



PROJECT PIPELINE

CU01: Town of Warrenton
US 211 - Lee Highway
Final Report

From Broadview Avenue to Blackwell Road



US 211 (Lee Highway) from Broadview Avenue to Blackwell Road

Final Report
October 2022

Prepared for



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Chapter 1:

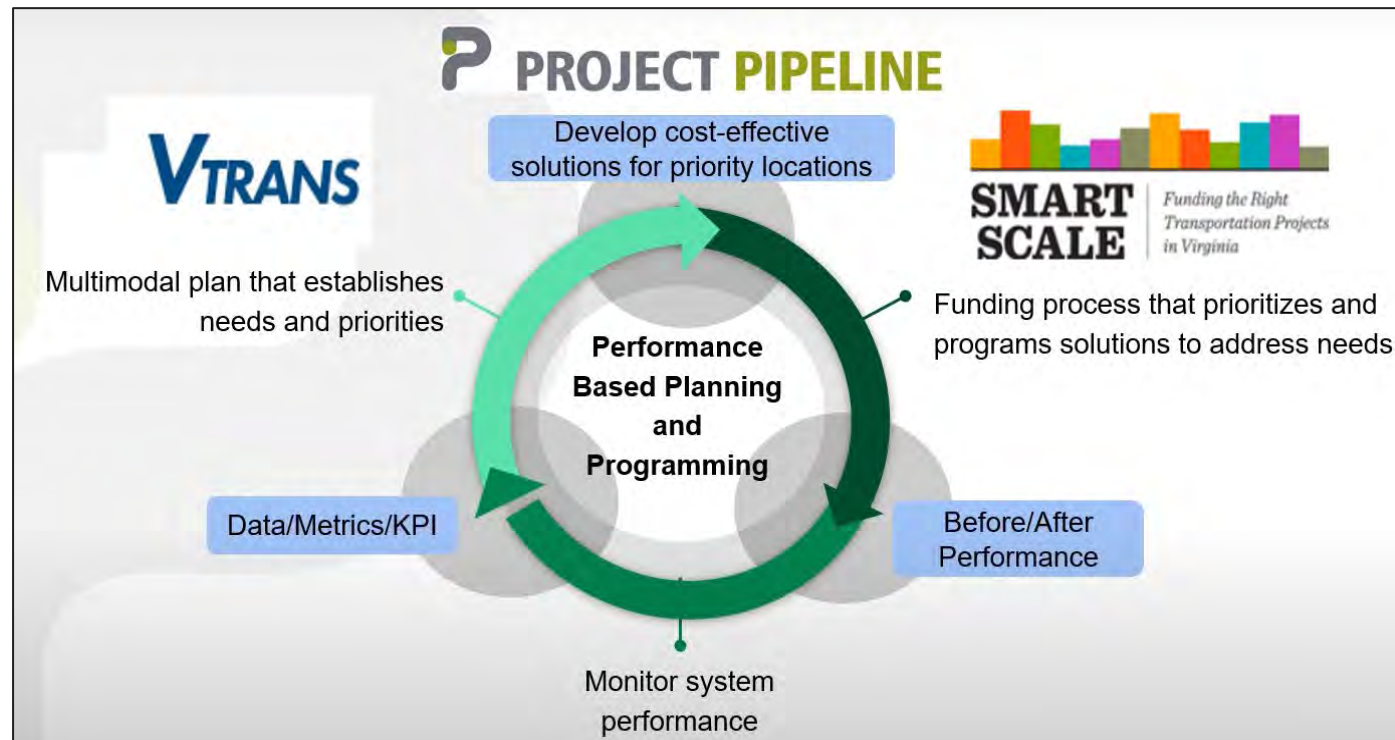
Needs Evaluation and Diagnosis

Methodology

Project Pipeline is a performance-based planning program to identify cost-effective solutions to multimodal transportation needs in Virginia. Through this planning process, projects and solutions may be considered for funding through programs including SMART SCALE, revenue sharing, interstate funding, and others. Visit the Project Pipeline webpage for additional information vapipeline.org.

This study focuses on concepts targeting identified needs including congestion mitigation, safety improvement, pedestrian and bicycle infrastructure along the corridor, and transit access. The objectives of Project Pipeline are shown below in Figure 1.

Figure 1. Project Pipeline Objectives



Background

The Office of Intermodal Planning and Investment (OIPI) prepared the VTrans Virginia's statewide transportation plan for the Commonwealth Transportation Board (CTB) in which mid-term needs (0 - 10 years) were identified for different categories listed in Table 1. This study focuses on addressing needs identified in VTrans, and those previously identified by the localities.

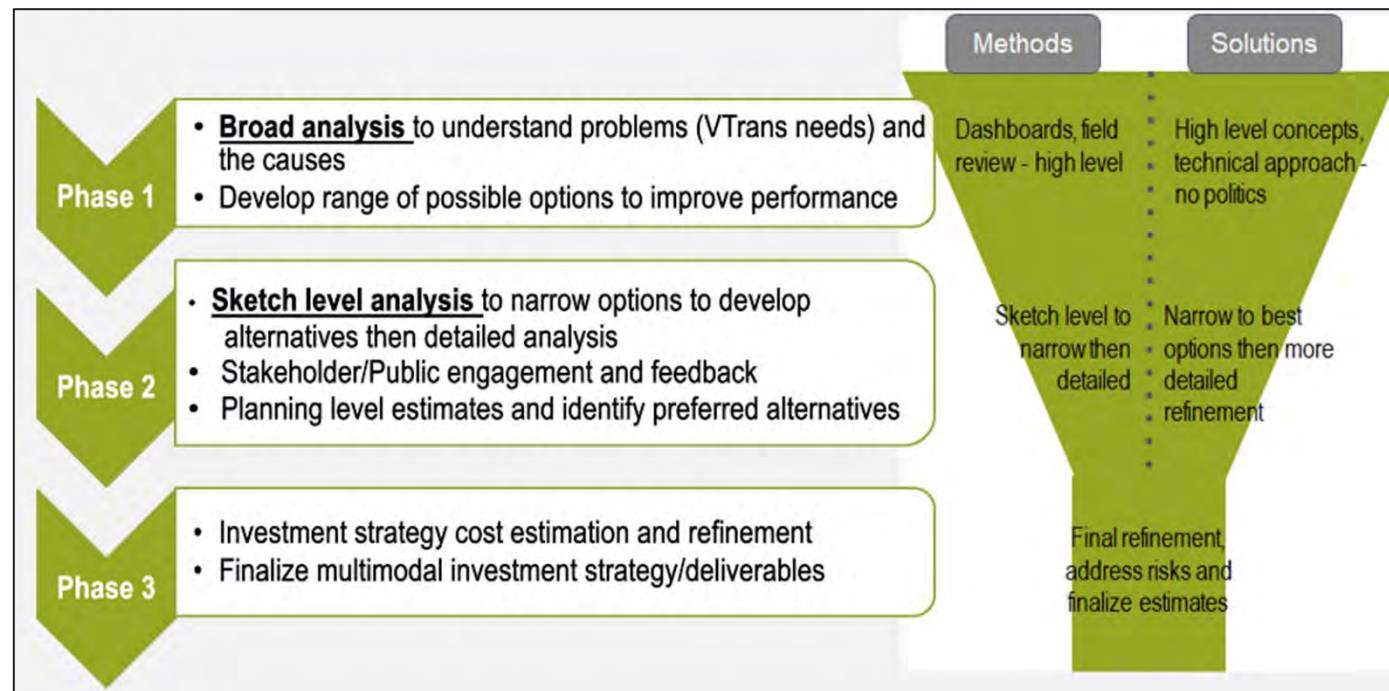
Table 1: List of VTrans Needs

VTrans Needs	
Transportation Demand Management	Capacity Preservation
Congestion Mitigation	Bicycle Access
Safety Improvement	Pedestrian Safety Improvement
Transit Access	

Methodology

The study is broken down into three phases. Phase I consists of the problem diagnosis and brainstorming of alternatives, Phase II includes the alternative evaluation and sketch level analysis, and Phase III is the investment strategy and cost estimates. Details on methods and solutions for each study phase are outlined below in Figure 2.

Figure 2. Study Phase Methods and Solutions



The study team is also broken down into three teams, with each team simultaneously working on different areas of the study. Team 1 focuses on Traffic Operations, Capacity, and Access, Team 2 focuses on Road Reliability and Safety, while Team 3 focuses on Rail, Transit, and Transportation Demand Management (TDM). As shown in Figure 3, Team 1 and Team 2 are led by ATCS, with support from KLS on the effort with respect to pedestrian and bicycle needs. Team 3 is led by Mead & Hunt, with support from Michael Baker under the Department of Rail and Public Transportation (DRPT) Program. The following details the focus areas of study for each team:

- Team 1 – Identify operation and access needs by conducting future traffic demand volume forecasts and performing operational analysis of future conditions using Synchro/SimTraffic. Evaluate operational mitigations such as geometric modifications, access management improvements, and installation of facilities for pedestrians and bicycles.
- Team 2 – Identify safety needs with respect to vehicles, pedestrians, and cyclists by evaluating existing roadway conditions as well as crash patterns and crash hot spot locations based on the most recent five-year crash history obtained from the VDOT Crash Database Tableau Tool. Recommend safety improvement options through geometric modifications, access management improvements, and installation of facilities for pedestrians and bicycles.
- Team 3 – Identify needs with respect to rail, transit, and TDM by reviewing existing rail and transit routes and future traffic demand volume forecasts. Consider improvements recommended through public transit route extensions and the addition of Park and Ride lots.

Study Area

The Lee Highway (including US 211, US Business 29, and US Business 15) study corridor between the western US 17 ramps and Winchester St (US Business 17) is located in the Town of Warrenton, Virginia. This segment runs approximately eight tenths of a mile.

The corridor is classified as Other Principal Arterial within the study area and has a posted speed of 40 miles per hour. The corridor provides access to numerous businesses and residential areas in Warrenton. Lee Highway connects to US 15, US 17, and US 29 directly to the East. Lee Highway is a four-lane divided roadway with a grass median. All unsignalized intersections are limited right-in/right-out movements. Left and right turn lanes are present at all signalized intersections. The area immediately surrounding the study corridor is primarily commercial business including grocery stores, a car dealership, numerous restaurants, banks, and various other businesses. The study area includes five intersections along Lee Highway, including one unsignalized intersection, and four signalized intersections. A map detailing the extents of the study corridor and surrounding area is shown below in Figure 3.

Figure 3. Study Area



VTrans and Related Project Background Information

VTrans is Virginia’s statewide transportation plan. It identifies and prioritizes locations with transportation needs using data-informed transparent processes. The policy for identifying VTrans mid-term needs establishes multimodal need categories that correspond to the Commonwealth Transportation Board-adopted VTrans visions, goals, and objectives. Each need category has one or more performance measures and thresholds to identify one or more needs. Visit the Vtrans policy guide for additional information: https://vtrans.org/resources/VTrans_Policy_Guide_v6.pdf.

The mid-term needs, as identified in VTrans for the study corridor, were identified as ‘Very High’ for Transportation Demand Management’, ‘High’ for Bicycle Access, Capacity Preservation, Congestion Mitigation, and Safety Improvement, ‘Medium’ for Pedestrian Safety Improvement, and ‘Low’ for Transit Access needs, as presented in Table 2.

Table 2: VTrans Needs in Study Area

VTRANS IDENTIFIED NEEDS	PRIORITIES
Bicycle Access	HIGH
Capacity Preservation	NONE
Congestion Mitigation	VERY HIGH
IEDA (UDA) Access	NONE
Pedestrian Access	HIGH
Safety Improvement	HIGH
Pedestrian Safety Improvement	NONE
Reliability	NONE
Rail On-Time Performance	NONE
Transit Access	VERY HIGH
Transit Access for Equity Emphasis Areas	NONE
Transportation Demand Management	VERY HIGH

At the VDOT Construction District level, each identified need location is assigned a tier from 1 to 4, with Tier 1 representing the most critical needs and Tier 4 representing the least critical. The segments ranked as “Priority 1” represent those with multiple categories identified as high in need. Figure 4 presents a map of the study area with 2019 VTrans mid-term need locations by priority tier.

Figure 4. VTrans 2019 Mid-Term Needs



Traffic Operation and Accessibility

Traffic operational analysis was performed using Synchro 10 software for all study intersections along the Lee Highway corridor. Inputs and analysis methodologies are consistent with the VDOT Traffic Operations and Safety Analysis Manual (TOSAM) guidelines. Both AM and PM peak hour analyses were performed for both the existing and future no-build conditions.

Traffic Data

Intersection turning movement counts were collected at each study intersection in August 2021. The AM peak hour was determined to be between 8:00 and 9:00 AM, the PM peak hour was determined to be between 4:00 and 5:00 PM. The raw turning movement counts are provided in Appendix A.

Future traffic volumes were forecasted by evaluating the trend in growth of VDOT’s historical average daily traffic (ADT) volumes for all roadway segments within the project area between 2010 and 2019. The weighted average linear growth rate across the entire project area was approximately 0.50%.

In the volume settings in Synchro, an overall Peak Hour Factor (PHF) was used per intersection as recommended by the Highway Capacity Manual. If PHFs for each individual approach or movement are used, they are likely to create demand volumes from one 15-minute period that are in apparent conflict with demand volumes from another 15-minute period, but in reality, these peak volumes do not occur at the same time.

Truck percentages for each movement were calculated and used in the models. Synchro roadway speeds were assumed to be the posted speed limit.

Measures of Effectiveness

There are many measures of effectiveness (MOE) in traffic operations analysis to quantify operational and safety objectives and provide a basis for evaluating the performance of a transportation network. Several MOEs for intersection analyses can be reported from Synchro/SimTraffic, VJuST, and SIDRA.

For the purposes of this study, guidance for reporting MOEs for signalized and unsignalized intersections was obtained from Chapter 4 of the VDOT TOSAM. A summary of the MOEs evaluated for the study intersections is presented below:

- Control Delay (measured in seconds per vehicle – sec/veh)
- Level of service (LOS)
- 95th Percentile Queue Length via Synchro (measured in feet – ft)
- Volume-to-Capacity (v/c) Ratio

Traffic Operations Analysis and Results

In an effort to identify operational and accessibility needs along the study corridor, Synchro analysis was performed for both the existing year 2021 and the future year 2045. Analysis was completed for the AM and PM peak hours for both the existing and future no-build conditions.

The operational analysis shows that all study intersections operate at a Level of Service (LOS) D or better during both AM and PM peak hours in both 2021 and 2045. All mainline Lee Highway approaches operate at Level of Service C or better for all intersections other than the intersection of Lee Highway and Blackwell Road, where the westbound approach operates at LOS D during both peak periods in existing and no-build conditions. Overall, the side streets along Lee Highway operate at LOS E or better.

The analysis shows that, during both existing and no-build conditions, at the intersection of Lee Highway and Broadview Avenue / Winchester Street, the side-street approaches experience congestion and queueing during both peak periods. The left-turn movements along Lee Highway experience excessive delays during both peak periods, with the westbound left turn lane operating at LOS E and F during the AM and PM peak periods respectively. The queue lengths for the westbound left turn lane spillback into the through lanes.

For the intersections of Lee Highway and Branch Drive and Lee Highway and Fletcher Drive, the analysis results show excessive delays for the eastbound and westbound left-turn lanes, as well as both side-street (Branch Drive) approaches, in both the existing and no-build conditions for both peak hours.

At the unsignalized Village Center intersection, the southbound approach operates at LOS D during the PM peak period in both the existing and no-build conditions.

As mentioned previously, the intersection of Lee Highway and Blackwell Road operates at LOS D during both peak periods. The westbound left-turn movement experienced delays in excess of 77 seconds during the PM

peak period of the no-build scenario. The side-street (Blackwell Road) approaches operated at LOS E during both the existing and no-build conditions for both peak hours.

Table 3 presents the AM and PM peak hour Synchro analysis results summary for 2021 and 2045 No-Build conditions. The Synchro reports are included in Appendix B. The traffic operations and accessibility needs are summarized in Figure 7 to Figure 9.

Table 3: Synchro Analysis for Existing and No Build Conditions

Intersection	Scenario	Control	Overall Delay (LOS)	Delay per Lane Group by Approach (sec/veh) (Level of Service)											
				Eastbound			Westbound			Northbound			Southbound		
				LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
1 US Route 15/17/29 Bus/ US Route 211 (Lee Highway) & Broadview Avenue / Winchester Street	AM Peak Hour														
	Existing Conditons	Signal	C (27.1)	C (27.7)			B (18.4)			D (46.9)			D (35.5)		
				E (64.0)	B (16.8)	B (16.8)	E (79.0)	B (13.9)	C (28.0)	E (70.0)	E (64.5)	A (0.0)	E (66.9)	E (65.0)	A (0.2)
	2045 No Build	Signal	C (29.1)	C (31.0)			C (20.5)			D (44.7)			D (36.0)		
				E (64.0)	C (20.8)	C (20.8)	E (78.3)	B (16.0)	C (27.0)	E (65.7)	E (62.4)	A (0.0)	E (67.8)	E (65.5)	A (0.2)
	PM Peak Hour														
Existing Conditons	Signal	C (29.4)	C (33.4)			C (20.3)			D (54.0)			C (29.7)			
			E (70.0)	C (21.0)	C (21.0)	F (95.4)	B (16.3)	B (19.2)	E (73.9)	E (68.8)	A (0.1)	E (72.9)	E (72.4)	A (0.3)	
2045 No Build	Signal	C (30.7)	D (36.9)			C (20.6)			E (55.1)			C (29.9)			
			E (71.9)	C (25.0)	C (25.0)	F (92.8)	B (16.4)	B (15.9)	E (76.2)	E (69.4)	A (0.1)	E (74.2)	E (72.6)	A (0.4)	
2 US Route 15/17/29 Bus/ US Route 211 (Lee Highway) & Branch Drive	AM Peak Hour														
	Existing Conditons	Signal	B (12.5)	A (9.2)			A (7.1)			E (65.0)			E (66.1)		
				E (76.8)	A (5.7)	A (8.9)	F (82.8)	A (2.2)	A (8.8)	E (66.7)	E (66.7)	E (64.4)	E (68.2)	E (68.2)	E (61.7)
	2045 No Build	Signal	B (12.8)	A (9.2)			A (7.5)			E (64.9)			E (67.3)		
				E (76.7)	A (5.7)	A (9.4)	F (85.0)	A (2.5)	A (9.2)	E (66.6)	E (66.6)	E (64.2)	E (70.1)	E (70.1)	E (61.2)
	PM Peak Hour														
Existing Conditons	Signal	C (21.7)	B (16.8)			B (13.5)			E (69.9)			E (67.8)			
			E (78.2)	A (9.2)	B (12.2)	F (90.5)	A (8.9)	B (14.6)	E (72.1)	E (68.7)	E (68.7)	E (74.0)	E (74.0)	E (59.0)	
2045 No Build	Signal	C (22.5)	A (0.0)			A (0.0)			A (0.0)			A (0.0)			
			E (79.9)	B (10.4)	B (13.5)	F (84.4)	B (10.1)	B (15.9)	E (72.0)	E (72.0)	E (68.5)	E (74.0)	E (74.0)	E (57.9)	

Table 3: Synchro Analysis for Existing and No Build Conditions

Intersection	Scenario	Control	Overall Delay (LOS)	Delay per Lane Group by Approach (sec/veh) (Level of Service)											
				Eastbound			Westbound			Northbound			Southbound		
				LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
3 US Route 15/17/29 Bus/ US Route 211 (Lee Highway) & BP Gas Station / Village Center Entrance	AM Peak Hour														
	Existing Conditons	Stop	A (0.6)	A (0.3)			A (0.0)			A (9.5)			B (11.2)		
				A (9.4)	A (0.0)	A (0.0)	A (9.5)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (9.5)	C (19.8)	A (0.0)	A (9.8)
	2045 No Build	Stop	A (0.7)	A (0.3)			A (0.0)			A (9.5)			B (11.6)		
				A (9.9)	A (0.0)	A (0.0)	A (9.9)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (9.5)	C (21.7)	A (0.0)	A (10.0)
				PM Peak Hour											
Existing Conditons	Stop	A (0.5)	A (0.4)			A (0.0)			A (9.8)			B (12.7)			
			B (11.0)	A (0.0)	A (0.0)	A (9.8)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (9.8)	D (26.4)	A (0.0)	A (9.7)	
2045 No Build	Stop	A (0.5)	A (0.5)			A (0.0)			A (9.8)			B (13.1)			
			B (11.0)	A (0.0)	A (0.0)	B (10.2)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (9.7)	D (32.3)	A (0.0)	A (9.6)	
4 US Route 15 / 29 BusinessUS Route 211 (Lee Highway) & Fletcher Drive	AM Peak Hour														
	Existing Conditons	Signal	B (10.4)	A (8.4)			A (3.8)			E (63.7)			E (66.4)		
				E (75.9)	A (5.9)	A (0.0)	F (100.1)	A (1.0)	A (6.1)	E (66.2)	E (66.6)	E (59.8)	E (68.5)	E (68.5)	E (61.5)
	2045 No Build	Signal	B (11.4)	B (10.2)			A (3.9)			E (63.2)			E (67.5)		
				E (73.1)	A (7.2)	B (11.9)	F (95.0)	A (1.3)	A (6.3)	E (66.3)	E (66.6)	E (58.4)	E (70.2)	E (70.2)	E (61.1)
				PM Peak Hour											
Existing Conditons	Signal	C (23.8)	B (17.4)			B (14.9)			E (64.1)			E (67.8)			
			E (72.1)	B (15.1)	A (2.8)	E (75.0)	B (10.6)	A (7.2)	E (70.8)	E (70.4)	D (53.3)	E (72.3)	E (72.3)	E (60.8)	
2045 No Build	Signal	C (24.3)	B (18.6)			B (15.1)			E (63.8)			E (67.7)			
			E (75.0)	B (16.3)	A (2.3)	F (81.5)	B (10.8)	A (1.5)	E (71.2)	E (70.6)	D (52.1)	E (72.7)	E (72.7)	E (59.4)	
5 US Route 15/17/29 Bus/ US Route 211(Lee Highway) & Blackwell Road	AM Peak Hour														
	Existing Conditons	Signal	C (34.2)	B (17.1)			D (36.8)			E (60.6)			E (64.7)		
				C (33.0)	B (18.4)	A (0.1)	E (67.9)	C (29.5)	C (23.5)	E (66.4)	E (58.8)	E (57.5)	E (65.9)	E (64.7)	E (59.1)
	2045 No Build	Signal	D (36.4)	C (21.2)			D (38.1)			E (60.6)			E (65.3)		
				D (38.0)	C (23.0)	A (0.1)	E (68.2)	C (31.4)	C (24.1)	E (67.8)	E (58.3)	E (56.9)	E (66.5)	E (65.6)	E (58.4)
				PM Peak Hour											
Existing Conditons	Signal	D (42.4)	C (24.3)			D (38.3)			E (66.0)			E (72.4)			
			D (48.5)	C (25.6)	A (0.1)	E (75.1)	C (33.8)	C (24.8)	F (81.6)	E (58.3)	E (55.2)	E (74.3)	E (74.1)	E (58.5)	
2045 No Build	Signal	D (45.2)	C (27.7)			D (40.9)			E (68.5)			E (74.2)			
			D (52.1)	C (29.5)	A (0.1)	E (77.4)	D (36.8)	C (25.5)	F (89.2)	E (57.8)	D (54.4)	E (76.5)	E (76.1)	E (57.5)	

Table 4: Queue Lengths for Existing and No Build Conditions

Intersection	Scenario	Synchro 95th Percentile Queue Length (LF)											
		Eastbound			Westbound			Northbound			Southbound		
		LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
1 US Route 15/17/29 Bus/ US Route 211 (Lee Highway) & Broadview Avenue / Winchester Street	AM Peak Hour												
	Existing	148	328		61	177	46	106	83	0	163	167	0
	Future No Build	168	392		83	164	39	119	92	0	176	178	0
	PM Peak Hour												
	Existing	183	371		107	211	27	186	170	0	189	193	0
Future No Build	196	411		128	235	36	191	174	0	203	203	0	
2 US Route 15/17/29 Bus/ US Route 211 (Lee Highway) & Branch Drive	AM Peak Hour												
	Existing	87	119	0	98	52	0	47	0	95	0		
	Future No Build	96	129	0	108	50	0	53	0	106	0		
	PM Peak Hour												
	Existing	193	180	0	125	195	0	64	D (53.3)	215	7		
Future No Build	202	183	0	128	216	0	67	D (52.1)	231	18			
3 US Route 15/17/29 Bus/ US Route 211 (Lee Highway) & BP Gas Station / Village Center Entrance	AM Peak Hour												
	Existing	3	0	0	0	0	0	N/A	N/A	2	3	6	
	Future No Build	4	0	0	0	0	0	N/A	N/A	1	4	5	
	PM Peak Hour												
	Existing	6	0	0	0	0	0	N/A	N/A	3	5	0	
Future No Build	7	0	0	0	0	0	N/A	N/A	1	5	0		

Table 4: Queue Lengths for Existing and No Build Conditions

Intersection		Scenario	Synchro 95th Percentile Queue Length (LF)											
			Eastbound			Westbound			Northbound			Southbound		
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
4	US Route 15 / 29 BusinessUS Route 211 (Lee Highway) & Fletcher Drive	AM Peak Hour												
		Existing	80	95	0	46	59	1	35	36	0	96	0	
		Future No Build	86	131	7	42	69	1	41	43	0	109	0	
		PM Peak Hour												
		Existing	127	276	7	151	193	9	129	130	28	189	17	
Future No Build	130	308	6	151	187	1	133	134	31	202	23			
5	US Route 15/17/29 Bus/ US Route 211(Lee Highway) & Blackwell Road	AM Peak Hour												
		Existing	60	303	0	277	353	26	157	82	65	118	120	0
		Future No Build	79	541	0	300	396	38	171	88	74	128	132	0
		PM Peak Hour												
		Existing	123	475	0	265	519	48	358	179	82	233	241	0
Future No Build	132	596	0	275	547	49	416	196	86	240	247	0		

Safety and Reliability

For the analysis of existing safety conditions, the VDOT Crash Database Tableau Tool was utilized to determine the crash history at the study intersections and along the study corridor on Lee Highway. Crash data was collected and analyzed for a five-year period spanning from January 2015 to December 2019. The study team reviewed the FR-300 crash reports provided by VDOT to determine specific trends and “hot spot” areas for consideration in developing alternative improvement concepts. For the purposes of this analysis, “injury crashes” is defined as the sum of type A (severe injury), B (visible injury), and C (non-visible injury) crashes.

Safety Analysis Results

The crash severities of crashes within the study area are summarized by year and by crash type in Table 5 and Table 6, respectively.

Table 5: Crashes by Year

Crash Year and Severity	A. Severe Injury	B. Visible Injury	C. Nonvisible Injury	O. Property Damage Only	Total
2015	2	1	10	34	47
2016	0	7	11	20	38
2017	2	4	9	23	38
2018	1	0	10	17	28
2019	1	4	7	21	33
Total	6	16	47	115	184

Table 6: Crashes by Type

Crash Type and Severity	A. Severe Injury	B. Visible Injury	C. Nonvisible Injury	O. Property Damage Only	Total
Rear End	2	7	31	67	107
Angle	2	7	11	28	48
Sideswipe - Same Direction	0	0	0	14	14
Fixed Object - Off Road	0	1	4	2	7
Other	1	1	0	1	3
Backed Into	0	0	0	2	2
Head On	1	0	1	0	2
Fixed Object in Road	0	0	0	1	1
Total	6	16	47	115	184

A total of 184 crashes were reported along Lee Highway within the study area during the five-year study period. Key takeaways from the crash data are as follows:

1. Six crashes were reported as severe (A) injury crashes, including 2 rear-end crashes, two angle crashes, one head-on crash, and one incident classified under “other”.
2. The majority of reported crashes within the corridor are rear-end and angle crashes. Combined, these constitute approximately 84% of the total crashes.
3. A total of 69 crashes resulted in injuries, which account for approximately 38% of the total reported crashes within the corridor. There were no crashes that led to a fatality.
4. A significant concentration of crashes was reported at the intersections, with few crashes occurring on the segments between intersections.
5. Throughout the corridor, most of the rear-end crashes occurred along the eastbound approach of Lee Highway. At Fletcher Drive in particular, it appears that queues extending from Blackwell Road contributed to the number of rear-ends at this location.

The safety and reliability needs and diagnosis identified during the analysis are summarized in Figure 7 and Figure 8. Detailed collision diagrams at the study intersections are provided in Figure 10 through Figure 14.

Pedestrian and Bicycle Access

In an effort to identify the needs with respect to accessibility, the study team reviewed existing conditions for pedestrian and bicycle accommodations. There is sidewalk along much of the corridor. There is no sidewalk East of Blackwell Road. Gaps exist in the sidewalk network to the East of Branch Drive and to the East of Blackwell Park Ln, both on the eastbound side of Lee Highway. Crosswalks and pedestrian signals exist at all major intersections along the study corridor on Lee Highway at Broadview Avenue, Branch Drive, Fletcher Drive, and Blackwell Road. There are no accommodations specific to cyclists along the study corridor. Figure 5 summarizes these findings.

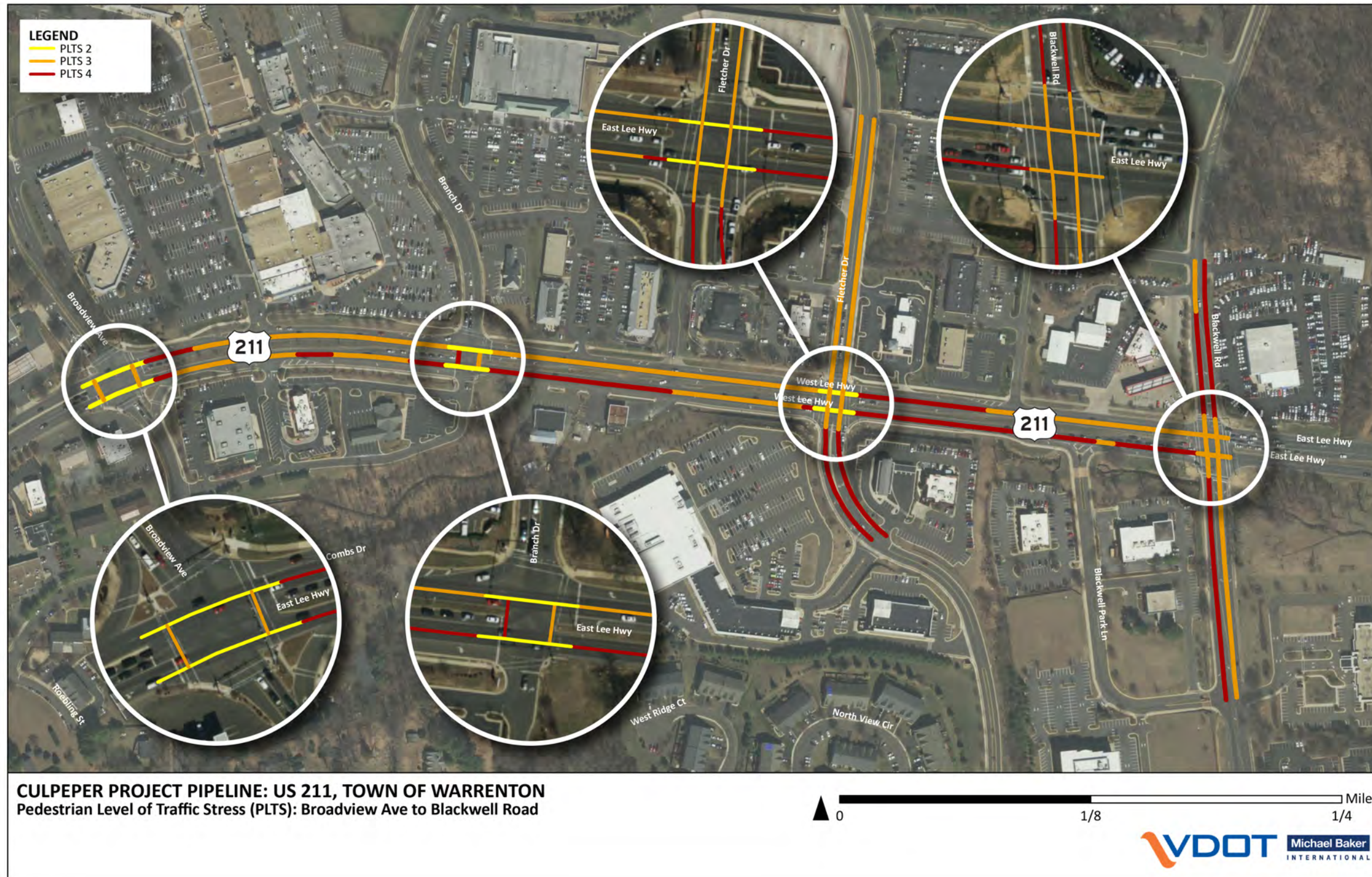
Figure 5. Pedestrian Facilities



The project team completed a Pedestrian Level of Traffic Stress Analysis (PLTS) in the study corridor, presented as Figure 6. The purpose of PLTS is to create a high-level inventory and a walkability/connectivity performance rating of pedestrian facilities in a community without needing a significant amount of data. The Pedestrian Level of Traffic Stress methodology classifies roadway segments according to the level of pressure or strain experienced by pedestrians and other sidewalk users. All definitions of PLTS in this section are sourced from Oregon DOT.

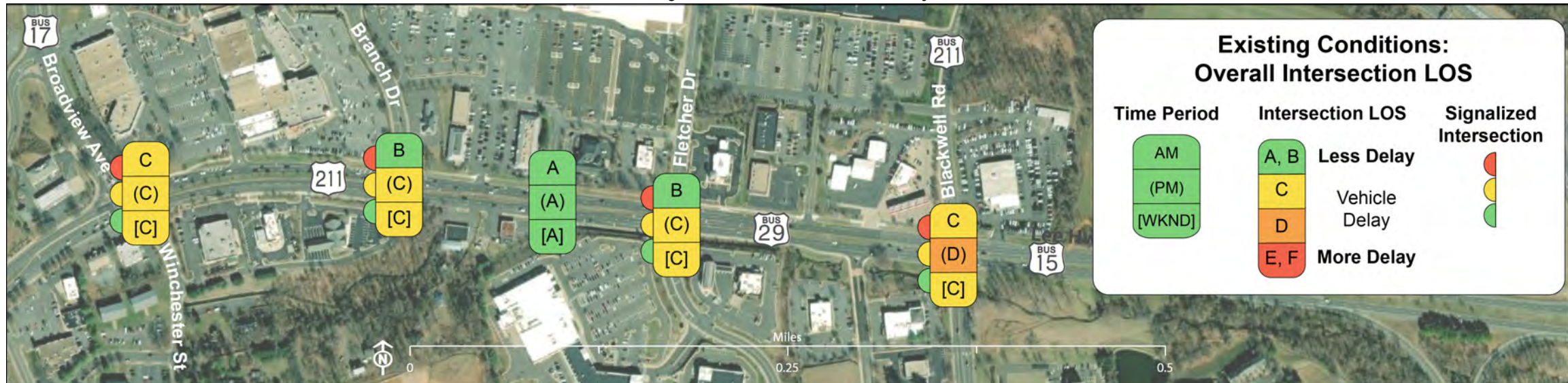
- PLTS 1: Represents little to no traffic stress and requires little attention to the traffic situation. This is suitable for all users including children 10 years or younger, groups of people and people using a wheeled mobility device
- PLTS 2: Represents little traffic stress but requires more attention to the traffic situation than of which young children may be capable. This would be suitable for children over 10, teens and adults.
- PLTS 3: Represents moderate stress and is suitable for adults. An able-bodied adult would feel uncomfortable but safe using this facility. This includes higher speed roadways with smaller buffers.
- PLTS 4: Represents high traffic stress. Only able-bodied adults with limited route choices would use this facility.

Figure 6. Pedestrian Level of Traffic Stress



Corridor Operation and Safety Needs and Diagnosis Summary

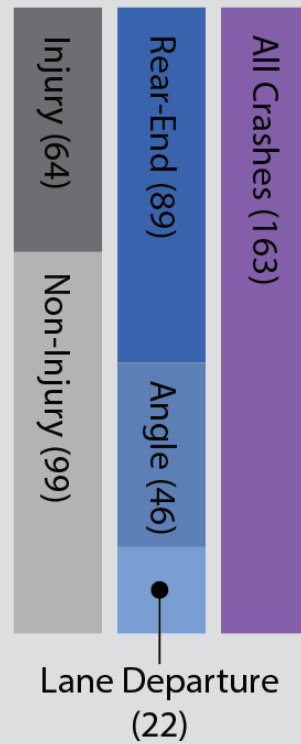
Figure 7. Level of Service Summary



Corridor Summary

- Lee Highway in the Town of Warrenton connects two major corridors for over 35,000 daily commuter trips
- Significant rear-end crash trends as a result of stop-and-go traffic
- Congestion, as a result of commuter patterns, nearby land uses, and recreational traffic on weekends, leads to long travel times through the corridor

Number of Crashes By Type



VDOT 2015-2019 Crash Data

Intersection	Crashes by Severity				Total
	A	B	C	O	
Broadview Ave	3	3	10	30	46
Branch Dr	1	3	6	15	25
Commercial Entrance	1	1	4	7	13
Fletcher Dr	1	4	9	23	37
Blackwell Rd	0	3	12	27	42

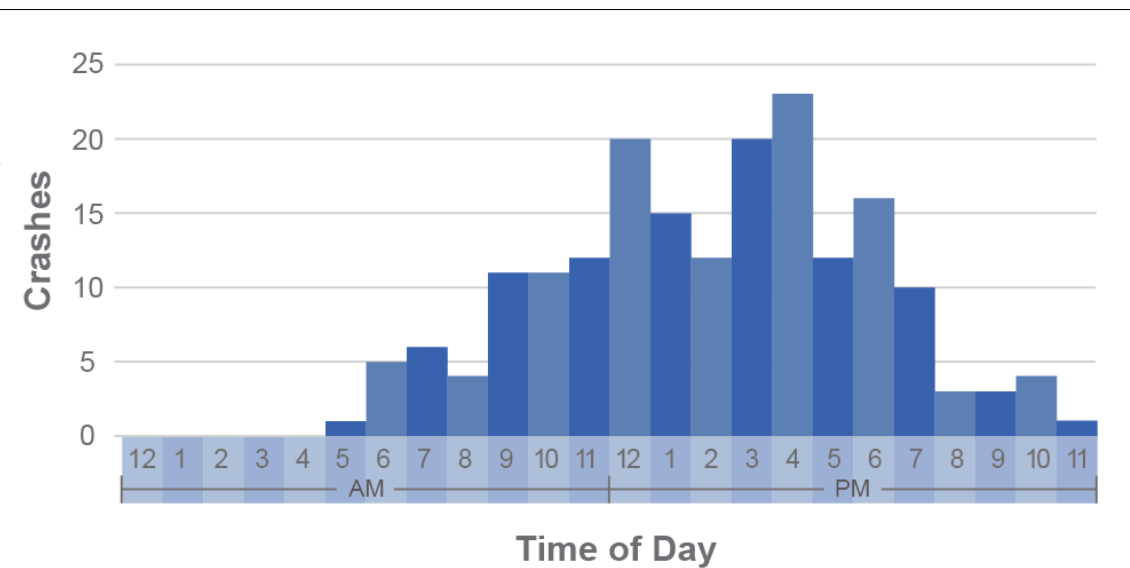
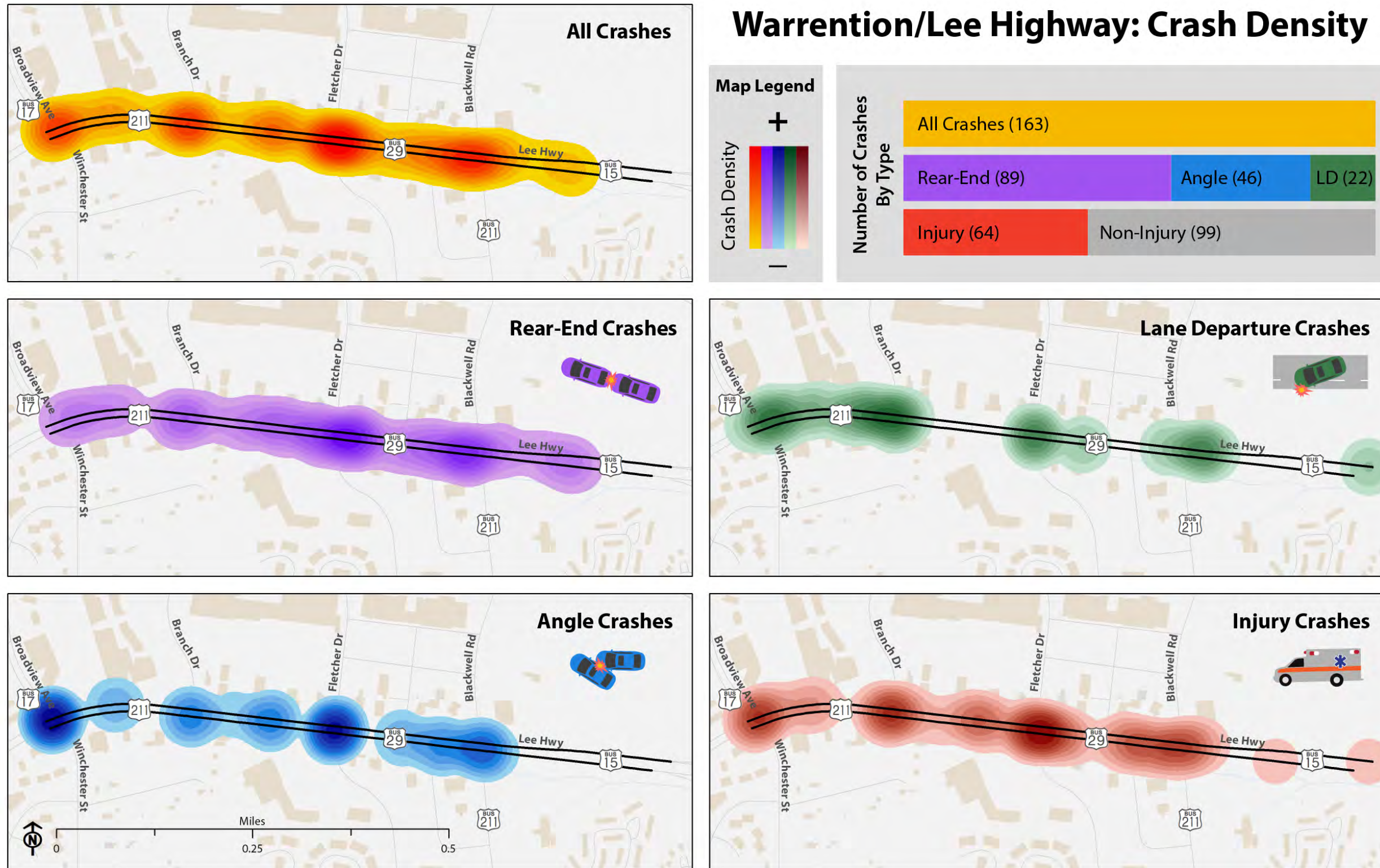


Figure 8. Crash Density by Crash Type



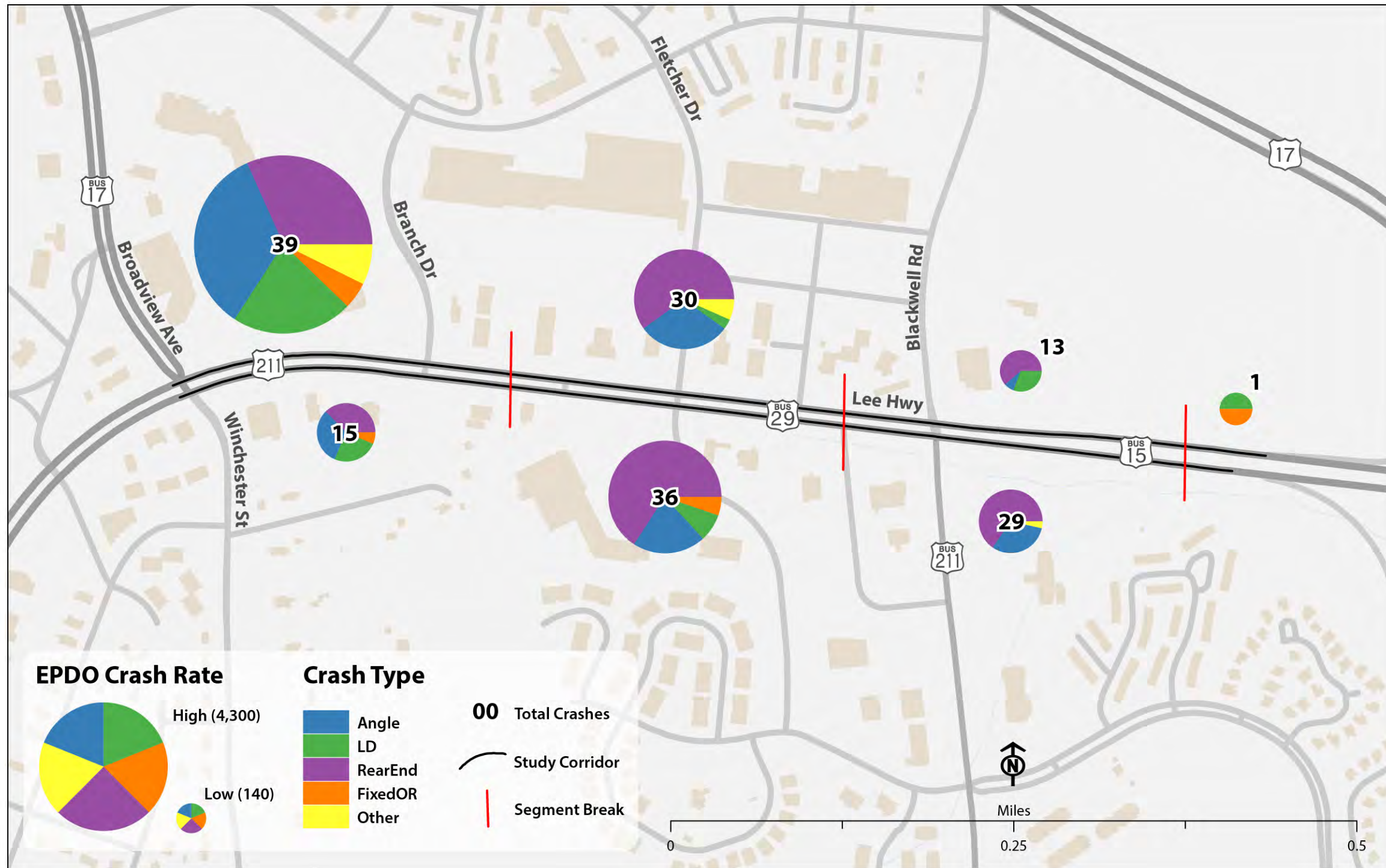
Top 100 PSI segment between Branch Avenue and Blackwell Road

High concentration of angle collisions at Broadview Avenue and Fletcher Drive

Throughout the corridor there were a significant number of rear-end crashes related to congestion

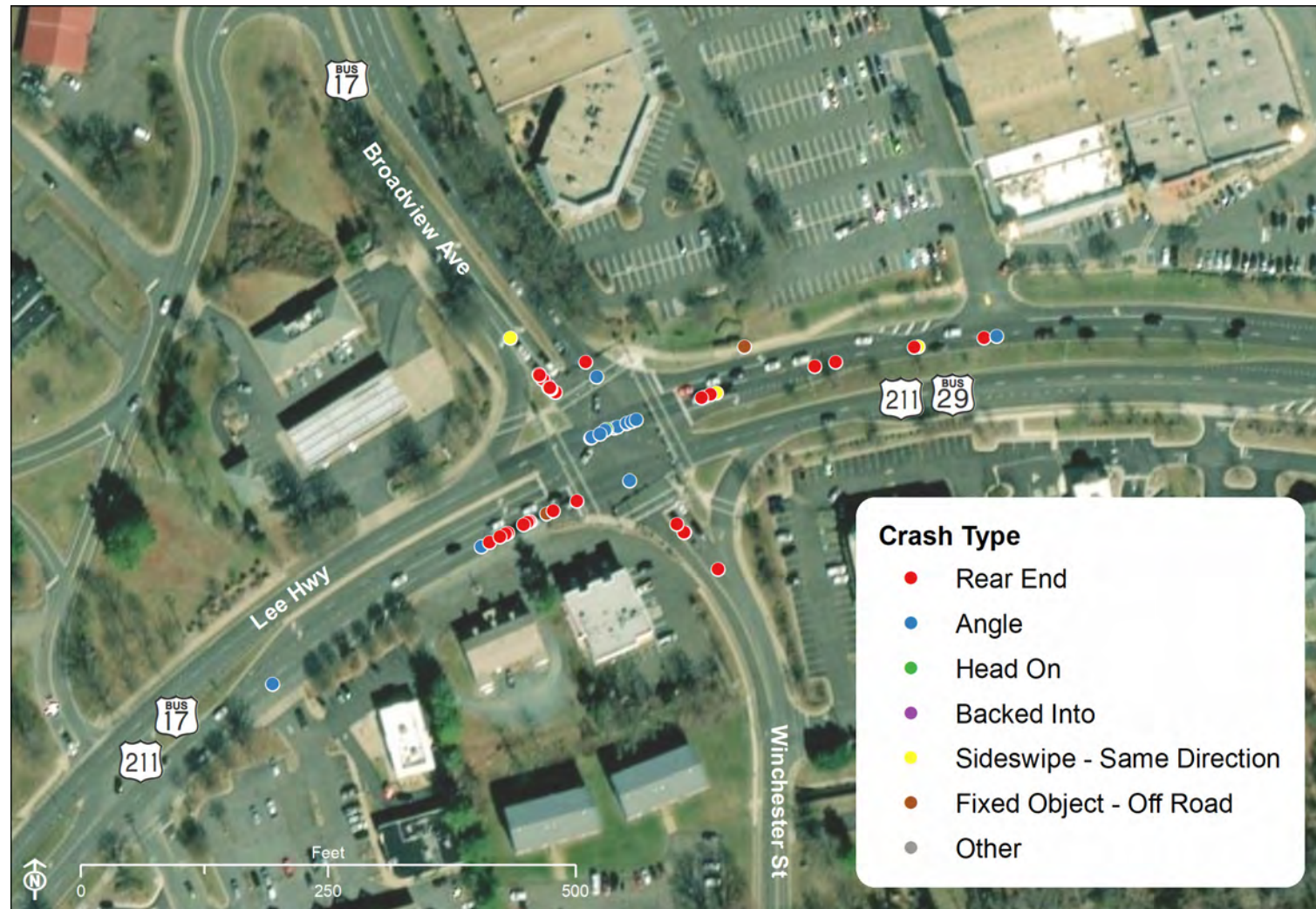
Concentration of rear-ends along eastbound Lee Highway between Fletcher Drive and Blackwell Road indicate queuing extends to upstream intersection

Figure 9. Intersection Crash EPDO and Crash Type



Broadview Ave Operation and Safety Needs and Diagnosis

Figure 10. Lee Highway and Broadview Avenue Crashes



Congestion for all approaches and all peak hours in the no-build conditions
Excessive delays and queues for the mainline left turns, with queues spilling back into the through lane along the westbound approach
All approaches operate at LOS D or better in the existing condition and LOS E or better in the no-build condition



Numerous rear-end crashes along the eastbound and westbound approaches
History of angle crashes at this location, particularly involving the westbound through movement



Marked crosswalks and accessible pedestrian signal (APS) infrastructure present at this location



Branch Drive Operation and Safety Needs and Diagnosis

Figure 11. Lee Highway and Branch Drive Crashes



Excessive delay for the northbound and southbound approaches during both peak hours in both existing and no-build conditions

LOS E or worse for the mainline left turns during both peak hours in both existing and no-build conditions



Most predominate crash type is rear-ends, particularly along the eastbound approach

Segment between Branch Drive and Blackwell Road is a Top 100 Potential for Safety Improvement (PSI) Segment in the District

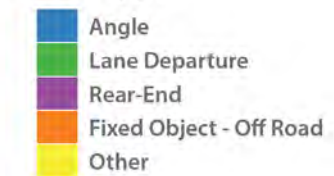


Marked crosswalks and APS infrastructure present at this location

25 Crashes



Crash Type



Commercial Drive Operation and Safety Needs and Diagnosis

Figure 12. Lee Highway and Commercial Drive Crashes



Overall intersection LOS is A

Southbound approach is LOS D during the PM peak hour in both existing and no-build conditions



Severe (A) angle collision involving eastbound left-turn and opposing westbound through movement

Segment between Branch Drive and Blackwell Road is a Top 100 Potential for Safety Improvement (PSI) Segment in the District



No marked crosswalks, sidewalk exists along the north and south leg of intersection

13 Crashes



Crash Type



Fletcher Drive Operation and Safety Needs and Diagnosis

Figure 13. Lee Highway and Fletcher Drive Crashes



Excessive delay for the northbound and southbound approaches during both peak hours in both existing and no-build conditions

LOS E or worse for the mainline left turns during both peak hours in both existing and no-build conditions

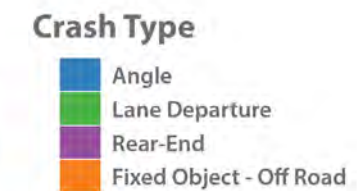


Most predominate crash type is rear-ends, particularly along the eastbound approach

Segment between Branch Drive and Blackwell Road is a Top 100 Potential for Safety Improvement (PSI) Segment in the District

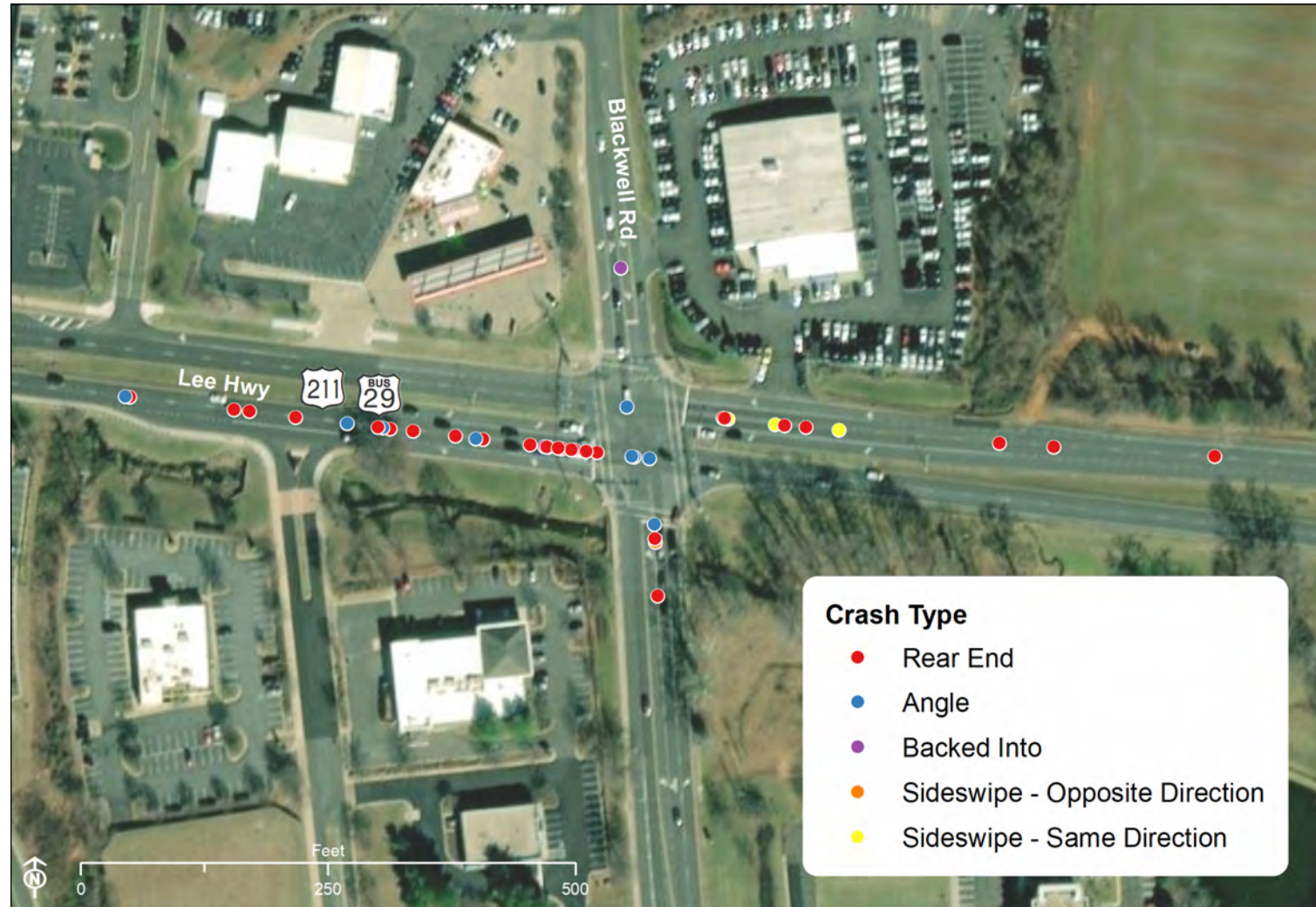


Marked crosswalks and APS infrastructure present at this location



Blackwell Road Operation and Safety Needs and Diagnosis

Figure 14. Lee Highway and Blackwell Road Crashes



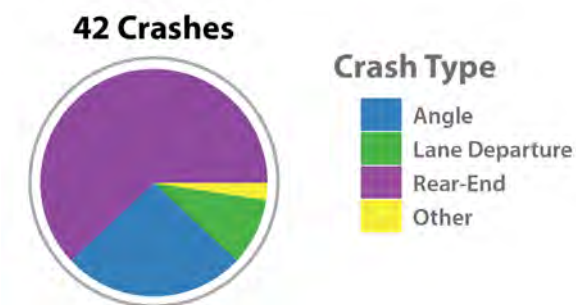
Congestion for all approaches and all peak hours in the no-build conditions
 Excessive delays and queues along both mainline approaches
 Queues along eastbound approach extend back to the upstream intersection (Fletcher Drive)
 All approaches operate at LOS E or better in the existing condition and LOS F or better in the no-build condition



Large concentration of rear-end crashes along the eastbound approach
 Segment between Branch Drive and Blackwell Road is a Top 100 Potential for Safety Improvement (PSI) Segment in the District



Marked crosswalks and APS infrastructure present at this location



Rail, Transit, and TDM

With support from DRPT, the study team reviewed the existing rail infrastructure, Park and Ride locations, and public transit routes in the study area.

Transit service in the study area is provided by Virginia Regional Transit's (VRT) Circuit Rider on its Blue Route and Green Route. The Blue Route runs Monday through Friday between 7:30 AM and 7:30 PM at 45-minute intervals while the Green Route runs on Saturday between 9:30 AM and 5:30 PM hourly. No bus stops are located on Lee Highway (US 211) but there are stops located along some of the side roads and in commercial parking lots (i.e., Rite Aid and North Rock Shopping Center). Ridership is low but typical for this type of rural system.

The Warrenton park-and-ride lot is located approximately one mile east of the study area on US 211 at the intersection of Dumfries Road. In 2019 the lot was expanded from 212 spaces to 360 spaces and the lot was improved with new lighting, bike racks, and sidewalks long Dumfries Road. A map of the park and ride lot location is presented in Figure 15. The rail, transit, and TDM needs identified by the study team are presented in Figure 16.

Figure 15. Existing Park and Ride Locations in the Study Area

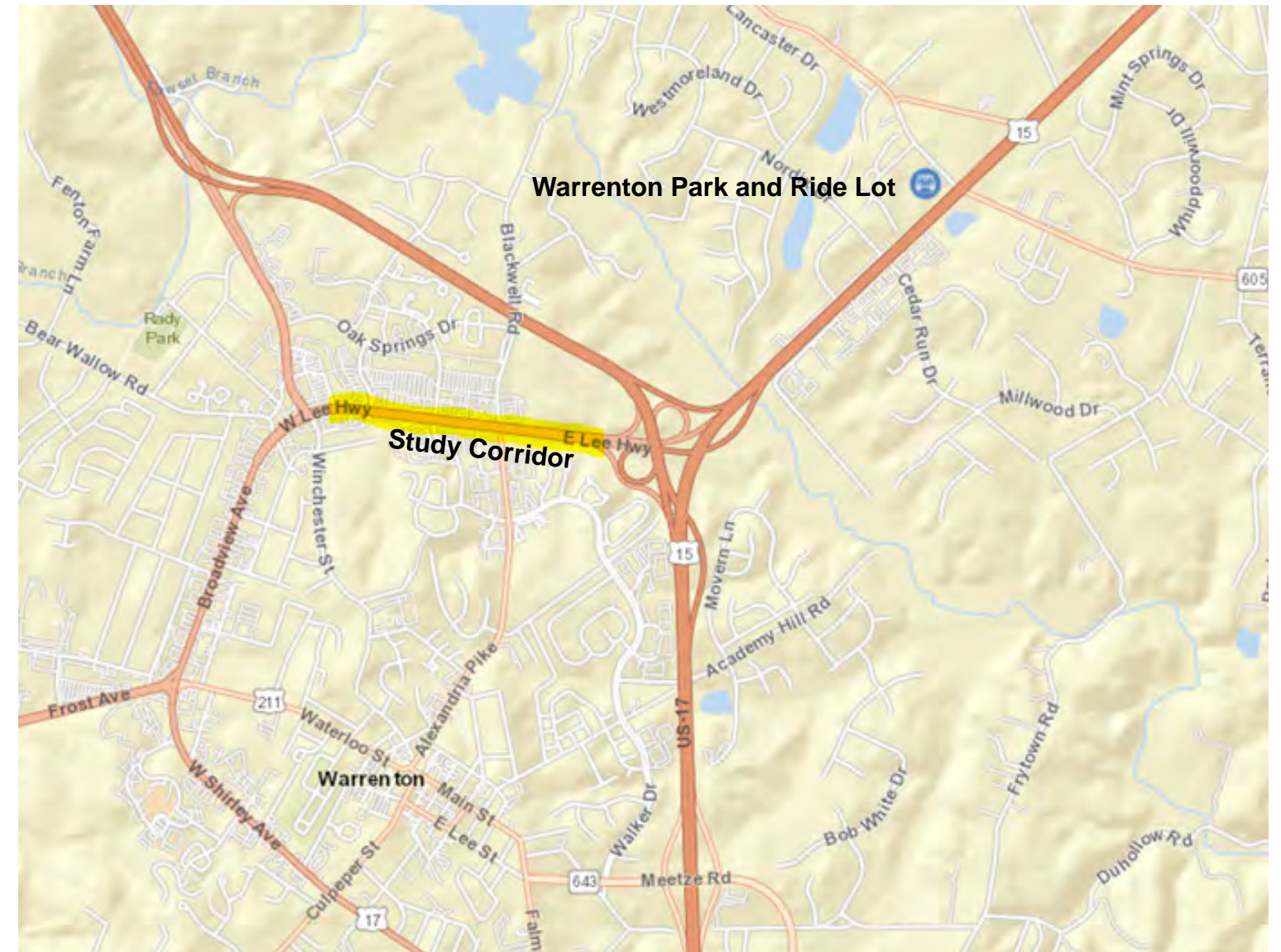
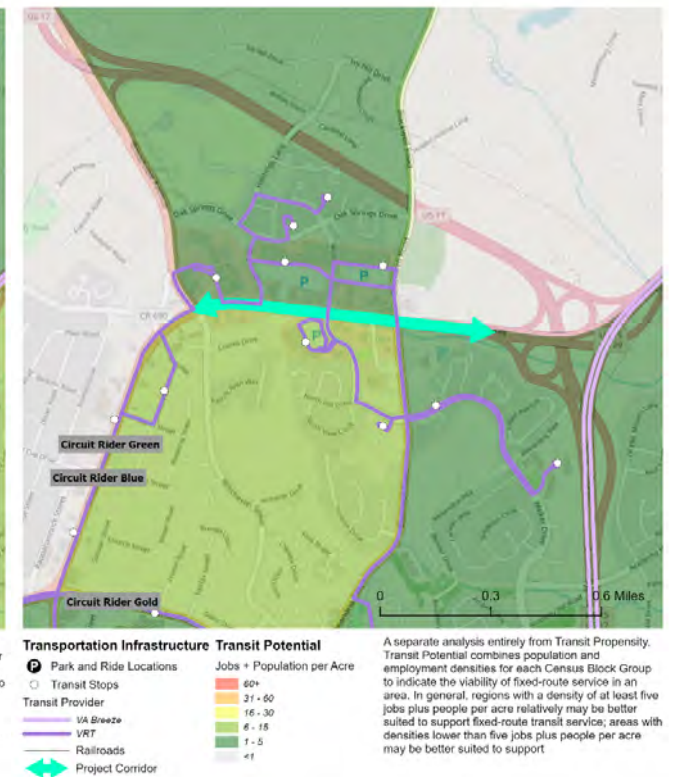
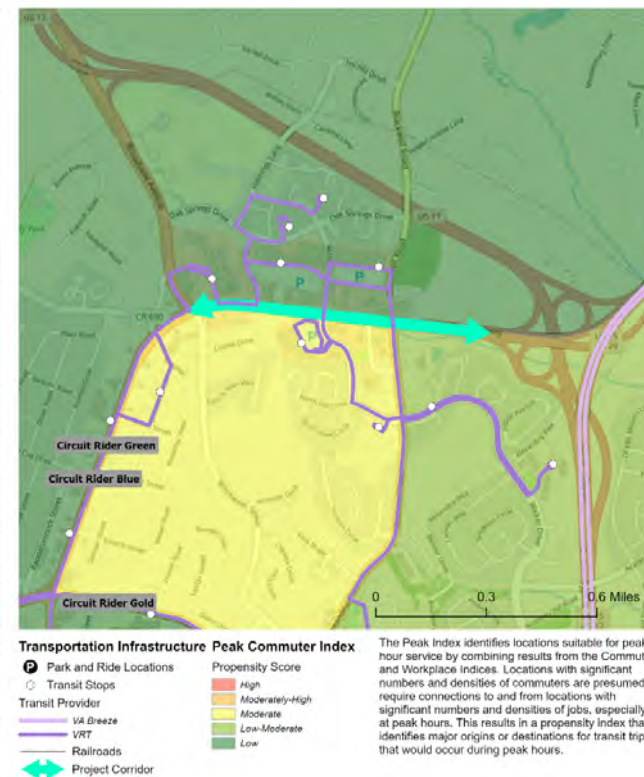
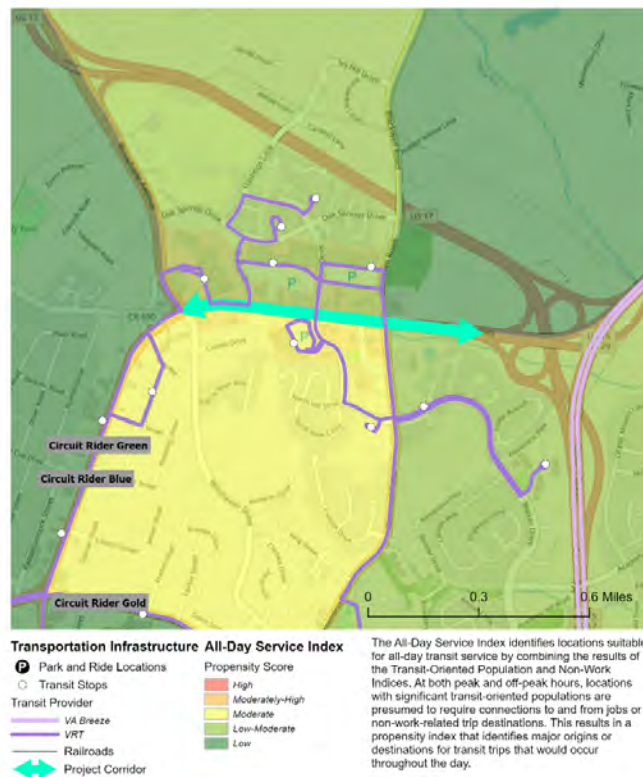


Figure 16. Rail, Transit, and TDM Needs and Diagnosis



Existing Conditions

- No rail infrastructure
- Commuter Services is the primary commuter assistance program in the region
- Warrenton PNR lot is east of the corridor (360 spaces, 7 ADA spaces)
- No bikeshare or scooter programs in area
- VRT's Circuit Rider Blue Route (M-F, 7:30a-7:30p, 45 min) and Circuit Rider Green Route (Sat, 9:30a – 5:30p, 60 min) both operate in the corridor
- No bus stops on Lee Hwy but stops are found in the commercial parking lots (at entrances to businesses)



Chapter 2:
**Alternative
Development and
Refinement**

Alternative Development and Screening

In order to develop alternative concepts to address the needs identified in Chapter 1, a thorough review of the existing conditions data was conducted and alternatives for addressing the needs at each intersection were identified.

A VJuST screening analysis was completed for each intersection prior to the Synchro build condition analyses to identify candidate alternative intersection designs and compare their potential operational and safety benefits to each intersection's existing configuration. VJuST is a screening tool that helps in the decision-making process of identifying innovative intersection and interchange configurations that are most appropriate in reducing congestion and improving safety to advance to further study, analysis, and design. The inputs and analysis methodologies are consistent with the VDOT TOSAM guidelines.

Where VJuST suggested one or more alternative intersection configurations may provide significant benefit over the existing configuration, Synchro or Sidra analysis was completed. For the purposes of alternative testing and screening, the afternoon (PM) peak hour analyses were performed for the future year 2045. The afternoon peak hour was determined to be the controlling peak hour for this corridor based on review of the no-build Synchro analysis results.

VJuST Analysis

In order to address operational and capacity needs, a VJuST analysis was completed for each subject intersection to consider alternative intersection designs and evaluate their potential benefits. VJuST analysis does not consider the influence of adjacent intersections on traffic patterns. Therefore, it was conducted for screening purposes only, with detailed analyses performed using Synchro. VJuST analysis was performed for all five intersections within the study area for the afternoon peak hour (4:00 PM to 5:00 PM). Some alternative design options in VJuST were not feasible for the roadway type at the subject intersections; hence, only the ones deemed most feasible were considered. VJuST worksheets for the afternoon peak hours are provided in Appendix C.

Lee Highway at Broadview Avenue/Winchester Street VJuST Analysis

Table 7 presents the alternative design considered at the Lee Highway and Broadview Ave/Winchester St intersection and its results compared to the conventional intersection as it will exist in the no-build. The VJuST analysis results show that during the PM peak hour, which is more critical than the AM peak hour for this intersection. A multi-lane hybrid roundabout would not provide significant operational benefits in terms of volume-to-capacity (V/C) ratio. However, the hybrid roundabout would greatly reduce the conflict points in the intersection, and thus the greatest benefit would be in terms of safety.

Table 7: VJuST Analysis for Lee Highway at Broadview Avenue/Winchester Street

Intersection Results					
		Congestion	Pedestrian	Safety	Notes
Type	Dir	Maximum V/C	Accommodation Compared to Conventional	Weighted Total Conflict Points	
Conventional	-	0.68		48	Existing Configuration
Roundabout	-	0.69		8	Hybrid Roundabout

*The continuous green-T is the only three-legged innovative intersection in this tool. To compare the continuous green-T to other innovative intersections, conflicts corresponding with the fourth leg must be removed. This has been done for the conventional intersection. Conflict point diagrams for three-legged and four-legged conventional intersections have been provided on the conventional intersection worksheet for reference.

Lee Highway at Branch Drive VJuST Analysis

Table 8 presents the alternative designs considered at the Lee Highway and Branch Drive intersection and its results compared to the conventional intersection as it will exist in the no-build. The VJuST analysis results show that the alternative designs may have modest operational benefit relative to the planned conventional intersection. Both alternative intersections feature less conflict points than the conventional intersection, which leads to greater safety benefits.

Table 8: VJuST Analysis for Lee Highway at Branch Drive

Intersection Results					
		Congestion	Pedestrian	Safety	Notes
Type	Dir	Maximum V/C	Accommodation Compared to Conventional	Weighted Total Conflict Points	
Conventional	-	0.55		48	
Restricted Crossing U-Turn	-	0.51		20	
Thru-Cut	-	0.51		28	

*The continuous green-T is the only three-legged innovative intersection in this tool. To compare the continuous green-T to other innovative intersections, conflicts corresponding with the fourth leg must be removed. This has been done for the conventional intersection. Conflict point diagrams for three-legged and four-legged conventional intersections have been provided on the conventional intersection worksheet for reference.

Lee Highway at Village Center Entrance VJuST Analysis

Table 9 presents the alternative designs considered at the Lee Highway and Village Center intersection and its results compared to the conventional intersection as it will exist in the no-build. The VJuST analysis results show that the alternative designs may have modest operational benefit relative to the planned conventional intersection. The alternative intersections feature less conflict points than the conventional intersection, which leads to greater safety benefits.

Table 9: VJuST Analysis for Lee Highway at Village Center Entrance

Intersection Results					
Type	Dir	Maximum V/C	Accommodation Compared to Conventional	Weighted Total Conflict Points	Notes
Median U-Turn	-	0.42	+	20	on has to be signalized, although it is anticipated t
Restricted Crossing U-Turn	-	0.39		20	1 Lane; NB & SB 1 Lane approaches; EB & WB sam
Thru-Cut	-	0.42		28	& SB 2 LTs and 1 RT Lane; EB & WB same as existi
Two-Way Stop Control	-	0.33		48	Existing Configuration

*The continuous green-T is the only three-legged innovative intersection in this tool. To compare the continuous green-T to other innovative intersections, conflicts corresponding with the fourth leg must be removed. This has been done for the conventional intersection. Conflict point diagrams for three-legged and four-legged conventional intersections have been provided on the conventional intersection worksheet for reference.

Lee Highway at Fletcher Drive VJuST Analysis

Table 10 presents the alternative designs considered at the Lee Highway and Fletcher Drive intersection. It should be noted that the conventional intersection represents the V/C ratio if the split-phase operation that currently exists is removed to allow a single phase dedicated to serving the side-streets. The VJuST analysis results show that the alternative designs may have modest operational benefit relative to the planned conventional intersection. The alternative intersections feature less conflict points than the conventional intersection, which leads to greater safety benefits.

Lee Highway at Blackwell Road VJuST Analysis

Table 11 presents the alternative designs considered at the Lee Highway and Blackwell Road intersection and its results compared to the conventional intersection as it will exist in the no-build. The VJuST analysis results show that the alternative designs may have modest operational benefit relative to the planned conventional intersection. The alternative intersections feature less conflict points than the conventional intersection, which leads to greater safety benefits.

Table 10: VJuST Analysis for Lee Highway at Fletcher Drive

Intersection Results					
Type	Dir	Maximum V/C	Accommodation Compared to Conventional	Weighted Total Conflict Points	Notes
Conventional	-	0.46		48	Split Phase Removal
Thru-Cut	-	0.47		28	s for NBL; remaining approaches same as Existing,
Roundabout	-	0.53		8	Hybrid Roundabout

*The continuous green-T is the only three-legged innovative intersection in this tool. To compare the continuous green-T to other innovative intersections, conflicts corresponding with the fourth leg must be removed. This has been done for the conventional intersection. Conflict point diagrams for three-legged and four-legged conventional intersections have been provided on the conventional intersection worksheet for reference.

Table 11: VJuST Analysis for Lee Highway at Blackwell Road

Intersection Results					
Type	Dir	Maximum V/C	Accommodation Compared to Conventional	Weighted Total Conflict Points	Notes
Conventional	-	0.63		48	Remove Split Phase by making SB L-T-R
Median U-Turn	-	0.65	+	20	Lanes; EB U-Turn 1 Lane; NB & SB both 1 Thru Lan
Partial Median U-Turn	-	0.74	+	28	SB existing configurations maintained; EB & WB sa
Quadrant Roadway	N-W	0.59		40	
	S-W	0.56		40	
Restricted Crossing U-Turn	-	0.57		20	1 Lane; NB & SB 2 Lane approaches; EB & WB sam
Thru-Cut	-	0.67		28	& SB 2 LTs and 1 RT Lane; EB & WB same as existi
Roundabout	-	0.79		8	Full Two-Lane Roundabout

*The continuous green-T is the only three-legged innovative intersection in this tool. To compare the continuous green-T to other innovative intersections, conflicts corresponding with the fourth leg must be removed. This has been done for the conventional intersection. Conflict point diagrams for three-legged and four-legged conventional intersections have been provided on the conventional intersection worksheet for reference.

Synchro/SIDRA Results

Following the preliminary VJuST analysis and alternative screening, alternatives that were deemed viable were carried forward for more detailed analysis. Using the PM peak period and 2045 traffic volumes, screening-level Synchro and SIDRA analysis was performed at the study intersections. These results are discussed in the following sections.

Lee Highway and Broadview Avenue/Winchester Street SIDRA Analysis

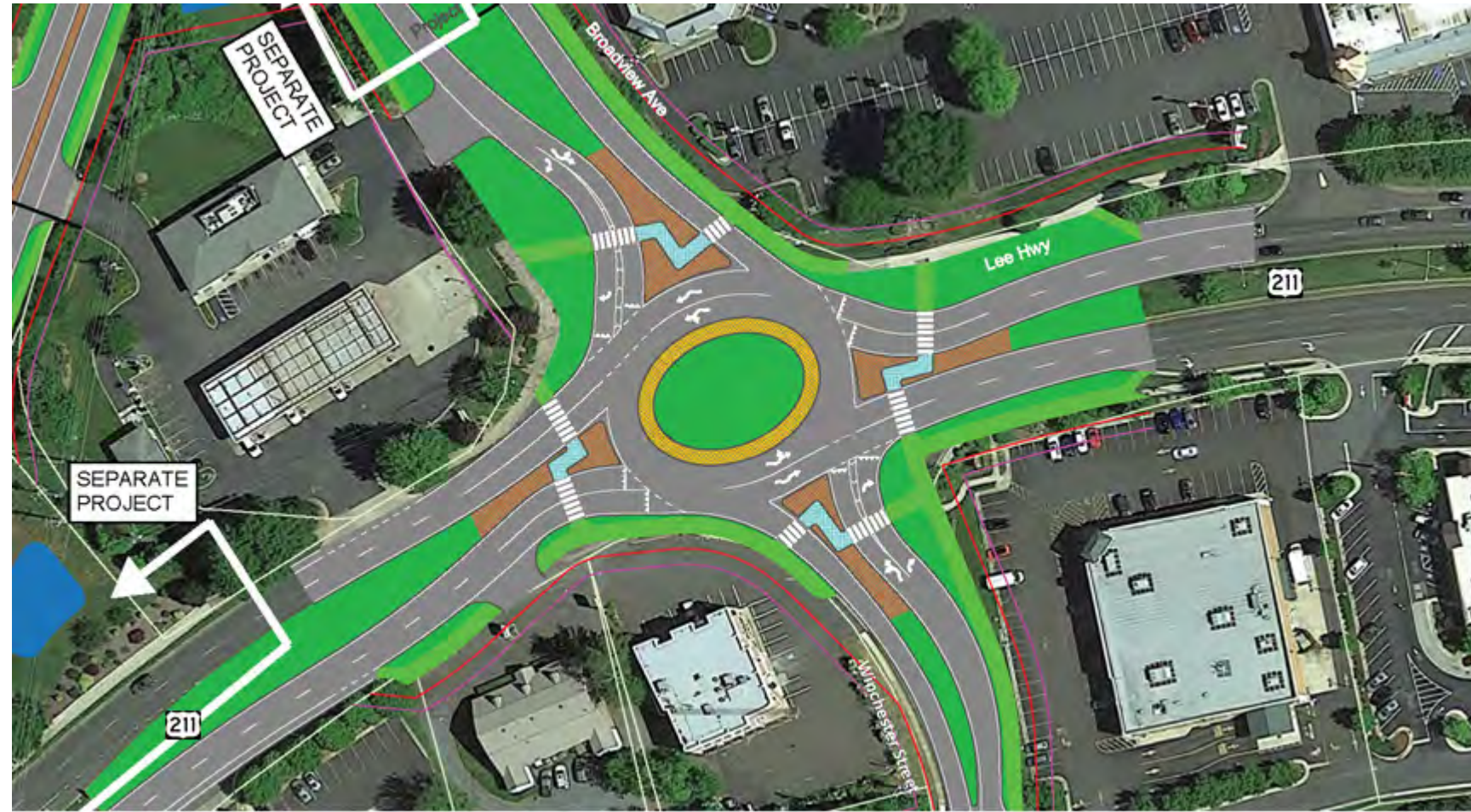
A multi-lane hybrid roundabout design was considered at this location. Using SIDRA analysis software, the roundabout was determined to reduce delays in the afternoon peak period by up to approximately 60 percent compared to the 2045 no-build. All approaches operated at LOS C or better, and the left-turn movements along Lee Highway improved from LOS E & F to LOS C. Table 12 shows the SIDRA results in comparison with the existing and no-build conditions.

Based on the results of this analysis, the study group decided to advance only the roundabout configuration for public comment. This configuration is shown in Figure 17.

Table 12: Synchro Analysis for Lee Highway at Blackwell Road

Intersection	Scenario	Control	Overall Delay (LOS)	Delay per Lane Group by Approach (sec/veh) (Level of Service)											
				Eastbound			Westbound			Northbound			Southbound		
				LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
1 US Route 15/17/29 Bus/ US Route 211 (Lee Highway) & Broadview Avenue / Winchester Street	PM Peak Hour														
	Existing Conditions	Signal	C (29.4)	E (70.0)	C (21.0)	C (21.0)	F (95.4)	B (16.3)	B (19.2)	E (73.9)	E (68.8)	A (0.1)	E (72.9)	E (72.4)	A (0.3)
				C (33.4)			C (20.3)			D (54.0)			C (29.7)		
	2045 No Build	Signal	C (30.7)	E (71.9)	C (25.0)	C (25.0)	F (92.8)	B (16.4)	B (15.9)	E (76.2)	E (69.4)	A (0.1)	E (74.2)	E (72.6)	A (0.4)
				D (36.9)			C (20.6)			E (55.1)			C (29.9)		
	2045 Build	Quadrant Roadway	Signal	C (28.3)	A (0.0)	B (16.2)	B (16.2)	A (0.0)	C (24.6)	D (45.3)	E (73.2)	E (67.9)	A (0.1)	E (71.7)	E (70.4)
			B (16.2)			C (27.2)			D (53.3)			C (33.5)			
			C (15.1)	A (6.0)	A (6.0)	C (21.9)	B (12.2)	B (11.3)	C (19.0)	B (13.8)	B (14.8)	C (20.3)	B (14.1)	C (15.2)	
			A (7.7)			B (12.5)			C (16.1)			C (16.7)			

Figure 17. Broadview Avenue Roundabout Concept



Lee Highway and Branch Drive Synchro Analysis

Three scenarios were analyzed in Synchro: Split-phase removal, thru-cut, and converting the northbound Branch Drive approach to right-in/right-out only. Each of the scenarios offered improved operations when compared to the future no-build; however, the delays experienced by the mainline left-turn movements were greater than 59 seconds for all scenarios. Table 13 shows the Synchro results in comparison with the existing and no-build conditions.

Based on the results of this analysis, the study group decided to advance the Thru-Cut configuration and the partial access management concept for public comment. These concepts are shown in Figure 18 and Figure 19, respectively.

Table 13: Synchro Analysis for Lee Highway at Branch Drive

Intersection	Scenario	Control	Overall Delay (LOS)	Delay per Lane Group by Approach (sec/veh) (Level of Service)												
				Eastbound			Westbound			Northbound			Southbound			
				LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
2 US Route 15/17/29 Bus/ US Route 211 (Lee Highway) & Branch Drive	PM Peak Hour															
	Existing Conditions	Signal	C (21.7)	E (78.2)	A (9.2)	B (12.2)	F (90.5)	A (8.9)	B (14.6)	E (72.1)	E (68.7)	E (68.7)	E (74.0)	E (74.0)	E (59.0)	
				B (16.8)			B (13.5)			E (69.9)			E (67.8)			
	2045 No Build	Signal	C (22.5)	E (79.9)	B (10.4)	B (13.5)	F (84.4)	B (10.1)	B (15.9)	E (72.0)	E (72.0)	E (68.5)	E (74.0)	E (74.0)	E (57.9)	
				B (18.1)			B (14.3)			E (69.7)			E (67.3)			
	2045 Build	Conventional Improvements	Signal	C (21.0)	F (84.0)	A (8.9)	B (12.7)	F (84.2)	B (10.2)	B (14.9)	E (68.2)	E (69.6)	E (69.6)	E (57.4)	D (52.6)	D (52.6)
					B (17.2)			B (14.3)			E (69.4)			D (55.0)		
		Thru-Cut	Signal	B (19.9)	E (59.9)	B (11.6)	A (7.9)	E (62.4)	B (15.9)	A (10.0)	D (48.5)	---	D (48.5)	E (60.7)	---	A (8.5)
				B (17.4)			B (15.9)			C (34.3)			D (43.0)			
Northbound RIRO	Signal	B (13.7)	E (80.0)	A (1.5)	A (3.1)	A (0.0)	A (6.1)	A (2.2)	---	---	---	E (74.0)	---	E (59.4)		
			B (11.4)			A (5.8)			---			E (66.9)				

Figure 18. Branch Drive Thru-Cut Concept



Figure 19. Branch Drive Access Management Concept



Lee Highway and Village Center Synchro Analysis

Two alternatives were considered at this location: converting the side-street approaches to right-in/right-out only and implementing a thru-cut configuration. The right-in/right-out configuration featured the greatest operational improvement when compared to the no-build. Because the thru-cut configuration requires signalization, the overall intersection delay is greater than in the no-build. Table 14 shows the Synchro results in comparison with the existing and no-build conditions.

Based on the results of this analysis, the study group decided to advance only the partial access management concept for public comment. This concept is shown in Figure 20.

Table 14: Synchro Analysis for Lee Highway at Village Center

Intersection	Scenario	Control	Overall Delay (LOS)	Delay per Lane Group by Approach (sec/veh) (Level of Service)											
				Eastbound			Westbound			Northbound			Southbound		
				LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
3 US Route 15/17/29 Bus/ US Route 211 (Lee Highway) & Village Center	PM Peak Hour														
	Existing Conditions	Stop	A (0.5)	B (11.0)	A (0.0)	A (0.0)	A (9.8)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (9.8)	D (26.4)	A (0.0)	A (9.7)
				A (0.4)			A (0.0)			A (9.8)			B (12.7)		
	2045 No Build	Stop	A (0.5)	B (11.0)	A (0.0)	A (0.0)	B (10.2)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (9.7)	D (32.3)	A (0.0)	A (9.6)
				A (0.5)			A (0.0)			A (9.8)			B (13.1)		
	2045 Build	Conventional Improvements	Stop	A (0.2)	A (0.0)	A (0.0)	A (0.0)	B (10.7)	A (0.0)	A (0.0)	---	---	A (9.3)	---	---
			A (0.0)			A (0.0)			A (9.3)			A (9.9)			
2045 Build	Thru-Cut	Stop	A (0.8)	B (12.9)	A (0.0)	A (0.0)	B (10.4)	A (0.0)	A (0.0)	D (26.5)	---	A (9.3)	D (32.8)	---	B (10.4)
				A (0.5)			A (0.0)			B (13.3)			B (13.9)		

Figure 20. Village Center Access Management Concept



Lee Highway and Fletcher Drive SIDRA & Synchro Analysis

The alternatives considered at this intersection include a roundabout, thru-cut, and removing the split-phase for the side-street approaches. Of these alternatives, the roundabout had the greatest improvement in terms of operations, with an expected overall intersection delay 73 percent lower than the no-build. The SIDRA and Synchro results are shown below in Table 15.

Based on the results of this analysis, the study group decided to advance the Thru-Cut and Roundabout configurations for public comment. These concepts are shown in Figure 21 and Figure 22, respectively.

Table 15: Synchro and SIDRA Analysis for Lee Highway at Village Center

Intersection	Scenario	Control	Overall Delay (LOS)	Delay per Lane Group by Approach (sec/veh) (Level of Service)													
				Eastbound			Westbound			Northbound			Southbound				
				LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4	US Route 15/17/29 Bus/ US Route 211 (Lee Highway) & Fletcher Drive	PM Peak Hour															
		Existing Conditions	Signal	C (23.8)	E (72.1)	B (15.1)	A (2.8)	E (75.0)	B (10.6)	A (7.2)	E (70.8)	E (70.4)	D (53.3)	E (72.3)	E (72.3)	E (60.8)	
					B (17.4)			B (14.9)			E (64.1)			E (67.8)			
		2045 No Build	Signal	C (24.3)	E (75.0)	B (16.3)	A (2.3)	F (81.5)	B (10.8)	A (1.5)	E (71.2)	E (70.6)	D (52.1)	E (72.7)	E (72.7)	E (59.4)	
					B (18.6)			B (15.1)			E (63.8)			E (67.7)			
		2045 Build	Conventional Improvements	Signal	C (22.3)	E (74.9)	B (11.6)	A (1.1)	F (86.9)	A (8.1)	A (1.4)	E (68.8)	E (71.1)	E (71.1)	E (69.2)	E (64.0)	E (64.0)
						B (14.6)			B (13.1)			E (70.0)			E (66.5)		
			Roundabout	Stop	A (6.7)	B (14.4)	A (5.5)	A (5.2)	B (14.5)	A (5.6)	A (5.5)	B (12.2)	A (7.0)	A (8.1)	B (14.0)	A (8.7)	A (9.7)
			A (5.9)			A (6.1)			A (9.8)			B (11.7)					
	Thru-Cut	Signal	C (21.1)	E (71.0)	B (12.8)	A (3.9)	E (74.1)	A (5.3)	A (3.0)	E (72.2)	---	E (57.8)	E (73.6)	---	E (59.4)		
				B (15.7)			A (9.9)			E (66.8)			E (68.2)				

Figure 21. Fletcher Drive Thru-Cut Concept



Figure 22. Fletcher Drive Roundabout Concept



Lee Highway and Blackwell Road SIDRA & Synchro Analysis

A Quadrant Roadway along with a roundabout and removing the split-phase for the side-street approaches were considered at the intersection with Blackwell Road. Of these alternatives, the roundabout had the greatest improvement in terms of operations, with an expected overall intersection delay 71 percent lower than the no-build. The SIDRA and Synchro results are shown below in Table 16.

Based on the results of these analyses, the study group decided to advance the Partial Quadrant and Roundabout configurations for public comment. These concepts are shown in Figure 23 and Figure 24, respectively.

Table 16: Synchro and SIDRA Analysis for Lee Highway at Village Center

Intersection		Scenario	Control	Overall Delay (LOS)	Delay per Lane Group by Approach (sec/veh) (Level of Service)												
					Eastbound			Westbound			Northbound			Southbound			
					LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
5 US Route 15/17/29 Bus/ US Route 211(Lee Highway) & Blackwell Road		PM Peak Hour															
		Existing Conditions	Signal	D (42.4)	D (48.5)	C (25.6)	A (0.1)	E (75.1)	C (33.8)	C (24.8)	F (81.6)	E (58.3)	E (55.2)	E (74.3)	E (74.1)	E (58.5)	
					C (24.3)			D (38.3)			E (66.0)			E (72.4)			
		2045 No Build	Signal	D (45.2)	D (52.1)	C (29.5)	A (0.1)	E (77.4)	D (36.8)	C (25.5)	F (89.2)	E (57.8)	D (54.4)	E (76.5)	E (76.1)	E (57.5)	
					C (27.7)			D (40.9)			E (68.5)			E (74.2)			
		2045 Build	Conventional Improvements	Signal	D (36.8)	D (50.3)	B (19.7)	B (13.0)	D (36.0)	C (30.1)	B (12.1)	E (78.3)	E (73.2)	D (51.9)	D (53.1)	E (78.3)	E (78.3)
						C (20.8)			C (28.6)			E (66.4)			E (64.6)		
			Quadrant	Signal	C (33.1)	F (118.5)	C (26.0)	A (6.8)	F (80.1)	B (16.8)	B (12.3)	D (54.7)	D (43.1)	D (40.1)	F (159.7)	E (73.3)	E (58.8)
					C (24.2)			C (24.8)			D (46.0)			E (71.6)			
Roundabout	Stop	B (13.1)	C (19.3)	A (9.9)	A (9.2)	C (22.4)	B (12.6)	B (11.8)	C (17.3)	B (11.6)	B (12.3)	C (21.1)	C (15.9)	B (10.5)			
			B (10.3)			B (13.5)			B (14.1)			C (18.1)					

Figure 23. Blackwell Road Partial Quadrant Concept



Figure 24. Blackwell Road Roundabout Concept



Bike/Ped Plan

Several bicycle and pedestrian recommendations were developed in the Warrenton study corridor. To supplement the existing sidewalk infrastructure, the following improvements were recommended:

- Close the gap in sidewalk along northbound Lee Hwy between Branch Drive and Blalock Cycle Co
- Provide a bicycle and pedestrian facility along the southbound side of Lee Highway from Broadview Avenue to Blackwell Road; alternatively, construct a bicycle and pedestrian facility along Oak Springs Drive, Broadview Avenue between Oak Springs Drive and Branch Drive, and Branch Drive from Broadview Avenue to Oak Springs Drive
- Safety improvements to the existing crosswalks at the four signalized intersections in the corridor

The bicycle and pedestrian recommendations are shown in Figure 25.

Figure 25. Bicycle and Pedestrian Recommendations



Chapter 3:
**Public and
Stakeholder Outreach
and Feedback**

Public Involvement

Following the development and analysis of the alternative designs for the study intersections, a public involvement survey was developed to determine the public’s response to the recommended improvements and what they perceived as the relevant issues within the study area. This survey was available online for 18 days spanning from February 1 to February 18, 2022.

Survey Design

Public involvement for this study took place in the form of an online survey developed in MetroQuest, which is an online engagement platform that is designed to educate the public while gathering informed output. The goals of this public outreach effort were to present relevant issues, educate the public on the recommended improvement concepts outlined in Chapter 2, and to receive the public’s feedback on the proposed improvements.

Overall, the survey is divided into five sections, which include the following:

1. Welcome/introduction with overview of the project and study area
2. Bike & Transit Survey questions
3. Intersection Recommendations – Broadview Ave, Branch Dr, & Village Center
4. Intersection Recommendations – Fletcher Dr, Blackwell Dr
5. Wrap up with demographic questions

The first section provides an overview of the study area and the project initiative. In the second section, participants were asked if they were in favor of increased access for bicyclists and pedestrians on and along Lee Highway, as well as whether transit bus stops should be relocated along Lee Highway. In the third & fourth sections, a summary of the recommended improvements and benefits at each study intersection was presented to the participants, as shown in Figure 26. For these recommended improvement concepts, participants were asked to rate them based on their opinion from one to five, one being very unfavorable, three being neutral, and five being strongly in favor. They were also provided with an option to input comments or concerns. At the end of the survey, the participants were asked a few demographic questions including: “How do you normally travel in this area?” and “What other modes of travel would you prefer?”. A total of 457 people participated in the survey, 79 percent of which live in Warrenton. No relevant comments were submitted to the MetroQuest survey.

Survey Questions and Results:

The survey results on the participants’ trip purpose, current and preferred modes of travel are presented in Figure 27 and Figure 28. Overall, the majority of participants live and drive their personal vehicle within the study area. One-third of participants responded that they preferred active transportation (walking/biking/transit).

Figure 26. MetroQuest Survey Welcome Screen

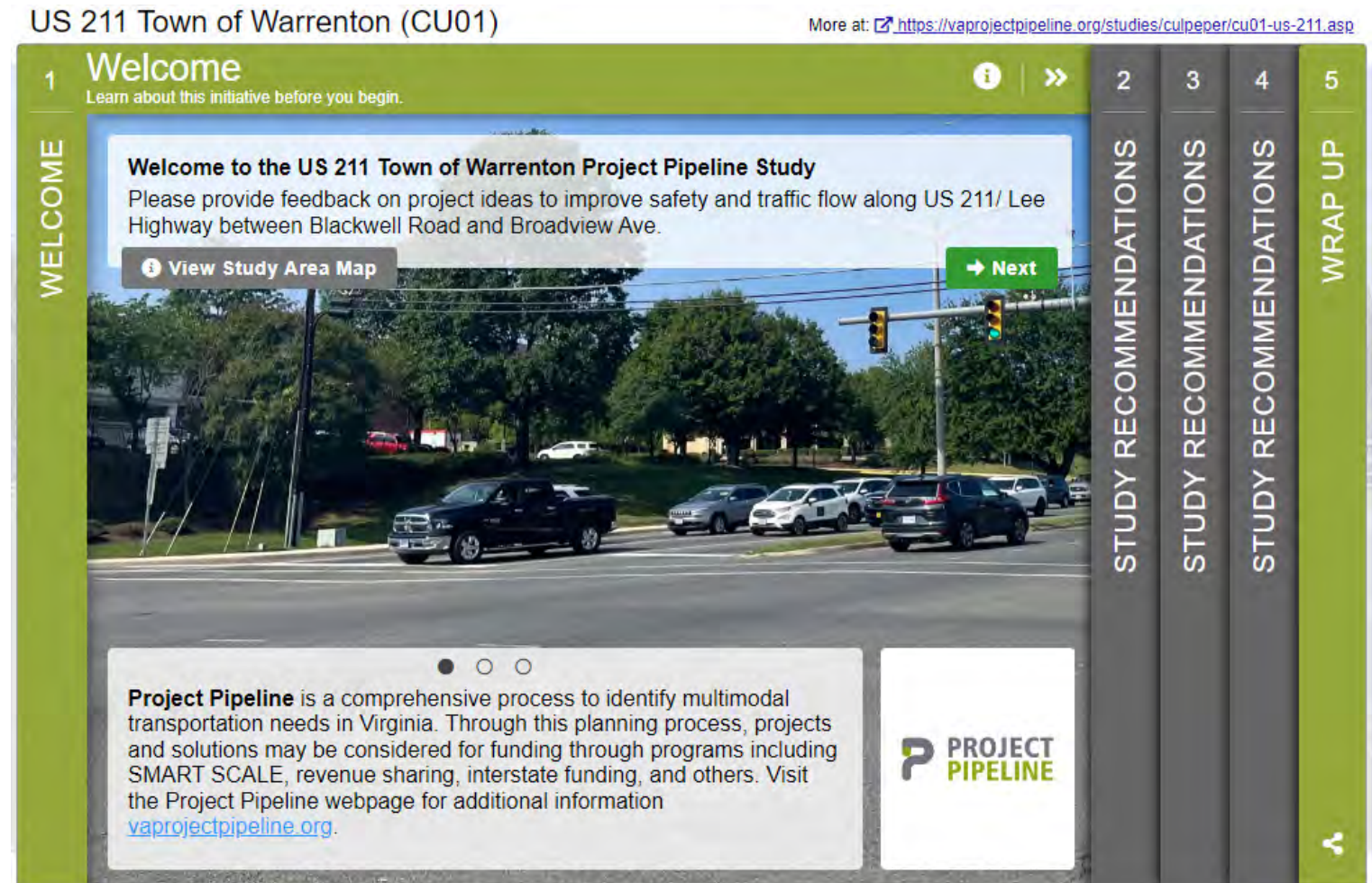


Figure 27. Current Travel Mode Results from the MetroQuest Survey

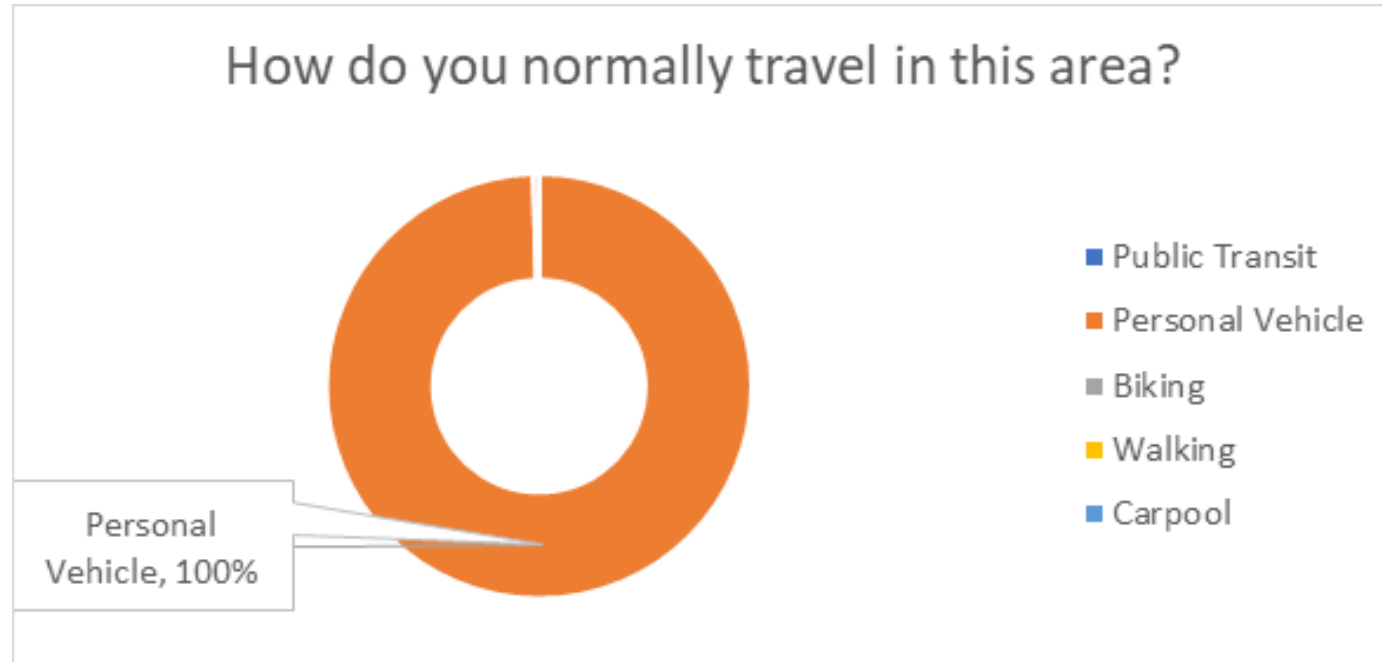
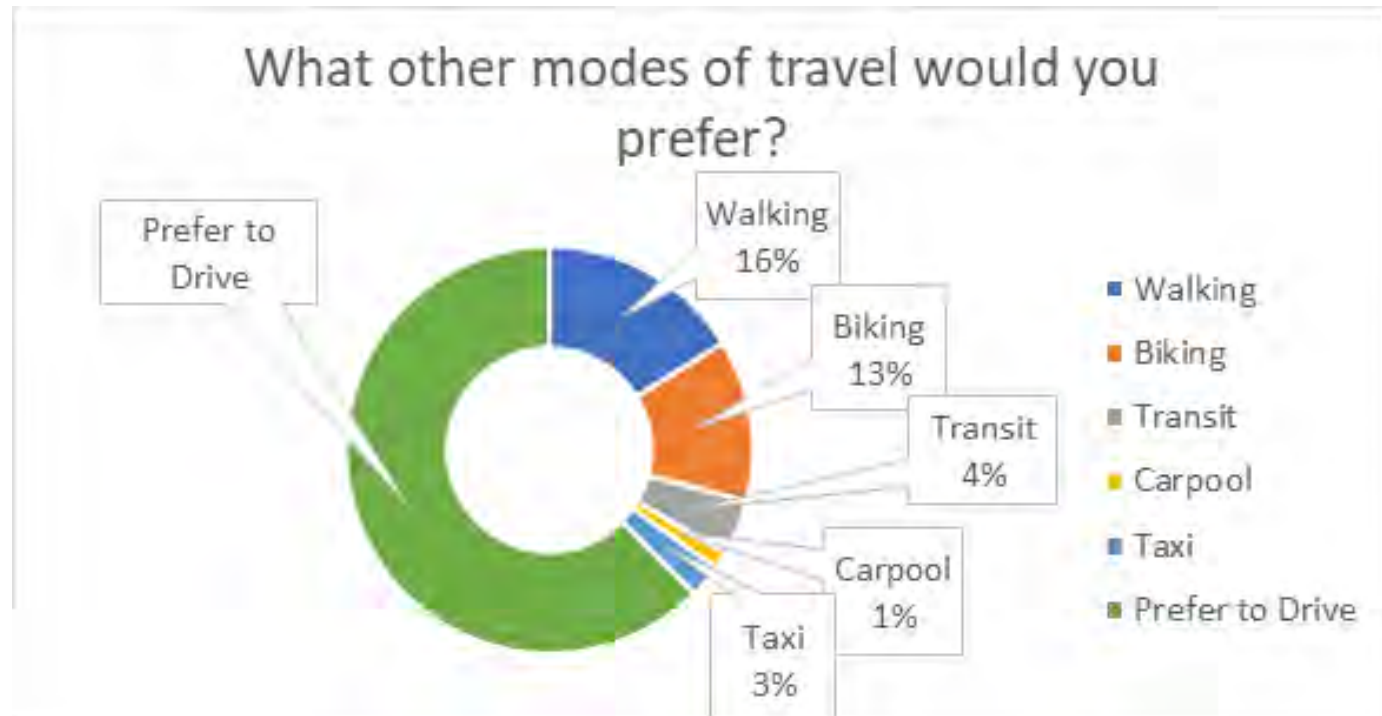


Figure 28. Desired Travel Mode Results from the MetroQuest Survey

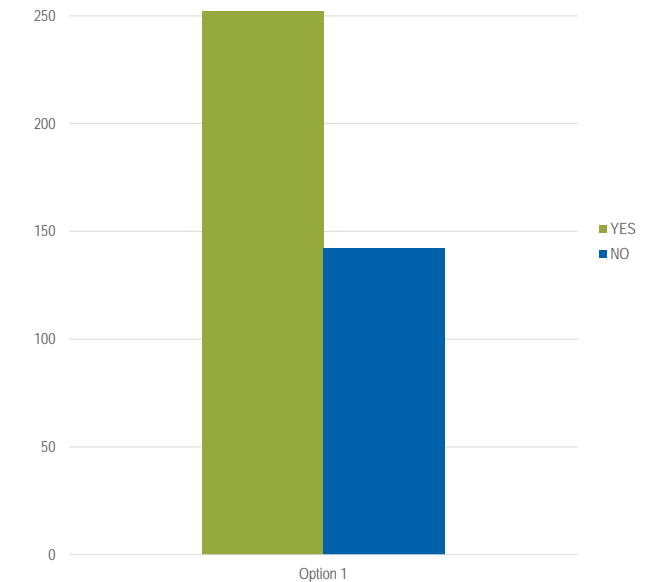


Bike and Pedestrian Plan

The bike & pedestrian plan serves as a foundation for future improvements to provide more access & safer crossings within Warrenton. This plan can be found in the previous chapter as Figure 25.

- 69% in support of the plan

Figure 29. Support for the Bicycle and Pedestrian Plan on the MetroQuest Survey

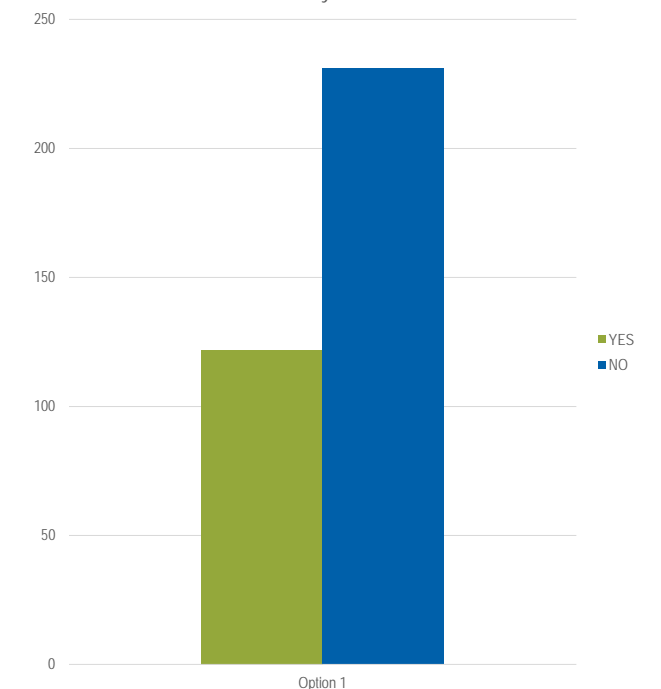


Transit Stops

Three Circuit Rider stops are in the area at Safeway, Rite Aid, & Harris Teeter. These stops are on business's private parking lots. Should stops be moved to the Lee Highway public right of way to improve transit access & establish more permanent bus stops?

- 69% do not support the option to relocate the stops

Figure 30. Support for moving transit stops on the MetroQuest Survey



US 211 & Broadview Ave

No Improvement: Leave the existing conditions as is; no improvements. The anticipated delay through the intersection is expected to increase by more than 10% over the next 20 years.

- Average score: 2.39

Roundabout: reconfigures the intersection to a multi-lane hybrid roundabout. The roundabout can improve operations by 60%, reduce crashes up to 60%, and improve the safety of pedestrian crossings.

- Average score: 3.46

Figure 31. Results for Broadview Road Intersection Improvements from the MetroQuest Survey

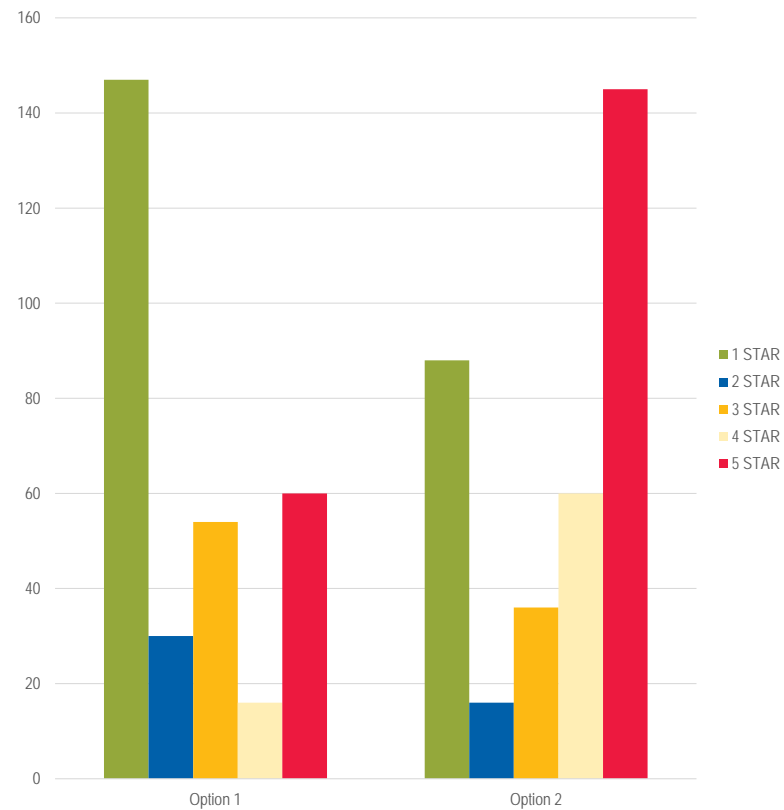


Figure 32. Options for Broadview Road Intersection Improvements from the MetroQuest Survey



US 211 & Branch Drive

No Improvement: Leave the existing condition as is; no improvements. The anticipated delay through the intersection is expected to increase by more than 15% over the next 20 years

- Average score: 2.45

Thru-Cut: Relocates the Branch Drive through-movements through other intersections and can reduce delay by up to 25% and reduce crashes by up to 10%.

- Average score: 3.00

Partial Access Management: Reconfigures the northbound approach of Branch Drive to right-in/right-out only. The relocated movements can use the Broadview Ave intersection. This improvement requires the recommended roundabout at Broadview Ave to be completed. Operations would be improved by 40%, and a projected crash reduction of up to 60% through-movements through other intersections and can reduce delay by up to 25% and reduce crashes by up to 10%.

- Average score: 3.15

Figure 33. Results for Branch Drive Intersection Improvements from the MetroQuest Survey

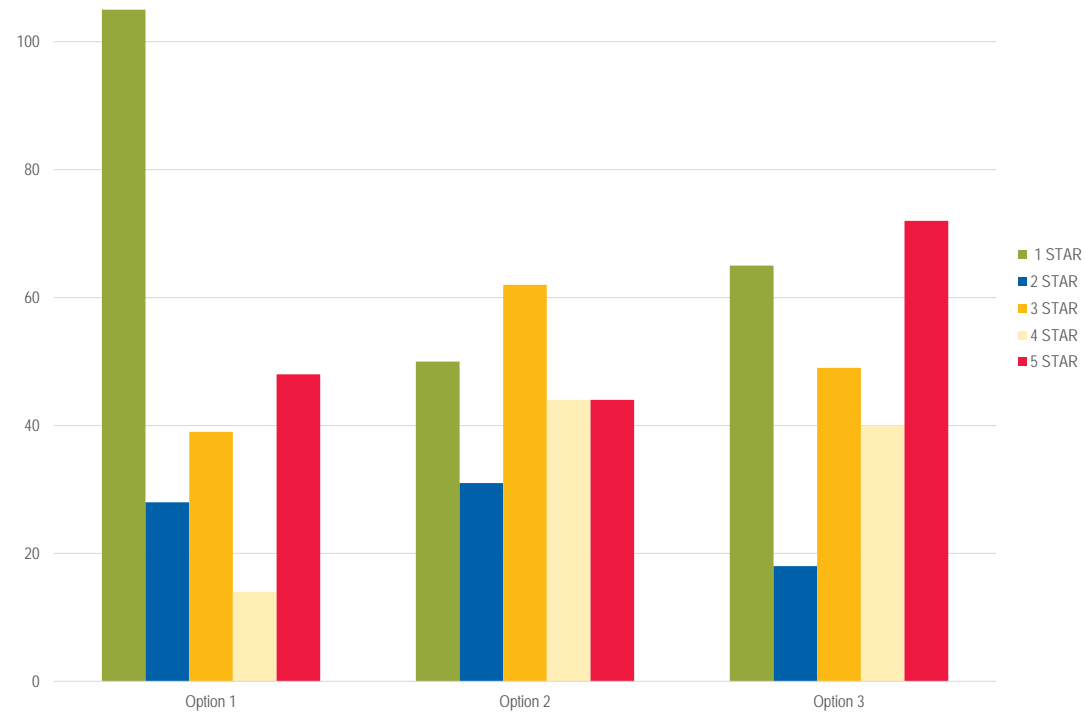
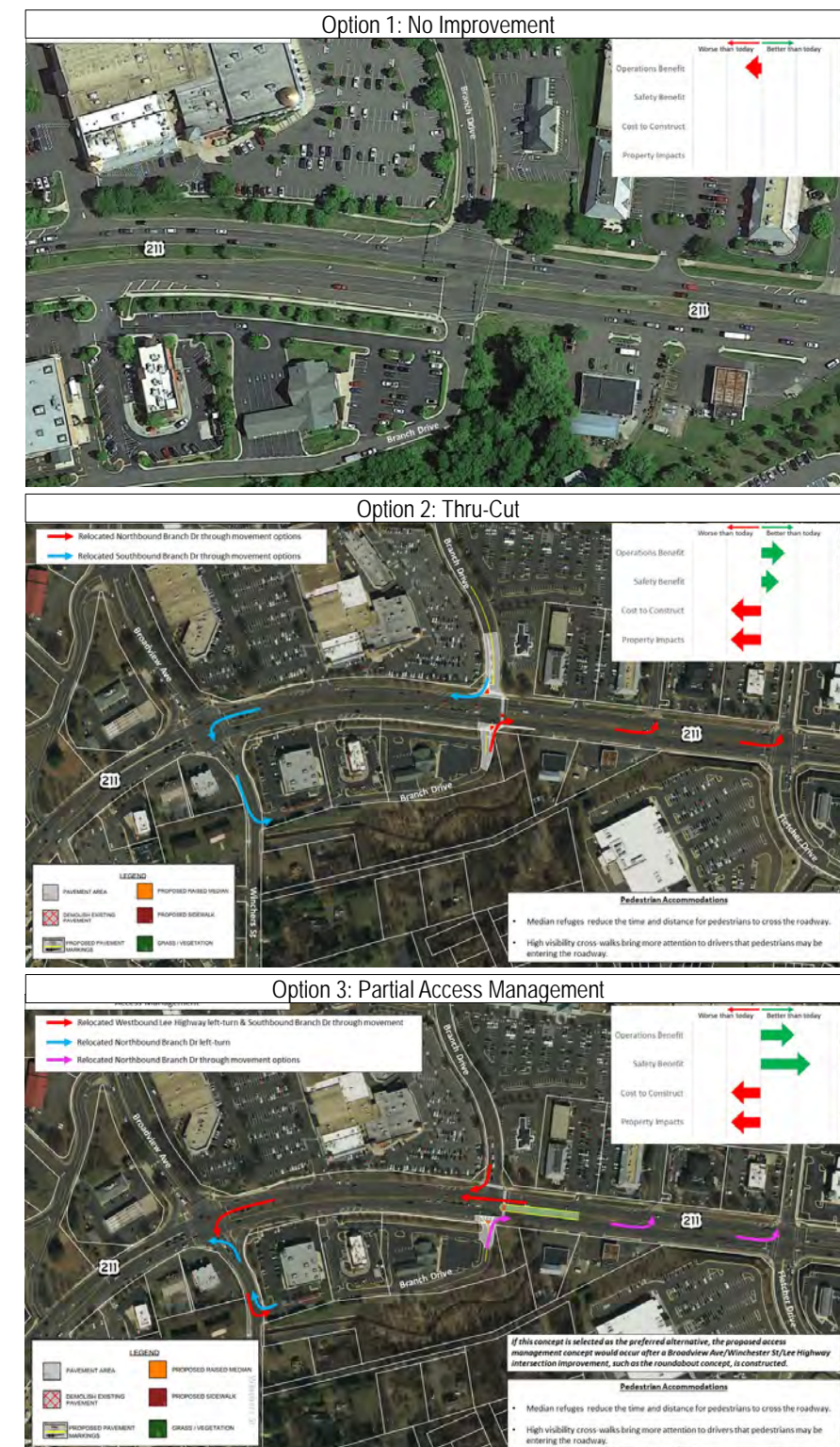


Figure 34. Options for Branch Drive Intersection Improvements from the MetroQuest Survey



US 211 & VILLAGE CENTER

Access Management: Median opening to be reconfigured to restrict through- and left-turn movements from the driveways. Additionally, the Village Center driveway would be reconstructed to improve ingress & egress.

- Average score: 3.33

Figure 35. Results for Village Center Intersection Improvements from the MetroQuest Survey

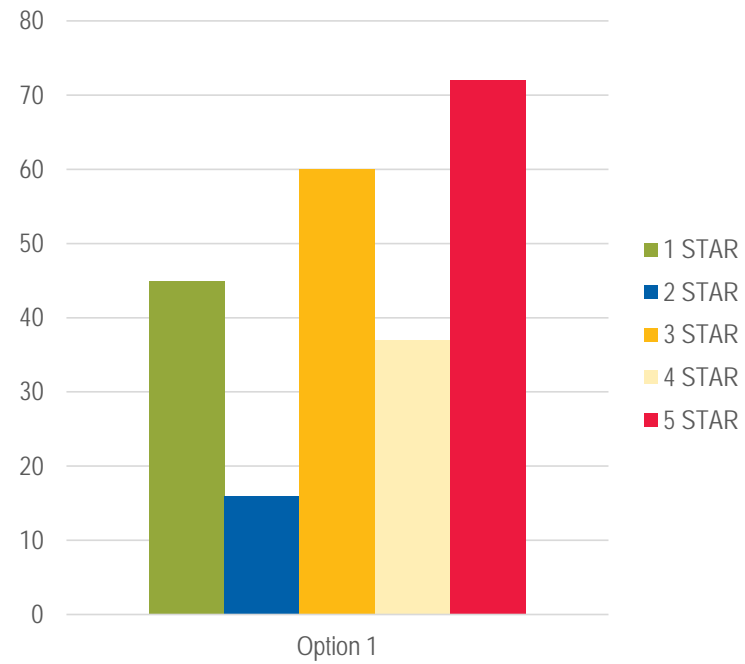


Figure 36. Option for Village Center Intersection Improvements from the MetroQuest Survey



US 211 & Fletcher Drive

No Improvement: Leave the existing condition as is; no improvements. The anticipated delay through the intersection is expected to increase by more than 10% over the next 20 years

- Average score: 2.59

Thru-Cut: Relocates the Branch Drive through-movements through other intersections and can reduce delay by up to 25% and reduce crashes by up to 10%.

- Average score: 2.67

Roundabout: reconfigures the intersection to a multi-lane hybrid roundabout. The roundabout can improve operations by 70%, reduce crashes up to 60%, and improve the safety of pedestrian crossings.

- Average score: 3.18

Figure 37. Results for Fletcher Drive Intersection Improvements from the MetroQuest Survey

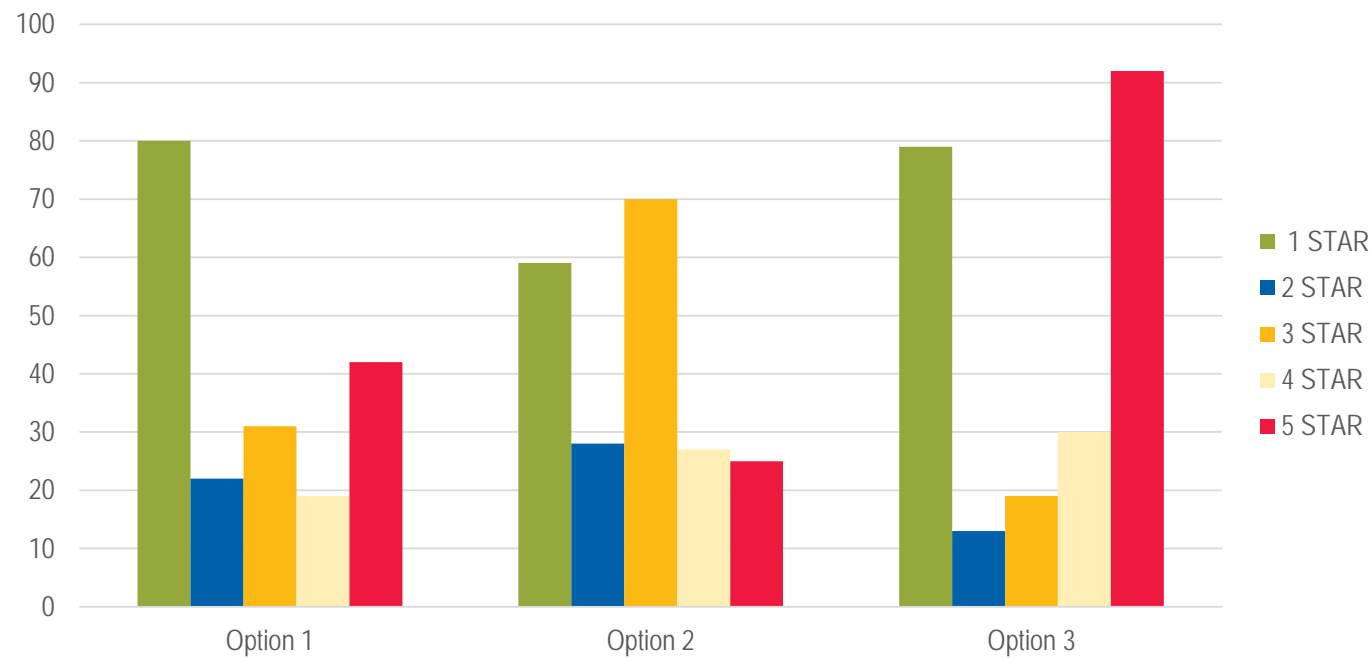
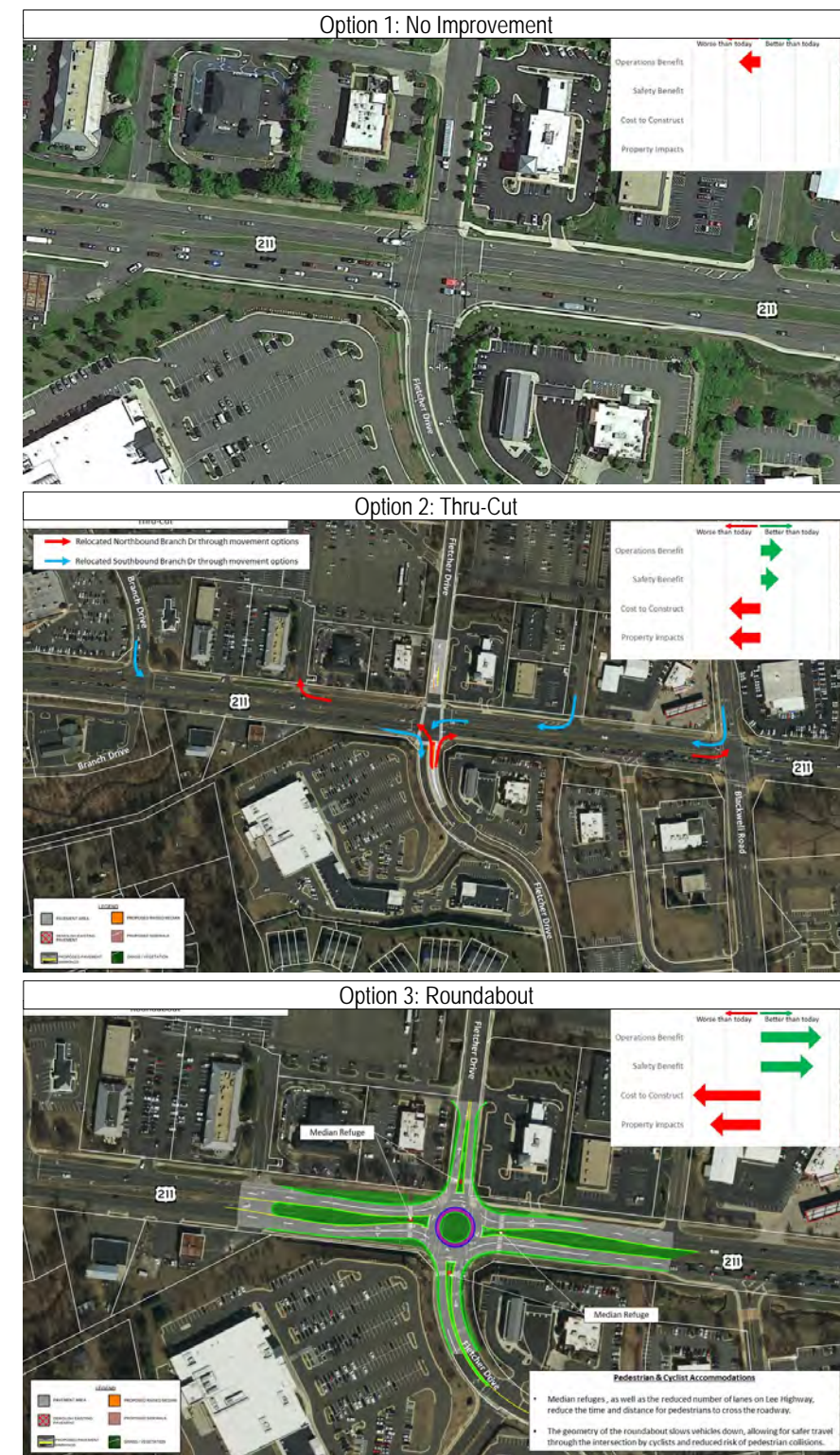


Figure 38. Option for Fletcher Drive Intersection Improvements from the MetroQuest Survey



US 211 & Blackwell Road

No Improvement: Leave the existing condition as is; no improvements. The anticipated delay through the intersection is expected to increase by more than 10% over the next 20 years.

- Average score: 3.33

Partial Quadrant Roadway: This alternative relocates the southbound Blackwell Road and eastbound US 211 left-turn movements through Blackwell Park Lane. Delay is expected to be reduced by up to 25% and reduce crossing conflicts.

- Average score: 2.59

Roundabout: reconfigures the intersection to a multi-lane hybrid roundabout. The roundabout can improve operations by 70%, reduce crashes up to 60%, and improve the safety of pedestrian crossings.

- Average score: 3.33

Figure 39. Results for Blackwell Road Intersection Improvements from the MetroQuest Survey

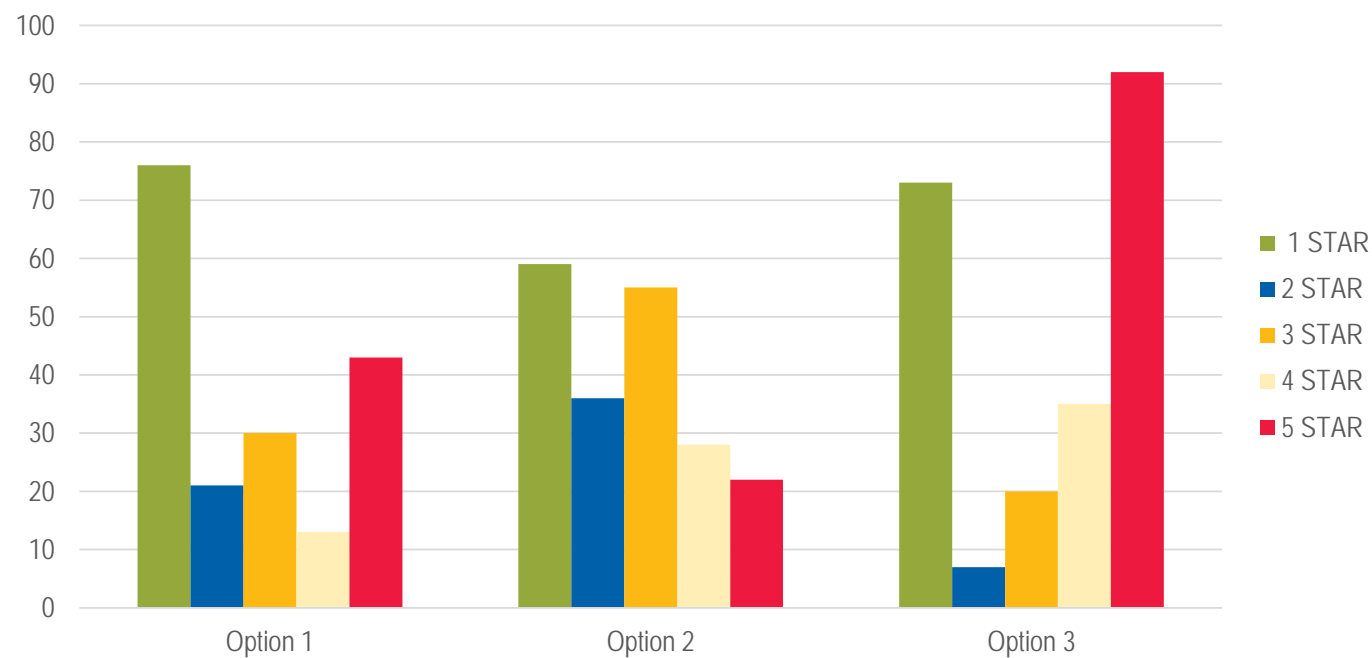


Figure 40. Option for Blackwell Road Intersection Improvements from the MetroQuest Survey



Chapter 4:

Preferred Alternative Design Refinement & Investment Strategy

Preferred Alternatives

The Preferred Alternative options were developed for the study area based on the results of the analysis as discussed in the previous Alternative Development and Screening section (Chapter 2), and Public and Stakeholders Feedback (Chapter 3). A summary of the proposed alternatives is provided in Table 17 and shown in Figure 41. The recommended considerations developed by Team 3 with respect to rail, transit, and TDM are shown in Figure 42.

SMART SCALE, Fiscal Year 2024

Based on public comments, preliminary Synchro analysis of each alternative for the controlling peak hour, and planning level cost estimates of each alternative, the study team decided to advance only the proposed roundabout at Lee Highway and Blackwell Road for fiscal year 2024 SMART SCALE funding consideration. Because this is a targeted improvement with both safety and congestion benefits, the SMART SCALE Program is a logical first option. A SMART SCALE application was prepared for this project and submitted by the Town of Warrenton on August 1st, 2022, for the fiscal year 2024 SMART SCALE cohort. If selected, this project would receive full funding by Virginia fiscal year 2026.

As a result of a separate study along Broadview Avenue, the Town of Warrenton also submitted a SMART SCALE application for a hybrid roundabout at the intersection of Broadview Avenue and Lee Highway.

Table 17: List of Preferred Alternative Improvements

Improvement	Description	Planning-Level Cost Estimate
Blackwell Road Hybrid Roundabout and Pedestrian Improvements	Convert the intersection of Lee Highway and Blackwell Road to a hybrid roundabout, construct pedestrian facilities on each leg, and provide pedestrian crossings with median refuges and HAWK signals	\$11,200,000
Branch Avenue Thru-Cut	Relocate the Branch Drive through movements through other intersections	\$6,700,000
Branch Avenue Access Management Improvements	Convert northbound approach of Branch Ave to right-in/right-out only	\$3,000,000
Fletcher Drive Roundabout	Multi-lane hybrid roundabout	\$7,200,000

Figure 41. Preferred Alternatives



PROJECT NEEDS

These proposed improvements help address VTrans needs associated with safety, capacity preservation, and congestion mitigation. The preferred alternatives reduce delay, improve safety for both vehicle and other modes such as bikes and pedestrians.

Need	Priority
Congestion Mitigation	Very High
Transit Access	Very High
Transportation Demand Management	Very High
Safety Improvement	High
Bicycle and Pedestrian Access	High

Survey Summary

- The MetroQuest survey ran between February 1 and February 18, 2022
- Survey included 457 participants
- 79% of respondents were residents, 13% visitors, and 8% employees of the study area

PROJECT DESCRIPTION

The following alternatives were advanced that can be submitted for future funding applications. These improvements will incorporate measures such as improved pedestrian crossing distances, crosswalks, and updated parallel facilities, such as shared use paths:

- Multi-lane Hybrid Roundabouts:** A multi-lane roundabout will help improve operations and reduce crashes by up to 60%. Roundabouts are also particularly beneficial for other roadway users like pedestrians and cyclists because of the slower speeds through a roundabout.
- Thru-cuts:** An alternative that reduces traffic signal phases on the minor approaches by relocating the through movement within the network. This improvement enhances timings and reduces delay.
- Access Management and Intersection Improvement:** A safety improvement that reduces the number of movements permitted at an intersection.
 - Branch Drive: Movements onto and into Branch Drive northbound approach would be reduced so that those turns would use a future roundabout at Broadview Avenue.
 - Village Center Driveway: Movements across and out of the driveway are reduced to enhance safety. The driveway would also be reconstructed to allow quicker ingress/egress.

What other modes of travel would you prefer?

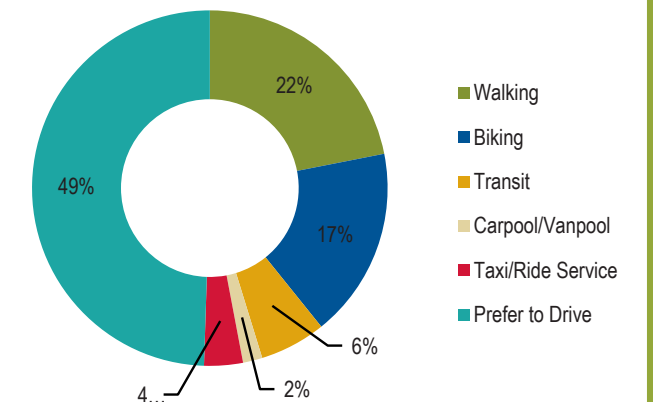


Figure 42. Transit and TDM Recommendations



Complete the pedestrian network on Lee Hwy where gaps exist (two blocks on southside of road east of Branch Dr and east of Blackwell Park Ln)



Add striping and pedestrian median refuges to the crosswalks at the intersections of Lee Hwy with Broadview Ave/Winchester St, Branch Dr, Fletcher Dr, and Blackwell Rd



Consider relocating bus stops to public rights-of-way (such as Fletcher Dr and Branch Dr) and installing more permanent infrastructure, including bus stop signs; consider instituting bi-directional service instead of loops



Leverage the existing RRRC's Commuter Services commuter assistance programs to promote the use of transit, carpool and vanpool, and to provide ridesharing and commute options information to residents, employers, and employees.

**Appendix A:
Existing Turning
Movement Counts**

Peggy Malone & Associates

(888) 247-8602

File Name : 7-Hwy 29 and Broadview Ave_Winchester St SAT
 Site Code :
 Start Date : 8/7/2021
 Page No : 2

Groups Printed- Cars

	Hwy 29 Eastbound					Hwy 29 Westbound					Winchester St Northbound					Broadview Ave Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
Grand Total	2328	7719	331	71	10449	524	8117	952	179	9772	791	844	656	0	2291	1334	621	2233	1	4189	26701
Apprch %	22.3	73.9	3.2	0.7		5.4	83.1	9.7	1.8		34.5	36.8	28.6	0		31.8	14.8	53.3	0		
Total %	8.7	28.9	1.2	0.3	39.1	2	30.4	3.6	0.7	36.6	3	3.2	2.5	0	8.6	5	2.3	8.4	0	15.7	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Winchester St Northbound				Broadview Ave Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 10:30 AM																	
10:30 AM	61	217	3	281	8	226	19	253	21	21	13	55	30	18	62	110	699
10:45 AM	34	189	15	238	4	245	15	264	21	19	10	50	35	15	75	125	677
11:00 AM	59	195	10	264	12	194	19	225	15	21	27	63	49	25	53	127	679
11:15 AM	69	189	8	266	12	210	23	245	15	26	21	62	26	15	61	102	675
Total Volume	223	790	36	1049	36	875	76	987	72	87	71	230	140	73	251	464	2730
% App. Total	21.3	75.3	3.4		3.6	88.7	7.7		31.3	37.8	30.9		30.2	15.7	54.1		
PHF	.808	.910	.600	.933	.750	.893	.826	.935	.857	.837	.657	.913	.714	.730	.837	.913	.976

Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Winchester St Northbound				Broadview Ave Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	70	178	8	256	10	209	29	248	22	33	23	78	31	21	50	102	684
12:15 PM	90	207	7	304	10	234	26	270	31	22	19	72	36	19	67	122	768
12:30 PM	64	192	10	266	18	182	22	222	24	25	28	77	43	18	76	137	702
12:45 PM	65	184	14	263	12	206	26	244	22	39	22	83	35	14	67	116	706
Total Volume	289	761	39	1089	50	831	103	984	99	119	92	310	145	72	260	477	2860
% App. Total	26.5	69.9	3.6		5.1	84.5	10.5		31.9	38.4	29.7		30.4	15.1	54.5		
PHF	.803	.919	.696	.896	.694	.888	.888	.911	.798	.763	.821	.934	.843	.857	.855	.870	.931

Peggy Malone & Associates

(888) 247-8602

File Name : 7-Hwy 29 and Broadview Ave_Winchester St SAT
 Site Code :
 Start Date : 8/7/2021
 Page No : 2
 Groups Printed- Trucks

	Hwy 29 Eastbound					Hwy 29 Westbound					Winchester St Northbound					Broadview Ave Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
Grand Total	14	109	2	1	126	5	105	16	0	126	8	2	3	0	13	10	4	25	0	39	304
Approch %	11.1	86.5	1.6	0.8		4	83.3	12.7	0		61.5	15.4	23.1	0		25.6	10.3	64.1	0		
Total %	4.6	35.9	0.7	0.3	41.4	1.6	34.5	5.3	0	41.4	2.6	0.7	1	0	4.3	3.3	1.3	8.2	0	12.8	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Winchester St Northbound				Broadview Ave Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:45 AM																	
08:45 AM	0	3	0	3	0	5	1	6	0	0	0	0	0	0	0	0	9
09:00 AM	0	6	0	6	0	3	2	5	0	0	0	0	0	0	0	0	11
09:15 AM	0	5	0	5	0	1	0	1	0	0	0	0	1	0	0	1	7
09:30 AM	0	5	0	5	0	2	0	2	0	0	0	0	2	0	0	2	9
Total Volume	0	19	0	19	0	11	3	14	0	0	0	0	3	0	0	3	36
% App. Total	0	100	0		0	78.6	21.4		0	0	0		100	0	0		
PHF	.000	.792	.000	.792	.000	.550	.375	.583	.000	.000	.000	.000	.375	.000	.000	.375	.818

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Winchester St Northbound				Broadview Ave Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:30 PM																	
02:30 PM	1	1	0	2	0	7	1	8	0	0	0	0	0	0	2	2	12
02:45 PM	2	0	0	2	0	2	2	4	0	0	0	0	0	0	0	0	6
03:00 PM	0	4	0	4	0	2	0	2	0	0	0	0	1	0	0	1	7
03:15 PM	0	4	0	4	0	4	0	4	0	0	0	0	0	0	1	1	9
Total Volume	3	9	0	12	0	15	3	18	0	0	0	0	1	0	3	4	34
% App. Total	25	75	0		0	83.3	16.7		0	0	0		25	0	75		
PHF	.375	.563	.000	.750	.000	.536	.375	.563	.000	.000	.000	.000	.250	.000	.375	.500	.708

Peggy Malone & Associates

(888) 247-8602

File Name : 7-Hwy 29 and Broadview Ave_Winchester St SAT
 Site Code :
 Start Date : 8/7/2021
 Page No : 2

Groups Printed- Cars - Trucks

	Hwy 29 Eastbound					Hwy 29 Westbound					Winchester St Northbound					Broadview Ave Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
Grand Total	2342	7828	333	72	10575	529	8222	968	179	9898	799	846	659	0	2304	1344	625	2258	1	4228	27005
Apprch %	22.1	74	3.1	0.7		5.3	83.1	9.8	1.8		34.7	36.7	28.6	0		31.8	14.8	53.4	0		
Total %	8.7	29	1.2	0.3	39.2	2	30.4	3.6	0.7	36.7	3	3.1	2.4	0	8.5	5	2.3	8.4	0	15.7	
Cars	2328	7719	331	71	10449	524	8117	952	179	9772	791	844	656	0	2291	1334	621	2233	1	4189	26701
% Cars	99.4	98.6	99.4	98.6	98.8	99.1	98.7	98.3	100	98.7	99	99.8	99.5	0	99.4	99.3	99.4	98.9	100	99.1	98.9
Trucks	14	109	2	1	126	5	105	16	0	126	8	2	3	0	13	10	4	25	0	39	304
% Trucks	0.6	1.4	0.6	1.4	1.2	0.9	1.3	1.7	0	1.3	1	0.2	0.5	0	0.6	0.7	0.6	1.1	0	0.9	1.1

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Winchester St Northbound				Broadview Ave Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 10:30 AM																	
10:30 AM	61	219	3	283	8	227	19	254	21	21	13	55	30	18	63	111	703
10:45 AM	34	191	15	240	4	250	16	270	22	19	12	53	35	15	76	126	689
11:00 AM	59	198	11	268	12	196	19	227	15	21	27	63	49	26	53	128	686
11:15 AM	70	190	8	268	12	212	24	248	15	26	21	62	27	15	61	103	681
Total Volume	224	798	37	1059	36	885	78	999	73	87	73	233	141	74	253	468	2759
% App. Total	21.2	75.4	3.5		3.6	88.6	7.8		31.3	37.3	31.3		30.1	15.8	54.1		
PHF	.800	.911	.617	.936	.750	.885	.813	.925	.830	.837	.676	.925	.719	.712	.832	.914	.981

Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	70	183	8	261	10	211	30	251	22	33	23	78	31	21	50	102	692
12:15 PM	90	210	7	307	10	234	27	271	32	22	19	73	36	19	67	122	773
12:30 PM	65	194	10	269	18	183	23	224	24	25	28	77	43	18	79	140	710
12:45 PM	66	185	14	265	13	206	26	245	23	40	22	85	35	14	67	116	711
Total Volume	291	772	39	1102	51	834	106	991	101	120	92	313	145	72	263	480	2886
% App. Total	26.4	70.1	3.5		5.1	84.2	10.7		32.3	38.3	29.4		30.2	15	54.8		
PHF	.808	.919	.696	.897	.708	.891	.883	.914	.789	.750	.821	.921	.843	.857	.832	.857	.933

Peggy Malone & Associates
(888) 247-8602

File Name : 7-Hwy 29 and Broadview Ave_Winchester St SAT
Site Code :
Start Date : 8/7/2021
Page No : 2

Groups Printed- Pedestrians

	Hwy 29 Eastbound					Hwy 29 Westbound					Winchester St Northbound					Broadview Ave Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
Grand Total	0	0	0	15	15	0	0	0	19	19	0	0	0	10	10	0	0	0	9	9	53
Apprch %	0	0	0	100		0	0	0	100		0	0	0	100		0	0	0	100		
Total %	0	0	0	28.3	28.3	0	0	0	35.8	35.8	0	0	0	18.9	18.9	0	0	0	17	17	

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Winchester St Northbound					Broadview Ave Southbound					Int. Total
	Left	Thru	Right	App. Total		Left	Thru	Right	App. Total		Left	Thru	Right	App. Total		Left	Thru	Right	App. Total		
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
07:15 AM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
07:30 AM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
07:45 AM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
Total Volume	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
% App. Total	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
PHF	.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Winchester St Northbound					Broadview Ave Southbound					Int. Total
	Left	Thru	Right	App. Total		Left	Thru	Right	App. Total		Left	Thru	Right	App. Total		Left	Thru	Right	App. Total		
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
12:15 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
12:30 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
12:45 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
Total Volume	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
% App. Total	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
PHF	.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000

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File Name : 7-Hwy 29 and Broadview Ave_Winchester St AM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Cars

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Winchester St Northbound					Broadview Ave Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
06:00 AM	12	121	1	1	135	0	65	29	1	95	3	5	3	0	11	9	1	14	0	24	265
06:15 AM	14	151	3	0	168	0	63	18	0	81	3	5	8	0	16	21	4	17	0	42	307
06:30 AM	20	150	1	0	171	4	91	22	0	117	5	6	12	0	23	15	2	23	0	40	351
06:45 AM	18	158	4	0	180	5	87	27	0	119	12	6	12	0	30	26	3	38	0	67	396
Total	64	580	9	1	654	9	306	96	1	412	23	22	35	0	80	71	10	92	0	173	1319
07:00 AM	22	139	4	0	165	2	81	35	1	119	14	13	9	0	36	13	6	33	0	52	372
07:15 AM	39	155	4	0	198	2	98	22	0	122	12	6	9	0	27	36	7	49	0	92	439
07:30 AM	41	165	3	1	210	4	126	25	0	155	9	10	10	0	29	16	11	45	0	72	466
07:45 AM	41	175	4	0	220	10	152	38	1	201	14	19	5	0	38	34	11	64	0	109	568
Total	143	634	15	1	793	18	457	120	2	597	49	48	33	0	130	99	35	191	0	325	1845
08:00 AM	52	171	5	2	230	7	162	26	0	195	11	10	11	0	32	24	24	53	0	101	558
08:15 AM	62	168	4	1	235	3	137	30	2	172	18	10	12	0	40	36	19	34	0	89	536
08:30 AM	56	163	5	2	226	7	126	30	2	165	14	8	11	0	33	27	11	34	0	72	496
08:45 AM	41	178	4	0	223	8	146	41	5	200	19	18	14	0	51	38	19	49	0	106	580
Total	211	680	18	5	914	25	571	127	9	732	62	46	48	0	156	125	73	170	0	368	2170
Grand Total	418	1894	42	7	2361	52	1334	343	12	1741	134	116	116	0	366	295	118	453	0	866	5334
Apprch %	17.7	80.2	1.8	0.3		3	76.6	19.7	0.7		36.6	31.7	31.7	0		34.1	13.6	52.3	0		
Total %	7.8	35.5	0.8	0.1	44.3	1	25	6.4	0.2	32.6	2.5	2.2	2.2	0	6.9	5.5	2.2	8.5	0	16.2	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Winchester St Northbound				Broadview Ave Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	52	171	5	228	7	162	26	195	11	10	11	32	24	24	53	101	556
08:15 AM	62	168	4	234	3	137	30	170	18	10	12	40	36	19	34	89	533
08:30 AM	56	163	5	224	7	126	30	163	14	8	11	33	27	11	34	72	492
08:45 AM	41	178	4	223	8	146	41	195	19	18	14	51	38	19	49	106	575
Total Volume	211	680	18	909	25	571	127	723	62	46	48	156	125	73	170	368	2156
% App. Total	23.2	74.8	2		3.5	79	17.6		39.7	29.5	30.8		34	19.8	46.2		
PHF	.851	.955	.900	.971	.781	.881	.774	.927	.816	.639	.857	.765	.822	.760	.802	.868	.937

Peggy Malone & Associates

(888) 247-8602

File Name : 7-Hwy 29 and Broadview Ave_Winchester St AM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Trucks

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Winchester St Northbound					Broadview Ave Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
06:00 AM	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	0	0	0	0	0	0
06:15 AM	0	2	0	0	2	0	2	1	0	3	0	0	0	0	0	0	0	1	0	1	6
06:30 AM	0	8	0	0	8	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1	10
06:45 AM	2	4	0	0	6	1	5	1	0	7	0	0	0	0	0	0	0	0	0	0	13
Total	2	14	0	0	16	1	9	4	0	14	0	0	0	0	0	0	0	2	0	2	32
07:00 AM	0	1	0	0	1	0	10	1	0	11	0	0	0	0	0	0	0	0	0	0	12
07:15 AM	0	6	0	0	6	0	4	0	0	4	0	0	0	0	0	2	1	1	0	4	14
07:30 AM	2	7	0	0	9	1	7	3	0	11	0	0	0	0	0	1	0	1	0	2	22
07:45 AM	2	12	0	0	14	0	7	1	0	8	1	1	0	0	2	0	0	1	0	1	25
Total	4	26	0	0	30	1	28	5	0	34	1	1	0	0	2	3	1	3	0	7	73
08:00 AM	3	11	0	0	14	0	4	0	0	4	1	0	0	0	1	0	0	0	0	0	19
08:15 AM	2	9	1	0	12	0	9	1	0	10	0	0	0	0	0	3	0	0	0	3	25
08:30 AM	2	9	0	0	11	0	7	6	0	13	0	0	0	0	0	0	0	2	0	2	26
08:45 AM	3	9	0	0	12	0	10	1	0	11	0	0	0	0	0	2	0	2	0	4	27
Total	10	38	1	0	49	0	30	8	0	38	1	0	0	0	1	5	0	4	0	9	97
Grand Total	16	78	1	0	95	2	67	17	0	86	2	1	0	0	3	8	1	9	0	18	202
Apprch %	16.8	82.1	1.1	0		2.3	77.9	19.8	0		66.7	33.3	0	0		44.4	5.6	50	0		
Total %	7.9	38.6	0.5	0	47	1	33.2	8.4	0	42.6	1	0.5	0	0	1.5	4	0.5	4.5	0	8.9	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Winchester St Northbound				Broadview Ave Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	3	11	0	14	0	4	0	4	1	0	0	1	0	0	0	0	19
08:15 AM	2	9	1	12	0	9	1	10	0	0	0	0	3	0	0	3	25
08:30 AM	2	9	0	11	0	7	6	13	0	0	0	0	0	0	2	2	26
08:45 AM	3	9	0	12	0	10	1	11	0	0	0	0	2	0	2	4	27
Total Volume	10	38	1	49	0	30	8	38	1	0	0	1	5	0	4	9	97
% App. Total	20.4	77.6	2		0	78.9	21.1		100	0	0		55.6	0	44.4		
PHF	.833	.864	.250	.875	.000	.750	.333	.731	.250	.000	.000	.250	.417	.000	.500	.563	.898

Peggy Malone & Associates

(888) 247-8602

File Name : 7-Hwy 29 and Broadview Ave_Winchester St AM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Cars - Trucks

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Winchester St Northbound					Broadview Ave Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
06:00 AM	12	121	1	1	135	0	67	30	1	98	3	5	3	0	11	9	1	14	0	24	268
06:15 AM	14	153	3	0	170	0	65	19	0	84	3	5	8	0	16	21	4	18	0	43	313
06:30 AM	20	158	1	0	179	4	91	23	0	118	5	6	12	0	23	15	2	24	0	41	361
06:45 AM	20	162	4	0	186	6	92	28	0	126	12	6	12	0	30	26	3	38	0	67	409
Total	66	594	9	1	670	10	315	100	1	426	23	22	35	0	80	71	10	94	0	175	1351
07:00 AM	22	140	4	0	166	2	91	36	1	130	14	13	9	0	36	13	6	33	0	52	384
07:15 AM	39	161	4	0	204	2	102	22	0	126	12	6	9	0	27	38	8	50	0	96	453
07:30 AM	43	172	3	1	219	5	133	28	0	166	9	10	10	0	29	17	11	46	0	74	488
07:45 AM	43	187	4	0	234	10	159	39	1	209	15	20	5	0	40	34	11	65	0	110	593
Total	147	660	15	1	823	19	485	125	2	631	50	49	33	0	132	102	36	194	0	332	1918
08:00 AM	55	182	5	2	244	7	166	26	0	199	12	10	11	0	33	24	24	53	0	101	577
08:15 AM	64	177	5	1	247	3	146	31	2	182	18	10	12	0	40	39	19	34	0	92	561
08:30 AM	58	172	5	2	237	7	133	36	2	178	14	8	11	0	33	27	11	36	0	74	522
08:45 AM	44	187	4	0	235	8	156	42	5	211	19	18	14	0	51	40	19	51	0	110	607
Total	221	718	19	5	963	25	601	135	9	770	63	46	48	0	157	130	73	174	0	377	2267
Grand Total	434	1972	43	7	2456	54	1401	360	12	1827	136	117	116	0	369	303	119	462	0	884	5536
Apprch %	17.7	80.3	1.8	0.3		3	76.7	19.7	0.7		36.9	31.7	31.4	0		34.3	13.5	52.3	0		
Total %	7.8	35.6	0.8	0.1	44.4	1	25.3	6.5	0.2	33	2.5	2.1	2.1	0	6.7	5.5	2.1	8.3	0	16	
Cars	418	1894	42	7	2361	52	1334	343	12	1741	134	116	116	0	366	295	118	453	0	866	5334
% Cars	96.3	96	97.7	100	96.1	96.3	95.2	95.3	100	95.3	98.5	99.1	100	0	99.2	97.4	99.2	98.1	0	98	96.4
Trucks	16	78	1	0	95	2	67	17	0	86	2	1	0	0	3	8	1	9	0	18	202
% Trucks	3.7	4	2.3	0	3.9	3.7	4.8	4.7	0	4.7	1.5	0.9	0	0	0.8	2.6	0.8	1.9	0	2	3.6

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Winchester St Northbound				Broadview Ave Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	55	182	5	242	7	166	26	199	12	10	11	33	24	24	53	101	575
08:15 AM	64	177	5	246	3	146	31	180	18	10	12	40	39	19	34	92	558
08:30 AM	58	172	5	235	7	133	36	176	14	8	11	33	27	11	36	74	518
08:45 AM	44	187	4	235	8	156	42	206	19	18	14	51	40	19	51	110	602
Total Volume	221	718	19	958	25	601	135	761	63	46	48	157	130	73	174	377	2253
% App. Total	23.1	74.9	2		3.3	79	17.7		40.1	29.3	30.6		34.5	19.4	46.2		
PHF	.863	.960	.950	.974	.781	.905	.804	.924	.829	.639	.857	.770	.813	.760	.821	.857	.936

Peggy Malone & Associates

(888) 247-8602

File Name : 7-Hwy 29 and Broadview Ave_Winchester St AM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Pedestrians

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Winchester St Northbound					Broadview Ave Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
06:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
Total	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	2
07:15 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	2	2	4
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	1	0	0	0	0	0	0	0	0	4	4	0	0	0	2	2	7
08:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	2
08:45 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	2	2	0	0	0	2	2	0	0	0	0	0	0	0	0	1	1	5
Grand Total	0	0	0	5	5	0	0	0	2	2	0	0	0	4	4	0	0	0	4	4	15
Apprch %	0	0	0	100		0	0	0	100		0	0	0	100		0	0	0	100		
Total %	0	0	0	33.3	33.3	0	0	0	13.3	13.3	0	0	0	26.7	26.7	0	0	0	26.7	26.7	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Winchester St Northbound				Broadview Ave Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 06:00 AM																	
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Peggy Malone & Associates

(888) 247-8602

File Name : 7-Hwy 29 and Broadview Ave_Winchester St PM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Cars

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Winchester St Northbound					Broadview Ave Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
02:00 PM	51	186	8	0	245	14	221	22	4	261	19	17	13	0	49	40	13	63	0	116	671
02:15 PM	49	152	6	3	210	13	200	23	1	237	17	27	17	0	61	35	13	74	0	122	630
02:30 PM	74	181	7	1	263	16	176	19	4	215	14	17	22	0	53	47	13	65	0	125	656
02:45 PM	52	158	10	3	223	13	237	25	1	276	23	20	11	0	54	53	19	74	0	146	699
Total	226	677	31	7	941	56	834	89	10	989	73	81	63	0	217	175	58	276	0	509	2656
03:00 PM	69	188	15	2	274	14	211	24	1	250	31	25	17	0	73	59	19	52	0	130	727
03:15 PM	57	164	9	1	231	9	250	16	2	277	20	21	16	0	57	50	23	68	0	141	706
03:30 PM	62	171	14	4	251	12	228	20	0	260	24	26	23	0	73	60	15	63	0	138	722
03:45 PM	51	177	9	2	239	20	247	21	2	290	26	24	18	0	68	48	19	90	0	157	754
Total	239	700	47	9	995	55	936	81	5	1077	101	96	74	0	271	217	76	273	0	566	2909
04:00 PM	71	187	12	0	270	14	245	15	3	277	32	24	21	0	77	65	12	75	0	152	776
04:15 PM	60	197	10	4	271	11	246	21	6	284	28	22	20	0	70	38	16	94	0	148	773
04:30 PM	75	162	6	0	243	8	264	31	0	303	19	21	13	0	53	36	12	84	1	133	732
04:45 PM	44	172	8	1	225	13	270	23	4	310	32	34	15	0	81	41	13	90	0	144	760
Total	250	718	36	5	1009	46	1025	90	13	1174	111	101	69	0	281	180	53	343	1	577	3041
05:00 PM	63	192	8	2	265	9	202	41	7	259	21	32	22	0	75	45	13	106	0	164	763
05:15 PM	67	161	5	2	235	9	283	29	0	321	28	30	22	0	80	45	15	76	0	136	772
05:30 PM	63	128	4	0	195	8	240	22	2	272	26	21	18	0	65	59	26	105	0	190	722
05:45 PM	62	159	8	0	229	15	253	29	1	298	30	20	13	0	63	42	20	82	0	144	734
Total	255	640	25	4	924	41	978	121	10	1150	105	103	75	0	283	191	74	369	0	634	2991
06:00 PM	52	179	9	0	240	12	214	19	5	250	23	30	16	0	69	46	12	74	0	132	691
06:15 PM	50	161	11	1	223	16	237	22	4	279	23	15	12	0	50	33	17	51	0	101	653
06:30 PM	52	159	5	1	217	11	222	19	6	258	18	32	8	0	58	28	9	50	0	87	620
06:45 PM	37	157	10	0	204	14	191	25	8	238	20	10	20	0	50	22	12	33	0	67	559
Total	191	656	35	2	884	53	864	85	23	1025	84	87	56	0	227	129	50	208	0	387	2523
Grand Total	1161	3391	174	27	4753	251	4637	466	61	5415	474	468	337	0	1279	892	311	1469	1	2673	14120
Apprch %	24.4	71.3	3.7	0.6		4.6	85.6	8.6	1.1		37.1	36.6	26.3	0		33.4	11.6	55	0		
Total %	8.2	24	1.2	0.2	33.7	1.8	32.8	3.3	0.4	38.3	3.4	3.3	2.4	0	9.1	6.3	2.2	10.4	0	18.9	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Winchester St Northbound				Broadview Ave Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	71	187	12	270	14	245	15	274	32	24	21	77	65	12	75	152	773
04:15 PM	60	197	10	267	11	246	21	278	28	22	20	70	38	16	94	148	763
04:30 PM	75	162	6	243	8	264	31	303	19	21	13	53	36	12	84	132	731
04:45 PM	44	172	8	224	13	270	23	306	32	34	15	81	41	13	90	144	755
Total Volume	250	718	36	1004	46	1025	90	1161	111	101	69	281	180	53	343	576	3022
% App. Total	24.9	71.5	3.6		4	88.3	7.8		39.5	35.9	24.6		31.2	9.2	59.5		
PHF	.833	.911	.750	.930	.821	.949	.726	.949	.867	.743	.821	.867	.692	.828	.912	.947	.977

Peggy Malone & Associates

(888) 247-8602

File Name : 7-Hwy 29 and Broadview Ave_Winchester St PM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Trucks

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Winchester St Northbound					Broadview Ave Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
02:00 PM	1	4	0	0	5	0	7	0	0	7	0	0	1	0	1	1	0	1	0	2	15
02:15 PM	1	3	0	0	4	0	4	0	0	4	0	0	0	0	0	0	0	1	0	1	9
02:30 PM	1	4	0	0	5	0	6	0	0	6	0	0	0	0	0	1	0	1	0	2	13
02:45 PM	1	2	0	0	3	0	2	0	0	2	0	0	0	0	0	2	0	1	0	3	8
Total	4	13	0	0	17	0	19	0	0	19	0	0	1	0	1	4	0	4	0	8	45
03:00 PM	2	4	1	0	7	0	7	0	0	7	0	0	0	0	0	0	0	2	0	2	16
03:15 PM	1	3	0	0	4	0	9	0	0	9	0	0	0	0	0	0	0	2	0	2	15
03:30 PM	3	6	0	0	9	0	7	1	0	8	0	0	0	0	0	1	0	2	0	3	20
03:45 PM	0	5	0	0	5	0	2	1	0	3	0	0	0	0	0	0	0	3	0	3	11
Total	6	18	1	0	25	0	25	2	0	27	0	0	0	0	0	1	0	9	0	10	62
04:00 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	1	0	1	0	2	6
04:15 PM	2	2	0	0	4	0	2	0	0	2	0	0	0	0	0	0	0	4	0	4	10
04:30 PM	0	1	1	0	2	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	6
04:45 PM	0	2	0	0	2	0	3	0	0	3	0	0	0	0	0	2	0	2	0	4	9
Total	2	5	1	0	8	0	13	0	0	13	0	0	0	0	0	3	0	7	0	10	31
05:00 PM	1	5	0	0	6	0	3	2	0	5	0	0	0	0	0	1	1	2	0	4	15
05:15 PM	2	4	0	0	6	0	4	0	0	4	0	0	0	0	0	1	0	2	0	3	13
05:30 PM	0	3	0	0	3	0	8	1	0	9	1	0	0	0	1	0	0	0	0	0	13
05:45 PM	1	1	1	0	3	0	3	0	0	3	0	0	0	0	0	1	0	0	0	1	7
Total	4	13	1	0	18	0	18	3	0	21	1	0	0	0	1	3	1	4	0	8	48
06:00 PM	0	2	0	0	2	1	9	1	0	11	0	0	0	0	0	0	0	1	0	1	14
06:15 PM	0	3	0	0	3	0	1	0	0	1	1	0	0	0	1	1	0	0	0	1	6
06:30 PM	0	3	0	0	3	0	4	0	0	4	0	0	0	0	0	0	0	1	0	1	8
06:45 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	5
Total	0	8	0	0	8	1	19	1	0	21	1	0	0	0	1	1	0	2	0	3	33
Grand Total	16	57	3	0	76	1	94	6	0	101	2	0	1	0	3	12	1	26	0	39	219
Apprch %	21.1	75	3.9	0		1	93.1	5.9	0		66.7	0	33.3	0		30.8	2.6	66.7	0		
Total %	7.3	26	1.4	0	34.7	0.5	42.9	2.7	0	46.1	0.9	0	0.5	0	1.4	5.5	0.5	11.9	0	17.8	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Winchester St Northbound				Broadview Ave Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	2	4	1	7	0	7	0	7	0	0	0	0	0	0	2	2	16
03:15 PM	1	3	0	4	0	9	0	9	0	0	0	0	0	0	2	2	15
03:30 PM	3	6	0	9	0	7	1	8	0	0	0	0	1	0	2	3	20
03:45 PM	0	5	0	5	0	2	1	3	0	0	0	0	0	0	3	3	11
Total Volume	6	18	1	25	0	25	2	27	0	0	0	0	1	0	9	10	62
% App. Total	24	72	4		0	92.6	7.4		0	0	0		10	0	90		
PHF	.500	.750	.250	.694	.000	.694	.500	.750	.000	.000	.000	.000	.250	.000	.750	.833	.775

Peggy Malone & Associates

(888) 247-8602

File Name : 7-Hwy 29 and Broadview Ave_Winchester St PM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Pedestrians

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Winchester St Northbound					Broadview Ave Southbound					Int. Total	
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total		
02:00 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	2	3
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	2	2	4
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	2
04:00 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	2	2	0	0	0	1	1	0	0	0	0	0	0	3
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	1	1	0	0	0	3	3	0	0	0	1	1	0	0	0	0	0	0	5
05:00 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	2	2	0	0	0	1	1	0	0	0	0	0	0	3
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	
06:30 PM	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	2
06:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	1	1	4	
Grand Total	0	0	0	2	2	0	0	0	9	9	0	0	0	4	4	0	0	0	3	3	18	
Apprch %	0	0	0	100		0	0	0	100		0	0	0	100		0	0	0	100			
Total %	0	0	0	11.1	11.1	0	0	0	50	50	0	0	0	22.2	22.2	0	0	0	16.7	16.7		

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Winchester St Northbound				Broadview Ave Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:00 PM																	
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Peggy Malone & Associates

(888) 247-8602

File Name : 8-Hwy 29 and Branch Dr SAT
 Site Code :
 Start Date : 8/7/2021
 Page No : 2

Groups Printed- Cars

	Hwy 29 Eastbound					Hwy 29 Westbound					Branch Dr Northbound					Branch Dr Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
Grand Total	1093	8247	52	110	9502	672	8649	745	60	10126	175	172	635	0	982	1004	171	1018	0	2193	22803
Apprch %	11.5	86.8	0.5	1.2		6.6	85.4	7.4	0.6		17.8	17.5	64.7	0		45.8	7.8	46.4	0		
Total %	4.8	36.2	0.2	0.5	41.7	2.9	37.9	3.3	0.3	44.4	0.8	0.8	2.8	0	4.3	4.4	0.7	4.5	0	9.6	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Branch Dr Northbound				Branch Dr Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:00 AM																	
11:00 AM	28	212	0	240	17	218	23	258	5	8	20	33	23	2	26	51	582
11:15 AM	28	191	0	219	18	199	16	233	4	5	16	25	29	4	30	63	540
11:30 AM	31	212	0	243	22	225	19	266	2	3	17	22	24	3	32	59	590
11:45 AM	31	186	1	218	30	226	17	273	9	2	18	29	28	3	42	73	593
Total Volume	118	801	1	920	87	868	75	1030	20	18	71	109	104	12	130	246	2305
% App. Total	12.8	87.1	0.1		8.4	84.3	7.3		18.3	16.5	65.1		42.3	4.9	52.8		
PHF	.952	.945	.250	.947	.725	.960	.815	.943	.556	.563	.888	.826	.897	.750	.774	.842	.972

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Branch Dr Northbound				Branch Dr Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	34	199	2	235	20	234	26	280	8	5	22	35	30	2	29	61	611
12:15 PM	39	213	2	254	22	224	22	268	5	5	17	27	29	4	33	66	615
12:30 PM	39	199	1	239	16	227	38	281	1	2	22	25	30	7	27	64	609
12:45 PM	32	203	1	236	27	209	21	257	8	6	18	32	32	6	30	68	593
Total Volume	144	814	6	964	85	894	107	1086	22	18	79	119	121	19	119	259	2428
% App. Total	14.9	84.4	0.6		7.8	82.3	9.9		18.5	15.1	66.4		46.7	7.3	45.9		
PHF	.923	.955	.750	.949	.787	.955	.704	.966	.688	.750	.898	.850	.945	.679	.902	.952	.987

Peggy Malone & Associates

(888) 247-8602

File Name : 8-Hwy 29 and Branch Dr SAT
 Site Code :
 Start Date : 8/7/2021
 Page No : 2

Groups Printed- Trucks

	Hwy 29 Eastbound					Hwy 29 Westbound					Branch Dr Northbound					Branch Dr Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
Grand Total	5	127	1	0	133	2	126	4	1	133	0	0	3	0	3	3	0	6	0	9	278
Apprch %	3.8	95.5	0.8	0		1.5	94.7	3	0.8		0	0	100	0		33.3	0	66.7	0		
Total %	1.8	45.7	0.4	0	47.8	0.7	45.3	1.4	0.4	47.8	0	0	1.1	0	1.1	1.1	0	2.2	0	3.2	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Branch Dr Northbound				Branch Dr Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:45 AM																	
08:45 AM	0	4	0	4	0	6	0	6	0	0	0	0	0	0	0	0	10
09:00 AM	0	6	0	6	0	4	0	4	0	0	0	0	0	0	0	0	10
09:15 AM	1	4	0	5	0	1	0	1	0	0	0	0	0	0	0	0	6
09:30 AM	0	7	0	7	0	3	0	3	0	0	0	0	0	0	0	0	10
Total Volume	1	21	0	22	0	14	0	14	0	0	0	0	0	0	0	0	36
% App. Total	4.5	95.5	0		0	100	0		0	0	0		0	0	0		
PHF	.250	.750	.000	.786	.000	.583	.000	.583	.000	.000	.000	.000	.000	.000	.000	.000	.900

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Branch Dr Northbound				Branch Dr Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:30 PM																	
02:30 PM	0	1	0	1	0	11	0	11	0	0	0	0	0	0	0	0	12
02:45 PM	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	0	4
03:00 PM	0	4	0	4	0	1	0	1	0	0	0	0	0	0	0	0	5
03:15 PM	0	6	0	6	0	5	0	5	0	0	1	1	1	0	0	1	13
Total Volume	0	11	0	11	0	21	0	21	0	0	1	1	1	0	0	1	34
% App. Total	0	100	0		0	100	0		0	0	100		100	0	0		
PHF	.000	.458	.000	.458	.000	.477	.000	.477	.000	.000	.250	.250	.250	.000	.000	.250	.654

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File Name : 8-Hwy 29 and Branch Dr SAT
 Site Code :
 Start Date : 8/7/2021
 Page No : 2

Groups Printed- Cars - Trucks

	Hwy 29 Eastbound					Hwy 29 Westbound					Branch Dr Northbound					Branch Dr Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
Grand Total	1098	8374	53	110	9635	674	8775	749	61	10259	175	172	638	0	985	1007	171	1024	0	2202	23081
Apprch %	11.4	86.9	0.6	1.1		6.6	85.5	7.3	0.6		17.8	17.5	64.8	0		45.7	7.8	46.5	0		
Total %	4.8	36.3	0.2	0.5	41.7	2.9	38	3.2	0.3	44.4	0.8	0.7	2.8	0	4.3	4.4	0.7	4.4	0	9.5	
Cars	1093	8247	52	110	9502	672	8649	745	60	10126	175	172	635	0	982	1004	171	1018	0	2193	22803
% Cars	99.5	98.5	98.1	100	98.6	99.7	98.6	99.5	98.4	98.7	100	100	99.5	0	99.7	99.7	100	99.4	0	99.6	98.8
Trucks	5	127	1	0	133	2	126	4	1	133	0	0	3	0	3	3	0	6	0	9	278
% Trucks	0.5	1.5	1.9	0	1.4	0.3	1.4	0.5	1.6	1.3	0	0	0.5	0	0.3	0.3	0	0.6	0	0.4	1.2

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Branch Dr Northbound				Branch Dr Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:00 AM																	
11:00 AM	28	214	0	242	17	220	24	261	5	8	21	34	23	2	26	51	588
11:15 AM	28	194	0	222	18	204	16	238	4	5	17	26	29	4	30	63	549
11:30 AM	31	214	0	245	22	230	19	271	2	3	17	22	24	3	32	59	597
11:45 AM	31	188	1	220	30	230	17	277	9	2	18	29	28	3	42	73	599
Total Volume	118	810	1	929	87	884	76	1047	20	18	73	111	104	12	130	246	2333
% App. Total	12.7	87.2	0.1		8.3	84.4	7.3		18	16.2	65.8		42.3	4.9	52.8		
PHF	.952	.946	.250	.948	.725	.961	.792	.945	.556	.563	.869	.816	.897	.750	.774	.842	.974

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Branch Dr Northbound				Branch Dr Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	34	205	2	241	20	237	26	283	8	5	22	35	30	2	30	62	621
12:15 PM	39	217	2	258	22	226	22	270	5	5	17	27	29	4	33	66	621
12:30 PM	39	201	1	241	17	230	38	285	1	2	22	25	30	7	27	64	615
12:45 PM	32	205	1	238	27	210	21	258	8	6	18	32	32	6	31	69	597
Total Volume	144	828	6	978	86	903	107	1096	22	18	79	119	121	19	121	261	2454
% App. Total	14.7	84.7	0.6		7.8	82.4	9.8		18.5	15.1	66.4		46.4	7.3	46.4		
PHF	.923	.954	.750	.948	.796	.953	.704	.961	.688	.750	.898	.850	.945	.679	.917	.946	.988

Peggy Malone & Associates
(888) 247-8602

File Name : 8-Hwy 29 and Branch Dr SAT
Site Code :
Start Date : 8/7/2021
Page No : 2

Groups Printed- Pedestrians

	Hwy 29 Eastbound					Hwy 29 Westbound					Branch Dr Northbound					Branch Dr Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
Grand Total	0	0	0	4	4	0	0	0	11	11	0	0	0	8	8	0	0	0	12	12	35
Apprch %	0	0	0	100		0	0	0	100		0	0	0	100		0	0	0	100		
Total %	0	0	0	11.4	11.4	0	0	0	31.4	31.4	0	0	0	22.9	22.9	0	0	0	34.3	34.3	

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Branch Dr Northbound					Branch Dr Southbound					Int. Total
	Left	Thru	Right	App. Total		Left	Thru	Right	App. Total		Left	Thru	Right	App. Total		Left	Thru	Right	App. Total		
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
07:15 AM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
07:30 AM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
07:45 AM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
Total Volume	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
% App. Total	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
PHF	.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Branch Dr Northbound					Branch Dr Southbound					Int. Total
	Left	Thru	Right	App. Total		Left	Thru	Right	App. Total		Left	Thru	Right	App. Total		Left	Thru	Right	App. Total		
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
12:15 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
12:30 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
12:45 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
Total Volume	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
% App. Total	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
PHF	.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000

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File Name : 8-Hwy 29 and Branch Dr AM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Cars

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Branch Dr Northbound					Branch Dr Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
06:00 AM	1	130	0	1	132	2	88	0	0	90	1	0	1	0	2	1	0	3	0	4	228
06:15 AM	4	163	0	1	168	4	82	4	0	90	1	0	8	0	9	1	1	1	0	3	270
06:30 AM	3	171	1	1	176	5	111	3	0	119	2	1	2	0	5	2	1	3	0	6	306
06:45 AM	5	177	0	2	184	3	117	5	0	125	0	2	2	0	4	5	0	4	0	9	322
Total	13	641	1	5	660	14	398	12	0	424	4	3	13	0	20	9	2	11	0	22	1126
07:00 AM	5	153	0	1	159	12	116	2	0	130	2	0	4	0	6	2	0	4	0	6	301
07:15 AM	6	177	0	2	185	9	123	8	0	140	0	1	5	0	6	4	1	5	0	10	341
07:30 AM	7	191	0	1	199	14	165	6	0	185	3	0	7	0	10	3	1	6	0	10	404
07:45 AM	12	197	0	1	210	9	216	11	0	236	4	2	8	0	14	8	1	7	0	16	476
Total	30	718	0	5	753	44	620	27	0	691	9	3	24	0	36	17	3	22	0	42	1522
08:00 AM	4	168	0	0	172	9	178	5	0	192	1	2	12	0	15	9	1	7	0	17	396
08:15 AM	10	202	2	3	217	16	169	7	0	192	3	2	11	0	16	3	1	10	0	14	439
08:30 AM	10	184	3	2	199	9	163	7	1	180	1	3	8	0	12	5	6	8	0	19	410
08:45 AM	14	198	1	0	213	13	203	12	1	229	4	4	12	0	20	5	5	10	0	20	482
Total	38	752	6	5	801	47	713	31	2	793	9	11	43	0	63	22	13	35	0	70	1727
Grand Total	81	2111	7	15	2214	105	1731	70	2	1908	22	17	80	0	119	48	18	68	0	134	4375
Apprch %	3.7	95.3	0.3	0.7		5.5	90.7	3.7	0.1		18.5	14.3	67.2	0		35.8	13.4	50.7	0		
Total %	1.9	48.3	0.2	0.3	50.6	2.4	39.6	1.6	0	43.6	0.5	0.4	1.8	0	2.7	1.1	0.4	1.6	0	3.1	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Branch Dr Northbound				Branch Dr Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	4	168	0	172	9	178	5	192	1	2	12	15	9	1	7	17	396
08:15 AM	10	202	2	214	16	169	7	192	3	2	11	16	3	1	10	14	436
08:30 AM	10	184	3	197	9	163	7	179	1	3	8	12	5	6	8	19	407
08:45 AM	14	198	1	213	13	203	12	228	4	4	12	20	5	5	10	20	481
Total Volume	38	752	6	796	47	713	31	791	9	11	43	63	22	13	35	70	1720
% App. Total	4.8	94.5	0.8		5.9	90.1	3.9		14.3	17.5	68.3		31.4	18.6	50		
PHF	.679	.931	.500	.930	.734	.878	.646	.867	.563	.688	.896	.788	.611	.542	.875	.875	.894

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(888) 247-8602

File Name : 8-Hwy 29 and Branch Dr AM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Trucks

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Branch Dr Northbound					Branch Dr Southbound					Int. Total	
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total		
06:00 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3
06:15 AM	0	3	0	0	3	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	6
06:30 AM	0	8	0	0	8	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	12
06:45 AM	0	2	0	0	2	0	5	1	0	6	0	0	1	0	1	1	1	0	0	0	1	10
Total	0	13	0	0	13	0	15	1	0	16	0	0	1	0	1	1	0	0	0	1	31	
07:00 AM	0	1	0	0	1	0	8	0	0	8	0	0	0	0	0	0	0	1	0	1	10	
07:15 AM	0	9	0	0	9	1	3	1	0	5	1	0	0	0	1	0	0	0	0	0	15	
07:30 AM	0	7	0	0	7	0	11	0	0	11	0	0	1	0	1	1	0	0	0	1	20	
07:45 AM	0	9	0	0	9	0	7	2	0	9	0	0	0	0	0	1	0	1	0	2	20	
Total	0	26	0	0	26	1	29	3	0	33	1	0	1	0	2	2	0	2	0	4	65	
08:00 AM	0	9	0	0	9	0	5	0	0	5	0	0	3	0	3	0	0	1	0	1	18	
08:15 AM	0	11	0	0	11	0	9	0	0	9	0	0	2	0	2	1	0	0	0	1	23	
08:30 AM	0	7	0	0	7	0	11	0	0	11	0	0	0	0	0	0	0	0	0	0	18	
08:45 AM	1	10	0	0	11	0	9	0	0	9	0	0	0	0	0	1	0	2	0	3	23	
Total	1	37	0	0	38	0	34	0	0	34	0	0	5	0	5	2	0	3	0	5	82	
Grand Total	1	76	0	0	77	1	78	4	0	83	1	0	7	0	8	5	0	5	0	10	178	
Apprch %	1.3	98.7	0	0		1.2	94	4.8	0		12.5	0	87.5	0		50	0	50	0			
Total %	0.6	42.7	0	0	43.3	0.6	43.8	2.2	0	46.6	0.6	0	3.9	0	4.5	2.8	0	2.8	0	5.6		

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Branch Dr Northbound				Branch Dr Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	9	0	9	0	5	0	5	0	0	3	3	0	0	1	1	18
08:15 AM	0	11	0	11	0	9	0	9	0	0	2	2	1	0	0	1	23
08:30 AM	0	7	0	7	0	11	0	11	0	0	0	0	0	0	0	0	18
08:45 AM	1	10	0	11	0	9	0	9	0	0	0	0	1	0	2	3	23
Total Volume	1	37	0	38	0	34	0	34	0	0	5	5	2	0	3	5	82
% App. Total	2.6	97.4	0		0	100	0		0	0	100		40	0	60		
PHF	.250	.841	.000	.864	.000	.773	.000	.773	.000	.000	.417	.417	.500	.000	.375	.417	.891

Peggy Malone & Associates

(888) 247-8602

File Name : 8-Hwy 29 and Branch Dr AM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Cars - Trucks

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Branch Dr Northbound					Branch Dr Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
06:00 AM	1	130	0	1	132	2	91	0	0	93	1	0	1	0	2	1	0	3	0	4	231
06:15 AM	4	166	0	1	171	4	85	4	0	93	1	0	8	0	9	1	1	1	0	3	276
06:30 AM	3	179	1	1	184	5	115	3	0	123	2	1	2	0	5	2	1	3	0	6	318
06:45 AM	5	179	0	2	186	3	122	6	0	131	0	2	3	0	5	6	0	4	0	10	332
Total	13	654	1	5	673	14	413	13	0	440	4	3	14	0	21	10	2	11	0	23	1157
07:00 AM	5	154	0	1	160	12	124	2	0	138	2	0	4	0	6	2	0	5	0	7	311
07:15 AM	6	186	0	2	194	10	126	9	0	145	1	1	5	0	7	4	1	5	0	10	356
07:30 AM	7	198	0	1	206	14	176	6	0	196	3	0	8	0	11	4	1	6	0	11	424
07:45 AM	12	206	0	1	219	9	223	13	0	245	4	2	8	0	14	9	1	8	0	18	496
Total	30	744	0	5	779	45	649	30	0	724	10	3	25	0	38	19	3	24	0	46	1587
08:00 AM	4	177	0	0	181	9	183	5	0	197	1	2	15	0	18	9	1	8	0	18	414
08:15 AM	10	213	2	3	228	16	178	7	0	201	3	2	13	0	18	4	1	10	0	15	462
08:30 AM	10	191	3	2	206	9	174	7	1	191	1	3	8	0	12	5	6	8	0	19	428
08:45 AM	15	208	1	0	224	13	212	12	1	238	4	4	12	0	20	6	5	12	0	23	505
Total	39	789	6	5	839	47	747	31	2	827	9	11	48	0	68	24	13	38	0	75	1809
Grand Total	82	2187	7	15	2291	106	1809	74	2	1991	23	17	87	0	127	53	18	73	0	144	4553
Apprch %	3.6	95.5	0.3	0.7		5.3	90.9	3.7	0.1		18.1	13.4	68.5	0		36.8	12.5	50.7	0		
Total %	1.8	48	0.2	0.3	50.3	2.3	39.7	1.6	0	43.7	0.5	0.4	1.9	0	2.8	1.2	0.4	1.6	0	3.2	
Cars	81	2111	7	15	2214	105	1731	70	2	1908	22	17	80	0	119	48	18	68	0	134	4375
% Cars	98.8	96.5	100	100	96.6	99.1	95.7	94.6	100	95.8	95.7	100	92	0	93.7	90.6	100	93.2	0	93.1	96.1
Trucks	1	76	0	0	77	1	78	4	0	83	1	0	7	0	8	5	0	5	0	10	178
% Trucks	1.2	3.5	0	0	3.4	0.9	4.3	5.4	0	4.2	4.3	0	8	0	6.3	9.4	0	6.8	0	6.9	3.9

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Branch Dr Northbound				Branch Dr Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	4	177	0	181	9	183	5	197	1	2	15	18	9	1	8	18	414
08:15 AM	10	213	2	225	16	178	7	201	3	2	13	18	4	1	10	15	459
08:30 AM	10	191	3	204	9	174	7	190	1	3	8	12	5	6	8	19	425
08:45 AM	15	208	1	224	13	212	12	237	4	4	12	20	6	5	12	23	504
Total Volume	39	789	6	834	47	747	31	825	9	11	48	68	24	13	38	75	1802
% App. Total	4.7	94.6	0.7		5.7	90.5	3.8		13.2	16.2	70.6		32	17.3	50.7		
PHF	.650	.926	.500	.927	.734	.881	.646	.870	.563	.688	.800	.850	.667	.542	.792	.815	.894

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(888) 247-8602

File Name : 8-Hwy 29 and Branch Dr AM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Pedestrians

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Branch Dr Northbound					Branch Dr Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00 AM	0	0	0	0	0	0	0	0	1	1	0	0	0	2	2	0	0	0	0	0	3
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	3	3	5
07:45 AM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	2	2	0	0	0	4	4	0	0	0	4	4	10
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	2
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	2
Grand Total	0	0	0	0	0	0	0	0	2	2	0	0	0	5	5	0	0	0	5	5	12
Apprch %	0	0	0	0		0	0	0	100		0	0	0	100		0	0	0	100		
Total %	0	0	0	0		0	0	0	16.7	16.7	0	0	0	41.7	41.7	0	0	0	41.7	41.7	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Branch Dr Northbound				Branch Dr Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 06:00 AM																	
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
06:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
06:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	

Peggy Malone & Associates

(888) 247-8602

File Name : 8-Hwy 29 and Branch Dr PM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Trucks

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Branch Dr Northbound					Branch Dr Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
02:00 PM	0	6	0	0	6	0	10	0	0	10	0	0	0	0	0	2	0	0	0	2	18
02:15 PM	0	3	0	0	3	0	4	0	0	4	0	0	0	0	0	1	0	0	0	1	8
02:30 PM	0	6	0	0	6	0	4	0	0	4	0	0	0	0	0	0	0	2	0	2	12
02:45 PM	0	5	0	0	5	0	2	0	0	2	0	0	0	0	0	2	0	0	0	2	9
Total	0	20	0	0	20	0	20	0	0	20	0	0	0	0	0	5	0	2	0	7	47
03:00 PM	0	3	0	0	3	0	12	0	0	12	0	0	0	0	0	0	0	0	0	0	15
03:15 PM	0	3	0	0	3	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	7
03:30 PM	0	6	0	0	6	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	13
03:45 PM	0	5	0	0	5	0	3	1	0	4	0	0	0	0	0	0	0	0	0	0	9
Total	0	17	0	0	17	0	26	1	0	27	0	0	0	0	0	0	0	0	0	0	44
04:00 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
04:15 PM	0	2	0	0	2	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	5
04:30 PM	0	4	0	0	4	0	3	0	0	3	0	0	0	0	0	1	0	0	0	1	8
04:45 PM	0	2	0	0	2	0	4	0	0	4	0	0	1	0	1	0	0	0	0	0	7
Total	0	9	0	0	9	0	11	0	0	11	0	0	1	0	1	1	0	0	0	1	22
05:00 PM	0	7	0	0	7	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	12
05:15 PM	2	3	0	0	5	0	4	0	0	4	0	0	0	0	0	0	0	1	0	1	10
05:30 PM	0	3	0	0	3	0	4	0	0	4	0	0	0	0	0	0	0	1	0	1	8
05:45 PM	0	3	0	0	3	0	4	0	0	4	0	0	0	0	0	0	0	1	0	1	8
Total	2	16	0	0	18	0	17	0	0	17	0	0	0	0	0	0	0	3	0	3	38
06:00 PM	0	2	0	0	2	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	9
06:15 PM	0	5	0	0	5	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	7
06:30 PM	0	3	0	0	3	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	9
06:45 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3
Total	0	10	0	0	10	0	18	0	0	18	0	0	0	0	0	0	0	0	0	0	28
Grand Total	2	72	0	0	74	0	92	1	0	93	0	0	1	0	1	6	0	5	0	11	179
Apprch %	2.7	97.3	0	0		0	98.9	1.1	0		0	0	100	0		54.5	0	45.5	0		
Total %	1.1	40.2	0	0	41.3	0	51.4	0.6	0	52	0	0	0.6	0	0.6	3.4	0	2.8	0	6.1	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Branch Dr Northbound				Branch Dr Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:00 PM																	
02:00 PM	0	6	0	6	0	10	0	10	0	0	0	0	2	0	0	2	18
02:15 PM	0	3	0	3	0	4	0	4	0	0	0	0	1	0	0	1	8
02:30 PM	0	6	0	6	0	4	0	4	0	0	0	0	0	0	2	2	12
02:45 PM	0	5	0	5	0	2	0	2	0	0	0	0	2	0	0	2	9
Total Volume	0	20	0	20	0	20	0	20	0	0	0	0	5	0	2	7	47
% App. Total	0	100	0	100	0	100	0	100	0	0	0	0	71.4	0	28.6	100	
PHF	.000	.833	.000	.833	.000	.500	.000	.500	.000	.000	.000	.000	.625	.000	.250	.875	.653

Peggy Malone & Associates

(888) 247-8602

File Name : 8-Hwy 29 and Branch Dr PM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Pedestrians

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Branch Dr Northbound					Branch Dr Southbound					Int. Total	
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total		
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	2	
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	4	4	5	
Apprch %	0	0	0	0		0	0	0	0		0	0	0	100		0	0	0	100			
Total %	0	0	0	0		0	0	0	0		0	0	0	20	20	0	0	0	80	80		

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Branch Dr Northbound				Branch Dr Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:00 PM																	
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Peggy Malone & Associates

(888) 247-8602

File Name : 9-Hwy 29 and Safeway Warrenton Village Ctr SAT
 Site Code :
 Start Date : 8/7/2021
 Page No : 2

Groups Printed- Cars

	Hwy 29 Eastbound					Hwy 29 Westbound					BP Driveway Northbound					Safeway Warrenton Village Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
Grand Total	416	9356	9	146	9927	36	9734	180	22	9972	14	5	109	1	129	155	5	516	0	676	20704
Apprch %	4.2	94.2	0.1	1.5		0.4	97.6	1.8	0.2		10.9	3.9	84.5	0.8		22.9	0.7	76.3	0		
Total %	2	45.2	0	0.7	47.9	0.2	47	0.9	0.1	48.2	0.1	0	0.5	0	0.6	0.7	0	2.5	0	3.3	

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					BP Driveway Northbound					Safeway Warrenton Village Southbound					Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total					
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:00 AM																					
11:00 AM	7	252	1	260	0	270	8	278	0	0	3	3	2	0	17	19	560				
11:15 AM	12	228	1	241	2	212	3	217	0	0	3	3	6	0	19	25	486				
11:30 AM	7	244	0	251	1	258	6	265	0	0	3	3	5	0	14	19	538				
11:45 AM	18	215	0	233	0	276	11	287	0	0	3	3	4	2	13	19	542				
Total Volume	44	939	2	985	3	1016	28	1047	0	0	12	12	17	2	63	82	2126				
% App. Total	4.5	95.3	0.2		0.3	97	2.7		0	0	100		20.7	2.4	76.8						
PHF	.611	.932	.500	.947	.375	.920	.636	.912	.000	.000	1.00	1.00	.708	.250	.829	.820	.949				

Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total				
12:00 PM	11	240	0	251	2	253	7	262	0	0	5	5	3	1	15	19	537				
12:15 PM	10	233	0	243	1	254	1	256	0	0	3	3	6	0	7	13	515				
12:30 PM	13	241	0	254	1	276	4	281	0	0	1	1	1	0	14	15	551				
12:45 PM	19	232	1	252	1	241	8	250	0	0	3	3	5	0	9	14	519				
Total Volume	53	946	1	1000	5	1024	20	1049	0	0	12	12	15	1	45	61	2122				
% App. Total	5.3	94.6	0.1		0.5	97.6	1.9		0	0	100		24.6	1.6	73.8						
PHF	.697	.981	.250	.984	.625	.928	.625	.933	.000	.000	.600	.600	.625	.250	.750	.803	.963				

Peggy Malone & Associates

(888) 247-8602

File Name : 9-Hwy 29 and Safeway Warrenton Village Ctr SAT
 Site Code :
 Start Date : 8/7/2021
 Page No : 2

Groups Printed- Cars - Trucks

	Hwy 29 Eastbound					Hwy 29 Westbound					BP Driveway Northbound					Safeway Warrenton Village Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
Grand Total	418	9479	9	146	10052	37	9873	182	22	10114	14	5	113	1	133	155	5	517	0	677	20976
Apprch %	4.2	94.3	0.1	1.5		0.4	97.6	1.8	0.2		10.5	3.8	85	0.8		22.9	0.7	76.4	0		
Total %	2	45.2	0	0.7	47.9	0.2	47.1	0.9	0.1	48.2	0.1	0	0.5	0	0.6	0.7	0	2.5	0	3.2	
Cars	416	9356	9	146	9927	36	9734	180	22	9972	14	5	109	1	129	155	5	516	0	676	20704
% Cars	99.5	98.7	100	100	98.8	97.3	98.6	98.9	100	98.6	100	100	96.5	100	97	100	100	99.8	0	99.9	98.7
Trucks	2	123	0	0	125	1	139	2	0	142	0	0	4	0	4	0	0	1	0	1	272
% Trucks	0.5	1.3	0	0	1.2	2.7	1.4	1.1	0	1.4	0	0	3.5	0	3	0	0	0.2	0	0.1	1.3

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				BP Driveway Northbound				Safeway Warrenton Village Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:00 AM																	
11:00 AM	7	255	1	263	0	273	8	281	0	0	3	3	2	0	17	19	566
11:15 AM	12	232	1	245	2	217	3	222	0	0	3	3	6	0	19	25	495
11:30 AM	7	245	0	252	1	263	6	270	0	0	3	3	5	0	14	19	544
11:45 AM	18	219	0	237	0	279	11	290	0	0	3	3	4	2	13	19	549
Total Volume	44	951	2	997	3	1032	28	1063	0	0	12	12	17	2	63	82	2154
% App. Total	4.4	95.4	0.2		0.3	97.1	2.6		0	0	100		20.7	2.4	76.8		
PHF	.611	.932	.500	.948	.375	.925	.636	.916	.000	.000	1.00	1.00	.708	.250	.829	.820	.951

Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	11	245	0	256	2	257	7	266	0	0	5	5	3	1	15	19	546
12:15 PM	10	237	0	247	1	257	1	259	0	0	3	3	6	0	7	13	522
12:30 PM	13	244	0	257	1	280	4	285	0	0	1	1	1	0	14	15	558
12:45 PM	19	234	1	254	1	242	8	251	0	0	3	3	5	0	9	14	522
Total Volume	53	960	1	1014	5	1036	20	1061	0	0	12	12	15	1	45	61	2148
% App. Total	5.2	94.7	0.1		0.5	97.6	1.9		0	0	100		24.6	1.6	73.8		
PHF	.697	.980	.250	.986	.625	.925	.625	.931	.000	.000	.600	.600	.625	.250	.750	.803	.962

Peggy Malone & Associates
(888) 247-8602

File Name : 9-Hwy 29 and Safeway Warrenton Village Ctr SAT
Site Code :
Start Date : 8/7/2021
Page No : 2

Groups Printed- Pedestrians

	Hwy 29 Eastbound					Hwy 29 Westbound					BP Driveway Northbound					Safeway Warrenton Village Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
Grand Total	0	0	0	4	4	0	0	0	0	0	0	0	0	7	7	0	0	0	13	13	24
Apprch %	0	0	0	100		0	0	0	0		0	0	0	100		0	0	0	100		
Total %	0	0	0	16.7	16.7	0	0	0	0	0	0	0	0	29.2	29.2	0	0	0	54.2	54.2	

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					BP Driveway Northbound					Safeway Warrenton Village Southbound					Int. Total
	Left	Thru	Right	App. Total		Left	Thru	Right	App. Total		Left	Thru	Right	App. Total		Left	Thru	Right	App. Total		
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
07:15 AM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
07:30 AM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
07:45 AM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
Total Volume	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
% App. Total	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
PHF	.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000

Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					BP Driveway Northbound					Safeway Warrenton Village Southbound					Int. Total
	Left	Thru	Right	App. Total		Left	Thru	Right	App. Total		Left	Thru	Right	App. Total		Left	Thru	Right	App. Total		
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
12:15 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
12:30 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
12:45 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
Total Volume	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
% App. Total	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
PHF	.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000

Peggy Malone & Associates

(888) 247-8602

File Name : 9-Hwy 29 and Safeway Warrenton Village Ctr AM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Cars

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					BP Driveway Northbound					Safeway Warrenton Village Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
06:00 AM	3	124	0	2	129	0	90	2	0	92	0	0	0	0	0	6	0	2	0	8	229
06:15 AM	1	165	0	3	169	0	91	0	0	91	0	0	0	0	0	5	0	5	0	10	270
06:30 AM	3	171	0	3	177	1	117	0	0	118	0	0	0	0	0	3	0	5	0	8	303
06:45 AM	3	161	0	5	169	0	132	1	0	133	0	0	3	0	3	2	0	7	0	9	314
Total	10	621	0	13	644	1	430	3	0	434	0	0	3	0	3	16	0	19	0	35	1116
07:00 AM	3	157	0	3	163	1	118	2	0	121	0	0	1	0	1	1	0	9	0	10	295
07:15 AM	5	173	0	8	186	0	142	0	0	142	0	0	1	0	1	8	0	8	0	16	345
07:30 AM	4	193	0	3	200	0	197	0	0	197	0	0	1	0	1	3	0	9	0	12	410
07:45 AM	12	195	0	5	212	1	230	2	3	236	0	0	3	0	3	3	0	7	0	10	461
Total	24	718	0	19	761	2	687	4	3	696	0	0	6	0	6	15	0	33	0	48	1511
08:00 AM	5	175	0	5	185	0	182	4	1	187	0	0	0	0	0	0	0	18	0	18	390
08:15 AM	12	195	0	6	213	0	167	1	1	169	0	0	1	0	1	3	0	14	0	17	400
08:30 AM	6	181	0	4	191	1	170	0	2	173	0	0	4	0	4	3	0	12	0	15	383
08:45 AM	7	207	0	5	219	2	206	3	1	212	0	0	0	0	0	3	0	12	0	15	446
Total	30	758	0	20	808	3	725	8	5	741	0	0	5	0	5	9	0	56	0	65	1619
Grand Total	64	2097	0	52	2213	6	1842	15	8	1871	0	0	14	0	14	40	0	108	0	148	4246
Apprch %	2.9	94.8	0	2.3		0.3	98.5	0.8	0.4		0	0	100	0		27	0	73	0		
Total %	1.5	49.4	0	1.2	52.1	0.1	43.4	0.4	0.2	44.1	0	0	0.3	0	0.3	0.9	0	2.5	0	3.5	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				BP Driveway Northbound				Safeway Warrenton Village Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	4	193	0	197	0	197	0	197	0	0	1	1	3	0	9	12	407
07:45 AM	12	195	0	207	1	230	2	233	0	0	3	3	3	0	7	10	453
08:00 AM	5	175	0	180	0	182	4	186	0	0	0	0	0	0	18	18	384
08:15 AM	12	195	0	207	0	167	1	168	0	0	1	1	3	0	14	17	393
Total Volume	33	758	0	791	1	776	7	784	0	0	5	5	9	0	48	57	1637
% App. Total	4.2	95.8	0		0.1	99	0.9		0	0	100		15.8	0	84.2		
PHF	.688	.972	.000	.955	.250	.843	.438	.841	.000	.000	.417	.417	.750	.000	.667	.792	.903

Peggy Malone & Associates

(888) 247-8602

File Name : 9-Hwy 29 and Safeway Warrenton Village Ctr AM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Trucks

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					BP Driveway Northbound					Safeway Warrenton Village Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
06:00 AM	0	1	0	0	1	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	4
06:15 AM	0	3	0	0	3	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	6
06:30 AM	0	7	0	0	7	0	4	1	0	5	0	0	0	0	0	0	0	0	0	0	12
06:45 AM	1	4	0	0	5	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	12
Total	1	15	0	0	16	0	17	1	0	18	0	0	0	0	0	0	0	0	0	0	34
07:00 AM	0	1	0	0	1	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	8
07:15 AM	0	9	0	0	9	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	13
07:30 AM	0	8	0	0	8	0	12	0	0	12	0	0	0	0	0	0	0	0	0	0	20
07:45 AM	0	8	0	0	8	0	9	1	0	10	0	0	0	0	0	0	0	0	0	0	18
Total	0	26	0	0	26	0	32	1	0	33	0	0	0	0	0	0	0	0	0	0	59
08:00 AM	0	12	0	0	12	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	18
08:15 AM	1	13	0	0	14	0	9	0	0	9	0	0	0	0	0	0	0	0	0	0	23
08:30 AM	0	7	0	0	7	0	13	0	0	13	0	0	0	0	0	0	0	0	0	0	20
08:45 AM	1	10	0	0	11	0	9	0	0	9	0	0	0	0	0	0	0	0	0	0	20
Total	2	42	0	0	44	0	37	0	0	37	0	0	0	0	0	0	0	0	0	0	81
Grand Total	3	83	0	0	86	0	86	2	0	88	0	0	0	0	0	0	0	0	0	0	174
Apprch %	3.5	96.5	0	0		0	97.7	2.3	0		0	0	0	0		0	0	0	0		
Total %	1.7	47.7	0	0	49.4	0	49.4	1.1	0	50.6	0	0	0	0	0	0	0	0	0	0	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				BP Driveway Northbound				Safeway Warrenton Village Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	12	0	12	0	6	0	6	0	0	0	0	0	0	0	0	18
08:15 AM	1	13	0	14	0	9	0	9	0	0	0	0	0	0	0	0	23
08:30 AM	0	7	0	7	0	13	0	13	0	0	0	0	0	0	0	0	20
08:45 AM	1	10	0	11	0	9	0	9	0	0	0	0	0	0	0	0	20
Total Volume	2	42	0	44	0	37	0	37	0	0	0	0	0	0	0	0	81
% App. Total	4.5	95.5	0		0	100	0		0	0	0		0	0	0		
PHF	.500	.808	.000	.786	.000	.712	.000	.712	.000	.000	.000	.000	.000	.000	.000	.000	.880

Peggy Malone & Associates

(888) 247-8602

File Name : 9-Hwy 29 and Safeway Warrenton Village Ctr AM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Cars - Trucks

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					BP Driveway Northbound					Safeway Warrenton Village Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
06:00 AM	3	125	0	2	130	0	93	2	0	95	0	0	0	0	0	6	0	2	0	8	233
06:15 AM	1	168	0	3	172	0	94	0	0	94	0	0	0	0	0	5	0	5	0	10	276
06:30 AM	3	178	0	3	184	1	121	1	0	123	0	0	0	0	0	3	0	5	0	8	315
06:45 AM	4	165	0	5	174	0	139	1	0	140	0	0	3	0	3	2	0	7	0	9	326
Total	11	636	0	13	660	1	447	4	0	452	0	0	3	0	3	16	0	19	0	35	1150
07:00 AM	3	158	0	3	164	1	125	2	0	128	0	0	1	0	1	1	0	9	0	10	303
07:15 AM	5	182	0	8	195	0	146	0	0	146	0	0	1	0	1	8	0	8	0	16	358
07:30 AM	4	201	0	3	208	0	209	0	0	209	0	0	1	0	1	3	0	9	0	12	430
07:45 AM	12	203	0	5	220	1	239	3	3	246	0	0	3	0	3	3	0	7	0	10	479
Total	24	744	0	19	787	2	719	5	3	729	0	0	6	0	6	15	0	33	0	48	1570
08:00 AM	5	187	0	5	197	0	188	4	1	193	0	0	0	0	0	0	0	18	0	18	408
08:15 AM	13	208	0	6	227	0	176	1	1	178	0	0	1	0	1	3	0	14	0	17	423
08:30 AM	6	188	0	4	198	1	183	0	2	186	0	0	4	0	4	3	0	12	0	15	403
08:45 AM	8	217	0	5	230	2	215	3	1	221	0	0	0	0	0	3	0	12	0	15	466
Total	32	800	0	20	852	3	762	8	5	778	0	0	5	0	5	9	0	56	0	65	1700
Grand Total	67	2180	0	52	2299	6	1928	17	8	1959	0	0	14	0	14	40	0	108	0	148	4420
Apprch %	2.9	94.8	0	2.3		0.3	98.4	0.9	0.4		0	0	100	0		27	0	73	0		
Total %	1.5	49.3	0	1.2	52	0.1	43.6	0.4	0.2	44.3	0	0	0.3	0	0.3	0.9	0	2.4	0	3.3	
Cars	64	2097	0	52	2213	6	1842	15	8	1871	0	0	14	0	14	40	0	108	0	148	4246
% Cars	95.5	96.2	0	100	96.3	100	95.5	88.2	100	95.5	0	0	100	0	100	100	0	100	0	100	96.1
Trucks	3	83	0	0	86	0	86	2	0	88	0	0	0	0	0	0	0	0	0	0	174
% Trucks	4.5	3.8	0	0	3.7	0	4.5	11.8	0	4.5	0	0	0	0	0	0	0	0	0	0	3.9

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				BP Driveway Northbound				Safeway Warrenton Village Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	4	201	0	205	0	209	0	209	0	0	1	1	3	0	9	12	427
07:45 AM	12	203	0	215	1	239	3	243	0	0	3	3	3	0	7	10	471
08:00 AM	5	187	0	192	0	188	4	192	0	0	0	0	0	0	18	18	402
08:15 AM	13	208	0	221	0	176	1	177	0	0	1	1	3	0	14	17	416
Total Volume	34	799	0	833	1	812	8	821	0	0	5	5	9	0	48	57	1716
% App. Total	4.1	95.9	0		0.1	98.9	1		0	0	100		15.8	0	84.2		
PHF	.654	.960	.000	.942	.250	.849	.500	.845	.000	.000	.417	.417	.750	.000	.667	.792	.911

Peggy Malone & Associates

(888) 247-8602

File Name : 9-Hwy 29 and Safeway Warrenton Village Ctr AM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Pedestrians

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					BP Driveway Northbound					Safeway Warrenton Village Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	2
07:15 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	3
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	2	2	4
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Total	0	0	0	1	1	0	0	0	0	0	0	0	0	4	4	0	0	0	5	5	10
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	5
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	5	5	6
Grand Total	0	0	0	1	1	0	0	0	0	0	0	0	0	5	5	0	0	0	10	10	16
Apprch %	0	0	0	100		0	0	0	0		0	0	0	100		0	0	0	100		
Total %	0	0	0	6.2	6.2	0	0	0	0	0	0	0	0	31.2	31.2	0	0	0	62.5	62.5	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				BP Driveway Northbound				Safeway Warrenton Village Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 06:00 AM																	
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Peggy Malone & Associates

(888) 247-8602

File Name : 9-Hwy 29 and Safeway Warrenton Village Ctr PM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Cars

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					BP Driveway Northbound					Safeway Warrenton Village Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
02:00 PM	8	229	0	2	239	0	256	7	0	263	0	0	4	0	4	2	0	16	0	18	524
02:15 PM	10	211	0	2	223	0	235	4	1	240	0	0	4	0	4	2	2	8	0	12	479
02:30 PM	9	229	0	2	240	2	240	3	0	245	0	0	1	0	1	5	0	13	0	18	504
02:45 PM	6	221	1	1	229	2	252	9	0	263	0	0	2	0	2	2	0	13	0	15	509
Total	33	890	1	7	931	4	983	23	1	1011	0	0	11	0	11	11	2	50	0	63	2016
03:00 PM	10	250	0	4	264	1	237	3	0	241	0	0	2	0	2	1	0	13	0	14	521
03:15 PM	4	238	1	3	246	0	294	4	1	299	0	0	2	0	2	2	0	10	0	12	559
03:30 PM	9	228	0	3	240	1	258	1	0	260	0	0	3	0	3	1	0	7	0	8	511
03:45 PM	0	241	0	0	241	1	291	6	0	298	0	0	2	0	2	2	0	6	0	8	549
Total	23	957	1	10	991	3	1080	14	1	1098	0	0	9	0	9	6	0	36	0	42	2140
04:00 PM	15	266	0	1	282	0	290	6	2	298	0	0	7	0	7	1	0	12	0	13	600
04:15 PM	9	273	0	3	285	0	268	3	2	273	0	0	4	0	4	2	0	15	0	17	579
04:30 PM	8	203	0	2	213	0	321	1	0	322	0	0	0	0	0	0	0	9	0	9	544
04:45 PM	8	248	0	3	259	1	308	1	0	310	0	0	1	0	1	5	0	7	0	12	582
Total	40	990	0	9	1039	1	1187	11	4	1203	0	0	12	0	12	8	0	43	0	51	2305
05:00 PM	8	248	0	2	258	1	280	1	0	282	1	0	3	0	4	0	0	8	0	8	552
05:15 PM	1	222	1	4	228	0	315	3	1	319	0	0	4	0	4	1	0	10	0	11	562
05:30 PM	6	224	0	1	231	1	267	4	0	272	0	0	2	0	2	3	0	12	0	15	520
05:45 PM	11	204	0	2	217	0	311	4	0	315	0	0	2	0	2	1	0	7	0	8	542
Total	26	898	1	9	934	2	1173	12	1	1188	1	0	11	0	12	5	0	37	0	42	2176
06:00 PM	8	237	2	3	250	0	237	0	0	237	0	0	3	0	3	2	0	3	0	5	495
06:15 PM	2	195	0	1	198	1	271	2	0	274	0	0	1	0	1	0	0	6	0	6	479
06:30 PM	14	182	0	1	197	1	244	4	0	249	0	0	1	0	1	1	0	4	0	5	452
06:45 PM	7	195	0	4	206	1	236	2	0	239	3	0	1	0	4	3	0	9	0	12	461
Total	31	809	2	9	851	3	988	8	0	999	3	0	6	0	9	6	0	22	0	28	1887
Grand Total	153	4544	5	44	4746	13	5411	68	7	5499	4	0	49	0	53	36	2	188	0	226	10524
Apprch %	3.2	95.7	0.1	0.9		0.2	98.4	1.2	0.1		7.5	0	92.5	0		15.9	0.9	83.2	0		
Total %	1.5	43.2	0	0.4	45.1	0.1	51.4	0.6	0.1	52.3	0	0	0.5	0	0.5	0.3	0	1.8	0	2.1	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				BP Driveway Northbound				Safeway Warrenton Village Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	15	266	0	281	0	290	6	296	0	0	7	7	1	0	12	13	597
04:15 PM	9	273	0	282	0	268	3	271	0	0	4	4	2	0	15	17	574
04:30 PM	8	203	0	211	0	321	1	322	0	0	0	0	0	0	9	9	542
04:45 PM	8	248	0	256	1	308	1	310	0	0	1	1	5	0	7	12	579
Total Volume	40	990	0	1030	1	1187	11	1199	0	0	12	12	8	0	43	51	2292
% App. Total	3.9	96.1	0		0.1	99	0.9		0	0	100		15.7	0	84.3		
PHF	.667	.907	.000	.913	.250	.924	.458	.931	.000	.000	.429	.429	.400	.000	.717	.750	.960

Peggy Malone & Associates

(888) 247-8602

File Name : 9-Hwy 29 and Safeway Warrenton Village Ctr PM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Trucks

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					BP Driveway Northbound					Safeway Warrenton Village Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
02:00 PM	0	8	0	0	8	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	4	0	0	4	0	5	0	0	5	0	0	0	0	0	1	0	0	0	1	10
02:30 PM	0	6	0	0	6	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	9
02:45 PM	0	6	0	0	6	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	9
Total	0	24	0	0	24	0	18	0	0	18	0	0	0	0	0	1	0	0	0	1	43
03:00 PM	0	5	0	0	5	0	11	0	0	11	0	0	0	0	0	0	0	0	0	0	16
03:15 PM	1	3	0	0	4	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	6
03:30 PM	0	6	0	0	6	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	13
03:45 PM	0	4	0	0	4	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	8
Total	1	18	0	0	19	0	24	0	0	24	0	0	0	0	0	0	0	0	0	0	43
04:00 PM	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	3
04:15 PM	0	3	0	0	3	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	6
04:30 PM	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	4
04:45 PM	0	4	0	0	4	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	8
Total	0	10	0	0	10	0	11	0	0	11	0	0	0	0	0	0	0	0	0	0	21
05:00 PM	0	6	0	0	6	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	11
05:15 PM	0	3	0	0	3	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	7
05:30 PM	0	4	0	0	4	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	8
05:45 PM	0	3	0	0	3	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	7
Total	0	16	0	0	16	0	17	0	0	17	0	0	0	0	0	0	0	0	0	0	33
06:00 PM	0	6	0	0	6	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	13
06:15 PM	0	4	0	0	4	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	5
06:30 PM	0	4	0	0	4	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	9
06:45 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3
Total	0	14	0	0	14	0	16	0	0	16	0	0	0	0	0	0	0	0	0	0	30
Grand Total	1	82	0	0	83	0	86	0	0	86	0	0	0	0	0	1	0	0	0	1	170
Apprch %	1.2	98.8	0	0		0	100	0	0		0	0	0	0		100	0	0	0		
Total %	0.6	48.2	0	0	48.8	0	50.6	0	0	50.6	0	0	0	0	0	0.6	0	0	0	0.6	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				BP Driveway Northbound				Safeway Warrenton Village Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:15 PM																	
02:15 PM	0	4	0	4	0	5	0	5	0	0	0	0	1	0	0	1	10
02:30 PM	0	6	0	6	0	3	0	3	0	0	0	0	0	0	0	0	9
02:45 PM	0	6	0	6	0	3	0	3	0	0	0	0	0	0	0	0	9
03:00 PM	0	5	0	5	0	11	0	11	0	0	0	0	0	0	0	0	16
Total Volume	0	21	0	21	0	22	0	22	0	0	0	0	1	0	0	1	44
% App. Total	0	100	0		0	100	0		0	0	0		100	0	0		
PHF	.000	.875	.000	.875	.000	.500	.000	.500	.000	.000	.000	.000	.250	.000	.000	.250	.688

Peggy Malone & Associates

(888) 247-8602

File Name : 9-Hwy 29 and Safeway Warrenton Village Ctr PM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Cars - Trucks

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					BP Driveway Northbound					Safeway Warrenton Village Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
02:00 PM	8	237	0	2	247	0	263	7	0	270	0	0	4	0	4	2	0	16	0	18	18
02:15 PM	10	215	0	2	227	0	240	4	1	245	0	0	4	0	4	3	2	8	0	13	489
02:30 PM	9	235	0	2	246	2	243	3	0	248	0	0	1	0	1	5	0	13	0	18	513
02:45 PM	6	227	1	1	235	2	255	9	0	266	0	0	2	0	2	2	0	13	0	15	518
Total	33	914	1	7	955	4	1001	23	1	1029	0	0	11	0	11	12	2	50	0	64	2059
03:00 PM	10	255	0	4	269	1	248	3	0	252	0	0	2	0	2	1	0	13	0	14	537
03:15 PM	5	241	1	3	250	0	296	4	1	301	0	0	2	0	2	2	0	10	0	12	565
03:30 PM	9	234	0	3	246	1	265	1	0	267	0	0	3	0	3	1	0	7	0	8	524
03:45 PM	0	245	0	0	245	1	295	6	0	302	0	0	2	0	2	2	0	6	0	8	557
Total	24	975	1	10	1010	3	1104	14	1	1122	0	0	9	0	9	6	0	36	0	42	2183
04:00 PM	15	267	0	1	283	0	292	6	2	300	0	0	7	0	7	1	0	12	0	13	603
04:15 PM	9	276	0	3	288	0	271	3	2	276	0	0	4	0	4	2	0	15	0	17	585
04:30 PM	8	205	0	2	215	0	323	1	0	324	0	0	0	0	0	0	0	9	0	9	548
04:45 PM	8	252	0	3	263	1	312	1	0	314	0	0	1	0	1	5	0	7	0	12	590
Total	40	1000	0	9	1049	1	1198	11	4	1214	0	0	12	0	12	8	0	43	0	51	2326
05:00 PM	8	254	0	2	264	1	285	1	0	287	1	0	3	0	4	0	0	8	0	8	563
05:15 PM	1	225	1	4	231	0	319	3	1	323	0	0	4	0	4	1	0	10	0	11	569
05:30 PM	6	228	0	1	235	1	271	4	0	276	0	0	2	0	2	3	0	12	0	15	528
05:45 PM	11	207	0	2	220	0	315	4	0	319	0	0	2	0	2	1	0	7	0	8	549
Total	26	914	1	9	950	2	1190	12	1	1205	1	0	11	0	12	5	0	37	0	42	2209
06:00 PM	8	243	2	3	256	0	244	0	0	244	0	0	3	0	3	2	0	3	0	5	508
06:15 PM	2	199	0	1	202	1	272	2	0	275	0	0	1	0	1	0	0	6	0	6	484
06:30 PM	14	186	0	1	201	1	249	4	0	254	0	0	1	0	1	1	0	4	0	5	461
06:45 PM	7	195	0	4	206	1	239	2	0	242	3	0	1	0	4	3	0	9	0	12	464
Total	31	823	2	9	865	3	1004	8	0	1015	3	0	6	0	9	6	0	22	0	28	1917
Grand Total	154	4626	5	44	4829	13	5497	68	7	5585	4	0	49	0	53	37	2	188	0	227	10694
Apprch %	3.2	95.8	0.1	0.9		0.2	98.4	1.2	0.1		7.5	0	92.5	0		16.3	0.9	82.8	0		
Total %	1.4	43.3	0	0.4	45.2	0.1	51.4	0.6	0.1	52.2	0	0	0.5	0	0.5	0.3	0	1.8	0	2.1	
Cars	153	4544	5	44	4746	13	5411	68	7	5499	4	0	49	0	53	36	2	188	0	226	10524
% Cars	99.4	98.2	100	100	98.3	100	98.4	100	100	98.5	100	0	100	0	100	97.3	100	100	0	99.6	98.4
Trucks	1	82	0	0	83	0	86	0	0	86	0	0	0	0	0	1	0	0	0	1	170
% Trucks	0.6	1.8	0	0	1.7	0	1.6	0	0	1.5	0	0	0	0	0	2.7	0	0	0	0.4	1.6

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				BP Driveway Northbound				Safeway Warrenton Village Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	15	267	0	282	0	292	6	298	0	0	7	7	1	0	12	13	600
04:15 PM	9	276	0	285	0	271	3	274	0	0	4	4	2	0	15	17	580
04:30 PM	8	205	0	213	0	323	1	324	0	0	0	0	0	0	9	9	546
04:45 PM	8	252	0	260	1	312	1	314	0	0	1	1	5	0	7	12	587
Total Volume	40	1000	0	1040	1	1198	11	1210	0	0	12	12	8	0	43	51	2313
% App. Total	3.8	96.2	0		0.1	99	0.9		0	0	100		15.7	0	84.3		
PHF	.667	.906	.000	.912	.250	.927	.458	.934	.000	.000	.429	.429	.400	.000	.717	.750	.964

Peggy Malone & Associates

(888) 247-8602

File Name : 9-Hwy 29 and Safeway Warrenton Village Ctr PM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Pedestrians

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					BP Driveway Northbound					Safeway Warrenton Village Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3
03:00 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	3
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
Grand Total	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	7	7	9
Apprch %	0	0	0	100		0	0	0	0		0	0	0	100		0	0	0	100		
Total %	0	0	0	11.1	11.1	0	0	0	0	0	0	0	0	11.1	11.1	0	0	0	77.8	77.8	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				BP Driveway Northbound				Safeway Warrenton Village Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:00 PM																	
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Peggy Malone & Associates

(888) 247-8602

File Name : 10-Hwy 29 and Fletcher Dr SAT
 Site Code :
 Start Date : 8/7/2021
 Page No : 1

Groups Printed- Cars

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Fletcher Dr Northbound					Fletcher Dr Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
07:00 AM	5	69	4	0	78	1	69	2	1	73	1	0	6	0	7	2	0	0	0	2	160
07:15 AM	0	75	10	0	85	3	97	2	1	103	0	0	2	0	2	0	1	1	0	2	192
07:30 AM	5	93	2	0	100	3	115	1	0	119	4	2	4	0	10	4	1	2	0	7	236
07:45 AM	4	105	10	0	119	5	131	4	1	141	5	0	2	0	7	5	1	5	0	11	278
Total	14	342	26	0	382	12	412	9	3	436	10	2	14	0	26	11	3	8	0	22	866
08:00 AM	5	99	7	0	111	3	137	3	0	143	4	2	2	0	8	5	2	4	0	11	273
08:15 AM	5	111	11	0	127	6	143	11	2	162	6	2	5	0	13	4	3	3	0	10	312
08:30 AM	7	115	13	0	135	8	154	13	1	176	4	0	3	0	7	9	3	2	0	14	332
08:45 AM	9	120	18	0	147	13	166	8	1	188	14	4	6	0	24	11	3	3	0	17	376
Total	26	445	49	0	520	30	600	35	4	669	28	8	16	0	52	29	11	12	0	52	1293
09:00 AM	6	119	15	0	140	4	149	11	0	164	8	2	7	0	17	14	7	9	0	30	351
09:15 AM	15	170	13	0	198	11	204	10	0	225	14	3	5	0	22	14	2	11	0	27	472
09:30 AM	12	169	19	1	201	10	181	19	1	211	12	3	8	0	23	15	5	10	0	30	465
09:45 AM	21	167	17	0	205	9	185	12	3	209	10	6	13	0	29	22	8	10	0	40	483
Total	54	625	64	1	744	34	719	52	4	809	44	14	33	0	91	65	22	40	0	127	1771
10:00 AM	19	187	25	0	231	6	213	18	0	237	13	10	14	0	37	11	1	23	0	35	540
10:15 AM	22	193	25	2	242	12	212	17	1	242	14	7	12	0	33	32	5	21	0	58	575
10:30 AM	15	189	20	0	224	12	193	22	4	231	13	6	17	0	36	22	9	24	0	55	546
10:45 AM	21	177	23	0	221	14	227	18	2	261	17	5	12	1	35	34	9	26	0	69	586
Total	77	746	93	2	918	44	845	75	7	971	57	28	55	1	141	99	24	94	0	217	2247
11:00 AM	20	196	29	0	245	14	229	26	0	269	23	11	17	0	51	14	8	19	0	41	606
11:15 AM	21	198	28	0	247	10	190	24	3	227	22	5	14	0	41	22	6	17	0	45	560
11:30 AM	13	201	32	1	247	15	222	32	1	270	20	13	17	0	50	18	12	13	0	43	610
11:45 AM	16	185	29	1	231	15	251	25	0	291	31	11	13	0	55	26	8	17	0	51	628
Total	70	780	118	2	970	54	892	107	4	1057	96	40	61	0	197	80	34	66	0	180	2404
12:00 PM	16	199	31	0	246	15	212	28	2	257	29	7	14	0	50	34	10	11	0	55	608
12:15 PM	13	196	29	0	238	17	214	18	3	252	25	8	16	0	49	23	5	19	0	47	586
12:30 PM	21	189	33	0	243	9	238	24	4	275	24	6	14	0	44	28	7	18	0	53	615
12:45 PM	17	205	29	2	253	19	214	33	5	271	16	13	24	0	53	18	12	23	0	53	630
Total	67	789	122	2	980	60	878	103	14	1055	94	34	68	0	196	103	34	71	0	208	2439
01:00 PM	11	213	27	0	251	15	204	25	2	246	20	10	21	0	51	29	3	15	0	47	595
01:15 PM	11	194	29	1	235	25	175	29	4	233	28	10	18	0	56	27	7	24	0	58	582
01:30 PM	14	207	17	1	239	16	214	32	0	262	28	6	21	0	55	22	11	17	0	50	606
01:45 PM	21	174	22	1	218	17	217	28	1	263	22	4	23	0	49	24	2	15	0	41	571
Total	57	788	95	3	943	73	810	114	7	1004	98	30	83	0	211	102	23	71	0	196	2354
02:00 PM	6	197	25	1	229	11	152	22	1	186	21	5	18	0	44	25	6	11	0	42	501
02:15 PM	11	163	24	0	198	15	194	27	0	236	24	5	21	0	50	23	9	12	0	44	528
02:30 PM	14	190	21	2	227	7	225	21	2	255	9	10	17	0	36	23	4	13	0	40	558
02:45 PM	8	179	32	2	221	14	195	27	1	237	15	8	12	0	35	25	6	17	0	48	541
Total	39	729	102	5	875	47	766	97	4	914	69	28	68	0	165	96	25	53	0	174	2128
03:00 PM	12	199	29	0	240	20	188	24	0	232	9	7	21	0	37	24	7	14	0	45	554
03:15 PM	22	164	26	0	212	14	186	19	1	220	21	6	27	0	54	19	7	26	0	52	538
03:30 PM	10	190	18	0	218	6	196	21	0	223	12	6	20	0	38	32	3	14	0	49	528
03:45 PM	9	160	38	0	207	23	196	16	2	237	17	8	20	0	45	25	7	10	0	42	531
Total	53	713	111	0	877	63	766	80	3	912	59	27	88	0	174	100	24	64	0	188	2151
04:00 PM	9	203	22	1	235	15	159	15	5	194	17	9	21	0	47	12	4	11	0	27	503
04:15 PM	13	191	35	0	239	16	169	20	3	208	18	5	21	0	44	17	6	8	0	31	522
04:30 PM	10	164	20	0	194	14	167	27	2	210	21	5	17	0	43	29	7	15	0	51	498
04:45 PM	15	169	23	0	207	14	163	13	2	192	20	7	22	0	49	12	8	9	0	29	477
Total	47	727	100	1	875	59	658	75	12	804	76	26	81	0	183	70	25	43	0	138	2000
05:00 PM	6	179	20	0	205	11	151	20	0	182	18	1	14	0	33	30	2	14	0	46	466
05:15 PM	11	160	23	0	194	14	154	25	2	195	20	7	17	0	44	15	6	3	0	24	457
05:30 PM	5	207	22	0	234	18	160	12	1	191	13	7	21	0	41	27	4	8	0	39	505
05:45 PM	3	167	15	1	186	16	176	26	1	219	18	11	12	0	41	16	3	17	0	36	482
Total	25	713	80	1	819	59	641	83	4	787	69	26	64	0	159	88	15	42	0	145	1910
06:00 PM	11	171	28	0	210	17	179	15	1	212	12	6	20	0	38	24	4	8	0	36	496
06:15 PM	11	167	10	0	188	18	144	18	4	184	23	5	23	0	51	19	4	10	0	33	456
06:30 PM	7	166	17	0	190	12	173	12	1	198	20	8	13	0	41	21	8	11	0	40	469
06:45 PM	10	150	16	1	177	12	149	12	0	173	15	5	15	0	35	24	3	7	0	34	419
Total	39	654	71	1	765	59	645	57	6	767	70	24	71	0	165	88	19	36	0	143	1840

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File Name : 10-Hwy 29 and Fletcher Dr SAT
Site Code :
Start Date : 8/7/2021
Page No : 2

Groups Printed- Cars

	Hwy 29 Eastbound					Hwy 29 Westbound					Fletcher Dr Northbound					Fletcher Dr Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
Grand Total	568	8051	1031	18	9668	594	8632	887	72	10185	770	287	702	1	1760	931	259	600	0	1790	23403
Apprch %	5.9	83.3	10.7	0.2		5.8	84.8	8.7	0.7		43.8	16.3	39.9	0.1		52	14.5	33.5	0		
Total %	2.4	34.4	4.4	0.1	41.3	2.5	36.9	3.8	0.3	43.5	3.3	1.2	3	0	7.5	4	1.1	2.6	0	7.6	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Fletcher Dr Northbound				Fletcher Dr Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:00 AM																	
11:00 AM	20	196	29	245	14	229	26	269	23	11	17	51	14	8	19	41	606
11:15 AM	21	198	28	247	10	190	24	224	22	5	14	41	22	6	17	45	557
11:30 AM	13	201	32	246	15	222	32	269	20	13	17	50	18	12	13	43	608
11:45 AM	16	185	29	230	15	251	25	291	31	11	13	55	26	8	17	51	627
Total Volume	70	780	118	968	54	892	107	1053	96	40	61	197	80	34	66	180	2398
% App. Total	7.2	80.6	12.2		5.1	84.7	10.2		48.7	20.3	31		44.4	18.9	36.7		
PHF	.833	.970	.922	.980	.900	.888	.836	.905	.774	.769	.897	.895	.769	.708	.868	.882	.956

Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Fletcher Dr Northbound				Fletcher Dr Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	16	199	31	246	15	212	28	255	29	7	14	50	34	10	11	55	606
12:15 PM	13	196	29	238	17	214	18	249	25	8	16	49	23	5	19	47	583
12:30 PM	21	189	33	243	9	238	24	271	24	6	14	44	28	7	18	53	611
12:45 PM	17	205	29	251	19	214	33	266	16	13	24	53	18	12	23	53	623
Total Volume	67	789	122	978	60	878	103	1041	94	34	68	196	103	34	71	208	2423
% App. Total	6.9	80.7	12.5		5.8	84.3	9.9		48	17.3	34.7		49.5	16.3	34.1		
PHF	.798	.962	.924	.974	.789	.922	.780	.960	.810	.654	.708	.925	.757	.708	.772	.945	.972

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File Name : 10-Hwy 29 and Fletcher Dr SAT
 Site Code :
 Start Date : 8/7/2021
 Page No : 2

Groups Printed- Trucks

	Hwy 29 Eastbound					Hwy 29 Westbound					Fletcher Dr Northbound					Fletcher Dr Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
Grand Total	2	111	6	0	119	5	130	3	0	138	5	2	3	0	10	8	0	2	0	10	277
Approch %	1.7	93.3	5	0		3.6	94.2	2.2	0		50	20	30	0		80	0	20	0		
Total %	0.7	40.1	2.2	0	43	1.8	46.9	1.1	0	49.8	1.8	0.7	1.1	0	3.6	2.9	0	0.7	0	3.6	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Fletcher Dr Northbound				Fletcher Dr Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	4	0	4	0	7	0	7	1	0	0	1	1	0	0	1	13
08:15 AM	0	1	0	1	1	4	0	5	0	0	0	0	0	0	0	0	6
08:30 AM	0	4	0	4	0	2	0	2	0	0	0	0	2	0	0	2	8
08:45 AM	0	2	0	2	0	5	0	5	0	0	0	0	0	0	0	0	7
Total Volume	0	11	0	11	1	18	0	19	1	0	0	1	3	0	0	3	34
% App. Total	0	100	0		5.3	94.7	0		100	0	0		100	0	0		
PHF	.000	.688	.000	.688	.250	.643	.000	.679	.250	.000	.000	.250	.375	.000	.000	.375	.654

Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:30 PM																	
02:30 PM	0	0	0	0	0	12	0	12	0	0	0	0	0	0	0	0	12
02:45 PM	0	1	0	1	0	3	0	3	0	0	0	0	1	0	0	1	5
03:00 PM	0	4	0	4	1	1	0	2	0	0	0	0	0	0	0	0	6
03:15 PM	0	6	0	6	0	6	0	6	0	0	1	1	0	0	0	0	13
Total Volume	0	11	0	11	1	22	0	23	0	0	1	1	1	0	0	1	36
% App. Total	0	100	0		4.3	95.7	0		0	0	100		100	0	0		
PHF	.000	.458	.000	.458	.250	.458	.000	.479	.000	.000	.250	.250	.250	.000	.000	.250	.692

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(888) 247-8602

File Name : 10-Hwy 29 and Fletcher Dr SAT
Site Code :
Start Date : 8/7/2021
Page No : 2

Groups Printed- Cars - Trucks

	Hwy 29 Eastbound					Hwy 29 Westbound					Fletcher Dr Northbound					Fletcher Dr Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
Grand Total	570	8162	1037	18	9787	599	8762	890	72	10323	775	289	705	1	1770	939	259	602	0	1800	23680
Apprch %	5.8	83.4	10.6	0.2		5.8	84.9	8.6	0.7		43.8	16.3	39.8	0.1		52.2	14.4	33.4	0		
Total %	2.4	34.5	4.4	0.1	41.3	2.5	37	3.8	0.3	43.6	3.3	1.2	3	0	7.5	4	1.1	2.5	0	7.6	
Cars	568	8051	1031	18	9668	594	8632	887	72	10185	770	287	702	1	1760	931	259	600	0	1790	23403
% Cars	99.6	98.6	99.4	100	98.8	99.2	98.5	99.7	100	98.7	99.4	99.3	99.6	100	99.4	99.1	100	99.7	0	99.4	98.8
Trucks	2	111	6	0	119	5	130	3	0	138	5	2	3	0	10	8	0	2	0	10	277
% Trucks	0.4	1.4	0.6	0	1.2	0.8	1.5	0.3	0	1.3	0.6	0.7	0.4	0	0.6	0.9	0	0.3	0	0.6	1.2

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Fletcher Dr Northbound				Fletcher Dr Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:00 AM																	
11:00 AM	20	199	29	248	14	231	26	271	23	11	17	51	14	8	19	41	611
11:15 AM	21	202	28	251	10	194	24	228	22	5	14	41	22	6	18	46	566
11:30 AM	13	202	33	248	15	226	32	273	21	13	17	51	18	12	13	43	615
11:45 AM	16	188	30	234	15	253	26	294	31	11	13	55	26	8	18	52	635
Total Volume	70	791	120	981	54	904	108	1066	97	40	61	198	80	34	68	182	2427
% App. Total	7.1	80.6	12.2		5.1	84.8	10.1		49	20.2	30.8		44	18.7	37.4		
PHF	.833	.979	.909	.977	.900	.893	.844	.906	.782	.769	.897	.900	.769	.708	.895	.875	.956

Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	16	204	31	251	15	215	28	258	30	7	14	51	34	10	11	55	615
12:15 PM	13	200	29	242	17	216	19	252	25	8	16	49	24	5	19	48	591
12:30 PM	21	191	33	245	9	242	24	275	24	6	14	44	28	7	18	53	617
12:45 PM	17	207	29	253	19	215	33	267	16	13	24	53	18	12	23	53	626
Total Volume	67	802	122	991	60	888	104	1052	95	34	68	197	104	34	71	209	2449
% App. Total	6.8	80.9	12.3		5.7	84.4	9.9		48.2	17.3	34.5		49.8	16.3	34		
PHF	.798	.969	.924	.979	.789	.917	.788	.956	.792	.654	.708	.929	.765	.708	.772	.950	.978

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File Name : 10-Hwy 29 and Fletcher Dr SAT
 Site Code :
 Start Date : 8/7/2021
 Page No : 2

Groups Printed- Pedestrians

	Hwy 29 Eastbound					Hwy 29 Westbound					Fletcher Dr Northbound					Fletcher Dr Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
Grand Total	0	0	0	11	11	0	0	0	3	3	0	0	0	9	9	0	0	0	7	7	30
Approch %	0	0	0	100		0	0	0	100		0	0	0	100		0	0	0	100		
Total %	0	0	0	36.7	36.7	0	0	0	10	10	0	0	0	30	30	0	0	0	23.3	23.3	

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Fletcher Dr Northbound					Fletcher Dr Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Fletcher Dr Northbound					Fletcher Dr Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

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File Name : 10-Hwy 29 and Fletcher Dr AM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Cars

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Fletcher Dr Northbound					Fletcher Dr Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
06:00 AM	0	130	1	0	131	1	93	0	0	94	0	0	0	0	0	3	0	0	0	3	228
06:15 AM	0	165	6	0	171	1	87	0	0	88	1	2	1	0	4	0	0	0	0	0	263
06:30 AM	0	171	5	0	176	2	116	1	0	119	2	0	3	0	5	5	0	1	0	6	306
06:45 AM	0	163	7	0	170	1	135	6	1	143	3	0	1	0	4	3	1	0	0	4	321
Total	0	629	19	0	648	5	431	7	1	444	6	2	5	0	13	11	1	1	0	13	1118
07:00 AM	0	159	3	0	162	2	109	1	1	113	2	1	1	0	4	3	0	2	0	5	284
07:15 AM	2	166	6	0	174	0	143	7	1	151	6	1	2	0	9	3	3	0	0	6	340
07:30 AM	2	174	3	0	179	4	196	3	0	203	0	1	4	0	5	6	0	1	0	7	394
07:45 AM	3	182	14	1	200	5	222	9	1	237	1	1	1	0	3	6	3	7	0	16	456
Total	7	681	26	1	715	11	670	20	3	704	9	4	8	0	21	18	6	10	0	34	1474
08:00 AM	7	169	10	0	186	3	184	9	0	196	2	2	5	0	9	12	2	4	0	18	409
08:15 AM	10	180	10	1	201	5	153	8	1	167	4	1	2	0	7	9	2	8	0	19	394
08:30 AM	9	184	12	1	206	3	175	8	0	186	3	1	7	0	11	10	2	7	0	19	422
08:45 AM	9	171	20	0	200	8	185	9	0	202	11	3	3	0	17	13	4	2	0	19	438
Total	35	704	52	2	793	19	697	34	1	751	20	7	17	0	44	44	10	21	0	75	1663
Grand Total	42	2014	97	3	2156	35	1798	61	5	1899	35	13	30	0	78	73	17	32	0	122	4255
Apprch %	1.9	93.4	4.5	0.1		1.8	94.7	3.2	0.3		44.9	16.7	38.5	0		59.8	13.9	26.2	0		
Total %	1	47.3	2.3	0.1	50.7	0.8	42.3	1.4	0.1	44.6	0.8	0.3	0.7	0	1.8	1.7	0.4	0.8	0	2.9	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Fletcher Dr Northbound				Fletcher Dr Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	3	182	14	199	5	222	9	236	1	1	1	3	6	3	7	16	454
08:00 AM	7	169	10	186	3	184	9	196	2	2	5	9	12	2	4	18	409
08:15 AM	10	180	10	200	5	153	8	166	4	1	2	7	9	2	8	19	392
08:30 AM	9	184	12	205	3	175	8	186	3	1	7	11	10	2	7	19	421
Total Volume	29	715	46	790	16	734	34	784	10	5	15	30	37	9	26	72	1676
% App. Total	3.7	90.5	5.8		2	93.6	4.3		33.3	16.7	50		51.4	12.5	36.1		
PHF	.725	.971	.821	.963	.800	.827	.944	.831	.625	.625	.536	.682	.771	.750	.813	.947	.923

Peggy Malone & Associates

(888) 247-8602

File Name : 10-Hwy 29 and Fletcher Dr AM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Trucks

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Fletcher Dr Northbound					Fletcher Dr Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
06:00 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0
06:15 AM	1	0	0	0	1	0	4	0	0	4	0	0	1	0	1	0	0	0	0	0	0
06:30 AM	0	5	0	0	5	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0
06:45 AM	0	3	0	0	3	2	8	0	0	10	0	0	0	0	0	0	0	0	0	0	0
Total	1	8	0	0	9	2	19	0	0	21	0	0	1	0	1	0	0	0	0	0	31
07:00 AM	0	1	0	0	1	1	5	1	0	7	1	0	0	0	1	0	0	0	0	0	0
07:15 AM	0	11	0	0	11	0	4	0	0	4	0	0	1	0	1	0	0	1	0	1	1
07:30 AM	0	12	0	0	12	0	12	0	0	12	0	0	1	0	1	0	0	0	0	0	0
07:45 AM	0	10	0	0	10	0	8	0	0	8	0	0	0	0	0	0	0	1	0	1	1
Total	0	34	0	0	34	1	29	1	0	31	1	0	2	0	3	0	0	2	0	2	70
08:00 AM	0	12	0	0	12	1	5	0	0	6	0	0	2	0	2	0	0	1	0	1	1
08:15 AM	0	12	0	0	12	0	8	0	0	8	0	0	0	0	0	2	0	0	0	2	2
08:30 AM	0	7	1	0	8	0	11	0	0	11	0	1	0	0	1	0	1	2	0	3	3
08:45 AM	0	7	1	0	8	0	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0
Total	0	38	2	0	40	1	33	0	0	34	0	1	2	0	3	2	1	3	0	6	83
Grand Total	1	80	2	0	83	4	81	1	0	86	1	1	5	0	7	2	1	5	0	8	184
Apprch %	1.2	96.4	2.4	0		4.7	94.2	1.2	0		14.3	14.3	71.4	0		25	12.5	62.5	0		
Total %	0.5	43.5	1.1	0	45.1	2.2	44	0.5	0	46.7	0.5	0.5	2.7	0	3.8	1.1	0.5	2.7	0	4.3	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Fletcher Dr Northbound				Fletcher Dr Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	12	0	12	0	12	0	12	0	0	1	1	0	0	0	0	25
07:45 AM	0	10	0	10	0	8	0	8	0	0	0	0	0	0	1	1	19
08:00 AM	0	12	0	12	1	5	0	6	0	0	2	2	0	0	1	1	21
08:15 AM	0	12	0	12	0	8	0	8	0	0	0	0	2	0	0	2	22
Total Volume	0	46	0	46	1	33	0	34	0	0	3	3	2	0	2	4	87
% App. Total	0	100	0		2.9	97.1	0		0	0	100		50	0	50		
PHF	.000	.958	.000	.958	.250	.688	.000	.708	.000	.000	.375	.375	.250	.000	.500	.500	.870

Peggy Malone & Associates

(888) 247-8602

File Name : 10-Hwy 29 and Fletcher Dr AM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Cars - Trucks

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Fletcher Dr Northbound					Fletcher Dr Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
06:00 AM	0	130	1	0	131	1	96	0	0	97	0	0	0	0	0	3	0	0	0	3	231
06:15 AM	1	165	6	0	172	1	91	0	0	92	1	2	2	0	5	0	0	0	0	0	269
06:30 AM	0	176	5	0	181	2	120	1	0	123	2	0	3	0	5	5	0	1	0	6	315
06:45 AM	0	166	7	0	173	3	143	6	1	153	3	0	1	0	4	3	1	0	0	4	334
Total	1	637	19	0	657	7	450	7	1	465	6	2	6	0	14	11	1	1	0	13	1149
07:00 AM	0	160	3	0	163	3	114	2	1	120	3	1	1	0	5	3	0	2	0	5	293
07:15 AM	2	177	6	0	185	0	147	7	1	155	6	1	3	0	10	3	3	1	0	7	357
07:30 AM	2	186	3	0	191	4	208	3	0	215	0	1	5	0	6	6	0	1	0	7	419
07:45 AM	3	192	14	1	210	5	230	9	1	245	1	1	1	0	3	6	3	8	0	17	475
Total	7	715	26	1	749	12	699	21	3	735	10	4	10	0	24	18	6	12	0	36	1544
08:00 AM	7	181	10	0	198	4	189	9	0	202	2	2	7	0	11	12	2	5	0	19	430
08:15 AM	10	192	10	1	213	5	161	8	1	175	4	1	2	0	7	11	2	8	0	21	416
08:30 AM	9	191	13	1	214	3	186	8	0	197	3	2	7	0	12	10	3	9	0	22	445
08:45 AM	9	178	21	0	208	8	194	9	0	211	11	3	3	0	17	13	4	2	0	19	455
Total	35	742	54	2	833	20	730	34	1	785	20	8	19	0	47	46	11	24	0	81	1746
Grand Total	43	2094	99	3	2239	39	1879	62	5	1985	36	14	35	0	85	75	18	37	0	130	4439
Apprch %	1.9	93.5	4.4	0.1		2	94.7	3.1	0.3		42.4	16.5	41.2	0		57.7	13.8	28.5	0		
Total %	1	47.2	2.2	0.1	50.4	0.9	42.3	1.4	0.1	44.7	0.8	0.3	0.8	0	1.9	1.7	0.4	0.8	0	2.9	
Cars	42	2014	97	3	2156	35	1798	61	5	1899	35	13	30	0	78	73	17	32	0	122	4255
% Cars	97.7	96.2	98	100	96.3	89.7	95.7	98.4	100	95.7	97.2	92.9	85.7	0	91.8	97.3	94.4	86.5	0	93.8	95.9
Trucks	1	80	2	0	83	4	81	1	0	86	1	1	5	0	7	2	1	5	0	8	184
% Trucks	2.3	3.8	2	0	3.7	10.3	4.3	1.6	0	4.3	2.8	7.1	14.3	0	8.2	2.7	5.6	13.5	0	6.2	4.1

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Fletcher Dr Northbound				Fletcher Dr Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	3	192	14	209	5	230	9	244	1	1	1	3	6	3	8	17	473
08:00 AM	7	181	10	198	4	189	9	202	2	2	7	11	12	2	5	19	430
08:15 AM	10	192	10	212	5	161	8	174	4	1	2	7	11	2	8	21	414
08:30 AM	9	191	13	213	3	186	8	197	3	2	7	12	10	3	9	22	444
Total Volume	29	756	47	832	17	766	34	817	10	6	17	33	39	10	30	79	1761
% App. Total	3.5	90.9	5.6		2.1	93.8	4.2		30.3	18.2	51.5		49.4	12.7	38		
PHF	.725	.984	.839	.977	.850	.833	.944	.837	.625	.750	.607	.688	.813	.833	.833	.898	.931

Peggy Malone & Associates

(888) 247-8602

File Name : 10-Hwy 29 and Fletcher Dr AM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Pedestrians

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Fletcher Dr Northbound					Fletcher Dr Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	3
Total	0	0	0	1	1	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	3
07:00 AM	0	0	0	0	0	0	0	0	1	1	0	0	0	3	3	0	0	0	1	1	5
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	2
07:45 AM	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Total	0	0	0	4	4	0	0	0	1	1	0	0	0	5	5	0	0	0	2	2	12
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	2
08:30 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:45 AM	0	0	0	4	4	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	5
Total	0	0	0	5	5	0	0	0	1	1	0	0	0	2	2	0	0	0	0	0	8
Grand Total	0	0	0	10	10	0	0	0	2	2	0	0	0	9	9	0	0	0	2	2	23
Apprch %	0	0	0	100		0	0	0	100		0	0	0	100		0	0	0	100		
Total %	0	0	0	43.5	43.5	0	0	0	8.7	8.7	0	0	0	39.1	39.1	0	0	0	8.7	8.7	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Fletcher Dr Northbound				Fletcher Dr Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 06:00 AM																	
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Peggy Malone & Associates

(888) 247-8602

File Name : 10-Hwy 29 and Fletcher Dr PM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Cars

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Fletcher Dr Northbound					Fletcher Dr Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
02:00 PM	15	195	27	1	238	15	215	18	0	248	22	12	17	0	51	15	12	18	0	45	582
02:15 PM	19	165	27	1	212	15	188	13	1	217	32	8	23	0	63	28	12	20	0	60	552
02:30 PM	14	202	36	0	252	9	211	14	0	234	24	4	23	0	51	24	10	20	0	54	591
02:45 PM	20	184	25	0	229	9	219	21	1	250	14	7	17	0	38	32	6	15	0	53	570
Total	68	746	115	2	931	48	833	66	2	949	92	31	80	0	203	99	40	73	0	212	2295
03:00 PM	10	207	37	0	254	22	207	25	1	255	28	5	23	0	56	18	9	14	0	41	606
03:15 PM	21	191	25	1	238	11	247	27	2	287	22	6	21	0	49	18	18	28	0	64	638
03:30 PM	17	180	31	0	228	18	221	18	0	257	29	8	17	0	54	19	10	14	0	43	582
03:45 PM	14	204	31	1	250	11	262	16	0	289	15	11	17	0	43	21	8	19	0	48	630
Total	62	782	124	2	970	62	937	86	3	1088	94	30	78	0	202	76	45	75	0	196	2456
04:00 PM	18	210	37	0	265	15	247	20	3	285	35	7	19	0	61	27	6	18	0	51	662
04:15 PM	21	220	37	1	279	23	238	23	2	286	24	11	27	0	62	23	4	15	0	42	669
04:30 PM	11	169	23	0	203	15	284	24	1	324	23	8	19	0	50	27	11	23	0	61	638
04:45 PM	16	200	27	2	245	23	261	30	2	316	19	8	16	0	43	19	6	19	0	44	648
Total	66	799	124	3	992	76	1030	97	8	1211	101	34	81	0	216	96	27	75	0	198	2617
05:00 PM	15	216	36	0	267	13	236	14	2	265	32	8	29	0	69	18	6	14	0	38	639
05:15 PM	10	184	22	0	216	22	283	19	0	324	26	11	25	0	62	23	15	11	0	49	651
05:30 PM	15	194	29	0	238	19	252	16	0	287	20	6	19	0	45	19	3	14	0	36	606
05:45 PM	15	174	28	0	217	16	275	26	2	319	22	6	29	0	57	24	6	12	0	42	635
Total	55	768	115	0	938	70	1046	75	4	1195	100	31	102	0	233	84	30	51	0	165	2531
06:00 PM	11	195	36	1	243	22	201	24	2	249	23	8	32	0	63	18	6	15	0	39	594
06:15 PM	10	169	20	0	199	17	226	13	0	256	32	7	21	0	60	25	8	14	0	47	562
06:30 PM	11	167	16	0	194	9	221	16	3	249	19	7	18	0	44	28	5	11	0	44	531
06:45 PM	12	161	20	0	193	15	202	18	1	236	20	7	16	0	43	21	6	16	0	43	515
Total	44	692	92	1	829	63	850	71	6	990	94	29	87	0	210	92	25	56	0	173	2202
Grand Total	295	3787	570	8	4660	319	4696	395	23	5433	481	155	428	0	1064	447	167	330	0	944	12101
Apprch %	6.3	81.3	12.2	0.2		5.9	86.4	7.3	0.4		45.2	14.6	40.2	0		47.4	17.7	35	0		
Total %	2.4	31.3	4.7	0.1	38.5	2.6	38.8	3.3	0.2	44.9	4	1.3	3.5	0	8.8	3.7	1.4	2.7	0	7.8	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Fletcher Dr Northbound				Fletcher Dr Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	18	210	37	265	15	247	20	282	35	7	19	61	27	6	18	51	659
04:15 PM	21	220	37	278	23	238	23	284	24	11	27	62	23	4	15	42	666
04:30 PM	11	169	23	203	15	284	24	323	23	8	19	50	27	11	23	61	637
04:45 PM	16	200	27	243	23	261	30	314	19	8	16	43	19	6	19	44	644
Total Volume	66	799	124	989	76	1030	97	1203	101	34	81	216	96	27	75	198	2606
% App. Total	6.7	80.8	12.5		6.3	85.6	8.1		46.8	15.7	37.5		48.5	13.6	37.9		
PHF	.786	.908	.838	.889	.826	.907	.808	.931	.721	.773	.750	.871	.889	.614	.815	.811	.978

Peggy Malone & Associates

(888) 247-8602

File Name : 10-Hwy 29 and Fletcher Dr PM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Trucks

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Fletcher Dr Northbound					Fletcher Dr Southbound					Int. Total	
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total		
02:00 PM	0	8	0	0	8	0	8	1	0	9	0	0	1	0	1	0	0	0	0	0	0	18
02:15 PM	1	5	0	0	6	0	7	1	0	8	0	1	0	0	1	0	0	0	0	0	0	15
02:30 PM	0	5	0	0	5	0	2	1	0	3	0	0	0	0	0	0	0	0	0	0	0	8
02:45 PM	0	5	0	0	5	0	3	1	0	4	0	0	0	0	0	0	0	0	0	0	0	9
Total	1	23	0	0	24	0	20	4	0	24	0	1	1	0	2	0	0	0	0	0	0	50
03:00 PM	0	3	1	0	4	0	10	0	0	10	1	0	0	0	1	2	0	0	0	2	0	17
03:15 PM	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	4
03:30 PM	1	5	0	0	6	0	6	1	0	7	0	0	0	0	0	0	0	1	0	1	0	14
03:45 PM	0	5	0	0	5	0	4	1	0	5	0	0	0	0	0	0	1	0	0	1	0	11
Total	1	15	1	0	17	0	22	2	0	24	1	0	0	0	1	2	1	1	0	4	0	46
04:00 PM	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	3
04:15 PM	0	6	0	0	6	0	3	2	0	5	0	0	1	0	1	0	0	0	0	0	0	12
04:30 PM	0	4	0	0	4	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	7
04:45 PM	0	3	0	0	3	0	4	1	0	5	0	0	0	0	0	0	0	0	0	0	0	8
Total	0	14	0	0	14	0	12	3	0	15	0	0	1	0	1	0	0	0	0	0	0	30
05:00 PM	0	7	0	0	7	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	11
05:15 PM	0	3	0	0	3	0	3	1	0	4	0	0	0	0	0	0	0	0	0	0	0	7
05:30 PM	0	3	0	0	3	0	5	1	0	6	0	0	0	0	0	0	0	0	0	0	0	9
05:45 PM	1	1	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3
Total	1	14	0	0	15	0	13	2	0	15	0	0	0	0	0	0	0	0	0	0	0	30
06:00 PM	0	3	0	0	3	0	7	1	0	8	0	0	0	0	0	0	0	0	0	0	0	11
06:15 PM	0	3	0	0	3	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	5
06:30 PM	0	3	0	0	3	0	6	0	0	6	1	0	0	0	1	0	0	0	0	0	0	10
06:45 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	2	0	0	0	2	0	6
Total	0	9	0	0	9	0	19	1	0	20	1	0	0	0	1	2	0	0	0	2	0	32
Grand Total	3	75	1	0	79	0	86	12	0	98	2	1	2	0	5	4	1	1	0	6	0	188
Apprch %	3.8	94.9	1.3	0		0	87.8	12.2	0		40	20	40	0		66.7	16.7	16.7	0			
Total %	1.6	39.9	0.5	0	42	0	45.7	6.4	0	52.1	1.1	0.5	1.1	0	2.7	2.1	0.5	0.5	0	3.2		

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Fletcher Dr Northbound				Fletcher Dr Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:00 PM																	
02:00 PM	0	8	0	8	0	8	1	9	0	0	1	1	0	0	0	0	18
02:15 PM	1	5	0	6	0	7	1	8	0	1	0	1	0	0	0	0	15
02:30 PM	0	5	0	5	0	2	1	3	0	0	0	0	0	0	0	0	8
02:45 PM	0	5	0	5	0	3	1	4	0	0	0	0	0	0	0	0	9
Total Volume	1	23	0	24	0	20	4	24	0	1	1	2	0	0	0	0	50
% App. Total	4.2	95.8	0		0	83.3	16.7		0	50	50		0	0	0		
PHF	.250	.719	.000	.750	.000	.625	1.000	.667	.000	.250	.250	.500	.000	.000	.000	.000	.694

Peggy Malone & Associates

(888) 247-8602

File Name : 10-Hwy 29 and Fletcher Dr PM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Cars - Trucks

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Fletcher Dr Northbound					Fletcher Dr Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
02:00 PM	15	203	27	1	246	15	223	19	0	257	22	12	18	0	52	15	12	18	0	45	600
02:15 PM	20	170	27	1	218	15	195	14	1	225	32	9	23	0	64	28	12	20	0	60	567
02:30 PM	14	207	36	0	257	9	213	15	0	237	24	4	23	0	51	24	10	20	0	54	599
02:45 PM	20	189	25	0	234	9	222	22	1	254	14	7	17	0	38	32	6	15	0	53	579
Total	69	769	115	2	955	48	853	70	2	973	92	32	81	0	205	99	40	73	0	212	2345
03:00 PM	10	210	38	0	258	22	217	25	1	265	29	5	23	0	57	20	9	14	0	43	623
03:15 PM	21	193	25	1	240	11	249	27	2	289	22	6	21	0	49	18	18	28	0	64	642
03:30 PM	18	185	31	0	234	18	227	19	0	264	29	8	17	0	54	19	10	15	0	44	596
03:45 PM	14	209	31	1	255	11	266	17	0	294	15	11	17	0	43	21	9	19	0	49	641
Total	63	797	125	2	987	62	959	88	3	1112	95	30	78	0	203	78	46	76	0	200	2502
04:00 PM	18	211	37	0	266	15	249	20	3	287	35	7	19	0	61	27	6	18	0	51	665
04:15 PM	21	226	37	1	285	23	241	25	2	291	24	11	28	0	63	23	4	15	0	42	681
04:30 PM	11	173	23	0	207	15	287	24	1	327	23	8	19	0	50	27	11	23	0	61	645
04:45 PM	16	203	27	2	248	23	265	31	2	321	19	8	16	0	43	19	6	19	0	44	656
Total	66	813	124	3	1006	76	1042	100	8	1226	101	34	82	0	217	96	27	75	0	198	2647
05:00 PM	15	223	36	0	274	13	240	14	2	269	32	8	29	0	69	18	6	14	0	38	650
05:15 PM	10	187	22	0	219	22	286	20	0	328	26	11	25	0	62	23	15	11	0	49	658
05:30 PM	15	197	29	0	241	19	257	17	0	293	20	6	19	0	45	19	3	14	0	36	615
05:45 PM	16	175	28	0	219	16	276	26	2	320	22	6	29	0	57	24	6	12	0	42	638
Total	56	782	115	0	953	70	1059	77	4	1210	100	31	102	0	233	84	30	51	0	165	2561
06:00 PM	11	198	36	1	246	22	208	25	2	257	23	8	32	0	63	18	6	15	0	39	605
06:15 PM	10	172	20	0	202	17	228	13	0	258	32	7	21	0	60	25	8	14	0	47	567
06:30 PM	11	170	16	0	197	9	227	16	3	255	20	7	18	0	45	28	5	11	0	44	541
06:45 PM	12	161	20	0	193	15	206	18	1	240	20	7	16	0	43	23	6	16	0	45	521
Total	44	701	92	1	838	63	869	72	6	1010	95	29	87	0	211	94	25	56	0	175	2234
Grand Total	298	3862	571	8	4739	319	4782	407	23	5531	483	156	430	0	1069	451	168	331	0	950	12289
Apprch %	6.3	81.5	12	0.2		5.8	86.5	7.4	0.4		45.2	14.6	40.2	0		47.5	17.7	34.8	0		
Total %	2.4	31.4	4.6	0.1	38.6	2.6	38.9	3.3	0.2	45	3.9	1.3	3.5	0	8.7	3.7	1.4	2.7	0	7.7	
Cars	295	3787	570	8	4660	319	4696	395	23	5433	481	155	428	0	1064	447	167	330	0	944	12101
% Cars	99	98.1	99.8	100	98.3	100	98.2	97.1	100	98.2	99.6	99.4	99.5	0	99.5	99.1	99.4	99.7	0	99.4	98.5
Trucks	3	75	1	0	79	0	86	12	0	98	2	1	2	0	5	4	1	1	0	6	188
% Trucks	1	1.9	0.2	0	1.7	0	1.8	2.9	0	1.8	0.4	0.6	0.5	0	0.5	0.9	0.6	0.3	0	0.6	1.5

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Fletcher Dr Northbound				Fletcher Dr Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	18	211	37	266	15	249	20	284	35	7	19	61	27	6	18	51	662
04:15 PM	21	226	37	284	23	241	25	289	24	11	28	63	23	4	15	42	678
04:30 PM	11	173	23	207	15	287	24	326	23	8	19	50	27	11	23	61	644
04:45 PM	16	203	27	246	23	265	31	319	19	8	16	43	19	6	19	44	652
Total Volume	66	813	124	1003	76	1042	100	1218	101	34	82	217	96	27	75	198	2636
% App. Total	6.6	81.1	12.4		6.2	85.6	8.2		46.5	15.7	37.8		48.5	13.6	37.9		
PHF	.786	.899	.838	.883	.826	.908	.806	.934	.721	.773	.732	.861	.889	.614	.815	.811	.972

Peggy Malone & Associates

(888) 247-8602

File Name : 10-Hwy 29 and Fletcher Dr PM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Pedestrians

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Fletcher Dr Northbound					Fletcher Dr Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Total	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	4
03:00 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
03:15 PM	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
03:30 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	9	9	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	11
Apprch %	0	0	0	100		0	0	0	0		0	0	0	100		0	0	0	100		
Total %	0	0	0	81.8	81.8	0	0	0	0	0	0	0	0	9.1	9.1	0	0	0	9.1	9.1	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Fletcher Dr Northbound				Fletcher Dr Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:00 PM																	
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	

Peggy Malone & Associates

(888) 247-8602

File Name : 11-Hwy 29 and Blackwell Rd SAT
 Site Code :
 Start Date : 8/7/2021
 Page No : 1

Groups Printed- Cars

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Blackwell Rd Northbound					Blackwell Rd Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
07:00 AM	2	67	6	1	76	6	56	7	1	70	8	4	10	0	22	6	2	2	0	10	178
07:15 AM	4	69	4	2	79	20	92	9	0	121	6	3	11	0	20	14	6	2	0	22	242
07:30 AM	4	77	11	0	92	20	112	15	1	148	11	8	8	0	27	4	2	3	0	9	276
07:45 AM	5	97	7	0	109	28	116	17	1	162	12	2	18	0	32	11	4	5	0	20	323
Total	15	310	28	3	356	74	376	48	3	501	37	17	47	0	101	35	14	12	0	61	1019
08:00 AM	3	88	10	2	103	36	119	16	0	171	13	8	24	0	45	13	7	1	0	21	340
08:15 AM	8	101	20	0	129	35	136	29	1	201	25	7	24	0	56	14	5	1	0	20	406
08:30 AM	5	97	17	1	120	31	144	17	2	194	23	9	31	0	63	23	4	1	0	28	405
08:45 AM	7	116	14	1	138	34	157	27	1	219	28	13	29	0	70	17	7	5	0	29	456
Total	23	402	61	4	490	136	556	89	4	785	89	37	108	0	234	67	23	8	0	98	1607
09:00 AM	9	117	19	0	145	40	141	26	0	207	28	11	48	0	87	25	18	5	0	48	487
09:15 AM	12	158	20	3	193	37	177	23	3	240	33	12	42	0	87	37	12	5	0	54	574
09:30 AM	13	147	20	2	183	51	184	30	0	265	31	15	43	0	89	31	11	8	0	50	586
09:45 AM	14	153	29	3	199	31	159	40	6	236	25	22	42	0	89	34	15	12	0	61	585
Total	48	575	88	8	719	159	661	119	9	948	117	60	175	0	352	127	56	30	0	213	2232
10:00 AM	15	156	28	1	200	43	174	37	1	255	56	26	37	0	119	28	21	10	0	59	633
10:15 AM	11	189	37	1	238	47	192	36	3	278	29	16	47	0	92	36	20	7	0	63	671
10:30 AM	11	206	27	1	245	34	185	36	1	256	38	19	51	0	108	33	17	8	0	58	667
10:45 AM	15	181	30	0	226	45	199	33	4	281	46	20	48	0	114	37	16	9	0	62	683
Total	52	732	122	3	909	169	750	142	9	1070	169	81	183	0	433	134	74	34	0	242	2654
11:00 AM	9	186	20	4	219	45	198	37	3	283	66	21	50	0	137	34	14	7	0	55	694
11:15 AM	10	187	21	5	223	45	178	47	6	276	52	27	44	0	123	33	22	13	0	68	690
11:30 AM	13	208	18	2	241	42	209	30	3	284	34	19	41	0	94	50	20	9	0	79	698
11:45 AM	8	174	20	0	202	26	214	51	2	293	46	18	58	0	122	50	19	11	0	80	697
Total	40	755	79	11	885	158	799	165	14	1136	198	85	193	0	476	167	75	40	0	282	2779
12:00 PM	14	194	23	5	236	42	191	32	0	265	54	20	46	0	120	41	12	9	0	62	683
12:15 PM	16	220	24	4	264	34	208	39	4	285	36	13	50	0	99	39	17	13	0	69	717
12:30 PM	6	186	26	1	219	44	197	33	5	279	42	29	46	0	117	45	18	13	0	76	691
12:45 PM	10	200	34	5	249	25	192	45	4	266	52	15	44	0	111	27	21	10	0	58	684
Total	46	800	107	15	968	145	788	149	13	1095	184	77	186	0	447	152	68	45	0	265	2775
01:00 PM	16	211	25	3	255	44	204	42	3	293	30	18	39	0	87	27	12	9	0	48	683
01:15 PM	8	205	24	2	239	40	196	38	2	276	26	23	39	0	88	33	18	8	0	59	662
01:30 PM	11	181	20	0	212	47	190	34	7	278	37	23	48	0	108	42	16	8	0	66	664
01:45 PM	13	188	22	5	228	35	202	33	3	273	38	13	30	0	81	42	11	11	0	64	646
Total	48	785	91	10	934	166	792	147	15	1120	131	77	156	0	364	144	57	36	0	237	2655
02:00 PM	11	195	25	5	236	21	135	27	3	186	30	10	38	0	78	37	14	12	0	63	563
02:15 PM	12	190	19	3	224	20	193	37	5	255	42	10	22	0	74	37	10	6	0	53	606
02:30 PM	15	182	24	1	222	30	182	34	1	247	33	17	39	0	89	35	18	9	0	62	620
02:45 PM	12	190	13	2	217	25	182	36	3	246	35	17	24	0	76	33	14	5	0	52	591
Total	50	757	81	11	899	96	692	134	12	934	140	54	123	0	317	142	56	32	0	230	2380
03:00 PM	6	211	26	2	245	36	197	39	0	272	28	19	47	0	94	37	18	9	0	64	675
03:15 PM	10	188	17	4	219	31	169	39	6	245	36	25	30	0	91	46	15	11	0	72	627
03:30 PM	15	210	27	0	252	30	167	25	2	224	39	15	37	0	91	41	21	7	0	69	636
03:45 PM	14	168	16	0	198	34	171	34	2	241	30	17	28	0	75	27	18	10	0	55	569
Total	45	777	86	6	914	131	704	137	10	982	133	76	142	0	351	151	72	37	0	260	2507
04:00 PM	14	189	21	1	225	28	157	28	2	215	24	15	38	0	77	35	15	8	0	58	575
04:15 PM	14	187	13	1	215	43	177	34	2	256	28	12	40	0	80	36	9	8	0	53	604
04:30 PM	6	196	23	2	227	40	173	30	6	249	37	18	37	0	92	42	14	6	0	62	630
04:45 PM	8	171	16	2	197	48	138	24	1	211	29	12	29	0	70	36	9	7	0	52	530
Total	42	743	73	6	864	159	645	116	11	931	118	57	144	0	319	149	47	29	0	225	2339
05:00 PM	11	200	17	2	230	37	151	41	5	234	33	10	32	0	75	45	16	10	0	71	610
05:15 PM	4	168	13	3	188	29	148	37	2	216	23	11	30	0	64	34	14	5	0	53	521
05:30 PM	9	212	18	2	241	20	148	37	0	205	28	6	22	0	56	35	10	4	0	49	551
05:45 PM	11	180	17	0	208	20	165	20	4	209	39	9	37	0	85	35	15	5	0	55	557
Total	35	760	65	7	867	106	612	135	11	864	123	36	121	0	280	149	55	24	0	228	2239
06:00 PM	6	194	25	3	228	28	176	28	4	236	26	11	58	0	95	34	13	1	0	48	607
06:15 PM	8	174	13	5	200	18	153	28	2	201	21	16	21	0	58	30	8	5	0	43	502
06:30 PM	6	182	24	1	213	17	168	26	2	213	26	11	23	0	60	28	13	6	0	47	533
06:45 PM	6	130	24	2	162	36	116	36	0	188	28	13	19	0	60	29	11	8	0	48	458
Total	26	680	86	11	803	99	613	118	8	838	101	51	121	0	273	121	45	20	0	186	2100

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File Name : 11-Hwy 29 and Blackwell Rd SAT
 Site Code :
 Start Date : 8/7/2021
 Page No : 2

Groups Printed- Cars

	Hwy 29 Eastbound					Hwy 29 Westbound					Blackwell Rd Northbound					Blackwell Rd Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
Grand Total	470	8076	967	95	9608	1598	7988	1499	119	11204	1540	708	1699	0	3947	1538	642	347	0	2527	27286
Apprch %	4.9	84.1	10.1	1		14.3	71.3	13.4	1.1		39	17.9	43	0		60.9	25.4	13.7	0		
Total %	1.7	29.6	3.5	0.3	35.2	5.9	29.3	5.5	0.4	41.1	5.6	2.6	6.2	0	14.5	5.6	2.4	1.3	0	9.3	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Blackwell Rd Northbound				Blackwell Rd Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:00 AM																	
11:00 AM	9	186	20	215	45	198	37	280	66	21	50	137	34	14	7	55	687
11:15 AM	10	187	21	218	45	178	47	270	52	27	44	123	33	22	13	68	679
11:30 AM	13	208	18	239	42	209	30	281	34	19	41	94	50	20	9	79	693
11:45 AM	8	174	20	202	26	214	51	291	46	18	58	122	50	19	11	80	695
Total Volume	40	755	79	874	158	799	165	1122	198	85	193	476	167	75	40	282	2754
% App. Total	4.6	86.4	9		14.1	71.2	14.7		41.6	17.9	40.5		59.2	26.6	14.2		
PHF	.769	.907	.940	.914	.878	.933	.809	.964	.750	.787	.832	.869	.835	.852	.769	.881	.991

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Blackwell Rd Northbound				Blackwell Rd Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	14	194	23	231	42	191	32	265	54	20	46	120	41	12	9	62	678
12:15 PM	16	220	24	260	34	208	39	281	36	13	50	99	39	17	13	69	709
12:30 PM	6	186	26	218	44	197	33	274	42	29	46	117	45	18	13	76	685
12:45 PM	10	200	34	244	25	192	45	262	52	15	44	111	27	21	10	58	675
Total Volume	46	800	107	953	145	788	149	1082	184	77	186	447	152	68	45	265	2747
% App. Total	4.8	83.9	11.2		13.4	72.8	13.8		41.2	17.2	41.6		57.4	25.7	17		
PHF	.719	.909	.787	.916	.824	.947	.828	.963	.852	.664	.930	.931	.844	.810	.865	.872	.969

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File Name : 11-Hwy 29 and Blackwell Rd SAT
Site Code :
Start Date : 8/7/2021
Page No : 2

Groups Printed- Trucks

	Hwy 29 Eastbound					Hwy 29 Westbound					Blackwell Rd Northbound					Blackwell Rd Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
Grand Total	2	124	5	0	131	13	126	13	0	152	6	9	14	0	29	13	1	6	0	20	332
Apprch %	1.5	94.7	3.8	0		8.6	82.9	8.6	0		20.7	31	48.3	0		65	5	30	0		
Total %	0.6	37.3	1.5	0	39.5	3.9	38	3.9	0	45.8	1.8	2.7	4.2	0	8.7	3.9	0.3	1.8	0	6	

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Blackwell Rd Northbound					Blackwell Rd Southbound					Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total					
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:30 AM																					
08:30 AM	0	6	0	6	2	2	1	5	0	0	0	0	1	0	0	1	12				
08:45 AM	0	4	0	4	0	7	0	7	0	0	0	0	0	0	0	0	11				
09:00 AM	0	5	0	5	2	3	0	5	0	0	0	0	1	0	1	2	12				
09:15 AM	0	5	0	5	0	2	1	3	1	0	1	2	0	0	0	0	10				
Total Volume	0	20	0	20	4	14	2	20	1	0	1	2	2	0	1	3	45				
% App. Total	0	100	0		20	70	10		50	0	50		66.7	0	33.3						
PHF	.000	.833	.000	.833	.500	.500	.500	.714	.250	.000	.250	.250	.500	.000	.250	.375	.938				

Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Blackwell Rd Northbound					Blackwell Rd Southbound					Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total					
Peak Hour for Entire Intersection Begins at 02:30 PM																					
02:30 PM	0	0	0	0	0	11	0	11	0	0	0	0	1	0	0	1	12				
02:45 PM	0	2	0	2	0	4	0	4	0	1	0	1	0	0	0	0	7				
03:00 PM	0	3	0	3	0	2	0	2	0	1	2	3	0	0	0	0	8				
03:15 PM	0	9	0	9	1	6	1	8	0	0	0	0	0	0	1	1	18				
Total Volume	0	14	0	14	1	23	1	25	0	2	2	4	1	0	1	2	45				
% App. Total	0	100	0		4	92	4		0	50	50		50	0	50						
PHF	.000	.389	.000	.389	.250	.523	.250	.568	.000	.500	.250	.333	.250	.000	.250	.500	.625				

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File Name : 11-Hwy 29 and Blackwell Rd SAT
 Site Code :
 Start Date : 8/7/2021
 Page No : 2

Groups Printed- Cars - Trucks

	Hwy 29 Eastbound					Hwy 29 Westbound					Blackwell Rd Northbound					Blackwell Rd Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
Grand Total	472	8200	972	95	9739	1611	8114	1512	119	11356	1546	717	1713	0	3976	1551	643	353	0	2547	27618
Apprch %	4.8	84.2	10	1		14.2	71.5	13.3	1		38.9	18	43.1	0		60.9	25.2	13.9	0		
Total %	1.7	29.7	3.5	0.3	35.3	5.8	29.4	5.5	0.4	41.1	5.6	2.6	6.2	0	14.4	5.6	2.3	1.3	0	9.2	
Cars	470	8076	967	95	9608	1598	7988	1499	119	11204	1540	708	1699	0	3947	1538	642	347	0	2527	27286
% Cars	99.6	98.5	99.5	100	98.7	99.2	98.4	99.1	100	98.7	99.6	98.7	99.2	0	99.3	99.2	99.8	98.3	0	99.2	98.8
Trucks	2	124	5	0	131	13	126	13	0	152	6	9	14	0	29	13	1	6	0	20	332
% Trucks	0.4	1.5	0.5	0	1.3	0.8	1.6	0.9	0	1.3	0.4	1.3	0.8	0	0.7	0.8	0.2	1.7	0	0.8	1.2

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Blackwell Rd Northbound				Blackwell Rd Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:00 AM																	
11:00 AM	9	188	20	217	46	202	39	287	66	21	50	137	34	14	7	55	696
11:15 AM	11	192	21	224	45	181	47	273	52	27	46	125	34	22	13	69	691
11:30 AM	13	212	18	243	42	213	30	285	34	20	42	96	50	20	9	79	703
11:45 AM	8	176	20	204	26	218	51	295	46	18	58	122	50	19	11	80	701
Total Volume	41	768	79	888	159	814	167	1140	198	86	196	480	168	75	40	283	2791
% App. Total	4.6	86.5	8.9		13.9	71.4	14.6		41.2	17.9	40.8		59.4	26.5	14.1		
PHF	.788	.906	.940	.914	.864	.933	.819	.966	.750	.796	.845	.876	.840	.852	.769	.884	.993

Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	14	198	23	235	42	193	32	267	54	20	46	120	41	12	9	62	684
12:15 PM	16	225	25	266	34	211	40	285	36	13	51	100	40	17	13	70	721
12:30 PM	6	188	26	220	44	200	34	278	42	30	46	118	46	18	13	77	693
12:45 PM	10	201	34	245	25	192	46	263	53	15	44	112	28	21	10	59	679
Total Volume	46	812	108	966	145	796	152	1093	185	78	187	450	155	68	45	268	2777
% App. Total	4.8	84.1	11.2		13.3	72.8	13.9		41.1	17.3	41.6		57.8	25.4	16.8		
PHF	.719	.902	.794	.908	.824	.943	.826	.959	.856	.650	.917	.938	.842	.810	.865	.870	.963

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File Name : 11-Hwy 29 and Blackwell Rd SAT
 Site Code :
 Start Date : 8/7/2021
 Page No : 2

Groups Printed- Pedestrians

	Hwy 29 Eastbound					Hwy 29 Westbound					Blackwell Rd Northbound					Blackwell Rd Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
Grand Total	0	0	0	14	14	0	0	0	2	2	0	0	0	4	4	0	0	0	2	2	22
Apprch %	0	0	0	100		0	0	0	100		0	0	0	100		0	0	0	100		
Total %	0	0	0	63.6	63.6	0	0	0	9.1	9.1	0	0	0	18.2	18.2	0	0	0	9.1	9.1	

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Blackwell Rd Northbound					Blackwell Rd Southbound					Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total					
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Blackwell Rd Northbound					Blackwell Rd Southbound					Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total					
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	

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File Name : 11-Hwy 29 and Blackwell Rd AM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Cars

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Blackwell Rd Northbound					Blackwell Rd Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
06:00 AM	2	123	4	1	130	5	81	9	0	95	5	4	24	0	33	9	5	0	0	14	272
06:15 AM	1	155	6	0	162	8	76	9	0	93	9	2	32	0	43	7	0	1	0	8	306
06:30 AM	5	165	8	1	179	10	103	7	1	121	10	3	28	0	41	10	3	1	0	14	355
06:45 AM	6	147	12	0	165	8	128	17	0	153	10	1	29	0	40	20	8	2	0	30	388
Total	14	590	30	2	636	31	388	42	1	462	34	10	113	0	157	46	16	4	0	66	1321
07:00 AM	5	126	9	1	141	22	99	13	0	134	16	5	42	0	63	13	9	0	0	22	360
07:15 AM	7	157	21	1	186	31	135	16	1	183	21	6	27	0	54	22	5	2	0	29	452
07:30 AM	9	148	18	0	175	50	160	21	1	232	23	6	32	0	61	24	8	8	0	40	508
07:45 AM	7	135	32	2	176	53	197	28	1	279	30	9	33	0	72	22	16	1	0	39	566
Total	28	566	80	4	678	156	591	78	3	828	90	26	134	0	250	81	38	11	0	130	1886
08:00 AM	6	154	25	1	186	51	166	25	0	242	21	8	29	0	58	18	13	3	0	34	520
08:15 AM	6	132	23	3	164	50	131	25	2	208	23	10	45	0	78	17	7	2	0	26	476
08:30 AM	11	153	24	2	190	42	154	29	1	226	30	14	39	0	83	23	10	5	0	38	537
08:45 AM	8	155	23	3	189	55	183	37	2	277	24	11	46	0	81	26	10	3	0	39	586
Total	31	594	95	9	729	198	634	116	5	953	98	43	159	0	300	84	40	13	0	137	2119
Grand Total	73	1750	205	15	2043	385	1613	236	9	2243	222	79	406	0	707	211	94	28	0	333	5326
Apprch %	3.6	85.7	10	0.7		17.2	71.9	10.5	0.4		31.4	11.2	57.4	0		63.4	28.2	8.4	0		
Total %	1.4	32.9	3.8	0.3	38.4	7.2	30.3	4.4	0.2	42.1	4.2	1.5	7.6	0	13.3	4	1.8	0.5	0	6.3	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Blackwell Rd Northbound				Blackwell Rd Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	6	154	25	185	51	166	25	242	21	8	29	58	18	13	3	34	519
08:15 AM	6	132	23	161	50	131	25	206	23	10	45	78	17	7	2	26	471
08:30 AM	11	153	24	188	42	154	29	225	30	14	39	83	23	10	5	38	534
08:45 AM	8	155	23	186	55	183	37	275	24	11	46	81	26	10	3	39	581
Total Volume	31	594	95	720	198	634	116	948	98	43	159	300	84	40	13	137	2105
% App. Total	4.3	82.5	13.2		20.9	66.9	12.2		32.7	14.3	53		61.3	29.2	9.5		
PHF	.705	.958	.950	.957	.900	.866	.784	.862	.817	.768	.864	.904	.808	.769	.650	.878	.906

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File Name : 11-Hwy 29 and Blackwell Rd AM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Trucks

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Blackwell Rd Northbound					Blackwell Rd Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
06:00 AM	0	0	0	0	0	0	4	1	0	5	0	0	0	0	0	0	0	0	0	0	5
06:15 AM	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	0	0	2	0	2	5
06:30 AM	0	3	0	0	3	0	4	2	0	6	0	0	0	0	0	0	2	0	0	2	11
06:45 AM	0	3	0	0	3	0	9	2	0	11	0	0	0	0	0	0	0	1	0	1	15
Total	0	7	0	0	7	0	19	5	0	24	0	0	0	0	0	2	0	3	0	5	36
07:00 AM	0	2	0	0	2	0	6	1	0	7	0	0	2	0	2	1	0	0	0	1	12
07:15 AM	1	9	0	0	10	0	2	0	0	2	0	0	0	0	0	1	0	0	0	1	13
07:30 AM	2	8	0	0	10	2	15	2	0	19	0	1	2	0	3	1	0	0	0	1	33
07:45 AM	3	9	1	0	13	1	8	0	0	9	1	0	0	0	1	1	0	0	0	1	24
Total	6	28	1	0	35	3	31	3	0	37	1	1	4	0	6	4	0	0	0	4	82
08:00 AM	2	6	1	0	9	2	4	3	0	9	1	1	0	0	2	0	0	0	0	0	20
08:15 AM	1	15	0	0	16	1	9	0	0	10	0	1	1	0	2	1	0	1	0	2	30
08:30 AM	0	7	0	0	7	1	10	2	0	13	0	0	1	0	1	2	1	0	0	3	24
08:45 AM	0	8	1	0	9	1	7	0	0	8	1	0	3	0	4	2	0	0	0	2	23
Total	3	36	2	0	41	5	30	5	0	40	2	2	5	0	9	5	1	1	0	7	97
Grand Total	9	71	3	0	83	8	80	13	0	101	3	3	9	0	15	11	1	4	0	16	215
Apprch %	10.8	85.5	3.6	0		7.9	79.2	12.9	0		20	20	60	0		68.8	6.2	25	0		
Total %	4.2	33	1.4	0	38.6	3.7	37.2	6	0	47	1.4	1.4	4.2	0	7	5.1	0.5	1.9	0	7.4	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Blackwell Rd Northbound				Blackwell Rd Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	2	8	0	10	2	15	2	19	0	1	2	3	1	0	0	1	33
07:45 AM	3	9	1	13	1	8	0	9	1	0	0	1	1	0	0	1	24
08:00 AM	2	6	1	9	2	4	3	9	1	1	0	2	0	0	0	0	20
08:15 AM	1	15	0	16	1	9	0	10	0	1	1	2	1	0	1	2	30
Total Volume	8	38	2	48	6	36	5	47	2	3	3	8	3	0	1	4	107
% App. Total	16.7	79.2	4.2		12.8	76.6	10.6		25	37.5	37.5		75	0	25		
PHF	.667	.633	.500	.750	.750	.600	.417	.618	.500	.750	.375	.667	.750	.000	.250	.500	.811

Peggy Malone & Associates

(888) 247-8602

File Name : 11-Hwy 29 and Blackwell Rd AM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Cars - Trucks

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Blackwell Rd Northbound					Blackwell Rd Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
06:00 AM	2	123	4	1	130	5	85	10	0	100	5	4	24	0	33	9	5	0	0	14	277
06:15 AM	1	156	6	0	163	8	78	9	0	95	9	2	32	0	43	7	0	3	0	10	311
06:30 AM	5	168	8	1	182	10	107	9	1	127	10	3	28	0	41	12	3	1	0	16	366
06:45 AM	6	150	12	0	168	8	137	19	0	164	10	1	29	0	40	20	8	3	0	31	403
Total	14	597	30	2	643	31	407	47	1	486	34	10	113	0	157	48	16	7	0	71	1357
07:00 AM	5	128	9	1	143	22	105	14	0	141	16	5	44	0	65	14	9	0	0	23	372
07:15 AM	8	166	21	1	196	31	137	16	1	185	21	6	27	0	54	23	5	2	0	30	465
07:30 AM	11	156	18	0	185	52	175	23	1	251	23	7	34	0	64	25	8	8	0	41	541
07:45 AM	10	144	33	2	189	54	205	28	1	288	31	9	33	0	73	23	16	1	0	40	590
Total	34	594	81	4	713	159	622	81	3	865	91	27	138	0	256	85	38	11	0	134	1968
08:00 AM	8	160	26	1	195	53	170	28	0	251	22	9	29	0	60	18	13	3	0	34	540
08:15 AM	7	147	23	3	180	51	140	25	2	218	23	11	46	0	80	18	7	3	0	28	506
08:30 AM	11	160	24	2	197	43	164	31	1	239	30	14	40	0	84	25	11	5	0	41	561
08:45 AM	8	163	24	3	198	56	190	37	2	285	25	11	49	0	85	28	10	3	0	41	609
Total	34	630	97	9	770	203	664	121	5	993	100	45	164	0	309	89	41	14	0	144	2216
Grand Total	82	1821	208	15	2126	393	1693	249	9	2344	225	82	415	0	722	222	95	32	0	349	5541
Apprch %	3.9	85.7	9.8	0.7		16.8	72.2	10.6	0.4		31.2	11.4	57.5	0		63.6	27.2	9.2	0		
Total %	1.5	32.9	3.8	0.3	38.4	7.1	30.6	4.5	0.2	42.3	4.1	1.5	7.5	0	13	4	1.7	0.6	0	6.3	
Cars	73	1750	205	15	2043	385	1613	236	9	2243	222	79	406	0	707	211	94	28	0	333	5326
% Cars	89	96.1	98.6	100	96.1	98	95.3	94.8	100	95.7	98.7	96.3	97.8	0	97.9	95	98.9	87.5	0	95.4	96.1
Trucks	9	71	3	0	83	8	80	13	0	101	3	3	9	0	15	11	1	4	0	16	215
% Trucks	11	3.9	1.4	0	3.9	2	4.7	5.2	0	4.3	1.3	3.7	2.2	0	2.1	5	1.1	12.5	0	4.6	3.9

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Blackwell Rd Northbound				Blackwell Rd Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	8	160	26	194	53	170	28	251	22	9	29	60	18	13	3	34	539
08:15 AM	7	147	23	177	51	140	25	216	23	11	46	80	18	7	3	28	501
08:30 AM	11	160	24	195	43	164	31	238	30	14	40	84	25	11	5	41	558
08:45 AM	8	163	24	195	56	190	37	283	25	11	49	85	28	10	3	41	604
Total Volume	34	630	97	761	203	664	121	988	100	45	164	309	89	41	14	144	2202
% App. Total	4.5	82.8	12.7		20.5	67.2	12.2		32.4	14.6	53.1		61.8	28.5	9.7		
PHF	.773	.966	.933	.976	.906	.874	.818	.873	.833	.804	.837	.909	.795	.788	.700	.878	.911

Peggy Malone & Associates

(888) 247-8602

File Name : 11-Hwy 29 and Blackwell Rd AM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Pedestrians

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Blackwell Rd Northbound					Blackwell Rd Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	2
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	2
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	3
Apprch %	0	0	0	100		0	0	0	100		0	0	0	0		0	0	0	0		
Total %	0	0	0	33.3	33.3	0	0	0	66.7	66.7	0	0	0	0	0	0	0	0	0	0	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Blackwell Rd Northbound				Blackwell Rd Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 06:00 AM																	
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
06:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
06:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	

Peggy Malone & Associates

(888) 247-8602

File Name : 11-Hwy 29 and Blackwell Rd PM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Cars

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Blackwell Rd Northbound					Blackwell Rd Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
02:00 PM	8	173	34	4	219	49	178	29	2	258	59	26	53	0	138	32	30	10	0	72	687
02:15 PM	11	166	45	3	225	44	169	31	3	247	45	18	44	0	107	40	17	3	0	60	639
02:30 PM	9	196	34	1	240	50	201	39	2	292	35	18	41	0	94	31	17	4	0	52	678
02:45 PM	10	188	34	3	235	50	194	33	2	279	45	27	65	0	137	44	22	14	0	80	731
Total	38	723	147	11	919	193	742	132	9	1076	184	89	203	0	476	147	86	31	0	264	2735
03:00 PM	3	190	37	3	233	52	196	51	2	301	38	22	46	0	106	29	24	7	0	60	700
03:15 PM	8	192	33	4	237	61	222	42	3	328	60	21	36	0	117	30	18	7	0	55	737
03:30 PM	10	177	30	1	218	46	193	30	2	271	53	29	41	0	123	43	20	8	0	71	683
03:45 PM	6	197	43	1	247	67	240	44	1	352	45	23	49	0	117	35	14	5	0	54	770
Total	27	756	143	9	935	226	851	167	8	1252	196	95	172	0	463	137	76	27	0	240	2890
04:00 PM	20	220	28	3	271	43	205	37	2	287	63	40	51	0	154	33	29	6	0	68	780
04:15 PM	12	233	23	5	273	51	213	36	1	301	61	29	58	0	148	40	28	14	0	82	804
04:30 PM	5	182	25	5	217	32	263	46	2	343	49	27	73	0	149	56	25	9	0	90	799
04:45 PM	10	203	30	0	243	39	233	47	2	321	58	23	64	0	145	44	27	8	0	79	788
Total	47	838	106	13	1004	165	914	166	7	1252	231	119	246	0	596	173	109	37	0	319	3171
05:00 PM	14	206	27	3	250	39	197	40	4	280	49	22	101	0	172	59	13	8	0	80	782
05:15 PM	12	195	23	5	235	44	259	40	0	343	54	17	64	0	135	46	27	7	0	80	793
05:30 PM	11	192	29	1	233	41	245	43	1	330	43	21	53	0	117	37	17	4	0	58	738
05:45 PM	13	203	27	0	243	52	258	31	3	344	34	16	46	0	96	39	15	10	0	64	747
Total	50	796	106	9	961	176	959	154	8	1297	180	76	264	0	520	181	72	29	0	282	3060
06:00 PM	8	217	27	3	255	41	216	28	1	286	29	14	51	0	94	42	14	4	0	60	695
06:15 PM	12	180	24	2	218	27	215	40	2	284	29	7	31	0	67	38	17	4	0	59	628
06:30 PM	9	187	24	3	223	37	211	41	4	293	41	19	28	0	88	36	14	8	0	58	662
06:45 PM	9	154	27	3	193	43	184	32	2	261	31	14	19	0	64	40	18	4	0	62	580
Total	38	738	102	11	889	148	826	141	9	1124	130	54	129	0	313	156	63	20	0	239	2565
Grand Total	200	3851	604	53	4708	908	4292	760	41	6001	921	433	1014	0	2368	794	406	144	0	1344	14421
Apprch %	4.2	81.8	12.8	1.1		15.1	71.5	12.7	0.7		38.9	18.3	42.8	0		59.1	30.2	10.7	0		
Total %	1.4	26.7	4.2	0.4	32.6	6.3	29.8	5.3	0.3	41.6	6.4	3	7	0	16.4	5.5	2.8	1	0	9.3	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Blackwell Rd Northbound				Blackwell Rd Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	20	220	28	268	43	205	37	285	63	40	51	154	33	29	6	68	775
04:15 PM	12	233	23	268	51	213	36	300	61	29	58	148	40	28	14	82	798
04:30 PM	5	182	25	212	32	263	46	341	49	27	73	149	56	25	9	90	792
04:45 PM	10	203	30	243	39	233	47	319	58	23	64	145	44	27	8	79	786
Total Volume	47	838	106	991	165	914	166	1245	231	119	246	596	173	109	37	319	3151
% App. Total	4.7	84.6	10.7		13.3	73.4	13.3		38.8	20	41.3		54.2	34.2	11.6		
PHF	.588	.899	.883	.924	.809	.869	.883	.913	.917	.744	.842	.968	.772	.940	.661	.886	.987

Peggy Malone & Associates

(888) 247-8602

File Name : 11-Hwy 29 and Blackwell Rd PM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Trucks

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Blackwell Rd Northbound					Blackwell Rd Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
02:00 PM	0	9	0	0	9	0	9	1	0	10	0	0	1	0	1	0	0	0	0	0	20
02:15 PM	1	4	0	0	5	0	5	1	0	6	0	0	1	0	1	1	0	1	0	2	14
02:30 PM	0	5	0	0	5	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	10
02:45 PM	0	4	1	0	5	0	2	0	0	2	1	0	0	0	1	1	0	0	0	1	9
Total	1	22	1	0	24	0	21	2	0	23	1	0	2	0	3	2	0	1	0	3	53
03:00 PM	0	6	0	0	6	1	12	0	0	13	0	0	0	0	0	0	0	0	0	0	19
03:15 PM	0	3	0	0	3	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	7
03:30 PM	0	4	0	0	4	1	5	0	0	6	0	0	1	0	1	1	0	0	0	1	12
03:45 PM	1	2	0	0	3	0	4	0	1	5	1	0	1	0	2	1	0	0	0	1	11
Total	1	15	0	0	16	2	25	0	1	28	1	0	2	0	3	2	0	0	0	2	49
04:00 PM	0	1	1	0	2	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	4
04:15 PM	0	8	0	0	8	2	5	1	0	8	0	0	0	0	0	1	1	0	0	2	18
04:30 PM	0	3	0	0	3	0	2	0	0	2	0	1	1	0	2	0	0	0	0	0	7
04:45 PM	0	2	0	0	2	0	4	0	0	4	0	0	1	0	1	0	0	0	0	0	7
Total	0	14	1	0	15	3	11	1	0	15	0	2	2	0	4	1	1	0	0	2	36
05:00 PM	0	4	1	0	5	0	5	0	0	5	0	0	0	0	0	1	0	1	0	2	12
05:15 PM	0	5	0	0	5	0	4	1	0	5	1	2	0	0	3	0	0	0	0	0	13
05:30 PM	0	3	0	0	3	0	7	0	0	7	0	0	2	0	2	2	1	0	0	3	15
05:45 PM	0	2	0	0	2	0	3	1	0	4	2	1	0	0	3	0	0	0	0	0	9
Total	0	14	1	0	15	0	19	2	0	21	3	3	2	0	8	3	1	1	0	5	49
06:00 PM	0	2	0	0	2	0	3	1	0	4	0	0	0	0	0	1	1	1	0	3	9
06:15 PM	0	3	0	0	3	0	1	0	0	1	1	0	0	0	1	2	0	0	0	2	7
06:30 PM	0	3	0	0	3	0	1	0	0	1	2	0	0	0	2	0	0	0	0	0	6
06:45 PM	0	0	0	0	0	0	3	0	0	3	0	1	0	0	1	0	0	0	0	0	4
Total	0	8	0	0	8	0	8	1	0	9	3	1	0	0	4	3	1	1	0	5	26
Grand Total	2	73	3	0	78	5	84	6	1	96	8	6	8	0	22	11	3	3	0	17	213
Apprch %	2.6	93.6	3.8	0		5.2	87.5	6.2	1		36.4	27.3	36.4	0		64.7	17.6	17.6	0		
Total %	0.9	34.3	1.4	0	36.6	2.3	39.4	2.8	0.5	45.1	3.8	2.8	3.8	0	10.3	5.2	1.4	1.4	0	8	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Blackwell Rd Northbound				Blackwell Rd Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:00 PM																	
02:00 PM	0	9	0	9	0	9	1	10	0	0	1	1	0	0	0	0	20
02:15 PM	1	4	0	5	0	5	1	6	0	0	1	1	1	0	1	2	14
02:30 PM	0	5	0	5	0	5	0	5	0	0	0	0	0	0	0	0	10
02:45 PM	0	4	1	5	0	2	0	2	1	0	0	1	1	0	0	1	9
Total Volume	1	22	1	24	0	21	2	23	1	0	2	3	2	0	1	3	53
% App. Total	4.2	91.7	4.2		0	91.3	8.7		33.3	0	66.7		66.7	0	33.3		
PHF	.250	.611	.250	.667	.000	.583	.500	.575	.250	.000	.500	.750	.500	.000	.250	.375	.663

Peggy Malone & Associates

(888) 247-8602

File Name : 11-Hwy 29 and Blackwell Rd PM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Cars - Trucks

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Blackwell Rd Northbound					Blackwell Rd Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
02:00 PM	8	182	34	4	228	49	187	30	2	268	59	26	54	0	139	32	30	10	0	72	707
02:15 PM	12	170	45	3	230	44	174	32	3	253	45	18	45	0	108	41	17	4	0	62	653
02:30 PM	9	201	34	1	245	50	206	39	2	297	35	18	41	0	94	31	17	4	0	52	688
02:45 PM	10	192	35	3	240	50	196	33	2	281	46	27	65	0	138	45	22	14	0	81	740
Total	39	745	148	11	943	193	763	134	9	1099	185	89	205	0	479	149	86	32	0	267	2788
03:00 PM	3	196	37	3	239	53	208	51	2	314	38	22	46	0	106	29	24	7	0	60	719
03:15 PM	8	195	33	4	240	61	226	42	3	332	60	21	36	0	117	30	18	7	0	55	744
03:30 PM	10	181	30	1	222	47	198	30	2	277	53	29	42	0	124	44	20	8	0	72	695
03:45 PM	7	199	43	1	250	67	244	44	2	357	46	23	50	0	119	36	14	5	0	55	781
Total	28	771	143	9	951	228	876	167	9	1280	197	95	174	0	466	139	76	27	0	242	2939
04:00 PM	20	221	29	3	273	44	205	37	2	288	63	41	51	0	155	33	29	6	0	68	784
04:15 PM	12	241	23	5	281	53	218	37	1	309	61	29	58	0	148	41	29	14	0	84	822
04:30 PM	5	185	25	5	220	32	265	46	2	345	49	28	74	0	151	56	25	9	0	90	806
04:45 PM	10	205	30	0	245	39	237	47	2	325	58	23	65	0	146	44	27	8	0	79	795
Total	47	852	107	13	1019	168	925	167	7	1267	231	121	248	0	600	174	110	37	0	321	3207
05:00 PM	14	210	28	3	255	39	202	40	4	285	49	22	101	0	172	60	13	9	0	82	794
05:15 PM	12	200	23	5	240	44	263	41	0	348	55	19	64	0	138	46	27	7	0	80	806
05:30 PM	11	195	29	1	236	41	252	43	1	337	43	21	55	0	119	39	18	4	0	61	753
05:45 PM	13	205	27	0	245	52	261	32	3	348	36	17	46	0	99	39	15	10	0	64	756
Total	50	810	107	9	976	176	978	156	8	1318	183	79	266	0	528	184	73	30	0	287	3109
06:00 PM	8	219	27	3	257	41	219	29	1	290	29	14	51	0	94	43	15	5	0	63	704
06:15 PM	12	183	24	2	221	27	216	40	2	285	30	7	31	0	68	40	17	4	0	61	635
06:30 PM	9	190	24	3	226	37	212	41	4	294	43	19	28	0	90	36	14	8	0	58	668
06:45 PM	9	154	27	3	193	43	187	32	2	264	31	15	19	0	65	40	18	4	0	62	584
Total	38	746	102	11	897	148	834	142	9	1133	133	55	129	0	317	159	64	21	0	244	2591
Grand Total	202	3924	607	53	4786	913	4376	766	42	6097	929	439	1022	0	2390	805	409	147	0	1361	14634
Apprch %	4.2	82	12.7	1.1		15	71.8	12.6	0.7		38.9	18.4	42.8	0		59.1	30.1	10.8	0		
Total %	1.4	26.8	4.1	0.4	32.7	6.2	29.9	5.2	0.3	41.7	6.3	3	7	0	16.3	5.5	2.8	1	0	9.3	
Cars	200	3851	604	53	4708	908	4292	760	41	6001	921	433	1014	0	2368	794	406	144	0	1344	14421
% Cars	99	98.1	99.5	100	98.4	99.5	98.1	99.2	97.6	98.4	99.1	98.6	99.2	0	99.1	98.6	99.3	98	0	98.8	98.5
Trucks	2	73	3	0	78	5	84	6	1	96	8	6	8	0	22	11	3	3	0	17	213
% Trucks	1	1.9	0.5	0	1.6	0.5	1.9	0.8	2.4	1.6	0.9	1.4	0.8	0	0.9	1.4	0.7	2	0	1.2	1.5

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Blackwell Rd Northbound				Blackwell Rd Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	12	241	23	276	53	218	37	308	61	29	58	148	41	29	14	84	816
04:30 PM	5	185	25	215	32	265	46	343	49	28	74	151	56	25	9	90	799
04:45 PM	10	205	30	245	39	237	47	323	58	23	65	146	44	27	8	79	793
05:00 PM	14	210	28	252	39	202	40	281	49	22	101	172	60	13	9	82	787
Total Volume	41	841	106	988	163	922	170	1255	217	102	298	617	201	94	40	335	3195
% App. Total	4.1	85.1	10.7		13	73.5	13.5		35.2	16.5	48.3		60	28.1	11.9		
PHF	.732	.872	.883	.895	.769	.870	.904	.915	.889	.879	.738	.897	.838	.810	.714	.931	.979

Peggy Malone & Associates

(888) 247-8602

File Name : 11-Hwy 29 and Blackwell Rd PM
 Site Code :
 Start Date : 8/5/2021
 Page No : 1

Groups Printed- Pedestrians

Start Time	Hwy 29 Eastbound					Hwy 29 Westbound					Blackwell Rd Northbound					Blackwell Rd Southbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
02:00 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
03:00 PM	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	3
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	3	3	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	6
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	8	8	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	11
Apprch %	0	0	0	100		0	0	0	100		0	0	0	0		0	0	0	0		
Total %	0	0	0	72.7	72.7	0	0	0	27.3	27.3	0	0	0	0	0	0	0	0	0	0	

Start Time	Hwy 29 Eastbound				Hwy 29 Westbound				Blackwell Rd Northbound				Blackwell Rd Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:00 PM																	
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
























Appendix B:

Synchro Reports

HCM Signalized Intersection Capacity Analysis

1: Winchester St/Broadview Avenue & Lee Highway

12/03/2021

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	221	718	19	25	628	135	63	46	48	130	73	174	
Future Volume (vph)	221	718	19	25	628	135	63	46	48	130	73	174	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	7.8	5.2		6.9	5.8	9.4	8.3	8.3	4.0	9.4	9.4	4.0	
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00	
Satd. Flow (prot)	3335	3425		1805	3438	1524	1770	1900	1615	1649	1759	1583	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00	
Satd. Flow (perm)	3335	3425		1805	3438	1524	1770	1900	1615	1649	1759	1583	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Adj. Flow (vph)	238	772	20	27	675	145	68	49	52	140	78	187	
RTOR Reduction (vph)	0	1	0	0	0	58	0	0	0	0	0	0	
Lane Group Flow (vph)	238	791	0	27	675	87	68	49	52	108	110	187	
Heavy Vehicles (%)	5%	5%	5%	0%	5%	6%	2%	0%	0%	4%	0%	2%	
Turn Type	Prot	NA		Prot	NA	pm+ov	Split	NA	Free	Split	NA	Free	
Protected Phases	5	2		1	6	4	3	3		4	4		
Permitted Phases						6			Free			Free	
Actuated Green, G (s)	15.3	80.9		5.2	69.3	84.0	9.4	9.4	140.0	14.7	14.7	140.0	
Effective Green, g (s)	15.3	80.9		5.2	69.3	84.0	9.4	9.4	140.0	14.7	14.7	140.0	
Actuated g/C Ratio	0.11	0.58		0.04	0.49	0.60	0.07	0.07	1.00	0.10	0.10	1.00	
Clearance Time (s)	7.8	5.2		6.9	5.8	9.4	8.3	8.3		9.4	9.4		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)	364	1979		67	1701	914	118	127	1615	173	184	1583	
v/s Ratio Prot	c0.07	c0.23		0.01	0.20	0.01	c0.04	0.03		c0.07	0.06		
v/s Ratio Perm						0.05			0.03			0.12	
v/c Ratio	0.65	0.40		0.40	0.40	0.10	0.58	0.39	0.03	0.62	0.60	0.12	
Uniform Delay, d1	59.8	16.2		65.9	22.2	11.9	63.4	62.5	0.0	60.0	59.8	0.0	
Progression Factor	1.00	1.00		1.14	0.60	2.35	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.2	0.6		3.8	0.7	0.0	6.7	1.9	0.0	6.8	5.1	0.2	
Delay (s)	64.0	16.8		79.0	13.9	28.0	70.0	64.5	0.0	66.9	65.0	0.2	
Level of Service	E	B		E	B	C	E	E	A	E	E	A	
Approach Delay (s)		27.7			18.4			46.9			35.5		
Approach LOS		C			B			D			D		
Intersection Summary													
HCM 2000 Control Delay			27.1									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.49										
Actuated Cycle Length (s)			140.0									Sum of lost time (s)	31.3
Intersection Capacity Utilization			55.6%									ICU Level of Service	B
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis

2: Branch Drive & Lee Highway

12/03/2021






















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	855	6	49	759	31	9	11	48	38	13	24
Future Volume (vph)	44	855	6	49	759	31	9	11	48	38	13	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4	5.7	5.7	6.8	5.6	5.6		6.6	6.6		7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00		0.96	1.00
Satd. Flow (prot)	1752	3438	1615	1805	3438	1615		1858	1468		1728	1495
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00		0.96	1.00
Satd. Flow (perm)	1752	3438	1615	1805	3438	1615		1858	1468		1728	1495
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	49	950	7	54	843	34	10	12	53	42	14	27
RTOR Reduction (vph)	0	0	2	0	0	12	0	0	51	0	0	25
Lane Group Flow (vph)	49	950	5	54	843	22	0	22	2	0	56	2
Heavy Vehicles (%)	3%	5%	0%	0%	5%	0%	0%	0%	10%	8%	0%	8%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases			6			2			4			3
Actuated Green, G (s)	8.2	90.2	90.2	8.4	90.9	90.9		6.1	6.1		8.7	8.7
Effective Green, g (s)	8.2	90.2	90.2	8.4	90.9	90.9		6.1	6.1		8.7	8.7
Actuated g/C Ratio	0.06	0.64	0.64	0.06	0.65	0.65		0.04	0.04		0.06	0.06
Clearance Time (s)	6.4	5.7	5.7	6.8	5.6	5.6		6.6	6.6		7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	102	2215	1040	108	2232	1048		80	63		107	92
v/s Ratio Prot	0.03	c0.28		c0.03	0.25			c0.01			c0.03	
v/s Ratio Perm			0.00			0.01			0.00			0.00
v/c Ratio	0.48	0.43	0.00	0.50	0.38	0.02		0.28	0.04		0.52	0.02
Uniform Delay, d1	63.8	12.2	8.9	63.8	11.4	8.7		64.8	64.1		63.6	61.6
Progression Factor	1.15	0.42	1.00	1.24	0.15	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	3.4	0.6	0.0	3.5	0.5	0.0		1.9	0.2		4.6	0.1
Delay (s)	76.8	5.7	8.9	82.8	2.2	8.8		66.7	64.4		68.2	61.7
Level of Service	E	A	A	F	A	A		E	E		E	E
Approach Delay (s)		9.2			7.1			65.0			66.1	
Approach LOS		A			A			E			E	

Intersection Summary

HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	26.6
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
 3: BP Gas Station/Village Center & Lee Highway

12/03/2021

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	20	32	891	0	5	3	763	8	0	0	5	9
Future Volume (Veh/h)	20	32	891	0	5	3	763	8	0	0	5	9
Sign Control			Free				Free			Stop		
Grade			0%				0%			0%		
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	35	979	0	0	3	838	9	0	0	5	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type			None				None					
Median storage (veh)												
Upstream signal (ft)			549				429					
pX, platoon unblocked	0.00	0.90			0.00	0.87			0.92	0.92	0.87	0.92
vC, conflicting volume	0	847			0	979			1536	1902	490	1408
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0	611			0	674			921	1320	111	783
tC, single (s)	0.0	4.2			0.0	4.1			7.5	6.5	6.9	7.5
tC, 2 stage (s)												
tF (s)	0.0	2.3			0.0	2.2			3.5	4.0	3.3	3.5
p0 queue free %	0	96			0	100			100	100	99	96
cM capacity (veh/h)	0	845			0	805			187	139	806	254
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1	SB 2	
Volume Total	35	490	490	0	3	419	419	9	5	10	62	
Volume Left	35	0	0	0	3	0	0	0	0	10	0	
Volume Right	0	0	0	0	0	0	0	9	5	0	62	
cSH	845	1700	1700	1700	805	1700	1700	1700	806	254	806	
Volume to Capacity	0.04	0.29	0.29	0.00	0.00	0.25	0.25	0.01	0.01	0.04	0.08	
Queue Length 95th (ft)	3	0	0	0	0	0	0	0	0	3	6	
Control Delay (s)	9.4	0.0	0.0	0.0	9.5	0.0	0.0	0.0	9.5	19.8	9.8	
Lane LOS	A				A				A	C	A	
Approach Delay (s)	0.3				0.0				9.5	11.2		
Approach LOS									A	B		
Intersection Summary												
Average Delay			0.6									
Intersection Capacity Utilization			45.1%			ICU Level of Service			A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

3: BP Gas Station/Village Center & Lee Highway

12/03/2021



Movement	SBT	SBR
Lane Configurations	↔	↗
Traffic Volume (veh/h)	0	56
Future Volume (Veh/h)	0	56
Sign Control	Stop	
Grade	0%	
Peak Hour Factor	0.91	0.91
Hourly flow rate (vph)	0	62
Pedestrians		
Lane Width (ft)		
Walking Speed (ft/s)		
Percent Blockage		
Right turn flare (veh)		
Median type		
Median storage (veh)		
Upstream signal (ft)		
pX, platoon unblocked	0.92	0.90
vC, conflicting volume	1893	419
vC1, stage 1 conf vol		
vC2, stage 2 conf vol		
vCu, unblocked vol	1310	136
tC, single (s)	6.5	6.9
tC, 2 stage (s)		
tF (s)	4.0	3.3
p0 queue free %	100	92
cM capacity (veh/h)	141	806
Direction, Lane #		

HCM Signalized Intersection Capacity Analysis

4: Fletcher Drive & Lee Highway

12/03/2021






























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	819	54	20	733	34	20	8	19	46	11	24
Future Volume (vph)	37	819	54	20	733	34	20	8	19	46	11	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.7	5.5	7.1	6.7	5.1	8.9	7.1	7.1	6.7		8.9	8.9
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00		0.96	1.00
Satd. Flow (prot)	1805	3438	1553	1719	3438	1615	1715	1649	1455		1740	1429
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00		0.96	1.00
Satd. Flow (perm)	1805	3438	1553	1719	3438	1615	1715	1649	1455		1740	1429
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	39	853	56	21	764	35	21	8	20	48	11	25
RTOR Reduction (vph)	0	0	17	0	0	10	0	0	18	0	0	23
Lane Group Flow (vph)	39	853	39	21	764	25	14	15	2	0	59	2
Heavy Vehicles (%)	0%	5%	4%	5%	5%	0%	0%	13%	11%	4%	9%	13%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	4	1	6	3	4	4	1	3	3	
Permitted Phases			2			6			4			3
Actuated Green, G (s)	7.3	92.2	98.0	4.9	90.2	99.1	5.8	5.8	10.7		8.9	8.9
Effective Green, g (s)	7.3	92.2	98.0	4.9	90.2	99.1	5.8	5.8	10.7		8.9	8.9
Actuated g/C Ratio	0.05	0.66	0.70	0.04	0.64	0.71	0.04	0.04	0.08		0.06	0.06
Clearance Time (s)	6.7	5.5	7.1	6.7	5.1	8.9	7.1	7.1	6.7		8.9	8.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	94	2264	1087	60	2215	1143	71	68	111		110	90
v/s Ratio Prot	c0.02	c0.25	0.00	0.01	0.22	0.00	0.01	c0.01	0.00		c0.03	
v/s Ratio Perm			0.02			0.01			0.00			0.00
v/c Ratio	0.41	0.38	0.04	0.35	0.34	0.02	0.20	0.22	0.01		0.54	0.02
Uniform Delay, d1	64.3	10.9	6.5	66.0	11.4	6.1	64.8	64.9	59.8		63.5	61.5
Progression Factor	1.14	0.50	0.00	1.47	0.05	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.8	0.5	0.0	3.2	0.4	0.0	1.4	1.6	0.0		5.0	0.1
Delay (s)	75.9	5.9	0.0	100.1	1.0	6.1	66.2	66.6	59.8		68.5	61.5
Level of Service	E	A	A	F	A	A	E	E	E		E	E
Approach Delay (s)		8.4			3.8			63.7			66.4	
Approach LOS		A			A			E			E	

Intersection Summary		
HCM 2000 Control Delay	10.4	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.39	B
Actuated Cycle Length (s)	140.0	Sum of lost time (s)
Intersection Capacity Utilization	52.5%	28.2
Analysis Period (min)	15	ICU Level of Service
		A
c Critical Lane Group		

HCM Signalized Intersection Capacity Analysis

5: Blackwell Road & Lee Highway

12/03/2021

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 						 		
Traffic Volume (vph)	43	744	97	208	664	121	100	45	164	89	41	14	
Future Volume (vph)	43	744	97	208	664	121	100	45	164	89	41	14	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.7	5.7	4.0	6.7	5.5	5.5	8.9	8.9	8.9	8.2	8.2	8.2	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	
Satd. Flow (prot)	1656	3406	1583	1770	3438	1553	1770	1827	1568	1618	1712	1509	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	
Satd. Flow (perm)	1656	3406	1583	1770	3438	1553	1770	1827	1568	1618	1712	1509	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	
Adj. Flow (vph)	47	818	107	229	730	133	110	49	180	98	45	15	
RTOR Reduction (vph)	0	0	0	0	0	75	0	0	162	0	0	14	
Lane Group Flow (vph)	47	818	107	229	730	58	110	49	18	71	72	1	
Heavy Vehicles (%)	9%	6%	2%	2%	5%	4%	2%	4%	3%	6%	2%	7%	
Turn Type	Prot	NA	Free	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm	
Protected Phases	5	2		1	6		4	4		3	3		
Permitted Phases			Free			6			4			3	
Actuated Green, G (s)	24.1	61.4	140.0	23.4	60.9	60.9	14.2	14.2	14.2	11.5	11.5	11.5	
Effective Green, g (s)	24.1	61.4	140.0	23.4	60.9	60.9	14.2	14.2	14.2	11.5	11.5	11.5	
Actuated g/C Ratio	0.17	0.44	1.00	0.17	0.43	0.43	0.10	0.10	0.10	0.08	0.08	0.08	
Clearance Time (s)	6.7	5.7		6.7	5.5	5.5	8.9	8.9	8.9	8.2	8.2	8.2	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	285	1493	1583	295	1495	675	179	185	159	132	140	123	
v/s Ratio Prot	0.03	c0.24		c0.13	0.21		c0.06	0.03		c0.04	0.04		
v/s Ratio Perm			0.07			0.04			0.01			0.00	
v/c Ratio	0.16	0.55	0.07	0.78	0.49	0.09	0.61	0.26	0.11	0.54	0.51	0.01	
Uniform Delay, d1	49.4	29.0	0.0	55.8	28.4	23.2	60.3	58.1	57.2	61.7	61.6	59.0	
Progression Factor	0.66	0.59	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	1.4	0.1	12.1	1.1	0.2	6.1	0.8	0.3	4.2	3.2	0.0	
Delay (s)	33.0	18.4	0.1	67.9	29.5	23.5	66.4	58.8	57.5	65.9	64.7	59.1	
Level of Service	C	B	A	E	C	C	E	E	E	E	E	E	
Approach Delay (s)		17.1			36.8			60.6			64.7		
Approach LOS		B			D			E			E		
Intersection Summary													
HCM 2000 Control Delay			34.2									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.60										
Actuated Cycle Length (s)			140.0									Sum of lost time (s)	29.5
Intersection Capacity Utilization			62.0%									ICU Level of Service	B
Analysis Period (min)			15										
c Critical Lane Group													

Queues

1: Winchester St/Broadview Avenue & Lee Highway

02/16/2022



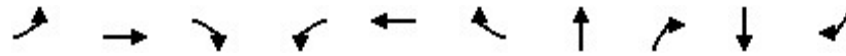
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	238	792	27	675	145	68	49	52	108	110	187
v/c Ratio	0.66	0.38	0.27	0.39	0.15	0.50	0.34	0.03	0.63	0.60	0.12
Control Delay	68.4	17.9	78.3	15.0	2.8	74.2	66.4	0.0	75.2	72.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.4	17.9	78.3	15.0	2.8	74.2	66.4	0.0	75.2	72.4	0.1
Queue Length 50th (ft)	108	212	26	60	0	61	43	0	101	102	0
Queue Length 95th (ft)	150	322	61	164	45	109	84	0	163	162	0
Internal Link Dist (ft)		770		835			259			1381	
Turn Bay Length (ft)	283		128		195	75		85	210		
Base Capacity (vph)	481	2087	120	1744	1093	236	253	1615	313	334	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.38	0.23	0.39	0.13	0.29	0.19	0.03	0.35	0.33	0.12

Intersection Summary

Queues

2: Branch Drive & Lee Highway

02/16/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	49	950	7	54	843	34	22	53	56	27
v/c Ratio	0.42	0.41	0.01	0.44	0.36	0.03	0.23	0.27	0.46	0.12
Control Delay	81.7	6.3	0.0	87.6	2.4	0.0	68.6	3.3	73.7	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.7	6.3	0.0	87.6	2.4	0.0	68.6	3.3	73.7	1.2
Queue Length 50th (ft)	44	105	0	51	32	0	20	0	50	0
Queue Length 95th (ft)	89	118	m0	101	43	0	49	0	94	0
Internal Link Dist (ft)		835			469		866		979	
Turn Bay Length (ft)	240		330	155		155		75		
Base Capacity (vph)	195	2345	1145	234	2361	1151	244	304	178	264
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.41	0.01	0.23	0.36	0.03	0.09	0.17	0.31	0.10

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

4: Fletcher Drive & Lee Highway

02/16/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	39	853	56	21	764	35	14	15	20	59	25
v/c Ratio	0.35	0.35	0.05	0.23	0.32	0.03	0.16	0.18	0.07	0.47	0.11
Control Delay	79.3	6.1	0.1	98.2	1.0	0.1	67.4	68.3	0.5	73.7	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.3	6.1	0.1	98.2	1.0	0.1	67.4	68.3	0.5	73.7	1.0
Queue Length 50th (ft)	38	73	0	20	2	0	12	13	0	53	0
Queue Length 95th (ft)	80	94	0	m45	55	1	38	40	0	99	0
Internal Link Dist (ft)		349			910			1093		912	
Turn Bay Length (ft)	155		255	255		288			75		200
Base Capacity (vph)	184	2435	1248	224	2351	1334	207	199	379	224	295
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.35	0.04	0.09	0.32	0.03	0.07	0.08	0.05	0.26	0.08

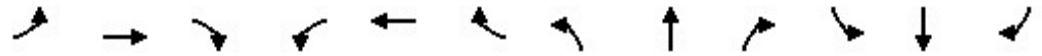
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

5: Blackwell Road & Lee Highway

02/16/2022

































Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	47	818	107	229	730	133	110	49	180	71	72	15
v/c Ratio	0.16	0.55	0.07	0.78	0.48	0.17	0.61	0.27	0.55	0.54	0.51	0.05
Control Delay	31.3	20.0	0.1	73.1	32.6	2.7	74.3	60.0	13.0	75.8	73.7	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.3	20.0	0.1	73.1	32.6	2.7	74.3	60.0	13.0	75.8	73.7	0.3
Queue Length 50th (ft)	27	129	0	202	269	0	98	42	0	66	67	0
Queue Length 95th (ft)	58	303	0	280	361	27	156	80	62	118	120	0
Internal Link Dist (ft)		910			996			609			979	
Turn Bay Length (ft)	210		150	530		320	350			180		228
Base Capacity (vph)	308	1496	1583	408	1728	860	244	252	378	217	230	369
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.55	0.07	0.56	0.42	0.15	0.45	0.19	0.48	0.33	0.31	0.04

Intersection Summary

HCM Signalized Intersection Capacity Analysis

1: Winchester St/Broadview Avenue & Lee Highway

12/03/2021

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	 	 		 	 		 			 	 		
Traffic Volume (vph)	255	718	36	59	1080	90	111	101	69	181	53	343	
Future Volume (vph)	255	718	36	59	1080	90	111	101	69	181	53	343	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	7.8	5.2		6.9	5.8	9.4	8.3	8.3	4.0	9.4	9.4	4.0	
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	
Satd. Flow (prot)	3467	3545		1805	3574	1615	1805	1900	1615	1681	1737	1583	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	
Satd. Flow (perm)	3467	3545		1805	3574	1615	1805	1900	1615	1681	1737	1583	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	260	733	37	60	1102	92	113	103	70	185	54	350	
RTOR Reduction (vph)	0	2	0	0	0	37	0	0	0	0	0	0	
Lane Group Flow (vph)	260	768	0	60	1102	55	113	103	70	118	121	350	
Heavy Vehicles (%)	1%	1%	3%	0%	1%	0%	0%	0%	0%	2%	0%	2%	
Turn Type	Prot	NA		Prot	NA	pm+ov	Split	NA	Free	Split	NA	Free	
Protected Phases	5	2		1	6	4	3	3		4	4		
Permitted Phases						6			Free			Free	
Actuated Green, G (s)	16.2	80.7		9.1	72.1	88.1	14.4	14.4	150.0	16.0	16.0	150.0	
Effective Green, g (s)	16.2	80.7		9.1	72.1	88.1	14.4	14.4	150.0	16.0	16.0	150.0	
Actuated g/C Ratio	0.11	0.54		0.06	0.48	0.59	0.10	0.10	1.00	0.11	0.11	1.00	
Clearance Time (s)	7.8	5.2		6.9	5.8	9.4	8.3	8.3		9.4	9.4		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)	374	1907		109	1717	948	173	182	1615	179	185	1583	
v/s Ratio Prot	c0.07	c0.22		0.03	c0.31	0.01	c0.06	0.05		c0.07	0.07		
v/s Ratio Perm						0.03			0.04			0.22	
v/c Ratio	0.70	0.40		0.55	0.64	0.06	0.65	0.57	0.04	0.66	0.65	0.22	
Uniform Delay, d1	64.5	20.4		68.5	29.3	13.2	65.4	64.8	0.0	64.4	64.3	0.0	
Progression Factor	1.00	1.00		1.32	0.50	1.45	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.5	0.6		5.1	1.6	0.0	8.5	4.0	0.1	8.5	8.0	0.3	
Delay (s)	70.0	21.1		95.4	16.3	19.2	73.9	68.8	0.1	72.9	72.4	0.3	
Level of Service	E	C		F	B	B	E	E	A	E	E	A	
Approach Delay (s)		33.4			20.3			54.0			29.7		
Approach LOS		C			C			D			C		
Intersection Summary													
HCM 2000 Control Delay			29.4									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.66										
Actuated Cycle Length (s)			150.0									Sum of lost time (s)	31.3
Intersection Capacity Utilization			69.4%									ICU Level of Service	C
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: Branch Drive & Lee Highway

12/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	868	4	65	1110	82	10	18	50	126	18	101
Future Volume (vph)	108	868	4	65	1110	82	10	18	50	126	18	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4	5.7	5.7	6.8	5.6	5.6		6.6	6.6		7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00		0.96	1.00
Satd. Flow (prot)	1805	3574	1615	1805	3574	1615		1868	1583		1805	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00		0.96	1.00
Satd. Flow (perm)	1805	3574	1615	1805	3574	1615		1868	1583		1805	1615
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	111	895	4	67	1144	85	10	19	52	130	19	104
RTOR Reduction (vph)	0	0	2	0	0	37	0	0	50	0	0	92
Lane Group Flow (vph)	111	895	2	67	1144	48	0	29	2	0	149	12
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	0%	2%	1%	0%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases			6			2			4			3
Actuated Green, G (s)	14.5	89.5	89.5	9.6	85.1	85.1		6.7	6.7		17.6	17.6
Effective Green, g (s)	14.5	89.5	89.5	9.6	85.1	85.1		6.7	6.7		17.6	17.6
Actuated g/C Ratio	0.10	0.60	0.60	0.06	0.57	0.57		0.04	0.04		0.12	0.12
Clearance Time (s)	6.4	5.7	5.7	6.8	5.6	5.6		6.6	6.6		7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	174	2132	963	115	2027	916		83	70		211	189
v/s Ratio Prot	c0.06	c0.25		0.04	c0.32			c0.02			c0.08	
v/s Ratio Perm			0.00			0.03			0.00			0.01
v/c Ratio	0.64	0.42	0.00	0.58	0.56	0.05		0.35	0.03		0.71	0.06
Uniform Delay, d1	65.2	16.3	12.2	68.3	20.7	14.5		69.5	68.6		63.7	58.9
Progression Factor	1.09	0.53	1.00	1.23	0.38	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	7.1	0.6	0.0	6.6	1.0	0.1		2.5	0.2		10.3	0.1
Delay (s)	78.2	9.2	12.2	90.5	8.9	14.6		72.1	68.7		74.0	59.0
Level of Service	E	A	B	F	A	B		E	E		E	E
Approach Delay (s)		16.8			13.5			69.9			67.8	
Approach LOS		B			B			E			E	

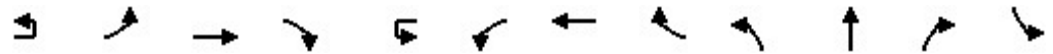
Intersection Summary

HCM 2000 Control Delay	21.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.6
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

3: BP Gas Station/Village Center & Lee Highway

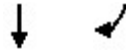
12/03/2021



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations		↔	↕↕	↗		↔	↕↕	↗		↕↔		
Traffic Volume (veh/h)	9	40	1002	0	4	1	1205	11	0	0	12	8
Future Volume (Veh/h)	9	40	1002	0	4	1	1205	11	0	0	12	8
Sign Control			Free				Free			Stop		
Grade			0%				0%			0%		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	42	1044	0	0	1	1255	11	0	0	13	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked	0.00	0.81			0.00	0.87			0.87	0.87	0.87	0.87
vC, conflicting volume	0	1266			0	1044			1802	2396	522	1876
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0	854			0	744			946	1625	142	1030
tC, single (s)	0.0	4.1			0.0	4.1			7.5	6.5	6.9	7.5
tC, 2 stage (s)												
tF (s)	0.0	2.2			0.0	2.2			3.5	4.0	3.3	3.5
p0 queue free %	0	93			0	100			100	100	98	95
cM capacity (veh/h)	0	642			0	757			172	84	769	155
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1	SB 2	
Volume Total	42	522	522	0	1	628	628	11	13	8	45	
Volume Left	42	0	0	0	1	0	0	0	0	8	0	
Volume Right	0	0	0	0	0	0	0	11	13	0	45	
cSH	642	1700	1700	1700	757	1700	1700	1700	769	155	803	
Volume to Capacity	0.07	0.31	0.31	0.00	0.00	0.37	0.37	0.01	0.02	0.05	0.06	
Queue Length 95th (ft)	5	0	0	0	0	0	0	0	1	4	4	
Control Delay (s)	11.0	0.0	0.0	0.0	9.8	0.0	0.0	0.0	9.8	29.4	9.8	
Lane LOS	B				A				A	D	A	
Approach Delay (s)	0.4				0.0				9.8	12.7		
Approach LOS									A	B		
Intersection Summary												
Average Delay			0.5									
Intersection Capacity Utilization			56.6%			ICU Level of Service				B		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 3: BP Gas Station/Village Center & Lee Highway

12/03/2021



Movement	SBT	SBR
Lane Configurations	↔	↗
Traffic Volume (veh/h)	0	43
Future Volume (Veh/h)	0	43
Sign Control	Stop	
Grade	0%	
Peak Hour Factor	0.96	0.96
Hourly flow rate (vph)	0	45
Pedestrians		
Lane Width (ft)		
Walking Speed (ft/s)		
Percent Blockage		
Right turn flare (veh)		
Median type		
Median storage (veh)		
Upstream signal (ft)		
pX, platoon unblocked	0.87	0.81
vC, conflicting volume	2385	628
vC1, stage 1 conf vol		
vC2, stage 2 conf vol		
vCu, unblocked vol	1612	64
tC, single (s)	6.5	6.9
tC, 2 stage (s)		
tF (s)	4.0	3.3
p0 queue free %	100	94
cM capacity (veh/h)	86	803
Direction, Lane #		

HCM Signalized Intersection Capacity Analysis

4: Fletcher Drive & Lee Highway

12/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	833	124	87	1042	100	101	34	82	96	27	75
Future Volume (vph)	69	833	124	87	1042	100	101	34	82	96	27	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.7	5.5	7.1	6.7	5.1	8.9	7.1	7.1	6.7		8.9	8.9
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00		0.96	1.00
Satd. Flow (prot)	1805	3539	1454	1805	3574	1568	1715	1761	1599		1829	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00		0.96	1.00
Satd. Flow (perm)	1805	3539	1454	1805	3574	1568	1715	1761	1599		1829	1615
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	71	859	128	90	1074	103	104	35	85	99	28	77
RTOR Reduction (vph)	0	0	49	0	0	35	0	0	71	0	0	69
Lane Group Flow (vph)	71	859	79	90	1074	68	69	70	14	0	127	8
Heavy Vehicles (%)	0%	2%	0%	0%	1%	3%	0%	0%	1%	0%	0%	0%
Parking (#/hr)			0									
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	4	1	6	3	4	4	1	3	3	
Permitted Phases			2			6			4			3
Actuated Green, G (s)	11.2	81.7	93.1	12.8	83.7	99.6	11.4	11.4	24.2		15.9	15.9
Effective Green, g (s)	11.2	81.7	93.1	12.8	83.7	99.6	11.4	11.4	24.2		15.9	15.9
Actuated g/C Ratio	0.07	0.54	0.62	0.09	0.56	0.66	0.08	0.08	0.16		0.11	0.11
Clearance Time (s)	6.7	5.5	7.1	6.7	5.1	8.9	7.1	7.1	6.7		8.9	8.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	134	1927	902	154	1994	1041	130	133	257		193	171
v/s Ratio Prot	0.04	0.24	0.01	c0.05	c0.30	0.01	c0.04	0.04	0.00		c0.07	
v/s Ratio Perm			0.05			0.04			0.00			0.01
v/c Ratio	0.53	0.45	0.09	0.58	0.54	0.07	0.53	0.53	0.05		0.66	0.05
Uniform Delay, d1	66.9	20.5	11.4	66.0	20.9	8.9	66.7	66.7	53.2		64.4	60.2
Progression Factor	1.03	0.70	0.24	1.07	0.46	0.81	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.5	0.7	0.0	4.5	0.9	0.0	4.1	3.7	0.1		7.9	0.1
Delay (s)	72.1	15.1	2.8	75.0	10.6	7.2	70.8	70.4	53.3		72.3	60.4
Level of Service	E	B	A	E	B	A	E	E	D		E	E
Approach Delay (s)		17.4			14.9			64.1			67.8	
Approach LOS		B			B			E			E	

Intersection Summary

























HCM 2000 Control Delay	23.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	28.2
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis











5: Blackwell Road & Lee Highway

12/03/2021

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	60	852	107	175	948	167	231	121	248	174	110	37	
Future Volume (vph)	60	852	107	175	948	167	231	121	248	174	110	37	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.7	5.7	4.0	6.7	5.5	5.5	8.9	8.9	8.9	8.2	8.2	8.2	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00	
Satd. Flow (prot)	1805	3539	1599	1770	3574	1599	1805	1863	1599	1698	1766	1615	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00	
Satd. Flow (perm)	1805	3539	1599	1770	3574	1599	1805	1863	1599	1698	1766	1615	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	61	869	109	179	967	170	236	123	253	178	112	38	
RTOR Reduction (vph)	0	0	0	0	0	95	0	0	214	0	0	33	
Lane Group Flow (vph)	61	869	109	179	967	75	236	123	39	142	148	5	
Heavy Vehicles (%)	0%	2%	1%	2%	1%	1%	0%	2%	1%	1%	1%	0%	
Turn Type	Prot	NA	Free	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm	
Protected Phases	5	2		1	6		4	4		3	3		
Permitted Phases			Free			6			4			3	
Actuated Green, G (s)	13.3	59.2	150.0	20.2	66.3	66.3	23.3	23.3	23.3	17.8	17.8	17.8	
Effective Green, g (s)	13.3	59.2	150.0	20.2	66.3	66.3	23.3	23.3	23.3	17.8	17.8	17.8	
Actuated g/C Ratio	0.09	0.39	1.00	0.13	0.44	0.44	0.16	0.16	0.16	0.12	0.12	0.12	
Clearance Time (s)	6.7	5.7		6.7	5.5	5.5	8.9	8.9	8.9	8.2	8.2	8.2	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	160	1396	1599	238	1579	706	280	289	248	201	209	191	
v/s Ratio Prot	0.03	c0.25		c0.10	0.27		c0.13	0.07		0.08	c0.08		
v/s Ratio Perm			0.07			0.05			0.02			0.00	
v/c Ratio	0.38	0.62	0.07	0.75	0.61	0.11	0.84	0.43	0.16	0.71	0.71	0.02	
Uniform Delay, d1	64.5	36.4	0.0	62.5	32.0	24.5	61.6	57.3	54.9	63.6	63.6	58.4	
Progression Factor	0.73	0.65	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.4	1.9	0.1	12.6	1.8	0.3	20.0	1.0	0.3	10.8	10.5	0.1	
Delay (s)	48.5	25.6	0.1	75.1	33.8	24.8	81.6	58.3	55.2	74.3	74.1	58.5	
Level of Service	D	C	A	E	C	C	F	E	E	E	E	E	
Approach Delay (s)		24.3			38.3			66.0			72.4		
Approach LOS		C			D			E			E		
Intersection Summary													
HCM 2000 Control Delay			42.4									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.70										
Actuated Cycle Length (s)			150.0									Sum of lost time (s)	29.5
Intersection Capacity Utilization			78.3%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													

HCM Unsignalized Intersection Capacity Analysis
 18: Winchester St & Branch Drive

12/03/2021

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	281	0	0	0
Future Volume (Veh/h)	0	0	281	0	0	0
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	305	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)	2					
Median type			None		None	
Median storage (veh)						
Upstream signal (ft)						339
pX, platoon unblocked						
vC, conflicting volume	305	305			305	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	305	305			305	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	687	735			1256	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	305	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1700			
Volume to Capacity	0.00	0.18	0.00			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			18.1%	ICU Level of Service		A
Analysis Period (min)			15			

Queues

1: Winchester St/Broadview Avenue & Lee Highway

02/16/2022



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	260	770	60	1102	92	113	103	70	118	121	350
v/c Ratio	0.70	0.40	0.48	0.64	0.10	0.65	0.57	0.04	0.66	0.65	0.22
Control Delay	74.5	22.7	99.0	17.4	2.8	82.5	76.2	0.0	80.9	80.2	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.5	22.7	99.0	17.4	2.8	82.5	76.2	0.0	80.9	80.2	0.3
Queue Length 50th (ft)	128	231	62	341	5	108	98	0	118	122	0
Queue Length 95th (ft)	174	345	m112	255	28	173	159	0	184	188	0
Internal Link Dist (ft)		770		835			259			1381	
Turn Bay Length (ft)	283		128		195	75		85	210		
Base Capacity (vph)	425	1943	217	1718	1025	225	236	1615	264	273	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.40	0.28	0.64	0.09	0.50	0.44	0.04	0.45	0.44	0.22

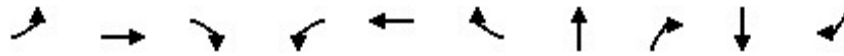
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

2: Branch Drive & Lee Highway

02/16/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	111	895	4	67	1144	85	29	52	149	104
v/c Ratio	0.64	0.41	0.00	0.51	0.56	0.08	0.30	0.21	0.71	0.31
Control Delay	86.0	9.9	0.0	93.5	9.5	0.2	75.5	2.0	81.1	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.0	9.9	0.0	93.5	9.5	0.2	75.5	2.0	81.1	2.8
Queue Length 50th (ft)	96	164	0	70	94	0	28	0	143	0
Queue Length 95th (ft)	182	165	m0	122	101	0	63	0	211	3
Internal Link Dist (ft)		835			469		866		979	
Turn Bay Length (ft)	240		330	155		155		75		
Base Capacity (vph)	259	2197	1043	163	2059	1005	204	324	254	368
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.41	0.00	0.41	0.56	0.08	0.14	0.16	0.59	0.28

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

4: Fletcher Drive & Lee Highway

02/16/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	71	859	128	90	1074	103	69	70	85	127	77
v/c Ratio	0.53	0.45	0.13	0.58	0.54	0.10	0.53	0.53	0.26	0.66	0.28
Control Delay	80.8	16.4	0.7	82.2	11.5	1.1	80.7	79.9	7.1	79.8	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.8	16.4	0.7	82.2	11.5	1.1	80.7	79.9	7.1	79.8	4.3
Queue Length 50th (ft)	66	133	3	83	182	4	69	70	0	122	0
Queue Length 95th (ft)	m121	238	6	m148	183	m3	123	124	30	186	12
Internal Link Dist (ft)		349			910			1093		912	
Turn Bay Length (ft)	155		255	255		288			75		200
Base Capacity (vph)	244	1928	1092	220	1993	1108	250	257	388	281	349
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.45	0.12	0.41	0.54	0.09	0.28	0.27	0.22	0.45	0.22

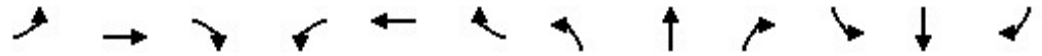
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

5: Blackwell Road & Lee Highway

02/16/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	61	869	109	179	967	170	236	123	253	142	148	38
v/c Ratio	0.35	0.62	0.07	0.75	0.60	0.21	0.84	0.43	0.55	0.71	0.71	0.11
Control Delay	51.0	27.3	0.1	81.5	35.6	4.6	86.6	61.5	10.8	81.8	81.4	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.0	27.3	0.1	81.5	35.6	4.6	86.6	61.5	10.8	81.8	81.4	0.6
Queue Length 50th (ft)	60	305	0	171	408	0	222	108	0	143	149	0
Queue Length 95th (ft)	100	424	0	247	491	48	#351	176	81	214	222	0
Internal Link Dist (ft)		910			996			609			979	
Turn Bay Length (ft)	210		150	530		320	350			180		228
Base Capacity (vph)	182	1398	1599	310	1673	839	306	315	481	269	280	407
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.62	0.07	0.58	0.58	0.20	0.77	0.39	0.53	0.53	0.53	0.09




























Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: Winchester St/Broadview Avenue & Lee Highway

02/17/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 			 						 	
Traffic Volume (vph)	254	804	21	38	704	151	71	52	54	146	82	195
Future Volume (vph)	254	804	21	38	704	151	71	52	54	146	82	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.8	5.2		6.9	5.8	9.4	8.3	8.3	4.0	9.4	9.4	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00
Satd. Flow (prot)	3335	3425		1805	3438	1524	1770	1900	1615	1649	1759	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00
Satd. Flow (perm)	3335	3425		1805	3438	1524	1770	1900	1615	1649	1759	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	273	865	23	41	757	162	76	56	58	157	88	210
RTOR Reduction (vph)	0	1	0	0	0	69	0	0	0	0	0	0
Lane Group Flow (vph)	273	887	0	41	757	93	76	56	58	121	124	210
Heavy Vehicles (%)	5%	5%	5%	0%	5%	6%	2%	0%	0%	4%	0%	2%
Turn Type	Prot	NA		Prot	NA	pm+ov	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6	4	3	3		4	4	
Permitted Phases						6			Free			Free
Actuated Green, G (s)	16.7	75.7		7.5	65.0	80.7	11.3	11.3	140.0	15.7	15.7	140.0
Effective Green, g (s)	16.7	75.7		7.5	65.0	80.7	11.3	11.3	140.0	15.7	15.7	140.0
Actuated g/C Ratio	0.12	0.54		0.05	0.46	0.58	0.08	0.08	1.00	0.11	0.11	1.00
Clearance Time (s)	7.8	5.2		6.9	5.8	9.4	8.3	8.3		9.4	9.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	397	1851		96	1596	878	142	153	1615	184	197	1583
v/s Ratio Prot	c0.08	c0.26		0.02	0.22	0.01	c0.04	0.03		c0.07	0.07	
v/s Ratio Perm						0.05			0.04			0.13
v/c Ratio	0.69	0.48		0.43	0.47	0.11	0.54	0.37	0.04	0.66	0.63	0.13
Uniform Delay, d1	59.1	19.9		64.2	25.8	13.4	61.8	61.0	0.0	59.6	59.4	0.0
Progression Factor	1.00	1.00		1.18	0.58	2.01	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.9	0.9		2.8	0.9	0.1	3.8	1.5	0.0	8.2	6.2	0.2
Delay (s)	64.0	20.8		78.3	16.0	27.0	65.7	62.4	0.0	67.8	65.5	0.2
Level of Service	E	C		E	B	C	E	E	A	E	E	A
Approach Delay (s)		31.0			20.5			44.7			36.0	
Approach LOS		C			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			29.1									HCM 2000 Level of Service C
HCM 2000 Volume to Capacity ratio			0.56									
Actuated Cycle Length (s)			140.0									Sum of lost time (s) 31.3
Intersection Capacity Utilization			58.7%									ICU Level of Service B
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: Branch Drive & Lee Highway

02/17/2022






















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘		↖	↗		↖	↘
Traffic Volume (vph)	50	957	7	55	850	35	10	12	54	43	15	27
Future Volume (vph)	50	957	7	55	850	35	10	12	54	43	15	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4	5.7	5.7	6.8	5.6	5.6		6.6	6.6		7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00		0.96	1.00
Satd. Flow (prot)	1752	3438	1615	1805	3438	1615		1857	1468		1730	1495
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00		0.96	1.00
Satd. Flow (perm)	1752	3438	1615	1805	3438	1615		1857	1468		1730	1495
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	1063	8	61	944	39	11	13	60	48	17	30
RTOR Reduction (vph)	0	0	3	0	0	14	0	0	57	0	0	28
Lane Group Flow (vph)	56	1063	5	61	944	25	0	24	3	0	65	2
Heavy Vehicles (%)	3%	5%	0%	0%	5%	0%	0%	0%	10%	8%	0%	8%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases			6			2			4			3
Actuated Green, G (s)	8.6	88.9	88.9	8.9	89.7	89.7		6.3	6.3		9.3	9.3
Effective Green, g (s)	8.6	88.9	88.9	8.9	89.7	89.7		6.3	6.3		9.3	9.3
Actuated g/C Ratio	0.06	0.64	0.64	0.06	0.64	0.64		0.04	0.04		0.07	0.07
Clearance Time (s)	6.4	5.7	5.7	6.8	5.6	5.6		6.6	6.6		7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	107	2183	1025	114	2202	1034		83	66		114	99
v/s Ratio Prot	0.03	c0.31		c0.03	0.27			c0.01			c0.04	
v/s Ratio Perm			0.00			0.02			0.00			0.00
v/c Ratio	0.52	0.49	0.00	0.54	0.43	0.02		0.29	0.04		0.57	0.02
Uniform Delay, d1	63.7	13.5	9.4	63.5	12.5	9.2		64.7	64.0		63.4	61.1
Progression Factor	1.14	0.37	1.00	1.27	0.15	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	4.2	0.7	0.0	4.6	0.6	0.0		1.9	0.3		6.7	0.1
Delay (s)	76.7	5.7	9.4	85.0	2.5	9.2		66.6	64.2		70.1	61.2
Level of Service	E	A	A	F	A	A		E	E		E	E
Approach Delay (s)		9.2			7.5			64.9			67.3	
Approach LOS		A			A			E			E	

Intersection Summary

HCM 2000 Control Delay	12.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	26.6
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
 3: BP Gas Station/Village Center & Lee Highway

02/17/2022

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	22	36	998	0	6	3	855	9	0	0	6	10
Future Volume (Veh/h)	22	36	998	0	6	3	855	9	0	0	6	10
Sign Control			Free				Free			Stop		
Grade			0%				0%			0%		
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	40	1097	0	0	3	940	10	0	0	7	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type			None				None					
Median storage (veh)												
Upstream signal (ft)			549				429					
pX, platoon unblocked	0.00	0.88			0.00	0.84			0.90	0.90	0.84	0.90
vC, conflicting volume	0	950			0	1097			1722	2133	548	1582
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0	675			0	735			987	1444	82	831
tC, single (s)	0.0	4.2			0.0	4.1			7.5	6.5	6.9	7.5
tC, 2 stage (s)												
tF (s)	0.0	2.3			0.0	2.2			3.5	4.0	3.3	3.5
p0 queue free %	0	95			0	100			100	100	99	95
cM capacity (veh/h)	0	781			0	739			161	113	813	227
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1	SB 2	
Volume Total	40	548	548	0	3	470	470	10	7	11	69	
Volume Left	40	0	0	0	3	0	0	0	0	11	0	
Volume Right	0	0	0	0	0	0	0	10	7	0	69	
cSH	781	1700	1700	1700	739	1700	1700	1700	813	227	794	
Volume to Capacity	0.05	0.32	0.32	0.00	0.00	0.28	0.28	0.01	0.01	0.05	0.09	
Queue Length 95th (ft)	4	0	0	0	0	0	0	0	1	4	7	
Control Delay (s)	9.9	0.0	0.0	0.0	9.9	0.0	0.0	0.0	9.5	21.7	10.0	
Lane LOS	A				A				A	C	A	
Approach Delay (s)	0.3				0.0				9.5	11.6		
Approach LOS									A	B		
Intersection Summary												
Average Delay			0.7									
Intersection Capacity Utilization			48.1%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 3: BP Gas Station/Village Center & Lee Highway

02/17/2022

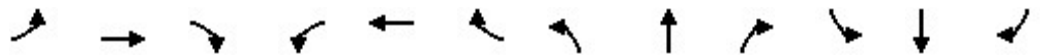


Movement	SBT	SBR
Lane Configurations	↔	↗
Traffic Volume (veh/h)	0	63
Future Volume (Veh/h)	0	63
Sign Control	Stop	
Grade	0%	
Peak Hour Factor	0.91	0.91
Hourly flow rate (vph)	0	69
Pedestrians		
Lane Width (ft)		
Walking Speed (ft/s)		
Percent Blockage		
Right turn flare (veh)		
Median type		
Median storage (veh)		
Upstream signal (ft)		
pX, platoon unblocked	0.90	0.88
vC, conflicting volume	2123	470
vC1, stage 1 conf vol		
vC2, stage 2 conf vol		
vCu, unblocked vol	1433	131
tC, single (s)	6.5	6.9
tC, 2 stage (s)		
tF (s)	4.0	3.3
p0 queue free %	100	91
cM capacity (veh/h)	115	794
Direction, Lane #		

HCM Signalized Intersection Capacity Analysis

4: Fletcher Drive & Lee Highway

02/17/2022



























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	917	61	22	821	38	23	9	21	52	12	27
Future Volume (vph)	42	917	61	22	821	38	23	9	21	52	12	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.7	5.5	7.1	6.7	5.1	8.9	7.1	7.1	6.7		8.9	8.9
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00		0.96	1.00
Satd. Flow (prot)	1805	3438	1553	1719	3438	1615	1715	1650	1455		1740	1429
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00		0.96	1.00
Satd. Flow (perm)	1805	3438	1553	1719	3438	1615	1715	1650	1455		1740	1429
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	44	955	64	23	855	40	24	9	22	54	12	28
RTOR Reduction (vph)	0	0	20	0	0	12	0	0	20	0	0	26
Lane Group Flow (vph)	44	955	44	23	855	28	16	17	2	0	67	2
Heavy Vehicles (%)	0%	5%	4%	5%	5%	0%	0%	13%	11%	4%	9%	13%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	4	1	6	3	4	4	1	3	3	
Permitted Phases			2			6			4			3
Actuated Green, G (s)	7.7	90.1	96.1	6.3	89.1	98.5	6.0	6.0	12.3		9.4	9.4
Effective Green, g (s)	7.7	90.1	96.1	6.3	89.1	98.5	6.0	6.0	12.3		9.4	9.4
Actuated g/C Ratio	0.06	0.64	0.69	0.04	0.64	0.70	0.04	0.04	0.09		0.07	0.07
Clearance Time (s)	6.7	5.5	7.1	6.7	5.1	8.9	7.1	7.1	6.7		8.9	8.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	99	2212	1066	77	2188	1136	73	70	127		116	95
v/s Ratio Prot	c0.02	c0.28	0.00	0.01	0.25	0.00	0.01	c0.01	0.00		c0.04	
v/s Ratio Perm			0.03			0.02			0.00			0.00
v/c Ratio	0.44	0.43	0.04	0.30	0.39	0.02	0.22	0.24	0.02		0.58	0.02
Uniform Delay, d1	64.1	12.3	7.1	64.7	12.3	6.3	64.7	64.8	58.3		63.4	61.0
Progression Factor	1.10	0.54	1.68	1.44	0.07	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.9	0.6	0.0	2.0	0.5	0.0	1.5	1.8	0.0		6.8	0.1
Delay (s)	73.1	7.2	11.9	95.0	1.3	6.3	66.3	66.6	58.4		70.2	61.1
Level of Service	E	A	B	F	A	A	E	E	E		E	E
Approach Delay (s)		10.2			3.9			63.2			67.5	
Approach LOS		B			A			E			E	

Intersection Summary		
HCM 2000 Control Delay	11.4	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.44	B
Actuated Cycle Length (s)	140.0	Sum of lost time (s)
Intersection Capacity Utilization	57.1%	28.2
Analysis Period (min)	15	ICU Level of Service
		B
c Critical Lane Group		

HCM Signalized Intersection Capacity Analysis

5: Blackwell Road & Lee Highway

02/17/2022

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	48	833	109	227	743	136	112	50	184	100	46	16	
Future Volume (vph)	48	833	109	227	743	136	112	50	184	100	46	16	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.7	5.7	4.0	6.7	5.5	5.5	8.9	8.9	8.9	8.2	8.2	8.2	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	
Satd. Flow (prot)	1656	3406	1583	1770	3438	1553	1770	1827	1568	1618	1711	1509	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00	
Satd. Flow (perm)	1656	3406	1583	1770	3438	1553	1770	1827	1568	1618	1711	1509	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	
Adj. Flow (vph)	53	915	120	249	816	149	123	55	202	110	51	18	
RTOR Reduction (vph)	0	0	0	0	0	85	0	0	180	0	0	16	
Lane Group Flow (vph)	53	915	120	249	816	64	123	55	22	79	82	2	
Heavy Vehicles (%)	9%	6%	2%	2%	5%	4%	2%	4%	3%	6%	2%	7%	
Turn Type	Prot	NA	Free	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm	
Protected Phases	5	2		1	6		4	4		3	3		
Permitted Phases			Free			6			4			3	
Actuated Green, G (s)	23.4	58.5	140.0	24.8	60.1	60.1	15.0	15.0	15.0	12.2	12.2	12.2	
Effective Green, g (s)	23.4	58.5	140.0	24.8	60.1	60.1	15.0	15.0	15.0	12.2	12.2	12.2	
Actuated g/C Ratio	0.17	0.42	1.00	0.18	0.43	0.43	0.11	0.11	0.11	0.09	0.09	0.09	
Clearance Time (s)	6.7	5.7		6.7	5.5	5.5	8.9	8.9	8.9	8.2	8.2	8.2	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	276	1423	1583	313	1475	666	189	195	168	140	149	131	
v/s Ratio Prot	0.03	c0.27		c0.14	0.24		c0.07	0.03		c0.05	0.05		
v/s Ratio Perm			0.08			0.04			0.01			0.00	
v/c Ratio	0.19	0.64	0.08	0.80	0.55	0.10	0.65	0.28	0.13	0.56	0.55	0.01	
Uniform Delay, d1	50.2	32.4	0.0	55.2	29.9	23.8	60.0	57.5	56.6	61.3	61.3	58.4	
Progression Factor	0.75	0.64	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	2.1	0.1	13.1	1.5	0.3	7.8	0.8	0.3	5.1	4.3	0.0	
Delay (s)	38.0	23.0	0.1	68.2	31.4	24.1	67.8	58.3	56.9	66.5	65.6	58.4	
Level of Service	D	C	A	E	C	C	E	E	E	E	E	E	
Approach Delay (s)		21.2			38.1			60.6			65.3		
Approach LOS		C			D			E			E		
Intersection Summary													
HCM 2000 Control Delay			36.4		HCM 2000 Level of Service					D			
HCM 2000 Volume to Capacity ratio			0.67										
Actuated Cycle Length (s)			140.0		Sum of lost time (s)					29.5			
Intersection Capacity Utilization			66.2%		ICU Level of Service					C			
Analysis Period (min)			15										
c Critical Lane Group													

Queues

1: Winchester St/Broadview Avenue & Lee Highway

02/17/2022



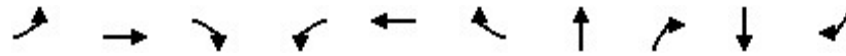
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	273	888	41	757	162	76	56	58	121	124	210
v/c Ratio	0.69	0.47	0.37	0.47	0.18	0.53	0.37	0.04	0.65	0.63	0.13
Control Delay	68.1	22.5	81.9	17.3	3.1	74.5	66.4	0.0	75.3	72.6	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.1	22.5	81.9	17.3	3.1	74.5	66.4	0.0	75.3	72.6	0.2
Queue Length 50th (ft)	124	259	39	84	1	68	49	0	112	115	0
Queue Length 95th (ft)	168	392	83	164	39	119	92	0	176	178	0
Internal Link Dist (ft)		770		835			259			1381	
Turn Bay Length (ft)	283		128		195	75		85	210		
Base Capacity (vph)	485	1884	126	1595	1017	236	253	1615	313	334	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.47	0.33	0.47	0.16	0.32	0.22	0.04	0.39	0.37	0.13

Intersection Summary

Queues

2: Branch Drive & Lee Highway

02/17/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	56	1063	8	61	944	39	24	60	65	30
v/c Ratio	0.46	0.46	0.01	0.47	0.41	0.03	0.24	0.30	0.50	0.13
Control Delay	81.1	6.1	0.0	89.3	2.6	0.1	69.0	3.8	74.4	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.1	6.1	0.0	89.3	2.6	0.1	69.0	3.8	74.4	1.2
Queue Length 50th (ft)	50	116	0	58	37	0	21	0	58	0
Queue Length 95th (ft)	96	129	m0	108	50	0	53	0	106	0
Internal Link Dist (ft)		835			469		866		979	
Turn Bay Length (ft)	240		330	155		155		75		
Base Capacity (vph)	195	2315	1132	234	2330	1138	244	304	179	264
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.46	0.01	0.26	0.41	0.03	0.10	0.20	0.36	0.11

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

4: Fletcher Drive & Lee Highway

02/17/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	44	955	64	23	855	40	16	17	22	67	28
v/c Ratio	0.39	0.41	0.06	0.25	0.37	0.03	0.18	0.20	0.08	0.50	0.12
Control Delay	76.9	7.7	0.6	96.5	1.3	0.1	67.8	68.7	0.6	74.3	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.9	7.7	0.6	96.5	1.3	0.1	67.8	68.7	0.6	74.3	1.1
Queue Length 50th (ft)	42	86	0	22	2	0	14	15	0	60	0
Queue Length 95th (ft)	86	131	7	m42	69	m1	41	43	0	109	0
Internal Link Dist (ft)		349			910			1093		912	
Turn Bay Length (ft)	155		255	255		288			75		200
Base Capacity (vph)	184	2351	1220	224	2325	1322	207	199	381	224	295
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.41	0.05	0.10	0.37	0.03	0.08	0.09	0.06	0.30	0.09

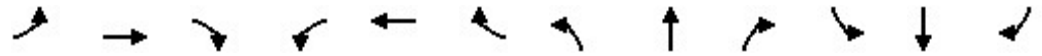
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

5: Blackwell Road & Lee Highway

02/17/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	53	915	120	249	816	149	123	55	202	79	82	18
v/c Ratio	0.18	0.64	0.08	0.80	0.54	0.19	0.65	0.28	0.58	0.56	0.55	0.06
Control Delay	37.1	25.4	0.1	73.0	34.3	3.9	75.1	59.5	13.9	75.9	74.4	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.1	25.4	0.1	73.0	34.3	3.9	75.1	59.5	13.9	75.9	74.4	0.4
Queue Length 50th (ft)	27	224	0	220	330	0	109	47	0	73	76	0
Queue Length 95th (ft)	79	#541	0	300	396	38	171	88	74	128	132	0
Internal Link Dist (ft)		910			996			609			979	
Turn Bay Length (ft)	210		150	530		320	350			180		228
Base Capacity (vph)	301	1422	1583	408	1722	858	245	253	391	217	229	369
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.64	0.08	0.61	0.47	0.17	0.50	0.22	0.52	0.36	0.36	0.05
























Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: Winchester St/Broadview Avenue & Lee Highway

12/03/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	286	804	40	77	1209	101	124	113	77	202	59	384
Future Volume (vph)	286	804	40	77	1209	101	124	113	77	202	59	384
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.8	5.2		6.9	5.8	9.4	8.3	8.3	4.0	9.4	9.4	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00
Satd. Flow (prot)	3467	3545		1805	3574	1615	1805	1900	1615	1681	1737	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00
Satd. Flow (perm)	3467	3545		1805	3574	1615	1805	1900	1615	1681	1737	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	292	820	41	79	1234	103	127	115	79	206	60	392
RTOR Reduction (vph)	0	2	0	0	0	38	0	0	0	0	0	0
Lane Group Flow (vph)	292	859	0	79	1234	65	127	115	79	132	134	392
Heavy Vehicles (%)	1%	1%	3%	0%	1%	0%	0%	0%	0%	2%	0%	2%
Turn Type	Prot	NA		Prot	NA	pm+ov	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6	4	3	3		4	4	
Permitted Phases						6			Free			Free
Actuated Green, G (s)	17.0	76.0		11.9	69.4	86.5	15.2	15.2	150.0	17.1	17.1	150.0
Effective Green, g (s)	17.0	76.0		11.9	69.4	86.5	15.2	15.2	150.0	17.1	17.1	150.0
Actuated g/C Ratio	0.11	0.51		0.08	0.46	0.58	0.10	0.10	1.00	0.11	0.11	1.00
Clearance Time (s)	7.8	5.2		6.9	5.8	9.4	8.3	8.3		9.4	9.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	392	1796		143	1653	931	182	192	1615	191	198	1583
v/s Ratio Prot	c0.08	c0.24		0.04	c0.35	0.01	c0.07	0.06		c0.08	0.08	
v/s Ratio Perm						0.03			0.05			0.25
v/c Ratio	0.74	0.48		0.55	0.75	0.07	0.70	0.60	0.05	0.69	0.68	0.25
Uniform Delay, d1	64.4	24.1		66.5	33.1	14.0	65.2	64.5	0.0	63.9	63.8	0.0
Progression Factor	1.00	1.00		1.34	0.42	1.13	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.5	0.9		3.6	2.5	0.0	11.1	5.0	0.1	10.3	8.8	0.4
Delay (s)	71.9	25.0		92.8	16.4	15.9	76.2	69.4	0.1	74.2	72.6	0.4
Level of Service	E	C		F	B	B	E	E	A	E	E	A
Approach Delay (s)		36.9			20.6			55.1			29.9	
Approach LOS		D			C			E			C	
Intersection Summary												
HCM 2000 Control Delay			30.7									HCM 2000 Level of Service C
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			150.0						31.3			
Intersection Capacity Utilization			74.6%									ICU Level of Service D
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: Branch Drive & Lee Highway

12/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	972	4	73	1243	92	11	20	56	141	20	114
Future Volume (vph)	121	972	4	73	1243	92	11	20	56	141	20	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4	5.7	5.7	6.8	5.6	5.6		6.6	6.6		7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00		0.96	1.00
Satd. Flow (prot)	1805	3574	1615	1805	3574	1615		1868	1583		1805	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00		0.96	1.00
Satd. Flow (perm)	1805	3574	1615	1805	3574	1615		1868	1583		1805	1615
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	125	1002	4	75	1281	95	11	21	58	145	21	118
RTOR Reduction (vph)	0	0	2	0	0	43	0	0	55	0	0	103
Lane Group Flow (vph)	125	1002	2	75	1281	52	0	32	3	0	166	15
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	0%	2%	1%	0%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases			6			2			4			3
Actuated Green, G (s)	15.6	86.3	86.3	11.1	82.3	82.3		7.0	7.0		19.0	19.0
Effective Green, g (s)	15.6	86.3	86.3	11.1	82.3	82.3		7.0	7.0		19.0	19.0
Actuated g/C Ratio	0.10	0.58	0.58	0.07	0.55	0.55		0.05	0.05		0.13	0.13
Clearance Time (s)	6.4	5.7	5.7	6.8	5.6	5.6		6.6	6.6		7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	187	2056	929	133	1960	886		87	73		228	204
v/s Ratio Prot	c0.07	c0.28		0.04	c0.36			c0.02			c0.09	
v/s Ratio Perm			0.00			0.03			0.00			0.01
v/c Ratio	0.67	0.49	0.00	0.56	0.65	0.06		0.37	0.04		0.73	0.07
Uniform Delay, d1	64.7	18.8	13.5	67.1	23.8	15.8		69.4	68.3		63.0	57.7
Progression Factor	1.11	0.51	1.00	1.19	0.36	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	8.0	0.8	0.0	4.6	1.5	0.1		2.6	0.2		11.0	0.2
Delay (s)	79.9	10.4	13.5	84.4	10.1	15.9		72.0	68.5		74.0	57.9
Level of Service	E	B	B	F	B	B		E	E		E	E
Approach Delay (s)		18.1			14.3			69.7			67.3	
Approach LOS		B			B			E			E	




















Intersection Summary

HCM 2000 Control Delay	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.6
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

3: BP Gas Station/Village Center & Lee Highway

12/03/2021

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	10	45	1122	0	4	1	1350	12	0	0	13	9
Future Volume (Veh/h)	10	45	1122	0	4	1	1350	12	0	0	13	9
Sign Control			Free				Free			Stop		
Grade			0%				0%			0%		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	47	1169	0	0	1	1406	13	0	0	14	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type			None				None					
Median storage (veh)												
Upstream signal (ft)			549				429					
pX, platoon unblocked	0.00	0.76			0.00	0.84			0.85	0.85	0.84	0.85
vC, conflicting volume	0	1419			0	1169			2018	2684	584	2100
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0	929			0	808			962	1749	108	1060
tC, single (s)	0.0	4.1			0.0	4.1			7.5	6.5	6.9	7.5
tC, 2 stage (s)												
tF (s)	0.0	2.2			0.0	2.2			3.5	4.0	3.3	3.5
p0 queue free %	0	92			0	100			100	100	98	94
cM capacity (veh/h)	0	568			0	690			159	67	778	141
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1	SB 2	
Volume Total	47	584	584	0	1	703	703	13	14	9	50	
Volume Left	47	0	0	0	1	0	0	0	0	9	0	
Volume Right	0	0	0	0	0	0	0	13	14	0	50	
cSH	568	1700	1700	1700	690	1700	1700	1700	778	141	833	
Volume to Capacity	0.08	0.34	0.34	0.00	0.00	0.41	0.41	0.01	0.02	0.06	0.06	
Queue Length 95th (ft)	7	0	0	0	0	0	0	0	1	5	5	
Control Delay (s)	11.9	0.0	0.0	0.0	10.2	0.0	0.0	0.0	9.7	32.3	9.6	
Lane LOS	B				B				A	D	A	
Approach Delay (s)	0.5				0.0				9.7	13.1		
Approach LOS									A	B		
Intersection Summary												
Average Delay			0.5									
Intersection Capacity Utilization			60.7%		ICU Level of Service				B			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 3: BP Gas Station/Village Center & Lee Highway

12/03/2021



Movement	SBT	SBR
Lane Configurations	↔	↔
Traffic Volume (veh/h)	0	48
Future Volume (Veh/h)	0	48
Sign Control	Stop	
Grade	0%	
Peak Hour Factor	0.96	0.96
Hourly flow rate (vph)	0	50
Pedestrians		
Lane Width (ft)		
Walking Speed (ft/s)		
Percent Blockage		
Right turn flare (veh)		
Median type		
Median storage veh		
Upstream signal (ft)		
pX, platoon unblocked	0.85	0.76
vC, conflicting volume	2671	703
vC1, stage 1 conf vol		
vC2, stage 2 conf vol		
vCu, unblocked vol	1734	0
tC, single (s)	6.5	6.9
tC, 2 stage (s)		
tF (s)	4.0	3.3
p0 queue free %	100	94
cM capacity (veh/h)	69	833
Direction, Lane #		

HCM Signalized Intersection Capacity Analysis

4: Fletcher Drive & Lee Highway

12/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	933	138	97	1167	112	113	38	92	108	30	84
Future Volume (vph)	77	933	138	97	1167	112	113	38	92	108	30	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.7	5.5	7.1	6.7	5.1	8.9	7.1	7.1	6.7		8.9	8.9
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00		0.96	1.00
Satd. Flow (prot)	1805	3539	1454	1805	3574	1568	1715	1761	1599		1829	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00		0.96	1.00
Satd. Flow (perm)	1805	3539	1454	1805	3574	1568	1715	1761	1599		1829	1615
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	79	962	142	100	1203	115	116	39	95	111	31	87
RTOR Reduction (vph)	0	0	56	0	0	38	0	0	79	0	0	77
Lane Group Flow (vph)	79	962	86	100	1203	77	77	78	16	0	142	10
Heavy Vehicles (%)	0%	2%	0%	0%	1%	3%	0%	0%	1%	0%	0%	0%
Parking (#/hr)			0									
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	4	1	6	3	4	4	1	3	3	
Permitted Phases			2			6			4			3
Actuated Green, G (s)	11.9	79.0	91.1	13.6	81.1	98.2	12.1	12.1	25.7		17.1	17.1
Effective Green, g (s)	11.9	79.0	91.1	13.6	81.1	98.2	12.1	12.1	25.7		17.1	17.1
Actuated g/C Ratio	0.08	0.53	0.61	0.09	0.54	0.65	0.08	0.08	0.17		0.11	0.11
Clearance Time (s)	6.7	5.5	7.1	6.7	5.1	8.9	7.1	7.1	6.7		8.9	8.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	143	1863	883	163	1932	1026	138	142	273		208	184
v/s Ratio Prot	0.04	0.27	0.01	c0.06	c0.34	0.01	c0.04	0.04	0.01		c0.08	
v/s Ratio Perm			0.05			0.04			0.00			0.01
v/c Ratio	0.55	0.52	0.10	0.61	0.62	0.07	0.56	0.55	0.06		0.68	0.05
Uniform Delay, d1	66.5	23.1	12.3	65.7	23.9	9.4	66.4	66.3	52.0		63.8	59.2
Progression Factor	1.07	0.67	0.18	1.17	0.41	0.16	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	4.1	0.9	0.0	5.0	1.1	0.0	4.8	4.3	0.1		8.9	0.1
Delay (s)	75.0	16.3	2.3	81.5	10.8	1.5	71.2	70.6	52.1		72.7	59.4
Level of Service	E	B	A	F	B	A	E	E	D		E	E
Approach Delay (s)		18.6			15.1			63.8			67.7	
Approach LOS		B			B			E			E	

























Intersection Summary		
HCM 2000 Control Delay	24.3	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.63	C
Actuated Cycle Length (s)	150.0	Sum of lost time (s)
Intersection Capacity Utilization	68.7%	28.2
Analysis Period (min)	15	ICU Level of Service
		C

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

5: Blackwell Road & Lee Highway

12/03/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	954	120	196	1061	187	259	136	278	195	123	41
Future Volume (vph)	68	954	120	196	1061	187	259	136	278	195	123	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.7	5.7	4.0	6.7	5.5	5.5	8.9	8.9	8.9	8.2	8.2	8.2
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00
Satd. Flow (prot)	1805	3539	1599	1770	3574	1599	1805	1863	1599	1698	1766	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00
Satd. Flow (perm)	1805	3539	1599	1770	3574	1599	1805	1863	1599	1698	1766	1615
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	69	973	122	200	1083	191	264	139	284	199	126	42
RTOR Reduction (vph)	0	0	0	0	0	107	0	0	238	0	0	37
Lane Group Flow (vph)	69	973	122	200	1083	84	264	139	46	159	166	5
Heavy Vehicles (%)	0%	2%	1%	2%	1%	1%	0%	2%	1%	1%	1%	0%
Turn Type	Prot	NA	Free	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		4	4		3	3	
Permitted Phases			Free			6			4			3
Actuated Green, G (s)	11.9	55.6	150.0	21.5	65.4	65.4	24.5	24.5	24.5	18.9	18.9	18.9
Effective Green, g (s)	11.9	55.6	150.0	21.5	65.4	65.4	24.5	24.5	24.5	18.9	18.9	18.9
Actuated g/C Ratio	0.08	0.37	1.00	0.14	0.44	0.44	0.16	0.16	0.16	0.13	0.13	0.13
Clearance Time (s)	6.7	5.7		6.7	5.5	5.5	8.9	8.9	8.9	8.2	8.2	8.2
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	143	1311	1599	253	1558	697	294	304	261	213	222	203
v/s Ratio Prot	0.04	c0.27		0.11	c0.30		c0.15	0.07		0.09	c0.09	
v/s Ratio Perm			0.08			0.05			0.03			0.00
v/c Ratio	0.48	0.74	0.08	0.79	0.70	0.12	0.90	0.46	0.18	0.75	0.75	0.03
Uniform Delay, d1	66.1	41.0	0.0	62.1	34.2	25.2	61.5	56.7	54.1	63.2	63.2	57.5
Progression Factor	0.75	0.64	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	3.4	0.1	15.4	2.6	0.4	27.7	1.1	0.3	13.3	12.9	0.1
Delay (s)	52.1	29.5	0.1	77.4	36.8	25.5	89.2	57.8	54.4	76.5	76.1	57.5
Level of Service	D	C	A	E	D	C	F	E	D	E	E	E
Approach Delay (s)		27.7			40.9			68.5			74.2	
Approach LOS		C			D			E			E	
Intersection Summary												
HCM 2000 Control Delay			45.2				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.79									
Actuated Cycle Length (s)			150.0				Sum of lost time (s)			29.5		
Intersection Capacity Utilization			84.8%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

Queues

1: Winchester St/Broadview Avenue & Lee Highway

02/14/2022



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	292	861	79	1234	103	127	115	79	132	134	392
v/c Ratio	0.74	0.48	0.55	0.75	0.11	0.69	0.60	0.05	0.69	0.68	0.25
Control Delay	76.4	26.9	99.1	17.9	2.9	84.1	76.8	0.1	81.7	80.2	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.4	26.9	99.1	17.9	2.9	84.1	76.8	0.1	81.7	80.2	0.4
Queue Length 50th (ft)	144	283	82	316	1	122	109	0	132	134	0
Queue Length 95th (ft)	196	411	m128	235	m36	191	174	0	203	203	0
Internal Link Dist (ft)		770		835			268			1381	
Turn Bay Length (ft)	283		128		195	75		85	210		
Base Capacity (vph)	427	1798	217	1653	998	225	236	1615	264	273	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.48	0.36	0.75	0.10	0.56	0.49	0.05	0.50	0.49	0.25

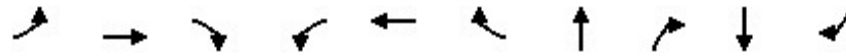
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

2: Branch Drive & Lee Highway

02/14/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	125	1002	4	75	1281	95	32	58	166	118
v/c Ratio	0.66	0.48	0.00	0.56	0.64	0.10	0.32	0.24	0.73	0.34
Control Delay	86.7	10.8	0.0	97.7	10.6	0.2	75.7	2.2	80.7	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.7	10.8	0.0	97.7	10.6	0.2	75.7	2.2	80.7	4.6
Queue Length 50th (ft)	109	187	0	77	103	0	31	0	159	0
Queue Length 95th (ft)	202	183	m0	m128	216	m0	67	0	231	18
Internal Link Dist (ft)		835			469		256		979	
Turn Bay Length (ft)	240		330	155		155		75		
Base Capacity (vph)	259	2088	997	160	1992	978	204	324	261	374
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.48	0.00	0.47	0.64	0.10	0.16	0.18	0.64	0.32

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

4: Fletcher Drive & Lee Highway

02/14/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	79	962	142	100	1203	115	77	78	95	142	87
v/c Ratio	0.55	0.52	0.14	0.61	0.62	0.11	0.56	0.55	0.27	0.68	0.30
Control Delay	79.9	20.2	0.7	85.8	12.0	0.4	80.9	80.1	6.5	79.8	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.9	20.2	0.7	85.8	12.0	0.4	80.9	80.1	6.5	79.8	6.0
Queue Length 50th (ft)	74	160	3	96	168	4	77	78	0	136	0
Queue Length 95th (ft)	m130	308	6	m151	187	m1	133	134	31	202	23
Internal Link Dist (ft)		349			910			1093		912	
Turn Bay Length (ft)	155		255	255		288			75		200
Base Capacity (vph)	244	1864	1072	221	1932	1087	250	257	404	283	350
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.52	0.13	0.45	0.62	0.11	0.31	0.30	0.24	0.50	0.25

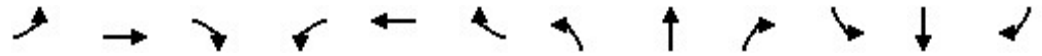
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

5: Blackwell Road & Lee Highway

02/14/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	69	973	122	200	1083	191	264	139	284	159	166	42
v/c Ratio	0.43	0.74	0.08	0.79	0.68	0.23	0.90	0.46	0.57	0.75	0.75	0.12
Control Delay	55.7	30.4	0.1	83.4	37.9	4.3	92.8	61.9	10.5	83.7	83.2	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.7	30.4	0.1	83.4	37.9	4.3	92.8	61.9	10.5	83.7	83.2	0.7
Queue Length 50th (ft)	51	352	0	191	487	1	255	124	0	160	167	0
Queue Length 95th (ft)	#132	#596	0	275	547	49	#416	196	86	240	247	0
Internal Link Dist (ft)		910			996			609			979	
Turn Bay Length (ft)	210		150	530		320	350			180		228
Base Capacity (vph)	165	1313	1599	310	1640	836	305	315	506	269	280	407
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.74	0.08	0.65	0.66	0.23	0.87	0.44	0.56	0.59	0.59	0.10
























Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: Winchester St/Broadview Avenue & Lee Highway

12/03/2021

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	286	804	40	77	1209	101	124	133	77	202	59	384	
Future Volume (vph)	286	804	40	77	1209	101	124	133	77	202	59	384	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	7.8	5.2		6.9	5.8	9.4	8.3	8.3	4.0	9.4	9.4	4.0	
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	
Satd. Flow (prot)	3467	3545		1805	3574	1615	1805	1900	1615	1681	1737	1583	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	
Satd. Flow (perm)	3467	3545		1805	3574	1615	1805	1900	1615	1681	1737	1583	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	292	820	41	79	1234	103	127	136	79	206	60	392	
RTOR Reduction (vph)	0	2	0	0	0	38	0	0	0	0	0	0	
Lane Group Flow (vph)	292	859	0	79	1234	65	127	136	79	132	134	392	
Heavy Vehicles (%)	1%	1%	3%	0%	1%	0%	0%	0%	0%	2%	0%	2%	
Turn Type	Prot	NA		Prot	NA	pm+ov	Split	NA	Free	Split	NA	Free	
Protected Phases	5	2		1	6	4	3	3		4	4		
Permitted Phases						6			Free			Free	
Actuated Green, G (s)	17.0	75.8		11.9	69.2	86.3	15.4	15.4	150.0	17.1	17.1	150.0	
Effective Green, g (s)	17.0	75.8		11.9	69.2	86.3	15.4	15.4	150.0	17.1	17.1	150.0	
Actuated g/C Ratio	0.11	0.51		0.08	0.46	0.58	0.10	0.10	1.00	0.11	0.11	1.00	
Clearance Time (s)	7.8	5.2		6.9	5.8	9.4	8.3	8.3		9.4	9.4		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)	392	1791		143	1648	929	185	195	1615	191	198	1583	
v/s Ratio Prot	c0.08	c0.24		0.04	c0.35	0.01	0.07	c0.07		c0.08	0.08		
v/s Ratio Perm						0.03			0.05			0.25	
v/c Ratio	0.74	0.48		0.55	0.75	0.07	0.69	0.70	0.05	0.69	0.68	0.25	
Uniform Delay, d1	64.4	24.2		66.5	33.2	14.1	65.0	65.0	0.0	63.9	63.8	0.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	7.5	0.9		4.6	3.2	0.0	10.1	10.4	0.1	10.3	8.8	0.4	
Delay (s)	71.9	25.1		71.0	36.4	14.1	75.1	75.4	0.1	74.2	72.6	0.4	
Level of Service	E	C		E	D	B	E	E	A	E	E	A	
Approach Delay (s)		37.0			36.7			57.9			29.9		
Approach LOS		D			D			E			C		
Intersection Summary													
HCM 2000 Control Delay			37.6									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.74										
Actuated Cycle Length (s)			150.0									Sum of lost time (s)	31.3
Intersection Capacity Utilization			81.8%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis

2: Branch Drive & Lee Highway

12/03/2021

























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (vph)	121	972	4	73	1243	92	11	0	56	141	0	133		
Future Volume (vph)	121	972	4	73	1243	92	11	0	56	141	0	133		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	6.4	5.7	5.7	6.8	5.6	5.6	6.6		6.6	7.5		5.7		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00		1.00		
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85		
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00		
Satd. Flow (prot)	1805	3574	1615	1805	3574	1615	1805		1583	1787		1615		
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00		
Satd. Flow (perm)	1805	3574	1615	1805	3574	1615	1805		1583	1787		1615		
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97		
Adj. Flow (vph)	125	1002	4	75	1281	95	11	0	58	145	0	137		
RTOR Reduction (vph)	0	0	1	0	0	37	0	0	51	0	0	48		
Lane Group Flow (vph)	125	1002	3	75	1281	58	11	0	7	145	0	89		
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	0%	2%	1%	0%	0%		
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot		Perm	Prot		Perm		
Protected Phases	1	6		5	2		4			8				
Permitted Phases			6			2			4			6		
Actuated Green, G (s)	14.1	82.2	82.2	9.3	77.9	77.9	16.4		16.4	15.5		82.2		
Effective Green, g (s)	14.1	82.2	82.2	9.3	77.9	77.9	16.4		16.4	15.5		82.2		
Actuated g/C Ratio	0.11	0.65	0.65	0.07	0.61	0.61	0.13		0.13	0.12		0.65		
Clearance Time (s)	6.4	5.7	5.7	6.8	5.6	5.6	6.6		6.6	7.5		5.7		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0		
Lane Grp Cap (vph)	200	2313	1045	132	2192	990	233		204	218		1045		
v/s Ratio Prot	c0.07	c0.28		0.04	c0.36		0.01			c0.08				
v/s Ratio Perm			0.00			0.04			0.00			0.05		
v/c Ratio	0.62	0.43	0.00	0.57	0.58	0.06	0.05		0.04	0.67		0.08		
Uniform Delay, d1	53.9	11.0	7.9	56.9	14.8	9.8	48.5		48.4	53.3		8.4		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00		
Incremental Delay, d2	6.0	0.6	0.0	5.5	1.1	0.1	0.1		0.1	7.4		0.2		
Delay (s)	59.9	11.6	7.9	62.4	15.9	10.0	48.5		48.5	60.7		8.5		
Level of Service	E	B	A	E	B	A	D		D	E		A		
Approach Delay (s)		16.9			18.0			48.5			35.4			
Approach LOS		B			B			D			D			
Intersection Summary														
HCM 2000 Control Delay			19.9									HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio			0.61											
Actuated Cycle Length (s)			127.0							20.0				
Intersection Capacity Utilization			65.1%										ICU Level of Service	C
Analysis Period (min)			15											
c Critical Lane Group														

HCM Signalized Intersection Capacity Analysis

4: Fletcher Drive & Lee Highway

























12/03/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	933	138	97	1167	112	154	0	92	138	0	84
Future Volume (vph)	77	933	138	97	1167	112	154	0	92	138	0	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.7	5.5	7.1	6.7	5.1	8.9	7.1		7.1	8.9		8.9
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	1805	3539	1454	1805	3574	1568	1805		1599	1805		1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	1805	3539	1454	1805	3574	1568	1805		1599	1805		1615
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	79	962	142	100	1203	115	159	0	95	142	0	87
RTOR Reduction (vph)	0	0	31	0	0	25	0	0	83	0	0	77
Lane Group Flow (vph)	79	962	111	100	1203	90	159	0	12	142	0	10
Heavy Vehicles (%)	0%	2%	0%	0%	1%	3%	0%	0%	1%	0%	0%	0%
Parking (#/hr)			0									
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot		Perm	Prot		Perm
Protected Phases	5	2	4	1	6	8	4			8		
Permitted Phases			2			6			4			8
Actuated Green, G (s)	11.9	98.2	117.1	13.6	100.3	117.4	18.9		18.9	17.1		17.1
Effective Green, g (s)	11.9	98.2	117.1	13.6	100.3	117.4	18.9		18.9	17.1		17.1
Actuated g/C Ratio	0.08	0.65	0.78	0.09	0.67	0.78	0.13		0.13	0.11		0.11
Clearance Time (s)	6.7	5.5	7.1	6.7	5.1	8.9	7.1		7.1	8.9		8.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	143	2316	1135	163	2389	1227	227		201	205		184
v/s Ratio Prot	0.04	0.27	0.01	c0.06	c0.34	0.01	c0.09			0.08		
v/s Ratio Perm			0.06			0.05			0.01			0.01
v/c Ratio	0.55	0.42	0.10	0.61	0.50	0.07	0.70		0.06	0.69		0.05
Uniform Delay, d1	66.5	12.3	3.9	65.7	12.4	3.8	62.8		57.7	63.9		59.2
Progression Factor	1.00	1.00	1.00	1.05	0.38	0.79	1.00		1.00	1.00		1.00
Incremental Delay, d2	4.6	0.6	0.0	5.0	0.6	0.0	9.4		0.1	9.7		0.1
Delay (s)	71.0	12.8	3.9	74.1	5.3	3.0	72.2		57.8	73.6		59.4
Level of Service	E	B	A	E	A	A	E		E	E		E
Approach Delay (s)		15.7			9.9			66.8			68.2	
Approach LOS		B			A			E			E	
Intersection Summary												
HCM 2000 Control Delay			21.1									C
HCM 2000 Volume to Capacity ratio			0.56									
Actuated Cycle Length (s)			150.0							21.1		
Intersection Capacity Utilization			62.2%									B
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
5: Blackwell Road & Lee Highway
























12/03/2021

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	68	954	120	196	1061	187	259	136	278	195	123	41	
Future Volume (vph)	68	954	120	196	1061	187	259	136	278	195	123	41	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.7	5.7	4.0	6.7	5.5	5.5	8.9	8.9	8.9	8.2	8.2	8.2	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00	
Satd. Flow (prot)	1805	3539	1599	1770	3574	1599	1805	1863	1599	1698	1766	1615	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00	
Satd. Flow (perm)	1805	3539	1599	1770	3574	1599	1805	1863	1599	1698	1766	1615	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	69	973	122	200	1083	191	264	139	284	199	126	42	
RTOR Reduction (vph)	0	0	0	0	0	107	0	0	238	0	0	37	
Lane Group Flow (vph)	69	973	122	200	1083	84	264	139	46	159	166	5	
Heavy Vehicles (%)	0%	2%	1%	2%	1%	1%	0%	2%	1%	1%	1%	0%	
Turn Type	Prot	NA	Free	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm	
Protected Phases	5	2		1	6		4	4		3	3		
Permitted Phases			Free			6			4			3	
Actuated Green, G (s)	11.9	55.6	150.0	21.5	65.4	65.4	24.5	24.5	24.5	18.9	18.9	18.9	
Effective Green, g (s)	11.9	55.6	150.0	21.5	65.4	65.4	24.5	24.5	24.5	18.9	18.9	18.9	
Actuated g/C Ratio	0.08	0.37	1.00	0.14	0.44	0.44	0.16	0.16	0.16	0.13	0.13	0.13	
Clearance Time (s)	6.7	5.7		6.7	5.5	5.5	8.9	8.9	8.9	8.2	8.2	8.2	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	143	1311	1599	253	1558	697	294	304	261	213	222	203	
v/s Ratio Prot	0.04	c0.27		0.11	c0.30		c0.15	0.07		0.09	c0.09		
v/s Ratio Perm			0.08			0.05			0.03			0.00	
v/c Ratio	0.48	0.74	0.08	0.79	0.70	0.12	0.90	0.46	0.18	0.75	0.75	0.03	
Uniform Delay, d1	66.1	41.0	0.0	62.1	34.2	25.2	61.5	56.7	54.1	63.2	63.2	57.5	
Progression Factor	0.91	0.89	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.4	3.6	0.1	15.4	2.6	0.4	27.7	1.1	0.3	13.3	12.9	0.1	
Delay (s)	62.8	40.2	0.1	77.4	36.8	25.5	89.2	57.8	54.4	76.5	76.1	57.5	
Level of Service	E	D	A	E	D	C	F	E	D	E	E	E	
Approach Delay (s)		37.3			40.9			68.5			74.2		
Approach LOS		D			D			E			E		
Intersection Summary													
HCM 2000 Control Delay			48.2									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.79										
Actuated Cycle Length (s)			150.0									Sum of lost time (s)	29.5
Intersection Capacity Utilization			84.8%									ICU Level of Service	E
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis

1: Winchester St/Broadview Avenue & Lee Highway

12/03/2021

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	286	804	40	77	1209	101	124	113	77	202	59	384	
Future Volume (vph)	286	804	40	77	1209	101	124	113	77	202	59	384	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	7.8	5.2		6.9	5.8	9.4	8.3	8.3	4.0	9.4	9.4	4.0	
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	
Satd. Flow (prot)	3467	3545		1805	3574	1615	1805	1900	1615	1681	1737	1583	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	
Satd. Flow (perm)	3467	3545		1805	3574	1615	1805	1900	1615	1681	1737	1583	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	292	820	41	79	1234	103	127	115	79	206	60	392	
RTOR Reduction (vph)	0	2	0	0	0	38	0	0	0	0	0	0	
Lane Group Flow (vph)	292	859	0	79	1234	65	127	115	79	132	134	392	
Heavy Vehicles (%)	1%	1%	3%	0%	1%	0%	0%	0%	0%	2%	0%	2%	
Turn Type	Prot	NA		Prot	NA	pm+ov	Split	NA	Free	Split	NA	Free	
Protected Phases	5	2		1	6	4	3	3		4	4		
Permitted Phases						6			Free			Free	
Actuated Green, G (s)	17.0	76.0		11.9	69.4	86.5	15.2	15.2	150.0	17.1	17.1	150.0	
Effective Green, g (s)	17.0	76.0		11.9	69.4	86.5	15.2	15.2	150.0	17.1	17.1	150.0	
Actuated g/C Ratio	0.11	0.51		0.08	0.46	0.58	0.10	0.10	1.00	0.11	0.11	1.00	
Clearance Time (s)	7.8	5.2		6.9	5.8	9.4	8.3	8.3		9.4	9.4		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)	392	1796		143	1653	931	182	192	1615	191	198	1583	
v/s Ratio Prot	c0.08	c0.24		0.04	c0.35	0.01	c0.07	0.06		c0.08	0.08		
v/s Ratio Perm						0.03			0.05			0.25	
v/c Ratio	0.74	0.48		0.55	0.75	0.07	0.70	0.60	0.05	0.69	0.68	0.25	
Uniform Delay, d1	64.4	24.1		66.5	33.1	14.0	65.2	64.5	0.0	63.9	63.8	0.0	
Progression Factor	1.00	1.00		1.27	0.54	1.30	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	7.5	0.9		3.7	2.6	0.0	11.1	5.0	0.1	10.3	8.8	0.4	
Delay (s)	71.9	25.0		87.8	20.5	18.3	76.2	69.4	0.1	74.2	72.6	0.4	
Level of Service	E	C		F	C	B	E	E	A	E	E	A	
Approach Delay (s)		36.9			24.1			55.1			29.9		
Approach LOS		D			C			E			C		
Intersection Summary													
HCM 2000 Control Delay			32.1									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.74										
Actuated Cycle Length (s)			150.0									Sum of lost time (s)	31.3
Intersection Capacity Utilization			74.6%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis

2: Branch Drive & Lee Highway

12/03/2021






















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	972	4	73	1243	92	11	20	56	141	20	114
Future Volume (vph)	121	972	4	73	1243	92	11	20	56	141	20	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4	5.7	5.7	6.8	5.6	5.6	4.5	6.6		7.5	4.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3574	1615	1805	3574	1615	1805	1666		1787	1658	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.73	1.00		0.71	1.00	
Satd. Flow (perm)	1805	3574	1615	1805	3574	1615	1382	1666		1327	1658	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	125	1002	4	75	1281	95	11	21	58	145	21	118
RTOR Reduction (vph)	0	0	2	0	0	41	0	55	0	0	97	0
Lane Group Flow (vph)	125	1002	2	75	1281	54	11	24	0	145	42	0
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	0%	2%	1%	0%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2	4			8		
Actuated Green, G (s)	15.4	88.3	88.3	11.2	84.6	84.6	8.2	8.2		26.3	26.3	
Effective Green, g (s)	15.4	88.3	88.3	11.2	84.6	84.6	8.2	8.2		26.3	26.3	
Actuated g/C Ratio	0.10	0.59	0.59	0.07	0.56	0.56	0.05	0.05		0.18	0.18	
Clearance Time (s)	6.4	5.7	5.7	6.8	5.6	5.6	4.5	6.6		7.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	185	2103	950	134	2015	910	83	91		280	290	
v/s Ratio Prot	c0.07	c0.28		0.04	c0.36		0.00	c0.01		c0.05	0.03	
v/s Ratio Perm			0.00			0.03	0.00			c0.04		
v/c Ratio	0.68	0.48	0.00	0.56	0.64	0.06	0.13	0.27		0.52	0.14	
Uniform Delay, d1	64.9	17.6	12.7	67.0	22.2	14.7	67.4	68.0		55.8	52.3	
Progression Factor	1.16	0.46	1.00	1.19	0.40	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.6	0.7	0.0	4.3	1.3	0.1	0.7	1.6		1.6	0.2	
Delay (s)	84.0	8.9	12.7	84.2	10.2	14.9	68.2	69.6		57.4	52.6	
Level of Service	F	A	B	F	B	B	E	E		E	D	
Approach Delay (s)		17.2			14.3			69.4			55.0	
Approach LOS		B			B			E			E	

Intersection Summary

HCM 2000 Control Delay	21.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.6
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
 3: BP Gas Station/Village Center & Lee Highway

12/03/2021

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	10	45	1122	0	4	1	1350	12	0	0	13	9
Future Volume (Veh/h)	10	45	1122	0	4	1	1350	12	0	0	13	9
Sign Control			Free				Free			Stop		
Grade			0%				0%			0%		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	47	1169	0	0	1	1406	13	0	0	14	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type			None				None					
Median storage (veh)												
Upstream signal (ft)			549				429					
pX, platoon unblocked	0.00	0.78			0.00	0.84			0.86	0.86	0.84	0.86
vC, conflicting volume	0	1419			0	1169			2018	2684	584	2100
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0	970			0	821			1019	1795	126	1115
tC, single (s)	0.0	4.1			0.0	4.1			7.5	6.5	6.9	7.5
tC, 2 stage (s)												
tF (s)	0.0	2.2			0.0	2.2			3.5	4.0	3.3	3.5
p0 queue free %	0	92			0	100			100	100	98	93
cM capacity (veh/h)	0	560			0	686			146	64	763	130
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1	SB 2	
Volume Total	47	584	584	0	1	703	703	13	14	9	50	
Volume Left	47	0	0	0	1	0	0	0	0	9	0	
Volume Right	0	0	0	0	0	0	0	13	14	0	50	
cSH	560	1700	1700	1700	686	1700	1700	1700	763	130	790	
Volume to Capacity	0.08	0.34	0.34	0.00	0.00	0.41	0.41	0.01	0.02	0.07	0.06	
Queue Length 95th (ft)	7	0	0	0	0	0	0	0	1	6	5	
Control Delay (s)	12.0	0.0	0.0	0.0	10.3	0.0	0.0	0.0	9.8	34.8	9.9	
Lane LOS	B				B				A	D	A	
Approach Delay (s)	0.5				0.0				9.8	13.7		
Approach LOS									A	B		
Intersection Summary												
Average Delay			0.6									
Intersection Capacity Utilization			60.7%		ICU Level of Service				B			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 3: BP Gas Station/Village Center & Lee Highway

12/03/2021



























Movement	SBT	SBR
Lane Configurations	↖ ↗	↖ ↗
Traffic Volume (veh/h)	0	48
Future Volume (Veh/h)	0	48
Sign Control	Stop	
Grade	0%	
Peak Hour Factor	0.96	0.96
Hourly flow rate (vph)	0	50
Pedestrians		
Lane Width (ft)		
Walking Speed (ft/s)		
Percent Blockage		
Right turn flare (veh)		
Median type		
Median storage veh		
Upstream signal (ft)		
pX, platoon unblocked	0.86	0.78
vC, conflicting volume	2671	703
vC1, stage 1 conf vol		
vC2, stage 2 conf vol		
vCu, unblocked vol	1780	50
tC, single (s)	6.5	6.9
tC, 2 stage (s)		
tF (s)	4.0	3.3
p0 queue free %	100	94
cM capacity (veh/h)	65	790
Direction, Lane #		

HCM Signalized Intersection Capacity Analysis

4: Fletcher Drive & Lee Highway

12/03/2021

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	933	138	97	1167	112	113	38	92	108	30	84
Future Volume (vph)	77	933	138	97	1167	112	113	38	92	108	30	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.7	5.5	5.5	6.7	5.1	8.9	7.1	7.1		8.9	8.9	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89		1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3539	1454	1805	3574	1568	3502	1686		1805	1690	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1805	3539	1454	1805	3574	1568	3502	1686		1900	1690	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	79	962	142	100	1203	115	116	39	95	111	31	87
RTOR Reduction (vph)	0	0	63	0	0	39	0	62	0	0	72	0
Lane Group Flow (vph)	79	962	79	100	1203	76	116	72	0	111	46	0
Heavy Vehicles (%)	0%	2%	0%	0%	1%	3%	0%	0%	1%	0%	0%	0%
Parking (#/hr)			0									
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA		pm+pt	NA	
Protected Phases	5	2		1	6	3	7	4		3	8	
Permitted Phases			2			6				8		
Actuated Green, G (s)	11.9	83.5	83.5	13.6	85.6	98.5	10.3	11.8		14.4	14.4	
Effective Green, g (s)	11.9	83.5	83.5	13.6	85.6	98.5	10.3	11.8		14.4	14.4	
Actuated g/C Ratio	0.08	0.56	0.56	0.09	0.57	0.66	0.07	0.08		0.10	0.10	
Clearance Time (s)	6.7	5.5	5.5	6.7	5.1	8.9	7.1	7.1		8.9	8.9	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	143	1970	809	163	2039	1029	240	132		182	162	
v/s Ratio Prot	0.04	0.27		c0.06	c0.34	0.01	0.03	c0.04		0.05	0.03	
v/s Ratio Perm			0.05			0.04				c0.01		
v/c Ratio	0.55	0.49	0.10	0.61	0.59	0.07	0.48	0.55		0.61	0.28	
Uniform Delay, d1	66.5	20.2	15.6	65.7	20.8	9.3	67.3	66.5		63.6	63.0	
Progression Factor	1.06	0.53	0.06	1.24	0.34	0.15	1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.2	0.8	0.2	5.7	1.1	0.0	1.5	4.6		5.7	1.0	
Delay (s)	74.9	11.6	1.1	86.9	8.1	1.4	68.8	71.1		69.2	64.0	
Level of Service	E	B	A	F	A	A	E	E		E	E	
Approach Delay (s)		14.6			13.1			70.0			66.5	
Approach LOS		B			B			E			E	
Intersection Summary												
HCM 2000 Control Delay			22.3									C
HCM 2000 Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			150.0							28.2		
Intersection Capacity Utilization			74.1%									D
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

5: Blackwell Road & Lee Highway













12/03/2021

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (vph)	68	954	120	196	1061	187	259	136	278	195	123	41		
Future Volume (vph)	68	954	120	196	1061	187	259	136	278	195	123	41		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	6.7	5.7	8.9	6.7	5.5	8.2	8.9	8.9	6.7	8.2	8.2	8.2		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		
Satd. Flow (prot)	1805	3539	1599	1770	3574	1599	1805	1863	1599	1787	1881	1615		
Flt Permitted	0.95	1.00	1.00	0.13	1.00	1.00	0.59	1.00	1.00	0.56	1.00	1.00		
Satd. Flow (perm)	1805	3539	1599	251	3574	1599	1124	1863	1599	1054	1881	1615		
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98		
Adj. Flow (vph)	69	973	122	200	1083	191	264	139	284	199	126	42		
RTOR Reduction (vph)	0	0	36	0	0	73	0	0	109	0	0	38		
Lane Group Flow (vph)	69	973	86	200	1083	118	264	139	175	199	126	4		
Heavy Vehicles (%)	0%	2%	1%	2%	1%	1%	0%	2%	1%	1%	1%	0%		
Turn Type	Prot	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	Perm		
Protected Phases	5	2	7	1	6	3	7	4	1	3	8			
Permitted Phases			2	6		6	4		4	8		8		
Actuated Green, G (s)	12.2	71.4	88.5	77.1	77.1	92.4	33.2	16.1	33.8	29.6	14.3	14.3		
Effective Green, g (s)	12.2	71.4	88.5	77.1	77.1	92.4	33.2	16.1	33.8	29.6	14.3	14.3		
Actuated g/C Ratio	0.08	0.48	0.59	0.51	0.51	0.62	0.22	0.11	0.23	0.20	0.10	0.10		
Clearance Time (s)	6.7	5.7	8.9	6.7	5.5	8.2	8.9	8.9	6.7	8.2	8.2	8.2		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	146	1684	943	308	1837	1072	326	199	360	282	179	153		
v/s Ratio Prot	0.04	c0.27	0.01	0.08	c0.30	0.01	c0.09	0.07	0.06	0.07	0.07			
v/s Ratio Perm			0.04	c0.26		0.06	c0.09		0.05	0.07		0.00		
v/c Ratio	0.47	0.58	0.09	0.65	0.59	0.11	0.81	0.70	0.49	0.71	0.70	0.03		
Uniform Delay, d1	65.8	28.4	13.3	25.4	25.4	11.9	55.0	64.6	50.5	56.6	65.8	61.5		
Progression Factor	0.72	0.54	0.58	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	2.1	1.3	0.0	4.7	1.4	0.0	13.8	10.2	1.0	7.8	11.9	0.1		
Delay (s)	49.5	16.6	7.8	30.1	26.8	11.9	68.8	74.8	51.6	64.4	77.7	61.6		
Level of Service	D	B	A	C	C	B	E	E	D	E	E	E		
Approach Delay (s)		17.7			25.3			62.9			68.6			
Approach LOS		B			C			E			E			
Intersection Summary														
HCM 2000 Control Delay			34.2									HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio			0.70											
Actuated Cycle Length (s)			150.0								29.5			
Intersection Capacity Utilization			82.6%										ICU Level of Service	E
Analysis Period (min)			15											
c Critical Lane Group														

HCM Signalized Intersection Capacity Analysis

1: Blackwell Road & Lee Highway

10/14/2021

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↑↑	↗	↖	↑↑	↗		↑	↗	↖	↑	↗	
Traffic Volume (vph)	0	852	107	175	948	167	0	181	248	174	110	37	
Future Volume (vph)	0	852	107	175	948	167	0	181	248	174	110	37	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.7	4.0	6.7	5.5	5.5		8.9	6.7	8.9	8.9	8.9	
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	
Flt Protected		1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)		3574	1599	1787	3574	1599		1881	1599	1787	1881	1599	
Flt Permitted		1.00	1.00	0.16	1.00	1.00		1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)		3574	1599	308	3574	1599		1881	1599	1787	1881	1599	
Peak-hour factor, PHF	0.92	0.92	0.92	0.91	0.91	0.91	0.97	0.97	0.97	0.89	0.89	0.89	
Adj. Flow (vph)	0	926	116	192	1042	184	0	187	256	196	124	42	
RTOR Reduction (vph)	0	0	0	0	0	95	0	0	112	0	0	37	
Lane Group Flow (vph)	0	926	116	192	1042	89	0	187	144	196	124	5	
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	
Turn Type		NA	Free	pm+pt	NA	Perm		NA	pm+ov	Prot	NA	Perm	
Protected Phases		2		1	6			4	1	3	4		
Permitted Phases			Free	6		6			4			4	
Actuated Green, G (s)		29.1	90.0	43.6	43.6	43.6		10.9	18.5	12.2	10.9	10.9	
Effective Green, g (s)		29.1	90.0	43.6	43.6	43.6		10.9	18.5	12.2	10.9	10.9	
Actuated g/C Ratio		0.32	1.00	0.48	0.48	0.48		0.12	0.21	0.14	0.12	0.12	
Clearance Time (s)		5.7		6.7	5.5	5.5		8.9	6.7	8.9	8.9	8.9	
Vehicle Extension (s)		3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		1155	1599	274	1731	774		227	328	242	227	193	
v/s Ratio Prot		c0.26		0.06	c0.29			c0.10	0.04	c0.11	0.07		
v/s Ratio Perm			0.07	0.28		0.06			0.05			0.00	
v/c Ratio		0.80	0.07	0.70	0.60	0.12		0.82	0.44	0.81	0.55	0.03	
Uniform Delay, d1		27.8	0.0	29.5	16.9	12.7		38.6	31.2	37.8	37.2	34.9	
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		5.9	0.1	7.8	1.6	0.3		20.9	0.9	17.8	2.7	0.1	
Delay (s)		33.7	0.1	37.3	18.4	13.0		59.5	32.2	55.6	39.9	34.9	
Level of Service		C	A	D	B	B		E	C	E	D	C	
Approach Delay (s)		30.0			20.3			43.7			47.8		
Approach LOS		C			C			D			D		
Intersection Summary													
HCM 2000 Control Delay			29.6		HCM 2000 Level of Service					C			
HCM 2000 Volume to Capacity ratio			0.82										
Actuated Cycle Length (s)			90.0	Sum of lost time (s)						30.2			
Intersection Capacity Utilization			77.6%	ICU Level of Service					D				
Analysis Period (min)			15										
c Critical Lane Group													

HCM Unsignalized Intersection Capacity Analysis

2: Blackwell Park Lane & Lee Highway

10/14/2021



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑		↑↑	↑↑	
Traffic Volume (veh/h)	959	60	0	985	231	0
Future Volume (Veh/h)	959	60	0	985	231	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.97	0.97
Hourly flow rate (vph)	1042	65	0	1071	238	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	350					
pX, platoon unblocked					0.79	
vC, conflicting volume	1042			1578	521	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1042			1189	521	
tC, single (s)	4.1			6.8	6.9	
tC, 2 stage (s)						
tF (s)	2.2			3.5	3.3	
p0 queue free %	100			0	100	
cM capacity (veh/h)	663			143	505	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	521	521	65	536	536	238
Volume Left	0	0	0	0	0	238
Volume Right	0	0	65	0	0	0
cSH	1700	1700	1700	1700	1700	143
Volume to Capacity	0.31	0.31	0.04	0.32	0.32	1.66
Queue Length 95th (ft)	0	0	0	0	0	427
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	382.0
Lane LOS						F
Approach Delay (s)	0.0				0.0	382.0
Approach LOS						F
Intersection Summary						
Average Delay	37.6					
Intersection Capacity Utilization	46.7%			ICU Level of Service	A	
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

3: Blackwell Road & Blackwell Park Lane

10/14/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	60	0	231	369	392	0
Future Volume (Veh/h)	60	0	231	369	392	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.97	0.97	0.92	0.92
Hourly flow rate (vph)	65	0	238	380	426	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						714
pX, platoon unblocked						
vC, conflicting volume	1092	213	426			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1092	213	426			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	61	100	79			
cM capacity (veh/h)	168	795	1137			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	65	238	190	190	213	213
Volume Left	65	238	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	168	1137	1700	1700	1700	1700
Volume to Capacity	0.39	0.21	0.11	0.11	0.13	0.13
Queue Length 95th (ft)	42	20	0	0	0	0
Control Delay (s)	39.4	9.0	0.0	0.0	0.0	0.0
Lane LOS	E	A				
Approach Delay (s)	39.4	3.5	0.0			
Approach LOS	E					
Intersection Summary						
Average Delay			4.2			
Intersection Capacity Utilization			37.0%	ICU Level of Service	A	
Analysis Period (min)			15			

Queues

1: Blackwell Road & Lee Highway

10/14/2021



Lane Group	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	926	116	192	1042	184	187	256	196	124	42
v/c Ratio	0.80	0.07	0.71	0.60	0.21	0.82	0.54	0.81	0.55	0.11
Control Delay	34.6	0.1	43.5	18.8	2.7	67.7	11.4	64.1	46.9	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.6	0.1	43.5	18.8	2.7	67.7	11.4	64.1	46.9	0.6
Queue Length 50th (ft)	254	0	62	217	0	105	30	110	67	0
Queue Length 95th (ft)	332	0	#119	281	33	#215	68	#220	122	0
Internal Link Dist (ft)	270			996		634			979	
Turn Bay Length (ft)		150	530		320			180		228
Base Capacity (vph)	1160	1599	284	1746	875	231	487	247	231	391
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.07	0.68	0.60	0.21	0.81	0.53	0.79	0.54	0.11

Intersection Summary

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

Appendix C:

VJuST Reports

VDOT Junction Screening Tool

Results Worksheet



General Information	
Project Title:	Lee Hwy at Broadview Ave / Winchester St - PM Peak
EW Facility:	Lee Hwy
NS Facility:	Broadview Ave / Winchester St
Date:	August 30, 2021

Volumes (veh/hr)	U-Turn / Left	Through	Right
Eastbound	255	718	36
Westbound	59	1080	90
Northbound	111	101	69
Southbound	181	53	343

General Instructions: All intersection and interchange configurations have a default assumption of one exclusive lane per movement. No results shall be interpreted until the user has verified the lane configurations on each worksheet.

Intersection Results

		Congestion			Pedestrian		Safety			
Type	Dir	Maximum V/C	Accommodation Compared to Conventional	Weighted Total Conflict Points	Notes					
Conventional	-	0.68		48	Existing Configuration					
Roundabout	-	0.69		8	Hybrid Roundabout					

*The continuous green-T is the only three-legged innovative intersection in this tool. To compare the continuous green-T to other innovative intersections, conflicts corresponding with the fourth leg must be removed. This has been done for the conventional intersection. Conflict point diagrams for three-legged and four-legged conventional intersections have been provided on the conventional intersection worksheet for reference.

Interchange Results					
		Congestion	Pedestrian	Safety	Notes
Type	Dir	Maximum V/C	Accommodation Compared to Traditional Diamond	Weighted Total Conflict Points	

Information	
Congestion	The maximum v/c ratio represents the worst v/c of all zones that make up an intersection.
Pedestrian	Compares the potential of each design to accommodate pedestrians based on safety, wayfinding, and delay. Potential is qualitatively defined as better (+), similar (blank cell), or worse (-) than a conventional intersection or traditional diamond interchange.
Safety	Weighted Total = (2 x Crossing Conflicts) + Merging Conflicts + Diverging Conflicts

VDOT Junction Screening Tool

Results Worksheet



General Information	
Project Title:	Lee Hwy at Branch Drive - PM Peak
EW Facility:	Lee Hwy
NS Facility:	Branch Drive
Date:	August 5, 2021

Volumes (veh/hr)	U-Turn / Left	Through	Right
Eastbound	108	868	4
Westbound	65	1110	82
Northbound	10	18	50
Southbound	126	18	101

General Instructions: All intersection and interchange configurations have a default assumption of one exclusive lane per movement. No results shall be interpreted until the user has verified the lane configurations on each worksheet.

Intersection Results

		Congestion	Pedestrian	Safety	Notes
Type	Dir	Maximum V/C	Accommodation Compared to Conventional	Weighted Total Conflict Points	
Conventional	-	0.55		48	
Restricted Crossing U-Turn	-	0.51		20	
Thru-Cut	-	0.51		28	

*The continuous green-T is the only three-legged innovative intersection in this tool. To compare the continuous green-T to other innovative intersections, conflicts corresponding with the fourth leg must be removed. This has been done for the conventional intersection. Conflict point diagrams for three-legged and four-legged conventional intersections have been provided on the conventional intersection worksheet for reference.

VDOT Junction Screening Tool

Results Worksheet



General Information	
Project Title:	Lee Hwy at Village Center / BP - PM Peak
EW Facility:	Lee Hwy
NS Facility:	Village Center / BP Gas Station
Date:	August 31, 2021

Volumes (veh/hr)	U-Turn / Left	Through	Right
Eastbound	49	1002	0
Westbound	5	1205	11
Northbound	0	0	12
Southbound	8	0	43

General Instructions: All intersection and interchange configurations have a default assumption of one exclusive lane per movement. No results shall be interpreted until the user has verified the lane configurations on each worksheet.

Intersection Results

		Congestion			Pedestrian		Safety			
Type	Dir	Maximum V/C	Accommodation Compared to Conventional	Weighted Total Conflict Points	Notes					
Median U-Turn	-	0.42	+	20	on has to be signalized, although it is anticipated t					
Restricted Crossing U-Turn	-	0.39		20	1 Lane; NB & SB 1 Lane approaches; EB & WB sam					
Thru-Cut	-	0.42		28	& SB 2 LTs and 1 RT Lane; EB & WB same as existi					
Two-Way Stop Control	-	0.33		48	Existing Configuration					

*The continuous green-T is the only three-legged innovative intersection in this tool. To compare the continuous green-T to other innovative intersections, conflicts corresponding with the fourth leg must be removed. This has been done for the conventional intersection. Conflict point diagrams for three-legged and four-legged conventional intersections have been provided on the conventional intersection worksheet for reference.

VDOT Junction Screening Tool

Results Worksheet



General Information	
Project Title:	Lee Hwy at Fletcher Drive - PM Peak
EW Facility:	Lee Hwy
NS Facility:	Fletcher Drive
Date:	August 30, 2021

Volumes (veh/hr)	U-Turn / Left	Through	Right
Eastbound	69	833	124
Westbound	87	1042	100
Northbound	101	34	82
Southbound	96	27	75

General Instructions: All intersection and interchange configurations have a default assumption of one exclusive lane per movement. No results shall be interpreted until the user has verified the lane configurations on each worksheet.

Intersection Results

Intersection Results					
		Congestion	Pedestrian	Safety	Notes
Type	Dir	Maximum V/C	Accommodation Compared to Conventional	Weighted Total Conflict Points	
Conventional	-	0.46		48	Split Phase Removal
Thru-Cut	-	0.47		28	s for NBL; remaining approaches same as Existing,
Roundabout	-	0.53		8	Hybrid Roundabout

*The continuous green-T is the only three-legged innovative intersection in this tool. To compare the continuous green-T to other innovative intersections, conflicts corresponding with the fourth leg must be removed. This has been done for the conventional intersection. Conflict point diagrams for three-legged and four-legged conventional intersections have been provided on the conventional intersection worksheet for reference.

VDOT Junction Screening Tool

Results Worksheet



General Information	
Project Title:	Lee Hwy at Blackwell Road - PM Peak
EW Facility:	Lee Hwy
NS Facility:	Blackwell Road
Date:	August 31, 2021

Volumes (veh/hr)	U-Turn / Left	Through	Right
Eastbound	60	852	107
Westbound	175	948	167
Northbound	231	121	248
Southbound	174	110	37

General Instructions: All intersection and interchange configurations have a default assumption of one exclusive lane per movement. No results shall be interpreted until the user has verified the lane configurations on each worksheet.

Intersection Results

Intersection Results					
Type	Dir	Maximum V/C	Accommodation Compared to Conventional	Weighted Total Conflict Points	Notes
Conventional	-	0.63		48	Remove Split Phase by making SB L-T-R
Median U-Turn	-	0.65	+	20	Lanes; EB U-Turn 1 Lane; NB & SB both 1 Thru Lane
Partial Median U-Turn	-	0.74	+	28	SB existing configurations maintained; EB & WB same as conventional
Quadrant Roadway	N-W	0.59		40	
	S-W	0.56		40	
Restricted Crossing U-Turn	-	0.57		20	1 Lane; NB & SB 2 Lane approaches; EB & WB same as conventional
Thru-Cut	-	0.67		28	& SB 2 LTs and 1 RT Lane; EB & WB same as conventional
Roundabout	-	0.79		8	Full Two-Lane Roundabout

*The continuous green-T is the only three-legged innovative intersection in this tool. To compare the continuous green-T to other innovative intersections, conflicts corresponding with the fourth leg must be removed. This has been done for the conventional intersection. Conflict point diagrams for three-legged and four-legged conventional intersections have been provided on the conventional intersection worksheet for reference.

Appendix D:

SIDRA Reports

MOVEMENT SUMMARY

 Site: 101 [2045 AM]

US 211 & Fletcher Dr
 Site Category: (None)
 Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Fletcher Dr												
3	L2	24	0.0	0.085	8.4	LOS A	0.3	9.0	0.59	0.68	0.59	28.7
8	T1	9	13.0	0.085	3.9	LOS A	0.3	9.0	0.59	0.68	0.59	23.4
18	R2	22	11.0	0.085	4.8	LOS A	0.3	9.0	0.59	0.68	0.59	27.7
Approach		55	6.6	0.085	6.2	LOS A	0.3	9.0	0.59	0.68	0.59	27.3
East: Lee Highway												
1	L2	23	5.0	0.334	10.5	LOS B	1.9	49.2	0.23	0.40	0.23	31.6
6	T1	855	5.0	0.334	4.1	LOS A	1.9	49.9	0.22	0.39	0.22	37.5
16	R2	40	0.0	0.334	4.1	LOS A	1.9	49.9	0.22	0.38	0.22	29.7
Approach		918	4.8	0.334	4.3	LOS A	1.9	49.9	0.22	0.39	0.22	37.0
North: Fletcher Dr												
7	L2	54	4.0	0.137	8.2	LOS A	0.5	14.2	0.56	0.69	0.56	28.6
4	T1	13	9.0	0.137	3.2	LOS A	0.5	14.2	0.56	0.69	0.56	23.3
14	R2	28	13.0	0.137	4.5	LOS A	0.5	14.2	0.56	0.69	0.56	27.6
Approach		95	7.3	0.137	6.4	LOS A	0.5	14.2	0.56	0.69	0.56	27.5
West: Lee Highway												
5u	U	2	0.0	0.393	13.0	LOS B	2.4	63.4	0.28	0.43	0.28	38.6
5	L2	42	0.0	0.393	10.5	LOS B	2.4	63.4	0.28	0.43	0.28	31.4
2	T1	955	5.0	0.393	4.3	LOS A	2.5	64.9	0.27	0.41	0.27	37.3
12	R2	64	4.0	0.393	4.2	LOS A	2.5	64.9	0.27	0.40	0.27	29.5
Approach		1063	4.7	0.393	4.5	LOS A	2.5	64.9	0.27	0.41	0.27	36.5
All Vehicles		2130	4.9	0.393	4.5	LOS A	2.5	64.9	0.27	0.42	0.27	35.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Culpeper Pipeline Phase 1\Work_Files\Analysis\Sidra\Warrenton\Future\2045 Fletcher\2045 Fletcher.sip8

MOVEMENT SUMMARY

 Site: 101 [2045 PM]

US 211 & Fletcher Dr
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Fletcher Dr												
3	L2	116	0.0	0.402	10.3	LOS B	2.2	54.0	0.74	0.87	0.83	28.2
8	T1	39	0.0	0.402	5.0	LOS A	2.2	54.0	0.74	0.87	0.83	23.0
18	R2	95	1.0	0.402	6.1	LOS A	2.2	54.0	0.74	0.87	0.83	27.4
Approach		251	0.4	0.402	7.9	LOS A	2.2	54.0	0.74	0.87	0.83	26.9
East: Lee Highway												
1u	U	9	0.0	0.566	14.2	LOS B	4.3	107.7	0.52	0.56	0.52	37.4
1	L2	91	0.0	0.566	11.7	LOS B	4.3	107.7	0.52	0.56	0.52	30.7
6	T1	1203	1.0	0.566	5.3	LOS A	4.5	113.1	0.50	0.53	0.50	36.4
16	R2	115	3.0	0.566	5.2	LOS A	4.5	113.1	0.50	0.51	0.50	29.0
Approach		1419	1.1	0.566	5.7	LOS A	4.5	113.1	0.50	0.53	0.50	35.3
North: Fletcher Dr												
7	L2	111	0.0	0.415	11.4	LOS B	2.3	57.8	0.79	0.92	0.91	27.8
4	T1	31	0.0	0.415	6.2	LOS A	2.3	57.8	0.79	0.92	0.91	22.7
14	R2	87	0.0	0.415	7.3	LOS A	2.3	57.8	0.79	0.92	0.91	27.0
Approach		229	0.0	0.415	9.2	LOS A	2.3	57.8	0.79	0.92	0.91	26.7
West: Lee Highway												
5u	U	3	0.0	0.477	14.0	LOS B	3.2	80.4	0.47	0.55	0.47	37.6
5	L2	76	0.0	0.477	11.5	LOS B	3.2	80.4	0.47	0.55	0.47	30.8
2	T1	962	2.0	0.477	5.2	LOS A	3.3	84.0	0.46	0.52	0.46	36.6
12	R2	142	0.0	0.477	5.0	LOS A	3.3	84.0	0.45	0.50	0.45	29.1
Approach		1184	1.6	0.477	5.6	LOS A	3.3	84.0	0.46	0.52	0.46	35.1
All Vehicles		3081	1.2	0.566	6.1	LOS A	4.5	113.1	0.53	0.58	0.54	33.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 Site: 101 [2045 AM w/ SB Right Lane]

US 211 & Broadview
 Site Category: (None)
 Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Winchester Ave												
3	L2	76	2.0	0.371	10.7	LOS B	1.7	44.0	0.75	0.86	0.84	28.2
8	T1	56	0.0	0.371	5.3	LOS A	1.7	44.0	0.75	0.86	0.84	27.1
18	R2	58	0.0	0.371	6.4	LOS A	1.7	44.0	0.75	0.86	0.84	27.4
Approach		190	0.8	0.371	7.8	LOS A	1.7	44.0	0.75	0.86	0.84	27.6
East: Lee Highway												
1u	U	11	0.0	0.462	15.1	LOS B	2.8	71.7	0.58	0.65	0.58	37.3
1	L2	30	0.0	0.462	12.6	LOS B	2.8	71.7	0.58	0.65	0.58	30.5
6	T1	757	5.0	0.462	6.3	LOS A	2.9	76.5	0.57	0.63	0.57	36.2
16	R2	162	6.0	0.462	6.1	LOS A	2.9	76.5	0.56	0.60	0.56	33.6
Approach		960	5.0	0.462	6.6	LOS A	2.9	76.5	0.57	0.62	0.57	35.5
North: BroadViewAve												
7	L2	157	4.0	0.297	11.4	LOS B	1.5	37.5	0.66	0.77	0.66	32.9
4	T1	88	0.0	0.297	5.3	LOS A	1.5	37.5	0.66	0.77	0.66	26.2
14	R2	210	2.0	0.285	6.3	LOS A	1.4	34.3	0.66	0.79	0.66	33.3
Approach		455	2.3	0.297	7.9	LOS A	1.5	37.5	0.66	0.78	0.66	31.5
West: Lee Highway												
5u	U	6	0.0	0.509	14.4	LOS B	3.9	100.6	0.64	0.66	0.64	36.1
5	L2	267	5.0	0.509	12.1	LOS B	3.9	100.6	0.64	0.66	0.64	33.8
2	T1	865	5.0	0.509	5.5	LOS A	4.0	104.6	0.63	0.57	0.63	35.7
12	R2	23	5.0	0.509	5.5	LOS A	4.0	104.6	0.62	0.53	0.62	28.7
Approach		1160	5.0	0.509	7.1	LOS A	4.0	104.6	0.63	0.59	0.63	35.1
All Vehicles		2766	4.2	0.509	7.1	LOS A	4.0	104.6	0.62	0.65	0.63	34.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 Site: 101 [2045 PM w/ SB Right Lane]

US 211 & Broadview
 Site Category: (None)
 Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Winchester Ave												
3	L2	127	0.0	0.625	13.6	LOS B	3.8	95.0	0.83	1.02	1.14	27.3
8	T1	115	0.0	0.625	8.4	LOS A	3.8	95.0	0.83	1.02	1.14	26.2
18	R2	79	0.0	0.625	9.4	LOS A	3.8	95.0	0.83	1.02	1.14	26.5
Approach		320	0.0	0.625	10.7	LOS B	3.8	95.0	0.83	1.02	1.14	26.7
East: Lee Highway												
1u	U	15	0.0	0.701	19.5	LOS B	7.1	179.3	0.74	0.89	0.99	35.3
1	L2	53	0.0	0.701	17.0	LOS B	7.1	179.3	0.74	0.89	0.99	29.2
6	T1	1234	1.0	0.701	10.1	LOS B	7.6	192.2	0.73	0.86	0.96	34.7
16	R2	103	0.0	0.701	9.5	LOS A	7.6	192.2	0.73	0.83	0.93	32.5
Approach		1405	0.9	0.701	10.4	LOS B	7.6	192.2	0.73	0.86	0.96	34.3
North: BroadViewAve												
7	L2	205	2.0	0.546	16.2	LOS B	3.2	82.2	0.84	1.01	1.06	30.8
4	T1	60	0.0	0.546	10.1	LOS B	3.2	82.2	0.84	1.01	1.06	24.9
14	R2	392	2.0	0.644	10.8	LOS B	4.7	118.2	0.89	1.05	1.19	31.3
Approach		657	1.8	0.644	12.4	LOS B	4.7	118.2	0.87	1.03	1.14	30.4
West: Lee Highway												
5u	U	6	0.0	0.507	14.7	LOS B	3.9	98.5	0.68	0.68	0.68	35.9
5	L2	286	1.0	0.507	12.2	LOS B	3.9	98.5	0.68	0.68	0.68	33.7
2	T1	820	1.0	0.507	5.6	LOS A	4.1	103.4	0.67	0.58	0.67	35.6
12	R2	41	3.0	0.507	5.6	LOS A	4.1	103.4	0.66	0.54	0.66	28.6
Approach		1153	1.1	0.507	7.3	LOS A	4.1	103.4	0.67	0.61	0.67	34.8
All Vehicles		3536	1.0	0.701	9.8	LOS A	7.6	192.2	0.75	0.82	0.92	32.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 Site: 101 [2045 AM w/ NB&SB Right Lane]

US 211 & Blackwell Dr
 Site Category: (None)
 Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Blackwell Rd												
3	L2	122	2.0	0.272	12.2	LOS B	1.2	30.2	0.63	0.82	0.63	32.6
8	T1	54	4.0	0.272	6.5	LOS A	1.2	30.2	0.63	0.82	0.63	26.0
18	R2	200	3.0	0.269	6.4	LOS A	1.2	31.3	0.63	0.78	0.63	33.3
Approach		376	2.8	0.272	8.3	LOS A	1.2	31.3	0.63	0.80	0.63	31.7
East: Lee Highway												
1u	U	7	0.0	0.499	14.0	LOS B	3.9	100.4	0.58	0.61	0.58	36.5
1	L2	247	2.0	0.499	11.6	LOS B	3.9	100.4	0.58	0.61	0.58	34.2
6	T1	808	5.0	0.499	5.2	LOS A	4.0	104.2	0.57	0.55	0.57	35.9
16	R2	148	4.0	0.499	5.1	LOS A	4.0	104.2	0.56	0.51	0.56	28.9
Approach		1209	4.2	0.499	6.6	LOS A	4.0	104.2	0.57	0.56	0.57	34.5
North: Blackwell Rd												
7	L2	109	6.0	0.235	8.8	LOS A	1.1	27.9	0.70	0.76	0.70	28.2
4	T1	50	2.0	0.235	3.3	LOS A	1.1	27.9	0.70	0.76	0.70	27.2
14	R2	17	7.0	0.047	7.2	LOS A	0.2	4.5	0.67	0.74	0.67	27.5
Approach		176	5.0	0.235	7.1	LOS A	1.1	27.9	0.70	0.76	0.70	27.8
West: Lee Highway												
5u	U	11	0.0	0.519	15.7	LOS B	3.5	90.6	0.60	0.69	0.64	37.1
5	L2	41	9.0	0.519	13.7	LOS B	3.5	90.6	0.60	0.69	0.64	30.4
2	T1	905	6.0	0.519	6.8	LOS A	3.5	92.1	0.59	0.66	0.61	36.0
12	R2	118	2.0	0.519	6.2	LOS A	3.5	92.1	0.58	0.63	0.59	33.5
Approach		1076	5.6	0.519	7.1	LOS A	3.5	92.1	0.59	0.66	0.61	35.5
All Vehicles		2837	4.6	0.519	7.0	LOS A	4.0	104.2	0.59	0.64	0.60	34.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 Site: 101 [2045 PM w/ NB&SB Right Lane]

US 211 & Blackwell Dr
 Site Category: (None)
 Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Blackwell Rd												
3	L2	264	0.0	0.590	14.6	LOS B	3.8	95.3	0.78	0.98	0.99	31.8
8	T1	139	2.0	0.590	8.8	LOS A	3.8	95.3	0.78	0.98	0.99	25.4
18	R2	284	1.0	0.511	9.6	LOS A	2.8	70.1	0.77	0.92	0.93	31.8
Approach		687	0.8	0.590	11.4	LOS B	3.8	95.3	0.78	0.96	0.97	30.2
East: Lee Highway												
1u	U	8	0.0	0.727	19.7	LOS B	9.4	236.5	0.93	0.98	1.20	34.6
1	L2	192	2.0	0.727	17.4	LOS B	9.4	236.5	0.93	0.98	1.20	32.5
6	T1	1083	1.0	0.727	10.2	LOS B	9.8	248.0	0.93	0.94	1.17	34.3
16	R2	191	1.0	0.727	9.7	LOS A	9.8	248.0	0.92	0.91	1.15	27.9
Approach		1473	1.1	0.727	11.2	LOS B	9.8	248.0	0.93	0.94	1.17	33.1
North: Blackwell Rd												
7	L2	199	1.0	0.647	14.7	LOS B	4.6	116.8	0.92	1.11	1.26	26.6
4	T1	126	1.0	0.647	9.5	LOS A	4.6	116.8	0.92	1.11	1.26	25.6
14	R2	42	0.0	0.138	8.4	LOS A	0.6	14.8	0.79	0.83	0.79	27.2
Approach		366	0.9	0.647	12.2	LOS B	4.6	116.8	0.91	1.08	1.20	26.3
West: Lee Highway												
5u	U	15	0.0	0.603	17.7	LOS B	5.0	127.7	0.71	0.83	0.85	36.2
5	L2	54	0.0	0.603	15.2	LOS B	5.0	127.7	0.71	0.83	0.85	29.8
2	T1	973	2.0	0.603	8.5	LOS A	5.4	135.9	0.70	0.79	0.82	35.4
12	R2	122	1.0	0.603	8.0	LOS A	5.4	135.9	0.70	0.76	0.80	33.1
Approach		1165	1.8	0.603	8.9	LOS A	5.4	135.9	0.70	0.79	0.82	34.9
All Vehicles		3692	1.2	0.727	10.6	LOS B	9.8	248.0	0.83	0.91	1.03	32.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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