#647	#548	151	179	11
Internal Link Dist (ft)	688	555		483	85
Turn Bay Length (ft)					
Base Capacity (vph)	1705	1693	352	409	286
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.87	0.79	0.46	0.49	0.01

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.