Traffic Impact Assessment – Forecasting

Heafey Group

Type of Document:
Final Report

Project Name:
6171 Hazeldean Road Development

Project Number:
OTT-00268780-A0

Prepared By:
EXP Services Inc.
2650 Queensview Drive, Suite 100
Ottawa, ON K2B 8H6
T: 613.688.1899

Date Submitted:
2020-09-14

11654128 Canada Inc. (Heafey Group)

Traffic Impact Assessment - Forecasting

Type of Document:
Final Report

Project Name:
6171 Hazeldean Road

Project Number:
OTT-00258780-A0

Prepared By:
EXP Services Inc.
2650 Queensview Drive, Suite 100
Ottawa, ON K2B 8H6

Phil Desmarais, P.Eng.
Senior Project Manager
Infrastructure Services

Joseph Gowrie, P.Eng.
Senior Project Manager, Transportation Planning
Infrastructure Services

Date Submitted:
September 14, 2020

Legal Notification

This report was prepared by EXP Services Inc. for the account of **11654128 Canada Inc. (Heafey Group).** Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. EXP Services Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this project

Table of Contents

List of Appendices

List of Tables

Page

List of Figures

Page

1 Screening Form

EXP completed a TIA screening form for the proposed development for confirmation of the need for completion of a Traffic Impact Assessment (TIA). A copy of the completed screening form is attached to this report as Appendix A.

The proposed development satisfies two of the three triggers (Trip Generation, Location) due to the size of the development and its connection to a spine bicycle route (Hazeldean Road).

2 Scoping Report

2.1 Proposed Development

11654128 Canada Inc. (Heafey Group) is proposing a 529-unit, residential subdivision consisting of the following dwelling types:

- 20 Single Detached;
- 154 Townhomes;
- 180 Condominium Units (36 units per building, 5 buildings); and
- 175 Apartment Units (One 9-story building).

The development will provide 449 parking spaces throughout the development, including underground parking for the apartment blocks. A concept site plan is shown in **Figure 1** (below) and is provided in full-size in Appendix B.

Figure 1 - Site Plan

The proposed development is in a General Urban Area (Section 3.6.1 of the Official Plan) which is located within Zone Arterial Mainstreet Subzone AM9. The property is currently vacant with few existing trees.

The proposed development is to be constructed in a single phase with construction starting in 2021 and completed and full occupancy by 2024.

Vehicular access to the proposed development will be provided by a signalized intersection on Hazeldean Road, approximately 280m east of the Hazeldean Road and Carp Road intersection. A second access to the development is proposed approximately 320m east of the Kimpton Drive (Echowoods Avenue) and Carp Road intersection. The proposed intersection would be the fourth leg of the 'stop controlled' intersection of Samantha Eastop Avenue and Kimpton Drive intersection.

2.2 Study Area

The proposed study area is as outlined below and highlighted in **Figure 2**:

- Hazeldean Road and Carp Road Intersection;
- Hazeldean Road and Stittsville Main Street Intersection;
- Carp Road and Stittsville Main Street Intersection;
- Carp Road and Kittiwake Drive/Echowoods Avenue Intersection;
- Kimber Drive and Samantha Eastop Drive Intersection; and
- All boundary roads to the proposed development (Hazeldean Road, Carp Road, Stittsville Main Street, Echowoods Avenue, Kimber Drive, Samantha Eastop Drive).

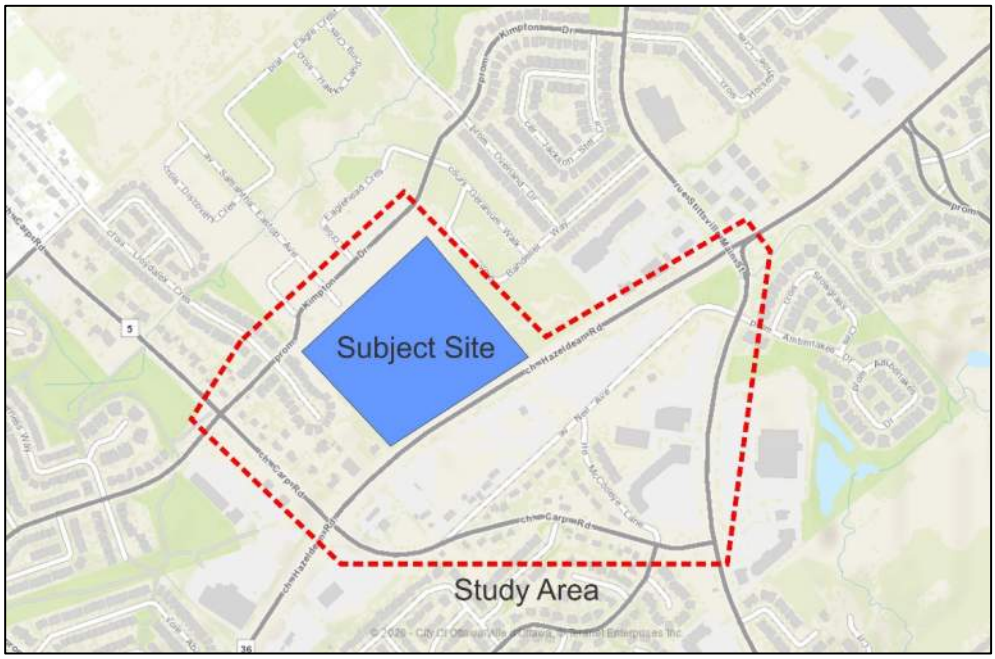


Figure 2 - Proposed Study Area

2.3 Existing Conditions

2.3.1 Area Road Network

Hazeldean Road is an east-west, City-owned, arterial roadway which extends from Spruce Ridge Road in the west to Eagleson Road in the east (where it continues as Robertson Road). Through the study area, Hazeldean Road has a four-lane divided cross section, with bike lanes on both sides of the roadway. West of Carp Road, Hazeldean Road's westbound movement drops to a single through lane. No parking is permitted on Hazeldean Road. The posted speed limit through the study area is 60km/h.

Carp Road is a north-south, City-owned arterial roadway which extends between Galleta Side Road in the north to Stittsville Main Street in the south. Within the study area, Carp Road has a two-way undivided cross section, with bike lanes on both sides of the roadway in several areas. No parking is permitted on Carp Road. The posted speed limit through the study area is 60km/h.

Stittsville Main Street is a north-south, City-owned roadway which extends between a cul-de-sac (aligned with Maple Grove Road) in the north and Flewellyn Road in the south (where it continues as Huntley Road). North of Hazeldean Road, it is classified as a major collector, and south of Hazeldean Road it is classified as an arterial. Within the study area, Stittsville Main Street has a two-way undivided cross section, with a bike lane on the east side of the road at the Hazeldean Road intersection. No parking is permitted on Stittsville Main Street within the study area. The posted speed limit within the study area is 50km/h.

Kimpton Drive is an east-west, City-owned, collector roadway which extends between Llyodalex Crescent in the west (where it continues as Echowoods Drive) and Stittsville Main Street in the east (where it continues as Horseshoe Crescent). It has a two-way undivided cross section, with parking permitted and no bike lanes. The posted speed limit is 50km/h.

Echowoods Avenue is an east-west, City-owned, collector roadway which extends between Carp Road in the west (where it continues as Kittiwake Drive), and Llyodalex Crescent in the east (where it continues as Kimpton Drive). It has a two-way undivided cross section, with parking permitted and no bike lanes. The posted speed limit is 50km/h.

Kittiwake Drive is an east-west, City-owned, collector roadway which extends between Hazeldean Road in the west (where it continues as West Ridge Drive) and Carp Road in the east (where it continues as Echowoods Avenue). It has a two-way undivided cross section, with parking permitted and no bike lanes. The posted speed limit is 40km/h.

2.3.2 Existing Study Area Intersections

The proposed study intersection lane configurations and traffic controls are illustrated in **Figure 3**. The following is a description of the study area intersections.

Hazeldean Road / Carp Road

The Hazeldean Road/Carp Road intersection is a signalized four-way intersection. The eastbound and northbound approaches consist of two through lanes and one auxiliary left-turn lane. The westbound and southbound approaches consist of one through lane, one auxiliary left-turn lane and one auxiliary channelized right-turn lane. The westbound, northbound and southbound lanes provide bike lanes.

Hazeldean Road / Stittsville Main Street

The Hazeldean Road/Stittsville Main Street intersection is a signalized four-way intersection. The eastbound and westbound approaches consist of two through lanes and one auxiliary left-turn lane. The northbound approach consists of one through lane, one auxiliary left-turn lane and one auxiliary channelized right-turn lane. The southbound approach consists of one through lane, one auxiliary left-turn lane and one auxiliary right-turn lane. The eastbound, westbound and southbound approaches provide cycle lanes.

Carp Road / Stittsville Main Street

The Carp Road/Stittsville Main Street intersection is a signalized four-way intersection. The eastbound approach consists of one through lane, one auxiliary left-turn lane and one auxiliary channelized right-turn lane. The westbound approach consists of one through lane and one auxiliary left-turn lane. The northbound approach consists of one through lane and one auxiliary left-turn lane. The southbound approach consists of one through lane, one auxiliary left-turn lane and one auxiliary channelized right-turn lane. No cycling lanes are provided at the intersection.

Carp Road / Echowoods Drive-Kittiwake Drive

The Carp Road/Echowoods Drive-Kittiwake Drive intersection is a signalized four-way intersection. The northbound approach consists of one through lane and one auxiliary left-turn lane. The southbound approach consists of one through lane, one auxiliary left-turn lane and one auxiliary right-turn lane. The eastbound and westbound approaches consist of one through lane. No cycling lanes are provided at the intersection.

Samantha Eastop Avenue / Kimpton Drive

The Samantha Eastop Avenue/Kimpton Drive intersection is an unsignalized four-way intersection. All four approaches consist of a single through lane. Kimpton Drive is the major movement through the intersection, with Samantha Eastop Avenue having stop control.

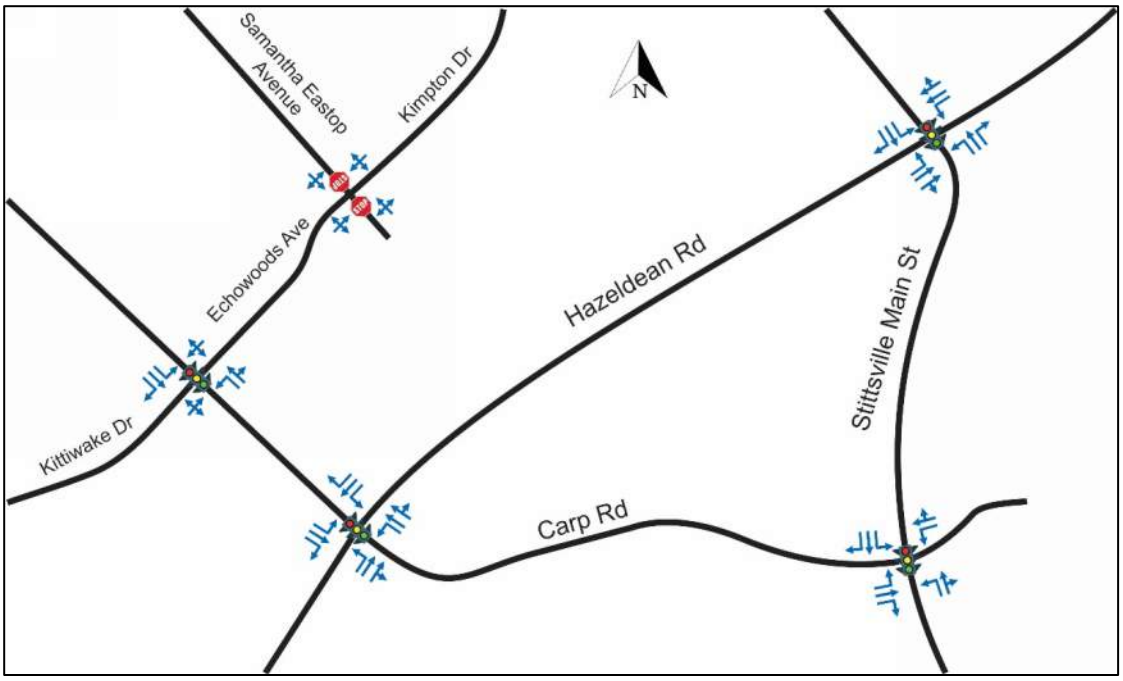


Figure 3 - Existing Traffic Control and Lane Configuration

2.3.3 Peak Hour Travel Demands

The existing peak hour traffic volumes are illustrated below in **Figure 4** and were collected by the City of Ottawa in 2017 and could not be updated due to the Covid-19 pandemic. The peak hour traffic volume count data is included in **Appendix C**.

To estimate 2020 traffic conditions, a uniform growth rate was applied to the collected volume counts. Assuming the base year of 2017, a vehicular growth rate of 2.0% per annum was applied, resulting in a total growth of 6.0%.

The Kimber Drive/Samantha Eastop Avenue intersection did not exist in 2017, and as estimated using the traffic volumes in the *6111 and 6141 Hazeldean Road Stittsville, Ontario Proposed Residential Development Transportation Impact Study* dated April 2014 and prepared by CastleGlenn Consultants. The traffic volumes from this study were then redistributed to match the trip distribution in Error! Reference source not found. of this report.

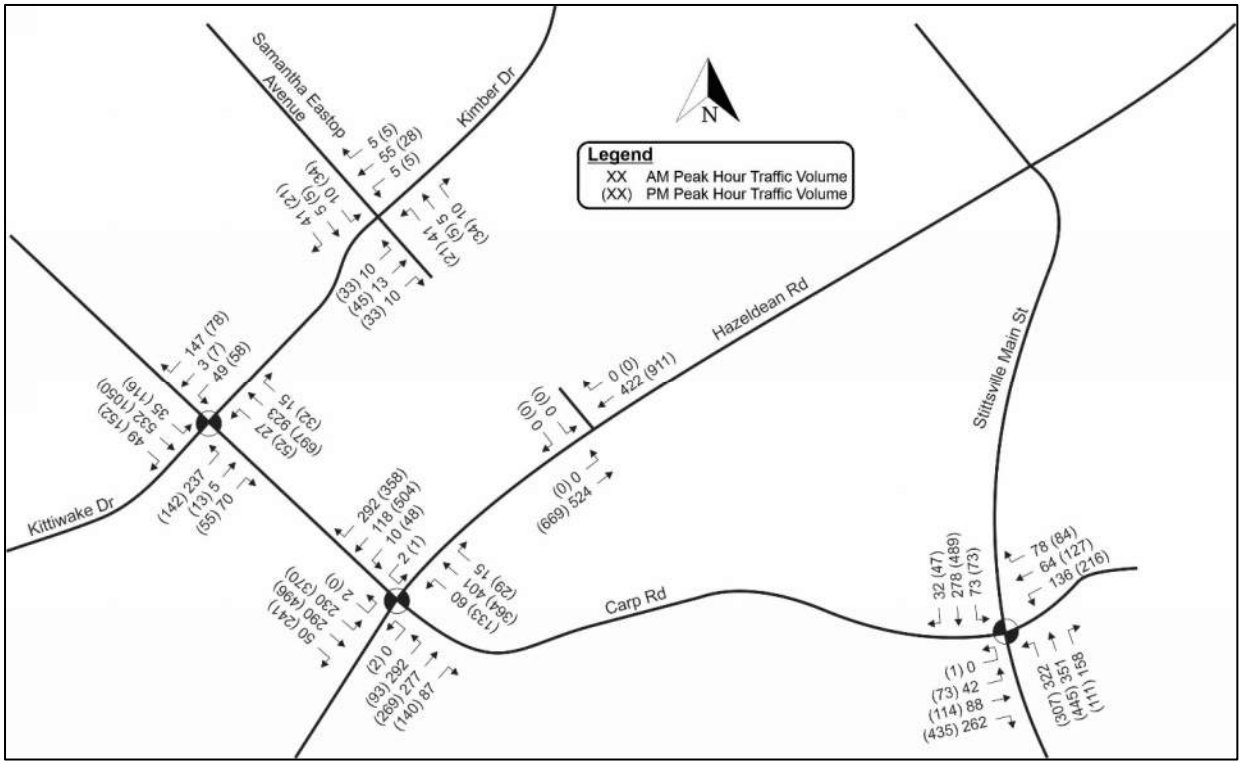


Figure 4 - Existing (2020) Volumes

The existing traffic operations were assessed using Synchro software and the results provided in **Appendix D** summarized in **Table 1**.

Table 1 - Existing (2020) Traffic Operations Analysis

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement(s)			Overall		
	LoS	v/c	Movement	Delay (s)	v/c	LOS
Signalized						
Carp Rd & Kittiwake Dr / Echowoods Ave	E	0.97	EBL	61.4 (61.5)	1.05 (1.06)	F (F)
	F	1.07	NBT			
	(F)	(1.16)	SBT			
Carp Rd & Hazeldean Rd	F (F)	1.18 (1.07)	EBL	53.4 (57.1)	0.78 (1.05)	C (F)
	(E)	(0.91)	WBT			
	(F)	(1.18)	SBL			
Carp Rd & Stittsville Main St	(F)	(1.02)	NBL	19.0 (53.3)	0.65 (0.94)	B (E)
	(E)	(0.92)	NBTR			
	(F)	(1.07)	SBT			
Unsignalized						
Kimpton Dr & Samantha Eastop Dr	-	-	-	5.7 (5.6)	-	A (A)

2.3.4 Existing Driveways to Adjacent Developments

An existing driveway exists opposite the site on Hazeldean Road. However, it is blocked off and the parcel is vacant.

2.3.5 Pedestrian/Cycling Network

The pedestrian and cycling infrastructure within the study area is outlined in **Figure 5**.

Figure 5 - Pedestrian and Cycling Infrastructure

With respect to cyclists, according to the City of Ottawa Cycling Plan, Hazeldean Road, Carp Road and Stittsville Main Street (south of Hazeldean Road) are classified as "Spine Routes". Kittiwake Drive is classified as a "Local Route", and Stittsville Main Street (north of Hazeldean Road) is classified as a "Pathway Link".

2.3.6 Transit Network

Transit service within the vicinity of the site is currently provided by OC Transpo Routes #61, #162, #261, #262, #303. The current bus stops are as follows:

Table 2 - OC Transpo Routes

Stop Location	OC Transpo Routes	Direction
Kittiwake / Sundew (#2019)	#162, #262	Westbound
Kittiwake / Wilderness (#2020)	#162, #262	Eastbound
Hazeldean / Carp (#1594)	#61, #162	Westbound
Hazeldean / Carp (#1881)	#61, #162	Eastbound
Carp / Mccooeye (#1592)	#61	Northbound
Carp / Hobin (#1838)	#61	Southbound
Stittsville Main / Carp (#0347)	#61, #261, #301	Northbound
Stittsville Main / Carp (#0346)	#61, #261, #301	Southbound
Stittsville Main / Ad. 1224 (#2185)	#261	Northbound
Stittsville Main / Ad. 1224 (#2186)	#261	Southbound
Hazeldean / Stittsville Main (#4676)	#61, #162	Westbound
Hazeldean / Stittsville Main (#1589)	#61, #162	Eastbound

A detailed map of the approximate stop locations has been provided below in **Figure 6** for reference.

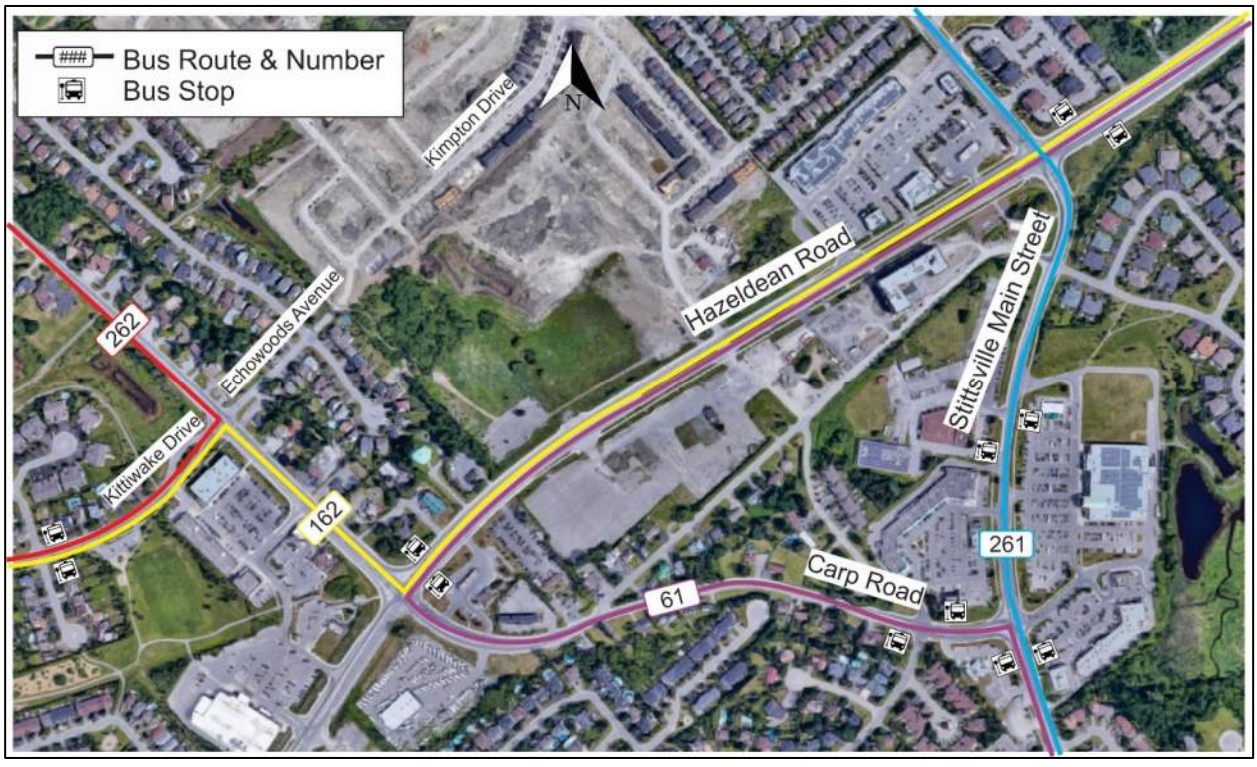


Figure 6 - Existing OC Transpo Area Network

2.3.7 Existing Road Safety Conditions

Collision history for the study area intersections (2014-2018, inclusive) was obtained from the City of Ottawa. Refer to **Appendix D** for the collision details report. The City requires a safety review to be conducted if at least six (6) collisions have occurred for any one movement or of a discernible pattern over a five (5) year period. A review of the boundary streets' historical collision records indicates collisions at the following intersections include:

- **Carp Road and Echowoods Ave/Kittiwake Drive** – A total of 10 collisions were recorded. The impact types are seven (7 or 70%) rear end, one (1 or 10%) approaching, one (1 or 10%) angle and one (1 or 10%) sideswipe. One of the collisions was classified as non-fatal while the rest were classified as property damage only.
- **Carp Road and Hazeldean Road** – A total of 75 collisions were recorded. The impact types are forty-one (41 or 55%) rear end, nineteen (19 or 25%) turning movement, ten (10 or 13%) angle and five (5 or 7%) single motor vehicle (SMV) other. Fourteen (14) collisions were classified as non-fatal, one (1) was classified as non-reportable and the rest were classified as property damage only.
- **Carp Road and Stittsville Main Street** – A total of 51 collisions were recorded. The impact types are thirty-seven (37 or 72%) rear end, nine (9 or 18%) turning movement, two (2 or 4%) sideswipe, one (1 or 2%) angle, one (1 or 2%) SMV and one (1 or 2%) classified as other. Five (5) collisions were classified as non-fatal while the rest were classified as property damage only.

Most collisions that occurred at the above-mentioned intersections are rear end making a right-turn movement. The proposed development's generated traffic is not anticipated to significantly contribute to the collision patterns within the identified study area due to the proposed locations of the site access roads as identified in section 1.1.

2.4 Planned Conditions

2.4.1 Transportation Network Plans

Arterial road widening is proposed on Carp Road between Highway 417 and Hazeldean Road as identified on the 2031 Road Network Concept and Affordable Network Concept (Map 10 and Map 11 of the City of Ottawa Transportation Master Plan).

A transit priority corridor is anticipated for Hazeldean Road and Stittsville Main Street is identified on the Rapid Transit and Transit Priority – 2031 Network Concept and Affordable Network Plans (Maps 4 and 5 of the City of Ottawa Transportation Master Plan).

2.4.2 Other Developments

A number of developments have been identified within the surrounding area. The list below outlines their location, purpose, buildout year and number of trips.

- **6111 Hazeldean Road**: located north of Hazeldean Road between Carp Road and Stittsville Main Street. A traffic impact assessment was prepared by CastleGlenn Consultants in April 2014. The development is a subdivision, consisting of 454 residential units and various new municipal roads. The Kimber Drive & Samantha Eastop Avenue intersection is originally apart of this development. The development buildout is expected for 2020 and will generated 241 new AM trips and 304 new PM trips. Development trips are added into the background scenarios using the trip distribution provided in **Table 5.**
- **5924 Hazeldean Road:** located at the southwest corner of Hazeldean Road and Victor Street. A traffic impact assessment was prepared by EXP Services in March 2019. The development is a 86-unit townhouse complex, slated for build out in 2020. The development will generate 40 new AM trips and 48 new PM trips. These trips are assumed to be apart of the background growth, due to the distance of the development from the study area intersections.

- **1145 Carp Road:** located in the northeast corner of Carp Road and Hazeldean Road. A traffic impact assessment was prepared by Stantec in May 2019. The development is a 34-unit residential building, and a restaurant and dental office building, slated for build out in 2020. The development will generate 48 new AM trips and 52 new PM trips. Development trips are added into the background scenarios.
- **6150 Hazeldean Road:** located on the south side Hazeldean Road approximately 450 meters east of Carp Road. A traffic impact assessment was prepared by CastleGlenn Consultants in May 2019. The development is a restaurant and a 2-storey office building, slated for build out in 2020. The development will generate 17 new AM trips and 67 new PM trips. Development trips are added into the background scenarios.
- **5986-5992 Hazeldean Road:** located at the southeast corner of Hazeldean Road and Springbrook Drive. A traffic impact assessment was prepared by Dillon Consulting in September 2019. The development is a three-storey mixed-use building, slated for build out in 2020. The development will generate 16 new AM trips and 17 new PM trips. These trips are assumed to be apart of the background growth, due to the low number of trips and distance of the development from the study area intersections.
- **2113 Carp Road:** located at the northwest corner of Carp Road and Westbrook Road. A traffic impact study was not submitted for this development, so instead the site plan by KWC Architects in November 2019 is referenced. The development is an automobile body shop. Due to the lack of TIA screening form, it is assumed that trip generation is minor enough to not trigger any warrants, and therefore trips are assumed to be amalgamated into background growth.
- **103 Walgreen Road:** located on Walgreen Road south of Westbrook Road. A traffic impact study was not submitted for this development, so instead the site plan by McIntosh Perry in August 2015 is referenced. The development is an automobile repair shop. Due to the lack of TIA screening form, it is assumed that trip generation is minor enough to not trigger any warrants, and therefore trips are assumed to be amalgamated into background growth.
- **1981 Maple Grove Road:** located northeast of Maple Grove Road and Stittsville Main Street. A traffic impact assessment was prepared by IBI in February 2018. The development is 196-unit residential subdivision slated for build out in 2020. The development will generate 89 new AM trips and 11 new PM trips. These trips are assumed to be apart of the background growth, due to the distance of the development from the study area intersections.

2.5 Time Periods

It is proposed that the residential development will generate peak traffic volumes during the weekday in the AM and PM peak periods.

2.6 Horizon Years

Based upon the anticipated size of the proposed residential development (529 residential units) and the impact of the proposed adjacent developments, it is anticipated both of the horizon periods (full occupancy and 5 years following full occupancy) will be required for analysis.

Full occupancy is anticipated for 2024, thus being the first horizon period. The 5-years post full occupancy will be for 2029, being the second horizon period.

2.7 Exemptions Review

The proposed development satisfies the 'Trip Generation' trigger on the 2017 TIA Screening Form. Based upon Table 4 of the City of Ottawa TIA Guidelines, the following exemptions apply to the proposed development:

- .....Module 4.2.2 – As adequate parking is provided per the City of Ottawa planning guidelines, and
- .....Module 4.8 – As the total number of trips is below the 200 person-trip limits for the AM9 zone.

3 Forecasting

3.1 Proposed Development

3.1.1 Development-Generated Travel Demand

Trip generation for the proposed development were derived from the 2009 TRANS Trip Generation Study. The trip generation is summarized in **Table 3**. The rates were derived from Tables 3.12 and 3.13 in the study, outlining the vehicle trips for the land use type.

Table 3 - Trip Generation

Land Use	Independent Variable	Parameters	AM Peak Hour		PM Peak Hour	
			In	Out	In	Out
Single Detached	20 units	Scenario	Suburban, Base Rate		Suburban, Base Rate	
		Rate / Eq.	0.7		0.9	
		Total Trips	14		18	
		Distribution	29%	71%	62%	38%
		Vehicle Trips	**4**	**10**	**11**	**7**
		Vehicle Trip %	55%		64%	
		Person Trips	**7**	**18**	**17**	**11**
Townhouses	154 units	Scenario	Suburban, Base Rate		Suburban, Base Rate	
		Rate / Eq.	0.54		0.71	
		Total Trips	83		109	
		Distribution	37%	63%	53%	47%
		Vehicle Trips	**31**	**52**	**58**	**51**
		Vehicle Trip %	55%		61%	
		Person Trips	**56**	**95**	**95**	**84**
High-Rise Condominiums	180 units	Scenario	Suburban, Base Rate		Suburban, Base Rate	
		Rate / Eq.	0.46		0.46	
		Total Trips	83		83	
		Distribution	28%	72%	58%	42%
		Vehicle Trips	**23**	**60**	**48**	**35**
		Vehicle Trip %	44%		44%	
		Person Trips	**52**	**136**	**109**	**80**

Mid-Rise Apartments	175 units	Scenario	Suburban, Base Rate		Suburban, Base Rate	
		Rate / Eq.	0.29		0.37	
		Total Trips	51		65	
		Distribution	24%	76%	62%	38%
		Vehicle Trips	**12**	**39**	**40**	**25**
		Vehicle Trip %	44%		44%	
		Person Trips	**27**	**89**	**91**	**57**
TOTAL (VEHICLE TRIPS)			**231**		**275**	
			70	**161**	**157**	**118**
TOTAL (PERSON TRIPS)			**480**		**544**	
			142	**338**	**312**	**232**

The proposed development is expected to generate 168 two-way vehicle trips during the AM peak, and 168 two-way vehicle trips during the PM peak.

3.1.2 Mode Share

The subject development is located within the Kanata/Stittsville neighbourhood and its existing and proposed modal split for the development is provided in **Table 4**. The information source, from the 2011 Origin-Destination Survey by Trans Committee, is included as **Appendix F**.

Table 4 – Existing and Proposed Travel Mode Proportions

Mode	AM Peak Hour			PM Peak Hour		
	From District	Within District	Proportion	To District	Within District	Proportion
Auto Driver	15360	13630	51%	17660	21240	59%
Auto Passenger	2450	5050	13%	4270	8570	19%
Transit	6230	1210	13%	5980	670	10%
Bicycle	30	220	0%	100	260	1%
Walk	0	5730	10%	0	4570	7%
Other	1900	4510	11%	910	2160	5%
Total	25970	30350		28920	37470	

3.1.3 Trip Distribution

Trip distribution was devised by determining the proportions of trips in relation to the Kanata/Stittsville neighbourhood. Using the 2011 Origin-Destination Survey for both AM and PM peak periods (provided as **Appendix F**), a matrix was devised to determine the entry and exit points of trips. The plaza located at 1261 Stittsville Main Street is included as “East Plaza”, as a potential origin and destination point.

Any trips with an origin and destination within Kanata/Stittsville will be distributed based on the TMCs. Most trips occurring outside the neighbourhood are routed via Carp Road, with a small portion routed via Stittsville Main Street. The TMC counts were proportioned out based on the access points for the major roads. These were multiplied by the TMC percentage from the O-D data.

Table 5 outlines the resultant trip distribution for the development. Over half of trips enter and exit the study area via Carp Road, due to its interchange with Highway 417.

Table 5 – Overall Trip Distribution

	AM IN	AM OUT	PM IN	PM OUT
West Hazeldean	13%	4%	7%	14%
East Hazeldean	8%	8%	12%	11%
North Carp	54%	71%	61%	51%
South Stittsville Main	20%	12%	14%	20%
East Plaza	5%	5%	6%	5%

3.1.4 Trip Assignment

The numerical breakdown of site trips is provided as **Table 6.**

Table 6 – Trip Assignment Breakdown

	AM IN	AM OUT	PM IN	PM OUT
West Hazeldean	9	6	11	16
East Hazeldean	11	13	19	12
North Carp	76	112	96	60
South Stittsville Main	28	20	22	24
East Plaza	8	9	9	6

The visual assignment of trips is illustrated in **Figure 7**. Trips to and from Carp Road use the access on Samantha Eastop Drive, while all others use the access on Hazeldean Road.

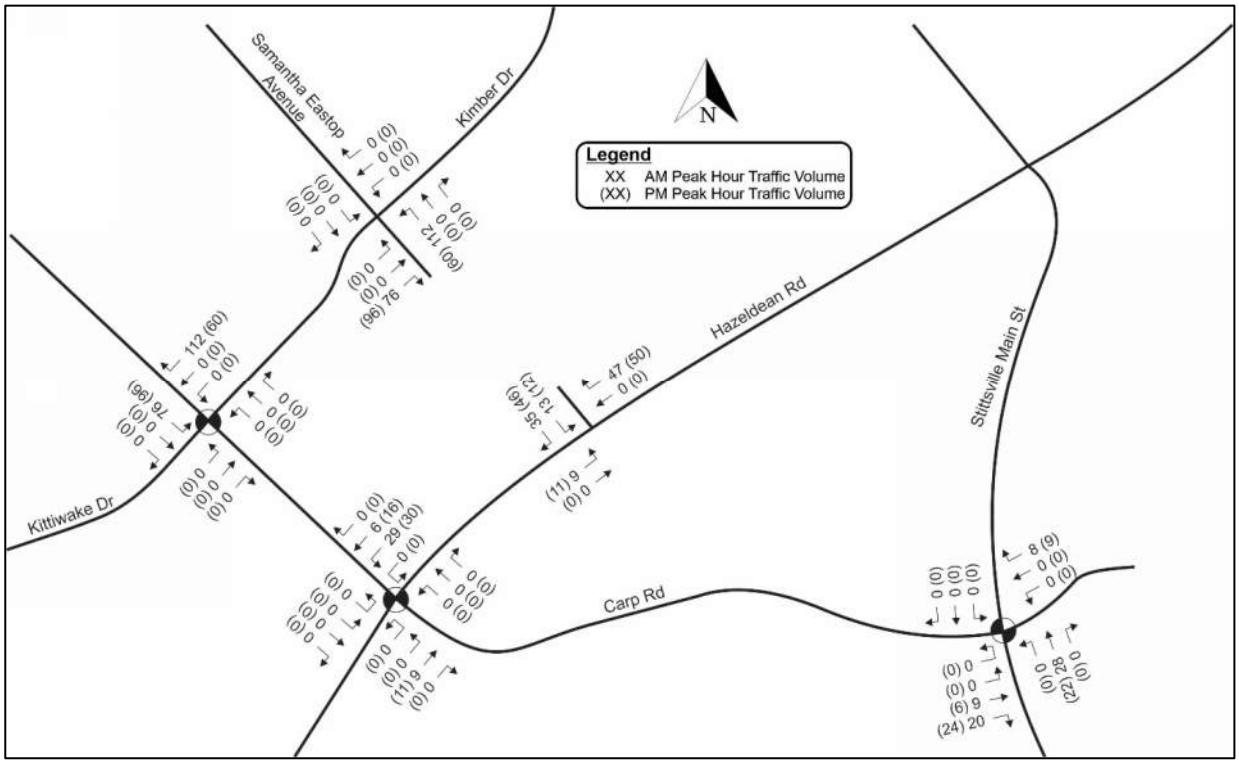


Figure 7 – Site Trip Volumes

3.2 Background Network Travel Demands

3.2.1 Transportation Network Plans

The City of Ottawa Transportation Master Plan was consulted to determine the road network changes in the study area. The 2031 Road Network Concept (Map 10) shows that Carp Road will be widened to four lanes between Hazeldean Road and Highway 2017. However, as the widening is not forecasting within the City's 10-year capital budget, it is expected it will not occur within the horizon years.

The lane configuration is based on the June 2015 Alternative A, developed by Parsons. The lane configuration changes the southbound exclusive right-turn lane at Kittiwake Drive into a through-right lane. An additional southbound left turn lane is added southbound at Hazeldean Road.

3.2.2 Background Traffic Growth

Background growth was estimated by using a uniform a 2.0% annual vehicular growth rate. The 2024 conditions will have an increase of 8.0% from the existing conditions. The 2029 conditions will have an increase of 20.0% from the existing conditions.

3.2.3 Other Developments

A number of developments have been identified within the surrounding area as discussed in Section 2.4.2.

3.3 Demand Rationalization

3.3.1 Future Background (2024) Traffic

The future background traffic volumes for 2024 are provided in **Figure 8.**

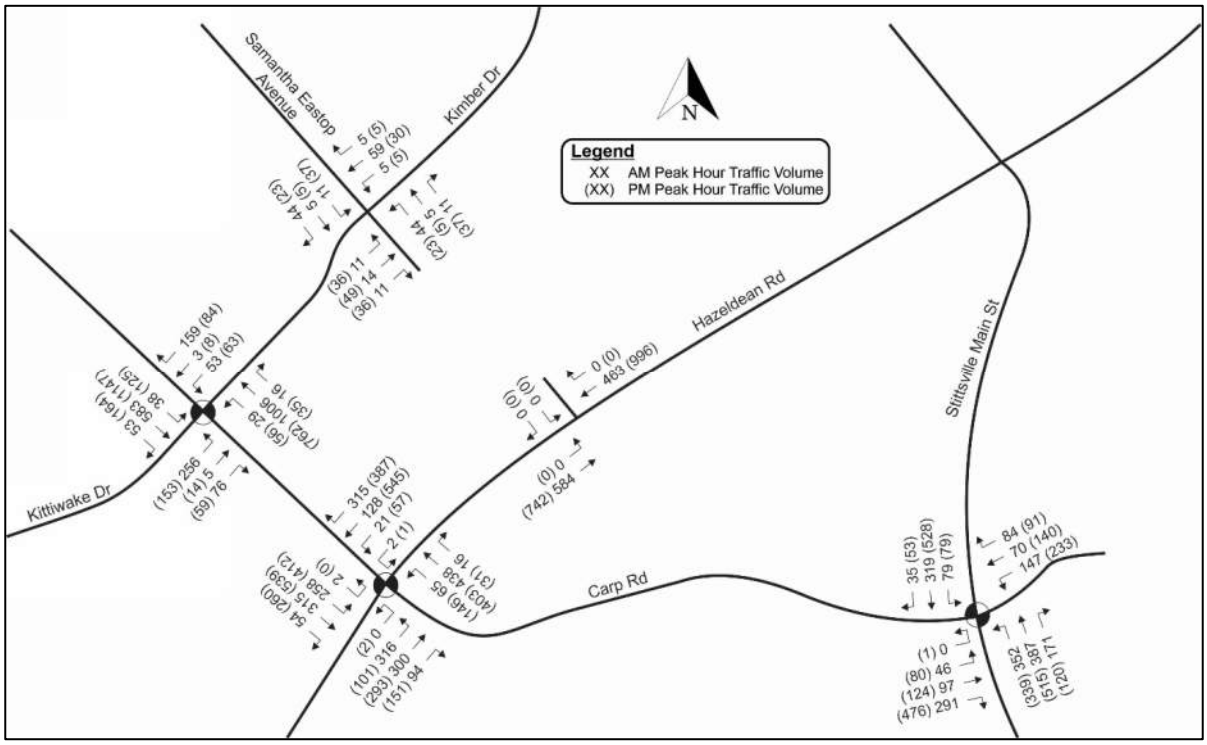


Figure 8 – Future Background (2024) Traffic Volumes

The future background traffic operations analysis for 2024 is provided as **Table 7**. Full outputs are provided in **Appendix G**.

Table 7 – Future Background (2024) Traffic Operations Analysis

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement(s)			Overall		
	LoS	v/c	Movement	Delay (s)	v/c	LOS
Signalized						
Carp Rd & Kittiwake Dr / Echowoods Ave	F (F)	1.11 (01.17)	EBL	49.7 (58.0)	1.03 (1.11)	F (F)
	E	1.04	NBT			
	(F)	(1.11)	SBT			
Carp Rd & Hazeldean Rd	F (F)	1.16 (1.05)	EBL	52.1 (57.0)	0.77 (1.04)	C (F)
	(E)	(0.91)	NBL			
	(F)	(1.19)	SBL			
Carp Rd & Stittsville Main St	(F)	(1.05)	NBL	18.8 (44.1)	0.64 (0.96)	B (E)
	(E)	(0.99)	NBTR			
	(F)	(1.04)	SBT			
Unsignalized						
Kimpton Dr & Samantha Eastop Dr	-	-	-	5.7 (5.4)	-	A (A)

3.3.2 Future Background (2029) Traffic

The future background traffic volumes for 2029 are provided in **Figure 9.**

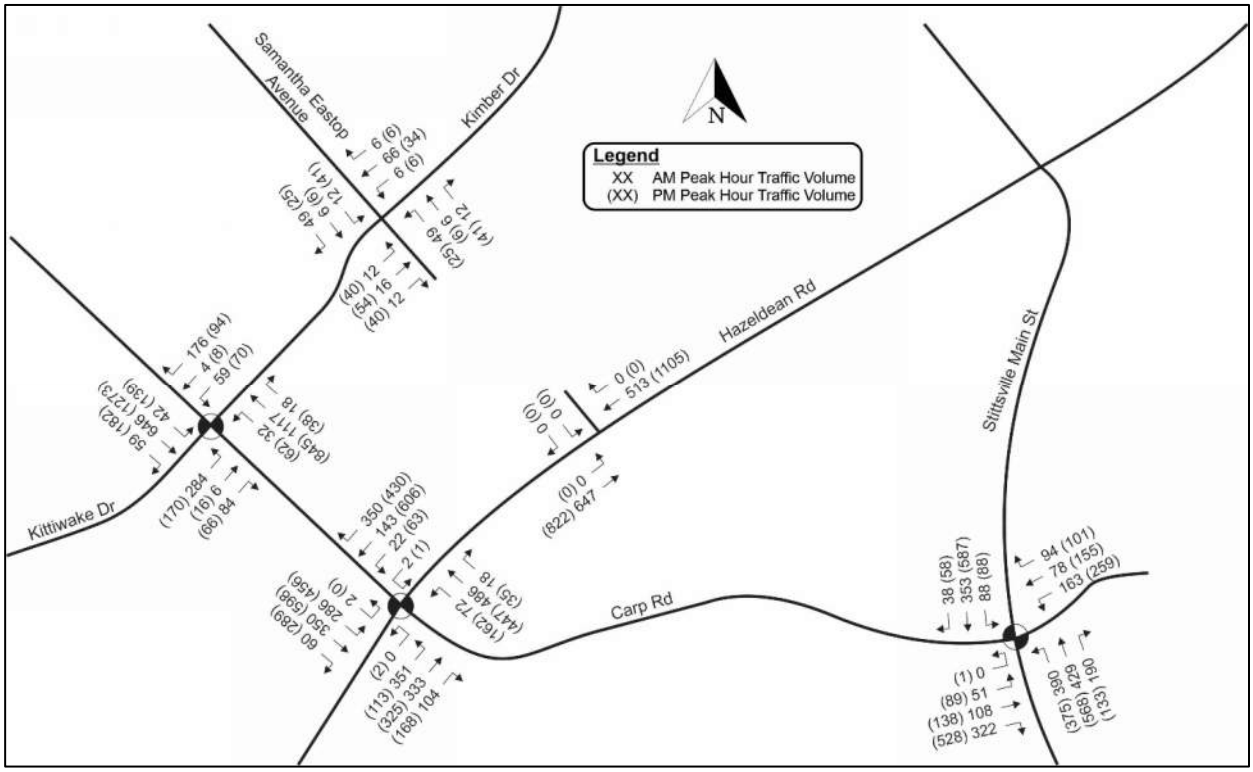


Figure 9 – Future Background (2029) Traffic Volumes

The future background traffic operations analysis for 2029 is provided as **Table 8**. Full outputs are provided in **Appendix G**.

Table 8 – Future Background (2029) Traffic Operations Analysis

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement(s)			Overall		
	LoS	v/c	Movement	Delay (s)	v/c	LOS
Signalized						
Carp Rd & Kittiwake Dr / Echowoods Ave	F (E)	1.17 (0.94)	EBL	84.8 (83.1)	1.16 (1.16)	F (F)
	F	1.22	NBT			
	(F)	(1.26)	SBT			
Carp Rd & Hazeldean Rd	F (F)	1.29 (1.25)	EBL	59.7 (78.3)	0.87 (1.25)	D (F)
	(E)	(0.93)	WBT			
	(F)	(1.47)	SBL			
	(E)	(1.03)	SBT			
Carp Rd & Stittsville Main St	(F)	(1.28)	NBL	20.0 (84.1)	0.56 (1.12)	A (F)
	(F)	(1.12)	NBTR			
	(F)	(1.16)	SBT			
Unsignalized						
Kimpton Dr & Samantha Eastop Dr	-	-	-	5.7 (5.7)	-	A (A)

3.3.3 Future Background (2029) Mitigations

Several movements in the 2029 future background conditions are considered failing, indicated by a LOS of F. In order to provide sufficient capacity for movements in the study area, the following mitigations were implemented:

- Carp Road & Kittiwake Drive / Echowoods Avenue
  - Additional northbound through lane;
  - Additional southbound through lane, replacing the exclusive southbound right-turn lane;
  - Eastbound left-turn provided a protected-permissive phase
  - Signals optimized to 120 seconds in the AM, 90 seconds in the PM.
- Hazeldean Road & Carp Road
  - Additional eastbound left-turn lane;
  - Additional northbound left-turn lane;
  - Additional southbound through lane;
  - Additional westbound through lane;
  - Eastbound left-turn provided a protected only phase
  - Signals optimized to 115 seconds in the AM, 140 seconds in the PM.
- Carp Road & Stittsville Main Street
  - Westbound left-turn provided a protected-permissive phase
  - Signals optimized to 80 seconds in the AM, 110 seconds in the PM

The operational analysis with the mitigations is provided in **Table 9**, with full outputs provided in **Appendix J**.

Table 9 – Future Background (2029) Traffic Operations Analysis

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement(s)			Overall		
	LoS	v/c	Movement	Delay (s)	v/c	LOS
Signalized						
Carp Rd & Kittiwake Dr / Echowoods Ave	E	0.97	EBL	31.4 (22.4)	0.75 (0.83)	C (D)
Carp Rd & Hazeldean Rd	F (F)	0.98 (1.17)	EBL	44.4 (59.7)	0.67 (0.97)	B (E)
	(F)	(1.05)	SBL			
Carp Rd & Stittsville Main St	(E)	(0.94)	NBL	20.5 (50.5)	0.72 (0.99)	C (E)
	(E)	(0.95)	SBT			
Unsignalized						
Kimpton Dr & Samantha Eastop Dr	-	-	-	5.7 (5.7)	-	A (A)

4 Analysis

4.1 Development Design

The development will have two access points – one to the north of the development via Samantha Eastop Drive, and one to the south onto Hazeldean Road. Internally, these accesses are not directly connected to discourage cut-through traffic.

The access on Hazeldean Road is designed to municipal standards and aligned with an unused access on the south side of Hazeldean Road, which, when developed, will create a four-legged intersection.

4.2 Parking

Each detached house and townhouse unit is providing at a minimum two parking spaces, with one parking space provided in a garage, and the other in their driveway. Bicycle parking for the townhouses and detached houses will be within their garage.

The condominium is required to provide 216 resident, 36 visitor and 90 bicycle parking spaces and is providing that amount.

The rental building is required to provide 210 resident, 35 visitor, 58 commercial and 88 bicycle parking spaces and is providing that amount.

4.3 Boundary Streets

The boundary streets for the proposed development are Carp Road, Hazeldean Road, Stittsville Main Street and Echowoods Ave/Kimpton Drive as identified in section 2.3.2.

Carp Road

The widening of Carp Road is planned between Highway 417 and Hazeldean Road as per Map 10 (Road Network – 2031 Concept). The existing roadway geometry consists of the following features:

- Approximate 24m R.O.W. road allowance, street width of 11m;
- One (1) vehicular traffic lane in each direction between Stittsville Main Street and Hazeldean Road, and two (2) vehicular traffic lanes in each direction between Hazeldean Road and Echowoods Ave/Kittiwake Drive;
- Sidewalk width of 2.0m;
- More than 3,000 annual average daily traffic (AADT);
- A median width of approximately 1.8m between Hazeldean Road and Echowoods Ave/Kittiwake Drive;
- Posted speed limit of 50km/h between Stittsville Main Street and Hazeldean Road and 60km/h between Hazeldean Road and Echowoods Ave/Kittiwake Drive;
- No dedicated transit facilities;
- Dedicated cycling facilities on both sides of the roadway in several areas;
- No shoulder of road; and
- No on-street parking.

The Multi-Modal Level of Service (MMLOS) analysis for the road segment along Carp Road was thoroughly conducted and is summarized below in

Table 10 and **Table 11**. The truck level of service is included in the analysis as Carp Road is classified as an arterial road.

Table 10 – MMLOS Projected Carp Road Segment Between Stittsville Main Street and Hazeldean Road (Both Sides of Roadway)

Road Segment	Level of Service							
	Pedestrian (PLOS)		Bicycle (BLOS)		Transit (TLOS)		Truck (TkLOS)	
	PLOS	Target	BLOS	Target	TLOS	Target	TkLOS	Target
Carp Road	C	C	B	C	D	D	C	E

Table 11 – MMLOS Projected Carp Road Segment Between Hazeldean Road and Echowoods Ave/Kittiwake Drive (Both Sides of Roadway)

Road Segment	Level of Service							
	Pedestrian (PLOS)		Bicycle (BLOS)		Transit (TLOS)		Truck (TkLOS)	
	PLOS	Target	BLOS	Target	TLOS	Target	TkLOS	Target
Carp Road	D	C	C	C	D	D	A	E

Based upon the location of the development in a general suburban area, adjacent to an arterial roadway with pedestrian facilities, and dedicated bike facilities with a Level of Traffic Stress (LTS) score of LTS3, the determined levels of service for pedestrians are PLOS 'C' and PLOS 'E', and cyclists are BLOS 'B' and BLOS 'C' for the segments between Stittsville Main Street and Hazeldean Road and Hazeldean Road and Echowoods Ave/Kittiwake Drive, respectively. The road currently does not have dedicated transit facilities or transit priority plans; however, there is low friction on the road and the ratio of the average transit travel speed to the posted speed limit is equal to or greater than 80%. Therefore, the determined level of service for transit is TLOS 'D' for both segments of Carp Road. The arterial road has an approximate curb lane width of 3.5m and transitions from one (1) to two (2) lane(s) in each direction for the identified segments. Therefore, the determined level of service for trucks is TkLOS 'C' and TkLOS 'A' for the segments between Stittsville Main Street and Hazeldean Road and Hazeldean Road and Echowoods Ave/Kittiwake Drive, respectively.

The target levels of service for pedestrians, cyclists, transit and trucks are determined as per the minimum desirable MMLOS targets by the City of Ottawa's Official Plan designation/policy area to be PLOS 'C', BLOS 'C', TLOS 'D' and TkLOS 'E'.

Hazeldean Road

An anticipated transit priority corridor for Hazeldean Road is identified on the Rapid Transit and Transit Priority – 2031 Network Concept and Affordable Network Plans (Maps 4 and 5 of the City of Ottawa Transportation Master Plan). The existing roadway geometry consists of the following features:

- Approximate 32m R.O.W. road allowance, street width of 23m;
- Two (2) vehicular traffic lanes in each direction between Carp Road and Stittsville Main Street;
- Sidewalk width of 3.0m on the north side and 2.0m on the south side of Hazeldean Road;
- More than 3,000 annual average daily traffic (AADT);'
- A median width of approximately 4.5m;
- Posted speed limit of 60km/h;
- No dedicated transit facilities;
- Dedicated cycling facilities on both sides of the roadway;
- No shoulder of road; and
- No on-street parking.

The Multi-Modal Level of Service (MMLOS) analysis for the road segment along Hazeldean Road was thoroughly conducted and is summarized below in **Table 12**. The truck level of service is included in the analysis as Hazeldean Road is classified as an arterial road.

Table 12 – MMLOS Projected Hazeldean Road Segment (Both Sides of Roadway)

Road Segment	Level of Service							
	Pedestrian (PLOS)		Bicycle (BLOS)		Transit (TLOS)		Truck (TkLOS)	
	PLOS	Target	BLOS	Target	TLOS	Target	TkLOS	Target
Hazeldean Road	C	C	C	C	D	D	A	E

Based upon the location of the development in a general suburban area, adjacent to Hazeldean Road, which is an arterial roadway with pedestrian facilities, and dedicated bike facilities with a Level of Traffic Stress (LTS) score of LTS3, the determined levels of service for pedestrians and cyclists are PLOS 'C' and BLOS 'C', respectively. The road currently does not have dedicated transit facilities or transit priority plans; however, there is low friction on the road and the ratio of the average transit travel speed to the posted speed limit is equal to or greater than 80%. Therefore, the determined level of service for transit is TLOS 'D'. The arterial road has an approximate curb lane width of 3.5m with two (2) traffic lanes in each direction; thus, the determined level of service for trucks is TkLOS 'A'.

The target levels of service for pedestrians, cyclists, transit and trucks are determined as per the minimum desirable MMLOS targets by the City of Ottawa's Official Plan designation/policy area to be PLOS 'C', BLOS 'C', TLOS 'D' and TkLOS 'E'.

Stittsville Main Street

An anticipated transit priority corridor for Stittsville Main Street is identified on the Rapid Transit and Transit Priority – 2031 Network Concept and Affordable Network Plans (Maps 4 and 5 of the City of Ottawa Transportation Master Plan). The existing roadway geometry consists of the following features:

- Approximate 26m R.O.W. road allowance and street width of 14m between Kimpton Drive and Hazeldean Road, and approximate 20m R.O.W. road allowance and street width of 8.5m between Hazeldean Road and Carp Road;
- One (1) vehicular traffic lanes in each direction;

- Sidewalk width of 2m on the east side and 3m on the west side of the roadway between Kimpton Drive and Hazeldean Road, and sidewalk width of 1.5m on the east side and 1.8m on the west side of the roadway between Hazeldean Road and Carp Road;
- More than 3,000 annual average daily traffic (AADT);
- Posted speed limit of 40km/h between Kimpton Drive and Hazeldean Road and 50km/h between Hazeldean Road and Carp Road;
- No dedicated transit facilities;
- Dedicated cycling facilities on the east side of the road at the Hazeldean Road intersection;
- No shoulder of road; and no on-street parking.

The Multi-Modal Level of Service (MMLOS) analysis for the road segment along Stittsville Main Street was thoroughly conducted and is summarized below in **Table 13** and **Table 14**. The truck level of service is included in the analysis for the segment of Stittsville Main Street between Hazeldean Road and Carp Road as it is classified as an arterial roadway.

Table 13 – MMLOS Projected Stittsville Main Street Segment Between Kimpton Drive and Hazeldean Road (Both Sides of Roadway)

Road Segment	Level of Service					
	Pedestrian (PLOS)		Bicycle (BLOS)		Transit (TLOS)	
	PLOS	Target	BLOS	Target	TLOS	Target
Stittsville Main Street	C	C	B	C	D	D

Table 14 – MMLOS Projected Stittsville Main Street Segment Between Hazeldean Road and Carp Road (Both Sides of Roadway)

Road Segment	Level of Service							
	Pedestrian (PLOS)		Bicycle (BLOS)		Transit (TLOS)		Truck (TkLOS)	
	PLOS	Target	BLOS	Target	TLOS	Target	TkLOS	Target
Stittsville Main Street	D	C	D	C	D	D	B	E

Based upon the location of the development in a general suburban area, adjacent to Stittsville Main Street with pedestrian facilities, and limited dedicated bike facilities with a Level of Traffic Stress (LTS) score of LTS3, the determined levels of service for pedestrians are PLOS 'C' and PLOS 'D', and for cyclists are BLOS 'B' and BLOS 'D' between Kimpton Drive and Hazeldean Road and Hazeldean Road and Carp Road, respectively. The road currently does not have dedicated transit facilities or transit priority plans; however, there is low friction on the road and the ratio of the average transit travel speed to the posted speed limit is equal to or greater than 80%. Therefore, the determined level of service for transit is TLOS 'D' for both the above-mentioned segments. The segment of Stittsville Main Street that is classified as an arterial road has an approximate curb lane width of 4.5m with two (2) traffic lanes in each direction; thus, the determined level of service for trucks is TkLOS 'B'.

The target levels of service for pedestrians, cyclists, transit and trucks are determined as per the minimum desirable MMLOS targets by the City of Ottawa's Official Plan designation/policy area to be PLOS 'C', BLOS 'C', TLOS 'D' and TkLOS 'E'.

Echowoods Ave/Kimpton Drive

The existing roadway geometry consists of the following features:

- Approximate 18m R.O.W. road allowance, street width of 8.5m between Carp Road and Overland Drive, and Approximate 20m R.O.W. road allowance, street width of 11m between Overland Drive and Stittsville Main Street;
- One (1) vehicular traffic lanes in each direction between Carp Road and Stittsville Main Street;
- Sidewalk width of 2.0m on the both side of the roadway;
- Less than 3,000 annual average daily traffic (AADT);'
- Posted speed limit of 50km/h;
- No dedicated transit facilities;
- Not dedicated cycling facilities;
- No shoulder of road; and
- Permitted on-street parking.

The Multi-Modal Level of Service (MMLOS) analysis for the road segment along Echowoods Ave/Kimpton Drive was thoroughly conducted and is summarized below in **Table 15**. The truck level of service has not been analyzed as Echowoods Ave/Kimpton Drive is not a designated truck route or classified as an arterial road.

Table 15 – MMLOS Projected Echowoods Ave/Kimpton Drive Segment (Both Sides of Roadway)

Road Segment	Level of Service					
	Pedestrian (PLOS)		Bicycle (BLOS)		Transit (TLOS)	
	PLOS	Target	BLOS	Target	TLOS	Target
Echowoods Ave/Kimpton Drive	**B**	**C**	**B**	**B**	**D**	**D**

Based upon the location of the development in a general suburban area, adjacent to Echowoods Ave/Kimpton Drive, which are collector roadways with pedestrian facilities, and no dedicated bike facilities with a Level of Traffic Stress (LTS) score of LTS3, the determined levels of service for pedestrians and cyclists are PLOS 'B' and BLOS 'B', respectively. The road currently does not have dedicated transit facilities or transit priority plans; however, there is low friction on the road and the ratio of the average transit travel speed to the posted speed limit is equal to or greater than 80%. Therefore, the determined level of service for transit is TLOS 'D'.

The target levels of service for pedestrians, cyclists, and transit are determined as per the minimum desirable MMLOS targets by the City of Ottawa's Official Plan designation/policy area to be PLOS 'C', BLOS 'B', and TLOS 'D'.

4.4 Access Intersections

The only external access will be to Hazeldean Road which is aligned with an unused access on the south side of the street. The access is designed to municipal standards.

4.5 Transportation Demand Management

The proposed development is expected to have a non-auto modal split of 19%, due to the nature of the development and availability of transit and other facilities. The development will provide sidewalk connections to the pre-existing network and contain at a sidewalk on at least one side of all roadways.

4.6 Neighborhood Traffic Management

Site traffic will be accommodated by Hazeldean Road and Kimpton Drive. No modifications are required on either to limit impact on surrounding roadways.

4.7 Transit

The development is not expected to necessitate any increase in transit requirements within the area.

4.8 Network Concept

The widening of Carp Road between Highway 417 and Hazeldean Road is expected to occur between the 2021 and 2025 horizon years. No other network roads are anticipated to see changes.

4.9 Network Intersections

4.9.1 Future Total (2024) Traffic

The future total traffic volumes for 2024 are provided in **Figure 10.**

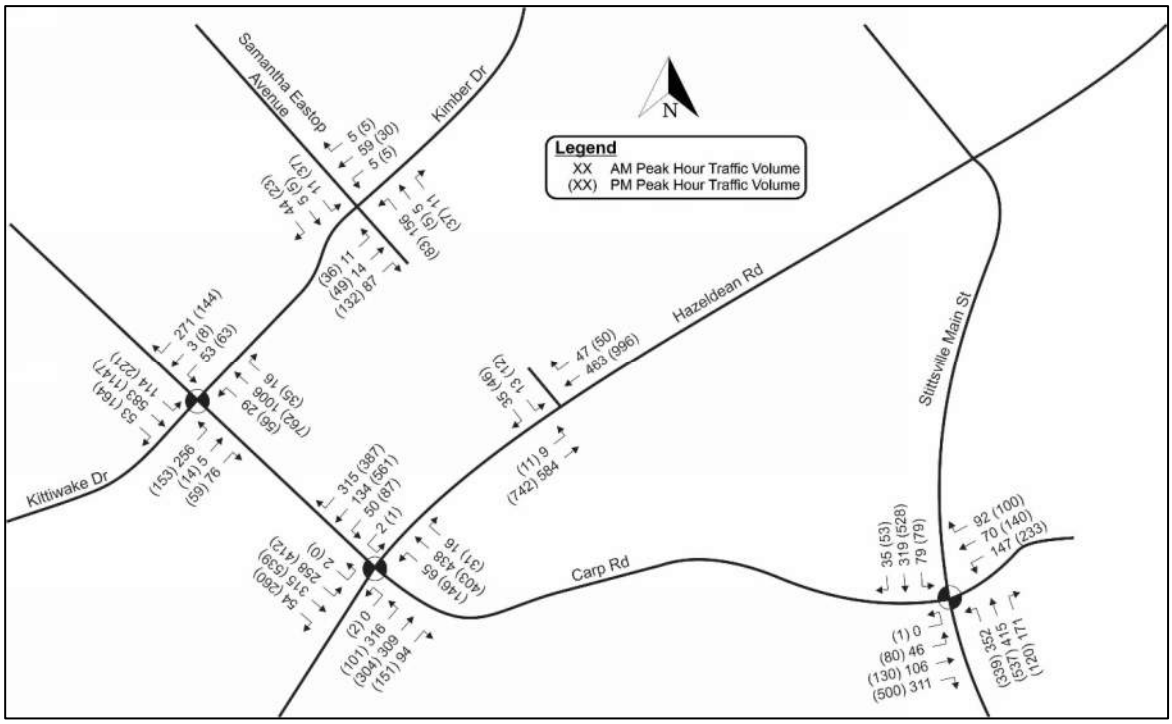


Figure 10 – Future Total (2024) Traffic Volumes

The City has requested the future total traffic analysis prior to submission of Step 4, which is being provided for reference. The future total traffic analysis for 2024 is provided in **Table 16** with full outputs provided in **Appendix H**.

Table 16 – Future Total (2024) Traffic Operations Analysis

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement(s)			Overall		
	LoS	v/c	Movement	Delay (s)	v/c	LOS
Signalized						
Carp Rd & Kittiwake Dr / Echowoods Ave	F (F)	1.30 (1.07)	EBL	75.5 (59.1)	1.17 (1.10)	F (F)
	F	1.15	NBT			
	(F)	(1.12)	SBT			
Carp Rd & Hazeldean Rd	F (F)	1.15 (1.05)	EBL	51.9 (57.2)	0.78 (1.04)	C (F)
	(E)	(0.91)	WBT			
	(F)	(1.19)	SBL			
Carp Rd & Stittsville Main St	(F)	(1.05)	NBL	18.9 (55.3)	0.63 (0.96)	B (E)
	(E)	(0.99)	NBTR			
	(F)	(1.04)	SBL			
Unsignalized						
Kimpton Dr & Samantha Eastop Dr	-	-	-	6.6 (5.4)	-	A (A)
Hazeldean Rd & 6171 Hazeldean	-	-	-	0.5 (0.5)	-	A (A)

4.9.2 Future Total (2029) Traffic

The future total traffic volumes for 2029 are provided in **Figure 11.**

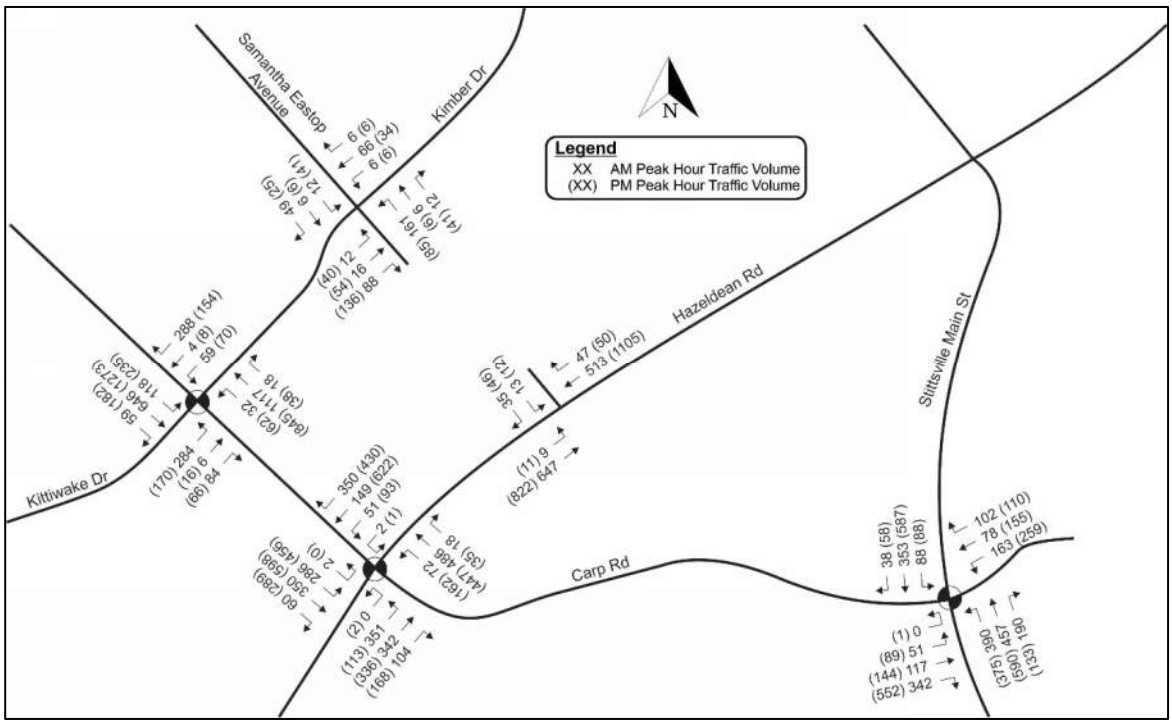


Figure 11 – Future Total (2029) Traffic Volumes

The City has requested the future total traffic analysis prior to submission of Step 4, which is being provided for reference. The future total traffic analysis for 2029 is provided in **Table 17** with full outputs provided in **Appendix H**.

Table 17 – Future Total (2029) Traffic Operations Analysis

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement(s)			Overall		
	LoS	v/c	Movement	Delay (s)	v/c	LOS
Signalized						
Carp Rd & Kittiwake Dr / Echowoods Ave	F (F)	1.38 (1.12)	EBL	108.5 (92.9)	1.30 (1.24)	F (F)
	F (E)	1.31 (0.96)	NBT			
	(F)	(1.30)	SBT			
Carp Rd & Hazeldean Rd	F (F)	1.28 (1.44)	EBL	59.1 (81.0)	0.87 (1.33)	D (F)
	(E)	(0.95)	WBT			
	(F)	(1.47)	SBL			
	(F)	(1.03)	SBT			
Carp Rd & Stittsville Main St	(E)	(0.90)	EBR	20.2 (95.6)	0.71 (1.16)	C (F)
	(F)	(1.36)	NBL			
	(F)	(1.20)	NBTR			
	(F)	(1.16)	SBT			
Unsignalized						
Kimpton Dr & Samantha Eastop Dr	-	-	-	6.7 (5.6)	-	A (A)
Hazeldean Rd & 6171 Hazeldean	-	-	-	0.5 (0.5)	-	A (A)

4.9.3 Future Total (2029) Mitigations

Several movements in the 2029 future total conditions are considered failing, indicated by an LOS of F. The mitigations from section 3.3.3 were applied to the future total conditions to determine the effect of development specific traffic in the study area.

In order to provide sufficient capacity for movements in the study area, the following mitigations were implemented:

- Carp Road & Kittiwake Drive / Echowoods Avenue
  - Additional westbound right-turn lane;
  - Signals optimized to 85 seconds in the AM, 90 seconds in the PM.
- Hazeldean Road & Carp Road
  - Signals optimized to 115 seconds in the AM, 120 seconds in the PM.
- Carp Road & Stittsville Main Street
  - Signals optimized to 80 seconds in the AM, 110 seconds in the PM

The operational analysis with the mitigations is provided in **Table 18**, with full outputs provided in **Appendix J**.

Table 18 - Future Total & Mitigated (2029) Traffic Operations Analysis

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement(s)			Overall		
	LoS	v/c	Movement	Delay (s)	v/c	LOS
Signalized						
Carp Rd & Kittiwake Dr / Echowoods Ave	E	0.93	EBL	29.9 (21.7)	0.90 (0.82)	E (D)
Carp Rd & Hazeldean Rd	E (F)	0.98 (1.00)	EBL	44.6 (48.3)	0.68 (0.86)	B (D)
	(F)	(1.04)	SBL			
Carp Rd & Stittsville Main St	(E)	(0.94)	EBR	20.9 (53.5)	0.74 (1.00)	C (F)
	(E)	(0.98)	NBL			
	(E)	(0.98)	NBTR			
	(E)	(0.97)	SBT			
Unsignalized						
Kimpton Dr & Samantha Eastop Dr	-	-	-	6.7 (5.6)	-	A (A)
Hazeldean Rd & 6171 Hazeldean	-	-	-	0.5 (0.5)	-	A (A)

Appendix A – TIA Screening Form

City of Ottawa 2017 TIA Guidelines Screening Form

1. Description of Proposed Development

Municipal Address	6171 Hazeldean Road
Description of Location	Site is located along Hazeldean Road
Land Use Classification	General Urban Area, Arterial Main Street (AM9)
Development Size (units)	20 singles, 154 towns, 180 Condo, 175 apartments (529 units total)
Development Size (m^2)	90,253
Number of Accesses and Locations	Two (2) site accesses along Hazeldean Road & Kimpton Drive
Phase of Development	No phasing
Buildout Year	2024

If available, please attach a sketch of the development or site plan to this form.

2. Trip Generation Trigger

Considering the Development's Land Use type and Size (as filled out in the previous section), please refer to the Trip Generation Trigger checks below.

Land Use Type	Minimum Development Size
Single-family homes	40 units
Townhomes or apartments	90 units
Office	3,500 m^2
Industrial	5,000 m^2
Fast-food restaurant or coffee shop	100 m^2
Destination retail	1,000 m^2
Gas station or convenience market	75 m^2

** If the development has a land use type other than what is presented in the table above, estimates of person-trip generation may be made based on average trip generation characteristics represented in the current edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual.*

If the proposed development size is greater than the sizes identified above, the Trip Generation Trigger is satisfied.

3. Location Triggers

	Yes	No
Does the development propose a new driveway to a boundary street that is designated as part of the City's Transit Priority, Rapid Transit or Spine Bicycle Networks?	X	
Is the development in a Design Priority Area (DPA) or Transit-oriented Development (TOD) zone?*		X

**DPA and TOD are identified in the City of Ottawa Official Plan (DPA in Section 2.5.1 and Schedules A and B; TOD in Annex 6). See Chapter 4 for a list of City of Ottawa Planning and Engineering documents that support the completion of TIA).*

If any of the above questions were answered with 'Yes,' the Location Trigger is satisfied.

4. Safety Triggers

	Yes	No
Are posted speed limits on a boundary street are 80 km/hr or greater?		X
Are there any horizontal/vertical curvatures on a boundary street limits sight lines at a proposed driveway?		X
Is the proposed driveway within the area of influence of an adjacent traffic signal or roundabout (i.e. within 300 m of intersection in rural conditions, or within 150 m of intersection in urban/ suburban conditions)?		X
Is the proposed driveway within auxiliary lanes of an intersection?		X
Does the proposed driveway make use of an existing median break that serves an existing site?		X
Is there is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development?		X
Does the development include a drive-thru facility?		X

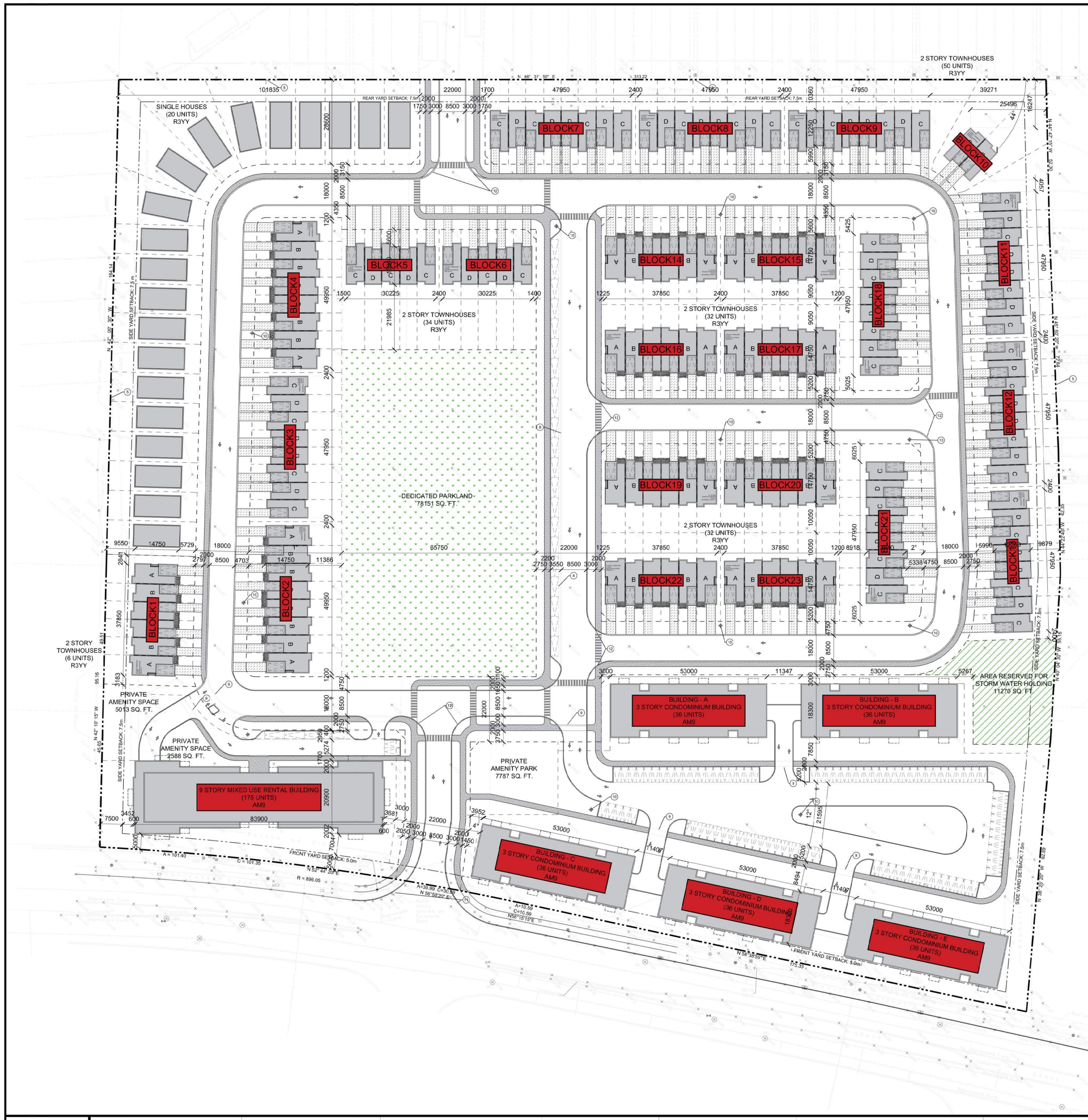
If any of the above questions were answered with 'Yes,' the Safety Trigger is satisfied.

5. Summary

	Yes	No
Does the development satisfy the Trip Generation Trigger?	X	
Does the development satisfy the Location Trigger?		X
Does the development satisfy the Safety Trigger?		X

If none of the triggers are satisfied, the TIA Study is complete. If one or more of the triggers is satisfied, the TIA Study must continue into the next stage (Screening and Scoping).

Appendix B - Site Plan



SITE INFORMATION

ZONING	AM9
MAX BUILDING HEIGHT (WITHIN 20 M. OF RESIDENTIAL)	11.0 M.
MAX BUILDING HEIGHT (ALL OTHER CASES)	15.0 M.
LOT AREA	90,187.6 SQ. M.

5924 HAZELDEAN RD
STITTSVILLE, ONTARIO,
CANADA

SITE SETBACKS (5924)	**PROVIDED**
FRONT YARD (HAZELDEAN)	5.0 M.
CORNER SIDE YARD	N/A
INTERIOR SIDE YARD	7.5 M.
REAR YARD	7.5 M.

RESIDENTIAL UNITS	
DETACHED HOMES:	20
TOWNHOUSES:	154
CONDOMINIUM UNITS:	180
APARTMENT UNITS:	175
TOTAL UNITS:	529

PARKING	**REQUIRED**
DETACHED & TOWNHOUSE	
RESIDENTIAL:	1.2 PER DWELLING
VISITOR:	0.2 PER DWELLING
CONDOMINIUM & APARTMENT	
RESIDENTIAL:	1.0 PER DWELLING
VISITOR:	0.2 PER DWELLING

DEVELOPMENT STATISTICS

PARKING	**REQUIRED**	**PROVIDED**
DETACHED HOUSES		
RESIDENTIAL:	20	20
VISITOR:	4	20
TRADITIONAL TOWNS		
RESIDENTIAL:	154	154
VISITOR:	31	154
CONDOMINIUM UNITS		
RESIDENTIAL:	216	216
VISITOR:	36	36
BICYCLE:	90	**90
APARTMENT UNITS		
RESIDENTIAL:	210	**210
VISITOR:	35	**35
COMMERCIAL SPACE:	58	**58
BICYCLE	88	**88
DEDICATED PARKLAND		
STREET PARKING:	0	21
TOTAL		
CAR SPACES:	764	**924
BICYCLE SPACES:	178	**178

DETACHED HOUSES	**BLD.**	**FOOTPRINT AREA**	**UNITS**	**NET UNIT AREA**
MODEL 1	-	**1,309 SQFT	5	**2,309 SQFT
MODEL 2	-	**1,309 SQFT	5	**2,309 SQFT
MODEL 3	-	**1,309 SQFT	5	**2,309 SQFT
MODEL 4	-	**1,309 SQFT	5	**2,309 SQFT
TOTAL	-	**26,180 SQFT (**2,432.2 SQM)	20	**46,180 SQFT (** 4,290.3 SQM)

TOWNHOUSES	**BLD.**	**FOOTPRINT AREA**	**UNITS**	**NET UNIT AREA**
BLOCK 1	-	6,056 SQFT	6	13,948 SQFT
BLOCK 2	-	8,000 SQFT	8	18,450 SQFT
BLOCK 2	-	6,627 SQFT	8	17,420 SQFT
BLOCK 4	-	8,000 SQFT	8	18,450 SQFT
BLOCK 5	-	4,201 SQFT	5	10,962 SQFT
BLOCK 6	-	4,201 SQFT	5	10,962 SQFT
BLOCK 7	-	6,627 SQFT	8	17,420 SQFT
BLOCK 8	-	6,627 SQFT	8	17,420 SQFT
BLOCK 9	-	6,627 SQFT	8	17,420 SQFT
BLOCK 10	-	1,767 SQFT	8	4,504 SQFT
BLOCK 11	-	6,627 SQFT	8	17,420 SQFT
BLOCK 12	-	6,627 SQFT	8	17,420 SQFT
BLOCK 13	-	6,627 SQFT	8	17,420 SQFT
BLOCK 14	-	6,056 SQFT	6	13,948 SQFT
BLOCK 15	-	6,056 SQFT	6	13,948 SQFT
BLOCK 16	-	6,056 SQFT	6	13,948 SQFT
BLOCK 17	-	6,056 SQFT	6	13,948 SQFT
BLOCK 18	-	6,627 SQFT	8	17,420 SQFT
BLOCK 19	-	6,056 SQFT	6	13,948 SQFT
BLOCK 20	-	6,056 SQFT	6	13,948 SQFT
BLOCK 21	-	6,056 SQFT	6	13,948 SQFT
BLOCK 22	-	6,056 SQFT	6	13,948 SQFT
BLOCK 23	-	6,627 SQFT	8	17,420 SQFT
TOTAL	-	140,316 SQFT (13,035.8 SQM)	154	345,622 SQFT (32,109.3 SQM)

TYP. CONDO BLD. (x5)	**GROSS FLOOR AREA**	**UNITS**	**NET UNIT AREA**
PARKING LEVEL	- 10,440 SQFT	-	N/A
Ground FLOOR	- 10,171 SQFT	12	8,530 SQFT
2nd FLOOR	- 10,171 SQFT	12	8,971 SQFT
3rd FLOOR	- 10,171 SQFT	12	8,971 SQFT
TOTAL	- 40,953 SQFT (3,804.7 SQM)	36	26,472 SQFT (2,459.3 SQM)
ALL BLD. TOTAL	- 204,765 SQFT (19,023.3 SQM)	180	132,360 SQFT (12,296.5 SQM)

APARTMENT BLD.	**GROSS FLOOR AREA**	**UNITS**	**NET UNIT AREA**
PARKING LEVEL	- 0,000 SQFT	-	N/A
GROUND FLOOR (RES.)	- 19,834 SQFT	11	7,756 SQFT
GROUND FLOOR (COM.)	- N/A	3	6,190 SQFT
TYPICAL FLOOR (2-7)	- 19,360 SQFT x6 =116,160 SQFT	22 x6 =132	17,358 SQFT x6 =104,148 SQFT
8th FLOOR	- 14,154 SQFT	16	12,318 SQFT
9th FLOOR	- 14,154 SQFT	16	12,318 SQFT
TOTAL	- 164,302 SQFT (15,264.2 SQM)	178	142,730 SQFT (13,260.1 SQM)

AMENITY SPACE	**REQUIRED**	**PROVIDED**
CONDOMINIUM UNITS		
INTERIOR - PRIVATE:	N/A	12,240 SQFT
INTERIOR - COMMUNAL:	N/A	0,000 SQFT
EXTERIOR - COMMUNAL:	MIN. 6,975 SQFT	7,787 SQFT
TOTAL:	11,625 SQFT (1,080.0 SQM)	20,027 SQFT (1,860.6 SQM)
APARTMENT UNITS		
INTERIOR - PRIVATE:	N/A	15,700 SQFT
INTERIOR - COMMUNAL:	MIN. 5,781 SQFT	3,036 SQFT
EXTERIOR - COMMUNAL:		7,601 SQFT
TOTAL:	11,322 SQFT (1,050.0 SQM)	26,337 SQFT (2,446.8 SQM)
DEDICATED PARKLAND		
TOTAL:	78,150 SQFT (7,260.3 SQM)	78,151 SQFT (7,260.5 SQM)

SITE COVERAGE

SPACE		**AREA**
BUILDING FOOTPRINT	-	**22,038.0 SQM
PARKING LOT	-	4,812.9 SQM
SIDEWALKS	-	3,443.3 SQM
DRIVEWAYS (TOWNHOUSE)	-	4,247. SQM
DRIVEWAYS (DETACHED HOUSE)	-	**480.0 SQM
CITY STREETS	-	10,711.4 SQM
LOT AREA		
6171 HAZELDEAN RD.	-	90,187.6 SQM
LANDSCAPE SPACE	-	52,625.3 SQM
TOTAL LANDSCAPE SPACE (%)	-	58.4%

QUALIFICATIONS

** TARGET VALUE

NOTATION SYMBOLS:

- (00) INDICATES DRAWING NOTES, LISTED ON EACH SHEET.
- ◇00 INDICATES ASSEMBLIE TYPE; REFER TO TYPICAL ASSEMBLIES SCHEDUAL.
- ⬡00 INDICATES WINDOW TYPE; REFER TO WINDOW ELEVATIONS AND DETAILS ON A900 SERIES.
- 000 INDICATES DOOR TYPE; REFER TO DOOR SCHEDULE AND DETAILS ON A900 SERIES.
- 00 / A900/00 TITLE / SCALE — DETAIL NUMBER, DETAIL REFERENCE PAGE, DETAIL CROSS REFERENCE PAGE

DRAWING NOTES

1. SWITCHGEAR
2. TRANSFORMER
3. NEW CONCRETE SIDEWALK BUILT TO CITY OF OTTAWA STANDARDS
4. CITY OWNED BOULEVARD PARKING
5. EXISTING WOOD FENCE
6. SITE APPROACH
7. --
8. 350mm WIDE MOUNTABLE CURB
9. DEPRESSED AND CONTINUOUS SIDEWALK
10. NEW FIRE HYDRANT (EXACT LOCATION TO BE CONFIRMED BY CIVIL ENGINEER)
11. PROVIDE TWSI AND DEPRESSED AND CONTINUOUS SIDEWALK
12. PROVIDE DEPRESSED CURB AND CROSSWALK
13. SHORT TERM PARKING
14. PICK UP AND PROP OFF LOCATION
15. PROVIDE CONCRETE PAD FOR GARBAGE PICK-UP STAGING AREA
16. --
17. NEW "BICYCLE RACK" AND OR "BICYCLE PARKING" (STRUCTURE TO BE DESIGNED)
18. --
19. --
20. --

GENERAL NOTES:

- (A) REFER TO TYPICAL ASSEMBLIES SHEET FOR WALL, PARTITION, ROOF CEILING & FLOOR TYPES
- (B) FOR DOOR TYPES AND HARDWARE REQUIREMENTS REFER TO DOOR SCHEDULE ON A900 SERIES.
- (C) ALL INTERIOR DIMENSIONS ARE TAKEN FROM THE FACE OF STUD
- (D) ALL EXTERIOR DIMENSIONS ARE TAKEN FROM THE FACE OF STUD
- (E) ALL EXTERIOR WALLS ARE TO BE TYPE 'W1' UNLESS NOTED OTHER WISE.
- (F) ALL INTERIOR PARTITIONS ARE TO BE TYPE 'P1' UNLESS NOTED OTHER WISE.
- (G) ALL REINFORCED CONCRETE SUSPENDED SLABS, COLUMNS & BEAMS HAVE A MIN. FIR OF 1.5 HRS (AS DETERMINED BY OBC SB-2) UNLESS OTHERWISE STATED.

LEGEND

ORGANICS BIN (O)
3 YRD. GARBAGE BIN (G3)
4 YRD. GARBAGE BIN (G4)
3 YRD. FIBROUS RECYCLING BIN (R3)
2 YRD. GLASS AND PLASTIC RECYCLING BIN (R2)
TYPICAL PARKING SPACE 2600 x 5200
SMALL PARKING SPACE 2400 x 5200
SMALL PARKING SPACE 2600 x 4600

UNIT ENTRY POINT
TRAFFIC FLOW
FIRE HYDRANT
NEW LIGHT STANDARD
EXISTING LIGHT STANDARD
VISITOR PARKING V#
RESIDENT PARKING R#
GEODETIC ELEVATION MARKER
BICYCLE PARKING 1800 x 600

PROPERTY LINE
SETBACK LINE
FIRE TRUCK AND GARBAGE PICK UP ROUTE
SUBDIVISION LINE
LOT LINE
PROPOSED BUILDING OUTLINE
NEW PRIVATE DRIVEWAY
NEW SIDEWALKS

No.	DESCRIPTION	DATE
1	ISSUED FOR COORDINATION	08-05-2020

REVISIONS:

ARCHITECT SEAL:

NORTH ARROW:

CLIENT: LATITUDE Homes

ARCHITECT:
rla/architecture
roderick lahey architect inc.
56 beech street, ottawa, ontario K1S 3J6
t. 613.724.9932 f. 613.724.1209 rlaarchitecture.ca

PROJECT TITLE:

6171 HAZELDEAN ROAD

OTTAWA ONTARIO

SHEET TITLE:

SITE PLAN

DRAWN: L.M.
CHECKED: R.V.
SCALE: 1:750
PROJECT No.: 1831
SHEET No.: SP-00

PROJECT DEVELOPER
LATITUDE HOMES
190 LISGAR STREET
OTTAWA, ONTARIO
K2P 0C4
carmine.zayoun@gmail.com
PHONE:

PLANNER
FOTENN PLANNING + DESIGN
396 COOPER STREET, SUITE 300
OTTAWA, ONTARIO, CANADA
K2P 2H7
posen@fotenn.com
PHONE: 613 730 5709 x236

ARCHITECT
RODERICK LAHEY ARCHITECT INC.
56 BEECH STREET
OTTAWA, ONTARIO, CANADA
K1S 4M8
lmcnairn@rlaarchitecture.ca
PHONE: 613 724 9932 x257

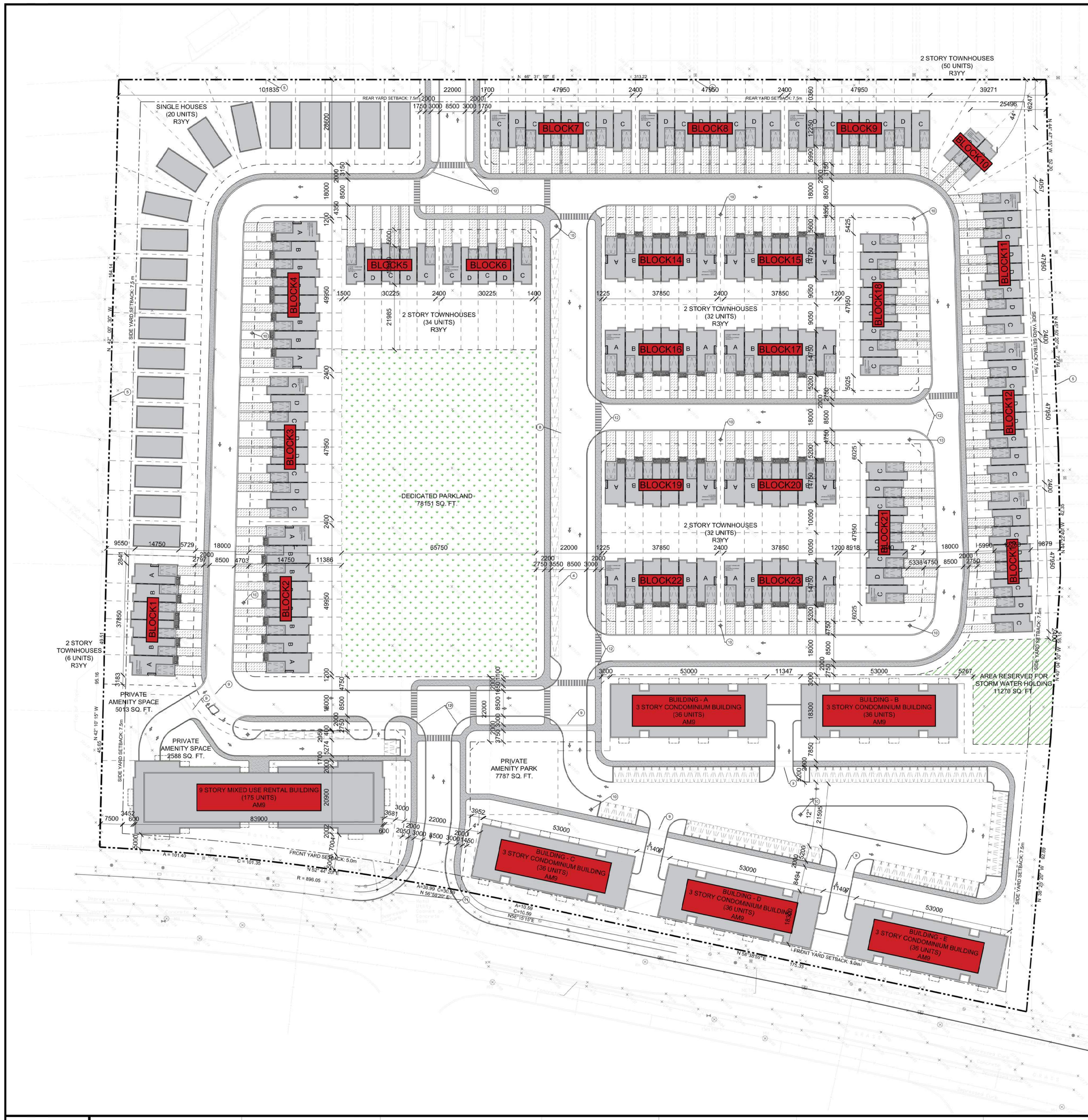
CIVIL ENGINEER
EXP SERVICES INC.
2650 QUEENSVIEW DRIVE SUITE 100
OTTAWA, ONTARIO
K2B 8H6
bruce.thomas@exp.com
PHONE: 613 688 1899

TRAFFIC ENGINEER
EXP SERVICES INC.
2650 QUEENSVIEW DRIVE SUITE 100
OTTAWA, ONTARIO
K2B 8H6
bruce.thomas@exp.com
PHONE: 613 688 1899

LANDSCAPE ARCHITECT
JAMES B. LENNOX AND ASSOCIATES INC
3332 CARLING AVE.
OTTAWA, ONTARIO, CANADA
K2H 5A8
jl@jbla.ca
PHONE: 613 722 5168
FAX: 1 866 343 3942

SURVEYOR
FAIRHALL MOFFATT & WOODLAND LTD.
600 TERRY FOX DR. UNIT 100
KANATA, ONTARIO, CANADA
K2L 4B6
john@fmw.on.ca
PHONE: 613 722 5168
FAX: 1 866 343 3942

PLOT DATE: Friday, May 08, 2020 F:\2019\1961 - 6171 Hazeldean Road - GNCR\00_Site Plan\1961_6171 Hazeldean Road_Site Plan DRAFT_08-05-2020.dwg PLOT SCALE: 1:0.943 PEN STYLE: 0_RLA Master_ARCH D



SITE INFORMATION

ZONING	AM9
MAX BUILDING HEIGHT (WITHIN 20 M. OF RESIDENTIAL)	11.0 M.
MAX BUILDING HEIGHT (ALL OTHER CASES)	15.0 M.
LOT AREA	90,187.6 SQ. M.

5924 HAZELDEAN RD
STITTSVILLE, ONTARIO,
CANADA

SITE SETBACKS (5924)	**PROVIDED**
FRONT YARD (HAZELDEAN)	5.0 M.
CORNER SIDE YARD	N/A
INTERIOR SIDE YARD	7.5 M.
REAR YARD	7.5 M.

RESIDENTIAL UNITS	
DETACHED HOMES:	20
TOWNHOUSES:	154
CONDOMINIUM UNITS:	180
APARTMENT UNITS:	175
TOTAL UNITS:	529

PARKING	**REQUIRED**
DETACHED & TOWNHOUSE	
RESIDENTIAL:	1.2 PER DWELLING
VISITOR:	0.2 PER DWELLING
CONDOMINIUM & APARTMENT	
RESIDENTIAL:	1.0 PER DWELLING
VISITOR:	0.2 PER DWELLING

DEVELOPMENT STATISTICS

PARKING	**REQUIRED**	**PROVIDED**
DETACHED HOUSES		
RESIDENTIAL:	20	20
VISITOR:	4	20
TRADITIONAL TOWNS		
RESIDENTIAL:	154	154
VISITOR:	31	154
CONDOMINIUM UNITS		
RESIDENTIAL:	216	216
VISITOR:	36	36
BICYCLE:	90	**90
APARTMENT UNITS		
RESIDENTIAL:	210	**210
VISITOR:	35	**35
COMMERCIAL SPACE:	58	**58
BICYCLE	88	**88
DEDICATED PARKLAND		
STREET PARKING:	0	21
TOTAL		
CAR SPACES:	764	**924
BICYCLE SPACES:	178	**178

DETACHED HOUSES	**BLD.**	**FOOTPRINT AREA**	**UNITS**	**NET UNIT AREA**
MODEL 1	-	**1,309 SQFT	5	**2,309 SQFT
MODEL 2	-	**1,309 SQFT	5	**2,309 SQFT
MODEL 3	-	**1,309 SQFT	5	**2,309 SQFT
MODEL 4	-	**1,309 SQFT	5	**2,309 SQFT
TOTAL	-	**26,180 SQFT (**2,432.2 SQM)	20	**46,180 SQFT (** 4,290.3 SQM)

TOWNHOUSES	**BLD.**	**FOOTPRINT AREA**	**UNITS**	**NET UNIT AREA**
BLOCK 1	-	6,056 SQFT	6	13,948 SQFT
BLOCK 2	-	8,000 SQFT	8	18,450 SQFT
BLOCK 2	-	6,627 SQFT	8	17,420 SQFT
BLOCK 4	-	8,000 SQFT	8	18,450 SQFT
BLOCK 5	-	4,201 SQFT	5	10,962 SQFT
BLOCK 6	-	4,201 SQFT	5	10,962 SQFT
BLOCK 7	-	6,627 SQFT	8	17,420 SQFT
BLOCK 8	-	6,627 SQFT	8	17,420 SQFT
BLOCK 9	-	6,627 SQFT	8	17,420 SQFT
BLOCK 10	-	1,767 SQFT	8	4,504 SQFT
BLOCK 11	-	6,627 SQFT	8	17,420 SQFT
BLOCK 12	-	6,627 SQFT	8	17,420 SQFT
BLOCK 13	-	6,627 SQFT	8	17,420 SQFT
BLOCK 14	-	6,056 SQFT	6	13,948 SQFT
BLOCK 15	-	6,056 SQFT	6	13,948 SQFT
BLOCK 16	-	6,056 SQFT	6	13,948 SQFT
BLOCK 17	-	6,056 SQFT	6	13,948 SQFT
BLOCK 18	-	6,627 SQFT	8	17,420 SQFT
BLOCK 19	-	6,056 SQFT	6	13,948 SQFT
BLOCK 20	-	6,056 SQFT	6	13,948 SQFT
BLOCK 21	-	6,056 SQFT	6	13,948 SQFT
BLOCK 22	-	6,056 SQFT	6	13,948 SQFT
BLOCK 23	-	6,627 SQFT	8	17,420 SQFT
TOTAL	-	140,316 SQFT (13,035.8 SQM)	154	345,622 SQFT (32,109.3 SQM)

TYP. CONDO BLD. (x5)	**GROSS FLOOR AREA**	**UNITS**	**NET UNIT AREA**
PARKING LEVEL	- 10,440 SQFT	-	N/A
Ground FLOOR	- 10,171 SQFT	12	8,530 SQFT
2nd FLOOR	- 10,171 SQFT	12	8,971 SQFT
3rd FLOOR	- 10,171 SQFT	12	8,971 SQFT
TOTAL	- 40,953 SQFT (3,804.7 SQM)	36	26,472 SQFT (2,459.3 SQM)
ALL BLD. TOTAL	- 204,765 SQFT (19,023.3 SQM)	180	132,360 SQFT (12,296.5 SQM)

APARTMENT BLD.	**GROSS FLOOR AREA**	**UNITS**	**NET UNIT AREA**
PARKING LEVEL	- 0,000 SQFT	-	N/A
GROUND FLOOR (RES.)	- 19,834 SQFT	11	7,756 SQFT
GROUND FLOOR (COM.)	- N/A	3	6,190 SQFT
TYPICAL FLOOR (2-7)	- 19,360 SQFT x6 =116,160 SQFT	22 x6 =132	17,358 SQFT x6 =104,148 SQFT
8th FLOOR	- 14,154 SQFT	16	12,318 SQFT
9th FLOOR	- 14,154 SQFT	16	12,318 SQFT
TOTAL	- 164,302 SQFT (15,264.2 SQM)	178	142,730 SQFT (13,260.1 SQM)

AMENITY SPACE	**REQUIRED**	**PROVIDED**
CONDOMINIUM UNITS		
INTERIOR - PRIVATE:	N/A	12,240 SQFT
INTERIOR - COMMUNAL:	N/A	0,000 SQFT
EXTERIOR - COMMUNAL:	MIN. 6,975 SQFT	7,787 SQFT
TOTAL:	11,625 SQFT (1,080.0 SQM)	20,027 SQFT (1,860.6 SQM)
APARTMENT UNITS		
INTERIOR - PRIVATE:	N/A	15,700 SQFT
INTERIOR - COMMUNAL:	MIN. 5,781 SQFT	3,036 SQFT
EXTERIOR - COMMUNAL:		7,601 SQFT
TOTAL:	11,322 SQFT (1,050.0 SQM)	26,337 SQFT (2,446.8 SQM)
DEDICATED PARKLAND		
TOTAL:	78,150 SQFT (7,260.3 SQM)	78,151 SQFT (7,260.5 SQM)

SITE COVERAGE

SPACE		**AREA**
BUILDING FOOTPRINT	-	**22,038.0 SQM
PARKING LOT	-	4,812.9 SQM
SIDEWALKS	-	3,443.3 SQM
DRIVEWAYS (TOWNHOUSE)	-	4,247. SQM
DRIVEWAYS (DETACHED HOUSE)	-	**480.0 SQM
CITY STREETS	-	10,711.4 SQM
LOT AREA		
6171 HAZELDEAN RD.	-	90,187.6 SQM
LANDSCAPE SPACE	-	52,625.3 SQM
TOTAL LANDSCAPE SPACE (%)	-	58.4%

QUALIFICATIONS

** TARGET VALUE

NOTATION SYMBOLS:

- (00) INDICATES DRAWING NOTES, LISTED ON EACH SHEET.
- ◇00 INDICATES ASSEMBLIE TYPE; REFER TO TYPICAL ASSEMBLIES SCHEDUAL.
- ⬡00 INDICATES WINDOW TYPE; REFER TO WINDOW ELEVATIONS AND DETAILS ON A900 SERIES.
- 000 INDICATES DOOR TYPE; REFER TO DOOR SCHEDULE AND DETAILS ON A900 SERIES.
- 00 / A900/00 TITLE / SCALE — DETAIL NUMBER, DETAIL REFERENCE PAGE, DETAIL CROSS REFERENCE PAGE

DRAWING NOTES

1. SWITCHGEAR
2. TRANSFORMER
3. NEW CONCRETE SIDEWALK BUILT TO CITY OF OTTAWA STANDARDS
4. CITY OWNED BOULEVARD PARKING
5. EXISTING WOOD FENCE
6. SITE APPROACH
7. --
8. 350mm WIDE MOUNTABLE CURB
9. DEPRESSED AND CONTINUOUS SIDEWALK
10. NEW FIRE HYDRANT (EXACT LOCATION TO BE CONFIRMED BY CIVIL ENGINEER)
11. PROVIDE TWSI AND DEPRESSED AND CONTINUOUS SIDEWALK
12. PROVIDE DEPRESSED CURB AND CROSSWALK
13. SHORT TERM PARKING
14. PICK UP AND PROP OFF LOCATION
15. PROVIDE CONCRETE PAD FOR GARBAGE PICK-UP STAGING AREA
16. --
17. NEW "BICYCLE RACK" AND OR "BICYCLE PARKING" (STRUCTURE TO BE DESIGNED)
18. --
19. --
20. --

GENERAL NOTES:

- (A) REFER TO TYPICAL ASSEMBLIES SHEET FOR WALL, PARTITION, ROOF CEILING & FLOOR TYPES
- (B) FOR DOOR TYPES AND HARDWARE REQUIREMENTS REFER TO DOOR SCHEDULE ON A900 SERIES.
- (C) ALL INTERIOR DIMENSIONS ARE TAKEN FROM THE FACE OF STUD
- (D) ALL EXTERIOR DIMENSIONS ARE TAKEN FROM THE FACE OF STUD
- (E) ALL EXTERIOR WALLS ARE TO BE TYPE 'W1' UNLESS NOTED OTHER WISE.
- (F) ALL INTERIOR PARTITIONS ARE TO BE TYPE 'P1' UNLESS NOTED OTHER WISE.
- (G) ALL REINFORCED CONCRETE SUSPENDED SLABS, COLUMNS & BEAMS HAVE A MIN. FIR OF 1.5 HRS (AS DETERMINED BY OBC SB-2) UNLESS OTHERWISE STATED.

LEGEND

ORGANICS BIN (O)
3 YRD. GARBAGE BIN (G3)
4 YRD. GARBAGE BIN (G4)
3 YRD. FIBROUS RECYCLING BIN (R3)
2 YRD. GLASS AND PLASTIC RECYCLING BIN (R2)
TYPICAL PARKING SPACE 2600 x 5200
SMALL PARKING SPACE 2400 x 5200
SMALL PARKING SPACE 2600 x 4600

UNIT ENTRY POINT
TRAFFIC FLOW
FIRE HYDRANT
NEW LIGHT STANDARD
EXISTING LIGHT STANDARD
VISITOR PARKING V#
RESIDENT PARKING R#
GEODETIC ELEVATION MARKER
BICYCLE PARKING 1800 x 600

PROPERTY LINE
SETBACK LINE
FIRE TRUCK AND GARBAGE PICK UP ROUTE
SUBDIVISION LINE
LOT LINE
PROPOSED BUILDING OUTLINE
NEW PRIVATE DRIVEWAY
NEW SIDEWALKS

No.	DESCRIPTION	DATE
1	ISSUED FOR COORDINATION	08-05-2020

REVISIONS:

ARCHITECT SEAL:

NORTH ARROW:

CLIENT: LATITUDE Homes

ARCHITECT:
rla/architecture
roderick lahey architect inc.
56 beech street, ottawa, ontario K1S 3J6
t. 613.724.9932 f. 613.724.1209 rlaarchitecture.ca

PROJECT TITLE:

6171 HAZELDEAN ROAD

OTTAWA ONTARIO

SHEET TITLE:

SITE PLAN

DRAWN: L.M.
CHECKED: R.V.
SCALE: 1:750
PROJECT No.: 1831
SHEET No.: SP-00

PROJECT DEVELOPER
LATITUDE HOMES
190 LISGAR STREET
OTTAWA, ONTARIO
K2P 0C4
carmine.zayoun@gmail.com
PHONE:

PLANNER
FOTENN PLANNING + DESIGN
396 COOPER STREET, SUITE 300
OTTAWA, ONTARIO, CANADA
K2P 2H7
posen@fotenn.com
PHONE: 613 730 5709 x236

ARCHITECT
RODERICK LAHEY ARCHITECT INC.
56 BEECH STREET
OTTAWA, ONTARIO, CANADA
K1S 4M8
lmcnairn@rlaarchitecture.ca
PHONE: 613 724 9932 x257

CIVIL ENGINEER
EXP SERVICES INC.
2650 QUEENSVIEW DRIVE SUITE 100
OTTAWA, ONTARIO
K2B 8H6
bruce.thomas@exp.com
PHONE: 613 688 1899

TRAFFIC ENGINEER
EXP SERVICES INC.
2650 QUEENSVIEW DRIVE SUITE 100
OTTAWA, ONTARIO
K2B 8H6
bruce.thomas@exp.com
PHONE: 613 688 1899

LANDSCAPE ARCHITECT
JAMES B. LENNOX AND ASSOCIATES INC
3332 CARLING AVE.
OTTAWA, ONTARIO, CANADA
K2H 5A8
jl@jbla.ca
PHONE: 613 722 5168
FAX: 1 866 343 3942

SURVEYOR
FAIRHALL MOFFATT & WOODLAND LTD.
600 TERRY FOX DR. UNIT 100
KANATA, ONTARIO, CANADA
K2L 4B6
john@fmw.on.ca
PHONE: 613 722 5168
FAX: 1 866 343 3942

PLOT DATE: Friday, May 08, 2020 F:\2019\1961 - 6171 Hazeldean Road - GNCR\00_Site Plan\1961_6171 Hazeldean Road_Site Plan DRAFT_08-05-2020.dwg PLOT SCALE: 1:0.943 PEN STYLE: 0_RLA Master_ARCH D

Appendix C – Traffic Data

Transportation Services - Traffic Services

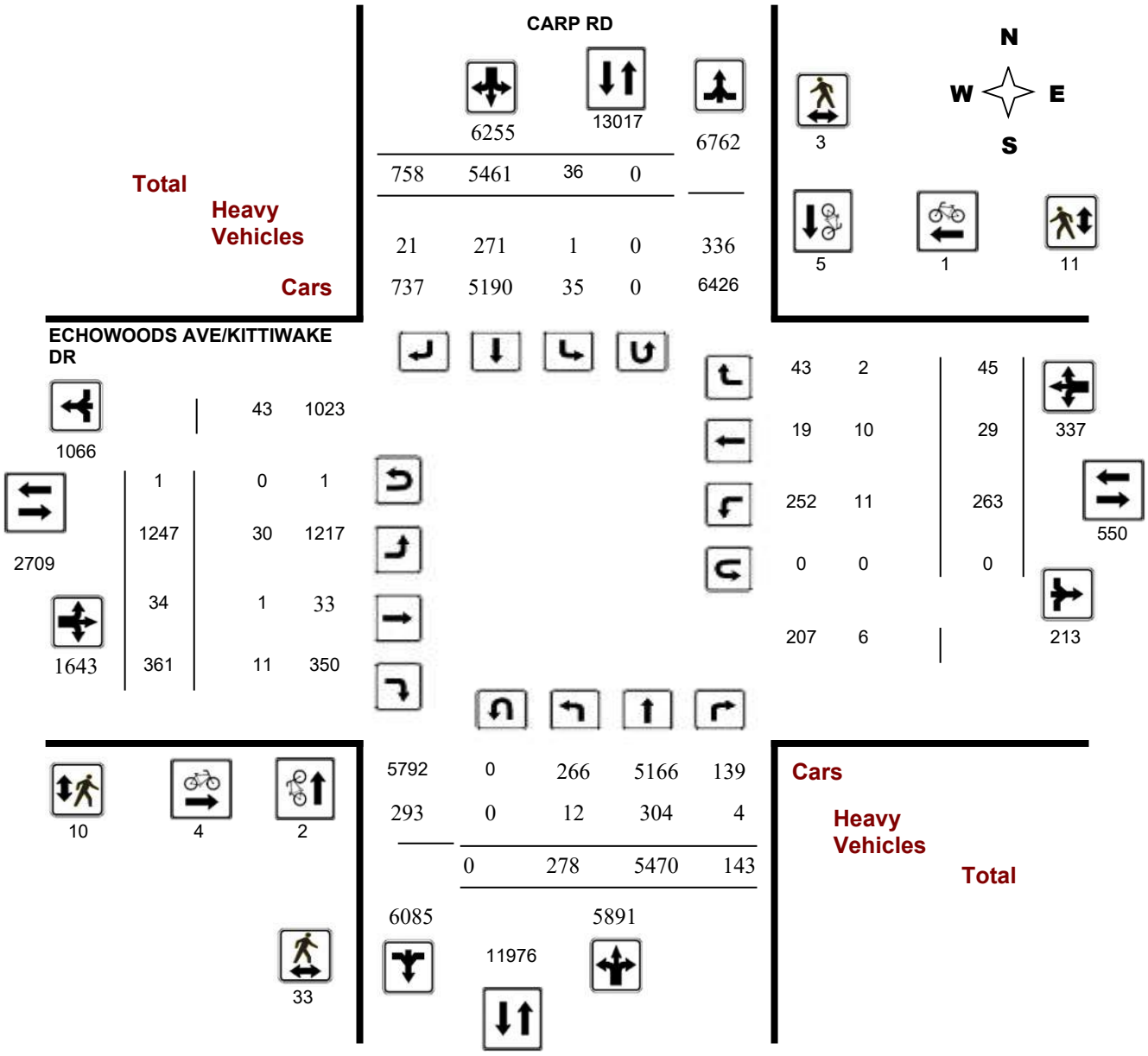
Turning Movement Count - Study Results

CARP RD @ ECHOWOODS AVE/KITTIWAKE DR

Survey Date: Thursday, May 04, 2017
Start Time: 07:00

WO No: 36996
Device: Miovision

Full Study Diagram



Transportation Services - Traffic Services

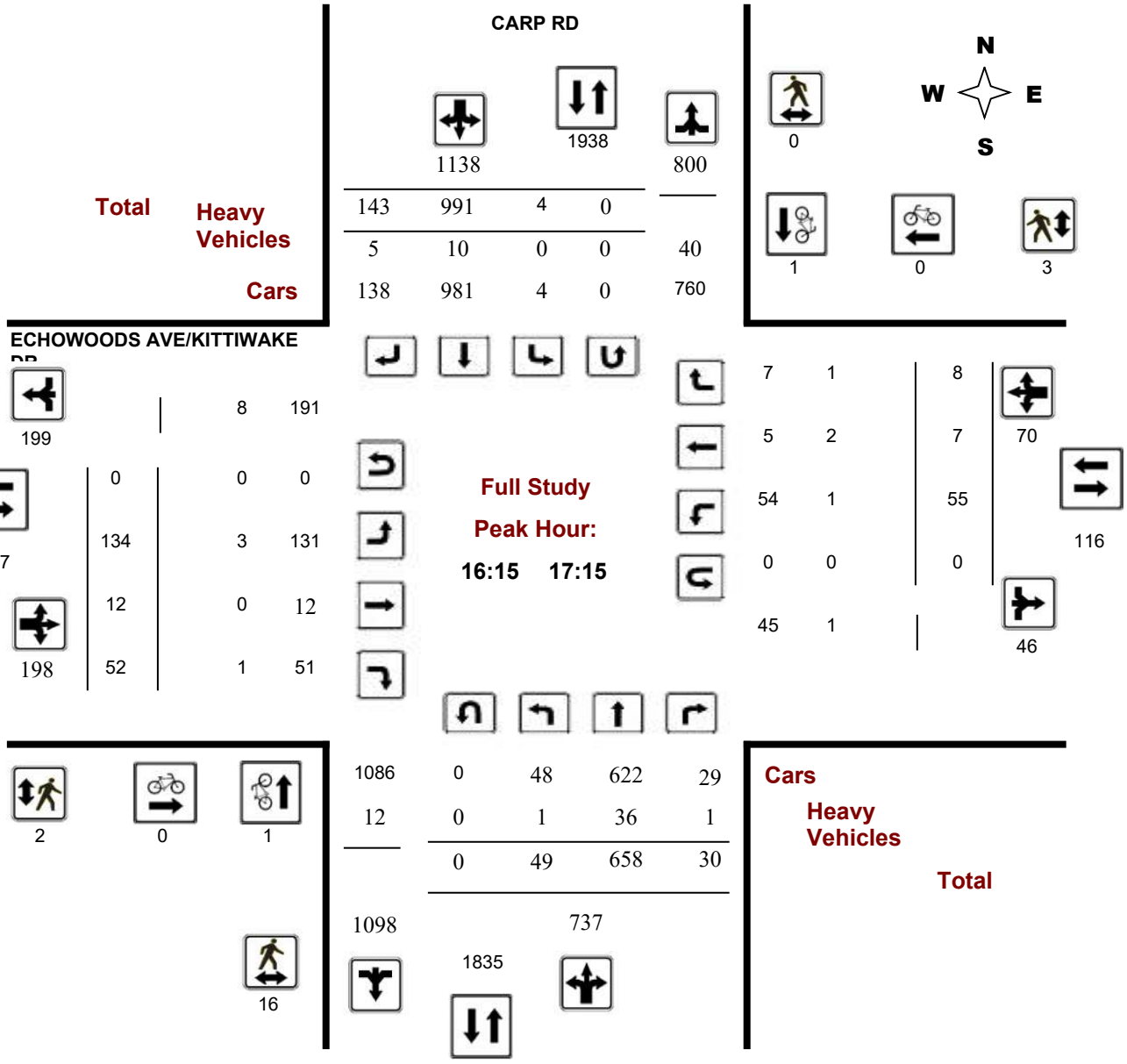
Turning Movement Count - Study Results

CARP RD @ ECHOWOODS AVE/KITTIWAKE DR

Survey Date: Thursday, May 04, 2017
Start Time: 07:00

WO No: 36996
Device: Miovision

Full Study Peak Hour Diagram



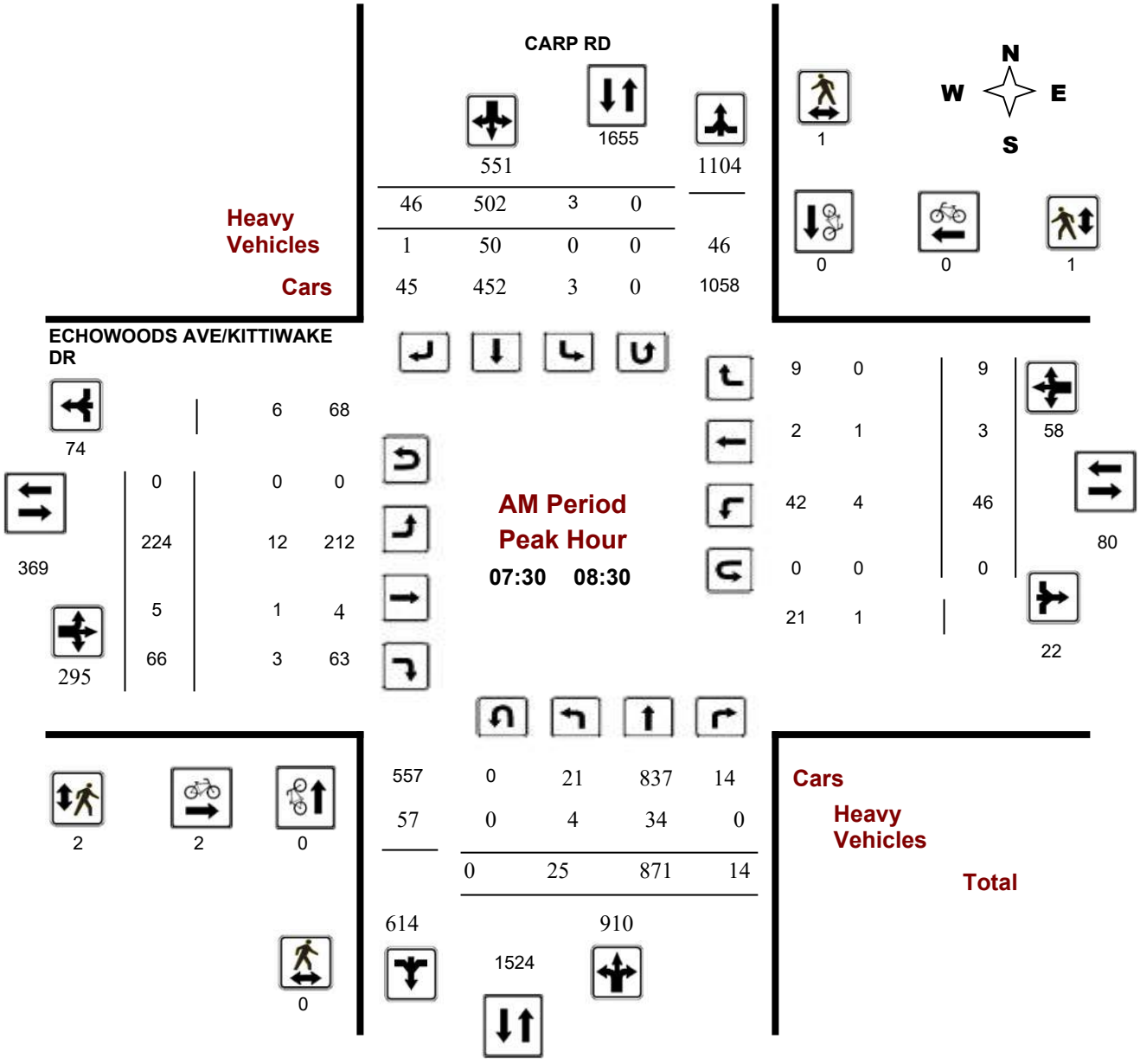
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARP RD @ ECHOWOODS AVE/KITTIWAKE DR

Survey Date: Thursday, May 04, 2017 **WO No:** 36996

Start Time: 07:00 **Device:** Miovision



Comments

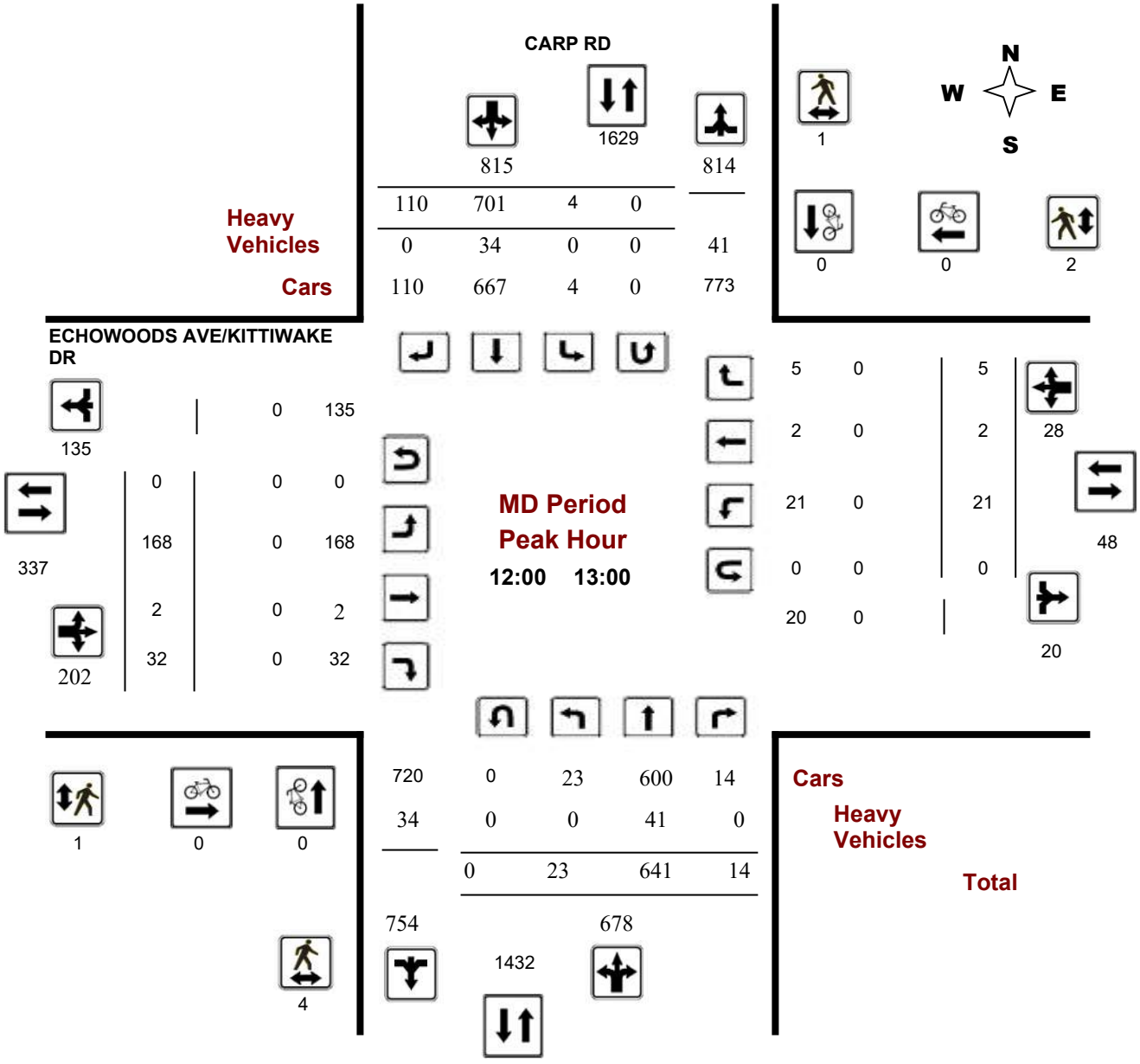
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARP RD @ ECHOWOODS AVE/KITTIWAKE DR

Survey Date: Thursday, May 04, 2017
Start Time: 07:00

WO No: 36996
Device: Miovision



Comments

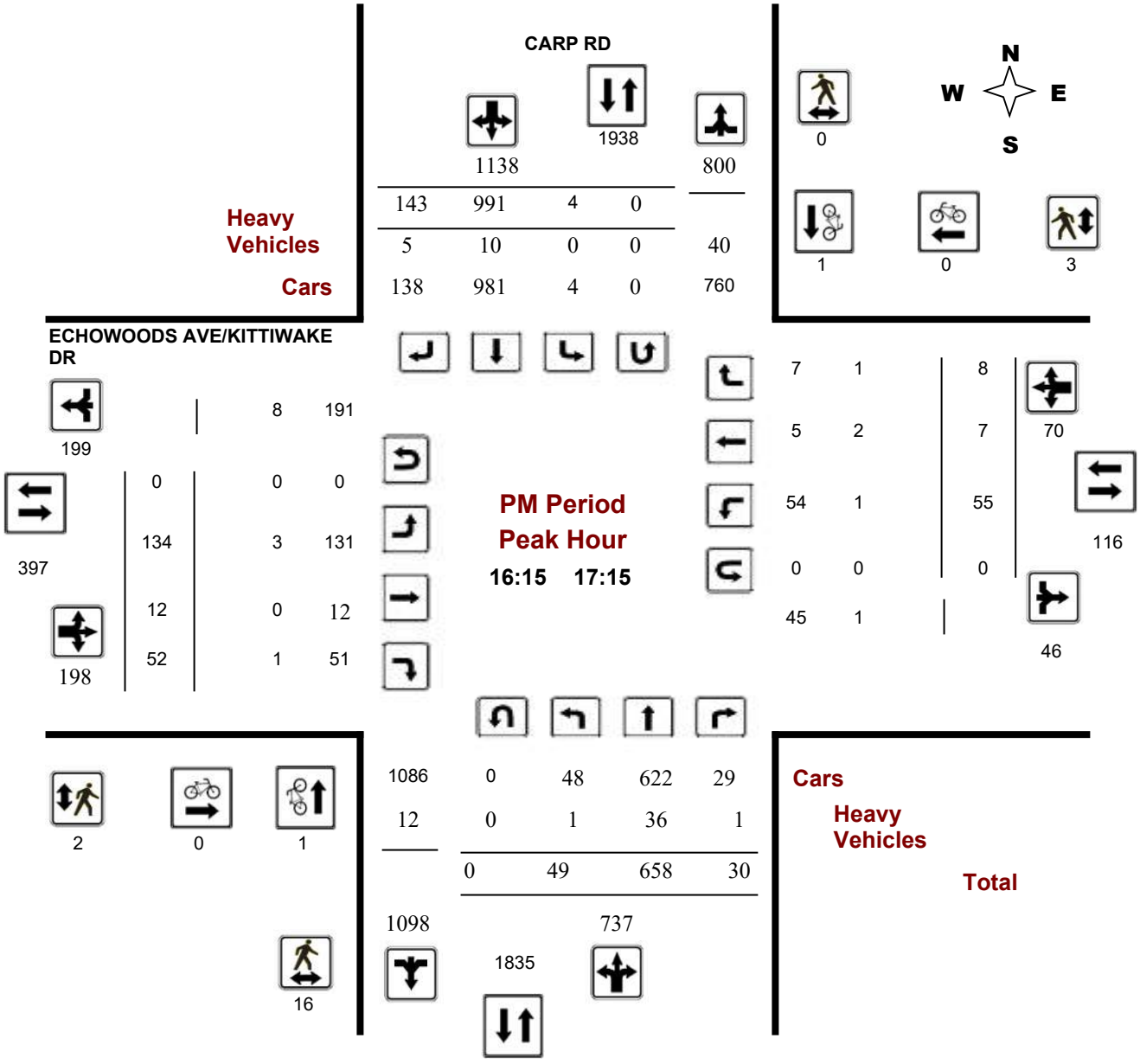
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARP RD @ ECHOWOODS AVE/KITTIWAKE DR

Survey Date: Thursday, May 04, 2017 **WO No:** 36996

Start Time: 07:00 **Device:** Miovision



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARP RD @ ECHOWOODS AVE/KITTIWAKE DR

Survey Date: Thursday, May 04, 2017 **WO No:** 36996

Start Time: 07:00 **Device:** Miovision

Full Study Summary (8 HR Standard)

Survey Date: Thursday, May 04, 2017

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 1 Westbound: 0

AADT Factor

.90

	CARP RD								ECHOWOODS AVE/KITTIWAKE DR									
	Northbound				Southbound				Eastbound				Westbound					
Period	LT	ST	RT	**NB TOT**	LT	ST	RT	**SB TOT**	**STR TOT**	LT	ST	RT	**EB TOT**	LT	ST	RT	**WB TOT**	**STR TOT**	**Grand Total**
07:00 08:00	12	903	10	**925**	7	461	38	**506**	**1431**	216	5	51	**272**	38	4	16	**58**	**330**	**1761**
08:00 09:00	28	802	14	**844**	4	470	54	**528**	**1372**	201	6	68	**275**	41	3	7	**51**	**326**	**1698**
09:00 10:00	22	743	16	**781**	4	466	42	**512**	**1293**	142	1	34	**177**	19	0	4	**23**	**200**	**1493**
11:30 12:30	19	578	9	**606**	4	657	102	**763**	**1369**	146	2	32	**180**	17	1	4	**22**	**202**	**1571**
12:30 13:30	31	628	18	**677**	0	639	88	**727**	**1404**	162	1	33	**196**	16	3	4	**23**	**219**	**1623**
15:00 16:00	58	594	23	**675**	9	823	129	**961**	**1636**	117	3	39	**159**	31	6	0	**37**	**196**	**1832**
16:00 17:00	46	666	27	**739**	6	973	128	**1107**	**1846**	108	11	45	**164**	63	7	7	**77**	**241**	**2087**
17:00 18:00	62	556	26	**644**	2	972	177	**1151**	**1795**	155	5	59	**219**	38	5	3	**46**	**265**	**2060**
Sub Total	278	5470	143	**5891**	36	5461	758	**6255**	**12146**	1247	34	361	**1642**	263	29	45	**337**	**1979**	**14125**
U Turns				**0**				**0**	**0**				**1**				**0**	**1**	**1**
Total	278	5470	143	**5891**	36	5461	758	**6255**	**12146**	1247	34	361	**1643**	263	29	45	**337**	**1980**	**14126**
EQ 12Hr	386	7603	199	**8188**	50	7591	1054	**8694**	**16883**	1733	47	502	**2284**	366	40	63	**468**	**2752**	**19635**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	328	6449	169	**6945**	42	6439	894	**7375**	**15195**	1470	40	426	**1937**	310	34	53	**397**	**2477**	**17672**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**0.9**					
AVG 24Hr	429	8448	221	**9099**	56	8434	1171	**9661**	**18760**	1926	53	558	**2538**	406	45	70	**520**	**3058**	**21818**

Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor. **1.31**

Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARP RD @ ECHOWOODS AVE/KITTIWAKE DR

Survey Date: Thursday, May 04, 2017 **WO No:** 36996

Start Time: 07:00 **Device:** Miovision

Full Study 15 Minute Increments

		CARP RD									ECHOWOODS AVE/KITTIWAKE DR									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	3	219	2	224	3	108	14	125	34	50	2	11	63	7	1	6	14	34	426
07:15	07:30	1	218	0	219	1	98	5	104	25	52	1	9	62	8	1	4	13	25	398
07:30	07:45	2	212	3	217	1	128	8	137	19	68	1	13	82	12	1	3	16	19	452
07:45	08:00	6	254	5	265	2	127	11	140	24	46	1	18	65	11	1	3	15	24	485
08:00	08:15	9	188	4	201	0	114	15	129	23	51	2	13	66	12	1	2	15	23	411
08:15	08:30	8	217	2	227	0	133	12	145	23	59	1	22	82	11	0	1	12	23	466
08:30	08:45	4	206	5	215	2	103	10	115	23	38	2	15	55	9	1	4	14	23	399
08:45	09:00	7	191	3	201	2	120	17	139	19	53	1	18	72	9	1	0	10	19	422
09:00	09:15	5	187	4	196	0	113	13	126	23	38	0	8	46	3	0	1	4	23	372
09:15	09:30	4	219	4	227	1	124	11	136	22	34	0	9	43	2	0	0	2	22	408
09:30	09:45	8	186	4	198	1	113	8	122	22	38	0	10	48	7	0	0	7	22	375
09:45	10:00	5	151	4	160	2	116	10	128	17	32	1	7	40	7	0	3	10	17	338
11:30	11:45	3	149	1	153	0	138	16	154	28	32	0	5	37	3	0	0	3	28	347
11:45	12:00	3	129	1	133	0	166	27	193	20	35	1	12	48	3	1	1	5	20	379
12:00	12:15	4	149	1	154	3	177	36	216	16	31	0	7	38	4	0	1	5	16	413
12:15	12:30	9	151	6	166	1	176	23	200	17	48	1	8	57	7	0	2	9	17	432
12:30	12:45	4	159	3	166	0	153	27	180	20	47	1	11	59	6	2	1	9	20	414
12:45	13:00	6	182	4	192	0	195	24	219	22	42	0	6	48	4	0	1	5	22	464
13:00	13:15	13	141	6	160	0	132	18	150	10	39	0	11	50	3	1	2	6	10	366
13:15	13:30	8	146	5	159	0	159	19	178	25	34	0	5	39	3	0	0	3	25	379
15:00	15:15	14	141	4	159	2	174	32	208	20	33	1	11	45	5	2	0	7	20	419
15:15	15:30	15	142	3	160	0	207	35	242	18	20	1	10	31	11	0	0	11	18	444
15:30	15:45	16	168	10	194	4	212	30	246	18	28	1	9	38	11	0	0	11	18	489
15:45	16:00	13	143	6	162	3	230	32	265	19	36	0	9	45	4	4	0	8	19	480
16:00	16:15	13	163	8	184	2	240	27	269	20	17	2	10	29	16	2	0	18	20	500
16:15	16:30	7	165	9	181	1	255	37	293	19	27	4	14	45	21	0	2	23	19	542
16:30	16:45	17	174	7	198	0	229	29	258	11	34	2	11	47	13	3	4	20	11	523
16:45	17:00	9	164	3	176	3	249	35	287	14	30	3	10	43	13	2	1	16	14	522
17:00	17:15	16	155	11	182	0	258	42	300	9	43	3	17	63	8	2	1	11	9	556
17:15	17:30	21	142	4	167	0	248	37	285	8	43	0	20	63	12	1	1	14	8	529
17:30	17:45	8	136	4	148	0	246	48	294	17	30	2	10	43	13	0	0	13	17	498
17:45	18:00	17	123	7	147	2	220	50	272	8	39	0	12	51	5	2	1	8	8	478
Total:		278	5470	143	5891	36	5461	758	6255	613	1247	34	361	1643	263	29	45	337	613	14,126

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARP RD @ ECHOWOODS AVE/KITTIWAKE DR

Survey Date: Thursday, May 04, 2017 **WO No:** 36996

Start Time: 07:00 **Device:** Miovision

Full Study Cyclist Volume

Time Period		CARP RD			ECHOWOODS AVE/KITTIWAKE DR			
		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	1	1	2	0	0	0	2
07:15	07:30	0	0	0	0	0	0	0
07:30	07:45	0	0	0	0	0	0	0
07:45	08:00	0	0	0	0	0	0	0
08:00	08:15	0	0	0	1	0	1	1
08:15	08:30	0	0	0	1	0	1	1
08:30	08:45	0	0	0	0	0	0	0
08:45	09:00	0	0	0	0	0	0	0
09:00	09:15	0	0	0	0	0	0	0
09:15	09:30	0	0	0	1	0	1	1
09:30	09:45	0	0	0	0	0	0	0
09:45	10:00	0	0	0	0	0	0	0
11:30	11:45	0	0	0	0	0	0	0
11:45	12:00	0	0	0	0	0	0	0
12:00	12:15	0	0	0	0	0	0	0
12:15	12:30	0	0	0	0	0	0	0
12:30	12:45	0	0	0	0	0	0	0
12:45	13:00	0	0	0	0	0	0	0
13:00	13:15	0	2	2	0	0	0	2
13:15	13:30	0	0	0	0	0	0	0
15:00	15:15	0	0	0	0	0	0	0
15:15	15:30	0	1	1	0	0	0	1
15:30	15:45	0	0	0	0	0	0	0
15:45	16:00	0	0	0	0	0	0	0
16:00	16:15	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	0	0
16:45	17:00	1	1	2	0	0	0	2
17:00	17:15	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0
17:30	17:45	0	0	0	1	0	1	1
17:45	18:00	0	0	0	0	1	1	1
Total		2	5	**7**	4	1	5	12

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARP RD @ ECHOWOODS AVE/KITTIWAKE DR

Survey Date: Thursday, May 04, 2017 **WO No:** 36996

Start Time: 07:00 **Device:** Miovision

Full Study Pedestrian Volume

	CARP RD			ECHOWOODS AVE/KITTIWAKE DR			
Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	**Total**	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	**Total**	**Grand Total**
07:00 07:15	0	0	**0**	0	0	**0**	**0**
07:15 07:30	0	0	**0**	1	1	**2**	**2**
07:30 07:45	0	1	**1**	1	0	**1**	**2**
07:45 08:00	0	0	**0**	0	0	**0**	**0**
08:00 08:15	0	0	**0**	0	1	**1**	**1**
08:15 08:30	0	0	**0**	1	0	**1**	**1**
08:30 08:45	2	0	**2**	0	1	**1**	**3**
08:45 09:00	0	0	**0**	1	1	**2**	**2**
09:00 09:15	2	0	**2**	2	0	**2**	**4**
09:15 09:30	0	0	**0**	0	0	**0**	**0**
09:30 09:45	0	0	**0**	0	0	**0**	**0**
09:45 10:00	2	0	**2**	0	0	**0**	**2**
11:30 11:45	1	0	**1**	0	0	**0**	**1**
11:45 12:00	0	0	**0**	0	0	**0**	**0**
12:00 12:15	0	0	**0**	0	0	**0**	**0**
12:15 12:30	0	0	**0**	0	0	**0**	**0**
12:30 12:45	1	1	**2**	1	2	**3**	**5**
12:45 13:00	3	0	**3**	0	0	**0**	**3**
13:00 13:15	0	0	**0**	0	2	**2**	**2**
13:15 13:30	0	1	**1**	1	0	**1**	**2**
15:00 15:15	1	0	**1**	0	0	**0**	**1**
15:15 15:30	3	0	**3**	0	0	**0**	**3**
15:30 15:45	0	0	**0**	0	0	**0**	**0**
15:45 16:00	2	0	**2**	0	0	**0**	**2**
16:00 16:15	0	0	**0**	0	0	**0**	**0**
16:15 16:30	3	0	**3**	0	0	**0**	**3**
16:30 16:45	13	0	**13**	0	1	**1**	**14**
16:45 17:00	0	0	**0**	2	1	**3**	**3**
17:00 17:15	0	0	**0**	0	1	**1**	**1**
17:15 17:30	0	0	**0**	0	0	**0**	**0**
17:30 17:45	0	0	**0**	0	0	**0**	**0**
17:45 18:00	0	0	**0**	0	0	**0**	**0**
Total	33	3	**36**	10	11	**21**	**57**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARP RD @ ECHOWOODS AVE/KITTIWAKE DR

Survey Date: Thursday, May 04, 2017 **WO No:** 36996

Start Time: 07:00 **Device:** Miovision

Full Study Heavy Vehicles

		CARP RD									ECHOWOODS AVE/KITTIWAKE DR									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	0	4	0	**4**	1	23	6	**30**	**34**	2	0	0	**2**	1	1	0	**2**	**4**	**38**
07:15	07:30	0	11	0	**11**	0	13	1	**14**	**25**	2	0	0	**2**	0	1	1	**2**	**4**	**29**
07:30	07:45	0	5	0	**5**	0	14	0	**14**	**19**	2	0	1	**3**	1	0	0	**1**	**4**	**23**
07:45	08:00	1	8	0	**9**	0	15	0	**15**	**24**	3	0	1	**4**	1	0	0	**1**	**5**	**29**
08:00	08:15	2	11	0	**13**	0	10	0	**10**	**23**	5	1	0	**6**	1	1	0	**2**	**8**	**31**
08:15	08:30	1	10	0	**11**	0	11	1	**12**	**23**	2	0	1	**3**	1	0	0	**1**	**4**	**27**
08:30	08:45	0	11	0	**11**	0	12	0	**12**	**23**	2	0	0	**2**	1	0	0	**1**	**3**	**26**
08:45	09:00	0	6	1	**7**	0	11	1	**12**	**19**	0	0	1	**1**	1	1	0	**2**	**3**	**22**
09:00	09:15	1	15	0	**16**	0	7	0	**7**	**23**	0	0	1	**1**	0	0	0	**0**	**1**	**24**
09:15	09:30	0	13	0	**13**	0	9	0	**9**	**22**	1	0	0	**1**	0	0	0	**0**	**1**	**23**
09:30	09:45	0	11	0	**11**	0	10	1	**11**	**22**	1	0	0	**1**	0	0	0	**0**	**1**	**23**
09:45	10:00	0	11	0	**11**	0	6	0	**6**	**17**	1	0	1	**2**	0	0	0	**0**	**2**	**19**
11:30	11:45	0	13	0	**13**	0	14	1	**15**	**28**	0	0	0	**0**	0	0	0	**0**	**0**	**28**
11:45	12:00	0	11	0	**11**	0	9	0	**9**	**20**	0	0	0	**0**	0	0	0	**0**	**0**	**20**
12:00	12:15	0	11	0	**11**	0	5	0	**5**	**16**	0	0	0	**0**	0	0	0	**0**	**0**	**16**
12:15	12:30	0	8	0	**8**	0	9	0	**9**	**17**	0	0	0	**0**	0	0	0	**0**	**0**	**17**
12:30	12:45	0	10	0	**10**	0	10	0	**10**	**20**	0	0	0	**0**	0	0	0	**0**	**0**	**20**
12:45	13:00	0	12	0	**12**	0	10	0	**10**	**22**	0	0	0	**0**	0	0	0	**0**	**0**	**22**
13:00	13:15	1	5	0	**6**	0	4	0	**4**	**10**	0	0	0	**0**	0	0	0	**0**	**0**	**10**
13:15	13:30	0	11	0	**11**	0	14	0	**14**	**25**	0	0	1	**1**	0	0	0	**0**	**1**	**26**
15:00	15:15	2	10	0	**12**	0	8	0	**8**	**20**	1	0	0	**1**	0	2	0	**2**	**3**	**23**
15:15	15:30	0	11	0	**11**	0	7	0	**7**	**18**	0	0	0	**0**	2	0	0	**2**	**2**	**20**
15:30	15:45	1	12	0	**13**	0	5	0	**5**	**18**	0	0	1	**1**	0	0	0	**0**	**1**	**19**
15:45	16:00	1	10	1	**12**	0	6	1	**7**	**19**	2	0	0	**2**	0	0	0	**0**	**2**	**21**
16:00	16:15	1	11	0	**12**	0	7	1	**8**	**20**	1	0	2	**3**	1	1	0	**2**	**5**	**25**
16:15	16:30	0	14	1	**15**	0	3	1	**4**	**19**	1	0	0	**1**	1	0	1	**2**	**3**	**22**
16:30	16:45	0	7	0	**7**	0	3	1	**4**	**11**	2	0	1	**3**	0	1	0	**1**	**4**	**15**
16:45	17:00	0	10	0	**10**	0	3	1	**4**	**14**	0	0	0	**0**	0	0	0	**0**	**0**	**14**
17:00	17:15	1	5	0	**6**	0	1	2	**3**	**9**	0	0	0	**0**	0	1	0	**1**	**1**	**10**
17:15	17:30	0	4	0	**4**	0	3	1	**4**	**8**	2	0	0	**2**	0	1	0	**1**	**3**	**11**
17:30	17:45	0	9	0	**9**	0	7	1	**8**	**17**	0	0	0	**0**	0	0	0	**0**	**0**	**17**
17:45	18:00	0	4	1	**5**	0	2	1	**3**	**8**	0	0	0	**0**	0	0	0	**0**	**0**	**8**
Total:	None	12	304	4	**320**	1	271	21	**293**	**613**	30	1	11	**42**	11	10	2	**23**	**65**	**678**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARP RD @ ECHOWOODS AVE/KITTIWAKE DR

Survey Date: Thursday, May 04, 2017 **WO No:** 36996

Start Time: 07:00 **Device:** Miovision

Full Study 15 Minute U-Turn Total

Time Period		CARP RD Northbound U-Turn Total	CARP RD Southbound U-Turn Total	ECHOWOODS AVE/KITTIWAKE DR Eastbound U-Turn Total	ECHOWOODS AVE/KITTIWAKE DR Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	0
07:15	07:30	0	0	0	0	0
07:30	07:45	0	0	0	0	0
07:45	08:00	0	0	0	0	0
08:00	08:15	0	0	0	0	0
08:15	08:30	0	0	0	0	0
08:30	08:45	0	0	0	0	0
08:45	09:00	0	0	0	0	0
09:00	09:15	0	0	0	0	0
09:15	09:30	0	0	0	0	0
09:30	09:45	0	0	0	0	0
09:45	10:00	0	0	0	0	0
11:30	11:45	0	0	0	0	0
11:45	12:00	0	0	0	0	0
12:00	12:15	0	0	0	0	0
12:15	12:30	0	0	0	0	0
12:30	12:45	0	0	0	0	0
12:45	13:00	0	0	0	0	0
13:00	13:15	0	0	0	0	0
13:15	13:30	0	0	0	0	0
15:00	15:15	0	0	0	0	0
15:15	15:30	0	0	0	0	0
15:30	15:45	0	0	0	0	0
15:45	16:00	0	0	0	0	0
16:00	16:15	0	0	0	0	0
16:15	16:30	0	0	0	0	0
16:30	16:45	0	0	0	0	0
16:45	17:00	0	0	0	0	0
17:00	17:15	0	0	0	0	0
17:15	17:30	0	0	0	0	0
17:30	17:45	0	0	1	0	1
17:45	18:00	0	0	0	0	0
Total		0	0	1	0	1

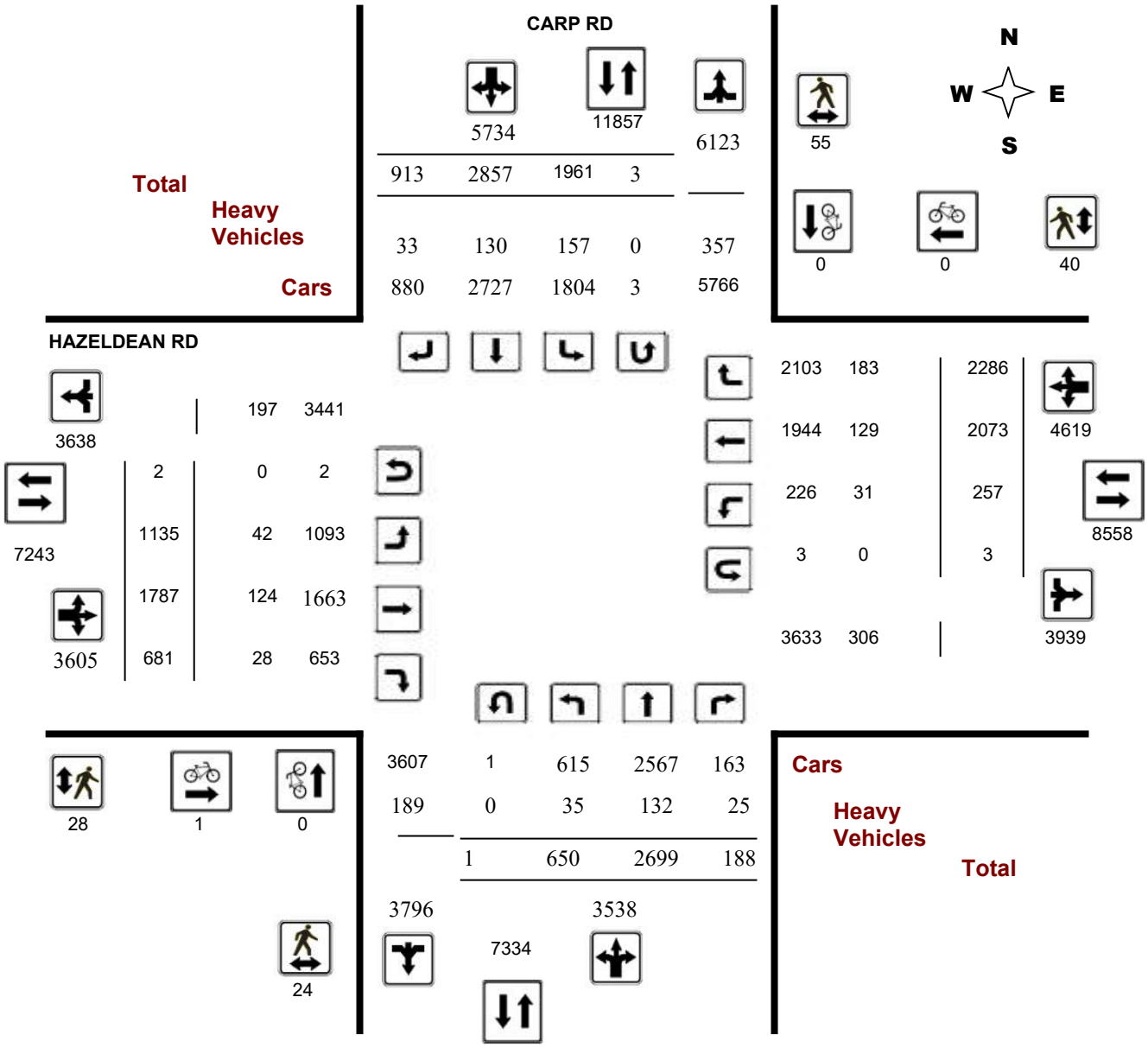
Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARP RD @ HAZELDEAN RD

Survey Date: Thursday, November 23, 2017
Start Time: 07:00
WO No: 37338
Device: Miovision

Full Study Diagram



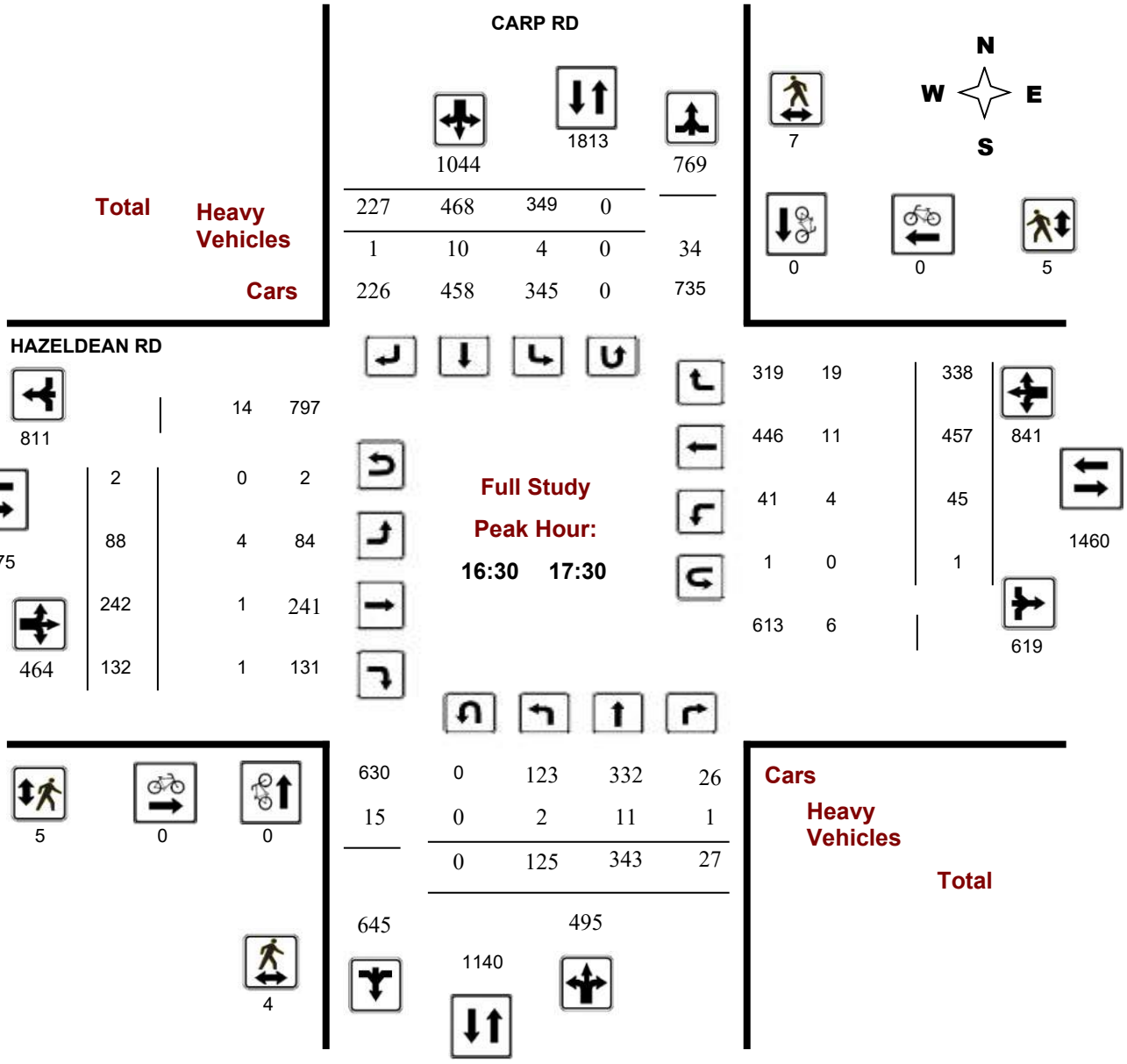
Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARP RD @ HAZELDEAN RD

Survey Date: Thursday, November 23, 2017
Start Time: 07:00
WO No: 37338
Device: Miovision

Full Study Peak Hour Diagram



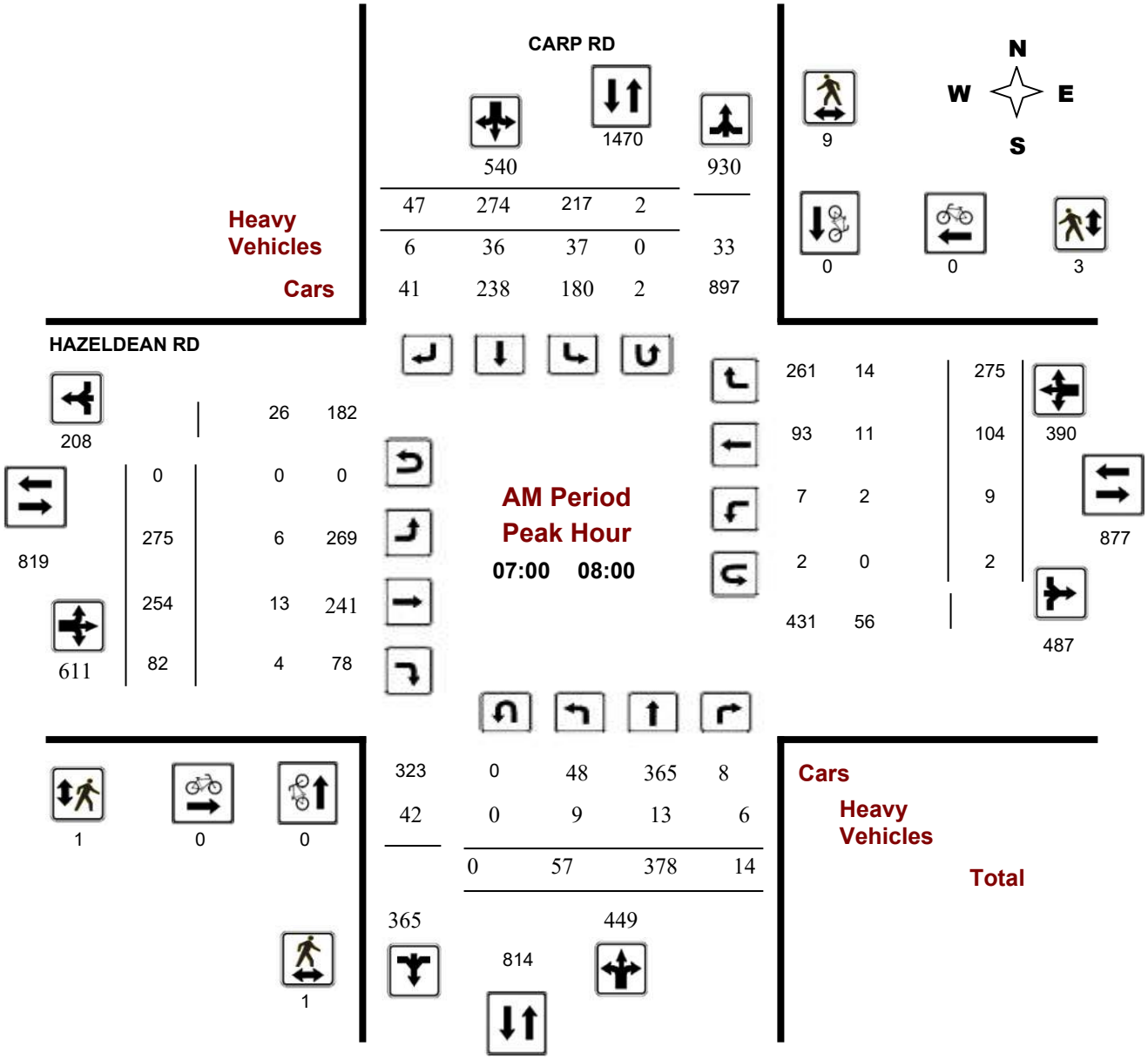
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARP RD @ HAZELDEAN RD

Survey Date: Thursday, November 23, 2017 **WO No:** 37338

Start Time: 07:00 **Device:** Miovision



Comments

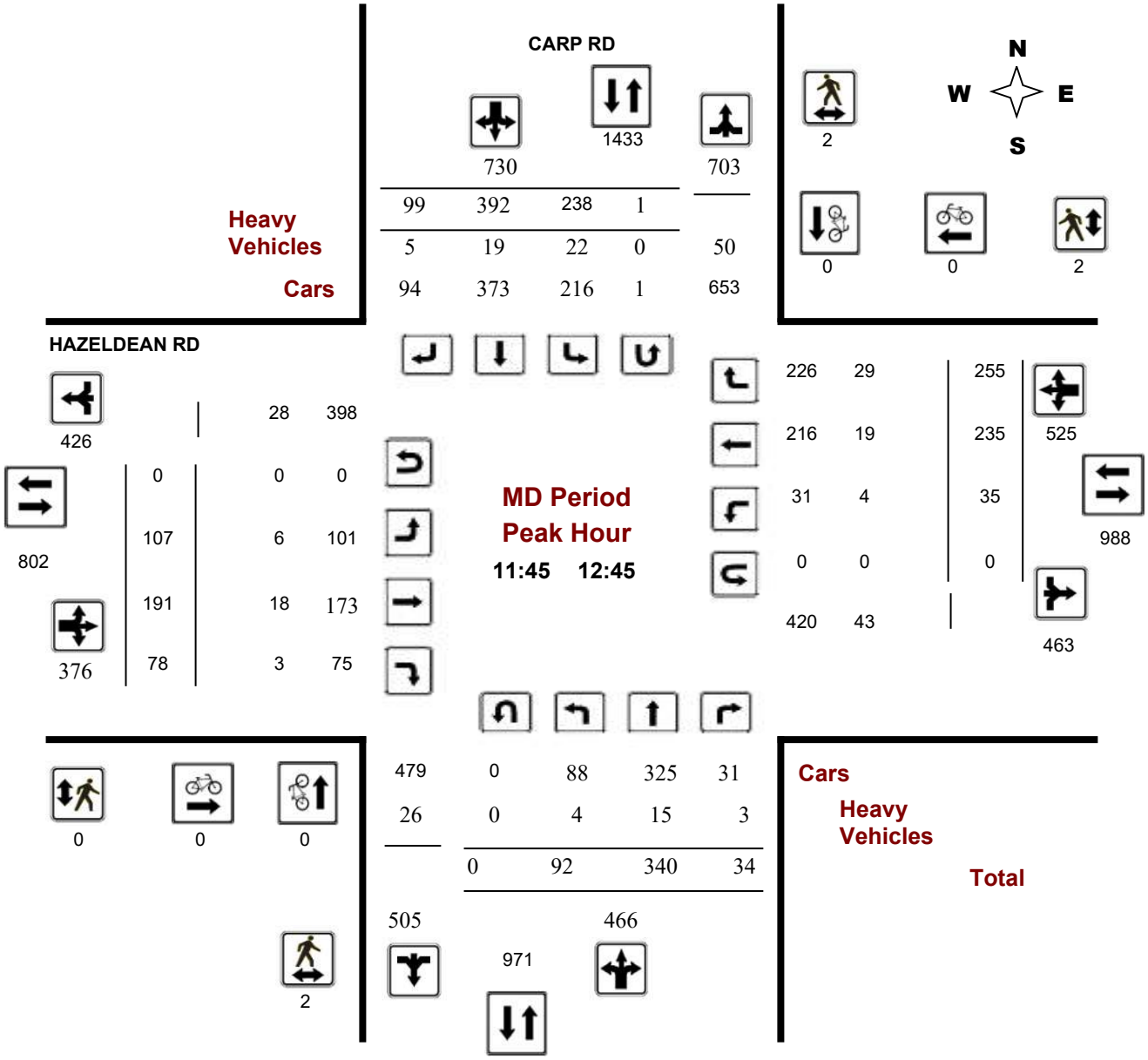
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARP RD @ HAZELDEAN RD

Survey Date: Thursday, November 23, 2017 **WO No:** 37338

Start Time: 07:00 **Device:** Miovision



Comments

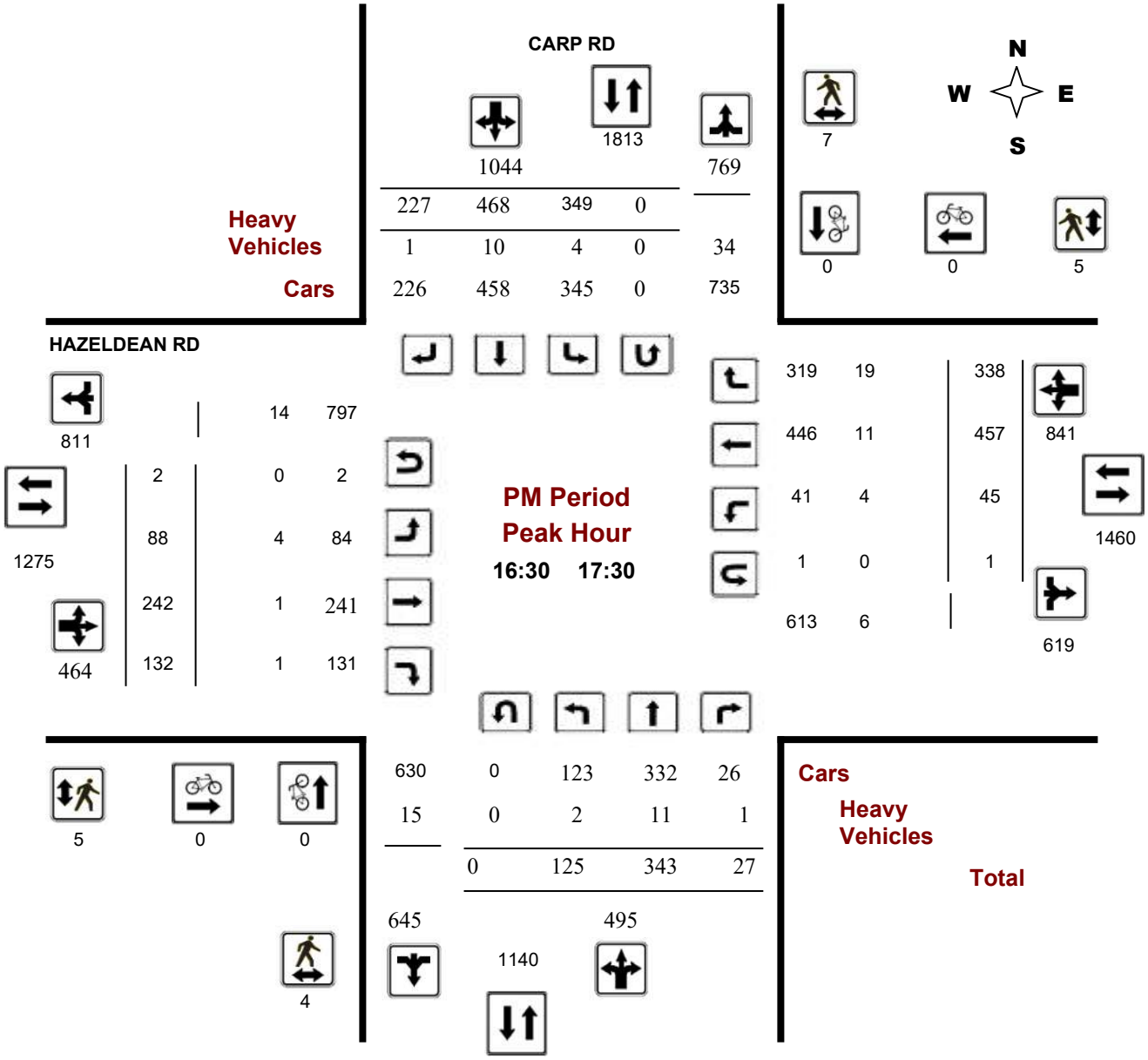
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARP RD @ HAZELDEAN RD

Survey Date: Thursday, November 23, 2017 **WO No:** 37338

Start Time: 07:00 **Device:** Miovision



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARP RD @ HAZELDEAN RD

Survey Date: Thursday, November 23, 2017 **WO No:** 37338

Start Time: 07:00 **Device:** Miovision

Full Study Summary (8 HR Standard)

Survey Date: Thursday, November 23, 2017

Total Observed U-Turns

Northbound: 1 Southbound: 3

Eastbound: 2 Westbound: 3

AADT Factor

.90

	CARP RD								HAZELDEAN RD									
	Northbound				Southbound					Eastbound				Westbound					
Period	LT	ST	RT	**NB TOT**	LT	ST	RT	**SB TOT**	**STR TOT**	LT	ST	RT	**EB TOT**	LT	ST	RT	**WB TOT**	**STR TOT**	**Grand Total**
07:00 08:00	57	378	14	**449**	217	274	47	**538**	**987**	275	254	82	**611**	9	104	275	**388**	**999**	**1986**
08:00 09:00	46	362	22	**430**	192	259	46	**497**	**927**	224	243	83	**550**	28	118	286	**432**	**982**	**1909**
09:00 10:00	51	334	20	**405**	194	252	49	**495**	**900**	137	214	78	**429**	23	115	221	**359**	**788**	**1688**
11:30 12:30	90	305	29	**424**	241	396	99	**736**	**1160**	101	183	83	**367**	32	233	249	**514**	**881**	**2041**
12:30 13:30	72	333	30	**435**	196	296	83	**575**	**1010**	120	201	72	**393**	37	239	274	**550**	**943**	**1953**
15:00 16:00	104	309	21	**434**	291	442	158	**891**	**1325**	78	211	78	**367**	43	386	364	**793**	**1160**	**2485**
16:00 17:00	111	336	27	**474**	301	481	205	**987**	**1461**	103	247	93	**443**	35	457	330	**822**	**1265**	**2726**
17:00 18:00	119	342	25	**486**	329	457	226	**1012**	**1498**	97	234	112	**443**	50	421	287	**758**	**1201**	**2699**
Sub Total	650	2699	188	**3537**	1961	2857	913	**5731**	**9268**	1135	1787	681	**3603**	257	2073	2286	**4616**	**8219**	**17487**
U Turns				**1**				**3**	**4**				**2**				**3**	**5**	**9**
Total	650	2699	188	**3538**	1961	2857	913	**5734**	**9272**	1135	1787	681	**3605**	257	2073	2286	**4619**	**8224**	**17496**
EQ 12Hr	903	3752	261	**4918**	2726	3971	1269	**7970**	**12888**	1578	2484	947	**5011**	357	2881	3178	**6420**	**11431**	**24319**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	766	3182	222	**4171**	2312	3368	1076	**6760**	**11599**	1338	2107	803	**4250**	303	2444	2695	**5446**	**10288**	**21887**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**0.9**					
AVG 24Hr	1004	4169	290	**5464**	3029	4413	1410	**8856**	**14320**	1753	2760	1052	**5568**	397	3202	3531	**7134**	**12702**	**27022**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.														**1.31**					

Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARP RD @ HAZELDEAN RD

Survey Date: Thursday, November 23, 2017 **WO No:** 37338

Start Time: 07:00 **Device:** Miovision

Full Study 15 Minute Increments

		CARP RD									HAZELDEAN RD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	9	90	5	104	59	66	18	143	38	77	58	20	155	1	17	61	79	38	481
07:15	07:30	17	98	1	116	50	83	8	141	27	73	54	22	149	2	20	74	97	27	503
07:30	07:45	11	110	2	123	51	61	12	124	25	67	68	20	155	2	31	62	96	25	498
07:45	08:00	20	80	6	106	57	64	9	132	17	58	74	20	152	4	36	78	118	17	508
08:00	08:15	13	94	6	113	53	54	14	121	25	49	44	24	117	2	24	66	92	25	443
08:15	08:30	12	90	7	109	42	69	9	120	15	76	79	17	172	9	33	87	129	15	530
08:30	08:45	8	82	7	97	43	65	11	119	11	48	53	20	121	10	33	65	108	11	445
08:45	09:00	13	96	2	111	54	71	12	137	14	51	67	22	140	7	28	68	103	14	491
09:00	09:15	16	82	5	103	39	63	16	118	26	52	57	20	129	7	25	52	84	26	434
09:15	09:30	16	109	5	130	55	64	6	125	29	37	57	26	120	7	30	58	95	29	470
09:30	09:45	7	82	5	94	57	65	13	135	21	26	47	22	95	5	32	54	91	21	415
09:45	10:00	12	61	5	78	43	60	14	117	12	22	53	10	85	4	28	57	89	12	369
11:30	11:45	20	54	4	78	57	88	21	166	11	28	49	23	100	5	58	68	131	11	475
11:45	12:00	30	75	9	114	70	101	27	199	17	23	42	24	89	6	63	71	140	17	542
12:00	12:15	24	89	7	120	57	97	23	177	15	27	44	19	90	9	61	56	126	15	513
12:15	12:30	16	87	9	112	57	110	28	195	16	23	48	17	88	12	51	54	117	16	512
12:30	12:45	22	89	9	120	54	84	21	159	20	34	57	18	109	8	60	74	142	20	530
12:45	13:00	20	92	8	120	51	68	14	133	12	28	54	22	104	15	65	82	162	12	519
13:00	13:15	13	81	5	99	48	84	20	152	23	27	39	20	86	5	69	47	121	23	458
13:15	13:30	17	71	8	96	43	60	28	131	20	31	51	12	94	9	45	71	125	20	446
15:00	15:15	27	76	4	107	75	106	37	218	22	23	47	13	83	11	97	91	199	22	607
15:15	15:30	26	94	4	124	56	103	43	202	10	21	68	19	108	12	75	77	164	10	598
15:30	15:45	32	62	5	99	68	112	44	224	16	24	42	18	84	12	105	92	209	16	616
15:45	16:00	19	77	8	105	92	121	34	247	16	10	54	28	92	8	109	104	221	16	665
16:00	16:15	26	74	5	105	73	127	41	241	11	33	51	17	101	8	126	80	214	11	661
16:15	16:30	23	105	5	133	63	103	58	224	12	26	72	18	116	7	105	74	186	12	659
16:30	16:45	35	59	5	99	86	131	52	269	13	21	54	34	110	8	114	95	217	13	695
16:45	17:00	27	98	12	137	79	120	54	253	4	23	70	24	117	12	112	81	205	4	712
17:00	17:15	37	87	7	131	99	121	55	275	6	21	56	37	115	8	134	81	224	6	745
17:15	17:30	26	99	3	128	85	96	66	247	6	23	62	37	122	17	97	81	195	6	692
17:30	17:45	31	74	10	115	75	131	55	261	2	25	58	19	102	17	104	64	185	2	663
17:45	18:00	25	82	5	112	70	109	50	229	0	28	58	19	105	8	86	61	155	0	601
Total:		650	2699	188	3538	1961	2857	913	5734	512	1135	1787	681	3605	257	2073	2286	4619	512	17,496

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARP RD @ HAZELDEAN RD

Survey Date: Thursday, November 23, 2017 **WO No:** 37338

Start Time: 07:00 **Device:** Miovision

Full Study Cyclist Volume

Time Period		CARP RD			HAZELDEAN RD			
		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	0	0	0	0	0	0
07:15	07:30	0	0	0	0	0	0	0
07:30	07:45	0	0	0	0	0	0	0
07:45	08:00	0	0	0	0	0	0	0
08:00	08:15	0	0	0	0	0	0	0
08:15	08:30	0	0	0	0	0	0	0
08:30	08:45	0	0	0	0	0	0	0
08:45	09:00	0	0	0	0	0	0	0
09:00	09:15	0	0	0	0	0	0	0
09:15	09:30	0	0	0	0	0	0	0
09:30	09:45	0	0	0	1	0	1	1
09:45	10:00	0	0	0	0	0	0	0
11:30	11:45	0	0	0	0	0	0	0
11:45	12:00	0	0	0	0	0	0	0
12:00	12:15	0	0	0	0	0	0	0
12:15	12:30	0	0	0	0	0	0	0
12:30	12:45	0	0	0	0	0	0	0
12:45	13:00	0	0	0	0	0	0	0
13:00	13:15	0	0	0	0	0	0	0
13:15	13:30	0	0	0	0	0	0	0
15:00	15:15	0	0	0	0	0	0	0
15:15	15:30	0	0	0	0	0	0	0
15:30	15:45	0	0	0	0	0	0	0
15:45	16:00	0	0	0	0	0	0	0
16:00	16:15	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0
Total		0	0	**0**	1	0	1	1

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARP RD @ HAZELDEAN RD

Survey Date: Thursday, November 23, 2017 **WO No:** 37338

Start Time: 07:00 **Device:** Miovision

Full Study Pedestrian Volume

	CARP RD			HAZELDEAN RD			
Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
07:00 07:15	0	1	**1**	0	1	**1**	**2**
07:15 07:30	1	6	**7**	1	1	**2**	**9**
07:30 07:45	0	0	**0**	0	0	**0**	**0**
07:45 08:00	0	2	**2**	0	1	**1**	**3**
08:00 08:15	3	1	**4**	3	1	**4**	**8**
08:15 08:30	0	4	**4**	1	3	**4**	**8**
08:30 08:45	2	3	**5**	1	0	**1**	**6**
08:45 09:00	0	3	**3**	0	0	**0**	**3**
09:00 09:15	1	0	**1**	1	0	**1**	**2**
09:15 09:30	0	3	**3**	0	2	**2**	**5**
09:30 09:45	1	1	**2**	1	1	**2**	**4**
09:45 10:00	3	1	**4**	2	2	**4**	**8**
11:30 11:45	0	1	**1**	2	0	**2**	**3**
11:45 12:00	2	0	**2**	0	0	**0**	**2**
12:00 12:15	0	0	**0**	0	0	**0**	**0**
12:15 12:30	0	1	**1**	0	1	**1**	**2**
12:30 12:45	0	1	**1**	0	1	**1**	**2**
12:45 13:00	1	0	**1**	1	2	**3**	**4**
13:00 13:15	0	4	**4**	0	0	**0**	**4**
13:15 13:30	0	2	**2**	0	1	**1**	**3**
15:00 15:15	1	4	**5**	2	7	**9**	**14**
15:15 15:30	1	2	**3**	1	0	**1**	**4**
15:30 15:45	1	1	**2**	4	4	**8**	**10**
15:45 16:00	2	3	**5**	2	2	**4**	**9**
16:00 16:15	0	0	**0**	0	3	**3**	**3**
16:15 16:30	1	0	**1**	1	0	**1**	**2**
16:30 16:45	1	3	**4**	1	2	**3**	**7**
16:45 17:00	1	3	**4**	1	1	**2**	**6**
17:00 17:15	1	1	**2**	1	2	**3**	**5**
17:15 17:30	1	0	**1**	2	0	**2**	**3**
17:30 17:45	0	3	**3**	0	0	**0**	**3**
17:45 18:00	0	1	**1**	0	2	**2**	**3**
Total	24	55	**79**	28	40	**68**	**147**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARP RD @ HAZELDEAN RD

Survey Date: Thursday, November 23, 2017 **WO No:** 37338

Start Time: 07:00 **Device:** Miovision

Full Study Heavy Vehicles

		CARP RD									HAZELDEAN RD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	0	1	1	**2**	18	15	3	**36**	**38**	1	2	3	**6**	0	1	2	**3**	**9**	**47**
07:15	07:30	4	7	1	**12**	9	5	1	**15**	**27**	1	3	1	**5**	1	1	5	**7**	**12**	**39**
07:30	07:45	3	2	1	**6**	7	10	2	**19**	**25**	1	4	0	**5**	0	5	4	**9**	**14**	**39**
07:45	08:00	2	3	3	**8**	3	6	0	**9**	**17**	3	4	0	**7**	1	4	3	**8**	**15**	**32**
08:00	08:15	2	9	2	**13**	8	3	1	**12**	**25**	0	4	1	**5**	0	3	2	**5**	**10**	**35**
08:15	08:30	0	4	1	**5**	3	6	1	**10**	**15**	2	7	1	**10**	3	5	5	**13**	**23**	**38**
08:30	08:45	0	0	0	**0**	6	4	1	**11**	**11**	1	5	4	**10**	1	6	6	**13**	**23**	**34**
08:45	09:00	0	5	1	**6**	2	2	4	**8**	**14**	0	4	0	**4**	2	3	8	**13**	**17**	**31**
09:00	09:15	2	13	1	**16**	7	1	2	**10**	**26**	0	6	3	**9**	0	8	3	**11**	**20**	**46**
09:15	09:30	1	16	1	**18**	8	3	0	**11**	**29**	1	7	1	**9**	2	6	4	**12**	**21**	**50**
09:30	09:45	1	3	1	**5**	6	8	2	**16**	**21**	1	5	1	**7**	0	3	6	**9**	**16**	**37**
09:45	10:00	2	3	0	**5**	3	4	0	**7**	**12**	0	5	0	**5**	0	3	8	**11**	**16**	**28**
11:30	11:45	1	2	1	**4**	3	3	1	**7**	**11**	3	1	2	**6**	0	5	8	**13**	**19**	**30**
11:45	12:00	2	4	0	**6**	7	3	1	**11**	**17**	2	5	1	**8**	2	7	10	**19**	**27**	**44**
12:00	12:15	1	6	0	**7**	3	4	1	**8**	**15**	2	5	1	**8**	1	5	7	**13**	**21**	**36**
12:15	12:30	0	5	1	**6**	7	2	1	**10**	**16**	1	3	0	**4**	1	4	4	**9**	**13**	**29**
12:30	12:45	1	0	2	**3**	5	10	2	**17**	**20**	1	5	1	**7**	0	3	8	**11**	**18**	**38**
12:45	13:00	0	3	1	**4**	3	4	1	**8**	**12**	3	7	2	**12**	1	4	13	**18**	**30**	**42**
13:00	13:15	0	6	0	**6**	12	3	2	**17**	**23**	2	4	1	**7**	1	8	7	**16**	**23**	**46**
13:15	13:30	2	1	2	**5**	9	4	2	**15**	**20**	0	6	0	**6**	1	2	6	**9**	**15**	**35**
15:00	15:15	0	5	1	**6**	7	6	3	**16**	**22**	3	5	0	**8**	1	5	15	**21**	**29**	**51**
15:15	15:30	1	3	0	**4**	2	3	1	**6**	**10**	1	3	2	**6**	1	8	7	**16**	**22**	**32**
15:30	15:45	2	3	1	**6**	9	1	0	**10**	**16**	3	3	2	**8**	0	6	2	**8**	**16**	**32**
15:45	16:00	4	5	0	**9**	2	5	0	**7**	**16**	0	5	0	**5**	3	2	8	**13**	**18**	**34**
16:00	16:15	1	3	1	**5**	3	3	0	**6**	**11**	2	7	0	**9**	1	3	3	**7**	**16**	**27**
16:15	16:30	0	9	0	**9**	1	2	0	**3**	**12**	4	4	0	**8**	0	2	6	**8**	**16**	**28**
16:30	16:45	2	5	0	**7**	0	5	1	**6**	**13**	1	0	1	**2**	1	8	9	**18**	**20**	**33**
16:45	17:00	0	3	0	**3**	0	1	0	**1**	**4**	2	1	0	**3**	1	1	4	**6**	**9**	**13**
17:00	17:15	0	2	1	**3**	1	2	0	**3**	**6**	1	0	0	**1**	2	1	4	**7**	**8**	**14**
17:15	17:30	0	1	0	**1**	3	2	0	**5**	**6**	0	0	0	**0**	0	1	2	**3**	**3**	**9**
17:30	17:45	1	0	1	**2**	0	0	0	**0**	**2**	0	3	0	**3**	4	3	0	**7**	**10**	**12**
17:45	18:00	0	0	0	**0**	0	0	0	**0**	**0**	0	1	0	**1**	0	3	4	**7**	**8**	**8**
Total:	None	35	132	25	**192**	157	130	33	**320**	**512**	42	124	28	**194**	31	129	183	**343**	**537**	**1,049**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARP RD @ HAZELDEAN RD

Survey Date: Thursday, November 23, 2017 **WO No:** 37338

Start Time: 07:00 **Device:** Miovision

Full Study 15 Minute U-Turn Total

Time Period		CARP RD Northbound U-Turn Total	CARP RD Southbound U-Turn Total	HAZELDEAN RD Eastbound U-Turn Total	HAZELDEAN RD Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	0
07:15	07:30	0	0	0	1	1
07:30	07:45	0	0	0	1	1
07:45	08:00	0	2	0	0	2
08:00	08:15	0	0	0	0	0
08:15	08:30	0	0	0	0	0
08:30	08:45	0	0	0	0	0
08:45	09:00	0	0	0	0	0
09:00	09:15	0	0	0	0	0
09:15	09:30	0	0	0	0	0
09:30	09:45	0	0	0	0	0
09:45	10:00	0	0	0	0	0
11:30	11:45	0	0	0	0	0
11:45	12:00	0	1	0	0	1
12:00	12:15	0	0	0	0	0
12:15	12:30	0	0	0	0	0
12:30	12:45	0	0	0	0	0
12:45	13:00	0	0	0	0	0
13:00	13:15	0	0	0	0	0
13:15	13:30	0	0	0	0	0
15:00	15:15	0	0	0	0	0
15:15	15:30	0	0	0	0	0
15:30	15:45	0	0	0	0	0
15:45	16:00	1	0	0	0	1
16:00	16:15	0	0	0	0	0
16:15	16:30	0	0	0	0	0
16:30	16:45	0	0	1	0	1
16:45	17:00	0	0	0	0	0
17:00	17:15	0	0	1	1	2
17:15	17:30	0	0	0	0	0
17:30	17:45	0	0	0	0	0
17:45	18:00	0	0	0	0	0
Total		1	3	2	3	9

Transportation Services - Traffic Services

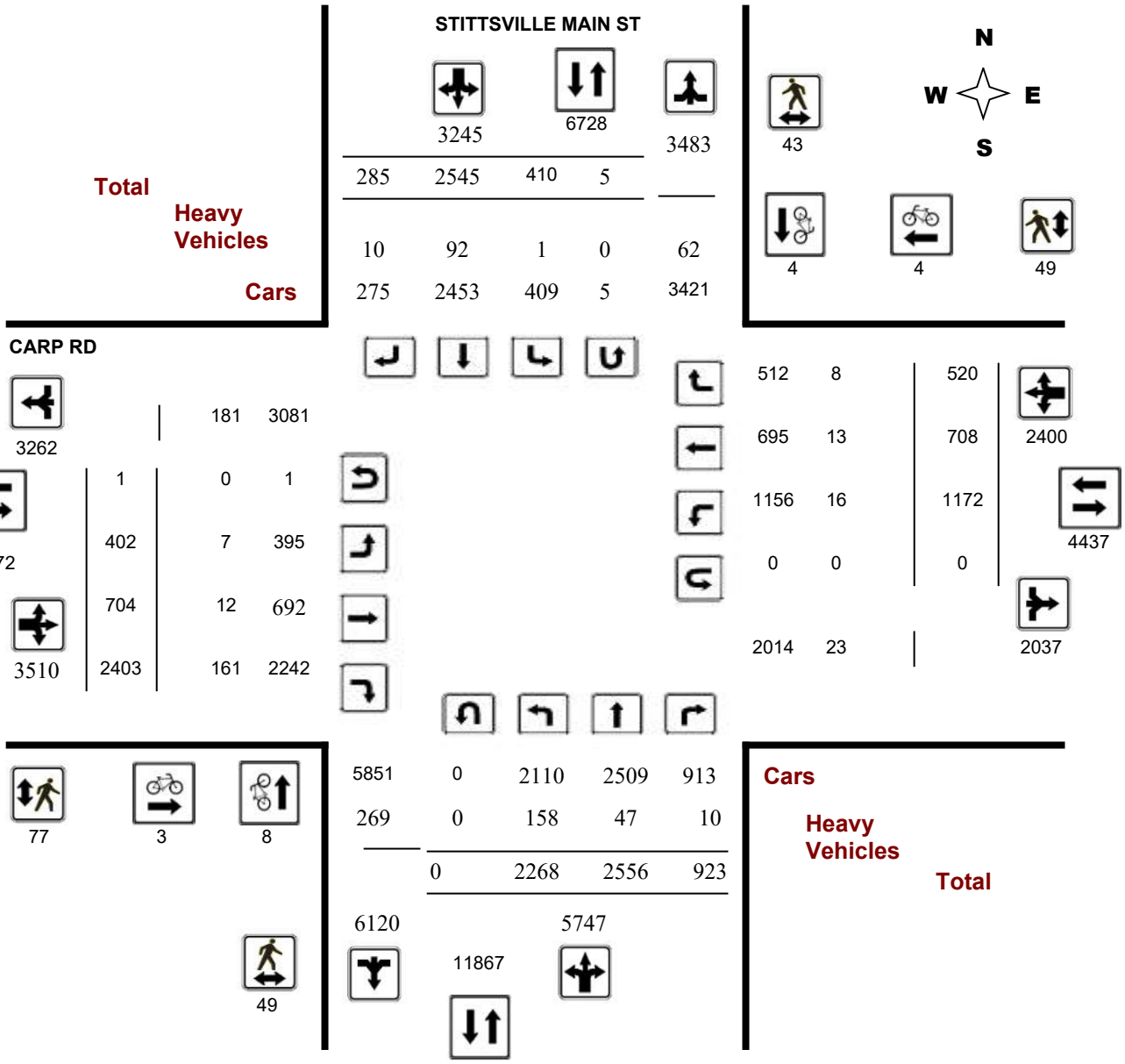
Turning Movement Count - Study Results

CARP RD @ STITTSVILLE MAIN ST

Survey Date: Thursday, May 04, 2017
Start Time: 07:00

WO No: 36999
Device: Miovision

Full Study Diagram



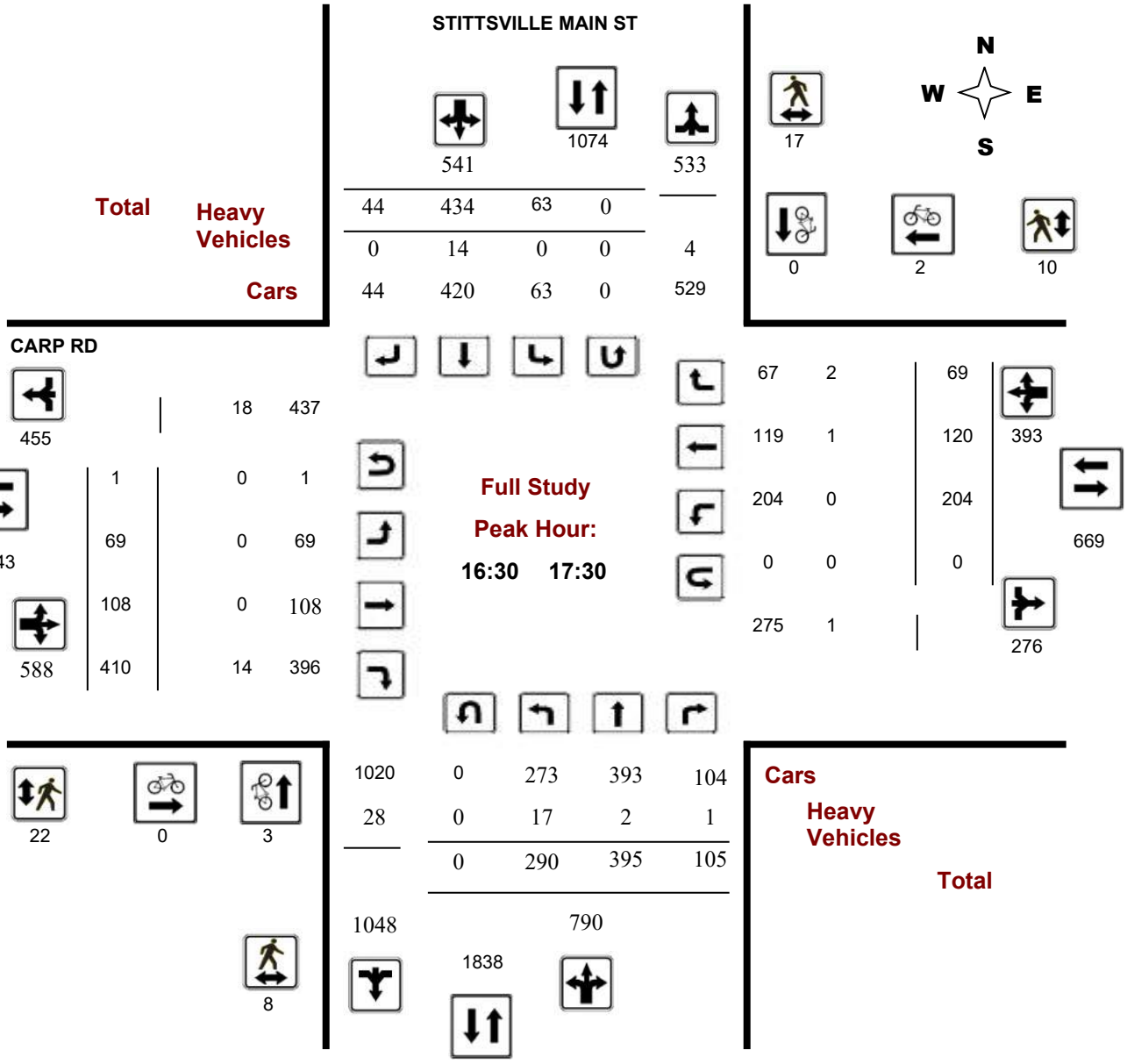
Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARP RD @ STITTSVILLE MAIN ST

Survey Date: Thursday, May 04, 2017
Start Time: 07:00
WO No: 36999
Device: Miovision

Full Study Peak Hour Diagram



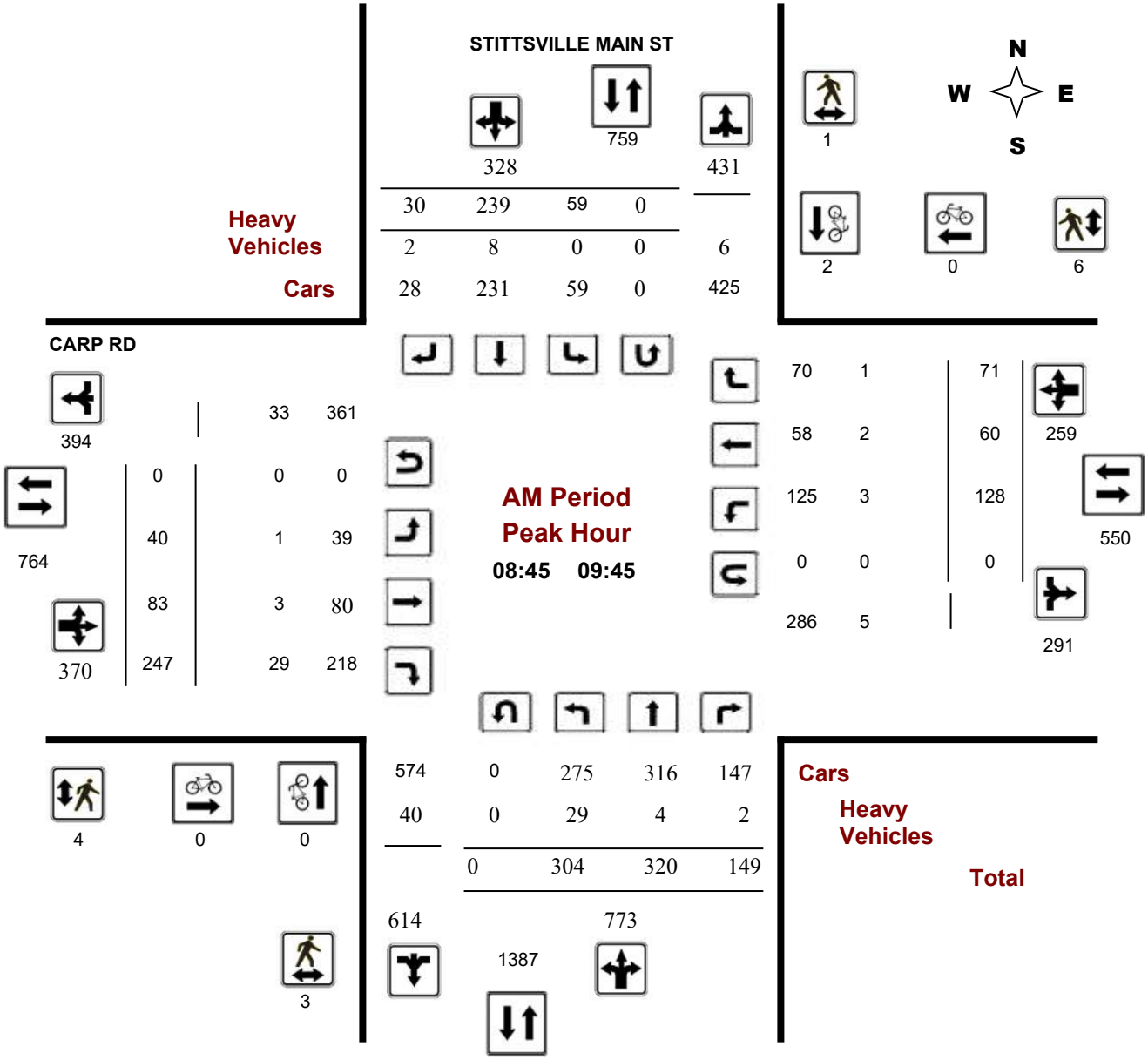
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARP RD @ STITTSVILLE MAIN ST

Survey Date: Thursday, May 04, 2017
Start Time: 07:00

WO No: 36999
Device: Miovision



Comments

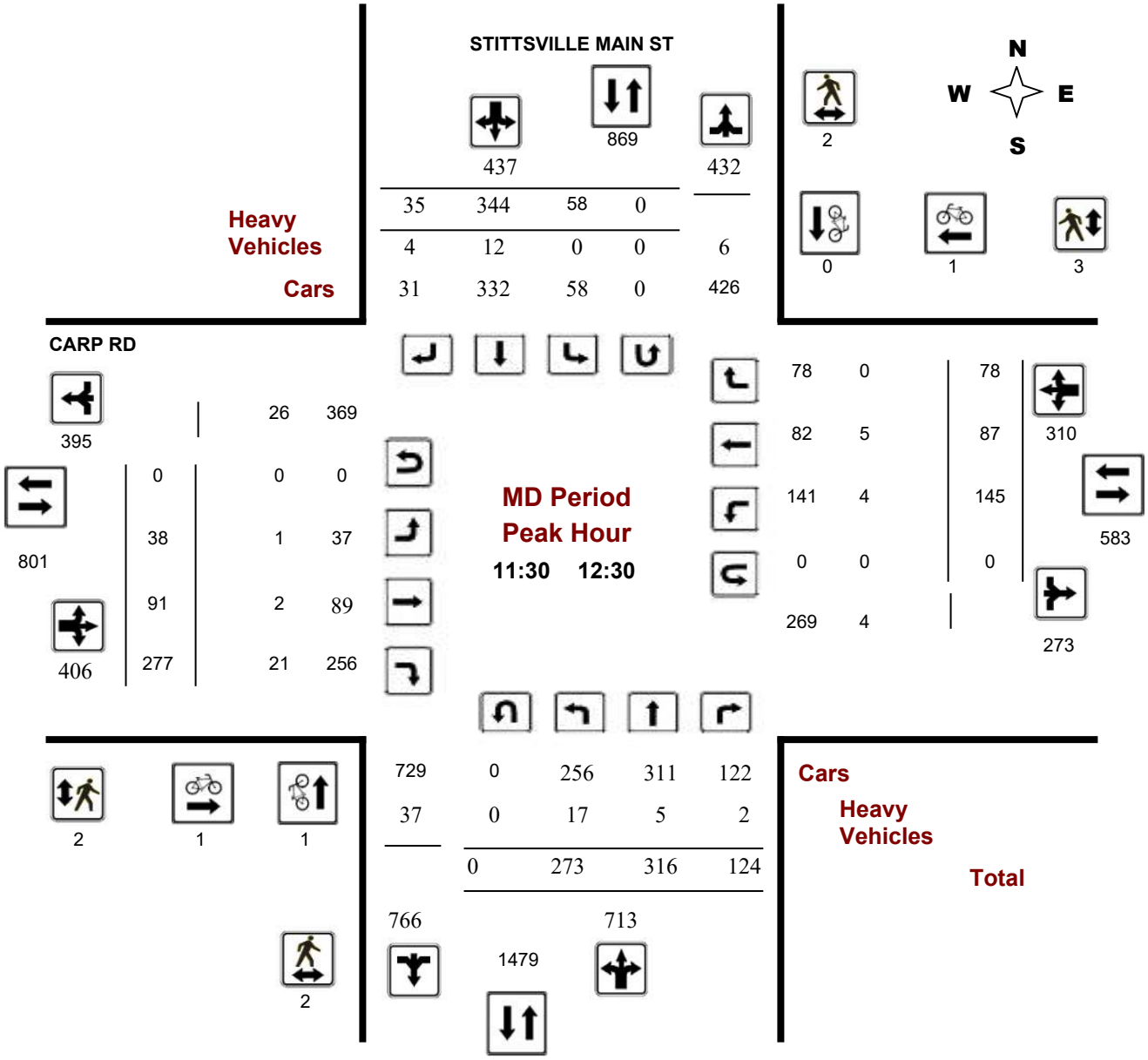
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARP RD @ STITTSVILLE MAIN ST

Survey Date: Thursday, May 04, 2017 **WO No:** 36999

Start Time: 07:00 **Device:** Miovision



Comments

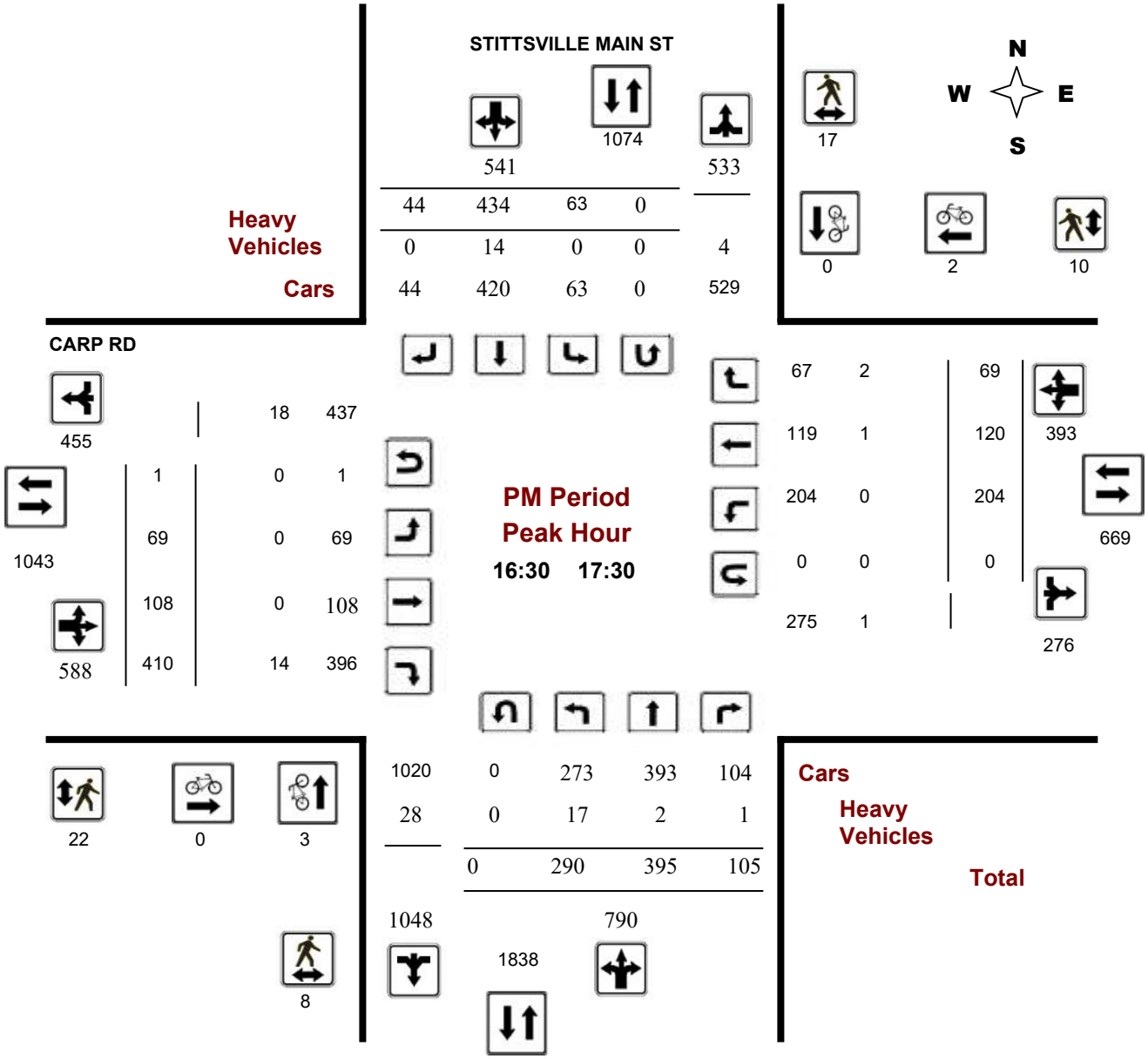
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARP RD @ STITTSVILLE MAIN ST

Survey Date: Thursday, May 04, 2017 **WO No:** 36999

Start Time: 07:00 **Device:** Miovision



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARP RD @ STITTSVILLE MAIN ST

Survey Date: Thursday, May 04, 2017 **WO No:** 36999

Start Time: 07:00 **Device:** Miovision

Full Study Summary (8 HR Standard)

Survey Date: Thursday, May 04, 2017

Total Observed U-Turns

Northbound: 0 Southbound: 5

Eastbound: 1 Westbound: 0

AADT Factor

.90

	STITTSVILLE MAIN ST								CARP RD									
	Northbound				Southbound				Eastbound				Westbound					
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Grand Total
07:00 08:00	314	238	118	**670**	32	160	25	**217**	**887**	47	59	218	**324**	75	56	52	**183**	**507**	**1394**
08:00 09:00	304	288	124	**716**	48	222	21	**291**	**1007**	40	72	239	**351**	94	65	56	**215**	**566**	**1573**
09:00 10:00	291	326	148	**765**	54	241	27	**322**	**1087**	43	76	229	**348**	128	66	74	**268**	**616**	**1703**
11:30 12:30	273	316	124	**713**	58	344	35	**437**	**1150**	38	91	277	**406**	145	87	78	**310**	**716**	**1866**
12:30 13:30	249	305	97	**651**	52	285	33	**370**	**1021**	56	85	277	**418**	163	78	79	**320**	**738**	**1759**
15:00 16:00	263	325	107	**695**	62	415	60	**537**	**1232**	54	98	356	**508**	179	118	60	**357**	**865**	**2097**
16:00 17:00	290	385	116	**791**	50	424	31	**505**	**1296**	65	112	390	**567**	197	126	57	**380**	**947**	**2243**
17:00 18:00	284	373	89	**746**	54	454	53	**561**	**1307**	59	111	417	**587**	191	112	64	**367**	**954**	**2261**
Sub Total	2268	2556	923	**5747**	410	2545	285	**3240**	**8987**	402	704	2403	**3509**	1172	708	520	**2400**	**5909**	**14896**
U Turns				**0**				**5**	**5**				**1**				**0**	**1**	**6**
Total	2268	2556	923	**5747**	410	2545	285	**3245**	**8992**	402	704	2403	**3510**	1172	708	520	**2400**	**5910**	**14902**
EQ 12Hr	3153	3553	1283	**7988**	570	3538	396	**4511**	**12499**	559	979	3340	**4879**	1629	984	723	**3336**	**8215**	**20714**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	2674	3014	1088	**6776**	483	3001	336	**3826**	**11249**	474	830	2833	**4138**	1382	835	613	**2830**	**7394**	**18643**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**0.9**					
AVG 24Hr	3503	3948	1426	**8876**	633	3931	440	**5012**	**13888**	621	1087	3711	**5421**	1810	1093	803	**3707**	**9128**	**23016**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.														**1.31**					

Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARP RD @ STITTSVILLE MAIN ST

Survey Date: Thursday, May 04, 2017 **WO No:** 36999

Start Time: 07:00 **Device:** Miovision

Full Study 15 Minute Increments

		STITTSVILLE MAIN ST									CARP RD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	75	45	27	147	5	38	6	49	7	9	11	48	68	13	12	11	36	7	300
07:15	07:30	77	59	22	158	6	40	7	53	9	11	14	51	76	9	17	18	44	9	331
07:30	07:45	83	65	33	181	7	32	7	46	10	12	13	58	83	25	14	9	48	10	358
07:45	08:00	79	69	36	184	14	50	5	69	22	15	21	61	97	28	13	14	55	22	405
08:00	08:15	85	79	34	198	8	43	6	57	13	12	20	53	85	23	13	13	49	13	389
08:15	08:30	72	73	37	182	12	57	2	71	10	15	16	63	94	22	28	17	67	10	414
08:30	08:45	80	69	27	176	7	57	3	67	10	7	17	54	78	19	8	16	43	10	364
08:45	09:00	67	67	26	160	21	65	10	96	6	6	19	69	94	30	16	10	56	6	406
09:00	09:15	83	76	46	205	16	52	6	74	17	9	21	54	84	33	16	14	63	17	426
09:15	09:30	80	105	48	233	9	57	7	73	12	15	24	68	107	31	15	29	75	12	488
09:30	09:45	74	72	29	175	13	65	7	85	10	10	19	56	85	34	13	18	65	10	410
09:45	10:00	54	73	25	152	16	67	7	90	12	9	12	51	72	30	22	13	65	12	379
11:30	11:45	77	68	35	180	9	83	7	99	6	10	27	54	91	30	18	24	72	6	442
11:45	12:00	60	82	32	174	21	85	9	115	17	7	19	90	116	40	21	17	78	17	483
12:00	12:15	80	80	32	192	14	94	12	120	11	8	25	72	105	41	29	19	89	11	506
12:15	12:30	56	86	25	167	14	82	7	103	6	13	20	61	94	34	19	18	71	6	435
12:30	12:45	52	90	33	175	9	59	5	73	9	17	18	66	101	43	11	18	72	9	421
12:45	13:00	76	78	23	177	16	82	11	109	9	15	25	86	126	34	22	26	82	9	494
13:00	13:15	72	76	26	174	16	71	11	98	10	10	21	56	87	51	22	17	90	10	449
13:15	13:30	49	61	15	125	11	73	6	92	11	14	21	69	104	35	23	18	76	11	397
15:00	15:15	64	79	32	175	16	105	16	139	12	13	23	89	125	43	23	10	76	12	515
15:15	15:30	59	71	24	154	17	96	9	122	11	14	26	85	125	48	28	24	100	11	501
15:30	15:45	66	83	21	170	18	115	21	154	9	12	22	93	127	50	35	15	100	9	551
15:45	16:00	74	92	30	196	11	99	14	125	8	15	27	89	131	38	32	11	81	8	533
16:00	16:15	83	87	30	200	12	90	14	116	8	14	19	95	128	43	29	16	88	8	532
16:15	16:30	66	82	27	175	13	119	2	134	12	14	44	91	149	48	29	11	88	12	546
16:30	16:45	75	108	23	206	15	106	6	127	10	21	25	105	152	53	34	13	100	10	585
16:45	17:00	66	108	36	210	10	109	9	128	9	16	24	99	139	53	34	17	104	9	581
17:00	17:15	73	107	17	197	21	108	14	143	8	16	28	115	159	54	28	15	97	8	596
17:15	17:30	76	72	29	177	17	111	15	143	7	16	31	91	138	44	24	24	92	7	550
17:30	17:45	68	86	26	180	8	112	14	134	3	19	29	114	162	53	33	15	101	3	577
17:45	18:00	67	108	17	192	8	123	10	141	4	8	23	97	128	40	27	10	77	4	538
Total:		2268	2556	923	5747	410	2545	285	3245	318	402	704	2403	3510	1172	708	520	2400	318	14,902

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARP RD @ STITTSVILLE MAIN ST

Survey Date: Thursday, May 04, 2017 **WO No:** 36999

Start Time: 07:00 **Device:** Miovision

Full Study Cyclist Volume

Time Period		STITTSVILLE MAIN ST			CARP RD			
		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	0	0	0	1	1	1
07:15	07:30	0	0	0	1	0	1	1
07:30	07:45	0	0	0	0	0	0	0
07:45	08:00	0	0	0	0	0	0	0
08:00	08:15	0	0	0	0	0	0	0
08:15	08:30	0	0	0	0	0	0	0
08:30	08:45	1	0	1	0	0	0	1
08:45	09:00	0	1	1	0	0	0	1
09:00	09:15	0	0	0	0	0	0	0
09:15	09:30	0	0	0	0	0	0	0
09:30	09:45	0	1	1	0	0	0	1
09:45	10:00	0	0	0	0	0	0	0
11:30	11:45	0	0	0	0	0	0	0
11:45	12:00	0	0	0	0	0	0	0
12:00	12:15	0	0	0	1	0	1	1
12:15	12:30	1	0	1	0	1	1	2
12:30	12:45	0	1	1	0	0	0	1
12:45	13:00	0	0	0	1	0	1	1
13:00	13:15	0	1	1	0	0	0	1
13:15	13:30	1	0	1	0	0	0	1
15:00	15:15	0	0	0	0	0	0	0
15:15	15:30	0	0	0	0	0	0	0
15:30	15:45	0	0	0	0	0	0	0
15:45	16:00	0	0	0	0	0	0	0
16:00	16:15	0	0	0	0	0	0	0
16:15	16:30	2	0	2	0	0	0	2
16:30	16:45	1	0	1	0	0	0	1
16:45	17:00	2	0	2	0	2	2	4
17:00	17:15	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0
Total		8	4	**12**	3	4	7	19

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARP RD @ STITTSVILLE MAIN ST

Survey Date: Thursday, May 04, 2017 **WO No:** 36999

Start Time: 07:00 **Device:** Miovision

Full Study Pedestrian Volume

	STITTSVILLE MAIN ST			CARP RD			
Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	**Total**	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	**Total**	**Grand Total**
07:00 07:15	0	0	**0**	2	0	**2**	**2**
07:15 07:30	0	0	**0**	0	1	**1**	**1**
07:30 07:45	0	0	**0**	0	1	**1**	**1**
07:45 08:00	3	0	**3**	0	0	**0**	**3**
08:00 08:15	3	2	**5**	1	0	**1**	**6**
08:15 08:30	0	0	**0**	2	0	**2**	**2**
08:30 08:45	0	0	**0**	0	0	**0**	**0**
08:45 09:00	0	0	**0**	0	1	**1**	**1**
09:00 09:15	0	1	**1**	1	3	**4**	**5**
09:15 09:30	3	0	**3**	2	2	**4**	**7**
09:30 09:45	0	0	**0**	1	0	**1**	**1**
09:45 10:00	3	2	**5**	2	0	**2**	**7**
11:30 11:45	1	0	**1**	2	0	**2**	**3**
11:45 12:00	1	0	**1**	0	2	**2**	**3**
12:00 12:15	0	1	**1**	0	1	**1**	**2**
12:15 12:30	0	1	**1**	0	0	**0**	**1**
12:30 12:45	4	1	**5**	3	2	**5**	**10**
12:45 13:00	1	0	**1**	3	2	**5**	**6**
13:00 13:15	4	0	**4**	5	0	**5**	**9**
13:15 13:30	1	1	**2**	2	2	**4**	**6**
15:00 15:15	2	4	**6**	2	4	**6**	**12**
15:15 15:30	1	1	**2**	7	2	**9**	**11**
15:30 15:45	2	3	**5**	3	2	**5**	**10**
15:45 16:00	5	4	**9**	7	0	**7**	**16**
16:00 16:15	6	3	**9**	3	6	**9**	**18**
16:15 16:30	1	1	**2**	5	1	**6**	**8**
16:30 16:45	4	4	**8**	8	2	**10**	**18**
16:45 17:00	2	7	**9**	9	3	**12**	**21**
17:00 17:15	1	3	**4**	1	2	**3**	**7**
17:15 17:30	1	3	**4**	4	3	**7**	**11**
17:30 17:45	0	1	**1**	1	6	**7**	**8**
17:45 18:00	0	0	**0**	1	1	**2**	**2**
Total	49	43	**92**	77	49	**126**	**218**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARP RD @ STITTSVILLE MAIN ST

Survey Date: Thursday, May 04, 2017 **WO No:** 36999

Start Time: 07:00 **Device:** Miovision

Full Study Heavy Vehicles

		STITTSVILLE MAIN ST									CARP RD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	5	1	0	**6**	0	1	0	**1**	**7**	0	0	12	**12**	0	0	0	**0**	**12**	**19**
07:15	07:30	3	1	0	**4**	0	5	0	**5**	**9**	0	0	4	**4**	0	1	1	**2**	**6**	**15**
07:30	07:45	4	3	1	**8**	0	2	0	**2**	**10**	0	2	7	**9**	1	1	0	**2**	**11**	**21**
07:45	08:00	8	6	1	**15**	0	7	0	**7**	**22**	1	1	2	**4**	2	1	2	**5**	**9**	**31**
08:00	08:15	9	4	0	**13**	0	0	0	**0**	**13**	1	1	4	**6**	1	0	0	**1**	**7**	**20**
08:15	08:30	2	2	2	**6**	1	3	0	**4**	**10**	1	0	3	**4**	0	0	1	**1**	**5**	**15**
08:30	08:45	5	1	0	**6**	0	4	0	**4**	**10**	0	0	4	**4**	0	0	0	**0**	**4**	**14**
08:45	09:00	4	1	0	**5**	0	1	0	**1**	**6**	0	1	7	**8**	1	1	0	**2**	**10**	**16**
09:00	09:15	12	1	1	**14**	0	3	0	**3**	**17**	0	0	7	**7**	0	0	0	**0**	**7**	**24**
09:15	09:30	7	1	1	**9**	0	2	1	**3**	**12**	0	0	6	**6**	0	1	1	**2**	**8**	**20**
09:30	09:45	6	1	0	**7**	0	2	1	**3**	**10**	1	2	9	**12**	2	0	0	**2**	**14**	**24**
09:45	10:00	6	2	0	**8**	0	4	0	**4**	**12**	0	1	5	**6**	0	1	0	**1**	**7**	**19**
11:30	11:45	2	0	1	**3**	0	1	2	**3**	**6**	0	2	6	**8**	1	1	0	**2**	**10**	**16**
11:45	12:00	7	2	1	**10**	0	6	1	**7**	**17**	0	0	10	**10**	1	1	0	**2**	**12**	**29**
12:00	12:15	6	1	0	**7**	0	3	1	**4**	**11**	0	0	4	**4**	1	3	0	**4**	**8**	**19**
12:15	12:30	2	2	0	**4**	0	2	0	**2**	**6**	1	0	1	**2**	1	0	0	**1**	**3**	**9**
12:30	12:45	4	3	0	**7**	0	2	0	**2**	**9**	1	1	5	**7**	0	0	1	**1**	**8**	**17**
12:45	13:00	4	1	0	**5**	0	1	3	**4**	**9**	0	0	7	**7**	2	0	0	**2**	**9**	**18**
13:00	13:15	5	2	0	**7**	0	3	0	**3**	**10**	0	0	1	**1**	0	1	0	**1**	**2**	**12**
13:15	13:30	6	2	0	**8**	0	3	0	**3**	**11**	0	1	11	**12**	2	0	0	**2**	**14**	**25**
15:00	15:15	3	2	1	**6**	0	6	0	**6**	**12**	0	0	4	**4**	0	0	0	**0**	**4**	**16**
15:15	15:30	7	0	0	**7**	0	3	1	**4**	**11**	0	0	6	**6**	1	0	0	**1**	**7**	**18**
15:30	15:45	3	1	0	**4**	0	5	0	**5**	**9**	0	0	4	**4**	0	0	0	**0**	**4**	**13**
15:45	16:00	4	0	0	**4**	0	4	0	**4**	**8**	0	0	5	**5**	0	0	0	**0**	**5**	**13**
16:00	16:15	4	2	0	**6**	0	2	0	**2**	**8**	1	0	0	**1**	0	0	0	**0**	**1**	**9**
16:15	16:30	8	1	0	**9**	0	3	0	**3**	**12**	0	0	5	**5**	0	0	0	**0**	**5**	**17**
16:30	16:45	7	0	0	**7**	0	3	0	**3**	**10**	0	0	4	**4**	0	0	0	**0**	**4**	**14**
16:45	17:00	4	1	0	**5**	0	4	0	**4**	**9**	0	0	5	**5**	0	0	1	**1**	**6**	**15**
17:00	17:15	2	1	0	**3**	0	5	0	**5**	**8**	0	0	2	**2**	0	1	0	**1**	**3**	**11**
17:15	17:30	4	0	1	**5**	0	2	0	**2**	**7**	0	0	3	**3**	0	0	1	**1**	**4**	**11**
17:30	17:45	2	1	0	**3**	0	0	0	**0**	**3**	0	0	3	**3**	0	0	0	**0**	**3**	**6**
17:45	18:00	3	1	0	**4**	0	0	0	**0**	**4**	0	0	5	**5**	0	0	0	**0**	**5**	**9**
Total:	None	158	47	10	**215**	1	92	10	**103**	**318**	7	12	161	**180**	16	13	8	**37**	**217**	**535**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARP RD @ STITTSVILLE MAIN ST

Survey Date: Thursday, May 04, 2017 **WO No:** 36999

Start Time: 07:00 **Device:** Miovision

Full Study 15 Minute U-Turn Total

		STITTSVILLE MAIN ST		CARP RD		
Time Period		Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	0
07:15	07:30	0	0	0	0	0
07:30	07:45	0	0	0	0	0
07:45	08:00	0	0	0	0	0
08:00	08:15	0	0	0	0	0
08:15	08:30	0	0	0	0	0
08:30	08:45	0	0	0	0	0
08:45	09:00	0	0	0	0	0
09:00	09:15	0	0	0	0	0
09:15	09:30	0	0	0	0	0
09:30	09:45	0	0	0	0	0
09:45	10:00	0	0	0	0	0
11:30	11:45	0	0	0	0	0
11:45	12:00	0	0	0	0	0
12:00	12:15	0	0	0	0	0
12:15	12:30	0	0	0	0	0
12:30	12:45	0	0	0	0	0
12:45	13:00	0	0	0	0	0
13:00	13:15	0	0	0	0	0
13:15	13:30	0	2	0	0	2
15:00	15:15	0	2	0	0	2
15:15	15:30	0	0	0	0	0
15:30	15:45	0	0	0	0	0
15:45	16:00	0	1	0	0	1
16:00	16:15	0	0	0	0	0
16:15	16:30	0	0	0	0	0
16:30	16:45	0	0	1	0	1
16:45	17:00	0	0	0	0	0
17:00	17:15	0	0	0	0	0
17:15	17:30	0	0	0	0	0
17:30	17:45	0	0	0	0	0
17:45	18:00	0	0	0	0	0
Total		0	5	1	0	6

Traffic Signal Timing

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

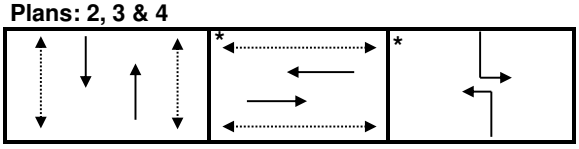
Intersection:	***Main:*** Carp	***Side:*** Hazeldean	
Controller:	**MS-3200**	**TSD:**	5639
Author:	R. Doueidar	**Date:**	06-Mar-2020

Existing Timing Plans†

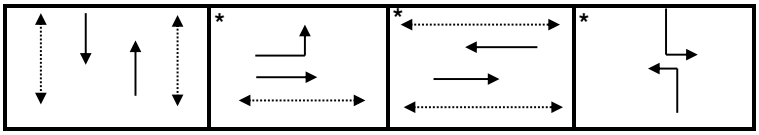
	Plan				**Ped Minimum Time**		
	AM Peak 1	**Off Peak** 2	**PM Peak** 3	**Night** 4	***Walk***	***DW***	***A+R***
Cycle	115	110	120	85			
Offset	107	X	8	X			
NB Thru	35	35	40	32	7	18	3.7+2.4
SB Thru	35	35	40	32	7	18	3.7+2.4
EB Left	15	-	-	-	-	-	3.7+2.4
EB Thru	53	40	52	38	7	24	3.7+2.9
WB Thru	38	40	52	38	7	24	3.7+2.9
SB Left (fp)	27	35	28	15	-	-	3.7+2.3
NB Left (fp)	27	35	28	15	-	-	3.7+2.3

Phasing Sequence‡

Plans: 2, 3 & 4



Plan: 1



Schedule

Weekday

Time	Plan
00:10	4
06:30	1
09:30	2
15:00	3
19:00	2
23:00	4

Saturday

Time	Plan
00:10	4
09:00	2
22:30	4

Sunday

Time	Plan
00:10	4
08:00	2
22:30	4

Notes

†: Time for each direction includes amber and all red intervals

‡: Start of first phase should be used as reference point for offset

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

◄·····► *Pedestrian signal*

Cost is $58.78 ($52.02 + HST)

Traffic Signal Timing

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

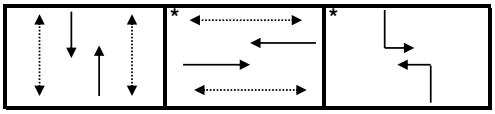
Intersection:	***Main:***	Stittsville Main	***Side:***	Carp	
Controller:	**MS-3200**			**TSD:**	6045
Author:	R. Doueidar			**Date:**	06-Mar-2020

Existing Timing Plans†

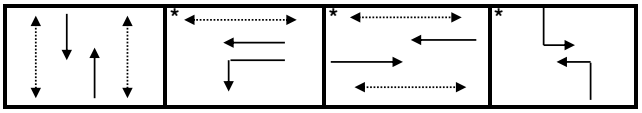
	Plan				**Ped Minimum Time**		
	AM Peak 1	**Off Peak** 2	**PM Peak** 3	**Night** 4	***Walk***	***DW***	***A+R***
Cycle	80	90	90	60			
Offset	0	2	2	X			
NB Thru	35	33	32	31	7	17	3.3+2.2
SB Thru	35	33	32	31	7	17	3.3+2.2
WBLT	-	13	15	-	-	-	3.3+1.8
WB Thru	30	42	44	29	7	16	3.3+1.8
EB Thru	30	29	29	29	7	16	3.3+1.8
NBLT	15	15	14	-	-	-	3.3+2.2
SBLT	15	15	14	-	-	-	3.3+2.2

Phasing Sequence‡

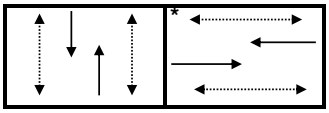
Plan: 1



Plan: 2 & 3



Plan: 4



Schedule

Weekday

Time	Plan
00:10	4
06:30	1
09:30	2
15:00	3
18:30	2
22:00	4

Saturday

Time	Plan
00:10	4
09:00	2
10:30	3
18:30	2
22:00	4

Sunday

Time	Plan
00:10	4
08:00	2
11:00	3
18:30	2
22:00	4

Notes

†: Time for each direction includes amber and all red intervals

‡: Start of first phase should be used as reference point for offset

Asterix (*) Indicates actuated phase

(fp): Fully Protected Left Turn

◄·····► *Pedestrian signal*

Cost is $58.78 ($52.02 + HST)

Traffic Signal Timing

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

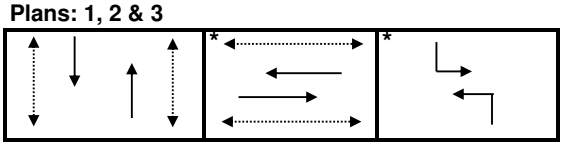
Intersection:	***Main:*** Carp	***Side:*** Echowoods/Kittiwake	
Controller:	**MS-3200**	**TSD:**	6585
Author:	R. Doueidar	**Date:**	06-Mar-2020

Existing Timing Plans†

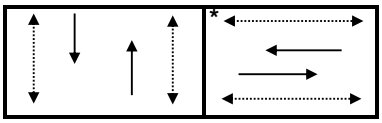
	Plan				**Ped Minimum Time**		
	AM Peak 1	**Off Peak** 2	**PM Peak** 3	**Night** 4	***Walk***	***DW***	***A+R***
Cycle	115	100	120	80			
Offset	7	X	11	X			
NB Thru	63	55	63	45	7	17	3.7+2.3
SB Thru	63	55	63	45	7	17	3.7+2.3
EB Thru	40	34	35	35	7	16	3.0+3.3
WB Thru	40	34	35	35	7	16	3.0+3.3
NB Left	12	11	22	-	-	-	3.7+1.9
SB Left	12	11	22	-	-	-	3.7+1.9

Phasing Sequence‡

Plans: 1, 2 & 3



Plan: 4



Schedule

Weekday

Time	Plan
00:10	4
06:30	1
09:30	2
15:00	3
19:00	2
23:00	4

Saturday

Time	Plan
00:10	4
09:00	2
22:30	4

Sunday

Time	Plan
00:10	4
08:00	2
23:30	4

Notes

†: Time for each direction includes amber and all red intervals

‡: Start of first phase should be used as reference point for offset

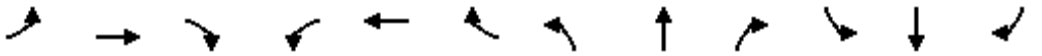
Asterix (*) Indicates actuated phase

(fp): Fully Protected Left Turn

◄·····► *Pedestrian signal*

Cost is $58.78 ($52.02 + HST)

Appendix D - Existing (2020) Synchro Outputs



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	237	5	70	49	3	147	27	923	15	35	532	49
Future Volume (vph)	237	5	70	49	3	147	27	923	15	35	532	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.9	3.9	3.7	3.7	4.8	3.7	3.6	3.7	3.7	3.3	3.5	3.1
Total Lost time (s)	6.3	6.3			6.0		5.6	6.0		5.6	5.7	5.7
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99			0.98		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.86			0.90		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1680	1490			1737		1474	1746		1653	1618	1382
Flt Permitted	0.54	1.00			0.90		0.29	1.00		0.07	1.00	1.00
Satd. Flow (perm)	957	1490			1588		449	1746		114	1618	1382
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)	263	6	78	54	3	163	30	1026	17	39	591	54
RTOR Reduction (vph)	0	56	0	0	90	0	0	0	0	0	0	25
Lane Group Flow (vph)	263	28	0	0	130	0	30	1043	0	39	591	29
Confl. Peds. (#/hr)	1					1	2		1	1		2
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	5%	20%	5%	9%	33%	0%	16%	4%	0%	0%	10%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	32.8	32.8			33.1		64.3	60.5		64.6	60.8	60.8
Effective Green, g (s)	32.8	32.8			33.1		64.3	60.5		64.6	60.8	60.8
Actuated g/C Ratio	0.29	0.29			0.29		0.56	0.53		0.56	0.53	0.53
Clearance Time (s)	6.3	6.3			6.0		5.6	6.0		5.6	5.7	5.7
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	272	424			457		284	918		114	855	730
v/s Ratio Prot		0.02					0.00	c0.60		c0.01	0.37	
v/s Ratio Perm	c0.27				0.08		0.06			0.18		0.02
v/c Ratio	0.97	0.07			0.28		0.11	1.14		0.34	0.69	0.04
Uniform Delay, d1	40.6	29.9			31.8		13.4	27.2		25.7	20.1	13.0
Progression Factor	1.00	1.00			1.00		0.74	0.69		1.00	1.00	1.00
Incremental Delay, d2	45.0	0.1			0.3		0.1	71.3		1.8	4.6	0.1
Delay (s)	85.6	30.0			32.1		10.1	90.0		27.5	24.7	13.1
Level of Service	F	C			C		B	F		C	C	B
Approach Delay (s)		72.1			32.1			87.8			23.9	
Approach LOS		E			C			F			C	

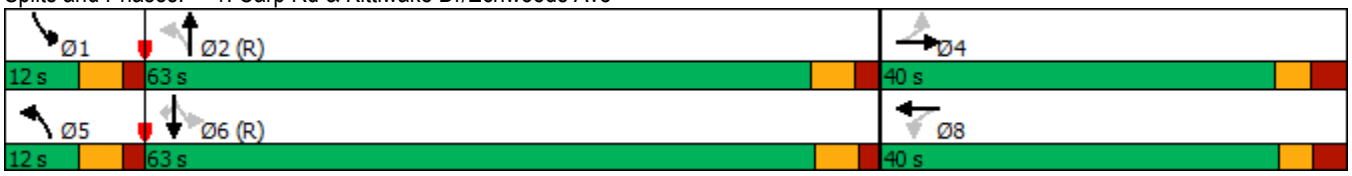
Intersection Summary			
HCM 2000 Control Delay	61.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	17.9
Intersection Capacity Utilization	94.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	1	2	4	5	6	8
Movement	SBL	NBTL	EBTL	NBL	SBTL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	12	63	40	12	63	40
Maximum Split (%)	10.4%	54.8%	34.8%	10.4%	54.8%	34.8%
Minimum Split (s)	10.6	30	29.3	10.6	29.7	29
Yellow Time (s)	3.7	3.7	3	3.7	3.7	3
All-Red Time (s)	1.9	2.3	3.3	1.9	2	3
Minimum Initial (s)	5	10	10	5	10	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		17	16		17	16
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	110	7	70	110	7	70
End Time (s)	7	70	110	7	70	110
Yield/Force Off (s)	1.4	64	103.7	1.4	64.3	104
Yield/Force Off 170(s)	1.4	47	87.7	1.4	47.3	88
Local Start Time (s)	103	0	63	103	0	63
Local Yield (s)	109.4	57	96.7	109.4	57.3	97
Local Yield 170(s)	109.4	40	80.7	109.4	40.3	81

Intersection Summary	
Cycle Length	115
Control Type	Actuated-Coordinated
Natural Cycle	150
Offset: 7 (6%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 1: Carp Rd & Kittiwake Dr/Echwoods Ave



Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	292	277	87	2	10	118	292	60	401	15	2	230
Future Volume (vph)	292	277	87	2	10	118	292	60	401	15	2	230
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.6	3.9	3.7	3.7	3.8	3.4	3.9	3.9	3.4	3.7	3.7	3.6
Total Lost time (s)	6.1	6.6			6.6	6.6	6.6	6.0	6.1			6.0
Lane Util. Factor	1.00	0.95			1.00	1.00	1.00	1.00	0.95			1.00
Frpb, ped/bikes	1.00	0.99			1.00	1.00	0.96	1.00	1.00			1.00
Flpb, ped/bikes	0.99	1.00			1.00	1.00	1.00	1.00	1.00			1.00
Frt	1.00	0.96			1.00	1.00	0.85	1.00	0.99			1.00
Flt Protected	0.95	1.00			0.95	1.00	1.00	0.95	1.00			0.95
Satd. Flow (prot)	1667	3228			1467	1586	1448	1523	3181			1463
Flt Permitted	0.44	1.00			0.51	1.00	1.00	0.95	1.00			0.95
Satd. Flow (perm)	779	3228			794	1586	1448	1523	3181			1463
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)	324	308	97	2	11	131	324	67	446	17	2	256
RTOR Reduction (vph)	0	32	0	0	0	0	281	0	2	0	0	0
Lane Group Flow (vph)	324	373	0	0	13	131	43	67	461	0	0	258
Confl. Peds. (#/hr)	10		1	3	1		10	1		3	10	3
Heavy Vehicles (%)	2%	5%	5%	0%	22%	11%	5%	16%	3%	43%	0%	17%
Turn Type	pm+pt	NA		Perm	Perm	NA	Perm	Prot	NA		Prot	Prot
Protected Phases	7	4				8		5	2		1	1
Permitted Phases	4			8	8		8					
Actuated Green, G (s)	30.4	30.4			15.4	15.4	15.4	9.2	38.3			27.6
Effective Green, g (s)	30.4	30.4			15.4	15.4	15.4	9.2	38.3			27.6
Actuated g/C Ratio	0.26	0.26			0.13	0.13	0.13	0.08	0.33			0.24
Clearance Time (s)	6.1	6.6			6.6	6.6	6.6	6.0	6.1			6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	274	853			106	212	193	121	1059			351
v/s Ratio Prot	c0.09	0.12				0.08		0.04	0.14			c0.18
v/s Ratio Perm	c0.22				0.02		0.03					
v/c Ratio	1.18	0.44			0.12	0.62	0.22	0.55	0.44			0.74
Uniform Delay, d1	41.5	35.2			43.9	47.0	44.5	50.9	29.9			40.3
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			0.78
Incremental Delay, d2	113.0	0.4			0.5	5.3	0.6	5.4	1.3			6.4
Delay (s)	154.6	35.5			44.4	52.3	45.1	56.3	31.2			37.8
Level of Service	F	D			D	D	D	E	C			D
Approach Delay (s)		88.4				47.1			34.4			
Approach LOS		F				D			C			

Intersection Summary			
HCM 2000 Control Delay	53.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	93.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

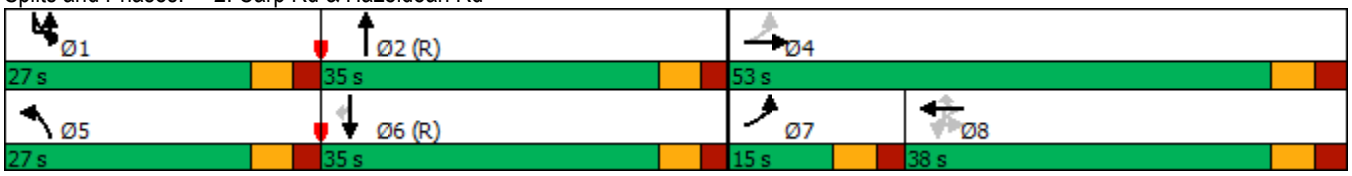
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	290	50
Future Volume (vph)	290	50
Ideal Flow (vphpl)	1800	1800
Lane Width	3.6	3.5
Total Lost time (s)	6.1	6.1
Lane Util. Factor	1.00	1.00
Frpb, ped/bikes	1.00	0.98
Flpb, ped/bikes	1.00	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	1593	1309
Flt Permitted	1.00	1.00
Satd. Flow (perm)	1593	1309
Peak-hour factor, PHF	0.90	0.90
Adj. Flow (vph)	322	56
RTOR Reduction (vph)	0	28
Lane Group Flow (vph)	322	28
Confl. Peds. (#/hr)		1
Heavy Vehicles (%)	13%	13%
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Actuated Green, G (s)	56.7	56.7
Effective Green, g (s)	56.7	56.7
Actuated g/C Ratio	0.49	0.49
Clearance Time (s)	6.1	6.1
Vehicle Extension (s)	3.0	3.0
Lane Grp Cap (vph)	785	645
v/s Ratio Prot	c0.20	
v/s Ratio Perm		0.02
v/c Ratio	0.41	0.04
Uniform Delay, d1	18.5	15.1
Progression Factor	1.77	1.00
Incremental Delay, d2	1.3	0.1
Delay (s)	34.1	15.2
Level of Service	C	B
Approach Delay (s)	33.9	
Approach LOS	C	

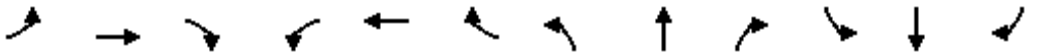
Intersection Summary

Phase Number	1	2	4	5	6	7	8
Movement	SBL	NBT	EBTL	NBL	SBT	EBL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize							
Recall Mode	None	C-Max	None	None	C-Max	None	None
Maximum Split (s)	27	35	53	27	35	15	38
Maximum Split (%)	23.5%	30.4%	46.1%	23.5%	30.4%	13.0%	33.0%
Minimum Split (s)	11	31.1	37.6	11	31.1	11.1	37.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.3	2.4	2.9	2.3	2.4	2.4	2.9
Minimum Initial (s)	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0
Walk Time (s)		7	7		7		7
Flash Dont Walk (s)		18	24		18		24
Dual Entry	No	Yes	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	80	107	27	80	107	27	42
End Time (s)	107	27	80	107	27	42	80
Yield/Force Off (s)	101	20.9	73.4	101	20.9	35.9	73.4
Yield/Force Off 170(s)	101	2.9	49.4	101	2.9	35.9	49.4
Local Start Time (s)	88	0	35	88	0	35	50
Local Yield (s)	109	28.9	81.4	109	28.9	43.9	81.4
Local Yield 170(s)	109	10.9	57.4	109	10.9	43.9	57.4

Intersection Summary	
Cycle Length	115
Control Type	Actuated-Coordinated
Natural Cycle	105
Offset: 107 (93%), Referenced to phase 2:NBT and 6:SBT, Start of Green	

Splits and Phases: 2: Carp Rd & Hazeldean Rd





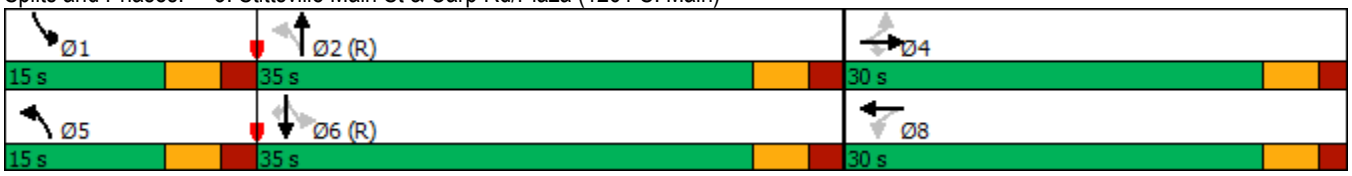
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	88	262	136	64	78	322	351	158	73	278	32
Future Volume (vph)	42	88	262	136	64	78	322	351	158	73	278	32
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.5	3.2	3.9	3.6	3.6	3.7	3.5	3.6	3.7	3.1	3.5	3.5
Total Lost time (s)	5.1	5.1	5.1	5.1	5.1		5.5	5.5		5.5	5.5	5.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	0.99		1.00	0.99		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.92		1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1656	1686	1511	1669	1600		1655	1667		1581	1745	1442
Flt Permitted	0.61	1.00	1.00	0.69	1.00		0.45	1.00		0.38	1.00	1.00
Satd. Flow (perm)	1065	1686	1511	1218	1600		781	1667		632	1745	1442
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)	47	98	291	151	71	87	358	390	176	81	309	36
RTOR Reduction (vph)	0	0	234	0	64	0	0	15	0	0	0	20
Lane Group Flow (vph)	47	98	57	151	94	0	358	551	0	81	309	16
Confl. Peds. (#/hr)	1		3	3		1	4		6	6		4
Confl. Bikes (#/hr)												2
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		6
Actuated Green, G (s)	15.7	15.7	15.7	15.7	15.7		53.7	42.3		42.2	36.3	36.3
Effective Green, g (s)	15.7	15.7	15.7	15.7	15.7		53.7	42.3		42.2	36.3	36.3
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.20		0.67	0.53		0.53	0.45	0.45
Clearance Time (s)	5.1	5.1	5.1	5.1	5.1		5.5	5.5		5.5	5.5	5.5
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)	209	330	296	239	314		654	881		403	791	654
v/s Ratio Prot		0.06			0.06		c0.08	c0.33		0.01	0.18	
v/s Ratio Perm	0.04		0.04	c0.12			0.29			0.09		0.01
v/c Ratio	0.22	0.30	0.19	0.63	0.30		0.55	0.63		0.20	0.39	0.02
Uniform Delay, d1	27.0	27.4	26.9	29.5	27.4		6.3	13.3		9.6	14.5	12.1
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	0.5	0.5	0.3	5.4	0.5		0.9	3.3		0.2	1.5	0.1
Delay (s)	27.6	27.9	27.2	34.9	28.0		7.3	16.6		9.9	16.0	12.1
Level of Service	C	C	C	C	C		A	B		A	B	B
Approach Delay (s)		27.4			31.3			13.0			14.5	
Approach LOS		C			C			B			B	

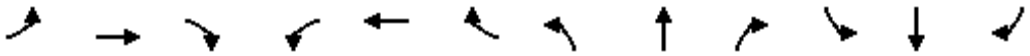
Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	4	5	6	8
Movement	SBL	NBTL	EBTL	NBL	SBTL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	15	35	30	15	35	30
Maximum Split (%)	18.8%	43.8%	37.5%	18.8%	43.8%	37.5%
Minimum Split (s)	10.5	29.5	28.1	10.5	29.5	28.1
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.2	2.2	1.8	2.2	2.2	1.8
Minimum Initial (s)	5	10	10	5	10	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		17	16		17	16
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	65	0	35	65	0	35
End Time (s)	0	35	65	0	35	65
Yield/Force Off (s)	74.5	29.5	59.9	74.5	29.5	59.9
Yield/Force Off 170(s)	74.5	12.5	43.9	74.5	12.5	43.9
Local Start Time (s)	65	0	35	65	0	35
Local Yield (s)	74.5	29.5	59.9	74.5	29.5	59.9
Local Yield 170(s)	74.5	12.5	43.9	74.5	12.5	43.9

Intersection Summary	
Cycle Length	80
Control Type	Actuated-Coordinated
Natural Cycle	70
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 3: Stittsville Main St & Carp Rd/Plaza (1261 S. Main)

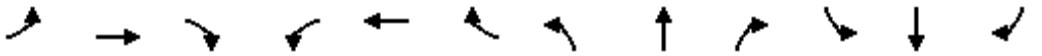




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	13	10	5	55	5	41	5	10	10	5	41
Future Volume (Veh/h)	10	13	10	5	55	5	41	5	10	10	5	41
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	14	11	6	61	6	46	6	11	11	6	46
Pedestrians		5			5			5			5	
Lane Width (m)		4.8			4.8			4.8			4.8	
Walking Speed (m/s)		1.0			1.0			1.0			1.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		322										
pX, platoon unblocked												
vC, conflicting volume	72			30			176	130	30	142	133	74
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	72			30			176	130	30	142	133	74
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			94	99	99	99	99	95
cM capacity (veh/h)	1518			1572			721	742	1031	789	739	975

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	36	73	63	63
Volume Left	11	6	46	11
Volume Right	11	6	11	46
cSH	1518	1572	763	910
Volume to Capacity	0.01	0.00	0.08	0.07
Queue Length 95th (m)	0.2	0.1	1.9	1.6
Control Delay (s)	2.3	0.6	10.1	9.3
Lane LOS	A	A	B	A
Approach Delay (s)	2.3	0.6	10.1	9.3
Approach LOS			B	A

Intersection Summary				
Average Delay	5.7			
Intersection Capacity Utilization	23.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	13	55	58	7	78	52	697	32	116	1050	152
Future Volume (vph)	142	13	55	58	7	78	52	697	32	116	1050	152
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.9	3.9	3.7	3.7	4.8	3.7	3.6	3.7	3.7	3.3	3.5	3.1
Total Lost time (s)	6.3	6.3			6.0		5.6	6.0		5.6	5.7	5.7
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97			1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00			0.99		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.88			0.93		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1732	1557			1742		1474	1739		1653	1618	1381
Flt Permitted	0.58	1.00			0.84		0.06	1.00		0.17	1.00	1.00
Satd. Flow (perm)	1059	1557			1484		89	1739		297	1618	1381
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)	158	14	61	64	8	87	58	774	36	129	1167	169
RTOR Reduction (vph)	0	50	0	0	39	0	0	1	0	0	0	31
Lane Group Flow (vph)	158	25	0	0	120	0	58	809	0	129	1167	138
Confl. Peds. (#/hr)			17	17			2		3	3		2
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	2%	0%	2%	9%	33%	0%	16%	4%	0%	0%	10%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	21.6	21.6			21.9		76.1	70.0		85.2	74.7	74.7
Effective Green, g (s)	21.6	21.6			21.9		76.1	70.0		85.2	74.7	74.7
Actuated g/C Ratio	0.18	0.18			0.18		0.63	0.58		0.71	0.62	0.62
Clearance Time (s)	6.3	6.3			6.0		5.6	6.0		5.6	5.7	5.7
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	190	280			270		126	1014		329	1007	859
v/s Ratio Prot		0.02					0.02	0.47		c0.03	c0.72	
v/s Ratio Perm	c0.15				0.08		0.27			0.24		0.10
v/c Ratio	0.83	0.09			0.44		0.46	0.80		0.39	1.16	0.16
Uniform Delay, d1	47.4	41.0			43.6		27.2	19.5		13.6	22.6	9.5
Progression Factor	1.00	1.00			1.00		1.50	0.78		1.00	1.00	1.00
Incremental Delay, d2	25.5	0.1			1.2		2.2	5.5		0.8	82.8	0.4
Delay (s)	72.9	41.1			44.8		43.1	20.7		14.4	105.4	9.9
Level of Service	E	D			D		D	C		B	F	A
Approach Delay (s)		62.7			44.8			22.2			86.4	
Approach LOS		E			D			C			F	

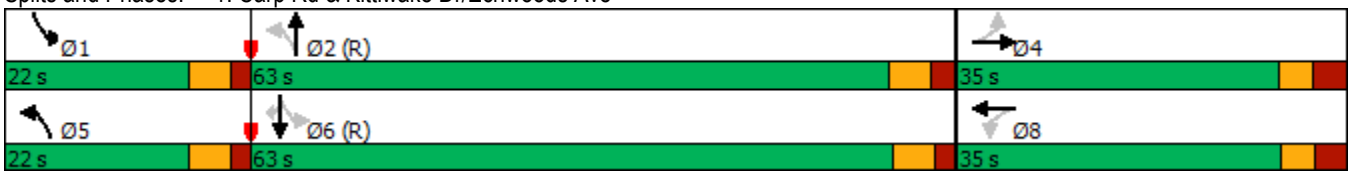
Intersection Summary			
HCM 2000 Control Delay	61.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.9
Intersection Capacity Utilization	94.0%	ICU Level of Service	F
Analysis Period (min)	15		

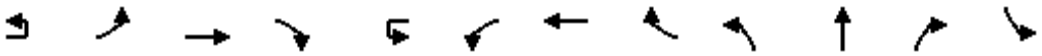
c Critical Lane Group

Phase Number	1	2	4	5	6	8
Movement	SBL	NBTL	EBTL	NBL	SBTL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	22	63	35	22	63	35
Maximum Split (%)	18.3%	52.5%	29.2%	18.3%	52.5%	29.2%
Minimum Split (s)	10.6	30	29.3	10.6	29.7	29
Yellow Time (s)	3.7	3.7	3	3.7	3.7	3
All-Red Time (s)	1.9	2.3	3.3	1.9	2	3
Minimum Initial (s)	5	10	10	5	10	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		17	16		17	16
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	109	11	74	109	11	74
End Time (s)	11	74	109	11	74	109
Yield/Force Off (s)	5.4	68	102.7	5.4	68.3	103
Yield/Force Off 170(s)	5.4	51	86.7	5.4	51.3	87
Local Start Time (s)	98	0	63	98	0	63
Local Yield (s)	114.4	57	91.7	114.4	57.3	92
Local Yield 170(s)	114.4	40	75.7	114.4	40.3	76

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	150
Offset: 11 (9%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 1: Carp Rd & Kittiwake Dr/Echwoods Ave





Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	2	93	269	140	1	48	504	358	133	364	29	370
Future Volume (vph)	2	93	269	140	1	48	504	358	133	364	29	370
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.7	3.6	3.9	3.7	3.7	3.8	3.4	3.9	3.9	3.4	3.7	3.6
Total Lost time (s)		6.6	6.6			6.6	6.6	6.6	6.0	6.1		6.0
Lane Util. Factor		1.00	0.95			1.00	1.00	1.00	1.00	0.95		1.00
Frpb, ped/bikes		1.00	0.99			1.00	1.00	0.97	1.00	1.00		1.00
Flpb, ped/bikes		0.99	1.00			0.99	1.00	1.00	1.00	1.00		1.00
Frt		1.00	0.95			1.00	1.00	0.85	1.00	0.99		1.00
Flt Protected		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		1698	3299			1593	1725	1442	1732	3204		1693
Flt Permitted		0.15	1.00			0.43	1.00	1.00	0.95	1.00		0.95
Satd. Flow (perm)		276	3299			720	1725	1442	1732	3204		1693
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)	2	103	299	156	1	53	560	398	148	404	32	411
RTOR Reduction (vph)	0	0	59	0	0	0	0	243	0	5	0	0
Lane Group Flow (vph)	0	105	396	0	0	54	560	155	148	431	0	411
Confl. Peds. (#/hr)	5	7		4	5	4		7	5		5	5
Heavy Vehicles (%)	5%	0%	1%	0%	0%	9%	2%	6%	2%	3%	4%	1%
Turn Type	Perm	Perm	NA		Perm	Perm	NA	Perm	Prot	NA		Prot
Protected Phases			4				8		5	2		1
Permitted Phases	4	4			8	8		8				
Actuated Green, G (s)		42.8	42.8			42.8	42.8	42.8	15.5	33.9		24.6
Effective Green, g (s)		42.8	42.8			42.8	42.8	42.8	15.5	33.9		24.6
Actuated g/C Ratio		0.36	0.36			0.36	0.36	0.36	0.13	0.28		0.21
Clearance Time (s)		6.6	6.6			6.6	6.6	6.6	6.0	6.1		6.0
Vehicle Extension (s)		3.0	3.0			3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		98	1176			256	615	514	223	905		347
v/s Ratio Prot			0.12				0.32		0.09	0.13		c0.24
v/s Ratio Perm		c0.38				0.07		0.11				
v/c Ratio		1.07	0.34			0.21	0.91	0.30	0.66	0.48		1.18
Uniform Delay, d1		38.6	28.2			26.9	36.8	27.8	49.8	35.7		47.7
Progression Factor		1.00	1.00			1.00	1.00	1.00	1.00	1.00		1.20
Incremental Delay, d2		111.5	0.2			0.4	17.7	0.3	7.2	1.8		85.9
Delay (s)		150.1	28.4			27.3	54.5	28.2	57.0	37.5		143.1
Level of Service		F	C			C	D	C	E	D		F
Approach Delay (s)			51.2				42.7			42.4		
Approach LOS			D				D			D		

Intersection Summary			
HCM 2000 Control Delay	57.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.7
Intersection Capacity Utilization	97.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

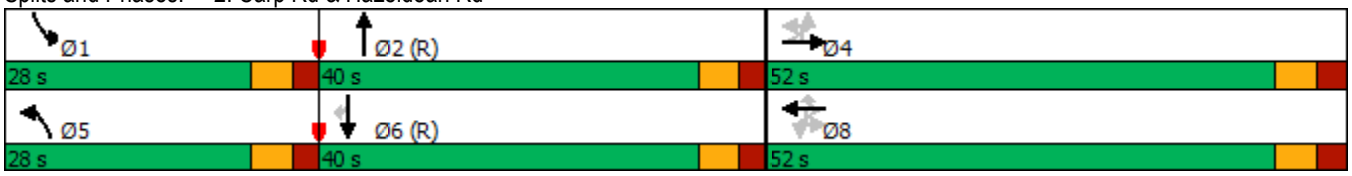
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	496	241
Future Volume (vph)	496	241
Ideal Flow (vphpl)	1800	1800
Lane Width	3.6	3.5
Total Lost time (s)	6.1	6.1
Lane Util. Factor	1.00	1.00
Frpb, ped/bikes	1.00	0.97
Flpb, ped/bikes	1.00	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	1765	1465
Flt Permitted	1.00	1.00
Satd. Flow (perm)	1765	1465
Peak-hour factor, PHF	0.90	0.90
Adj. Flow (vph)	551	268
RTOR Reduction (vph)	0	141
Lane Group Flow (vph)	551	127
Confl. Peds. (#/hr)		5
Heavy Vehicles (%)	2%	0%
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Actuated Green, G (s)	43.0	43.0
Effective Green, g (s)	43.0	43.0
Actuated g/C Ratio	0.36	0.36
Clearance Time (s)	6.1	6.1
Vehicle Extension (s)	3.0	3.0
Lane Grp Cap (vph)	632	524
v/s Ratio Prot	c0.31	
v/s Ratio Perm		0.09
v/c Ratio	0.87	0.24
Uniform Delay, d1	35.9	27.1
Progression Factor	1.12	2.02
Incremental Delay, d2	1.7	0.1
Delay (s)	42.0	54.8
Level of Service	D	D
Approach Delay (s)	78.6	
Approach LOS	E	

Intersection Summary

Phase Number	1	2	4	5	6	8
Movement	SBL	NBT	EBTL	NBL	SBT	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	28	40	52	28	40	52
Maximum Split (%)	23.3%	33.3%	43.3%	23.3%	33.3%	43.3%
Minimum Split (s)	11	31.1	37.6	11	31.1	37.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.3	2.4	2.9	2.3	2.4	2.9
Minimum Initial (s)	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		18	24		18	24
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	100	8	48	100	8	48
End Time (s)	8	48	100	8	48	100
Yield/Force Off (s)	2	41.9	93.4	2	41.9	93.4
Yield/Force Off 170(s)	2	23.9	69.4	2	23.9	69.4
Local Start Time (s)	92	0	40	92	0	40
Local Yield (s)	114	33.9	85.4	114	33.9	85.4
Local Yield 170(s)	114	15.9	61.4	114	15.9	61.4

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	110
Offset: 8 (7%), Referenced to phase 2:NBT and 6:SBT, Start of Green	

Splits and Phases: 2: Carp Rd & Hazeldean Rd



Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	73	114	435	216	127	84	307	445	111	73	489
Future Volume (vph)	1	73	114	435	216	127	84	307	445	111	73	489
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.7	3.5	3.2	3.9	3.6	3.6	3.7	3.5	3.6	3.7	3.1	3.5
Total Lost time (s)		5.1	5.1	5.1	5.1	5.1		5.5	5.5		5.5	5.5
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frpb, ped/bikes		1.00	1.00	0.96	1.00	0.98		1.00	0.99		1.00	1.00
Flpb, ped/bikes		0.94	1.00	1.00	0.99	1.00		1.00	1.00		1.00	1.00
Frt		1.00	1.00	0.85	1.00	0.94		1.00	0.97		1.00	1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)		1591	1720	1481	1700	1624		1595	1714		1614	1728
Flt Permitted		0.61	1.00	1.00	0.51	1.00		0.12	1.00		0.19	1.00
Satd. Flow (perm)		1026	1720	1481	918	1624		210	1714		322	1728
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)	1	81	127	483	240	141	93	341	494	123	81	543
RTOR Reduction (vph)	0	0	0	266	0	29	0	0	9	0	0	0
Lane Group Flow (vph)	0	82	127	217	240	205	0	341	608	0	81	543
Confl. Peds. (#/hr)	23	19		8	8		19	23		11	11	
Confl. Bikes (#/hr)							2			3		
Heavy Vehicles (%)	0%	0%	0%	3%	0%	1%	3%	6%	1%	1%	0%	3%
Turn Type	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA
Protected Phases			4		3	8		5	2		1	6
Permitted Phases	4	4		4	8			2			6	
Actuated Green, G (s)		17.7	17.7	17.7	32.7	32.7		46.7	34.9		32.8	26.5
Effective Green, g (s)		17.7	17.7	17.7	32.7	32.7		46.7	34.9		32.8	26.5
Actuated g/C Ratio		0.20	0.20	0.20	0.36	0.36		0.52	0.39		0.36	0.29
Clearance Time (s)		5.1	5.1	5.1	5.1	5.1		5.5	5.5		5.5	5.5
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)		201	338	291	419	590		335	664		207	508
v/s Ratio Prot			0.07		c0.06	0.13		c0.17	0.35		0.03	0.31
v/s Ratio Perm		0.08		c0.15	0.14			c0.36			0.11	
v/c Ratio		0.41	0.38	0.75	0.57	0.35		1.02	0.92		0.39	1.07
Uniform Delay, d1		31.6	31.4	34.0	21.4	20.9		25.9	26.2		20.5	31.8
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.4	0.7	10.0	1.9	0.4		53.8	19.5		1.2	59.6
Delay (s)		32.9	32.1	44.0	23.3	21.2		79.7	45.7		21.7	91.4
Level of Service		C	C	D	C	C		E	D		C	F
Approach Delay (s)			40.5			22.3			57.8			77.7
Approach LOS			D			C			E			E

Intersection Summary			
HCM 2000 Control Delay	52.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	21.2
Intersection Capacity Utilization	87.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

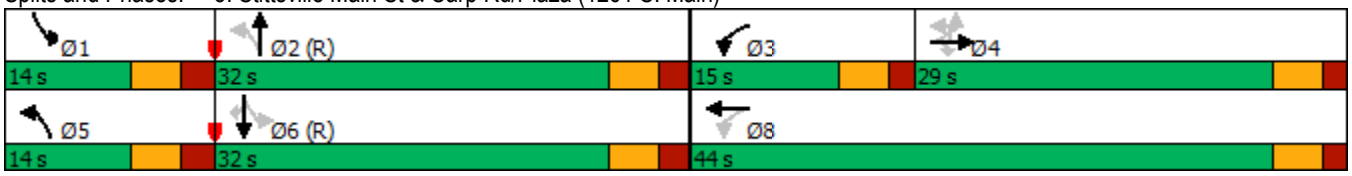
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	47
Future Volume (vph)	47
Ideal Flow (vphpl)	1800
Lane Width	3.5
Total Lost time (s)	5.5
Lane Util. Factor	1.00
Frpb, ped/bikes	0.94
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1419
Flt Permitted	1.00
Satd. Flow (perm)	1419
Peak-hour factor, PHF	0.90
Adj. Flow (vph)	52
RTOR Reduction (vph)	37
Lane Group Flow (vph)	15
Confl. Peds. (#/hr)	23
Confl. Bikes (#/hr)	
Heavy Vehicles (%)	0%
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	26.5
Effective Green, g (s)	26.5
Actuated g/C Ratio	0.29
Clearance Time (s)	5.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	417
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.04
Uniform Delay, d1	22.6
Progression Factor	1.00
Incremental Delay, d2	0.2
Delay (s)	22.8
Level of Service	C
Approach Delay (s)	
Approach LOS	

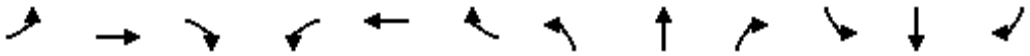
Intersection Summary

Phase Number	1	2	3	4	5	6	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize							
Recall Mode	None	C-Max	None	None	None	C-Max	None
Maximum Split (s)	14	32	15	29	14	32	44
Maximum Split (%)	15.6%	35.6%	16.7%	32.2%	15.6%	35.6%	48.9%
Minimum Split (s)	10.5	29.5	10.1	28.1	10.5	29.5	28.1
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.2	2.2	1.8	1.8	2.2	2.2	1.8
Minimum Initial (s)	5	10	5	10	5	10	10
Vehicle Extension (s)	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0
Walk Time (s)		7		7		7	7
Flash Dont Walk (s)		17		16		17	16
Dual Entry	No	Yes	No	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	78	2	34	49	78	2	34
End Time (s)	2	34	49	78	2	34	78
Yield/Force Off (s)	86.5	28.5	43.9	72.9	86.5	28.5	72.9
Yield/Force Off 170(s)	86.5	11.5	43.9	56.9	86.5	11.5	56.9
Local Start Time (s)	76	0	32	47	76	0	32
Local Yield (s)	84.5	26.5	41.9	70.9	84.5	26.5	70.9
Local Yield 170(s)	84.5	9.5	41.9	54.9	84.5	9.5	54.9

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	90
Offset: 2 (2%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 3: Stittsville Main St & Carp Rd/Plaza (1261 S. Main)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	45	33	5	28	5	21	5	34	34	5	21
Future Volume (Veh/h)	33	45	33	5	28	5	21	5	34	34	5	21
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	37	50	37	6	31	6	23	6	38	38	6	23
Pedestrians		5			5			5			5	
Lane Width (m)		4.8			4.8			4.8			4.8	
Walking Speed (m/s)		1.0			1.0			1.0			1.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		322										
pX, platoon unblocked												
vC, conflicting volume	42			92			224	202	78	240	217	44
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	42			92			224	202	78	240	217	44
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			97	99	96	94	99	98
cM capacity (veh/h)	1557			1493			678	666	969	652	653	1012

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	124	43	67	67
Volume Left	37	6	23	38
Volume Right	37	6	38	23
cSH	1557	1493	816	743
Volume to Capacity	0.02	0.00	0.08	0.09
Queue Length 95th (m)	0.5	0.1	1.9	2.1
Control Delay (s)	2.3	1.1	9.8	10.3
Lane LOS	A	A	A	B
Approach Delay (s)	2.3	1.1	9.8	10.3
Approach LOS			A	B

Intersection Summary				
Average Delay	5.6			
Intersection Capacity Utilization	26.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Appendix E – Collision Details Report

City Operations - Transportation Services

Collision Details Report - Public Version

From: January 1, 2014 **To:** December 31, 2018

Location: CARP RD @ ECHOWOODS AVE/KITTIWAKE DR

Traffic Control: Traffic signal

Total Collisions: 10

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2014-Aug-14, Thu,17:04	Rain	Rear end	P.D. only	Wet	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Pick-up truck	Other motor vehicle	
2015-Jan-15, Thu,14:46	Clear	Rear end	P.D. only	Wet	North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Going ahead	Pick-up truck	Other motor vehicle	
2016-Sep-01, Thu,16:45	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2016-May-06, Fri,15:59	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Jul-11, Mon,12:07	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	
					North	Stopped	Pick-up truck	Other motor vehicle	

2016-Dec-08, Thu,19:56	Snow	Approaching	P.D. only	Packed snow	North	Going ahead	Automobile, station wagon	Skidding/sliding	
					South	Turning left	Automobile, station wagon	Other	
2017-Jul-18, Tue,15:44	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Intercity bus	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jan-24, Wed,15:30	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jan-17, Wed,07:41	Clear	Sideswipe	P.D. only	Slush	West	Turning right	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Sep-14, Fri,11:29	Clear	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Slowing or stopping	Delivery van	Other motor vehicle	

Location: CARP RD @ HAZELDEAN RD

Traffic Control: Traffic signal **Total Collisions:** 77

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2014-Jan-04, Sat,14:55	Clear	Rear end	P.D. only	Wet	West	Turning right	Automobile, station wagon	Other motor vehicle	

					West	Turning right	Automobile, station wagon	Other motor vehicle
2014-Jan-29, Wed,08:10	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Pick-up truck	Other motor vehicle
2014-Feb-10, Mon,17:09	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Pick-up truck	Other motor vehicle
2014-Feb-27, Thu,17:58	Snow	Turning movement	P.D. only	Loose snow	North	Turning left	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2014-May-24, Sat,13:15	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle
					West	Turning right	Pick-up truck	Other motor vehicle
2014-May-27, Tue,11:15	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle
					West	Turning right	Automobile, station wagon	Other motor vehicle
2014-Jun-05, Thu,09:09	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Stopped	Pick-up truck	Other motor vehicle
2014-Jun-26, Thu,17:12	Clear	Rear end	P.D. only	Dry	West	Changing lanes	Pick-up truck	Other motor vehicle

					West	Stopped	Automobile, station wagon	Other motor vehicle
					West	Stopped	Pick-up truck	Other motor vehicle
2014-Jul-24, Thu,12:23	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Truck and trailer	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Aug-04, Mon,16:00	Rain	Rear end	P.D. only	Wet	West	Going ahead	Pick-up truck	Other motor vehicle
					West	Stopped	Automobile, station wagon	Other motor vehicle
2014-Jul-20, Sun,08:33	Rain	SMV other	P.D. only	Wet	West	Slowing or stopping	Automobile, station wagon	Curb
2014-Aug-07, Thu,08:46	Clear	Rear end	Non-fatal injury	Dry	East	Going ahead	Pick-up truck	Other motor vehicle
					East	Stopped	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Passenger van	Other motor vehicle
2014-Aug-21, Thu,18:15	Rain	Rear end	P.D. only	Wet	West	Going ahead	Pick-up truck	Other motor vehicle
					West	Going ahead	Pick-up truck	Other motor vehicle
2014-Sep-21, Sun,11:58	Rain	Rear end	P.D. only	Wet	North	Turning left	Pick-up truck	Skidding/sliding
					North	Turning left	Pick-up truck	Other motor vehicle

2014-Dec-05, Fri,08:42	Clear	Rear end	P.D. only	Dry	West	Turning right	Pick-up truck	Other motor vehicle
					West	Turning right	School bus	Other motor vehicle
2014-Sep-10, Wed,14:18	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Oct-04, Sat,09:44	Rain	Turning movement	P.D. only	Wet	East	Turning left	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Dec-24, Wed,12:40	Rain	Turning movement	P.D. only	Wet	East	Making "U" turn	Unknown	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Apr-01, Wed,11:08	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Stopped	Automobile, station wagon	Other motor vehicle
2015-Feb-11, Wed,08:18	Clear	Rear end	Non-fatal injury	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					East	Stopped	Automobile, station wagon	Other motor vehicle
					East	Stopped	Passenger van	Other motor vehicle
2015-Feb-25, Wed,07:30	Snow	Rear end	P.D. only	Loose snow	South	Going ahead	Truck - closed	Other motor vehicle
					South	Stopped	Automobile, station wagon	Other motor vehicle

2015-Feb-17, Tue,10:35	Clear	Rear end	P.D. only	Dry	West	Turning right	Pick-up truck	Other motor vehicle
					West	Turning right	Automobile, station wagon	Other motor vehicle
2015-Aug-29, Sat,18:42	Rain	Turning movement	P.D. only	Wet	North	Turning left	Pick-up truck	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Jun-28, Sun,15:48	Rain	Turning movement	Non-fatal injury	Wet	East	Turning left	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Passenger van	Other motor vehicle
2015-Aug-07, Fri,09:57	Clear	Angle	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Turning right	Automobile, station wagon	Other motor vehicle
2016-Jun-07, Tue,11:51	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Pick-up truck	Other motor vehicle
2015-Nov-11, Wed,20:30	Clear	SMV other	P.D. only	Dry	West	Turning right	Automobile, station wagon	Pole (sign, parking meter)
2016-Feb-24, Wed,14:29	Snow	Angle	P.D. only	Loose snow	South	Slowing or stopping	Automobile, station wagon	Skidding/sliding
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Feb-28, Sun,09:37	Clear	Angle	P.D. only	Wet	South	Going ahead	Unknown	Other motor vehicle

					East	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Feb-29, Mon,09:46	Clear	SMV other	Non-fatal injury	Slush	South	Going ahead	Automobile, station wagon	Pole (utility, power)
2016-Jan-26, Tue,10:55	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle
					West	Turning right	Pick-up truck	Other motor vehicle
2015-Sep-24, Thu,15:33	Clear	Rear end	P.D. only	Dry	West	Turning right	Pick-up truck	Other motor vehicle
					West	Turning right	Automobile, station wagon	Other motor vehicle
2015-Dec-12, Sat,13:53	Clear	Rear end	P.D. only	Dry	West	Turning right	Pick-up truck	Other motor vehicle
					West	Turning right	Automobile, station wagon	Other motor vehicle
2016-Jun-29, Wed,12:07	Clear	Turning movement	P.D. only	Dry	South	Turning left	Pick-up truck	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Aug-23, Tue,12:57	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle
					West	Turning right	Automobile, station wagon	Other motor vehicle
2016-Jul-15, Fri,09:30	Clear	Rear end	P.D. only	Dry	West	Turning right	Pick-up truck	Other motor vehicle
					West	Turning right	Pick-up truck	Other motor vehicle

2016-Nov-10, Thu,07:15	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Turning left	Truck - dump	Other motor vehicle
2016-Oct-08, Sat,12:43	Clear	Rear end	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Turning right	Automobile, station wagon	Other motor vehicle
2016-Sep-29, Thu,13:36	Clear	Rear end	P.D. only	Dry	West	Turning right	Pick-up truck	Other motor vehicle
					West	Turning right	Automobile, station wagon	Other motor vehicle
2017-Jan-02, Mon,10:53	Clear	Rear end	P.D. only	Dry	West	Turning right	Pick-up truck	Other motor vehicle
					West	Turning right	Pick-up truck	Other motor vehicle
2017-Jan-04, Wed,20:00	Freezing Rain	Angle	P.D. only	Ice	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle
2017-Oct-06, Fri,12:27	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Sep-14, Thu,15:41	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Pick-up truck	Other motor vehicle

2017-Sep-06, Wed,17:10	Clear	Rear end	P.D. only	Dry	West	Turning right	Pick-up truck	Other motor vehicle
					West	Turning right	Pick-up truck	Other motor vehicle
2017-Sep-25, Mon,19:40	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Aug-12, Sat,10:23	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle
					West	Turning right	Automobile, station wagon	Other motor vehicle
2017-Jan-25, Wed,19:16	Clear	Turning movement	P.D. only	Wet	South	Turning left	Passenger van	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Jan-28, Sat,09:44	Snow	SMV other	P.D. only	Wet	South	Turning right	Automobile, station wagon	Pole (utility, power)
2016-Dec-05, Mon,08:07	Snow	Turning movement	P.D. only	Loose snow	South	Turning left	Truck - closed	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Mar-24, Fri,08:18	Snow	Turning movement	P.D. only	Loose snow	South	Turning left	School bus	Other motor vehicle
					North	Going ahead	Delivery van	Other motor vehicle
2017-Apr-15, Sat,14:21	Rain	Rear end	P.D. only	Wet	South	Going ahead	Pick-up truck	Other motor vehicle

					South	Stopped	Pick-up truck	Other motor vehicle
					South	Stopped	Pick-up truck	Other motor vehicle
					South	Stopped	Pick-up truck	Other motor vehicle
2017-May-05, Fri,15:49	Rain	Rear end	Non-fatal injury	Wet	North	Slowing or stopping	Pick-up truck	Other motor vehicle
					North	Stopped	Pick-up truck	Other motor vehicle
2017-Mar-06, Mon,12:08	Clear	Rear end	P.D. only	Dry	North	Turning right	Pick-up truck	Other motor vehicle
					North	Turning right	Pick-up truck	Other motor vehicle
2017-May-27, Sat,12:52	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					North	Stopped	Automobile, station wagon	Other motor vehicle
2017-May-19, Fri,16:46	Clear	Turning movement	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Turning left	Passenger van	Other motor vehicle
2017-Jun-30, Fri,12:44	Rain	Turning movement	P.D. only	Wet	South	Turning left	Pick-up truck	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Sep-10, Sun,14:00	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle
					West	Turning right	Automobile, station wagon	Other motor vehicle

2017-Dec-17, Sun,13:39	Clear	Rear end	P.D. only	Wet	West	Turning right	Automobile, station wagon	Other motor vehicle
					West	Turning right	Pick-up truck	Other motor vehicle
2017-Jul-30, Sun,14:17	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Bicycle	Other motor vehicle
					North	Going ahead	Pick-up truck	Cyclist
2017-Aug-04, Fri,13:00	Clear	Angle	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle
					West	Going ahead	Pick-up truck	Other motor vehicle
2017-Nov-26, Sun,19:34	Snow	SMV other	P.D. only	Ice	South	Turning right	Automobile, station wagon	Skidding/sliding
2017-Dec-16, Sat,09:13	Clear	Angle	Non-fatal injury	Ice	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2018-Jan-07, Sun,18:27	Snow	Rear end	Non-reportable	Loose snow	South	Unknown	Automobile, station wagon	Other motor vehicle
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle
2018-Feb-02, Fri,09:15	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle
					South	Stopped	Automobile, station wagon	Other motor vehicle
					South	Stopped	Automobile, station wagon	Other motor vehicle

2018-Mar-14, Wed,22:45	Rain	SMV other	P.D. only	Ice	South	Turning right	Automobile, station wagon	Skidding/sliding
2018-Feb-18, Sun,10:22	Clear	Rear end	P.D. only	Dry	North	Merging	Automobile, station wagon	Other motor vehicle
					North	Merging	Automobile, station wagon	Other motor vehicle
2018-Feb-12, Mon,08:45	Clear	Turning movement	P.D. only	Slush	North	Turning left	Truck - tractor	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2018-May-18, Fri,09:20	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle
					West	Turning right	Automobile, station wagon	Other motor vehicle
2018-May-16, Wed,10:44	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Stopped	Automobile, station wagon	Other motor vehicle
2018-Jul-13, Fri,10:09	Clear	Rear end	P.D. only	Dry	South	Turning left	Truck - dump	Other motor vehicle
					South	Turning left	Automobile, station wagon	Other motor vehicle
2018-Jun-25, Mon,16:09	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle
					West	Turning right	Automobile, station wagon	Other motor vehicle
2018-Nov-21, Wed,17:08	Clear	Rear end	Non-fatal injury	Ice	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle

					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Dec-02, Sun,14:42	Freezing Rain	Rear end	P.D. only	Slush	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Sep-27, Thu,13:55	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Aug-09, Thu,17:30	Rain	Rear end	P.D. only	Wet	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Aug-07, Tue,08:54	Clear	Angle	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Truck - closed	Other	
2018-Nov-01, Thu,17:04	Clear	Angle	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: CARP RD @ STITTSVILLE MAIN ST

Traffic Control: Traffic signal

Total Collisions: 51

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped

2014-Jan-16, Thu,18:40	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Jan-09, Thu,17:25	Clear	Rear end	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle
					East	Turning right	Automobile, station wagon	Other motor vehicle
2014-Feb-06, Thu,14:15	Clear	Rear end	P.D. only	Wet	East	Turning right	Automobile, station wagon	Other motor vehicle
					East	Turning right	Automobile, station wagon	Other motor vehicle
2014-Mar-21, Fri,14:15	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle
					North	Turning left	Pick-up truck	Other motor vehicle
2014-Mar-21, Fri,08:58	Clear	Rear end	Non-fatal injury	Dry	East	Turning right	Pick-up truck	Other motor vehicle
					East	Turning right	Passenger van	Other motor vehicle
2014-Aug-26, Tue,17:15	Clear	Rear end	P.D. only	Dry	East	Turning right	Pick-up truck	Other motor vehicle
					East	Turning right	Automobile, station wagon	Other motor vehicle
2014-Sep-23, Tue,11:55	Clear	Rear end	P.D. only	Dry	East	Turning right	Pick-up truck	Other motor vehicle
					East	Turning right	Delivery van	Other motor vehicle

2014-Oct-06, Mon,14:50	Clear	Rear end	Non-fatal injury	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle
					South	Turning right	Pick-up truck	Other motor vehicle
2014-Dec-04, Thu,13:00	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Stopped	Pick-up truck	Other motor vehicle
2014-Nov-25, Tue,11:14	Clear	Other	P.D. only	Dry	East	Reversing	Pick-up truck	Other motor vehicle
					West	Stopped	Automobile, station wagon	Other motor vehicle
2014-Nov-10, Mon,09:50	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle
					South	Turning right	Automobile, station wagon	Other motor vehicle
2014-Nov-14, Fri,07:41	Clear	Rear end	P.D. only	Dry	East	Turning right	Passenger van	Other motor vehicle
					East	Turning right	Automobile, station wagon	Other motor vehicle
2014-Oct-26, Sun,11:55	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Unknown	Other motor vehicle
2014-Dec-23, Tue,14:42	Rain	Rear end	P.D. only	Wet	East	Turning right	Unknown	Other motor vehicle
					East	Turning right	Automobile, station wagon	Other motor vehicle
					East	Turning right	Pick-up truck	Other motor vehicle

2015-Apr-23, Thu,15:10	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Jun-25, Thu,14:42	Clear	Rear end	P.D. only	Dry	East	Turning right	Pick-up truck	Other motor vehicle
					East	Turning right	Pick-up truck	Other motor vehicle
2015-Mar-01, Sun,11:41	Clear	Angle	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle
					North	Going ahead	Pick-up truck	Other motor vehicle
2015-Feb-25, Wed,15:35	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle
					South	Stopped	Pick-up truck	Other motor vehicle
2015-Jun-15, Mon,09:49	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle
					North	Stopped	Pick-up truck	Other motor vehicle
2016-Feb-20, Sat,08:50	Rain	Rear end	P.D. only	Wet	South	Turning right	Passenger van	Other motor vehicle
					South	Turning right	Pick-up truck	Other motor vehicle
2016-Jun-19, Sun,13:00	Clear	Rear end	Non-fatal injury	Dry	East	Slowing or stopping	Passenger van	Other motor vehicle
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle

2015-Oct-18, Sun,12:33	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					North	Stopped	Ambulance	Other motor vehicle
2016-Apr-12, Tue,13:00	Clear	Rear end	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle
					East	Turning right	Pick-up truck	Other motor vehicle
2015-Dec-28, Mon,09:50	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Oct-17, Mon,09:18	Clear	Rear end	P.D. only	Dry	South	Turning right	Pick-up truck	Other motor vehicle
					South	Turning right	Automobile, station wagon	Other motor vehicle
2016-Nov-16, Wed,09:23	Rain	Turning movement	P.D. only	Wet	North	Turning left	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Pick-up truck	Other motor vehicle
2016-Dec-30, Fri,20:12	Clear	Rear end	P.D. only	Loose snow	South	Going ahead	Pick-up truck	Other motor vehicle
					South	Stopped	Automobile, station wagon	Other motor vehicle
2017-Mar-08, Wed,17:58	Clear	Rear end	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle
					East	Turning right	Pick-up truck	Other motor vehicle

2017-Feb-27, Mon,13:50	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Pick-up truck	Other motor vehicle
2017-Apr-28, Fri,18:45	Clear	Rear end	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle
					East	Turning right	Pick-up truck	Other motor vehicle
2017-Apr-07, Fri,15:46	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle
					West	Turning right	Automobile, station wagon	Other motor vehicle
2017-Jun-30, Fri,18:49	Clear	Rear end	P.D. only	Dry	East	Turning right	Pick-up truck	Other motor vehicle
					East	Turning right	Automobile, station wagon	Other motor vehicle
2017-Jul-07, Fri,11:37	Clear	Turning movement	P.D. only	Dry	North	Turning left	Truck and trailer	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Dec-12, Tue,08:33	Snow	Turning movement	P.D. only	Loose snow	East	Turning left	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Jul-23, Sun,09:51	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Stopped	Automobile, station wagon	Other motor vehicle

2017-Nov-18, Sat,15:52	Rain	Rear end	P.D. only	Wet	East	Turning right	Automobile, station wagon	Other motor vehicle	
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Sep-14, Thu,19:30	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Nov-16, Thu,06:55	Rain	SMV other	Non-fatal injury	Wet	North	Turning left	Automobile, station wagon	Pedestrian	1
2017-Dec-21, Thu,18:30	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Sep-11, Mon,19:17	Clear	Turning movement	P.D. only	Dry	West	Turning left	Unknown	Other motor vehicle	
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Oct-17, Tue,13:00	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Apr-07, Sat,13:49	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	
					North	Unknown	Unknown	Other motor vehicle	
2018-Apr-28, Sat,12:07	Clear	Rear end	Non-fatal injury	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	

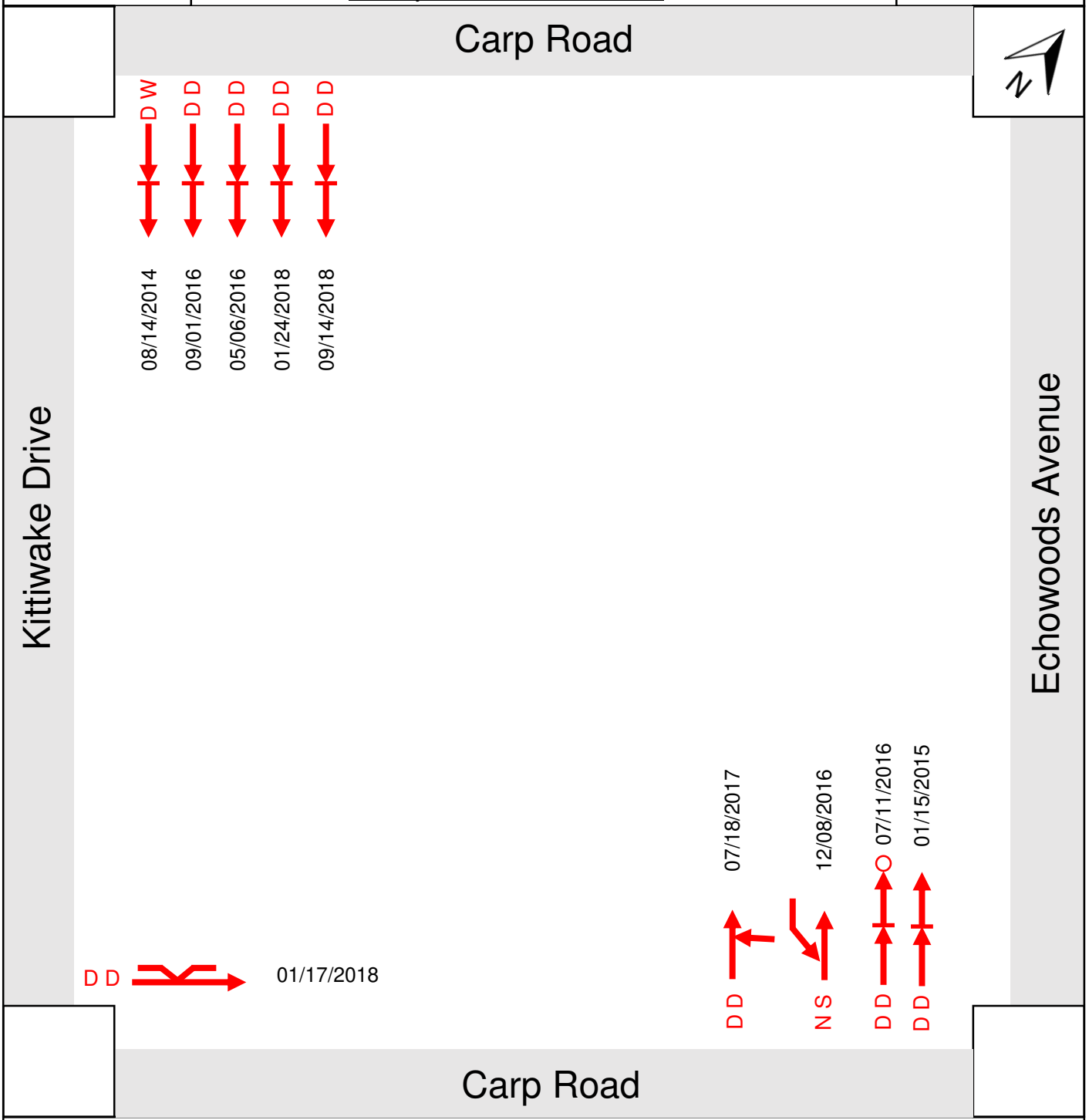
					East	Turning right	Automobile, station wagon	Other motor vehicle
2018-Feb-05, Mon,09:55	Rain	Rear end	P.D. only	Wet	South	Merging	Police vehicle	Other motor vehicle
					South	Merging	Automobile, station wagon	Other motor vehicle
2018-Jun-26, Tue,21:05	Clear	Rear end	P.D. only	Dry	East	Turning right	Passenger van	Other motor vehicle
					East	Turning right	Automobile, station wagon	Other motor vehicle
2018-Oct-23, Tue,16:49	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2018-Nov-02, Fri,07:00	Rain	Turning movement	P.D. only	Wet	North	Turning left	Pick-up truck	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2018-Sep-18, Tue,17:30	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Stopped	Automobile, station wagon	Other motor vehicle
					South	Stopped	Pick-up truck	Other motor vehicle
2018-Sep-18, Tue,12:23	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle

2018-Sep-21, Fri,22:00	Clear	Rear end	P.D. only	Wet	South	Stopped	Automobile, station wagon	Other motor vehicle
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle
2018-Aug-06, Mon,17:24	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Turning right	Automobile, station wagon	Other motor vehicle

COLLISION DIAGRAM

LOCATION: Carp Road & Kittiwake Drive / Echowoods Avenue
CITY: Ottawa, ON
PERIOD: January 2014 to December 2018

DATE: June 26, 2020
PREPARED BY: M.C.



LEGEND

- Vehicle Path
- Pedestrian Path
- Fixed Object
- Personal Injury
- Fatality
- Rear-end Collision
- Head-on Collision
- Side Swipe
- Out Of Control
- Right-turning Vehicle
- Left-turning Vehicle

Conditions

D W

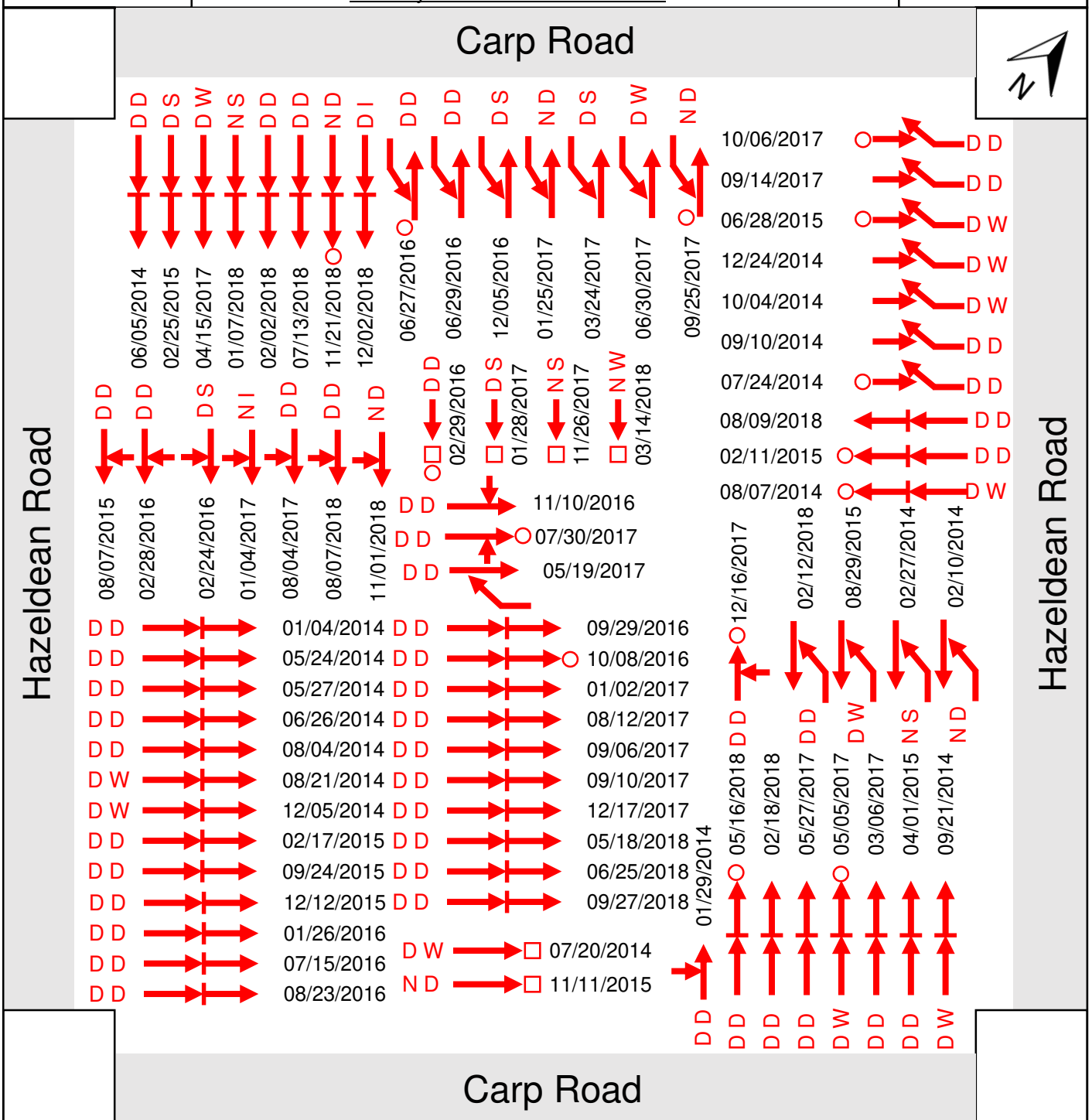
Time of Day
D – Daytime
N – Nighttime

Roadway
D – Dry
I – Icy
W – Wet
S – Snow

COLLISION DIAGRAM

LOCATION: Carp Road & Hazeldean Road
CITY: Ottawa, ON
PERIOD: January 2014 to December 2018

DATE: June 26, 2020
PREPARED BY: M.C.



LEGEND

- Vehicle Path
- Pedestrian Path
- Fixed Object
- Personal Injury
- Fatality

- Rear-end Collision
- Head-on Collision
- Side Swipe
- Out Of Control
- Right-turning Vehicle
- Left-turning Vehicle

Conditions

D W

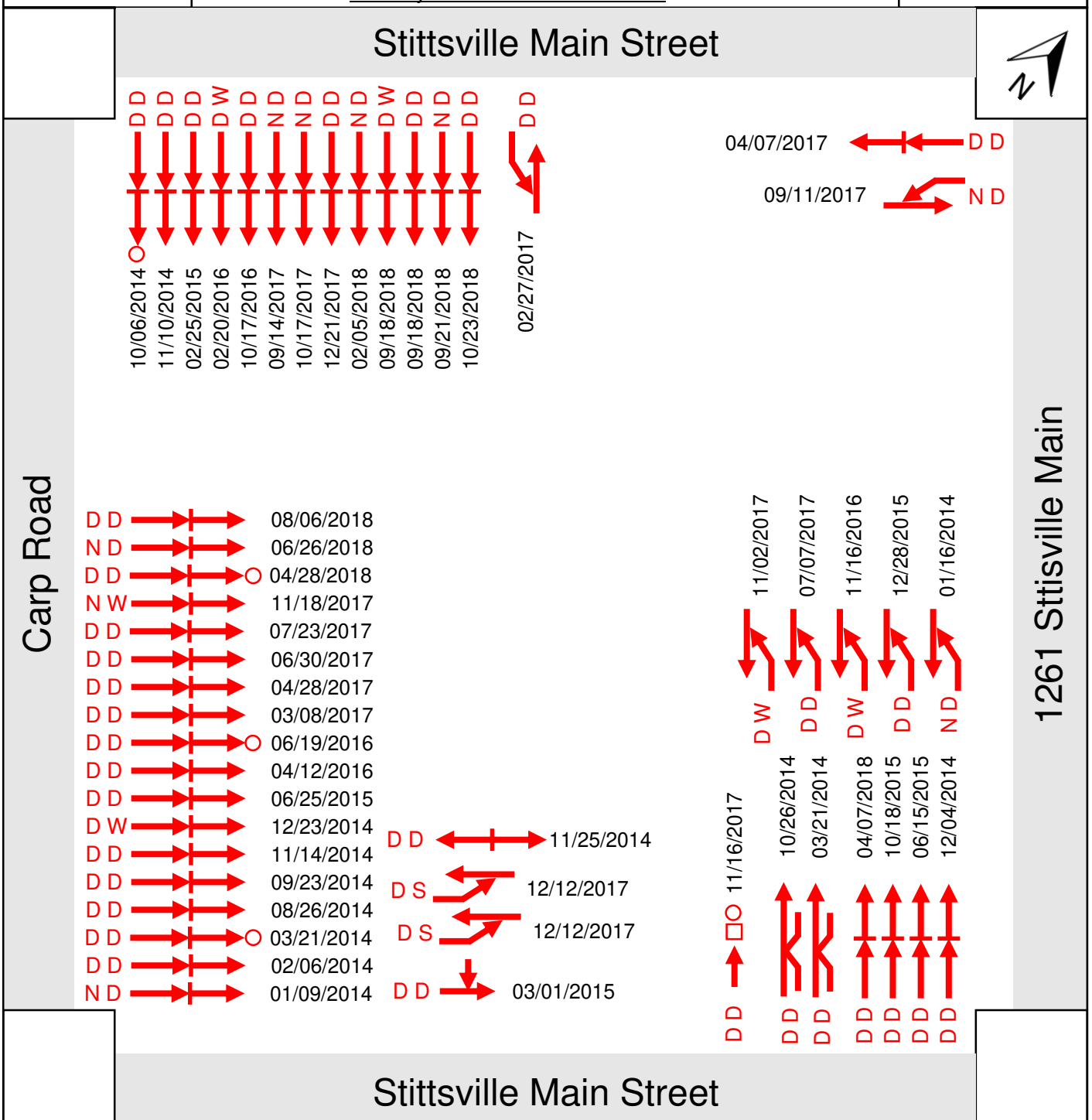
Time of Day
D – Daytime
N – Nighttime

Roadway
D – Dry
I – Icy
W – Wet
S – Snow

COLLISION DIAGRAM

LOCATION: Carp Road & Stittsville Main Street
CITY: Ottawa, ON
PERIOD: January 2014 to December 2018

DATE: June 26, 2020
PREPARED BY: M.C.



LEGEND

- Vehicle Path
- Pedestrian Path
- Fixed Object
- Personal Injury
- Fatality

- Rear-end Collision
- Head-on Collision
- Side Swipe
- Out Of Control
- Right-turning Vehicle
- Left-turning Vehicle

Conditions: D W

Time of Day: D – Daytime; N – Nighttime

Roadway: D – Dry; I – Icy; W – Wet; S – Snow

Appendix F – Ottawa 2011 O-D Survey, Kanata-Stittsville

Kanata - Stittsville

Demographic Characteristics

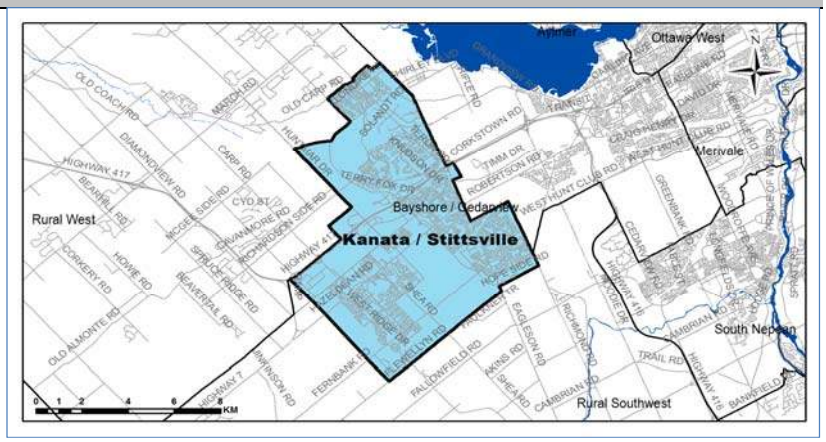
Population	105,210	Actively Travelled	83,460
Employed Population	49,640	Number of Vehicles	64,540
Households	38,010	Area (km^2)	82.6

Occupation

Status (age 5+)	Male	Female	Total
Full Time Employed	24,670	19,590	44,260
Part Time Employed	1,540	3,840	5,380
Student	13,630	13,410	27,040
Retiree	6,480	8,350	14,820
Unemployed	850	940	1,790
Homemaker	160	3,310	3,470
Other	350	1,010	1,360
Total:	47,690	50,440	98,120

Traveller Characteristics	Male	Female	Total
Transit Pass Holders	5,940	6,920	12,860
Licensed Drivers	36,280	36,790	73,070
Telecommuters	200	380	580
Trips made by residents	135,300	143,330	278,630

Selected Indicators	
Daily Trips per Person (age 5+)	2.84
Vehicles per Person	0.61
Number of Persons per Household	2.77
Daily Trips per Household	7.33
Vehicles per Household	1.70
Workers per Household	1.31
Population Density (Pop/km2)	1270

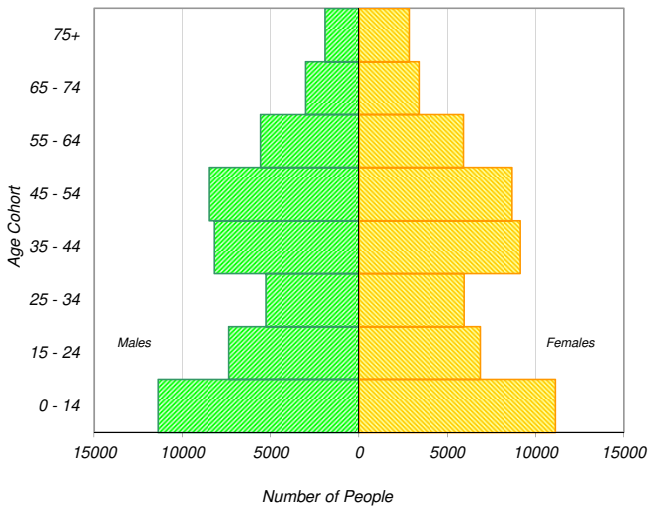


Household Size		
1 person	5,810	15%
2 persons	11,660	31%
3 persons	7,490	20%
4 persons	8,890	23%
5+ persons	4,160	11%
Total:	38,010	100%

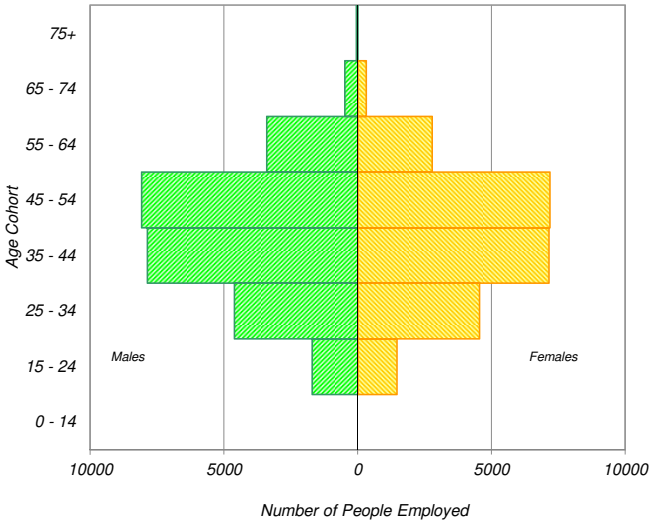
Households by Vehicle Availability		
0 vehicles	1,050	3%
1 vehicle	14,090	37%
2 vehicles	19,110	50%
3 vehicles	3,000	8%
4+ vehicles	770	2%
Total:	38,010	100%

Households by Dwelling Type		
Single-detached	21,610	57%
Semi-detached	3,890	10%
Townhouse	10,550	28%
Apartment/Condo	1,960	5%
Total:	38,010	100%

Population



Employed Population

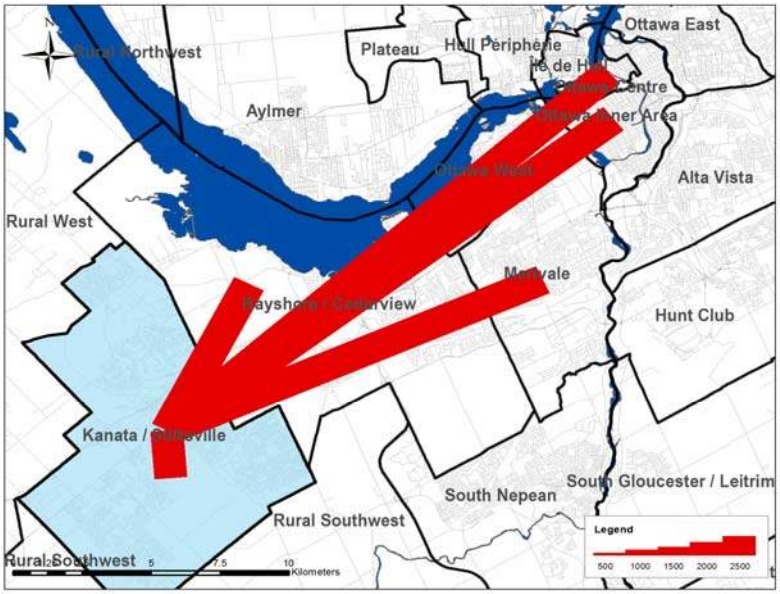


* In 2005 data was only collected for household members aged 11+ therefore these results cannot be compared to the 2011 data.

Travel Patterns

Top Five Destinations of Trips from Kanata - Stittsville

AM Peak Period



Summary of Trips to and from Kanata - Stittsville

AM Peak Period (6:30 - 8:59)	Destinations of Trips From District	% Total	Origins of Trips To District	% Total
Ottawa Centre	4,560	8%	140	0%
Ottawa Inner Area	3,350	6%	970	2%
Ottawa East	660	1%	260	1%
Beacon Hill	280	0%	170	0%
Alta Vista	1,810	3%	660	1%
Hunt Club	490	1%	420	1%
Merivale	3,410	6%	1,200	3%
Ottawa West	2,020	4%	840	2%
Bayshore / Cedarview	5,010	9%	2,420	5%
Orléans	290	1%	500	1%
Rural East	100	0%	30	0%
Rural Southeast	50	0%	260	1%
South Gloucester / Leitrim	60	0%	140	0%
South Nepean	690	1%	1,800	4%
Rural Southwest	1,130	2%	1,850	4%
Kanata / Stittsvile	30,360	54%	30,360	66%
Rural West	1,050	2%	3,250	7%
Île de Hull	670	1%	30	0%
Hull Périphérie	160	0%	30	0%
Plateau	100	0%	230	0%
Aylmer	0	0%	190	0%
Rural Northwest	20	0%	60	0%
Pointe Gatineau	20	0%	80	0%
Gatineau Est	0	0%	60	0%
Rural Northeast	30	0%	50	0%
Buckingham / Masson-Angers	30	0%	10	0%
Ontario Sub-Total:	55,320	98%	45,270	98%
Québec Sub-Total:	1,030	2%	740	2%
Total:	56,350	100%	46,010	100%

Trips by Trip Purpose

24 Hours	From District		To District		Within District	
Work or related	27,180	29%	17,020	18%	14,550	9%
School	7,070	7%	2,500	3%	15,110	9%
Shopping	6,070	6%	9,150	10%	22,480	14%
Leisure	8,450	9%	10,590	11%	17,090	11%
Medical	2,520	3%	1,170	1%	2,660	2%
Pick-up / drive passenger	6,570	7%	5,470	6%	15,190	9%
Return Home	33,610	35%	45,620	48%	65,770	41%
Other	3,560	4%	3,590	4%	8,440	5%
Total:	95,030	100%	95,110	100%	161,290	100%

AM Peak (06:30 - 08:59)	From District		To District		Within District	
Work or related	18,030	69%	11,020	70%	7,430	24%
School	4,890	19%	2,280	15%	11,740	39%
Shopping	170	1%	320	2%	760	3%
Leisure	340	1%	400	3%	780	3%
Medical	330	1%	230	1%	350	1%
Pick-up / drive passenger	1,260	5%	580	4%	4,760	16%
Return Home	290	1%	380	2%	1,980	7%
Other	670	3%	430	3%	2,560	8%
Total:	25,980	100%	15,640	100%	30,360	100%

PM Peak (15:30 - 17:59)	From District		To District		Within District	
Work or related	390	2%	350	1%	930	2%
School	370	2%	0	0%	90	0%
Shopping	1,030	5%	1,910	7%	5,100	14%
Leisure	2,140	11%	3,080	11%	4,130	11%
Medical	230	1%	180	1%	400	1%
Pick-up / drive passenger	1,980	10%	1,980	7%	3,410	9%
Return Home	12,130	64%	20,550	71%	21,560	58%
Other	680	4%	860	3%	1,850	5%
Total:	18,950	100%	28,910	100%	37,470	100%

Peak Period (%)	Total:	% of 24 Hours	Within District (%)
24 Hours	351,430		46%
AM Peak Period	71,980	20%	42%
PM Peak Period	85,330	24%	44%

Trips by Primary Travel Mode

24 Hours	From District		To District		Within District	
Auto Driver	63,470	67%	63,830	67%	92,190	57%
Auto Passenger	15,220	16%	14,920	16%	31,880	20%
Transit	12,200	13%	12,270	13%	4,050	3%
Bicycle	360	0%	410	0%	960	1%
Walk	40	0%	50	0%	21,080	13%
Other	3,730	4%	3,660	4%	11,130	7%
Total:	95,020	100%	95,140	100%	161,290	100%

AM Peak (06:30 - 08:59)	From District		To District		Within District	
Auto Driver	15,360	59%	11,530	74%	13,630	45%
Auto Passenger	2,450	9%	1,160	7%	5,050	17%
Transit	6,230	24%	1,290	8%	1,210	4%
Bicycle	30	0%	80	1%	220	1%
Walk	0	0%	40	0%	5,730	19%
Other	1,900	7%	1,560	10%	4,510	15%
Total:	25,970	100%	15,660	100%	30,350	100%

PM Peak (15:30 - 17:59)	From District		To District		Within District	
Auto Driver	13,850	73%	17,660	61%	21,240	57%
Auto Passenger	3,240	17%	4,270	15%	8,570	23%
Transit	1,270	7%	5,980	21%	670	2%
Bicycle	40	0%	100	0%	260	1%
Walk	40	0%	0	0%	4,570	12%
Other	520	3%	910	3%	2,160	6%
Total:	18,960	100%	28,920	100%	37,470	100%

Avg Vehicle Occupancy	From District	To District	Within District
24 Hours	1.24	1.23	1.35
AM Peak Period	1.16	1.10	1.37
PM Peak Period	1.23	1.24	1.40

Transit Modal Split	From District	To District	Within District
24 Hours	13%	13%	3%
AM Peak Period	26%	9%	6%
PM Peak Period	7%	21%	2%

2011 ORIGIN-DESTINATION SURVEY IN THE NATIONAL CAPITAL REGION
PERSON TRIPS BY TRANS DISTRICTS

TRIP PURPOSES: ALL
MODES: AUTO DRIVER
TIME PERIOD: AM Peak Period (06:30 to 08:59)

Origin \ Destination	Ottawa Centre	Ottawa Inner Area	Ottawa East	Beacon Hill	Alta Vista	Hunt Club	Merivale	Ottawa West
001 - Ottawa Centre	400	300	300	100	400	200	300	200
050 - Ottawa Inner Area	1,600	3,500	800	600	2,300	700	1,400	700
100 - Ottawa East	900	1,100	2,400	900	1,400	400	900	300
120 - Beacon Hill	800	500	1,200	1,600	1,400	100	400	300
140 - Alta Vista	1,200	1,900	1,000	1,100	6,300	1,300	1,700	600
180 - Hunt Club	1,100	1,100	600	200	3,300	3,700	1,400	300
200 - Merivale	2,000	1,800	600	300	2,200	800	6,000	2,100
240 - Ottawa West	900	1,100	100	100	800	300	1,700	2,700
260 - Bayshore / Cedarview	1,000	1,200	200	300	1,600	200	2,500	1,900
300 - Orléans	2,000	1,700	1,900	2,500	4,200	800	1,200	1,000
350 - Rural East	300	100	100	300	400	100	200	100
360 - Rural Southeast	400	500	100	200	1,200	800	800	100
400 - South Gloucester / Leitrim	400	300	200	200	1,200	600	600	200
425 - South Nepean	1,100	1,100	500	300	1,700	800	2,900	900
450 - Rural Southwest	300	500	100	100	600	200	800	300
500 - Kanata / Stittsville	1,600	1,400	400	200	1,200	500	2,600	1,200
560 - Rural West	200	100	100	100	100	100	700	100
600 - Île de Hull	200	200	200	100	200	-	-	100
625 - Hull Périphérie	700	700	400	200	300	-	200	200
650 - Plateau	500	400	100	100	400	100	200	400
700 - Aylmer	800	600	200	100	400	200	400	600
750 - Rural Northwest	400	200	100	100	300	100	200	200
800 - Pointe Gatineau	600	600	300	400	600	100	300	300
820 - Gatineau Est	500	400	200	200	200	100	200	200
840 - Rural Northeast	300	400	100	-	300	-	-	100
845 - Buckingham / Masson-Angers	-	200	100	100	100	-	-	100
900 - External	-	-	-	-	-	-	-	-
Total	20,200	21,800	12,500	10,600	33,100	12,100	27,500	15,400

Bayshore / Cedarview	Orléans	Rural East	Rural Southeast	South Gloucester / Leitrim	South Nepean	Rural Southwest	Kanata / Stittsville	Rural West	Île de Hull	Hull Périphérie
200	100	-	-	-	-	-	100	-	100	200
500	400	-	-	200	300	200	600	-	500	300
200	300	-	-	-	100	-	200	100	400	300
200	500	-	-	-	-	-	100	-	200	200
700	800	-	100	100	400	100	500	-	400	300
400	300	-	100	300	300	100	300	100	200	100
1,800	300	-	-	300	500	100	900	100	300	100
1,300	200	-	100	-	100	100	700	100	200	100
5,100	200	-	-	100	500	200	1,900	400	200	100
900	11,400	400	100	100	100	100	400	100	900	400
-	800	400	-	-	-	-	-	-	-	-
200	200	100	1,500	300	400	100	300	-	100	-
100	-	-	100	1,500	200	100	100	-	100	-
2,200	100	-	200	100	5,800	500	1,700	-	300	100
700	-	-	100	200	600	1,600	1,000	-	100	100
3,600	200	-	-	100	600	500	13,600	600	300	100
500	-	-	-	100	-	100	2,100	1,700	-	-
-	100	-	-	-	-	-	-	-	600	400
300	100	-	-	-	-	-	-	-	1,300	4,900
100	100	-	-	-	-	-	200	-	700	2,000
400	100	-	-	-	-	-	200	100	1,100	1,400
100	-	-	-	-	-	-	100	-	400	900
100	100	-	-	-	-	-	100	-	1,100	3,000
100	100	-	-	-	-	-	100	-	800	1,500
100	-	-	100	-	-	-	-	-	600	1,400
-	-	-	-	-	-	-	-	-	200	700
100	-	-	-	-	-	-	-	100	-	-
19,800	16,600	1,300	2,700	3,600	10,200	3,900	25,200	3,300	11,100	18,800

Plateau	Aylmer	Rural Northwest	Pointe Gatineau	Gatineau Est	Rural Northeast	Buckingham / Masson-Angers	External	Total
-	-	-	-	-	-	-	-	3,000
-	200	-	100	100	-	-	200	15,000
-	-	-	100	100	100	-	100	10,100
-	-	-	100	-	-	-	100	7,800
-	-	-	-	100	-	-	-	18,800
-	-	-	-	100	-	-	100	14,300
-	100	-	-	-	-	-	200	20,700
-	100	-	-	-	100	-	100	11,000
-	-	-	-	100	-	-	100	18,100
-	-	-	200	-	-	-	400	31,000
-	-	-	-	-	-	-	200	3,100
-	-	-	-	-	-	-	300	7,800
-	-	-	-	-	-	-	100	6,300
-	100	-	-	-	-	-	100	20,500
-	-	-	-	-	-	-	300	7,500
100	-	-	-	-	-	-	300	29,100
-	-	-	-	-	-	-	500	6,600
100	-	-	200	-	-	-	-	2,500
300	500	200	1,100	300	200	100	100	12,300
900	400	100	300	200	-	-	-	7,200
100	4,200	300	600	200	-	-	100	12,000
100	500	1,900	400	-	-	-	100	6,100
100	200	100	5,200	1,700	500	300	100	15,500
100	300	-	2,900	5,000	300	400	100	13,800
100	200	200	1,600	1,100	1,600	700	100	9,000
-	100	100	800	1,000	300	3,300	100	7,100
-	-	-	-	-	-	-	100	400
2,000	6,700	3,000	13,600	10,000	3,300	4,900	3,900	317,100

	IN	OUT
N CARP (ALL BUT 450, 500)	42%	52%
S STITTSVILLE MAIN (450)	4%	2%
TMC (500)	54%	47%

2011 ORIGIN-DESTINATION SURVEY IN THE NATIONAL CAPITAL REGION
PERSON TRIPS BY TRANS DISTRICTS

TRIP PURPOSES: ALL
MODES: AUTO DRIVER
TIME PERIOD: PM Peak Period (15:30 to 17:59)

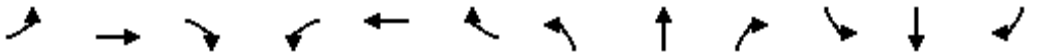
Origin \ Destination	Ottawa Centre	Ottawa Inner Area	Ottawa East	Beacon Hill	Alta Vista	Hunt Club	Merivale	Ottawa West
001 - Ottawa Centre	700	1,500	900	500	1,300	1,200	1,600	1,100
050 - Ottawa Inner Area	800	5,300	1,800	500	2,500	1,200	2,000	1,000
100 - Ottawa East	200	1,200	4,900	1,400	1,600	700	500	300
120 - Beacon Hill	100	700	1,400	3,300	1,100	200	200	200
140 - Alta Vista	200	2,600	2,000	1,300	9,600	3,700	2,300	1,100
180 - Hunt Club	300	1,100	400	300	2,400	5,300	1,000	500
200 - Merivale	400	1,900	800	400	1,800	1,900	9,300	2,700
240 - Ottawa West	300	1,400	300	200	700	500	3,000	4,600
260 - Bayshore / Cedarview	400	900	200	200	800	500	3,300	2,300
300 - Orléans	300	700	600	1,000	1,400	400	200	100
350 - Rural East	-	-	-	-	100	-	100	-
360 - Rural Southeast	-	100	-	-	200	200	200	100
400 - South Gloucester / Leitrim	-	300	100	100	300	300	200	100
425 - South Nepean	100	500	-	100	300	300	1,000	200
450 - Rural Southwest	100	200	-	-	100	200	300	100
500 - Kanata / Stittsville	200	1,000	200	100	500	500	1,300	800
560 - Rural West	100	100	100	-	100	100	200	200
600 - Île de Hull	200	500	300	100	300	200	300	200
625 - Hull Périphérie	200	400	200	200	200	200	300	200
650 - Plateau	200	100	-	-	100	-	-	-
700 - Aylmer	100	100	-	-	-	-	100	-
750 - Rural Northwest	-	-	-	-	100	-	100	-
800 - Pointe Gatineau	100	100	100	100	100	-	100	-
820 - Gatineau Est	-	-	100	100	100	-	-	-
840 - Rural Northeast	-	-	-	-	-	-	-	100
845 - Buckingham / Masson-Angers	-	-	100	-	-	-	-	-
900 - External	-	100	100	100	100	100	200	100
Total	5,000	20,800	14,600	10,000	25,800	17,700	27,800	16,000

Bayshore / Cedarview	Orléans	Rural East	Rural Southeast	South Gloucester / Leitrim	South Nepean	Rural Southwest	Kanata / Stittsville	Rural West	Île de Hull	Hull Périphérie
800	1,900	200	400	300	900	300	1,500	100	200	700
1,300	1,600	100	700	500	1,300	500	1,300	200	200	700
200	2,300	100	300	100	300	100	500	100	200	200
300	2,700	100	300	200	200	100	300	-	-	200
1,300	4,500	400	1,300	1,100	1,700	500	1,400	300	100	400
300	800	100	600	800	700	300	500	100	-	100
4,300	900	300	500	600	3,400	900	2,600	600	100	200
2,100	800	-	100	100	900	300	1,200	200	100	200
8,000	800	100	200	200	2,400	600	4,000	600	-	200
300	18,300	1,100	200	100	100	100	500	100	100	200
-	700	400	100	-	-	-	-	-	-	-
100	100	100	1,500	200	100	300	-	-	-	-
100	200	-	600	1,500	200	300	100	100	-	-
1,000	100	-	200	200	8,400	900	800	-	-	-
500	-	-	400	200	500	1,700	1,000	100	-	-
2,800	500	-	300	200	1,300	900	21,200	2,700	-	-
400	100	-	-	-	100	-	1,100	2,000	-	-
200	600	-	100	100	200	100	400	-	300	1,700
100	400	-	-	-	100	100	200	-	700	6,100
-	-	-	-	-	-	-	100	-	100	1,100
-	100	-	-	-	100	-	-	-	100	900
-	100	-	-	-	-	-	100	-	-	200
-	100	-	-	-	-	-	100	-	400	1,900
-	-	-	-	-	-	-	100	-	100	700
100	-	-	-	-	-	-	-	-	100	400
-	-	100	-	-	-	-	-	-	200	200
100	400	100	300	100	-	400	600	500	-	100
24,300	38,000	3,200	8,100	6,500	22,900	8,400	39,600	7,700	3,000	16,400

Plateau	Aylmer	Rural Northwest	Pointe Gatineau	Gatineau Est	Rural Northeast	Buckingham / Masson-Angers	External	Total
500	600	300	700	300	500	-	-	19,000
300	500	300	700	300	300	100	100	26,100
100	200	100	300	200	200	100	-	16,400
-	200	100	300	100	200	-	-	12,500
300	500	200	700	500	200	200	100	38,500
100	100	100	100	100	100	-	-	16,200
-	300	300	300	200	100	-	200	35,000
500	400	100	300	100	100	100	-	18,600
100	400	200	100	100	100	-	200	26,900
-	100	-	100	200	100	-	100	26,400
-	-	-	-	-	-	-	100	1,500
-	-	-	-	-	-	-	200	3,400
-	-	-	-	-	-	-	-	4,500
-	-	-	-	-	100	-	-	14,200
-	-	-	-	-	-	-	200	5,600
100	100	100	100	100	-	-	100	35,100
-	100	-	-	-	-	-	100	4,800
900	1,100	500	1,200	800	800	300	-	11,400
2,400	1,400	1,100	2,800	1,700	1,200	800	100	21,100
1,800	500	100	100	-	200	-	-	4,400
500	6,000	500	300	200	100	100	-	9,200
100	300	1,900	200	200	300	100	100	3,800
200	700	200	8,500	3,900	1,400	900	-	18,900
200	200	-	2,900	6,000	1,100	700	-	12,300
-	-	200	600	500	2,000	400	-	4,400
100	-	-	500	300	700	4,000	-	6,200
-	-	100	200	100	100	200	300	4,400
8,200	13,700	6,400	21,000	15,900	9,900	8,000	1,900	400,800

	IN	OUT
N CARP (ALL BUT 450, 500)	44%	37%
S STITTSVILLE MAIN (450)	3%	3%
TMC (500)	54%	60%

Appendix G – Future Background (2024, 2029) Synchro Outputs



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	256	5	76	53	3	159	29	1006	16	38	583	53
Future Volume (vph)	256	5	76	53	3	159	29	1006	16	38	583	53
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.9	3.9	3.7	3.7	4.8	3.7	3.6	3.7	3.7	3.3	3.5	3.1
Total Lost time (s)	6.3	6.3			6.0		5.6	6.0		5.6	5.7	5.7
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99			0.98		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.86			0.90		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1680	1489			1737		1474	1746		1653	1618	1382
Flt Permitted	0.52	1.00			0.90		0.32	1.00		0.06	1.00	1.00
Satd. Flow (perm)	926	1489			1584		494	1746		107	1618	1382
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	256	5	76	53	3	159	29	1006	16	38	583	53
RTOR Reduction (vph)	0	57	0	0	94	0	0	0	0	0	0	23
Lane Group Flow (vph)	256	24	0	0	121	0	29	1022	0	38	583	30
Confl. Peds. (#/hr)	1					1	2		1	1		2
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	5%	20%	5%	9%	33%	0%	16%	4%	0%	0%	10%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	28.7	28.7			29.0		68.4	64.6		68.7	64.9	64.9
Effective Green, g (s)	28.7	28.7			29.0		68.4	64.6		68.7	64.9	64.9
Actuated g/C Ratio	0.25	0.25			0.25		0.59	0.56		0.60	0.56	0.56
Clearance Time (s)	6.3	6.3			6.0		5.6	6.0		5.6	5.7	5.7
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	231	371			399		326	980		115	913	779
v/s Ratio Prot		0.02					0.00	c0.58		c0.01	0.36	
v/s Ratio Perm	c0.28				0.08		0.05			0.19		0.02
v/c Ratio	1.11	0.06			0.30		0.09	1.04		0.33	0.64	0.04
Uniform Delay, d1	43.1	32.9			34.8		11.2	25.2		25.7	17.1	11.2
Progression Factor	1.00	1.00			1.00		0.75	0.67		1.00	1.00	1.00
Incremental Delay, d2	91.3	0.1			0.4		0.1	36.6		1.7	3.4	0.1
Delay (s)	134.4	33.0			35.2		8.4	53.5		27.4	20.5	11.2
Level of Service	F	C			D		A	D		C	C	B
Approach Delay (s)		110.0			35.2			52.2			20.1	
Approach LOS		F			D			D			C	

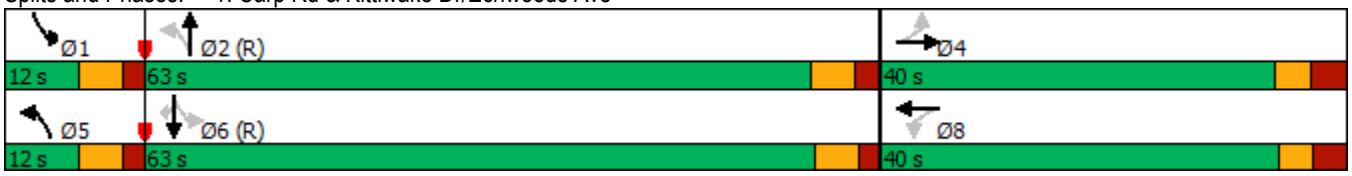
Intersection Summary			
HCM 2000 Control Delay	49.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	17.9
Intersection Capacity Utilization	101.0%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	1	2	4	5	6	8
Movement	SBL	NBTL	EBTL	NBL	SBTL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	12	63	40	12	63	40
Maximum Split (%)	10.4%	54.8%	34.8%	10.4%	54.8%	34.8%
Minimum Split (s)	10.6	30	29.3	10.6	29.7	29
Yellow Time (s)	3.7	3.7	3	3.7	3.7	3
All-Red Time (s)	1.9	2.3	3.3	1.9	2	3
Minimum Initial (s)	5	10	10	5	10	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		17	16		17	16
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	110	7	70	110	7	70
End Time (s)	7	70	110	7	70	110
Yield/Force Off (s)	1.4	64	103.7	1.4	64.3	104
Yield/Force Off 170(s)	1.4	47	87.7	1.4	47.3	88
Local Start Time (s)	103	0	63	103	0	63
Local Yield (s)	109.4	57	96.7	109.4	57.3	97
Local Yield 170(s)	109.4	40	80.7	109.4	40.3	81

Intersection Summary	
Cycle Length	115
Control Type	Actuated-Coordinated
Natural Cycle	150
Offset: 7 (6%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 1: Carp Rd & Kittiwake Dr/Echwoods Ave



Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	316	300	94	2	21	128	315	65	438	16	2	258
Future Volume (vph)	316	300	94	2	21	128	315	65	438	16	2	258
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.6	3.9	3.7	3.7	3.8	3.4	3.9	3.9	3.4	3.7	3.7	3.6
Total Lost time (s)	6.1	6.6			6.6	6.6	6.6	6.0	6.1			6.0
Lane Util. Factor	1.00	0.95			1.00	1.00	1.00	1.00	0.95			1.00
Frpb, ped/bikes	1.00	0.99			1.00	1.00	0.96	1.00	1.00			1.00
Flpb, ped/bikes	0.99	1.00			1.00	1.00	1.00	1.00	1.00			1.00
Frt	1.00	0.96			1.00	1.00	0.85	1.00	0.99			1.00
Flt Protected	0.95	1.00			0.95	1.00	1.00	0.95	1.00			0.95
Satd. Flow (prot)	1666	3228			1449	1586	1445	1523	3184			1463
Flt Permitted	0.45	1.00			0.52	1.00	1.00	0.95	1.00			0.95
Satd. Flow (perm)	785	3228			792	1586	1445	1523	3184			1463
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	316	300	94	2	21	128	315	65	438	16	2	258
RTOR Reduction (vph)	0	32	0	0	0	0	274	0	2	0	0	0
Lane Group Flow (vph)	316	362	0	0	23	128	41	65	452	0	0	260
Confl. Peds. (#/hr)	11		1	3	1		11	1		3	9	3
Heavy Vehicles (%)	2%	5%	5%	0%	22%	11%	5%	16%	3%	43%	0%	17%
Turn Type	pm+pt	NA		Perm	Perm	NA	Perm	Prot	NA		Prot	Prot
Protected Phases	7	4				8		5	2		1	1
Permitted Phases	4			8	8		8					
Actuated Green, G (s)	30.1	30.1			15.1	15.1	15.1	9.1	38.2			28.0
Effective Green, g (s)	30.1	30.1			15.1	15.1	15.1	9.1	38.2			28.0
Actuated g/C Ratio	0.26	0.26			0.13	0.13	0.13	0.08	0.33			0.24
Clearance Time (s)	6.1	6.6			6.6	6.6	6.6	6.0	6.1			6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	273	844			103	208	189	120	1057			356
v/s Ratio Prot	c0.09	0.11				0.08		0.04	c0.14			c0.18
v/s Ratio Perm	c0.21				0.03		0.03					
v/c Ratio	1.16	0.43			0.22	0.62	0.22	0.54	0.43			0.73
Uniform Delay, d1	41.7	35.3			44.7	47.2	44.7	50.9	29.9			40.0
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			0.81
Incremental Delay, d2	103.9	0.4			1.1	5.3	0.6	4.9	1.3			6.4
Delay (s)	145.6	35.6			45.8	52.5	45.3	55.9	31.2			38.9
Level of Service	F	D			D	D	D	E	C			D
Approach Delay (s)		84.6				47.3			34.3			
Approach LOS		F				D			C			

Intersection Summary			
HCM 2000 Control Delay	52.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	98.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

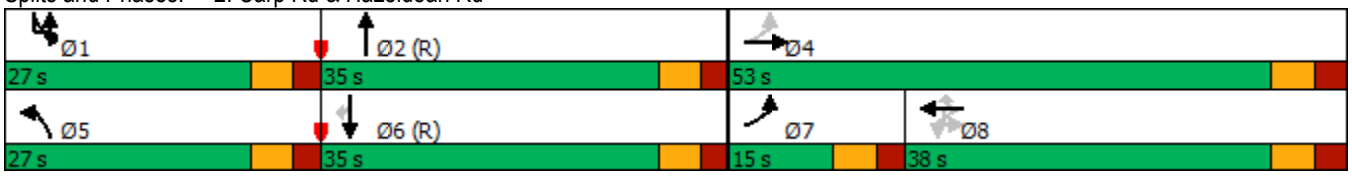
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	315	54
Future Volume (vph)	315	54
Ideal Flow (vphpl)	1800	1800
Lane Width	3.6	3.5
Total Lost time (s)	6.1	6.1
Lane Util. Factor	1.00	1.00
Frpb, ped/bikes	1.00	0.98
Flpb, ped/bikes	1.00	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	1593	1309
Flt Permitted	1.00	1.00
Satd. Flow (perm)	1593	1309
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	315	54
RTOR Reduction (vph)	0	27
Lane Group Flow (vph)	315	27
Confl. Peds. (#/hr)		1
Heavy Vehicles (%)	13%	13%
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Actuated Green, G (s)	57.1	57.1
Effective Green, g (s)	57.1	57.1
Actuated g/C Ratio	0.50	0.50
Clearance Time (s)	6.1	6.1
Vehicle Extension (s)	3.0	3.0
Lane Grp Cap (vph)	790	649
v/s Ratio Prot	0.20	
v/s Ratio Perm		0.02
v/c Ratio	0.40	0.04
Uniform Delay, d1	18.2	14.9
Progression Factor	1.72	1.00
Incremental Delay, d2	1.3	0.1
Delay (s)	32.5	15.0
Level of Service	C	B
Approach Delay (s)	33.7	
Approach LOS	C	

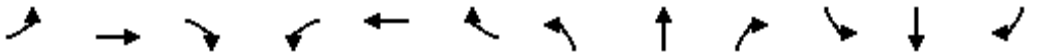
Intersection Summary

Phase Number	1	2	4	5	6	7	8
Movement	SBL	NBT	EBTL	NBL	SBT	EBL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize							
Recall Mode	None	C-Max	None	None	C-Max	None	None
Maximum Split (s)	27	35	53	27	35	15	38
Maximum Split (%)	23.5%	30.4%	46.1%	23.5%	30.4%	13.0%	33.0%
Minimum Split (s)	11	31.1	37.6	11	31.1	11.1	37.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.3	2.4	2.9	2.3	2.4	2.4	2.9
Minimum Initial (s)	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0
Walk Time (s)		7	7		7		7
Flash Dont Walk (s)		18	24		18		24
Dual Entry	No	Yes	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	80	107	27	80	107	27	42
End Time (s)	107	27	80	107	27	42	80
Yield/Force Off (s)	101	20.9	73.4	101	20.9	35.9	73.4
Yield/Force Off 170(s)	101	2.9	49.4	101	2.9	35.9	49.4
Local Start Time (s)	88	0	35	88	0	35	50
Local Yield (s)	109	28.9	81.4	109	28.9	43.9	81.4
Local Yield 170(s)	109	10.9	57.4	109	10.9	43.9	57.4

Intersection Summary	
Cycle Length	115
Control Type	Actuated-Coordinated
Natural Cycle	95
Offset: 107 (93%), Referenced to phase 2:NBT and 6:SBT, Start of Green	

Splits and Phases: 2: Carp Rd & Hazeldean Rd





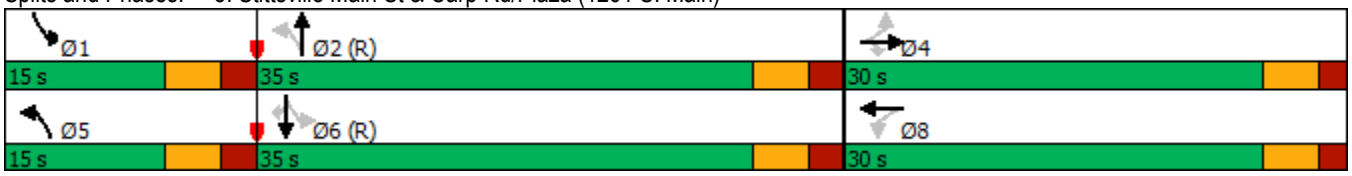
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	97	291	147	70	84	352	387	171	79	319	35
Future Volume (vph)	46	97	291	147	70	84	352	387	171	79	319	35
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.5	3.2	3.9	3.6	3.6	3.7	3.5	3.6	3.7	3.1	3.5	3.5
Total Lost time (s)	5.1	5.1	5.1	5.1	5.1		5.5	5.5		5.5	5.5	5.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	0.99		1.00	0.99		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.92		1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1656	1686	1511	1669	1601		1655	1668		1581	1745	1442
Flt Permitted	0.62	1.00	1.00	0.69	1.00		0.44	1.00		0.39	1.00	1.00
Satd. Flow (perm)	1077	1686	1511	1220	1601		772	1668		645	1745	1442
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	46	97	291	147	70	84	352	387	171	79	319	35
RTOR Reduction (vph)	0	0	235	0	63	0	0	14	0	0	0	19
Lane Group Flow (vph)	46	97	56	147	91	0	352	544	0	79	319	16
Confl. Peds. (#/hr)	1		3	3		1	4		6	6		4
Confl. Bikes (#/hr)												2
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		6
Actuated Green, G (s)	15.3	15.3	15.3	15.3	15.3		54.1	42.7		42.8	36.9	36.9
Effective Green, g (s)	15.3	15.3	15.3	15.3	15.3		54.1	42.7		42.8	36.9	36.9
Actuated g/C Ratio	0.19	0.19	0.19	0.19	0.19		0.68	0.53		0.53	0.46	0.46
Clearance Time (s)	5.1	5.1	5.1	5.1	5.1		5.5	5.5		5.5	5.5	5.5
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)	205	322	288	233	306		651	890		414	804	665
v/s Ratio Prot		0.06			0.06		c0.08	c0.33		0.01	0.18	
v/s Ratio Perm	0.04		0.04	c0.12			0.29			0.09		0.01
v/c Ratio	0.22	0.30	0.19	0.63	0.30		0.54	0.61		0.19	0.40	0.02
Uniform Delay, d1	27.3	27.8	27.2	29.8	27.7		6.2	12.9		9.3	14.2	11.7
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	0.6	0.5	0.3	5.5	0.5		0.9	3.1		0.2	1.5	0.1
Delay (s)	27.9	28.3	27.5	35.2	28.3		7.1	16.0		9.5	15.7	11.8
Level of Service	C	C	C	D	C		A	B		A	B	B
Approach Delay (s)		27.7			31.7			12.6			14.2	
Approach LOS		C			C			B			B	

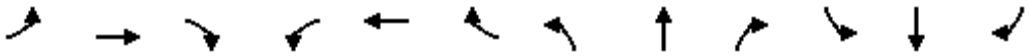
Intersection Summary			
HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	4	5	6	8
Movement	SBL	NBTL	EBTL	NBL	SBTL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	15	35	30	15	35	30
Maximum Split (%)	18.8%	43.8%	37.5%	18.8%	43.8%	37.5%
Minimum Split (s)	10.5	29.5	28.1	10.5	29.5	28.1
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.2	2.2	1.8	2.2	2.2	1.8
Minimum Initial (s)	5	10	10	5	10	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		17	16		17	16
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	65	0	35	65	0	35
End Time (s)	0	35	65	0	35	65
Yield/Force Off (s)	74.5	29.5	59.9	74.5	29.5	59.9
Yield/Force Off 170(s)	74.5	12.5	43.9	74.5	12.5	43.9
Local Start Time (s)	65	0	35	65	0	35
Local Yield (s)	74.5	29.5	59.9	74.5	29.5	59.9
Local Yield 170(s)	74.5	12.5	43.9	74.5	12.5	43.9

Intersection Summary	
Cycle Length	80
Control Type	Actuated-Coordinated
Natural Cycle	70
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 3: Stittsville Main St & Carp Rd/Plaza (1261 S. Main)

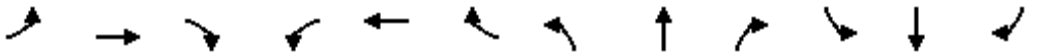




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	14	11	5	59	5	44	5	11	11	5	44
Future Volume (Veh/h)	11	14	11	5	59	5	44	5	11	11	5	44
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	11	14	11	5	59	5	44	5	11	11	5	44
Pedestrians		5			5			5			5	
Lane Width (m)		4.8			4.8			4.8			4.8	
Walking Speed (m/s)		1.0			1.0			1.0			1.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		322										
pX, platoon unblocked												
vC, conflicting volume	69			30			170	126	30	136	128	72
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	69			30			170	126	30	136	128	72
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			94	99	99	99	99	95
cM capacity (veh/h)	1522			1572			731	747	1031	796	744	978

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	36	69	60	60
Volume Left	11	5	44	11
Volume Right	11	5	11	44
cSH	1522	1572	774	915
Volume to Capacity	0.01	0.00	0.08	0.07
Queue Length 95th (m)	0.2	0.1	1.8	1.5
Control Delay (s)	2.3	0.6	10.0	9.2
Lane LOS	A	A	B	A
Approach Delay (s)	2.3	0.6	10.0	9.2
Approach LOS			B	A

Intersection Summary				
Average Delay	5.7			
Intersection Capacity Utilization	24.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	153	14	59	63	8	144	56	762	35	221	1147	164
Future Volume (vph)	153	14	59	63	8	144	56	762	35	221	1147	164
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.9	3.9	3.7	3.7	4.8	3.7	3.6	3.7	3.7	3.3	3.5	3.1
Total Lost time (s)	6.3	6.3			6.0		5.6	6.0		5.6	5.7	5.7
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97			1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00			0.99		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.88			0.91		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1732	1557			1748		1474	1739		1653	1618	1381
Flt Permitted	0.44	1.00			0.88		0.06	1.00		0.16	1.00	1.00
Satd. Flow (perm)	804	1557			1552		92	1739		274	1618	1381
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	153	14	59	63	8	144	56	762	35	221	1147	164
RTOR Reduction (vph)	0	49	0	0	67	0	0	1	0	0	0	29
Lane Group Flow (vph)	153	24	0	0	148	0	56	796	0	221	1147	135
Confl. Peds. (#/hr)			18	18			2		3	3		2
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	2%	0%	2%	9%	33%	0%	16%	4%	0%	0%	10%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	19.6	19.6			19.9		73.2	67.2		88.4	76.8	76.8
Effective Green, g (s)	19.6	19.6			19.9		73.2	67.2		88.4	76.8	76.8
Actuated g/C Ratio	0.16	0.16			0.17		0.61	0.56		0.74	0.64	0.64
Clearance Time (s)	6.3	6.3			6.0		5.6	6.0		5.6	5.7	5.7
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	131	254			257		125	973		377	1035	883
v/s Ratio Prot		0.02					0.02	0.46		c0.07	c0.71	
v/s Ratio Perm	c0.19				0.10		0.25			0.36		0.10
v/c Ratio	1.17	0.09			0.58		0.45	0.82		0.59	1.11	0.15
Uniform Delay, d1	50.2	42.6			46.2		25.9	21.4		15.8	21.6	8.6
Progression Factor	1.00	1.00			1.00		1.32	0.77		1.00	1.00	1.00
Incremental Delay, d2	130.8	0.2			3.1		2.2	6.5		2.3	62.6	0.4
Delay (s)	181.0	42.8			49.3		36.3	23.0		18.2	84.2	9.0
Level of Service	F	D			D		D	C		B	F	A
Approach Delay (s)		136.4			49.3			23.8			66.6	
Approach LOS		F			D			C			E	

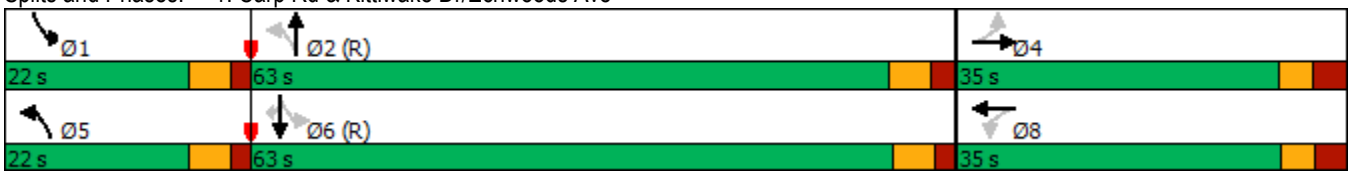
Intersection Summary			
HCM 2000 Control Delay	58.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.9
Intersection Capacity Utilization	107.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	1	2	4	5	6	8
Movement	SBL	NBTL	EBTL	NBL	SBTL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	22	63	35	22	63	35
Maximum Split (%)	18.3%	52.5%	29.2%	18.3%	52.5%	29.2%
Minimum Split (s)	10.6	30	29.3	10.6	29.7	29
Yellow Time (s)	3.7	3.7	3	3.7	3.7	3
All-Red Time (s)	1.9	2.3	3.3	1.9	2	3
Minimum Initial (s)	5	10	10	5	10	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		17	16		17	16
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	109	11	74	109	11	74
End Time (s)	11	74	109	11	74	109
Yield/Force Off (s)	5.4	68	102.7	5.4	68.3	103
Yield/Force Off 170(s)	5.4	51	86.7	5.4	51.3	87
Local Start Time (s)	98	0	63	98	0	63
Local Yield (s)	114.4	57	91.7	114.4	57.3	92
Local Yield 170(s)	114.4	40	75.7	114.4	40.3	76

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	150
Offset: 11 (9%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 1: Carp Rd & Kittiwake Dr/Echwoods Ave



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	2	101	304	151	1	87	561	387	146	403	31	412
Future Volume (vph)	2	101	304	151	1	87	561	387	146	403	31	412
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.7	3.6	3.9	3.7	3.7	3.8	3.4	3.9	3.9	3.4	3.7	3.6
Total Lost time (s)		6.6	6.6			6.6	6.6	6.6	6.0	6.1		6.0
Lane Util. Factor		1.00	0.95			1.00	1.00	1.00	1.00	0.95		1.00
Frpb, ped/bikes		1.00	0.99			1.00	1.00	0.96	1.00	1.00		1.00
Flpb, ped/bikes		0.99	1.00			0.99	1.00	1.00	1.00	1.00		1.00
Frt		1.00	0.95			1.00	1.00	0.85	1.00	0.99		1.00
Flt Protected		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		1698	3305			1592	1725	1439	1732	3205		1693
Flt Permitted		0.15	1.00			0.43	1.00	1.00	0.95	1.00		0.95
Satd. Flow (perm)		276	3305			720	1725	1439	1732	3205		1693
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	101	304	151	1	87	561	387	146	403	31	412
RTOR Reduction (vph)	0	0	53	0	0	0	0	235	0	5	0	0
Lane Group Flow (vph)	0	103	402	0	0	88	561	152	146	429	0	412
Confl. Peds. (#/hr)	5	8		4	5	4		8	5		5	5
Heavy Vehicles (%)	5%	0%	1%	0%	0%	9%	2%	6%	2%	3%	4%	1%
Turn Type	Perm	Perm	NA		Perm	Perm	NA	Perm	Prot	NA		Prot
Protected Phases			4				8		5	2		1
Permitted Phases	4	4			8	8		8				
Actuated Green, G (s)		42.9	42.9			42.9	42.9	42.9	15.4	33.9		24.5
Effective Green, g (s)		42.9	42.9			42.9	42.9	42.9	15.4	33.9		24.5
Actuated g/C Ratio		0.36	0.36			0.36	0.36	0.36	0.13	0.28		0.20
Clearance Time (s)		6.6	6.6			6.6	6.6	6.6	6.0	6.1		6.0
Vehicle Extension (s)		3.0	3.0			3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		98	1181			257	616	514	222	905		345
v/s Ratio Prot			0.12				0.33		0.08	0.13		c0.24
v/s Ratio Perm		c0.37				0.12		0.11				
v/c Ratio		1.05	0.34			0.34	0.91	0.30	0.66	0.47		1.19
Uniform Delay, d1		38.5	28.2			28.2	36.7	27.7	49.8	35.7		47.8
Progression Factor		1.00	1.00			1.00	1.00	1.00	1.00	1.00		1.22
Incremental Delay, d2		105.4	0.2			0.8	17.7	0.3	6.9	1.8		90.2
Delay (s)		143.9	28.4			29.0	54.4	28.0	56.7	37.4		148.4
Level of Service		F	C			C	D	C	E	D		F
Approach Delay (s)			49.7				42.4			42.3		
Approach LOS			D				D			D		

Intersection Summary			
HCM 2000 Control Delay	57.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.7
Intersection Capacity Utilization	103.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

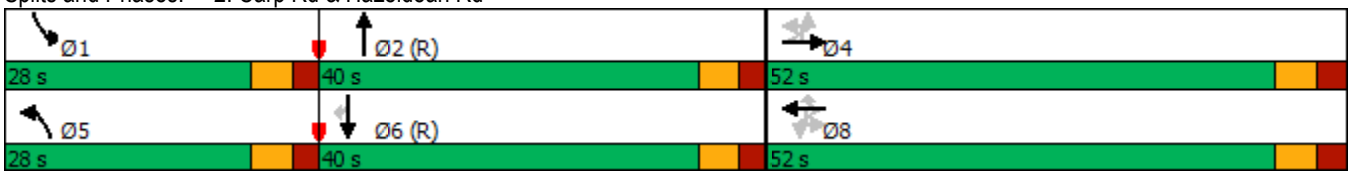
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	539	260
Future Volume (vph)	539	260
Ideal Flow (vphpl)	1800	1800
Lane Width	3.6	3.5
Total Lost time (s)	6.1	6.1
Lane Util. Factor	1.00	1.00
Frpb, ped/bikes	1.00	0.97
Flpb, ped/bikes	1.00	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	1765	1465
Flt Permitted	1.00	1.00
Satd. Flow (perm)	1765	1465
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	539	260
RTOR Reduction (vph)	0	141
Lane Group Flow (vph)	539	119
Confl. Peds. (#/hr)		5
Heavy Vehicles (%)	2%	0%
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Actuated Green, G (s)	43.0	43.0
Effective Green, g (s)	43.0	43.0
Actuated g/C Ratio	0.36	0.36
Clearance Time (s)	6.1	6.1
Vehicle Extension (s)	3.0	3.0
Lane Grp Cap (vph)	632	524
v/s Ratio Prot	c0.31	
v/s Ratio Perm		0.08
v/c Ratio	0.85	0.23
Uniform Delay, d1	35.6	26.9
Progression Factor	1.10	1.97
Incremental Delay, d2	1.5	0.1
Delay (s)	40.5	53.0
Level of Service	D	D
Approach Delay (s)	79.9	
Approach LOS	E	

Intersection Summary

Phase Number	1	2	4	5	6	8
Movement	SBL	NBT	EBTL	NBL	SBT	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	28	40	52	28	40	52
Maximum Split (%)	23.3%	33.3%	43.3%	23.3%	33.3%	43.3%
Minimum Split (s)	11	31.1	37.6	11	31.1	37.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.3	2.4	2.9	2.3	2.4	2.9
Minimum Initial (s)	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		18	24		18	24
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	100	8	48	100	8	48
End Time (s)	8	48	100	8	48	100
Yield/Force Off (s)	2	41.9	93.4	2	41.9	93.4
Yield/Force Off 170(s)	2	23.9	69.4	2	23.9	69.4
Local Start Time (s)	92	0	40	92	0	40
Local Yield (s)	114	33.9	85.4	114	33.9	85.4
Local Yield 170(s)	114	15.9	61.4	114	15.9	61.4

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	110
Offset: 8 (7%), Referenced to phase 2:NBT and 6:SBT, Start of Green	

Splits and Phases: 2: Carp Rd & Hazeldean Rd



Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	80	130	500	233	140	100	339	537	120	79	528
Future Volume (vph)	1	80	130	500	233	140	100	339	537	120	79	528
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.7	3.5	3.2	3.9	3.6	3.6	3.7	3.5	3.6	3.7	3.1	3.5
Total Lost time (s)		5.1	5.1	5.1	5.1	5.1		5.5	5.5		5.5	5.5
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frpb, ped/bikes		1.00	1.00	0.96	1.00	0.97		1.00	0.99		1.00	1.00
Flpb, ped/bikes		0.94	1.00	1.00	0.99	1.00		1.00	1.00		1.00	1.00
Frt		1.00	1.00	0.85	1.00	0.94		1.00	0.97		1.00	1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)		1582	1720	1478	1699	1614		1595	1719		1614	1728
Flt Permitted		0.61	1.00	1.00	0.51	1.00		0.12	1.00		0.15	1.00
Satd. Flow (perm)		1015	1720	1478	919	1614		210	1719		256	1728
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	80	130	500	233	140	100	339	537	120	79	528
RTOR Reduction (vph)	0	0	0	267	0	31	0	0	8	0	0	0
Lane Group Flow (vph)	0	81	130	233	233	209	0	339	649	0	79	528
Confl. Peds. (#/hr)	25	21		9	9		21	25		12	12	
Confl. Bikes (#/hr)							2			3		
Heavy Vehicles (%)	0%	0%	0%	3%	0%	1%	3%	6%	1%	1%	0%	3%
Turn Type	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA
Protected Phases			4		3	8		5	2		1	6
Permitted Phases	4	4		4	8			2			6	
Actuated Green, G (s)		18.4	18.4	18.4	33.4	33.4		46.0	34.2		32.8	26.5
Effective Green, g (s)		18.4	18.4	18.4	33.4	33.4		46.0	34.2		32.8	26.5
Actuated g/C Ratio		0.20	0.20	0.20	0.37	0.37		0.51	0.38		0.36	0.29
Clearance Time (s)		5.1	5.1	5.1	5.1	5.1		5.5	5.5		5.5	5.5
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)		207	351	302	426	598		322	653		188	508
v/s Ratio Prot			0.08		c0.06	0.13		c0.16	0.38		0.03	0.31
v/s Ratio Perm		0.08		c0.16	0.14			c0.37			0.12	
v/c Ratio		0.39	0.37	0.77	0.55	0.35		1.05	0.99		0.42	1.04
Uniform Delay, d1		31.0	30.8	33.8	20.8	20.4		25.5	27.8		21.3	31.8
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.2	0.7	11.5	1.4	0.4		64.7	33.7		1.5	50.5
Delay (s)		32.2	31.5	45.3	22.3	20.8		90.2	61.5		22.8	82.3
Level of Service		C	C	D	C	C		F	E		C	F
Approach Delay (s)			41.3			21.5			71.3			70.4
Approach LOS			D			C			E			E

Intersection Summary			
HCM 2000 Control Delay	55.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	21.2
Intersection Capacity Utilization	92.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

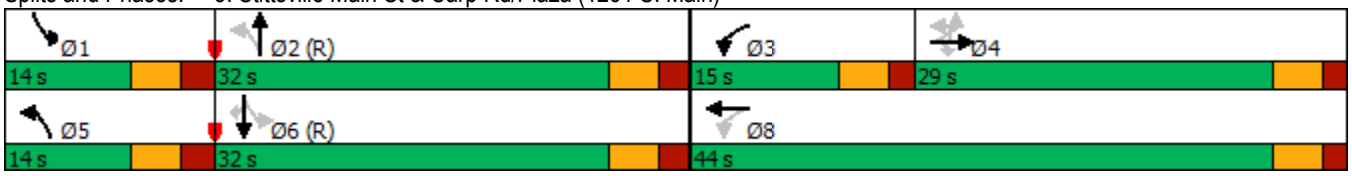
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	53
Future Volume (vph)	53
Ideal Flow (vphpl)	1800
Lane Width	3.5
Total Lost time (s)	5.5
Lane Util. Factor	1.00
Frpb, ped/bikes	0.93
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1413
Flt Permitted	1.00
Satd. Flow (perm)	1413
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	53
RTOR Reduction (vph)	37
Lane Group Flow (vph)	16
Confl. Peds. (#/hr)	25
Confl. Bikes (#/hr)	
Heavy Vehicles (%)	0%
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	26.5
Effective Green, g (s)	26.5
Actuated g/C Ratio	0.29
Clearance Time (s)	5.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	416
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.04
Uniform Delay, d1	22.7
Progression Factor	1.00
Incremental Delay, d2	0.2
Delay (s)	22.8
Level of Service	C
Approach Delay (s)	
Approach LOS	

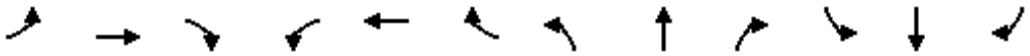
Intersection Summary

Phase Number	1	2	3	4	5	6	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize							
Recall Mode	None	C-Max	None	None	None	C-Max	None
Maximum Split (s)	14	32	15	29	14	32	44
Maximum Split (%)	15.6%	35.6%	16.7%	32.2%	15.6%	35.6%	48.9%
Minimum Split (s)	10.5	29.5	10.1	28.1	10.5	29.5	28.1
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.2	2.2	1.8	1.8	2.2	2.2	1.8
Minimum Initial (s)	5	10	5	10	5	10	10
Vehicle Extension (s)	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0
Walk Time (s)		7		7		7	7
Flash Dont Walk (s)		17		16		17	16
Dual Entry	No	Yes	No	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	78	2	34	49	78	2	34
End Time (s)	2	34	49	78	2	34	78
Yield/Force Off (s)	86.5	28.5	43.9	72.9	86.5	28.5	72.9
Yield/Force Off 170(s)	86.5	11.5	43.9	56.9	86.5	11.5	56.9
Local Start Time (s)	76	0	32	47	76	0	32
Local Yield (s)	84.5	26.5	41.9	70.9	84.5	26.5	70.9
Local Yield 170(s)	84.5	9.5	41.9	54.9	84.5	9.5	54.9

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	90
Offset: 2 (2%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 3: Stittsville Main St & Carp Rd/Plaza (1261 S. Main)

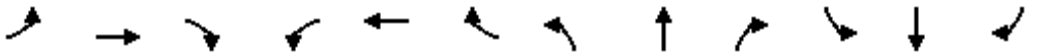




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	49	132	5	30	5	83	5	37	37	5	23
Future Volume (Veh/h)	36	49	132	5	30	5	83	5	37	37	5	23
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	36	49	132	5	30	5	83	5	37	37	5	23
Pedestrians		5			5			5			5	
Lane Width (m)		4.8			4.8			4.8			4.8	
Walking Speed (m/s)		1.0			1.0			1.0			1.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		322										
pX, platoon unblocked												
vC, conflicting volume	40			186			265	242	125	279	306	42
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	40			186			265	242	125	279	306	42
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			87	99	96	94	99	98
cM capacity (veh/h)	1559			1379			639	633	913	615	584	1014

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	217	40	125	65
Volume Left	36	5	83	37
Volume Right	132	5	37	23
cSH	1559	1379	701	711
Volume to Capacity	0.02	0.00	0.18	0.09
Queue Length 95th (m)	0.5	0.1	4.5	2.1
Control Delay (s)	1.4	1.0	11.2	10.6
Lane LOS	A	A	B	B
Approach Delay (s)	1.4	1.0	11.2	10.6
Approach LOS			B	B

Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	37.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	284	6	84	59	4	176	32	1117	18	42	646	59
Future Volume (vph)	284	6	84	59	4	176	32	1117	18	42	646	59
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.9	3.9	3.7	3.7	4.8	3.7	3.6	3.7	3.7	3.3	3.5	3.1
Total Lost time (s)	6.3	6.3			6.0		5.6	6.0		5.6	5.7	5.7
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99			0.98		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.86			0.90		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1490			1737		1474	1746		1653	1618	1382
Flt Permitted	0.51	1.00			0.90		0.27	1.00		0.06	1.00	1.00
Satd. Flow (perm)	902	1490			1577		412	1746		111	1618	1382
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	284	6	84	59	4	176	32	1117	18	42	646	59
RTOR Reduction (vph)	0	61	0	0	90	0	0	0	0	0	0	27
Lane Group Flow (vph)	284	29	0	0	149	0	32	1135	0	42	646	32
Confl. Peds. (#/hr)	1					1	2		1	1		2
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	5%	20%	5%	9%	33%	0%	16%	4%	0%	0%	10%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	31.0	31.0			31.3		64.9	61.1		67.6	62.6	62.6
Effective Green, g (s)	31.0	31.0			31.3		64.9	61.1		67.6	62.6	62.6
Actuated g/C Ratio	0.27	0.27			0.27		0.56	0.53		0.59	0.54	0.54
Clearance Time (s)	6.3	6.3			6.0		5.6	6.0		5.6	5.7	5.7
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	243	401			429		267	927		132	880	752
v/s Ratio Prot		0.02					0.00	c0.65		c0.01	0.40	
v/s Ratio Perm	c0.31				0.09		0.06			0.17		0.02
v/c Ratio	1.17	0.07			0.35		0.12	1.22		0.32	0.73	0.04
Uniform Delay, d1	42.0	31.3			33.6		13.5	26.9		25.3	19.9	12.2
Progression Factor	1.00	1.00			1.00		0.74	0.65		1.00	1.00	1.00
Incremental Delay, d2	111.0	0.1			0.5		0.1	107.0		1.4	5.4	0.1
Delay (s)	153.0	31.4			34.1		10.0	124.6		26.7	25.3	12.3
Level of Service	F	C			C		B	F		C	C	B
Approach Delay (s)		123.7			34.1			121.5			24.3	
Approach LOS		F			C			F			C	

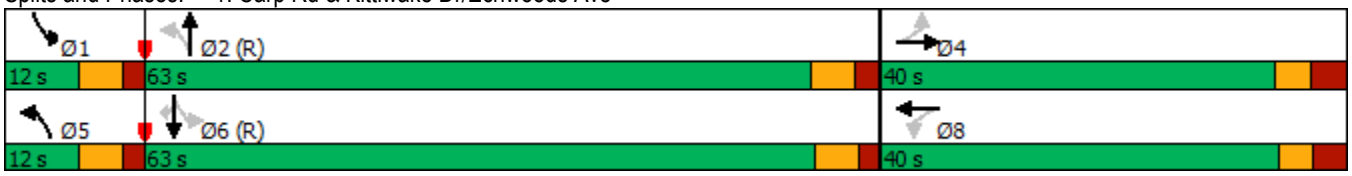
Intersection Summary			
HCM 2000 Control Delay	84.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	17.9
Intersection Capacity Utilization	110.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	1	2	4	5	6	8
Movement	SBL	NBTL	EBTL	NBL	SBTL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	12	63	40	12	63	40
Maximum Split (%)	10.4%	54.8%	34.8%	10.4%	54.8%	34.8%
Minimum Split (s)	10.6	30	29.3	10.6	29.7	29
Yellow Time (s)	3.7	3.7	3	3.7	3.7	3
All-Red Time (s)	1.9	2.3	3.3	1.9	2	3
Minimum Initial (s)	5	10	10	5	10	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		17	16		17	16
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	110	7	70	110	7	70
End Time (s)	7	70	110	7	70	110
Yield/Force Off (s)	1.4	64	103.7	1.4	64.3	104
Yield/Force Off 170(s)	1.4	47	87.7	1.4	47.3	88
Local Start Time (s)	103	0	63	103	0	63
Local Yield (s)	109.4	57	96.7	109.4	57.3	97
Local Yield 170(s)	109.4	40	80.7	109.4	40.3	81

Intersection Summary	
Cycle Length	115
Control Type	Actuated-Coordinated
Natural Cycle	150
Offset: 7 (6%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 1: Carp Rd & Kittiwake Dr/Echwoods Ave



Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	351	333	104	2	22	143	350	72	486	18	2	286
Future Volume (vph)	351	333	104	2	22	143	350	72	486	18	2	286
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.6	3.9	3.7	3.7	3.8	3.4	3.9	3.9	3.4	3.7	3.7	3.6
Total Lost time (s)	6.1	6.6			6.6	6.6	6.6	6.0	6.1			6.0
Lane Util. Factor	1.00	0.95			1.00	1.00	1.00	1.00	0.95			1.00
Frpb, ped/bikes	1.00	0.99			1.00	1.00	0.96	1.00	1.00			1.00
Flpb, ped/bikes	0.99	1.00			1.00	1.00	1.00	1.00	1.00			1.00
Frt	1.00	0.96			1.00	1.00	0.85	1.00	0.99			1.00
Flt Protected	0.95	1.00			0.95	1.00	1.00	0.95	1.00			0.95
Satd. Flow (prot)	1666	3229			1449	1586	1443	1523	3183			1463
Flt Permitted	0.43	1.00			0.50	1.00	1.00	0.95	1.00			0.95
Satd. Flow (perm)	747	3229			760	1586	1443	1523	3183			1463
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	351	333	104	2	22	143	350	72	486	18	2	286
RTOR Reduction (vph)	0	31	0	0	0	0	301	0	2	0	0	0
Lane Group Flow (vph)	351	406	0	0	24	143	49	72	502	0	0	288
Confl. Peds. (#/hr)	12		1	3	1		12	1		3	12	3
Heavy Vehicles (%)	2%	5%	5%	0%	22%	11%	5%	16%	3%	43%	0%	17%
Turn Type	pm+pt	NA		Perm	Perm	NA	Perm	Prot	NA		Prot	Prot
Protected Phases	7	4				8		5	2		1	1
Permitted Phases	4			8	8		8					
Actuated Green, G (s)	31.2	31.2			16.2	16.2	16.2	9.5	32.9			32.2
Effective Green, g (s)	31.2	31.2			16.2	16.2	16.2	9.5	32.9			32.2
Actuated g/C Ratio	0.27	0.27			0.14	0.14	0.14	0.08	0.29			0.28
Clearance Time (s)	6.1	6.6			6.6	6.6	6.6	6.0	6.1			6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	273	876			107	223	203	125	910			409
v/s Ratio Prot	c0.10	0.13				0.09		0.05	c0.16			c0.20
v/s Ratio Perm	c0.25				0.03		0.03					
v/c Ratio	1.29	0.46			0.22	0.64	0.24	0.58	0.55			0.70
Uniform Delay, d1	41.1	34.9			43.8	46.7	43.9	50.8	34.8			37.1
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			0.83
Incremental Delay, d2	153.4	0.4			1.1	6.2	0.6	6.3	2.4			4.2
Delay (s)	194.5	35.3			44.9	52.8	44.6	57.1	37.2			35.1
Level of Service	F	D			D	D	D	E	D			D
Approach Delay (s)		106.2				46.9			39.7			
Approach LOS		F				D			D			

Intersection Summary			
HCM 2000 Control Delay	59.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	103.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

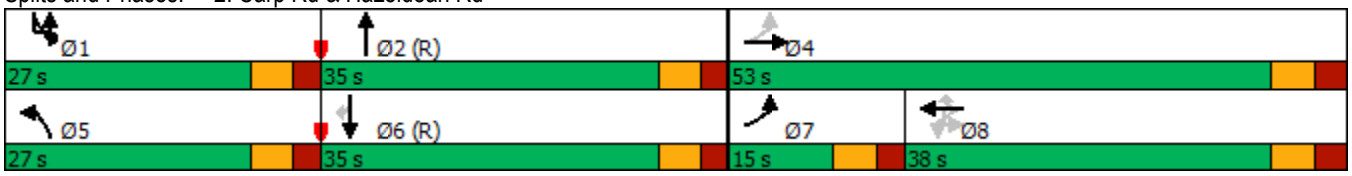
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	350	60
Future Volume (vph)	350	60
Ideal Flow (vphpl)	1800	1800
Lane Width	3.6	3.5
Total Lost time (s)	6.1	6.1
Lane Util. Factor	1.00	1.00
Frpb, ped/bikes	1.00	0.98
Flpb, ped/bikes	1.00	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	1593	1309
Flt Permitted	1.00	1.00
Satd. Flow (perm)	1593	1309
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	350	60
RTOR Reduction (vph)	0	31
Lane Group Flow (vph)	350	29
Confl. Peds. (#/hr)		1
Heavy Vehicles (%)	13%	13%
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Actuated Green, G (s)	55.6	55.6
Effective Green, g (s)	55.6	55.6
Actuated g/C Ratio	0.48	0.48
Clearance Time (s)	6.1	6.1
Vehicle Extension (s)	3.0	3.0
Lane Grp Cap (vph)	770	632
v/s Ratio Prot	0.22	
v/s Ratio Perm		0.02
v/c Ratio	0.45	0.05
Uniform Delay, d1	19.7	15.7
Progression Factor	1.68	1.00
Incremental Delay, d2	1.5	0.1
Delay (s)	34.5	15.8
Level of Service	C	B
Approach Delay (s)	33.1	
Approach LOS	C	

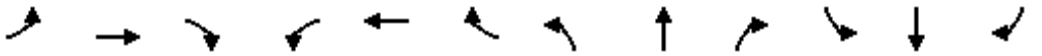
Intersection Summary

Phase Number	1	2	4	5	6	7	8
Movement	SBL	NBT	EBTL	NBL	SBT	EBL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize							
Recall Mode	None	C-Max	None	None	C-Max	None	None
Maximum Split (s)	27	35	53	27	35	15	38
Maximum Split (%)	23.5%	30.4%	46.1%	23.5%	30.4%	13.0%	33.0%
Minimum Split (s)	11	31.1	37.6	11	31.1	11.1	37.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.3	2.4	2.9	2.3	2.4	2.4	2.9
Minimum Initial (s)	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0
Walk Time (s)		7	7		7		7
Flash Dont Walk (s)		18	24		18		24
Dual Entry	No	Yes	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	80	107	27	80	107	27	42
End Time (s)	107	27	80	107	27	42	80
Yield/Force Off (s)	101	20.9	73.4	101	20.9	35.9	73.4
Yield/Force Off 170(s)	101	2.9	49.4	101	2.9	35.9	49.4
Local Start Time (s)	88	0	35	88	0	35	50
Local Yield (s)	109	28.9	81.4	109	28.9	43.9	81.4
Local Yield 170(s)	109	10.9	57.4	109	10.9	43.9	57.4

Intersection Summary	
Cycle Length	115
Control Type	Actuated-Coordinated
Natural Cycle	105
Offset: 107 (93%), Referenced to phase 2:NBT and 6:SBT, Start of Green	

Splits and Phases: 2: Carp Rd & Hazeldean Rd





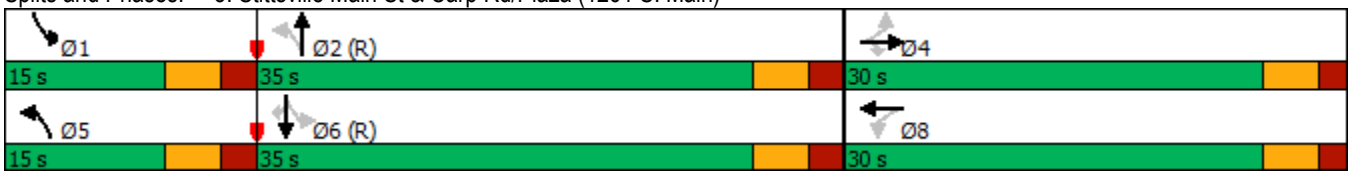
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	108	322	163	78	94	390	429	190	88	353	38
Future Volume (vph)	51	108	322	163	78	94	390	429	190	88	353	38
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.5	3.2	3.9	3.6	3.6	3.7	3.5	3.6	3.7	3.1	3.5	3.5
Total Lost time (s)	5.1	5.1	5.1	5.1	5.1		5.5	5.5		5.5	5.5	5.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	0.99		1.00	0.99		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.92		1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1656	1686	1511	1669	1601		1656	1667		1581	1745	1441
Flt Permitted	0.58	1.00	1.00	0.69	1.00		0.40	1.00		0.33	1.00	1.00
Satd. Flow (perm)	1019	1686	1511	1207	1601		698	1667		542	1745	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	51	108	322	163	78	94	390	429	190	88	353	38
RTOR Reduction (vph)	0	0	256	0	63	0	0	15	0	0	0	21
Lane Group Flow (vph)	51	108	66	163	109	0	390	604	0	88	353	17
Confl. Peds. (#/hr)	1		3	3		1	4		7	7		4
Confl. Bikes (#/hr)												2
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		6
Actuated Green, G (s)	16.4	16.4	16.4	16.4	16.4		53.0	41.3		41.2	35.0	35.0
Effective Green, g (s)	16.4	16.4	16.4	16.4	16.4		53.0	41.3		41.2	35.0	35.0
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.20		0.66	0.52		0.52	0.44	0.44
Clearance Time (s)	5.1	5.1	5.1	5.1	5.1		5.5	5.5		5.5	5.5	5.5
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)	208	345	309	247	328		612	860		359	763	630
v/s Ratio Prot		0.06			0.07		c0.10	c0.36		0.02	0.20	
v/s Ratio Perm	0.05		0.04	c0.13			0.32			0.11		0.01
v/c Ratio	0.25	0.31	0.21	0.66	0.33		0.64	0.70		0.25	0.46	0.03
Uniform Delay, d1	26.6	27.0	26.4	29.2	27.1		7.2	14.7		10.5	15.9	12.8
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	0.6	0.5	0.3	6.2	0.6		2.2	4.8		0.4	2.0	0.1
Delay (s)	27.2	27.5	26.8	35.5	27.7		9.4	19.4		10.8	17.9	12.9
Level of Service	C	C	C	D	C		A	B		B	B	B
Approach Delay (s)		27.0			31.5			15.6			16.2	
Approach LOS		C			C			B			B	

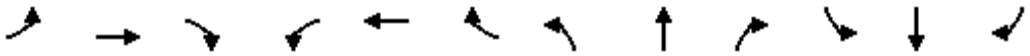
Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	4	5	6	8
Movement	SBL	NBTL	EBTL	NBL	SBTL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	15	35	30	15	35	30
Maximum Split (%)	18.8%	43.8%	37.5%	18.8%	43.8%	37.5%
Minimum Split (s)	10.5	29.5	28.1	10.5	29.5	28.1
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.2	2.2	1.8	2.2	2.2	1.8
Minimum Initial (s)	5	10	10	5	10	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		17	16		17	16
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	65	0	35	65	0	35
End Time (s)	0	35	65	0	35	65
Yield/Force Off (s)	74.5	29.5	59.9	74.5	29.5	59.9
Yield/Force Off 170(s)	74.5	12.5	43.9	74.5	12.5	43.9
Local Start Time (s)	65	0	35	65	0	35
Local Yield (s)	74.5	29.5	59.9	74.5	29.5	59.9
Local Yield 170(s)	74.5	12.5	43.9	74.5	12.5	43.9

Intersection Summary	
Cycle Length	80
Control Type	Actuated-Coordinated
Natural Cycle	75
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 3: Stittsville Main St & Carp Rd/Plaza (1261 S. Main)

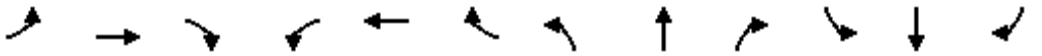




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	16	12	6	66	6	49	6	12	12	6	49
Future Volume (Veh/h)	12	16	12	6	66	6	49	6	12	12	6	49
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	12	16	12	6	66	6	49	6	12	12	6	49
Pedestrians		5			5			5			5	
Lane Width (m)		4.8			4.8			4.8			4.8	
Walking Speed (m/s)		1.0			1.0			1.0			1.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		322										
pX, platoon unblocked												
vC, conflicting volume	77			33			189	140	32	152	143	79
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	77			33			189	140	32	152	143	79
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			93	99	99	98	99	95
cM capacity (veh/h)	1512			1568			704	732	1028	775	730	968

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	40	78	67	67
Volume Left	12	6	49	12
Volume Right	12	6	12	49
cSH	1512	1568	749	902
Volume to Capacity	0.01	0.00	0.09	0.07
Queue Length 95th (m)	0.2	0.1	2.1	1.7
Control Delay (s)	2.3	0.6	10.3	9.3
Lane LOS	A	A	B	A
Approach Delay (s)	2.3	0.6	10.3	9.3
Approach LOS			B	A

Intersection Summary				
Average Delay	5.7			
Intersection Capacity Utilization	24.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	170	16	66	70	8	94	62	845	38	139	1273	182
Future Volume (vph)	170	16	66	70	8	94	62	845	38	139	1273	182
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.9	3.9	3.7	3.7	4.8	3.7	3.6	3.7	3.7	3.3	3.5	3.1
Total Lost time (s)	6.3	6.3			6.0		5.6	6.0		5.6	5.7	5.7
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97			1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00			0.99		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.88			0.93		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1732	1554			1740		1474	1739		1653	1618	1381
Flt Permitted	0.56	1.00			0.83		0.06	1.00		0.12	1.00	1.00
Satd. Flow (perm)	1024	1554			1475		89	1739		215	1618	1381
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	170	16	66	70	8	94	62	845	38	139	1273	182
RTOR Reduction (vph)	0	54	0	0	39	0	0	1	0	0	0	30
Lane Group Flow (vph)	170	28	0	0	133	0	62	882	0	139	1273	152
Confl. Peds. (#/hr)			20	20			2		4	4		2
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	2%	0%	2%	9%	33%	0%	16%	4%	0%	0%	10%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	21.2	21.2			21.5		76.0	69.7		86.1	74.9	74.9
Effective Green, g (s)	21.2	21.2			21.5		76.0	69.7		86.1	74.9	74.9
Actuated g/C Ratio	0.18	0.18			0.18		0.63	0.58		0.72	0.62	0.62
Clearance Time (s)	6.3	6.3			6.0		5.6	6.0		5.6	5.7	5.7
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	180	274			264		129	1010		288	1009	861
v/s Ratio Prot		0.02					0.03	0.51		c0.04	c0.79	
v/s Ratio Perm	c0.17				0.09		0.28			0.30		0.11
v/c Ratio	0.94	0.10			0.50		0.48	0.87		0.48	1.26	0.18
Uniform Delay, d1	48.8	41.4			44.4		27.2	21.4		17.5	22.5	9.5
Progression Factor	1.00	1.00			1.00		1.43	0.79		1.00	1.00	1.00
Incremental Delay, d2	50.7	0.2			1.5		2.2	8.4		1.3	125.8	0.4
Delay (s)	99.5	41.6			45.9		41.0	25.3		18.7	148.3	10.0
Level of Service	F	D			D		D	C		B	F	A
Approach Delay (s)		80.7			45.9			26.3			121.2	
Approach LOS		F			D			C			F	

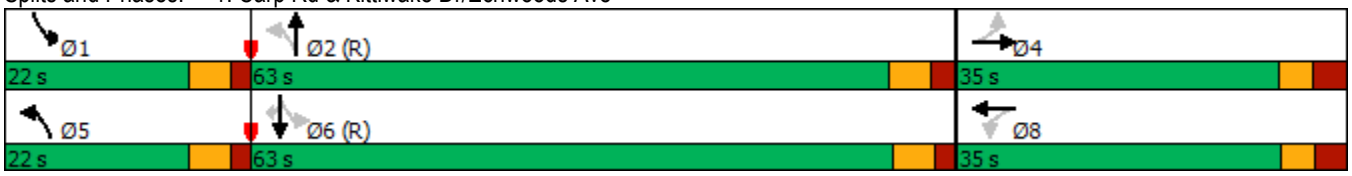
Intersection Summary			
HCM 2000 Control Delay	83.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.9
Intersection Capacity Utilization	107.4%	ICU Level of Service	G
Analysis Period (min)	15		

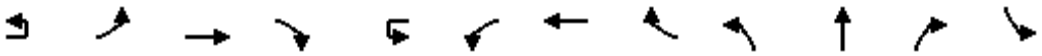
c Critical Lane Group

Phase Number	1	2	4	5	6	8
Movement	SBL	NBTL	EBTL	NBL	SBTL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	22	63	35	22	63	35
Maximum Split (%)	18.3%	52.5%	29.2%	18.3%	52.5%	29.2%
Minimum Split (s)	10.6	30	29.3	10.6	29.7	29
Yellow Time (s)	3.7	3.7	3	3.7	3.7	3
All-Red Time (s)	1.9	2.3	3.3	1.9	2	3
Minimum Initial (s)	5	10	10	5	10	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		17	16		17	16
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	109	11	74	109	11	74
End Time (s)	11	74	109	11	74	109
Yield/Force Off (s)	5.4	68	102.7	5.4	68.3	103
Yield/Force Off 170(s)	5.4	51	86.7	5.4	51.3	87
Local Start Time (s)	98	0	63	98	0	63
Local Yield (s)	114.4	57	91.7	114.4	57.3	92
Local Yield 170(s)	114.4	40	75.7	114.4	40.3	76

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	150
Offset: 11 (9%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 1: Carp Rd & Kittiwake Dr/Echwoods Ave





Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	2	113	325	168	1	63	606	430	162	447	35	456
Future Volume (vph)	2	113	325	168	1	63	606	430	162	447	35	456
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.7	3.6	3.9	3.7	3.7	3.8	3.4	3.9	3.9	3.4	3.7	3.6
Total Lost time (s)		6.6	6.6			6.6	6.6	6.6	6.0	6.1		6.0
Lane Util. Factor		1.00	0.95			1.00	1.00	1.00	1.00	0.95		1.00
Frpb, ped/bikes		1.00	0.99			1.00	1.00	0.96	1.00	1.00		1.00
Flpb, ped/bikes		1.00	1.00			0.99	1.00	1.00	1.00	1.00		1.00
Frt		1.00	0.95			1.00	1.00	0.85	1.00	0.99		1.00
Flt Protected		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		1709	3298			1590	1725	1439	1732	3204		1693
Flt Permitted		0.14	1.00			0.41	1.00	1.00	0.95	1.00		0.95
Satd. Flow (perm)		244	3298			686	1725	1439	1732	3204		1693
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	113	325	168	1	63	606	430	162	447	35	456
RTOR Reduction (vph)	0	0	55	0	0	0	0	234	0	5	0	0
Lane Group Flow (vph)	0	115	438	0	0	64	606	196	162	477	0	456
Confl. Peds. (#/hr)	6	8		5	6	5		8	6		6	6
Heavy Vehicles (%)	5%	0%	1%	0%	0%	9%	2%	6%	2%	3%	4%	1%
Turn Type	Perm	Perm	NA		Perm	Perm	NA	Perm	Prot	NA		Prot
Protected Phases			4				8		5	2		1
Permitted Phases	4	4			8	8		8				
Actuated Green, G (s)		45.4	45.4			45.4	45.4	45.4	16.4	33.9		22.0
Effective Green, g (s)		45.4	45.4			45.4	45.4	45.4	16.4	33.9		22.0
Actuated g/C Ratio		0.38	0.38			0.38	0.38	0.38	0.14	0.28		0.18
Clearance Time (s)		6.6	6.6			6.6	6.6	6.6	6.0	6.1		6.0
Vehicle Extension (s)		3.0	3.0			3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		92	1247			259	652	544	236	905		310
v/s Ratio Prot			0.13				0.35		0.09	0.15		c0.27
v/s Ratio Perm		c0.47				0.09		0.14				
v/c Ratio		1.25	0.35			0.25	0.93	0.36	0.69	0.53		1.47
Uniform Delay, d1		37.3	26.7			25.6	35.8	26.8	49.4	36.3		49.0
Progression Factor		1.00	1.00			1.00	1.00	1.00	1.00	1.00		1.19
Incremental Delay, d2		175.3	0.2			0.5	19.6	0.4	8.0	2.2		213.6
Delay (s)		212.6	26.9			26.1	55.4	27.2	57.4	38.5		271.9
Level of Service		F	C			C	E	C	E	D		F
Approach Delay (s)			62.0				42.7			43.2		
Approach LOS			E				D			D		

Intersection Summary			
HCM 2000 Control Delay	78.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.7
Intersection Capacity Utilization	109.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

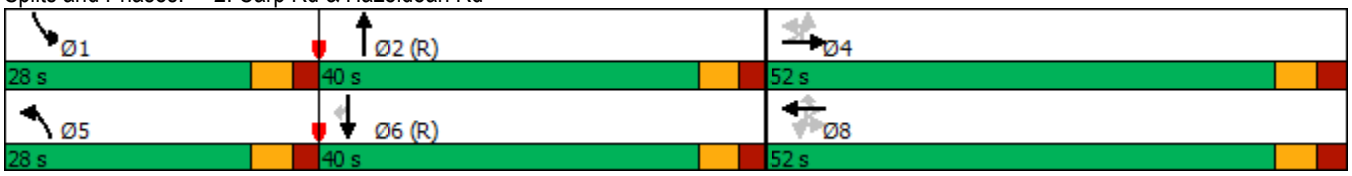
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	598	289
Future Volume (vph)	598	289
Ideal Flow (vphpl)	1800	1800
Lane Width	3.6	3.5
Total Lost time (s)	6.1	6.1
Lane Util. Factor	1.00	1.00
Frpb, ped/bikes	1.00	0.97
Flpb, ped/bikes	1.00	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	1765	1461
Flt Permitted	1.00	1.00
Satd. Flow (perm)	1765	1461
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	598	289
RTOR Reduction (vph)	0	129
Lane Group Flow (vph)	598	160
Confl. Peds. (#/hr)		6
Heavy Vehicles (%)	2%	0%
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Actuated Green, G (s)	39.5	39.5
Effective Green, g (s)	39.5	39.5
Actuated g/C Ratio	0.33	0.33
Clearance Time (s)	6.1	6.1
Vehicle Extension (s)	3.0	3.0
Lane Grp Cap (vph)	580	480
v/s Ratio Prot	c0.34	
v/s Ratio Perm		0.11
v/c Ratio	1.03	0.33
Uniform Delay, d1	40.2	30.3
Progression Factor	1.10	1.61
Incremental Delay, d2	20.3	0.2
Delay (s)	64.4	49.1
Level of Service	E	D
Approach Delay (s)	131.6	
Approach LOS	F	

Intersection Summary

Phase Number	1	2	4	5	6	8
Movement	SBL	NBT	EBTL	NBL	SBT	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	28	40	52	28	40	52
Maximum Split (%)	23.3%	33.3%	43.3%	23.3%	33.3%	43.3%
Minimum Split (s)	11	31.1	37.6	11	31.1	37.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.3	2.4	2.9	2.3	2.4	2.9
Minimum Initial (s)	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		18	24		18	24
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	100	8	48	100	8	48
End Time (s)	8	48	100	8	48	100
Yield/Force Off (s)	2	41.9	93.4	2	41.9	93.4
Yield/Force Off 170(s)	2	23.9	69.4	2	23.9	69.4
Local Start Time (s)	92	0	40	92	0	40
Local Yield (s)	114	33.9	85.4	114	33.9	85.4
Local Yield 170(s)	114	15.9	61.4	114	15.9	61.4

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	130
Offset: 8 (7%), Referenced to phase 2:NBT and 6:SBT, Start of Green	

Splits and Phases: 2: Carp Rd & Hazeldean Rd



Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	89	138	528	259	155	101	375	568	133	88	587
Future Volume (vph)	1	89	138	528	259	155	101	375	568	133	88	587
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.7	3.5	3.2	3.9	3.6	3.6	3.7	3.5	3.6	3.7	3.1	3.5
Total Lost time (s)		5.1	5.1	5.1	5.1	5.1		5.5	5.5		5.5	5.5
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frpb, ped/bikes		1.00	1.00	0.96	1.00	0.97		1.00	0.99		1.00	1.00
Flpb, ped/bikes		0.93	1.00	1.00	0.99	1.00		1.00	1.00		1.00	1.00
Frt		1.00	1.00	0.85	1.00	0.94		1.00	0.97		1.00	1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)		1573	1720	1475	1698	1620		1595	1716		1615	1728
Flt Permitted		0.60	1.00	1.00	0.51	1.00		0.12	1.00		0.15	1.00
Satd. Flow (perm)		994	1720	1475	919	1620		210	1716		257	1728
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	89	138	528	259	155	101	375	568	133	88	587
RTOR Reduction (vph)	0	0	0	244	0	28	0	0	8	0	0	0
Lane Group Flow (vph)	0	90	138	284	259	228	0	375	693	0	88	587
Confl. Peds. (#/hr)	28	23		10	10		23	28		13	13	
Confl. Bikes (#/hr)							2			3		
Heavy Vehicles (%)	0%	0%	0%	3%	0%	1%	3%	6%	1%	1%	0%	3%
Turn Type	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA
Protected Phases			4		3	8		5	2		1	6
Permitted Phases	4	4		4	8			2			6	
Actuated Green, G (s)		20.0	20.0	20.0	35.0	35.0		44.4	32.4		33.0	26.5
Effective Green, g (s)		20.0	20.0	20.0	35.0	35.0		44.4	32.4		33.0	26.5
Actuated g/C Ratio		0.22	0.22	0.22	0.39	0.39		0.49	0.36		0.37	0.29
Clearance Time (s)		5.1	5.1	5.1	5.1	5.1		5.5	5.5		5.5	5.5
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)		220	382	327	443	630		294	617		192	508
v/s Ratio Prot			0.08		c0.06	0.14		c0.18	0.40		0.03	0.34
v/s Ratio Perm		0.09		c0.19	0.16			c0.45			0.13	
v/c Ratio		0.41	0.36	0.87	0.58	0.36		1.28	1.12		0.46	1.16
Uniform Delay, d1		29.9	29.6	33.7	20.1	19.6		25.1	28.8		22.1	31.8
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.2	0.6	20.8	2.0	0.4		147.8	74.9		1.7	90.4
Delay (s)		31.2	30.2	54.5	22.0	19.9		172.9	103.7		23.8	122.1
Level of Service		C	C	D	C	B		F	F		C	F
Approach Delay (s)			47.3			21.0			127.8			102.5
Approach LOS			D			C			F			F

Intersection Summary			
HCM 2000 Control Delay	84.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	21.2
Intersection Capacity Utilization	98.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

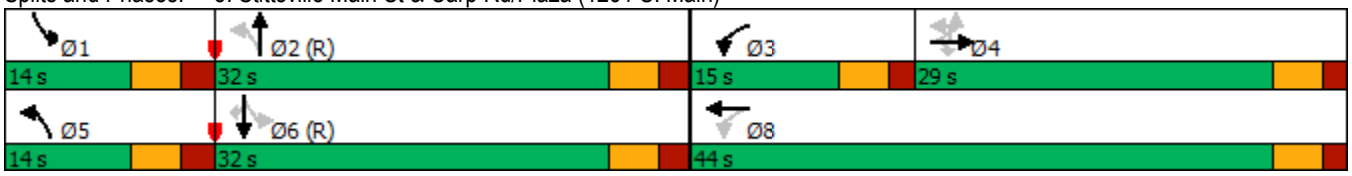
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	58
Future Volume (vph)	58
Ideal Flow (vphpl)	1800
Lane Width	3.5
Total Lost time (s)	5.5
Lane Util. Factor	1.00
Frpb, ped/bikes	0.93
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1405
Flt Permitted	1.00
Satd. Flow (perm)	1405
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	58
RTOR Reduction (vph)	41
Lane Group Flow (vph)	17
Confl. Peds. (#/hr)	28
Confl. Bikes (#/hr)	
Heavy Vehicles (%)	0%
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	26.5
Effective Green, g (s)	26.5
Actuated g/C Ratio	0.29
Clearance Time (s)	5.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	413
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.04
Uniform Delay, d1	22.7
Progression Factor	1.00
Incremental Delay, d2	0.2
Delay (s)	22.9
Level of Service	C
Approach Delay (s)	
Approach LOS	

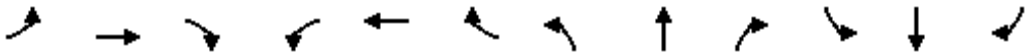
Intersection Summary

Phase Number	1	2	3	4	5	6	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize							
Recall Mode	None	C-Max	None	None	None	C-Max	None
Maximum Split (s)	14	32	15	29	14	32	44
Maximum Split (%)	15.6%	35.6%	16.7%	32.2%	15.6%	35.6%	48.9%
Minimum Split (s)	10.5	29.5	10.1	28.1	10.5	29.5	28.1
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.2	2.2	1.8	1.8	2.2	2.2	1.8
Minimum Initial (s)	5	10	5	10	5	10	10
Vehicle Extension (s)	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0
Walk Time (s)		7		7		7	7
Flash Dont Walk (s)		17		16		17	16
Dual Entry	No	Yes	No	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	78	2	34	49	78	2	34
End Time (s)	2	34	49	78	2	34	78
Yield/Force Off (s)	86.5	28.5	43.9	72.9	86.5	28.5	72.9
Yield/Force Off 170(s)	86.5	11.5	43.9	56.9	86.5	11.5	56.9
Local Start Time (s)	76	0	32	47	76	0	32
Local Yield (s)	84.5	26.5	41.9	70.9	84.5	26.5	70.9
Local Yield 170(s)	84.5	9.5	41.9	54.9	84.5	9.5	54.9

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	110
Offset: 2 (2%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 3: Stittsville Main St & Carp Rd/Plaza (1261 S. Main)



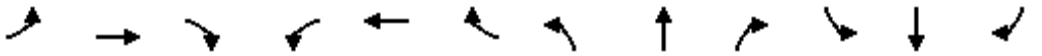


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	54	40	6	34	6	25	6	41	41	6	25
Future Volume (Veh/h)	40	54	40	6	34	6	25	6	41	41	6	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	40	54	40	6	34	6	25	6	41	41	6	25
Pedestrians		5			5			5			5	
Lane Width (m)		4.8			4.8			4.8			4.8	
Walking Speed (m/s)		1.0			1.0			1.0			1.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		322										
pX, platoon unblocked												
vC, conflicting volume	45			99			241	216	84	257	233	47
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	45			99			241	216	84	257	233	47
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			96	99	96	94	99	98
cM capacity (veh/h)	1553			1484			659	653	962	632	639	1009

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	134	46	72	72
Volume Left	40	6	25	41
Volume Right	40	6	41	25
cSH	1553	1484	802	727
Volume to Capacity	0.03	0.00	0.09	0.10
Queue Length 95th (m)	0.6	0.1	2.1	2.3
Control Delay (s)	2.3	1.0	9.9	10.5
Lane LOS	A	A	A	B
Approach Delay (s)	2.3	1.0	9.9	10.5
Approach LOS			A	B

Intersection Summary				
Average Delay	5.7			
Intersection Capacity Utilization	29.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Appendix H – Future Total (2024, 2029) Synchro Outputs



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	256	5	76	53	3	271	29	1006	16	114	583	53
Future Volume (vph)	256	5	76	53	3	271	29	1006	16	114	583	53
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.9	3.9	3.7	3.7	4.8	3.7	3.6	3.7	3.7	3.3	3.5	3.1
Total Lost time (s)	6.3	6.3			6.0		5.6	6.0		5.6	5.7	5.7
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99			0.98		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.86			0.89		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1490			1733		1474	1746		1653	1618	1382
Flt Permitted	0.40	1.00			0.93		0.32	1.00		0.06	1.00	1.00
Satd. Flow (perm)	714	1490			1631		492	1746		113	1618	1382
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	256	5	76	53	3	271	29	1006	16	114	583	53
RTOR Reduction (vph)	0	55	0	0	126	0	0	0	0	0	0	25
Lane Group Flow (vph)	256	26	0	0	201	0	29	1022	0	114	583	28
Confl. Peds. (#/hr)	1					1	2		1	1		2
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	5%	20%	5%	9%	33%	0%	16%	4%	0%	0%	10%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	31.8	31.8			32.1		62.3	58.5		68.6	61.8	61.8
Effective Green, g (s)	31.8	31.8			32.1		62.3	58.5		68.6	61.8	61.8
Actuated g/C Ratio	0.28	0.28			0.28		0.54	0.51		0.60	0.54	0.54
Clearance Time (s)	6.3	6.3			6.0		5.6	6.0		5.6	5.7	5.7
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	197	412			455		298	888		158	869	742
v/s Ratio Prot		0.02					0.00	c0.58		c0.04	0.36	
v/s Ratio Perm	c0.36				0.12		0.05			c0.39		0.02
v/c Ratio	1.30	0.06			0.44		0.10	1.15		0.72	0.67	0.04
Uniform Delay, d1	41.6	30.6			34.1		13.6	28.2		25.9	19.2	12.6
Progression Factor	1.00	1.00			1.00		0.75	0.70		1.00	1.00	1.00
Incremental Delay, d2	166.8	0.1			0.7		0.1	77.7		15.0	4.1	0.1
Delay (s)	208.4	30.7			34.8		10.3	97.5		40.9	23.4	12.7
Level of Service	F	C			C		B	F		D	C	B
Approach Delay (s)		165.7			34.8			95.1			25.3	
Approach LOS		F			C			F			C	

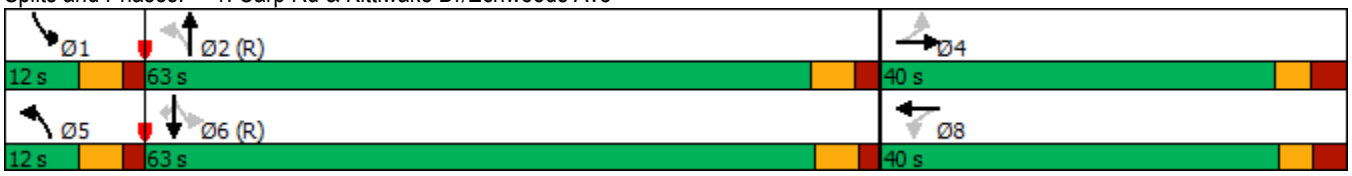
Intersection Summary			
HCM 2000 Control Delay	75.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	17.9
Intersection Capacity Utilization	119.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	1	2	4	5	6	8
Movement	SBL	NBTL	EBTL	NBL	SBTL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	12	63	40	12	63	40
Maximum Split (%)	10.4%	54.8%	34.8%	10.4%	54.8%	34.8%
Minimum Split (s)	10.6	30	29.3	10.6	29.7	29
Yellow Time (s)	3.7	3.7	3	3.7	3.7	3
All-Red Time (s)	1.9	2.3	3.3	1.9	2	3
Minimum Initial (s)	5	10	10	5	10	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		17	16		17	16
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	110	7	70	110	7	70
End Time (s)	7	70	110	7	70	110
Yield/Force Off (s)	1.4	64	103.7	1.4	64.3	104
Yield/Force Off 170(s)	1.4	47	87.7	1.4	47.3	88
Local Start Time (s)	103	0	63	103	0	63
Local Yield (s)	109.4	57	96.7	109.4	57.3	97
Local Yield 170(s)	109.4	40	80.7	109.4	40.3	81

Intersection Summary	
Cycle Length	115
Control Type	Actuated-Coordinated
Natural Cycle	150
Offset: 7 (6%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 1: Carp Rd & Kittiwake Dr/Echwoods Ave



Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	316	309	94	2	50	134	315	65	438	16	2	258
Future Volume (vph)	316	309	94	2	50	134	315	65	438	16	2	258
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.6	3.9	3.7	3.7	3.8	3.4	3.9	3.9	3.4	3.7	3.7	3.6
Total Lost time (s)	6.1	6.6			6.6	6.6	6.6	6.0	6.1			6.0
Lane Util. Factor	1.00	0.95			1.00	1.00	1.00	1.00	0.95			1.00
Frpb, ped/bikes	1.00	0.99			1.00	1.00	0.96	1.00	1.00			1.00
Flpb, ped/bikes	0.99	1.00			1.00	1.00	1.00	1.00	1.00			1.00
Frt	1.00	0.97			1.00	1.00	0.85	1.00	0.99			1.00
Flt Protected	0.95	1.00			0.95	1.00	1.00	0.95	1.00			0.95
Satd. Flow (prot)	1666	3231			1437	1586	1445	1523	3184			1463
Flt Permitted	0.44	1.00			0.51	1.00	1.00	0.95	1.00			0.95
Satd. Flow (perm)	771	3231			779	1586	1445	1523	3184			1463
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	316	309	94	2	50	134	315	65	438	16	2	258
RTOR Reduction (vph)	0	31	0	0	0	0	272	0	2	0	0	0
Lane Group Flow (vph)	316	372	0	0	52	134	43	65	452	0	0	260
Confl. Peds. (#/hr)	11		1	3	1		11	1		3	9	3
Heavy Vehicles (%)	2%	5%	5%	0%	22%	11%	5%	16%	3%	43%	0%	17%
Turn Type	pm+pt	NA		Perm	Perm	NA	Perm	Prot	NA		Prot	Prot
Protected Phases	7	4				8		5	2		1	1
Permitted Phases	4			8	8		8					
Actuated Green, G (s)	30.6	30.6			15.6	15.6	15.6	9.1	37.8			27.9
Effective Green, g (s)	30.6	30.6			15.6	15.6	15.6	9.1	37.8			27.9
Actuated g/C Ratio	0.27	0.27			0.14	0.14	0.14	0.08	0.33			0.24
Clearance Time (s)	6.1	6.6			6.6	6.6	6.6	6.0	6.1			6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	274	859			105	215	196	120	1046			354
v/s Ratio Prot	c0.09	0.12				0.08		0.04	c0.14			c0.18
v/s Ratio Perm	c0.22				0.07		0.03					
v/c Ratio	1.15	0.43			0.50	0.62	0.22	0.54	0.43			0.73
Uniform Delay, d1	41.4	35.0			46.1	46.9	44.3	50.9	30.2			40.1
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			0.81
Incremental Delay, d2	102.3	0.4			3.6	5.5	0.6	4.9	1.3			6.3
Delay (s)	143.7	35.4			49.7	52.5	44.8	55.9	31.5			38.8
Level of Service	F	D			D	D	D	E	C			D
Approach Delay (s)		83.0				47.4			34.6			
Approach LOS		F				D			C			

Intersection Summary			
HCM 2000 Control Delay	51.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	98.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

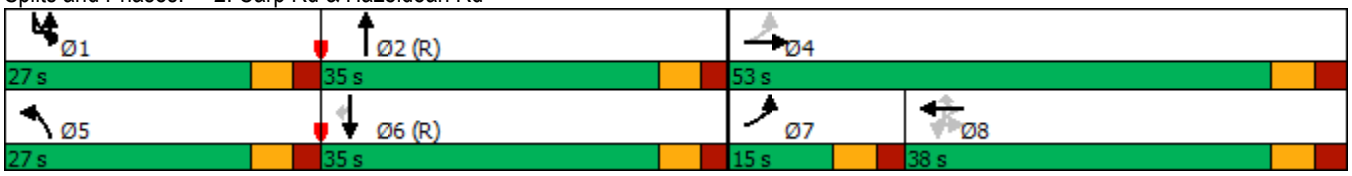
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	315	54
Future Volume (vph)	315	54
Ideal Flow (vphpl)	1800	1800
Lane Width	3.6	3.5
Total Lost time (s)	6.1	6.1
Lane Util. Factor	1.00	1.00
Frpb, ped/bikes	1.00	0.98
Flpb, ped/bikes	1.00	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	1593	1309
Flt Permitted	1.00	1.00
Satd. Flow (perm)	1593	1309
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	315	54
RTOR Reduction (vph)	0	27
Lane Group Flow (vph)	315	27
Confl. Peds. (#/hr)		1
Heavy Vehicles (%)	13%	13%
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Actuated Green, G (s)	56.6	56.6
Effective Green, g (s)	56.6	56.6
Actuated g/C Ratio	0.49	0.49
Clearance Time (s)	6.1	6.1
Vehicle Extension (s)	3.0	3.0
Lane Grp Cap (vph)	784	644
v/s Ratio Prot	0.20	
v/s Ratio Perm		0.02
v/c Ratio	0.40	0.04
Uniform Delay, d1	18.5	15.1
Progression Factor	1.76	1.00
Incremental Delay, d2	1.2	0.1
Delay (s)	33.8	15.2
Level of Service	C	B
Approach Delay (s)	34.3	
Approach LOS	C	

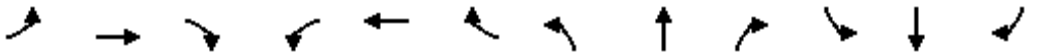
Intersection Summary

Phase Number	1	2	4	5	6	7	8
Movement	SBL	NBT	EBTL	NBL	SBT	EBL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize							
Recall Mode	None	C-Max	None	None	C-Max	None	None
Maximum Split (s)	27	35	53	27	35	15	38
Maximum Split (%)	23.5%	30.4%	46.1%	23.5%	30.4%	13.0%	33.0%
Minimum Split (s)	11	31.1	37.6	11	31.1	11.1	37.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.3	2.4	2.9	2.3	2.4	2.4	2.9
Minimum Initial (s)	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0
Walk Time (s)		7	7		7		7
Flash Dont Walk (s)		18	24		18		24
Dual Entry	No	Yes	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	80	107	27	80	107	27	42
End Time (s)	107	27	80	107	27	42	80
Yield/Force Off (s)	101	20.9	73.4	101	20.9	35.9	73.4
Yield/Force Off 170(s)	101	2.9	49.4	101	2.9	35.9	49.4
Local Start Time (s)	88	0	35	88	0	35	50
Local Yield (s)	109	28.9	81.4	109	28.9	43.9	81.4
Local Yield 170(s)	109	10.9	57.4	109	10.9	43.9	57.4

Intersection Summary	
Cycle Length	115
Control Type	Actuated-Coordinated
Natural Cycle	95
Offset: 107 (93%), Referenced to phase 2:NBT and 6:SBT, Start of Green	

Splits and Phases: 2: Carp Rd & Hazeldean Rd





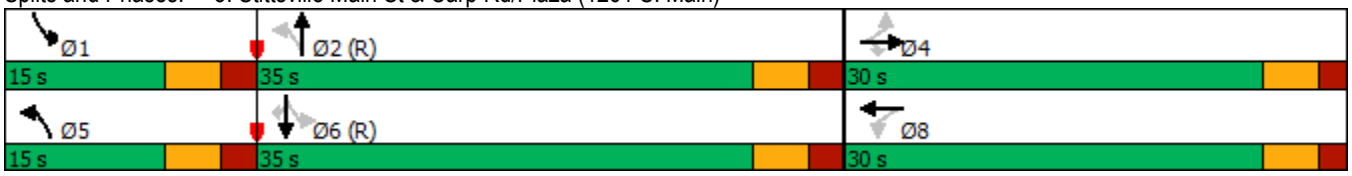
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	106	311	147	70	92	352	415	171	79	319	35
Future Volume (vph)	46	106	311	147	70	92	352	415	171	79	319	35
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.5	3.2	3.9	3.6	3.6	3.7	3.5	3.6	3.7	3.1	3.5	3.5
Total Lost time (s)	5.1	5.1	5.1	5.1	5.1		5.5	5.5		5.5	5.5	5.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	0.99		1.00	0.99		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.91		1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1656	1686	1511	1669	1594		1655	1673		1581	1745	1442
Flt Permitted	0.60	1.00	1.00	0.69	1.00		0.44	1.00		0.36	1.00	1.00
Satd. Flow (perm)	1046	1686	1511	1210	1594		772	1673		598	1745	1442
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	46	106	311	147	70	92	352	415	171	79	319	35
RTOR Reduction (vph)	0	0	251	0	69	0	0	14	0	0	0	19
Lane Group Flow (vph)	46	106	60	147	93	0	352	572	0	79	319	16
Confl. Peds. (#/hr)	1		3	3		1	4		6	6		4
Confl. Bikes (#/hr)												2
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		6
Actuated Green, G (s)	15.5	15.5	15.5	15.5	15.5		53.9	42.5		42.8	36.9	36.9
Effective Green, g (s)	15.5	15.5	15.5	15.5	15.5		53.9	42.5		42.8	36.9	36.9
Actuated g/C Ratio	0.19	0.19	0.19	0.19	0.19		0.67	0.53		0.53	0.46	0.46
Clearance Time (s)	5.1	5.1	5.1	5.1	5.1		5.5	5.5		5.5	5.5	5.5
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)	202	326	292	234	308		647	888		392	804	665
v/s Ratio Prot		0.06			0.06		c0.08	c0.34		0.01	0.18	
v/s Ratio Perm	0.04		0.04	c0.12			0.29			0.09		0.01
v/c Ratio	0.23	0.33	0.21	0.63	0.30		0.54	0.64		0.20	0.40	0.02
Uniform Delay, d1	27.2	27.7	27.1	29.6	27.6		6.2	13.4		9.4	14.2	11.7
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	0.6	0.6	0.4	5.2	0.6		0.9	3.6		0.3	1.5	0.1
Delay (s)	27.8	28.3	27.4	34.8	28.2		7.2	17.0		9.7	15.7	11.8
Level of Service	C	C	C	C	C		A	B		A	B	B
Approach Delay (s)		27.7			31.3			13.3			14.3	
Approach LOS		C			C			B			B	

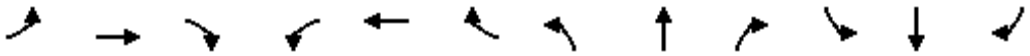
Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	4	5	6	8
Movement	SBL	NBTL	EBTL	NBL	SBTL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	15	35	30	15	35	30
Maximum Split (%)	18.8%	43.8%	37.5%	18.8%	43.8%	37.5%
Minimum Split (s)	10.5	29.5	28.1	10.5	29.5	28.1
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.2	2.2	1.8	2.2	2.2	1.8
Minimum Initial (s)	5	10	10	5	10	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		17	16		17	16
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	65	0	35	65	0	35
End Time (s)	0	35	65	0	35	65
Yield/Force Off (s)	74.5	29.5	59.9	74.5	29.5	59.9
Yield/Force Off 170(s)	74.5	12.5	43.9	74.5	12.5	43.9
Local Start Time (s)	65	0	35	65	0	35
Local Yield (s)	74.5	29.5	59.9	74.5	29.5	59.9
Local Yield 170(s)	74.5	12.5	43.9	74.5	12.5	43.9

Intersection Summary	
Cycle Length	80
Control Type	Actuated-Coordinated
Natural Cycle	75
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 3: Stittsville Main St & Carp Rd/Plaza (1261 S. Main)

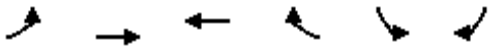




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	14	87	5	59	5	156	5	11	11	5	44
Future Volume (Veh/h)	11	14	87	5	59	5	156	5	11	11	5	44
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	11	14	87	5	59	5	156	5	11	11	5	44
Pedestrians		5			5			5			5	
Lane Width (m)		4.8			4.8			4.8			4.8	
Walking Speed (m/s)		1.0			1.0			1.0			1.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		322										
pX, platoon unblocked												
vC, conflicting volume	69			106			208	164	68	174	204	72
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	69			106			208	164	68	174	204	72
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			77	99	99	99	99	95
cM capacity (veh/h)	1522			1475			690	712	983	751	676	978

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	112	69	172	60
Volume Left	11	5	156	11
Volume Right	87	5	11	44
cSH	1522	1475	704	895
Volume to Capacity	0.01	0.00	0.24	0.07
Queue Length 95th (m)	0.2	0.1	6.7	1.5
Control Delay (s)	0.8	0.6	11.8	9.3
Lane LOS	A	A	B	A
Approach Delay (s)	0.8	0.6	11.8	9.3
Approach LOS			B	A

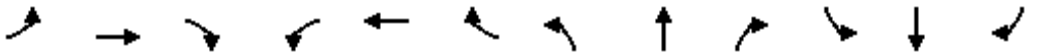
Intersection Summary				
Average Delay	6.6			
Intersection Capacity Utilization	34.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	584	463	47	13	35
Future Volume (Veh/h)	9	584	463	47	13	35
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	9	584	463	47	13	35
Pedestrians					5	
Lane Width (m)					4.8	
Walking Speed (m/s)					1.0	
Percent Blockage					1	
Right turn flare (veh)						
Median type		Raised	Raised			
Median storage veh)		1	1			
Upstream signal (m)		281				
pX, platoon unblocked					0.96	
vC, conflicting volume	515				802	260
vC1, stage 1 conf vol					492	
vC2, stage 2 conf vol					310	
vCu, unblocked vol	515				716	260
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	99				97	95
cM capacity (veh/h)	1040				452	734

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	9	292	292	309	201	48
Volume Left	9	0	0	0	0	13
Volume Right	0	0	0	0	47	35
cSH	1040	1700	1700	1700	1700	628
Volume to Capacity	0.01	0.17	0.17	0.18	0.12	0.08
Queue Length 95th (m)	0.2	0.0	0.0	0.0	0.0	1.7
Control Delay (s)	8.5	0.0	0.0	0.0	0.0	11.2
Lane LOS	A					B
Approach Delay (s)	0.1			0.0		11.2
Approach LOS						B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	27.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	153	14	59	63	8	144	56	762	35	221	1147	164
Future Volume (vph)	153	14	59	63	8	144	56	762	35	221	1147	164
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.9	3.9	3.7	3.7	4.8	3.7	3.6	3.7	3.7	3.3	3.5	3.1
Total Lost time (s)	6.3	6.3			6.0		5.6	6.0		5.6	5.7	5.7
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97			1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00			0.99		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.88			0.91		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1732	1557			1748		1474	1739		1653	1618	1381
Flt Permitted	0.45	1.00			0.88		0.06	1.00		0.15	1.00	1.00
Satd. Flow (perm)	829	1557			1552		94	1739		263	1618	1381
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	153	14	59	63	8	144	56	762	35	221	1147	164
RTOR Reduction (vph)	0	49	0	0	66	0	0	1	0	0	0	30
Lane Group Flow (vph)	153	24	0	0	149	0	56	796	0	221	1147	134
Confl. Peds. (#/hr)			18	18			2		3	3		2
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	2%	0%	2%	9%	33%	0%	16%	4%	0%	0%	10%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	20.7	20.7			21.0		72.3	66.3		87.3	75.7	75.7
Effective Green, g (s)	20.7	20.7			21.0		72.3	66.3		87.3	75.7	75.7
Actuated g/C Ratio	0.17	0.17			0.18		0.60	0.55		0.73	0.63	0.63
Clearance Time (s)	6.3	6.3			6.0		5.6	6.0		5.6	5.7	5.7
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	143	268			271		125	960		366	1020	871
v/s Ratio Prot		0.02					0.02	0.46		c0.08	c0.71	
v/s Ratio Perm	c0.18				0.10		0.25			0.36		0.10
v/c Ratio	1.07	0.09			0.55		0.45	0.83		0.60	1.12	0.15
Uniform Delay, d1	49.6	41.7			45.2		26.6	22.2		16.6	22.1	9.1
Progression Factor	1.00	1.00			1.00		1.35	0.76		1.00	1.00	1.00
Incremental Delay, d2	95.2	0.1			2.3		2.2	7.0		2.8	69.0	0.4
Delay (s)	144.8	41.9			47.5		38.1	24.0		19.4	91.1	9.4
Level of Service	F	D			D		D	C		B	F	A
Approach Delay (s)		111.6			47.5			24.9			72.0	
Approach LOS		F			D			C			E	

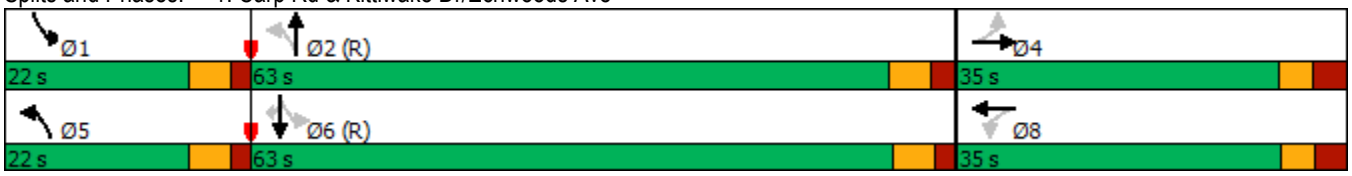
Intersection Summary			
HCM 2000 Control Delay	59.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.9
Intersection Capacity Utilization	107.4%	ICU Level of Service	G
Analysis Period (min)	15		

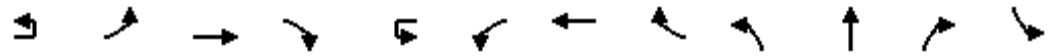
c Critical Lane Group

Phase Number	1	2	4	5	6	8
Movement	SBL	NBTL	EBTL	NBL	SBTL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	22	63	35	22	63	35
Maximum Split (%)	18.3%	52.5%	29.2%	18.3%	52.5%	29.2%
Minimum Split (s)	10.6	30	29.3	10.6	29.7	29
Yellow Time (s)	3.7	3.7	3	3.7	3.7	3
All-Red Time (s)	1.9	2.3	3.3	1.9	2	3
Minimum Initial (s)	5	10	10	5	10	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		17	16		17	16
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	109	11	74	109	11	74
End Time (s)	11	74	109	11	74	109
Yield/Force Off (s)	5.4	68	102.7	5.4	68.3	103
Yield/Force Off 170(s)	5.4	51	86.7	5.4	51.3	87
Local Start Time (s)	98	0	63	98	0	63
Local Yield (s)	114.4	57	91.7	114.4	57.3	92
Local Yield 170(s)	114.4	40	75.7	114.4	40.3	76

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	150
Offset: 11 (9%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 1: Carp Rd & Kittiwake Dr/Echwoods Ave





Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	2	101	304	151	1	87	561	387	146	403	31	412
Future Volume (vph)	2	101	304	151	1	87	561	387	146	403	31	412
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.7	3.6	3.9	3.7	3.7	3.8	3.4	3.9	3.9	3.4	3.7	3.6
Total Lost time (s)		6.6	6.6			6.6	6.6	6.6	6.0	6.1		6.0
Lane Util. Factor		1.00	0.95			1.00	1.00	1.00	1.00	0.95		1.00
Frpb, ped/bikes		1.00	0.99			1.00	1.00	0.96	1.00	1.00		1.00
Flpb, ped/bikes		0.99	1.00			0.99	1.00	1.00	1.00	1.00		1.00
Frt		1.00	0.95			1.00	1.00	0.85	1.00	0.99		1.00
Flt Protected		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		1698	3305			1592	1725	1439	1732	3205		1693
Flt Permitted		0.15	1.00			0.43	1.00	1.00	0.95	1.00		0.95
Satd. Flow (perm)		276	3305			720	1725	1439	1732	3205		1693
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	101	304	151	1	87	561	387	146	403	31	412
RTOR Reduction (vph)	0	0	53	0	0	0	0	235	0	5	0	0
Lane Group Flow (vph)	0	103	402	0	0	88	561	152	146	429	0	412
Confl. Peds. (#/hr)	5	8		4	5	4		8	5		5	5
Heavy Vehicles (%)	5%	0%	1%	0%	0%	9%	2%	6%	2%	3%	4%	1%
Turn Type	Perm	Perm	NA		Perm	Perm	NA	Perm	Prot	NA		Prot
Protected Phases			4				8		5	2		1
Permitted Phases	4	4			8	8		8				
Actuated Green, G (s)		42.9	42.9			42.9	42.9	42.9	15.4	33.9		24.5
Effective Green, g (s)		42.9	42.9			42.9	42.9	42.9	15.4	33.9		24.5
Actuated g/C Ratio		0.36	0.36			0.36	0.36	0.36	0.13	0.28		0.20
Clearance Time (s)		6.6	6.6			6.6	6.6	6.6	6.0	6.1		6.0
Vehicle Extension (s)		3.0	3.0			3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		98	1181			257	616	514	222	905		345
v/s Ratio Prot			0.12				0.33		0.08	0.13		c0.24
v/s Ratio Perm		c0.37				0.12		0.11				
v/c Ratio		1.05	0.34			0.34	0.91	0.30	0.66	0.47		1.19
Uniform Delay, d1		38.5	28.2			28.2	36.7	27.7	49.8	35.7		47.8
Progression Factor		1.00	1.00			1.00	1.00	1.00	1.00	1.00		1.21
Incremental Delay, d2		105.4	0.2			0.8	17.7	0.3	6.9	1.8		90.2
Delay (s)		143.9	28.4			29.0	54.4	28.0	56.7	37.4		147.9
Level of Service		F	C			C	D	C	E	D		F
Approach Delay (s)			49.7				42.4			42.3		
Approach LOS			D				D			D		

Intersection Summary			
HCM 2000 Control Delay	57.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.7
Intersection Capacity Utilization	103.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

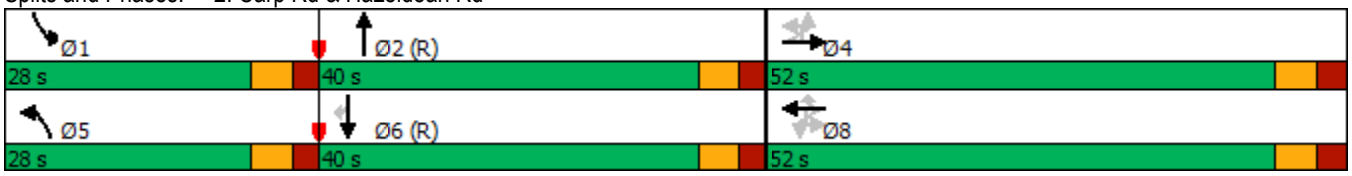
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	539	260
Future Volume (vph)	539	260
Ideal Flow (vphpl)	1800	1800
Lane Width	3.6	3.5
Total Lost time (s)	6.1	6.1
Lane Util. Factor	1.00	1.00
Frpb, ped/bikes	1.00	0.97
Flpb, ped/bikes	1.00	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	1765	1465
Flt Permitted	1.00	1.00
Satd. Flow (perm)	1765	1465
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	539	260
RTOR Reduction (vph)	0	141
Lane Group Flow (vph)	539	119
Confl. Peds. (#/hr)		5
Heavy Vehicles (%)	2%	0%
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Actuated Green, G (s)	43.0	43.0
Effective Green, g (s)	43.0	43.0
Actuated g/C Ratio	0.36	0.36
Clearance Time (s)	6.1	6.1
Vehicle Extension (s)	3.0	3.0
Lane Grp Cap (vph)	632	524
v/s Ratio Prot	c0.31	
v/s Ratio Perm		0.08
v/c Ratio	0.85	0.23
Uniform Delay, d1	35.6	26.9
Progression Factor	1.11	2.04
Incremental Delay, d2	1.5	0.1
Delay (s)	41.0	55.1
Level of Service	D	E
Approach Delay (s)	80.4	
Approach LOS	F	

Intersection Summary

Phase Number	1	2	4	5	6	8
Movement	SBL	NBT	EBTL	NBL	SBT	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	28	40	52	28	40	52
Maximum Split (%)	23.3%	33.3%	43.3%	23.3%	33.3%	43.3%
Minimum Split (s)	11	31.1	37.6	11	31.1	37.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.3	2.4	2.9	2.3	2.4	2.9
Minimum Initial (s)	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		18	24		18	24
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	100	8	48	100	8	48
End Time (s)	8	48	100	8	48	100
Yield/Force Off (s)	2	41.9	93.4	2	41.9	93.4
Yield/Force Off 170(s)	2	23.9	69.4	2	23.9	69.4
Local Start Time (s)	92	0	40	92	0	40
Local Yield (s)	114	33.9	85.4	114	33.9	85.4
Local Yield 170(s)	114	15.9	61.4	114	15.9	61.4

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	110
Offset: 8 (7%), Referenced to phase 2:NBT and 6:SBT, Start of Green	

Splits and Phases: 2: Carp Rd & Hazeldean Rd



Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	80	130	500	233	140	100	339	537	120	79	528
Future Volume (vph)	1	80	130	500	233	140	100	339	537	120	79	528
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.7	3.5	3.2	3.9	3.6	3.6	3.7	3.5	3.6	3.7	3.1	3.5
Total Lost time (s)		5.1	5.1	5.1	5.1	5.1		5.5	5.5		5.5	5.5
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frpb, ped/bikes		1.00	1.00	0.96	1.00	0.97		1.00	0.99		1.00	1.00
Flpb, ped/bikes		0.94	1.00	1.00	0.99	1.00		1.00	1.00		1.00	1.00
Frt		1.00	1.00	0.85	1.00	0.94		1.00	0.97		1.00	1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)		1582	1720	1478	1699	1614		1595	1719		1614	1728
Flt Permitted		0.61	1.00	1.00	0.51	1.00		0.12	1.00		0.15	1.00
Satd. Flow (perm)		1015	1720	1478	919	1614		210	1719		256	1728
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	80	130	500	233	140	100	339	537	120	79	528
RTOR Reduction (vph)	0	0	0	267	0	31	0	0	8	0	0	0
Lane Group Flow (vph)	0	81	130	233	233	209	0	339	649	0	79	528
Confl. Peds. (#/hr)	25	21		9	9		21	25		12	12	
Confl. Bikes (#/hr)							2			3		
Heavy Vehicles (%)	0%	0%	0%	3%	0%	1%	3%	6%	1%	1%	0%	3%
Turn Type	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA
Protected Phases			4		3	8		5	2		1	6
Permitted Phases	4	4		4	8			2			6	
Actuated Green, G (s)		18.4	18.4	18.4	33.4	33.4		46.0	34.2		32.8	26.5
Effective Green, g (s)		18.4	18.4	18.4	33.4	33.4		46.0	34.2		32.8	26.5
Actuated g/C Ratio		0.20	0.20	0.20	0.37	0.37		0.51	0.38		0.36	0.29
Clearance Time (s)		5.1	5.1	5.1	5.1	5.1		5.5	5.5		5.5	5.5
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)		207	351	302	426	598		322	653		188	508
v/s Ratio Prot			0.08		c0.06	0.13		c0.16	0.38		0.03	0.31
v/s Ratio Perm		0.08		c0.16	0.14			c0.37			0.12	
v/c Ratio		0.39	0.37	0.77	0.55	0.35		1.05	0.99		0.42	1.04
Uniform Delay, d1		31.0	30.8	33.8	20.8	20.4		25.5	27.8		21.3	31.8
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.2	0.7	11.5	1.4	0.4		64.7	33.7		1.5	50.5
Delay (s)		32.2	31.5	45.3	22.3	20.8		90.2	61.5		22.8	82.3
Level of Service		C	C	D	C	C		F	E		C	F
Approach Delay (s)			41.3			21.5			71.3			70.4
Approach LOS			D			C			E			E

Intersection Summary			
HCM 2000 Control Delay	55.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	21.2
Intersection Capacity Utilization	92.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

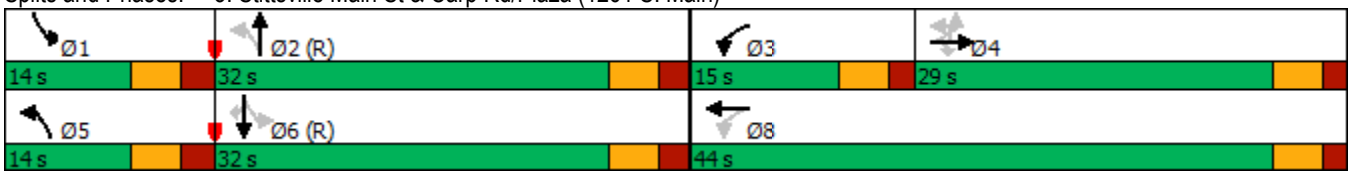
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	53
Future Volume (vph)	53
Ideal Flow (vphpl)	1800
Lane Width	3.5
Total Lost time (s)	5.5
Lane Util. Factor	1.00
Frpb, ped/bikes	0.93
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1413
Flt Permitted	1.00
Satd. Flow (perm)	1413
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	53
RTOR Reduction (vph)	37
Lane Group Flow (vph)	16
Confl. Peds. (#/hr)	25
Confl. Bikes (#/hr)	
Heavy Vehicles (%)	0%
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	26.5
Effective Green, g (s)	26.5
Actuated g/C Ratio	0.29
Clearance Time (s)	5.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	416
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.04
Uniform Delay, d1	22.7
Progression Factor	1.00
Incremental Delay, d2	0.2
Delay (s)	22.8
Level of Service	C
Approach Delay (s)	
Approach LOS	

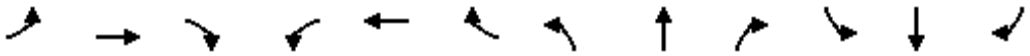
Intersection Summary

Phase Number	1	2	3	4	5	6	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize							
Recall Mode	None	C-Max	None	None	None	C-Max	None
Maximum Split (s)	14	32	15	29	14	32	44
Maximum Split (%)	15.6%	35.6%	16.7%	32.2%	15.6%	35.6%	48.9%
Minimum Split (s)	10.5	29.5	10.1	28.1	10.5	29.5	28.1
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.2	2.2	1.8	1.8	2.2	2.2	1.8
Minimum Initial (s)	5	10	5	10	5	10	10
Vehicle Extension (s)	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0
Walk Time (s)		7		7		7	7
Flash Dont Walk (s)		17		16		17	16
Dual Entry	No	Yes	No	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	78	2	34	49	78	2	34
End Time (s)	2	34	49	78	2	34	78
Yield/Force Off (s)	86.5	28.5	43.9	72.9	86.5	28.5	72.9
Yield/Force Off 170(s)	86.5	11.5	43.9	56.9	86.5	11.5	56.9
Local Start Time (s)	76	0	32	47	76	0	32
Local Yield (s)	84.5	26.5	41.9	70.9	84.5	26.5	70.9
Local Yield 170(s)	84.5	9.5	41.9	54.9	84.5	9.5	54.9

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	90
Offset: 2 (2%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 3: Stittsville Main St & Carp Rd/Plaza (1261 S. Main)

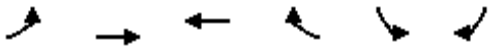




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	49	132	5	30	5	83	5	37	37	5	23
Future Volume (Veh/h)	36	49	132	5	30	5	83	5	37	37	5	23
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	36	49	132	5	30	5	83	5	37	37	5	23
Pedestrians		5			5			5			5	
Lane Width (m)		4.8			4.8			4.8			4.8	
Walking Speed (m/s)		1.0			1.0			1.0			1.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		322										
pX, platoon unblocked												
vC, conflicting volume	40			186			265	242	125	279	306	42
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	40			186			265	242	125	279	306	42
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			87	99	96	94	99	98
cM capacity (veh/h)	1559			1379			639	633	913	615	584	1014

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	217	40	125	65
Volume Left	36	5	83	37
Volume Right	132	5	37	23
cSH	1559	1379	701	711
Volume to Capacity	0.02	0.00	0.18	0.09
Queue Length 95th (m)	0.5	0.1	4.5	2.1
Control Delay (s)	1.4	1.0	11.2	10.6
Lane LOS	A	A	B	B
Approach Delay (s)	1.4	1.0	11.2	10.6
Approach LOS			B	B

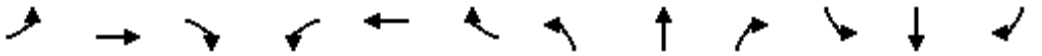
Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	37.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	742	996	50	12	46
Future Volume (Veh/h)	11	742	996	50	12	46
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	11	742	996	50	12	46
Pedestrians					5	
Lane Width (m)					4.8	
Walking Speed (m/s)					1.0	
Percent Blockage					1	
Right turn flare (veh)						
Median type		Raised	Raised			
Median storage veh)		1	1			
Upstream signal (m)		281				
pX, platoon unblocked					1.00	
vC, conflicting volume	1051				1419	528
vC1, stage 1 conf vol					1026	
vC2, stage 2 conf vol					393	
vCu, unblocked vol	1051				1418	528
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	98				95	91
cM capacity (veh/h)	666				239	497

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	11	371	371	664	382	58
Volume Left	11	0	0	0	0	12
Volume Right	0	0	0	0	50	46
cSH	666	1700	1700	1700	1700	406
Volume to Capacity	0.02	0.22	0.22	0.39	0.22	0.14
Queue Length 95th (m)	0.4	0.0	0.0	0.0	0.0	3.5
Control Delay (s)	10.5	0.0	0.0	0.0	0.0	15.3
Lane LOS	B					C
Approach Delay (s)	0.2			0.0		15.3
Approach LOS						C

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	284	6	84	59	4	288	32	1117	18	118	646	59
Future Volume (vph)	284	6	84	59	4	288	32	1117	18	118	646	59
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.9	3.9	3.7	3.7	4.8	3.7	3.6	3.7	3.7	3.3	3.5	3.1
Total Lost time (s)	6.3	6.3			6.0		5.6	6.0		5.6	5.7	5.7
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99			0.98		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.86			0.89		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1490			1733		1474	1746		1653	1618	1382
Flt Permitted	0.40	1.00			0.93		0.25	1.00		0.07	1.00	1.00
Satd. Flow (perm)	706	1490			1623		393	1746		116	1618	1382
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	284	6	84	59	4	288	32	1117	18	118	646	59
RTOR Reduction (vph)	0	59	0	0	111	0	0	1	0	0	0	28
Lane Group Flow (vph)	284	31	0	0	240	0	32	1134	0	118	646	31
Confl. Peds. (#/hr)	1					1	2		1	1		2
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	5%	20%	5%	9%	33%	0%	16%	4%	0%	0%	10%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	33.7	33.7			34.0		60.8	57.0		66.3	59.9	59.9
Effective Green, g (s)	33.7	33.7			34.0		60.8	57.0		66.3	59.9	59.9
Actuated g/C Ratio	0.29	0.29			0.30		0.53	0.50		0.58	0.52	0.52
Clearance Time (s)	6.3	6.3			6.0		5.6	6.0		5.6	5.7	5.7
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	206	436			479		243	865		152	842	719
v/s Ratio Prot		0.02					0.00	c0.65		c0.04	0.40	
v/s Ratio Perm	c0.40				0.15		0.07			c0.40		0.02
v/c Ratio	1.38	0.07			0.50		0.13	1.31		0.78	0.77	0.04
Uniform Delay, d1	40.6	29.3			33.5		15.4	29.0		26.1	22.0	13.5
Progression Factor	1.00	1.00			1.00		0.75	0.66		1.00	1.00	1.00
Incremental Delay, d2	197.8	0.1			0.8		0.2	145.5		21.6	6.6	0.1
Delay (s)	238.4	29.4			34.3		11.6	164.6		47.7	28.6	13.6
Level of Service	F	C			C		B	F		D	C	B
Approach Delay (s)		188.1			34.3			160.4			30.3	
Approach LOS		F			C			F			C	

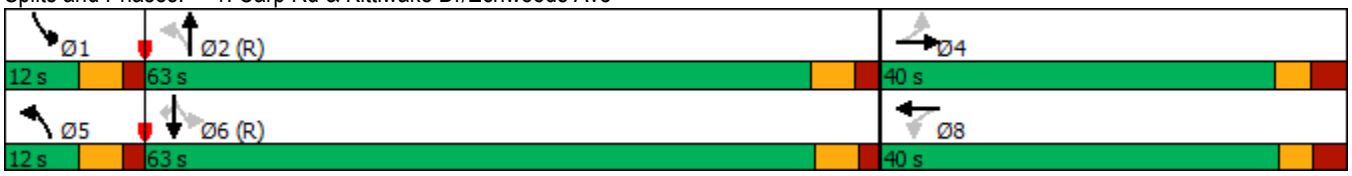
Intersection Summary			
HCM 2000 Control Delay	108.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.30		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	17.9
Intersection Capacity Utilization	129.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	1	2	4	5	6	8
Movement	SBL	NBTL	EBTL	NBL	SBTL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	12	63	40	12	63	40
Maximum Split (%)	10.4%	54.8%	34.8%	10.4%	54.8%	34.8%
Minimum Split (s)	10.6	30	29.3	10.6	29.7	29
Yellow Time (s)	3.7	3.7	3	3.7	3.7	3
All-Red Time (s)	1.9	2.3	3.3	1.9	2	3
Minimum Initial (s)	5	10	10	5	10	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		17	16		17	16
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	110	7	70	110	7	70
End Time (s)	7	70	110	7	70	110
Yield/Force Off (s)	1.4	64	103.7	1.4	64.3	104
Yield/Force Off 170(s)	1.4	47	87.7	1.4	47.3	88
Local Start Time (s)	103	0	63	103	0	63
Local Yield (s)	109.4	57	96.7	109.4	57.3	97
Local Yield 170(s)	109.4	40	80.7	109.4	40.3	81

Intersection Summary	
Cycle Length	115
Control Type	Actuated-Coordinated
Natural Cycle	150
Offset: 7 (6%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 1: Carp Rd & Kittiwake Dr/Echwoods Ave



Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	351	342	104	2	51	149	350	72	486	18	2	286
Future Volume (vph)	351	342	104	2	51	149	350	72	486	18	2	286
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.6	3.9	3.7	3.7	3.8	3.4	3.9	3.9	3.4	3.7	3.7	3.6
Total Lost time (s)	6.1	6.6			6.6	6.6	6.6	6.0	6.1			6.0
Lane Util. Factor	1.00	0.95			1.00	1.00	1.00	1.00	0.95			1.00
Frpb, ped/bikes	1.00	0.99			1.00	1.00	0.96	1.00	1.00			1.00
Flpb, ped/bikes	0.99	1.00			1.00	1.00	1.00	1.00	1.00			1.00
Frt	1.00	0.97			1.00	1.00	0.85	1.00	0.99			1.00
Flt Protected	0.95	1.00			0.95	1.00	1.00	0.95	1.00			0.95
Satd. Flow (prot)	1666	3231			1437	1586	1443	1523	3183			1463
Flt Permitted	0.42	1.00			0.49	1.00	1.00	0.95	1.00			0.95
Satd. Flow (perm)	737	3231			747	1586	1443	1523	3183			1463
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	351	342	104	2	51	149	350	72	486	18	2	286
RTOR Reduction (vph)	0	30	0	0	0	0	299	0	2	0	0	0
Lane Group Flow (vph)	351	416	0	0	53	149	51	72	502	0	0	288
Confl. Peds. (#/hr)	12		1	3	1		12	1		3	12	3
Heavy Vehicles (%)	2%	5%	5%	0%	22%	11%	5%	16%	3%	43%	0%	17%
Turn Type	pm+pt	NA		Perm	Perm	NA	Perm	Prot	NA		Prot	Prot
Protected Phases	7	4				8		5	2		1	1
Permitted Phases	4			8	8		8					
Actuated Green, G (s)	31.8	31.8			16.8	16.8	16.8	9.5	32.5			32.0
Effective Green, g (s)	31.8	31.8			16.8	16.8	16.8	9.5	32.5			32.0
Actuated g/C Ratio	0.28	0.28			0.15	0.15	0.15	0.08	0.28			0.28
Clearance Time (s)	6.1	6.6			6.6	6.6	6.6	6.0	6.1			6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	275	893			109	231	210	125	899			407
v/s Ratio Prot	c0.10	0.13				0.09		0.05	c0.16			c0.20
v/s Ratio Perm	c0.25				0.07		0.04					
v/c Ratio	1.28	0.47			0.49	0.65	0.24	0.58	0.56			0.71
Uniform Delay, d1	40.8	34.5			45.1	46.3	43.5	50.8	35.1			37.3
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			0.83
Incremental Delay, d2	149.5	0.4			3.4	6.1	0.6	6.3	2.5			4.1
Delay (s)	190.3	34.9			48.5	52.3	44.1	57.1	37.6			35.1
Level of Service	F	C			D	D	D	E	D			D
Approach Delay (s)		103.4				46.7			40.1			
Approach LOS		F				D			D			

Intersection Summary			
HCM 2000 Control Delay	59.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	103.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

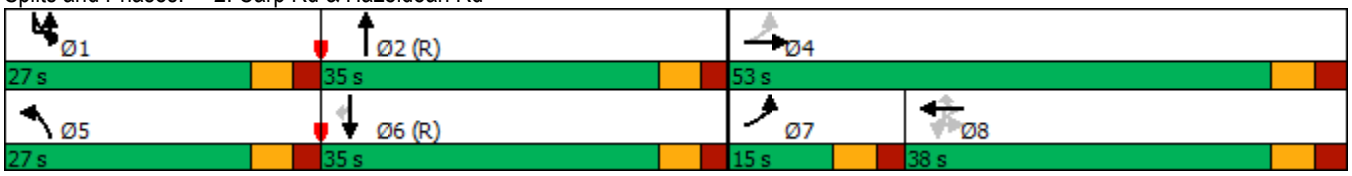
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	350	60
Future Volume (vph)	350	60
Ideal Flow (vphpl)	1800	1800
Lane Width	3.6	3.5
Total Lost time (s)	6.1	6.1
Lane Util. Factor	1.00	1.00
Frpb, ped/bikes	1.00	0.98
Flpb, ped/bikes	1.00	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	1593	1309
Flt Permitted	1.00	1.00
Satd. Flow (perm)	1593	1309
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	350	60
RTOR Reduction (vph)	0	31
Lane Group Flow (vph)	350	29
Confl. Peds. (#/hr)		1
Heavy Vehicles (%)	13%	13%
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Actuated Green, G (s)	55.0	55.0
Effective Green, g (s)	55.0	55.0
Actuated g/C Ratio	0.48	0.48
Clearance Time (s)	6.1	6.1
Vehicle Extension (s)	3.0	3.0
Lane Grp Cap (vph)	761	626
v/s Ratio Prot	0.22	
v/s Ratio Perm		0.02
v/c Ratio	0.46	0.05
Uniform Delay, d1	20.1	16.0
Progression Factor	1.73	1.00
Incremental Delay, d2	1.5	0.1
Delay (s)	36.1	16.1
Level of Service	D	B
Approach Delay (s)	34.0	
Approach LOS	C	

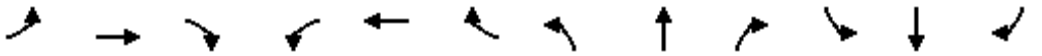
Intersection Summary

Phase Number	1	2	4	5	6	7	8
Movement	SBL	NBT	EBTL	NBL	SBT	EBL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize							
Recall Mode	None	C-Max	None	None	C-Max	None	None
Maximum Split (s)	27	35	53	27	35	15	38
Maximum Split (%)	23.5%	30.4%	46.1%	23.5%	30.4%	13.0%	33.0%
Minimum Split (s)	11	31.1	37.6	11	31.1	11.1	37.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.3	2.4	2.9	2.3	2.4	2.4	2.9
Minimum Initial (s)	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0
Walk Time (s)		7	7		7		7
Flash Dont Walk (s)		18	24		18		24
Dual Entry	No	Yes	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	80	107	27	80	107	27	42
End Time (s)	107	27	80	107	27	42	80
Yield/Force Off (s)	101	20.9	73.4	101	20.9	35.9	73.4
Yield/Force Off 170(s)	101	2.9	49.4	101	2.9	35.9	49.4
Local Start Time (s)	88	0	35	88	0	35	50
Local Yield (s)	109	28.9	81.4	109	28.9	43.9	81.4
Local Yield 170(s)	109	10.9	57.4	109	10.9	43.9	57.4

Intersection Summary	
Cycle Length	115
Control Type	Actuated-Coordinated
Natural Cycle	105
Offset: 107 (93%), Referenced to phase 2:NBT and 6:SBT, Start of Green	

Splits and Phases: 2: Carp Rd & Hazeldean Rd





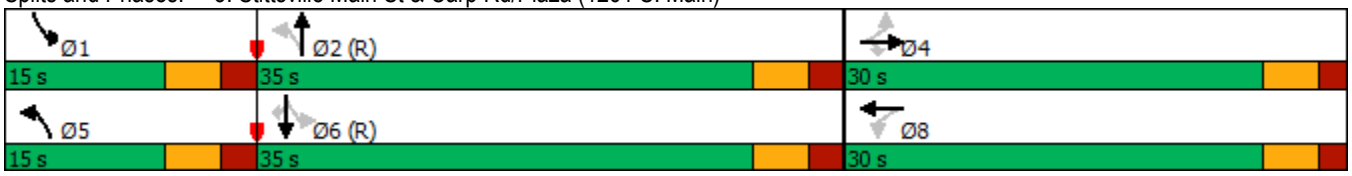
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	117	342	163	78	102	390	457	190	88	353	38
Future Volume (vph)	51	117	342	163	78	102	390	457	190	88	353	38
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.5	3.2	3.9	3.6	3.6	3.7	3.5	3.6	3.7	3.1	3.5	3.5
Total Lost time (s)	5.1	5.1	5.1	5.1	5.1		5.5	5.5		5.5	5.5	5.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	0.99		1.00	0.99		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.92		1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1656	1686	1511	1669	1595		1656	1671		1582	1745	1441
Flt Permitted	0.57	1.00	1.00	0.68	1.00		0.40	1.00		0.30	1.00	1.00
Satd. Flow (perm)	989	1686	1511	1198	1595		697	1671		498	1745	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	51	117	342	163	78	102	390	457	190	88	353	38
RTOR Reduction (vph)	0	0	271	0	67	0	0	15	0	0	0	21
Lane Group Flow (vph)	51	117	71	163	113	0	390	632	0	88	353	17
Confl. Peds. (#/hr)	1		3	3		1	4		7	7		4
Confl. Bikes (#/hr)												2
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		6
Actuated Green, G (s)	16.5	16.5	16.5	16.5	16.5		52.9	41.2		41.1	34.9	34.9
Effective Green, g (s)	16.5	16.5	16.5	16.5	16.5		52.9	41.2		41.1	34.9	34.9
Actuated g/C Ratio	0.21	0.21	0.21	0.21	0.21		0.66	0.52		0.51	0.44	0.44
Clearance Time (s)	5.1	5.1	5.1	5.1	5.1		5.5	5.5		5.5	5.5	5.5
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)	203	347	311	247	328		610	860		339	761	628
v/s Ratio Prot		0.07			0.07		c0.10	c0.38		0.02	0.20	
v/s Ratio Perm	0.05		0.05	c0.14			0.32			0.11		0.01
v/c Ratio	0.25	0.34	0.23	0.66	0.34		0.64	0.74		0.26	0.46	0.03
Uniform Delay, d1	26.6	27.1	26.4	29.2	27.1		7.3	15.1		10.7	15.9	12.9
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	0.7	0.6	0.4	6.2	0.6		2.2	5.6		0.4	2.0	0.1
Delay (s)	27.2	27.7	26.8	35.4	27.7		9.5	20.7		11.1	18.0	12.9
Level of Service	C	C	C	D	C		A	C		B	B	B
Approach Delay (s)		27.0			31.4			16.5			16.3	
Approach LOS		C			C			B			B	

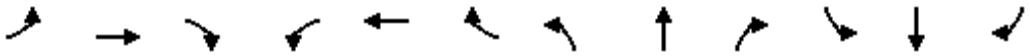
Intersection Summary				
HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.74			
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.1	
Intersection Capacity Utilization	80.2%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Phase Number	1	2	4	5	6	8
Movement	SBL	NBTL	EBTL	NBL	SBTL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	15	35	30	15	35	30
Maximum Split (%)	18.8%	43.8%	37.5%	18.8%	43.8%	37.5%
Minimum Split (s)	10.5	29.5	28.1	10.5	29.5	28.1
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.2	2.2	1.8	2.2	2.2	1.8
Minimum Initial (s)	5	10	10	5	10	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		17	16		17	16
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	65	0	35	65	0	35
End Time (s)	0	35	65	0	35	65
Yield/Force Off (s)	74.5	29.5	59.9	74.5	29.5	59.9
Yield/Force Off 170(s)	74.5	12.5	43.9	74.5	12.5	43.9
Local Start Time (s)	65	0	35	65	0	35
Local Yield (s)	74.5	29.5	59.9	74.5	29.5	59.9
Local Yield 170(s)	74.5	12.5	43.9	74.5	12.5	43.9

Intersection Summary	
Cycle Length	80
Control Type	Actuated-Coordinated
Natural Cycle	75
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 3: Stittsville Main St & Carp Rd/Plaza (1261 S. Main)

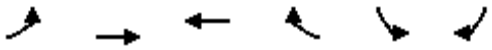




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	16	88	6	66	6	161	6	12	12	6	49
Future Volume (Veh/h)	12	16	88	6	66	6	161	6	12	12	6	49
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	12	16	88	6	66	6	161	6	12	12	6	49
Pedestrians		5			5			5			5	
Lane Width (m)		4.8			4.8			4.8			4.8	
Walking Speed (m/s)		1.0			1.0			1.0			1.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		322										
pX, platoon unblocked												
vC, conflicting volume	77			109			227	178	70	190	219	79
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	77			109			227	178	70	190	219	79
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			76	99	99	98	99	95
cM capacity (veh/h)	1512			1472			665	698	980	731	662	968

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	116	78	179	67
Volume Left	12	6	161	12
Volume Right	88	6	12	49
cSH	1512	1472	680	881
Volume to Capacity	0.01	0.00	0.26	0.08
Queue Length 95th (m)	0.2	0.1	7.4	1.7
Control Delay (s)	0.8	0.6	12.2	9.4
Lane LOS	A	A	B	A
Approach Delay (s)	0.8	0.6	12.2	9.4
Approach LOS			B	A

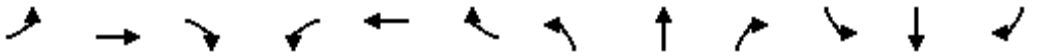
Intersection Summary				
Average Delay	6.7			
Intersection Capacity Utilization	35.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	647	513	47	13	35
Future Volume (Veh/h)	9	647	513	47	13	35
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	9	647	513	47	13	35
Pedestrians					5	
Lane Width (m)					4.8	
Walking Speed (m/s)					1.0	
Percent Blockage					1	
Right turn flare (veh)						
Median type		Raised	Raised			
Median storage veh)		1	1			
Upstream signal (m)		281				
pX, platoon unblocked					0.95	
vC, conflicting volume	565				883	285
vC1, stage 1 conf vol					542	
vC2, stage 2 conf vol					342	
vCu, unblocked vol	565				771	285
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	99				97	95
cM capacity (veh/h)	996				426	707

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	9	324	324	342	218	48
Volume Left	9	0	0	0	0	13
Volume Right	0	0	0	0	47	35
cSH	996	1700	1700	1700	1700	600
Volume to Capacity	0.01	0.19	0.19	0.20	0.13	0.08
Queue Length 95th (m)	0.2	0.0	0.0	0.0	0.0	1.8
Control Delay (s)	8.6	0.0	0.0	0.0	0.0	11.5
Lane LOS	A					B
Approach Delay (s)	0.1			0.0		11.5
Approach LOS						B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	28.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	170	16	66	70	8	154	62	845	38	235	1273	182
Future Volume (vph)	170	16	66	70	8	154	62	845	38	235	1273	182
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.9	3.9	3.7	3.7	4.8	3.7	3.6	3.7	3.7	3.3	3.5	3.1
Total Lost time (s)	6.3	6.3			6.0		5.6	6.0		5.6	5.7	5.7
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97			1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00			0.99		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.88			0.91		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1732	1554			1747		1474	1739		1653	1618	1381
Flt Permitted	0.45	1.00			0.87		0.06	1.00		0.08	1.00	1.00
Satd. Flow (perm)	825	1554			1540		98	1739		131	1618	1381
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	170	16	66	70	8	154	62	845	38	235	1273	182
RTOR Reduction (vph)	0	54	0	0	63	0	0	1	0	0	0	31
Lane Group Flow (vph)	170	28	0	0	169	0	62	882	0	235	1273	151
Confl. Peds. (#/hr)			20	20			2		4	4		2
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	2%	0%	2%	9%	33%	0%	16%	4%	0%	0%	10%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	22.2	22.2			22.5		70.0	63.6		85.8	73.8	73.8
Effective Green, g (s)	22.2	22.2			22.5		70.0	63.6		85.8	73.8	73.8
Actuated g/C Ratio	0.18	0.18			0.19		0.58	0.53		0.71	0.61	0.61
Clearance Time (s)	6.3	6.3			6.0		5.6	6.0		5.6	5.7	5.7
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	152	287			288		130	921		300	995	849
v/s Ratio Prot		0.02					0.03	0.51		c0.11	c0.79	
v/s Ratio Perm	c0.21				0.11		0.25			0.45		0.11
v/c Ratio	1.12	0.10			0.59		0.48	0.96		0.78	1.28	0.18
Uniform Delay, d1	48.9	40.6			44.5		26.3	26.9		34.1	23.1	10.0
Progression Factor	1.00	1.00			1.00		1.34	0.78		1.00	1.00	1.00
Incremental Delay, d2	108.3	0.2			3.0		2.1	17.5		12.5	133.5	0.5
Delay (s)	157.2	40.7			47.5		37.3	38.5		46.7	156.6	10.4
Level of Service	F	D			D		D	D		D	F	B
Approach Delay (s)		119.3			47.5			38.5			125.6	
Approach LOS		F			D			D			F	

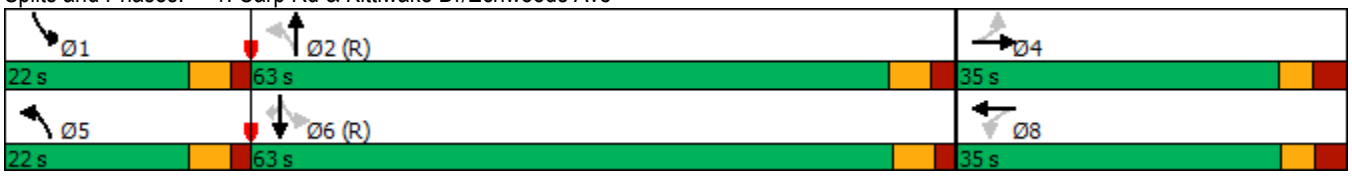
Intersection Summary			
HCM 2000 Control Delay	92.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.9
Intersection Capacity Utilization	116.5%	ICU Level of Service	H
Analysis Period (min)	15		

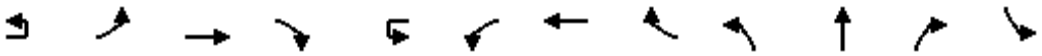
c Critical Lane Group

Phase Number	1	2	4	5	6	8
Movement	SBL	NBTL	EBTL	NBL	SBTL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	22	63	35	22	63	35
Maximum Split (%)	18.3%	52.5%	29.2%	18.3%	52.5%	29.2%
Minimum Split (s)	10.6	30	29.3	10.6	29.7	29
Yellow Time (s)	3.7	3.7	3	3.7	3.7	3
All-Red Time (s)	1.9	2.3	3.3	1.9	2	3
Minimum Initial (s)	5	10	10	5	10	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		17	16		17	16
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	109	11	74	109	11	74
End Time (s)	11	74	109	11	74	109
Yield/Force Off (s)	5.4	68	102.7	5.4	68.3	103
Yield/Force Off 170(s)	5.4	51	86.7	5.4	51.3	87
Local Start Time (s)	98	0	63	98	0	63
Local Yield (s)	114.4	57	91.7	114.4	57.3	92
Local Yield 170(s)	114.4	40	75.7	114.4	40.3	76

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	150
Offset: 11 (9%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 1: Carp Rd & Kittiwake Dr/Echwoods Ave





Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	2	113	336	168	1	93	622	430	162	447	35	456
Future Volume (vph)	2	113	336	168	1	93	622	430	162	447	35	456
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.7	3.6	3.9	3.7	3.7	3.8	3.4	3.9	3.9	3.4	3.7	3.6
Total Lost time (s)		6.6	6.6			6.6	6.6	6.6	6.0	6.1		6.0
Lane Util. Factor		1.00	0.95			1.00	1.00	1.00	1.00	0.95		1.00
Frpb, ped/bikes		1.00	0.99			1.00	1.00	0.96	1.00	1.00		1.00
Flpb, ped/bikes		1.00	1.00			0.99	1.00	1.00	1.00	1.00		1.00
Frt		1.00	0.95			1.00	1.00	0.85	1.00	0.99		1.00
Flt Protected		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		1709	3302			1590	1725	1439	1732	3204		1693
Flt Permitted		0.12	1.00			0.40	1.00	1.00	0.95	1.00		0.95
Satd. Flow (perm)		214	3302			673	1725	1439	1732	3204		1693
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	113	336	168	1	93	622	430	162	447	35	456
RTOR Reduction (vph)	0	0	52	0	0	0	0	228	0	5	0	0
Lane Group Flow (vph)	0	115	452	0	0	94	622	202	162	477	0	456
Confl. Peds. (#/hr)	6	8		5	6	5		8	6		6	6
Heavy Vehicles (%)	5%	0%	1%	0%	0%	9%	2%	6%	2%	3%	4%	1%
Turn Type	Perm	Perm	NA		Perm	Perm	NA	Perm	Prot	NA		Prot
Protected Phases			4				8		5	2		1
Permitted Phases	4	4			8	8		8				
Actuated Green, G (s)		45.4	45.4			45.4	45.4	45.4	16.4	33.9		22.0
Effective Green, g (s)		45.4	45.4			45.4	45.4	45.4	16.4	33.9		22.0
Actuated g/C Ratio		0.38	0.38			0.38	0.38	0.38	0.14	0.28		0.18
Clearance Time (s)		6.6	6.6			6.6	6.6	6.6	6.0	6.1		6.0
Vehicle Extension (s)		3.0	3.0			3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		80	1249			254	652	544	236	905		310
v/s Ratio Prot			0.14				0.36		0.09	0.15		c0.27
v/s Ratio Perm		c0.54				0.14		0.14				
v/c Ratio		1.44	0.36			0.37	0.95	0.37	0.69	0.53		1.47
Uniform Delay, d1		37.3	26.9			27.0	36.3	27.0	49.4	36.3		49.0
Progression Factor		1.00	1.00			1.00	1.00	1.00	1.00	1.00		1.19
Incremental Delay, d2		254.1	0.2			0.9	24.3	0.4	8.0	2.2		213.6
Delay (s)		291.4	27.0			27.9	60.5	27.4	57.4	38.5		271.7
Level of Service		F	C			C	E	C	E	D		F
Approach Delay (s)			76.2				45.4			43.2		
Approach LOS			E				D			D		

Intersection Summary			
HCM 2000 Control Delay	81.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.7
Intersection Capacity Utilization	109.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

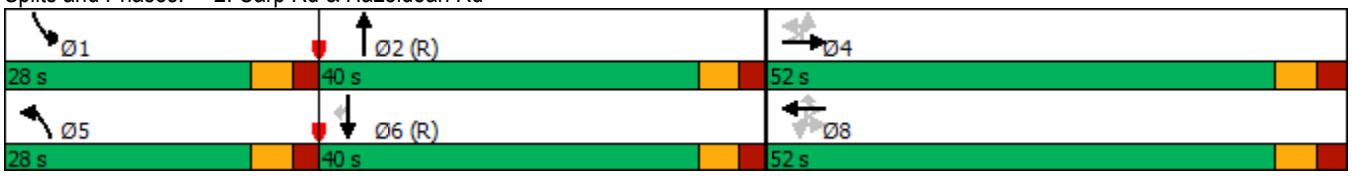
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	598	289
Future Volume (vph)	598	289
Ideal Flow (vphpl)	1800	1800
Lane Width	3.6	3.5
Total Lost time (s)	6.1	6.1
Lane Util. Factor	1.00	1.00
Frpb, ped/bikes	1.00	0.97
Flpb, ped/bikes	1.00	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	1765	1461
Flt Permitted	1.00	1.00
Satd. Flow (perm)	1765	1461
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	598	289
RTOR Reduction (vph)	0	125
Lane Group Flow (vph)	598	164
Confl. Peds. (#/hr)		6
Heavy Vehicles (%)	2%	0%
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Actuated Green, G (s)	39.5	39.5
Effective Green, g (s)	39.5	39.5
Actuated g/C Ratio	0.33	0.33
Clearance Time (s)	6.1	6.1
Vehicle Extension (s)	3.0	3.0
Lane Grp Cap (vph)	580	480
v/s Ratio Prot	c0.34	
v/s Ratio Perm		0.11
v/c Ratio	1.03	0.34
Uniform Delay, d1	40.2	30.4
Progression Factor	1.11	1.62
Incremental Delay, d2	20.3	0.2
Delay (s)	64.8	49.5
Level of Service	E	D
Approach Delay (s)	131.8	
Approach LOS	F	

Intersection Summary

Phase Number	1	2	4	5	6	8
Movement	SBL	NBT	EBTL	NBL	SBT	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	28	40	52	28	40	52
Maximum Split (%)	23.3%	33.3%	43.3%	23.3%	33.3%	43.3%
Minimum Split (s)	11	31.1	37.6	11	31.1	37.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.3	2.4	2.9	2.3	2.4	2.9
Minimum Initial (s)	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		18	24		18	24
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	100	8	48	100	8	48
End Time (s)	8	48	100	8	48	100
Yield/Force Off (s)	2	41.9	93.4	2	41.9	93.4
Yield/Force Off 170(s)	2	23.9	69.4	2	23.9	69.4
Local Start Time (s)	92	0	40	92	0	40
Local Yield (s)	114	33.9	85.4	114	33.9	85.4
Local Yield 170(s)	114	15.9	61.4	114	15.9	61.4

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	140
Offset: 8 (7%), Referenced to phase 2:NBT and 6:SBT, Start of Green	

Splits and Phases: 2: Carp Rd & Hazeldean Rd



Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	89	144	552	259	155	110	375	590	133	88	587
Future Volume (vph)	1	89	144	552	259	155	110	375	590	133	88	587
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.7	3.5	3.2	3.9	3.6	3.6	3.7	3.5	3.6	3.7	3.1	3.5
Total Lost time (s)		5.1	5.1	5.1	5.1	5.1		5.5	5.5		5.5	5.5
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frpb, ped/bikes		1.00	1.00	0.96	1.00	0.97		1.00	0.99		1.00	1.00
Flpb, ped/bikes		0.93	1.00	1.00	0.99	1.00		1.00	1.00		1.00	1.00
Frt		1.00	1.00	0.85	1.00	0.94		1.00	0.97		1.00	1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)		1574	1720	1475	1698	1612		1595	1718		1615	1728
Flt Permitted		0.60	1.00	1.00	0.51	1.00		0.13	1.00		0.15	1.00
Satd. Flow (perm)		987	1720	1475	917	1612		215	1718		257	1728
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	89	144	552	259	155	110	375	590	133	88	587
RTOR Reduction (vph)	0	0	0	240	0	30	0	0	8	0	0	0
Lane Group Flow (vph)	0	90	144	312	259	235	0	375	715	0	88	587
Confl. Peds. (#/hr)	28	23		10	10		23	28		13	13	
Confl. Bikes (#/hr)							2			3		
Heavy Vehicles (%)	0%	0%	0%	3%	0%	1%	3%	6%	1%	1%	0%	3%
Turn Type	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA
Protected Phases			4		3	8		5	2		1	6
Permitted Phases	4	4		4	8			2			6	
Actuated Green, G (s)		21.1	21.1	21.1	36.1	36.1		42.6	31.3		33.0	26.5
Effective Green, g (s)		21.1	21.1	21.1	36.1	36.1		42.6	31.3		33.0	26.5
Actuated g/C Ratio		0.23	0.23	0.23	0.40	0.40		0.47	0.35		0.37	0.29
Clearance Time (s)		5.1	5.1	5.1	5.1	5.1		5.5	5.5		5.5	5.5
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)		231	403	345	453	646		275	597		192	508
v/s Ratio Prot			0.08		c0.06	0.15		c0.17	0.42		0.03	0.34
v/s Ratio Perm		0.09		c0.21	0.17			c0.48			0.13	
v/c Ratio		0.39	0.36	0.90	0.57	0.36		1.36	1.20		0.46	1.16
Uniform Delay, d1		29.0	28.8	33.5	19.3	18.9		24.4	29.4		22.1	31.8
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.1	0.5	25.7	1.7	0.4		185.3	104.2		1.7	90.4
Delay (s)		30.1	29.3	59.2	21.0	19.2		209.7	133.5		23.8	122.1
Level of Service		C	C	E	C	B		F	F		C	F
Approach Delay (s)			50.4			20.1			159.5			102.5
Approach LOS			D			C			F			F

Intersection Summary			
HCM 2000 Control Delay	95.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	21.2
Intersection Capacity Utilization	98.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

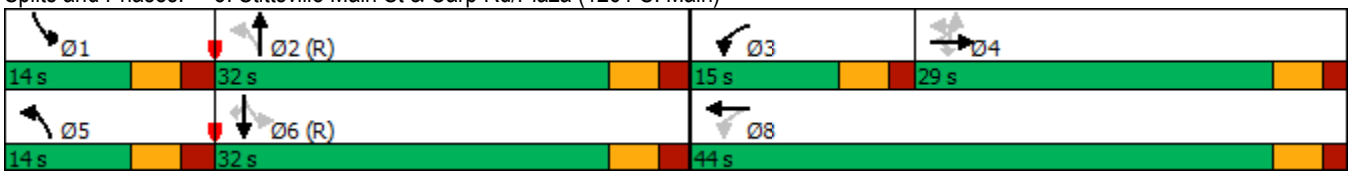
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	58
Future Volume (vph)	58
Ideal Flow (vphpl)	1800
Lane Width	3.5
Total Lost time (s)	5.5
Lane Util. Factor	1.00
Frpb, ped/bikes	0.93
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1405
Flt Permitted	1.00
Satd. Flow (perm)	1405
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	58
RTOR Reduction (vph)	41
Lane Group Flow (vph)	17
Confl. Peds. (#/hr)	28
Confl. Bikes (#/hr)	
Heavy Vehicles (%)	0%
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	26.5
Effective Green, g (s)	26.5
Actuated g/C Ratio	0.29
Clearance Time (s)	5.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	413
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.04
Uniform Delay, d1	22.7
Progression Factor	1.00
Incremental Delay, d2	0.2
Delay (s)	22.9
Level of Service	C
Approach Delay (s)	
Approach LOS	

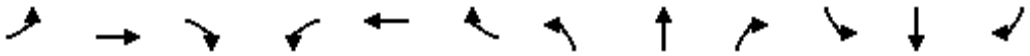
Intersection Summary

Phase Number	1	2	3	4	5	6	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize							
Recall Mode	None	C-Max	None	None	None	C-Max	None
Maximum Split (s)	14	32	15	29	14	32	44
Maximum Split (%)	15.6%	35.6%	16.7%	32.2%	15.6%	35.6%	48.9%
Minimum Split (s)	10.5	29.5	10.1	28.1	10.5	29.5	28.1
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.2	2.2	1.8	1.8	2.2	2.2	1.8
Minimum Initial (s)	5	10	5	10	5	10	10
Vehicle Extension (s)	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0
Walk Time (s)		7		7		7	7
Flash Dont Walk (s)		17		16		17	16
Dual Entry	No	Yes	No	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	78	2	34	49	78	2	34
End Time (s)	2	34	49	78	2	34	78
Yield/Force Off (s)	86.5	28.5	43.9	72.9	86.5	28.5	72.9
Yield/Force Off 170(s)	86.5	11.5	43.9	56.9	86.5	11.5	56.9
Local Start Time (s)	76	0	32	47	76	0	32
Local Yield (s)	84.5	26.5	41.9	70.9	84.5	26.5	70.9
Local Yield 170(s)	84.5	9.5	41.9	54.9	84.5	9.5	54.9

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	110
Offset: 2 (2%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 3: Stittsville Main St & Carp Rd/Plaza (1261 S. Main)

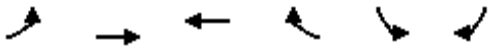




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	54	136	6	34	6	85	6	41	41	6	25
Future Volume (Veh/h)	40	54	136	6	34	6	85	6	41	41	6	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	40	54	136	6	34	6	85	6	41	41	6	25
Pedestrians		5			5			5			5	
Lane Width (m)		4.8			4.8			4.8			4.8	
Walking Speed (m/s)		1.0			1.0			1.0			1.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		322										
pX, platoon unblocked												
vC, conflicting volume	45			195			289	264	132	305	329	47
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	45			195			289	264	132	305	329	47
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			86	99	95	93	99	98
cM capacity (veh/h)	1553			1369			612	614	905	585	565	1009

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	230	46	132	72
Volume Left	40	6	85	41
Volume Right	136	6	41	25
cSH	1553	1369	681	683
Volume to Capacity	0.03	0.00	0.19	0.11
Queue Length 95th (m)	0.6	0.1	5.0	2.5
Control Delay (s)	1.5	1.0	11.6	10.9
Lane LOS	A	A	B	B
Approach Delay (s)	1.5	1.0	11.6	10.9
Approach LOS			B	B

Intersection Summary				
Average Delay	5.6			
Intersection Capacity Utilization	38.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	822	1105	50	12	46
Future Volume (Veh/h)	11	822	1105	50	12	46
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	11	822	1105	50	12	46
Pedestrians					5	
Lane Width (m)					4.8	
Walking Speed (m/s)					1.0	
Percent Blockage					1	
Right turn flare (veh)						
Median type		Raised	Raised			
Median storage veh)		1	1			
Upstream signal (m)		281				
pX, platoon unblocked					0.99	
vC, conflicting volume	1160				1568	582
vC1, stage 1 conf vol					1135	
vC2, stage 2 conf vol					433	
vCu, unblocked vol	1160				1553	582
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	98				94	90
cM capacity (veh/h)	605				210	458

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	11	411	411	737	418	58
Volume Left	11	0	0	0	0	12
Volume Right	0	0	0	0	50	46
cSH	605	1700	1700	1700	1700	368
Volume to Capacity	0.02	0.24	0.24	0.43	0.25	0.16
Queue Length 95th (m)	0.4	0.0	0.0	0.0	0.0	3.9
Control Delay (s)	11.1	0.0	0.0	0.0	0.0	16.6
Lane LOS	B					C
Approach Delay (s)	0.1			0.0		16.6
Approach LOS						C

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix I – City of Ottawa TIA Credential Form

TIA Plan Reports

On 14 June 2017, the Council of the City of Ottawa adopted new Transportation Impact Assessment (TIA) Guidelines. In adopting the guidelines, Council established a requirement for those preparing and delivering transportation impact assessments and reports to sign a letter of certification.

Individuals submitting TIA reports will be responsible for all aspects of development-related transportation assessment and reporting, and undertaking such work, in accordance and compliance with the City of Ottawa's Official Plan, the Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines.

By submitting the attached TIA report (and any associated documents) and signing this document, the individual acknowledges that s/he meets the four criteria listed below.

CERTIFICATION

1. I have reviewed and have a sound understanding of the objectives, needs and requirements of the City of Ottawa's Official Plan, Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines;
2. I have a sound knowledge of industry standard practice with respect to the preparation of transportation impact assessment reports, including multi modal level of service review;
3. I have substantial experience (more than 5 years) in undertaking and delivering transportation impact studies (analysis, reporting and geometric design) with strong background knowledge in transportation planning, engineering or traffic operations; and
4. I am either a licensed[1] or registered[2] professional in good standing, whose field of expertise [check √ appropriate field(s)] is either transportation engineering ☒ or transportation planning ☐.

[1,2] **License of registration body that oversees the profession is required to have a code of conduct and ethics guidelines that will ensure appropriate conduct and representation for transportation planning and/or transportation engineering works.**

City Of Ottawa
Infrastructure Services and Community Sustainability
Planning and Growth Management
110 Laurier Avenue West, 4th fl.
Ottawa, ON K1P 1J1
Tel. : 613-580-2424
Fax: 613-560-6006

Ville d'Ottawa
Services d 'infrastructure et Viabilité des collectivités
Urbanisme et Gestion de la croissance
110, avenue Laurier Ouest
Ottawa (Ontario) K1P 1J1
Tél. : 613-580-2424
Télécopieur: 613-560-6006

Dated at Ottawa this 14th day of September, 2020.
(City)

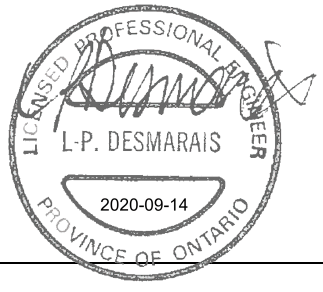
Name: Louis P. Desmarais, P. Eng.
(Please Print)

Professional Title: Senior Project Manager

L P Desmarais
Signature of Individual certifier that s/he meets the above four criteria

Office Contact Information (Please Print)
Address: 100 - 2650 Queensview Road
City / Postal Code: Ottawa, ON K2B 8H6
Telephone / Extension: 613 688 1899 extension 3248
E-Mail Address: phil.desmarais@ottawa.ca

Stamp



Appendix J – Future Mitigated (2029) Synchro Outputs

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	284	6	84	59	4	176	32	1117	18	42	646	59
Future Volume (vph)	284	6	84	59	4	176	32	1117	18	42	646	59
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.9	3.9	3.7	3.7	4.8	3.7	3.6	3.7	3.7	3.3	3.5	3.1
Total Lost time (s)	3.0	6.3			6.0		5.6	6.0		5.6	5.7	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.86			0.90		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1683	1490			1748		1473	3318		1653	3048	
Flt Permitted	0.30	1.00			0.89		0.34	1.00		0.16	1.00	
Satd. Flow (perm)	525	1490			1571		526	3318		276	3048	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	284	6	84	59	4	176	32	1117	18	42	646	59
RTOR Reduction (vph)	0	60	0	0	90	0	0	1	0	0	5	0
Lane Group Flow (vph)	284	30	0	0	149	0	32	1134	0	42	700	0
Confl. Peds. (#/hr)	1					1	2		1	1		2
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	5%	20%	5%	9%	33%	0%	16%	4%	0%	0%	10%	2%
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	34.1	34.1			16.4		66.6	62.9		69.7	64.6	
Effective Green, g (s)	34.1	34.1			16.4		66.6	62.9		69.7	64.6	
Actuated g/C Ratio	0.28	0.28			0.14		0.55	0.52		0.58	0.54	
Clearance Time (s)	3.0	6.3			6.0		5.6	6.0		5.6	5.7	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	293	423			214		321	1739		218	1640	
v/s Ratio Prot	c0.12	0.02					0.00	c0.34		c0.01	0.23	
v/s Ratio Perm	c0.15				0.10		0.05			0.10		
v/c Ratio	0.97	0.07			0.70		0.10	0.65		0.19	0.43	
Uniform Delay, d1	39.7	31.4			49.4		12.4	20.6		13.4	16.6	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	43.6	0.1			9.5		0.1	1.9		0.4	0.8	
Delay (s)	83.4	31.4			58.9		12.5	22.6		13.9	17.4	
Level of Service	F	C			E		B	C		B	B	
Approach Delay (s)		70.9			58.9			22.3			17.2	
Approach LOS		E			E			C			B	

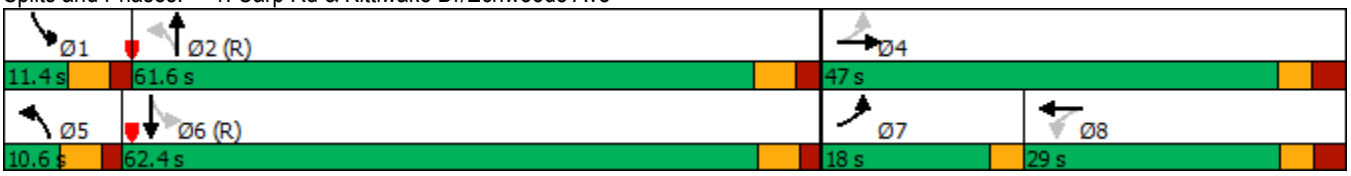
Intersection Summary			
HCM 2000 Control Delay	31.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	1	2	4	5	6	7	8
Movement	SBL	NBTL	EBTL	NBL	SBTL	EBL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize							
Recall Mode	None	C-Max	None	None	C-Max	None	None
Maximum Split (s)	11.4	61.6	47	10.6	62.4	18	29
Maximum Split (%)	9.5%	51.3%	39.2%	8.8%	52.0%	15.0%	24.2%
Minimum Split (s)	10.6	30	29.3	10.6	29.7	9.5	29
Yellow Time (s)	3.7	3.7	3	3.7	3.7	3	3
All-Red Time (s)	1.9	2.3	3.3	1.9	2	0	3
Minimum Initial (s)	5	10	10	5	10	5	10
Vehicle Extension (s)	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0
Walk Time (s)		7	7		7		7
Flash Dont Walk (s)		17	16		17		16
Dual Entry	No	Yes	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	108.6	0	61.6	108.6	119.2	61.6	79.6
End Time (s)	0	61.6	108.6	119.2	61.6	79.6	108.6
Yield/Force Off (s)	114.4	55.6	102.3	113.6	55.9	76.6	102.6
Yield/Force Off 170(s)	114.4	38.6	86.3	113.6	38.9	76.6	86.6
Local Start Time (s)	108.6	0	61.6	108.6	119.2	61.6	79.6
Local Yield (s)	114.4	55.6	102.3	113.6	55.9	76.6	102.6
Local Yield 170(s)	114.4	38.6	86.3	113.6	38.9	76.6	86.6

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 1: Carp Rd & Kittiwake Dr/Echwoods Ave



Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	351	333	104	2	22	143	350	72	486	18	2	286
Future Volume (vph)	351	333	104	2	22	143	350	72	486	18	2	286
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.6	3.9	3.7	3.7	3.8	3.4	3.9	3.9	3.4	3.7	3.7	3.6
Total Lost time (s)	6.1	6.6			6.6	6.6	6.6	6.0	6.1			6.0
Lane Util. Factor	0.97	0.95			1.00	0.95	1.00	0.97	0.95			1.00
Frpb, ped/bikes	1.00	0.99			1.00	1.00	0.97	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00			1.00
Frt	1.00	0.96			1.00	1.00	0.85	1.00	0.99			1.00
Flt Protected	0.95	1.00			0.95	1.00	1.00	0.95	1.00			0.95
Satd. Flow (prot)	3252	3229			1449	3013	1468	2955	3183			1463
Flt Permitted	0.95	1.00			0.50	1.00	1.00	0.95	1.00			0.95
Satd. Flow (perm)	3252	3229			760	3013	1468	2955	3183			1463
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	351	333	104	2	22	143	350	72	486	18	2	286
RTOR Reduction (vph)	0	33	0	0	0	0	284	0	2	0	0	0
Lane Group Flow (vph)	351	404	0	0	24	143	66	72	502	0	0	288
Confl. Peds. (#/hr)	12		1	3	1		12	1		3	12	3
Heavy Vehicles (%)	2%	5%	5%	0%	22%	11%	5%	16%	3%	43%	0%	17%
Turn Type	Prot	NA		Perm	Perm	NA	Perm	Prot	NA		Prot	Prot
Protected Phases	7	4				8		5	2		1	1
Permitted Phases				8	8		8					
Actuated Green, G (s)	12.7	32.0			13.2	13.2	13.2	7.0	32.2			32.1
Effective Green, g (s)	12.7	32.0			13.2	13.2	13.2	7.0	32.2			32.1
Actuated g/C Ratio	0.11	0.28			0.11	0.11	0.11	0.06	0.28			0.28
Clearance Time (s)	6.1	6.6			6.6	6.6	6.6	6.0	6.1			6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	359	898			87	345	168	179	891			408
v/s Ratio Prot	c0.11	c0.13				0.05		0.02	c0.16			c0.20
v/s Ratio Perm					0.03		0.04					
v/c Ratio	0.98	0.45			0.28	0.41	0.39	0.40	0.56			0.71
Uniform Delay, d1	51.0	34.2			46.5	47.3	47.2	52.0	35.4			37.2
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			1.00
Incremental Delay, d2	41.1	0.4			1.7	0.8	1.5	1.5	2.6			5.5
Delay (s)	92.1	34.6			48.3	48.1	48.7	53.5	38.0			42.7
Level of Service	F	C			D	D	D	D	D			D
Approach Delay (s)		60.2				48.5			39.9			
Approach LOS		E				D			D			

Intersection Summary			
HCM 2000 Control Delay	44.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	93.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

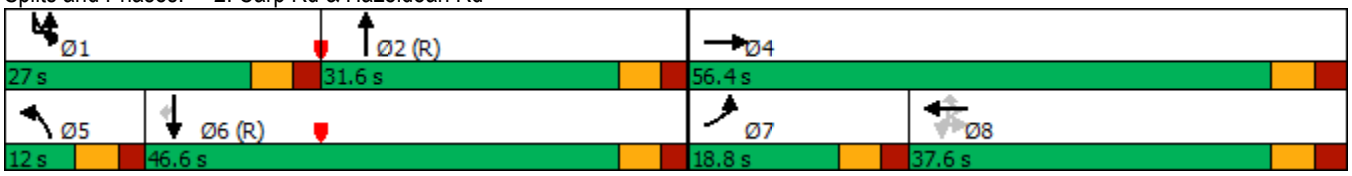
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	350	60
Future Volume (vph)	350	60
Ideal Flow (vphpl)	1800	1800
Lane Width	3.6	3.5
Total Lost time (s)	6.1	6.1
Lane Util. Factor	0.95	1.00
Frpb, ped/bikes	1.00	0.99
Flpb, ped/bikes	1.00	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	3027	1321
Flt Permitted	1.00	1.00
Satd. Flow (perm)	3027	1321
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	350	60
RTOR Reduction (vph)	0	30
Lane Group Flow (vph)	350	30
Confl. Peds. (#/hr)		1
Heavy Vehicles (%)	13%	13%
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Actuated Green, G (s)	57.3	57.3
Effective Green, g (s)	57.3	57.3
Actuated g/C Ratio	0.50	0.50
Clearance Time (s)	6.1	6.1
Vehicle Extension (s)	3.0	3.0
Lane Grp Cap (vph)	1508	658
v/s Ratio Prot	0.12	
v/s Ratio Perm		0.02
v/c Ratio	0.23	0.05
Uniform Delay, d1	16.4	14.8
Progression Factor	1.00	1.00
Incremental Delay, d2	0.4	0.1
Delay (s)	16.7	14.9
Level of Service	B	B
Approach Delay (s)	27.3	
Approach LOS	C	

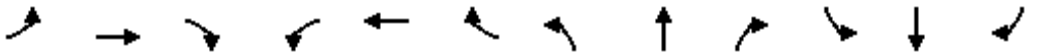
Intersection Summary

Phase Number	1	2	4	5	6	7	8
Movement	SBL	NBT	EBT	NBL	SBT	EBL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize							
Recall Mode	None	C-Max	None	None	C-Max	None	None
Maximum Split (s)	27	31.6	56.4	12	46.6	18.8	37.6
Maximum Split (%)	23.5%	27.5%	49.0%	10.4%	40.5%	16.3%	32.7%
Minimum Split (s)	11	31.1	37.6	11	31.1	11.1	37.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.3	2.4	2.9	2.3	2.4	2.4	2.9
Minimum Initial (s)	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0
Walk Time (s)		7	7		7		7
Flash Dont Walk (s)		18	24		18		24
Dual Entry	No	Yes	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	88	0	31.6	88	100	31.6	50.4
End Time (s)	0	31.6	88	100	31.6	50.4	88
Yield/Force Off (s)	109	25.5	81.4	94	25.5	44.3	81.4
Yield/Force Off 170(s)	109	7.5	57.4	94	7.5	44.3	57.4
Local Start Time (s)	88	0	31.6	88	100	31.6	50.4
Local Yield (s)	109	25.5	81.4	94	25.5	44.3	81.4
Local Yield 170(s)	109	7.5	57.4	94	7.5	44.3	57.4

Intersection Summary		
Cycle Length	115	
Control Type	Actuated-Coordinated	
Natural Cycle	115	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green		

Splits and Phases: 2: Carp Rd & Hazeldean Rd





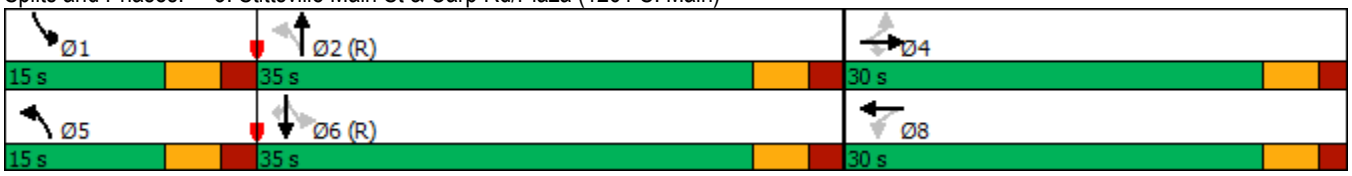
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	108	322	163	78	94	390	429	190	88	353	38
Future Volume (vph)	51	108	322	163	78	94	390	429	190	88	353	38
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.5	3.2	3.9	3.6	3.6	3.7	3.5	3.6	3.7	3.1	3.5	3.5
Total Lost time (s)	5.1	5.1	5.1	5.1	5.1		5.5	5.5		5.5	5.5	5.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	0.99		1.00	0.99		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.92		1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1656	1686	1511	1669	1601		1656	1667		1581	1745	1441
Flt Permitted	0.58	1.00	1.00	0.69	1.00		0.40	1.00		0.33	1.00	1.00
Satd. Flow (perm)	1019	1686	1511	1207	1601		694	1667		549	1745	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	51	108	322	163	78	94	390	429	190	88	353	38
RTOR Reduction (vph)	0	0	256	0	63	0	0	15	0	0	0	22
Lane Group Flow (vph)	51	108	66	163	109	0	390	604	0	88	353	16
Confl. Peds. (#/hr)	1		3	3		1	4		7	7		4
Confl. Bikes (#/hr)												2
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		6
Actuated Green, G (s)	16.4	16.4	16.4	16.4	16.4		53.0	41.3		40.8	34.6	34.6
Effective Green, g (s)	16.4	16.4	16.4	16.4	16.4		53.0	41.3		40.8	34.6	34.6
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.20		0.66	0.52		0.51	0.43	0.43
Clearance Time (s)	5.1	5.1	5.1	5.1	5.1		5.5	5.5		5.5	5.5	5.5
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)	208	345	309	247	328		614	860		359	754	623
v/s Ratio Prot		0.06			0.07		c0.10	c0.36		0.02	0.20	
v/s Ratio Perm	0.05		0.04	c0.13			0.32			0.11		0.01
v/c Ratio	0.25	0.31	0.21	0.66	0.33		0.64	0.70		0.25	0.47	0.03
Uniform Delay, d1	26.6	27.0	26.4	29.2	27.1		7.3	14.7		10.6	16.2	13.0
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	0.6	0.5	0.3	6.2	0.6		2.2	4.8		0.4	2.1	0.1
Delay (s)	27.2	27.5	26.8	35.5	27.7		9.4	19.4		11.0	18.2	13.1
Level of Service	C	C	C	D	C		A	B		B	B	B
Approach Delay (s)		27.0			31.5			15.6			16.5	
Approach LOS		C			C			B			B	

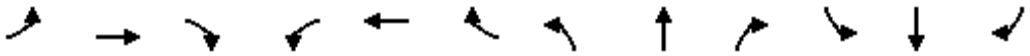
Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	4	5	6	8
Movement	SBL	NBTL	EBTL	NBL	SBTL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	15	35	30	15	35	30
Maximum Split (%)	18.8%	43.8%	37.5%	18.8%	43.8%	37.5%
Minimum Split (s)	10.5	29.5	28.1	10.5	29.5	28.1
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.2	2.2	1.8	2.2	2.2	1.8
Minimum Initial (s)	5	10	10	5	10	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		17	16		17	16
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	65	0	35	65	0	35
End Time (s)	0	35	65	0	35	65
Yield/Force Off (s)	74.5	29.5	59.9	74.5	29.5	59.9
Yield/Force Off 170(s)	74.5	12.5	43.9	74.5	12.5	43.9
Local Start Time (s)	65	0	35	65	0	35
Local Yield (s)	74.5	29.5	59.9	74.5	29.5	59.9
Local Yield 170(s)	74.5	12.5	43.9	74.5	12.5	43.9

Intersection Summary	
Cycle Length	80
Control Type	Actuated-Coordinated
Natural Cycle	75
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 3: Stittsville Main St & Carp Rd/Plaza (1261 S. Main)

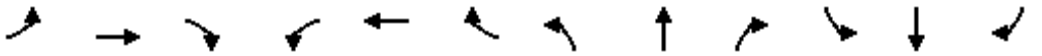




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	16	12	6	66	6	49	6	12	12	6	49
Future Volume (Veh/h)	12	16	12	6	66	6	49	6	12	12	6	49
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	12	16	12	6	66	6	49	6	12	12	6	49
Pedestrians		5			5			5			5	
Lane Width (m)		4.8			4.8			4.8			4.8	
Walking Speed (m/s)		1.0			1.0			1.0			1.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		322										
pX, platoon unblocked												
vC, conflicting volume	77			33			189	140	32	152	143	79
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	77			33			189	140	32	152	143	79
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			93	99	99	98	99	95
cM capacity (veh/h)	1512			1568			704	732	1028	775	730	968

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	40	78	67	67
Volume Left	12	6	49	12
Volume Right	12	6	12	49
cSH	1512	1568	749	902
Volume to Capacity	0.01	0.00	0.09	0.07
Queue Length 95th (m)	0.2	0.1	2.1	1.7
Control Delay (s)	2.3	0.6	10.3	9.3
Lane LOS	A	A	B	A
Approach Delay (s)	2.3	0.6	10.3	9.3
Approach LOS			B	A

Intersection Summary				
Average Delay	5.7			
Intersection Capacity Utilization	24.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	170	16	66	70	8	94	62	845	38	139	1273	182
Future Volume (vph)	170	16	66	70	8	94	62	845	38	139	1273	182
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.9	3.9	3.7	3.7	4.8	3.7	3.6	3.7	3.7	3.3	3.5	3.1
Total Lost time (s)	6.3	6.3			6.0		5.6	6.0		5.6	5.7	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.97			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			0.99		1.00	1.00		1.00	1.00	
Frt	1.00	0.88			0.93		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1732	1564			1745		1474	3305		1652	3035	
Flt Permitted	0.61	1.00			0.83		0.10	1.00		0.24	1.00	
Satd. Flow (perm)	1106	1564			1479		154	3305		418	3035	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	170	16	66	70	8	94	62	845	38	139	1273	182
RTOR Reduction (vph)	0	53	0	0	52	0	0	3	0	0	11	0
Lane Group Flow (vph)	170	29	0	0	120	0	62	880	0	139	1444	0
Confl. Peds. (#/hr)			20	20			2		4	4		2
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	2%	0%	2%	9%	33%	0%	16%	4%	0%	0%	10%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	17.8	17.8			18.1		51.0	46.1		57.9	49.7	
Effective Green, g (s)	17.8	17.8			18.1		51.0	46.1		57.9	49.7	
Actuated g/C Ratio	0.20	0.20			0.20		0.57	0.51		0.64	0.55	
Clearance Time (s)	6.3	6.3			6.0		5.6	6.0		5.6	5.7	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	218	309			297		159	1692		381	1675	
v/s Ratio Prot		0.02					0.02	0.27		c0.03	c0.48	
v/s Ratio Perm	c0.15				0.08		0.20			0.20		
v/c Ratio	0.78	0.09			0.40		0.39	0.52		0.36	0.86	
Uniform Delay, d1	34.2	29.5			31.3		11.9	14.6		7.4	17.2	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	16.1	0.1			0.9		1.6	1.1		0.6	6.1	
Delay (s)	50.3	29.6			32.2		13.5	15.7		8.0	23.3	
Level of Service	D	C			C		B	B		A	C	
Approach Delay (s)		43.6			32.2			15.6			22.0	
Approach LOS		D			C			B			C	

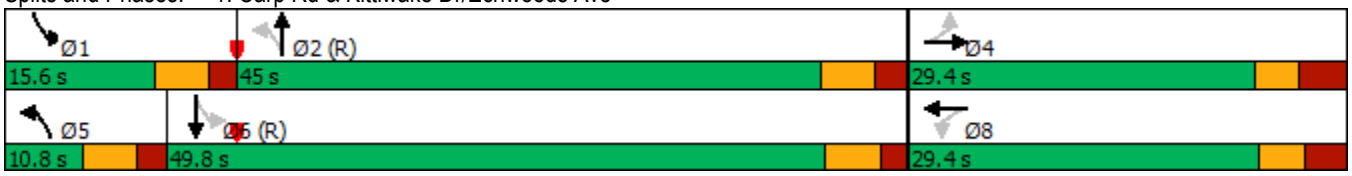
Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.9
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		

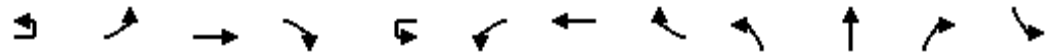
c Critical Lane Group

Phase Number	1	2	4	5	6	8
Movement	SBL	NBTL	EBTL	NBL	SBTL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	15.6	45	29.4	10.8	49.8	29.4
Maximum Split (%)	17.3%	50.0%	32.7%	12.0%	55.3%	32.7%
Minimum Split (s)	10.6	30	29.3	10.6	29.7	29
Yellow Time (s)	3.7	3.7	3	3.7	3.7	3
All-Red Time (s)	1.9	2.3	3.3	1.9	2	3
Minimum Initial (s)	5	10	10	5	10	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		17	16		17	16
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	74.4	0	45	74.4	85.2	45
End Time (s)	0	45	74.4	85.2	45	74.4
Yield/Force Off (s)	84.4	39	68.1	79.6	39.3	68.4
Yield/Force Off 170(s)	84.4	22	52.1	79.6	22.3	52.4
Local Start Time (s)	74.4	0	45	74.4	85.2	45
Local Yield (s)	84.4	39	68.1	79.6	39.3	68.4
Local Yield 170(s)	84.4	22	52.1	79.6	22.3	52.4

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 1: Carp Rd & Kittiwake Dr/Echwoods Ave





Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	2	113	325	168	1	63	606	430	162	447	35	456
Future Volume (vph)	2	113	325	168	1	63	606	430	162	447	35	456
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.7	3.6	3.9	3.7	3.7	3.8	3.4	3.9	3.9	3.4	3.7	3.6
Total Lost time (s)		4.5	6.6			6.6	6.6	6.6	6.0	6.1		6.0
Lane Util. Factor		0.97	0.95			1.00	0.95	1.00	0.97	0.95		1.00
Frpb, ped/bikes		1.00	0.99			1.00	1.00	0.98	1.00	1.00		1.00
Flpb, ped/bikes		0.99	1.00			0.99	1.00	1.00	1.00	1.00		1.00
Frt		1.00	0.95			1.00	1.00	0.85	1.00	0.99		1.00
Flt Protected		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		3287	3296			1586	3278	1458	3361	3204		1693
Flt Permitted		0.16	1.00			0.47	1.00	1.00	0.95	1.00		0.95
Satd. Flow (perm)		560	3296			788	3278	1458	3361	3204		1693
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	113	325	168	1	63	606	430	162	447	35	456
RTOR Reduction (vph)	0	0	48	0	0	0	0	338	0	4	0	0
Lane Group Flow (vph)	0	115	445	0	0	64	606	92	162	478	0	456
Confl. Peds. (#/hr)	6	8		5	6	5		8	6		6	6
Heavy Vehicles (%)	5%	0%	1%	0%	0%	9%	2%	6%	2%	3%	4%	1%
Turn Type	Perm	Prot	NA		Perm	Perm	NA	Perm	Prot	NA		Prot
Protected Phases		7	4				8		5	2		1
Permitted Phases	4				8	8		8				
Actuated Green, G (s)		24.7	59.3			30.1	30.1	30.1	10.5	26.1		35.9
Effective Green, g (s)		24.7	59.3			30.1	30.1	30.1	10.5	26.1		35.9
Actuated g/C Ratio		0.18	0.42			0.22	0.22	0.22	0.08	0.19		0.26
Clearance Time (s)		4.5	6.6			6.6	6.6	6.6	6.0	6.1		6.0
Vehicle Extension (s)		3.0	3.0			3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		98	1396			169	704	313	252	597		434
v/s Ratio Prot			0.14				c0.18		0.05	c0.15		c0.27
v/s Ratio Perm		c0.21				0.08		0.06				
v/c Ratio		1.17	0.32			0.38	0.86	0.30	0.64	0.80		1.05
Uniform Delay, d1		57.6	26.9			47.0	52.9	46.1	62.9	54.5		52.0
Progression Factor		1.00	1.00			1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2		145.0	0.1			1.4	10.5	0.5	5.5	10.8		57.1
Delay (s)		202.6	27.0			48.4	63.4	46.6	68.4	65.3		109.2
Level of Service		F	C			D	E	D	E	E		F
Approach Delay (s)			60.2				56.0			66.1		
Approach LOS			E				E			E		

Intersection Summary			
HCM 2000 Control Delay	59.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	23.2
Intersection Capacity Utilization	90.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

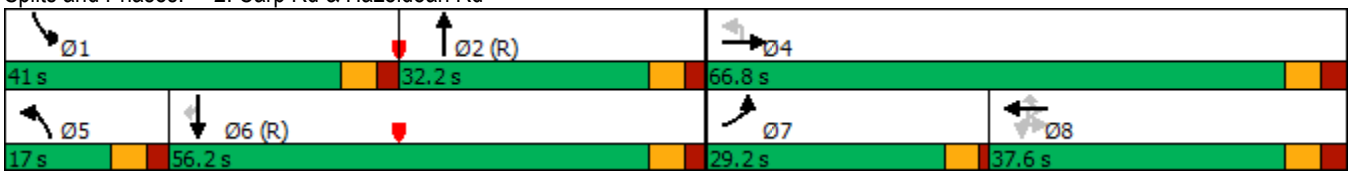
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	598	289
Future Volume (vph)	598	289
Ideal Flow (vphpl)	1800	1800
Lane Width	3.6	3.5
Total Lost time (s)	6.1	6.1
Lane Util. Factor	0.95	1.00
Frpb, ped/bikes	1.00	0.98
Flpb, ped/bikes	1.00	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	3353	1480
Flt Permitted	1.00	1.00
Satd. Flow (perm)	3353	1480
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	598	289
RTOR Reduction (vph)	0	183
Lane Group Flow (vph)	598	106
Confl. Peds. (#/hr)		6
Heavy Vehicles (%)	2%	0%
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Actuated Green, G (s)	51.5	51.5
Effective Green, g (s)	51.5	51.5
Actuated g/C Ratio	0.37	0.37
Clearance Time (s)	6.1	6.1
Vehicle Extension (s)	3.0	3.0
Lane Grp Cap (vph)	1233	544
v/s Ratio Prot	0.18	
v/s Ratio Perm		0.07
v/c Ratio	0.48	0.20
Uniform Delay, d1	34.0	30.1
Progression Factor	1.00	1.00
Incremental Delay, d2	1.4	0.8
Delay (s)	35.4	30.9
Level of Service	D	C
Approach Delay (s)	59.5	
Approach LOS	E	

Intersection Summary

Phase Number	1	2	4	5	6	7	8
Movement	SBL	NBT	EBTU	NBL	SBT	EBL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize							
Recall Mode	None	C-Max	None	None	C-Max	None	None
Maximum Split (s)	41	32.2	66.8	17	56.2	29.2	37.6
Maximum Split (%)	29.3%	23.0%	47.7%	12.1%	40.1%	20.9%	26.9%
Minimum Split (s)	11	31.1	37.6	11	31.1	9.5	37.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.5	3.7
All-Red Time (s)	2.3	2.4	2.9	2.3	2.4	1	2.9
Minimum Initial (s)	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0
Walk Time (s)		7	7		7		7
Flash Dont Walk (s)		18	24		18		24
Dual Entry	No	Yes	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	99	0	32.2	99	116	32.2	61.4
End Time (s)	0	32.2	99	116	32.2	61.4	99
Yield/Force Off (s)	134	26.1	92.4	110	26.1	56.9	92.4
Yield/Force Off 170(s)	134	8.1	68.4	110	8.1	56.9	68.4
Local Start Time (s)	99	0	32.2	99	116	32.2	61.4
Local Yield (s)	134	26.1	92.4	110	26.1	56.9	92.4
Local Yield 170(s)	134	8.1	68.4	110	8.1	56.9	68.4

Intersection Summary	
Cycle Length	140
Control Type	Actuated-Coordinated
Natural Cycle	120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	

Splits and Phases: 2: Carp Rd & Hazeldean Rd



Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	89	138	528	259	155	101	375	568	133	88	587
Future Volume (vph)	1	89	138	528	259	155	101	375	568	133	88	587
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.7	3.5	3.2	3.9	3.6	3.6	3.7	3.5	3.6	3.7	3.1	3.5
Total Lost time (s)		5.1	5.1	5.1	5.1	5.1		5.5	5.5		5.5	5.5
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frpb, ped/bikes		1.00	1.00	0.96	1.00	0.97		1.00	0.99		1.00	1.00
Flpb, ped/bikes		0.91	1.00	1.00	0.99	1.00		1.00	1.00		1.00	1.00
Frt		1.00	1.00	0.85	1.00	0.94		1.00	0.97		1.00	1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)		1546	1720	1468	1697	1614		1595	1715		1611	1728
Flt Permitted		0.60	1.00	1.00	0.47	1.00		0.10	1.00		0.30	1.00
Satd. Flow (perm)		978	1720	1468	843	1614		174	1715		503	1728
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	89	138	528	259	155	101	375	568	133	88	587
RTOR Reduction (vph)	0	0	0	283	0	22	0	0	7	0	0	0
Lane Group Flow (vph)	0	90	138	245	259	234	0	375	694	0	88	587
Confl. Peds. (#/hr)	28	23		10	10		23	28		13	13	
Confl. Bikes (#/hr)							2			3		
Heavy Vehicles (%)	0%	0%	0%	3%	0%	1%	3%	6%	1%	1%	0%	3%
Turn Type	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA
Protected Phases			4		3	8		5	2		1	6
Permitted Phases	4	4		4	8			2			6	
Actuated Green, G (s)		20.2	20.2	20.2	32.1	32.1		67.3	57.3		43.7	39.2
Effective Green, g (s)		20.2	20.2	20.2	32.1	32.1		67.3	57.3		43.7	39.2
Actuated g/C Ratio		0.18	0.18	0.18	0.29	0.29		0.61	0.52		0.40	0.36
Clearance Time (s)		5.1	5.1	5.1	5.1	5.1		5.5	5.5		5.5	5.5
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)		179	315	269	298	470		398	893		245	615
v/s Ratio Prot			0.08		c0.05	0.15		c0.19	0.40		0.01	0.34
v/s Ratio Perm		0.09		0.17	c0.20			c0.38			0.13	
v/c Ratio		0.50	0.44	0.91	0.87	0.50		0.94	0.78		0.36	0.95
Uniform Delay, d1		40.4	39.9	44.0	37.1	32.3		31.9	21.2		21.7	34.5
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		2.2	1.0	31.8	22.5	0.8		30.6	6.6		0.9	26.7
Delay (s)		42.6	40.8	75.8	59.6	33.1		62.5	27.8		22.6	61.2
Level of Service		D	D	E	E	C		E	C		C	E
Approach Delay (s)			65.5			46.4			39.9			53.6
Approach LOS			E			D			D			D

Intersection Summary			
HCM 2000 Control Delay	50.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.2
Intersection Capacity Utilization	98.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

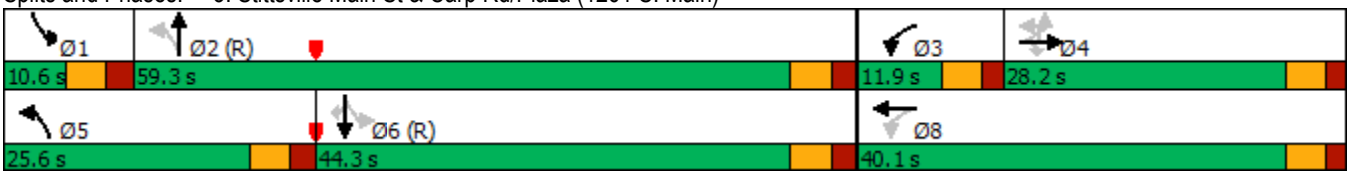
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	58
Future Volume (vph)	58
Ideal Flow (vphpl)	1800
Lane Width	3.5
Total Lost time (s)	5.5
Lane Util. Factor	1.00
Frpb, ped/bikes	0.92
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1388
Flt Permitted	1.00
Satd. Flow (perm)	1388
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	58
RTOR Reduction (vph)	37
Lane Group Flow (vph)	21
Confl. Peds. (#/hr)	28
Confl. Bikes (#/hr)	
Heavy Vehicles (%)	0%
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	39.2
Effective Green, g (s)	39.2
Actuated g/C Ratio	0.36
Clearance Time (s)	5.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	494
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.04
Uniform Delay, d1	23.1
Progression Factor	1.00
Incremental Delay, d2	0.2
Delay (s)	23.3
Level of Service	C
Approach Delay (s)	
Approach LOS	

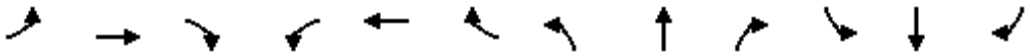
Intersection Summary

Phase Number	1	2	3	4	5	6	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize							
Recall Mode	None	C-Max	None	None	None	C-Max	None
Maximum Split (s)	10.6	59.3	11.9	28.2	25.6	44.3	40.1
Maximum Split (%)	9.6%	53.9%	10.8%	25.6%	23.3%	40.3%	36.5%
Minimum Split (s)	10.5	29.5	10.1	28.1	10.5	29.5	28.1
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.2	2.2	1.8	1.8	2.2	2.2	1.8
Minimum Initial (s)	5	10	5	10	5	10	10
Vehicle Extension (s)	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0
Walk Time (s)		7		7		7	7
Flash Dont Walk (s)		17		16		17	16
Dual Entry	No	Yes	No	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	84.4	95	44.3	56.2	84.4	0	44.3
End Time (s)	95	44.3	56.2	84.4	0	44.3	84.4
Yield/Force Off (s)	89.5	38.8	51.1	79.3	104.5	38.8	79.3
Yield/Force Off 170(s)	89.5	21.8	51.1	63.3	104.5	21.8	63.3
Local Start Time (s)	84.4	95	44.3	56.2	84.4	0	44.3
Local Yield (s)	89.5	38.8	51.1	79.3	104.5	38.8	79.3
Local Yield 170(s)	89.5	21.8	51.1	63.3	104.5	21.8	63.3

Intersection Summary	
Cycle Length	110
Control Type	Actuated-Coordinated
Natural Cycle	110
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 3: Stittsville Main St & Carp Rd/Plaza (1261 S. Main)

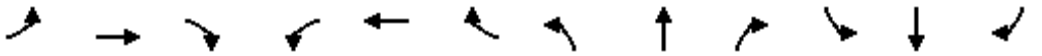




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	54	40	6	34	6	25	6	41	41	6	25
Future Volume (Veh/h)	40	54	40	6	34	6	25	6	41	41	6	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	40	54	40	6	34	6	25	6	41	41	6	25
Pedestrians		5			5			5			5	
Lane Width (m)		4.8			4.8			4.8			4.8	
Walking Speed (m/s)		1.0			1.0			1.0			1.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		322										
pX, platoon unblocked												
vC, conflicting volume	45			99			241	216	84	257	233	47
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	45			99			241	216	84	257	233	47
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			96	99	96	94	99	98
cM capacity (veh/h)	1553			1484			659	653	962	632	639	1009

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	134	46	72	72
Volume Left	40	6	25	41
Volume Right	40	6	41	25
cSH	1553	1484	802	727
Volume to Capacity	0.03	0.00	0.09	0.10
Queue Length 95th (m)	0.6	0.1	2.1	2.3
Control Delay (s)	2.3	1.0	9.9	10.5
Lane LOS	A	A	A	B
Approach Delay (s)	2.3	1.0	9.9	10.5
Approach LOS			A	B

Intersection Summary				
Average Delay	5.7			
Intersection Capacity Utilization	29.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	284	6	84	59	4	288	32	1117	18	118	646	59
Future Volume (vph)	284	6	84	59	4	288	32	1117	18	118	646	59
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.9	3.9	3.7	3.7	4.8	3.7	3.6	3.7	3.7	3.3	3.5	3.1
Total Lost time (s)	6.3	6.3			6.3	6.3	5.6	6.0		5.6	6.0	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99			1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.86			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1682	1490			1763	1527	1474	3318		1653	3049	
Flt Permitted	0.49	1.00			0.68	1.00	0.36	1.00		0.11	1.00	
Satd. Flow (perm)	864	1490			1246	1527	555	3318		183	3049	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	284	6	84	59	4	288	32	1117	18	118	646	59
RTOR Reduction (vph)	0	59	0	0	0	161	0	1	0	0	7	0
Lane Group Flow (vph)	284	31	0	0	63	127	32	1134	0	118	698	0
Confl. Peds. (#/hr)	1					1	2		1	1		2
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	5%	20%	5%	9%	33%	0%	16%	4%	0%	0%	10%	2%
Turn Type	pm+pt	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	25.1	25.1			13.5	13.5	38.1	34.1		45.9	38.0	
Effective Green, g (s)	25.1	25.1			13.5	13.5	38.1	34.1		45.9	38.0	
Actuated g/C Ratio	0.30	0.30			0.16	0.16	0.45	0.40		0.54	0.45	
Clearance Time (s)	6.3	6.3			6.3	6.3	5.6	6.0		5.6	6.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	306	439			197	242	292	1331		235	1363	
v/s Ratio Prot	c0.06	0.02					0.01	c0.34		c0.05	c0.23	
v/s Ratio Perm	c0.22				0.05	0.08	0.04			0.22		
v/c Ratio	0.93	0.07			0.32	0.53	0.11	0.85		0.50	0.51	
Uniform Delay, d1	29.5	21.6			31.7	32.8	13.3	23.2		13.9	16.9	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	32.9	0.1			0.9	2.1	0.2	7.0		1.7	1.4	
Delay (s)	62.4	21.6			32.6	34.9	13.4	30.2		15.6	18.2	
Level of Service	E	C			C	C	B	C		B	B	
Approach Delay (s)		52.6			34.5			29.7			17.9	
Approach LOS		D			C			C			B	

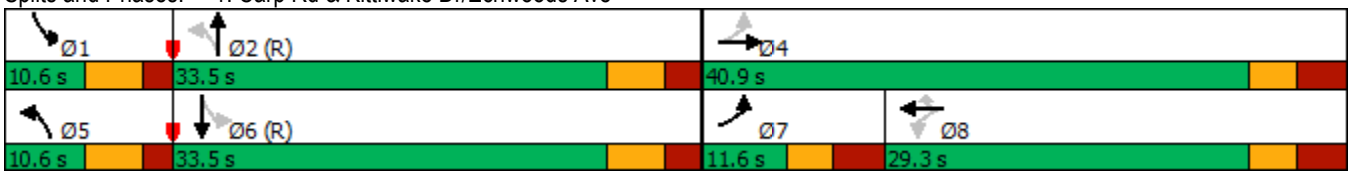
Intersection Summary			
HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	24.2
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	1	2	4	5	6	7	8
Movement	SBL	NBTL	EBTL	NBL	SBTL	EBL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize							
Recall Mode	None	C-Max	None	None	C-Max	None	None
Maximum Split (s)	10.6	33.5	40.9	10.6	33.5	11.6	29.3
Maximum Split (%)	12.5%	39.4%	48.1%	12.5%	39.4%	13.6%	34.5%
Minimum Split (s)	10.6	30	29.3	10.6	30	11.3	29.3
Yellow Time (s)	3.7	3.7	3	3.7	3.7	3	3
All-Red Time (s)	1.9	2.3	3.3	1.9	2.3	3.3	3.3
Minimum Initial (s)	5	10	10	5	10	5	10
Vehicle Extension (s)	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0
Walk Time (s)		7	7		7		7
Flash Dont Walk (s)		17	16		17		16
Dual Entry	No	Yes	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	74.4	0	33.5	74.4	0	33.5	45.1
End Time (s)	0	33.5	74.4	0	33.5	45.1	74.4
Yield/Force Off (s)	79.4	27.5	68.1	79.4	27.5	38.8	68.1
Yield/Force Off 170(s)	79.4	10.5	52.1	79.4	10.5	38.8	52.1
Local Start Time (s)	74.4	0	33.5	74.4	0	33.5	45.1
Local Yield (s)	79.4	27.5	68.1	79.4	27.5	38.8	68.1
Local Yield 170(s)	79.4	10.5	52.1	79.4	10.5	38.8	52.1

Intersection Summary	
Cycle Length	85
Control Type	Actuated-Coordinated
Natural Cycle	85
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 1: Carp Rd & Kittiwake Dr/Echwoods Ave



Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	351	342	104	2	51	149	350	72	486	18	2	286
Future Volume (vph)	351	342	104	2	51	149	350	72	486	18	2	286
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.6	3.9	3.7	3.7	3.8	3.4	3.9	3.9	3.4	3.7	3.7	3.6
Total Lost time (s)	6.1	6.6			6.6	6.6	6.6	6.0	6.1			6.0
Lane Util. Factor	0.97	0.95			1.00	0.95	1.00	0.97	0.95			1.00
Frpb, ped/bikes	1.00	0.99			1.00	1.00	0.97	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00			1.00
Frt	1.00	0.97			1.00	1.00	0.85	1.00	0.99			1.00
Flt Protected	0.95	1.00			0.95	1.00	1.00	0.95	1.00			0.95
Satd. Flow (prot)	3252	3231			1437	3013	1468	2955	3183			1463
Flt Permitted	0.95	1.00			0.49	1.00	1.00	0.95	1.00			0.95
Satd. Flow (perm)	3252	3231			747	3013	1468	2955	3183			1463
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	351	342	104	2	51	149	350	72	486	18	2	286
RTOR Reduction (vph)	0	31	0	0	0	0	280	0	2	0	0	0
Lane Group Flow (vph)	351	415	0	0	53	149	70	72	502	0	0	288
Confl. Peds. (#/hr)	12		1	3	1		12	1		3	12	3
Heavy Vehicles (%)	2%	5%	5%	0%	22%	11%	5%	16%	3%	43%	0%	17%
Turn Type	Prot	NA		Perm	Perm	NA	Perm	Prot	NA		Prot	Prot
Protected Phases	7	4				8		5	2		1	1
Permitted Phases				8	8		8					
Actuated Green, G (s)	12.7	33.5			14.7	14.7	14.7	7.0	30.5			32.3
Effective Green, g (s)	12.7	33.5			14.7	14.7	14.7	7.0	30.5			32.3
Actuated g/C Ratio	0.11	0.29			0.13	0.13	0.13	0.06	0.27			0.28
Clearance Time (s)	6.1	6.6			6.6	6.6	6.6	6.0	6.1			6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	359	941			95	385	187	179	844			410
v/s Ratio Prot	c0.11	0.13				0.05		0.02	c0.16			c0.20
v/s Ratio Perm					c0.07		0.05					
v/c Ratio	0.98	0.44			0.56	0.39	0.37	0.40	0.59			0.70
Uniform Delay, d1	51.0	33.1			47.1	46.0	45.9	52.0	36.9			37.0
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			1.00
Incremental Delay, d2	41.1	0.3			6.9	0.6	1.3	1.5	3.1			5.4
Delay (s)	92.1	33.5			54.0	46.7	47.2	53.5	39.9			42.4
Level of Service	F	C			D	D	D	D	D			D
Approach Delay (s)		59.3				47.7			41.6			
Approach LOS		E				D			D			

Intersection Summary			
HCM 2000 Control Delay	44.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	93.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

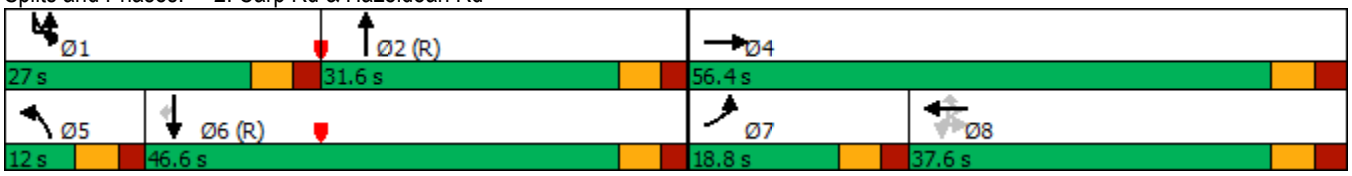
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	350	60
Future Volume (vph)	350	60
Ideal Flow (vphpl)	1800	1800
Lane Width	3.6	3.5
Total Lost time (s)	6.1	6.1
Lane Util. Factor	0.95	1.00
Frpb, ped/bikes	1.00	0.99
Flpb, ped/bikes	1.00	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	3027	1321
Flt Permitted	1.00	1.00
Satd. Flow (perm)	3027	1321
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	350	60
RTOR Reduction (vph)	0	31
Lane Group Flow (vph)	350	29
Confl. Peds. (#/hr)		1
Heavy Vehicles (%)	13%	13%
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Actuated Green, G (s)	55.8	55.8
Effective Green, g (s)	55.8	55.8
Actuated g/C Ratio	0.49	0.49
Clearance Time (s)	6.1	6.1
Vehicle Extension (s)	3.0	3.0
Lane Grp Cap (vph)	1468	640
v/s Ratio Prot	0.12	
v/s Ratio Perm		0.02
v/c Ratio	0.24	0.05
Uniform Delay, d1	17.2	15.6
Progression Factor	1.00	1.00
Incremental Delay, d2	0.4	0.1
Delay (s)	17.6	15.7
Level of Service	B	B
Approach Delay (s)	27.7	
Approach LOS	C	

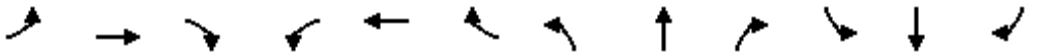
Intersection Summary

Phase Number	1	2	4	5	6	7	8
Movement	SBL	NBT	EBT	NBL	SBT	EBL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize							
Recall Mode	None	C-Max	None	None	C-Max	None	None
Maximum Split (s)	27	31.6	56.4	12	46.6	18.8	37.6
Maximum Split (%)	23.5%	27.5%	49.0%	10.4%	40.5%	16.3%	32.7%
Minimum Split (s)	11	31.1	37.6	11	31.1	11.1	37.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.3	2.4	2.9	2.3	2.4	2.4	2.9
Minimum Initial (s)	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0
Walk Time (s)		7	7		7		7
Flash Dont Walk (s)		18	24		18		24
Dual Entry	No	Yes	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	88	0	31.6	88	100	31.6	50.4
End Time (s)	0	31.6	88	100	31.6	50.4	88
Yield/Force Off (s)	109	25.5	81.4	94	25.5	44.3	81.4
Yield/Force Off 170(s)	109	7.5	57.4	94	7.5	44.3	57.4
Local Start Time (s)	88	0	31.6	88	100	31.6	50.4
Local Yield (s)	109	25.5	81.4	94	25.5	44.3	81.4
Local Yield 170(s)	109	7.5	57.4	94	7.5	44.3	57.4

Intersection Summary		
Cycle Length	115	
Control Type	Actuated-Coordinated	
Natural Cycle	115	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green		

Splits and Phases: 2: Carp Rd & Hazeldean Rd





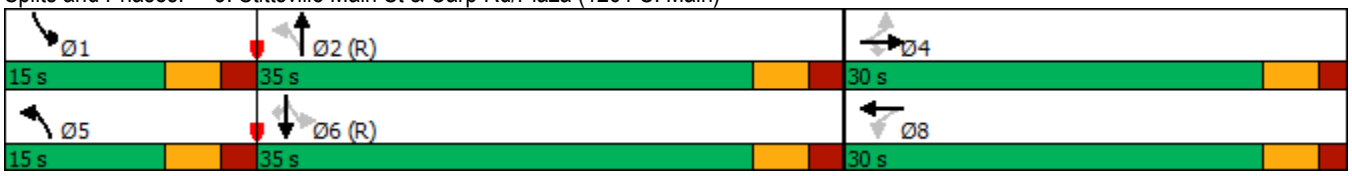
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	117	342	163	78	102	390	457	190	88	353	38
Future Volume (vph)	51	117	342	163	78	102	390	457	190	88	353	38
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.5	3.2	3.9	3.6	3.6	3.7	3.5	3.6	3.7	3.1	3.5	3.5
Total Lost time (s)	5.1	5.1	5.1	5.1	5.1		5.5	5.5		5.5	5.5	5.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	0.99		1.00	0.99		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.92		1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1656	1686	1511	1669	1595		1656	1671		1582	1745	1441
Flt Permitted	0.57	1.00	1.00	0.68	1.00		0.40	1.00		0.30	1.00	1.00
Satd. Flow (perm)	989	1686	1511	1198	1595		692	1671		504	1745	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	51	117	342	163	78	102	390	457	190	88	353	38
RTOR Reduction (vph)	0	0	271	0	67	0	0	15	0	0	0	22
Lane Group Flow (vph)	51	117	71	163	113	0	390	632	0	88	353	16
Confl. Peds. (#/hr)	1		3	3		1	4		7	7		4
Confl. Bikes (#/hr)												2
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		6
Actuated Green, G (s)	16.5	16.5	16.5	16.5	16.5		52.9	41.2		40.7	34.5	34.5
Effective Green, g (s)	16.5	16.5	16.5	16.5	16.5		52.9	41.2		40.7	34.5	34.5
Actuated g/C Ratio	0.21	0.21	0.21	0.21	0.21		0.66	0.52		0.51	0.43	0.43
Clearance Time (s)	5.1	5.1	5.1	5.1	5.1		5.5	5.5		5.5	5.5	5.5
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)	203	347	311	247	328		613	860		339	752	621
v/s Ratio Prot		0.07			0.07		c0.10	c0.38		0.02	0.20	
v/s Ratio Perm	0.05		0.05	c0.14			0.32			0.11		0.01
v/c Ratio	0.25	0.34	0.23	0.66	0.34		0.64	0.74		0.26	0.47	0.03
Uniform Delay, d1	26.6	27.1	26.4	29.2	27.1		7.3	15.1		10.9	16.2	13.1
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	0.7	0.6	0.4	6.2	0.6		2.2	5.6		0.4	2.1	0.1
Delay (s)	27.2	27.7	26.8	35.4	27.7		9.5	20.7		11.3	18.3	13.2
Level of Service	C	C	C	D	C		A	C		B	B	B
Approach Delay (s)		27.0			31.4			16.5			16.6	
Approach LOS		C			C			B			B	

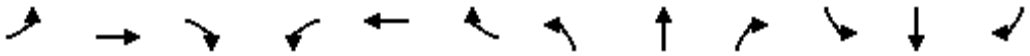
Intersection Summary			
HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	4	5	6	8
Movement	SBL	NBTL	EBTL	NBL	SBTL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	15	35	30	15	35	30
Maximum Split (%)	18.8%	43.8%	37.5%	18.8%	43.8%	37.5%
Minimum Split (s)	10.5	29.5	28.1	10.5	29.5	28.1
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.2	2.2	1.8	2.2	2.2	1.8
Minimum Initial (s)	5	10	10	5	10	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		17	16		17	16
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	65	0	35	65	0	35
End Time (s)	0	35	65	0	35	65
Yield/Force Off (s)	74.5	29.5	59.9	74.5	29.5	59.9
Yield/Force Off 170(s)	74.5	12.5	43.9	74.5	12.5	43.9
Local Start Time (s)	65	0	35	65	0	35
Local Yield (s)	74.5	29.5	59.9	74.5	29.5	59.9
Local Yield 170(s)	74.5	12.5	43.9	74.5	12.5	43.9

Intersection Summary	
Cycle Length	80
Control Type	Actuated-Coordinated
Natural Cycle	75
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 3: Stittsville Main St & Carp Rd/Plaza (1261 S. Main)

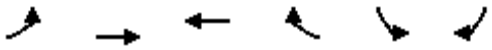




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	16	88	6	66	6	161	6	12	12	6	49
Future Volume (Veh/h)	12	16	88	6	66	6	161	6	12	12	6	49
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	12	16	88	6	66	6	161	6	12	12	6	49
Pedestrians		5			5			5			5	
Lane Width (m)		4.8			4.8			4.8			4.8	
Walking Speed (m/s)		1.0			1.0			1.0			1.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		322										
pX, platoon unblocked												
vC, conflicting volume	77			109			227	178	70	190	219	79
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	77			109			227	178	70	190	219	79
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			76	99	99	98	99	95
cM capacity (veh/h)	1512			1472			665	698	980	731	662	968

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	116	78	179	67
Volume Left	12	6	161	12
Volume Right	88	6	12	49
cSH	1512	1472	680	881
Volume to Capacity	0.01	0.00	0.26	0.08
Queue Length 95th (m)	0.2	0.1	7.4	1.7
Control Delay (s)	0.8	0.6	12.2	9.4
Lane LOS	A	A	B	A
Approach Delay (s)	0.8	0.6	12.2	9.4
Approach LOS			B	A

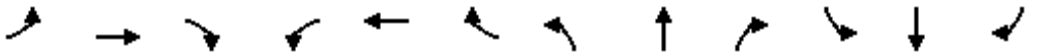
Intersection Summary				
Average Delay	6.7			
Intersection Capacity Utilization	35.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	647	513	47	13	35
Future Volume (Veh/h)	9	647	513	47	13	35
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	9	647	513	47	13	35
Pedestrians					5	
Lane Width (m)					4.8	
Walking Speed (m/s)					1.0	
Percent Blockage					1	
Right turn flare (veh)						
Median type		Raised	Raised			
Median storage veh)		1	1			
Upstream signal (m)		281				
pX, platoon unblocked					0.95	
vC, conflicting volume	565				883	285
vC1, stage 1 conf vol					542	
vC2, stage 2 conf vol					342	
vCu, unblocked vol	565				777	285
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	99				97	95
cM capacity (veh/h)	996				425	707

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	9	324	324	342	218	48
Volume Left	9	0	0	0	0	13
Volume Right	0	0	0	0	47	35
cSH	996	1700	1700	1700	1700	599
Volume to Capacity	0.01	0.19	0.19	0.20	0.13	0.08
Queue Length 95th (m)	0.2	0.0	0.0	0.0	0.0	1.8
Control Delay (s)	8.6	0.0	0.0	0.0	0.0	11.5
Lane LOS	A					B
Approach Delay (s)	0.1			0.0		11.5
Approach LOS						B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	28.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	170	16	66	70	8	154	62	845	38	235	1273	182
Future Volume (vph)	170	16	66	70	8	154	62	845	38	235	1273	182
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.9	3.9	3.7	3.7	4.8	3.7	3.6	3.7	3.7	3.3	3.5	3.1
Total Lost time (s)	6.3	6.3			6.3	6.3	5.6	6.0		5.6	6.0	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.97			1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			0.98	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.88			1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1732	1564			1719	1547	1474	3305		1653	3035	
Flt Permitted	0.71	1.00			0.69	1.00	0.11	1.00		0.23	1.00	
Satd. Flow (perm)	1288	1564			1239	1547	166	3305		396	3035	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	170	16	66	70	8	154	62	845	38	235	1273	182
RTOR Reduction (vph)	0	54	0	0	0	125	0	3	0	0	11	0
Lane Group Flow (vph)	170	28	0	0	78	29	62	880	0	235	1444	0
Confl. Peds. (#/hr)			20	20			2		4	4		2
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	2%	0%	2%	9%	33%	0%	16%	4%	0%	0%	10%	2%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	16.9	16.9			16.9	16.9	50.2	45.1		60.2	50.1	
Effective Green, g (s)	16.9	16.9			16.9	16.9	50.2	45.1		60.2	50.1	
Actuated g/C Ratio	0.19	0.19			0.19	0.19	0.56	0.50		0.67	0.56	
Clearance Time (s)	6.3	6.3			6.3	6.3	5.6	6.0		5.6	6.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	241	293			232	290	166	1656		405	1689	
v/s Ratio Prot		0.02					0.02	0.27		c0.06	c0.48	
v/s Ratio Perm	c0.13				0.06	0.02	0.19			0.32		
v/c Ratio	0.71	0.10			0.34	0.10	0.37	0.53		0.58	0.86	
Uniform Delay, d1	34.2	30.2			31.7	30.3	11.6	15.3		7.8	16.9	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.0	0.1			0.9	0.2	1.4	1.2		2.1	5.8	
Delay (s)	43.3	30.4			32.5	30.4	13.1	16.5		9.9	22.7	
Level of Service	D	C			C	C	B	B		A	C	
Approach Delay (s)		39.1			31.1			16.3			20.9	
Approach LOS		D			C			B			C	

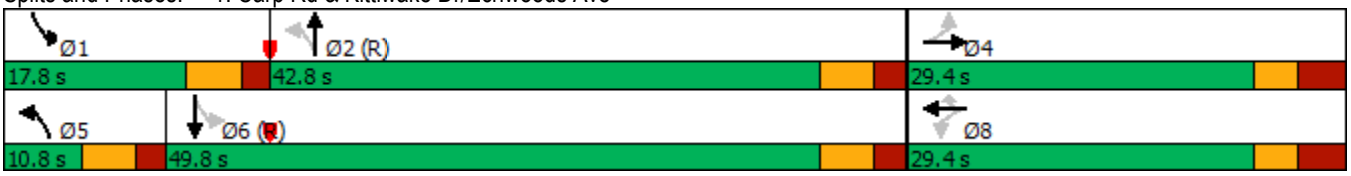
Intersection Summary			
HCM 2000 Control Delay	21.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.9
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		

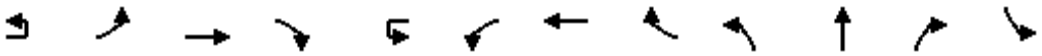
c Critical Lane Group

Phase Number	1	2	4	5	6	8
Movement	SBL	NBTL	EBTL	NBL	SBTL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	17.8	42.8	29.4	10.8	49.8	29.4
Maximum Split (%)	19.8%	47.6%	32.7%	12.0%	55.3%	32.7%
Minimum Split (s)	10.6	30	29.3	10.6	30	29.3
Yellow Time (s)	3.7	3.7	3	3.7	3.7	3
All-Red Time (s)	1.9	2.3	3.3	1.9	2.3	3.3
Minimum Initial (s)	5	10	10	5	10	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		17	16		17	16
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	72.2	0	42.8	72.2	83	42.8
End Time (s)	0	42.8	72.2	83	42.8	72.2
Yield/Force Off (s)	84.4	36.8	65.9	77.4	36.8	65.9
Yield/Force Off 170(s)	84.4	19.8	49.9	77.4	19.8	49.9
Local Start Time (s)	72.2	0	42.8	72.2	83	42.8
Local Yield (s)	84.4	36.8	65.9	77.4	36.8	65.9
Local Yield 170(s)	84.4	19.8	49.9	77.4	19.8	49.9

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 1: Carp Rd & Kittiwake Dr/Echwoods Ave





Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	2	113	336	168	1	93	622	430	162	447	35	456
Future Volume (vph)	2	113	336	168	1	93	622	430	162	447	35	456
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.7	3.6	3.9	3.7	3.7	3.8	3.4	3.9	3.9	3.4	3.7	3.6
Total Lost time (s)		4.5	6.6			6.6	6.6	6.6	6.0	6.1		6.0
Lane Util. Factor		0.97	0.95			1.00	0.95	1.00	0.97	0.95		1.00
Frpb, ped/bikes		1.00	0.99			1.00	1.00	0.98	1.00	1.00		1.00
Flpb, ped/bikes		0.99	1.00			0.99	1.00	1.00	1.00	1.00		1.00
Frt		1.00	0.95			1.00	1.00	0.85	1.00	0.99		1.00
Flt Protected		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		3283	3302			1588	3278	1460	3361	3204		1693
Flt Permitted		0.37	1.00			0.47	1.00	1.00	0.95	1.00		0.95
Satd. Flow (perm)		1292	3302			780	3278	1460	3361	3204		1693
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	113	336	168	1	93	622	430	162	447	35	456
RTOR Reduction (vph)	0	0	53	0	0	0	0	327	0	5	0	0
Lane Group Flow (vph)	0	115	451	0	0	94	622	103	162	477	0	456
Confl. Peds. (#/hr)	6	8		5	6	5		8	6		6	6
Heavy Vehicles (%)	5%	0%	1%	0%	0%	9%	2%	6%	2%	3%	4%	1%
Turn Type	custom	Prot	NA		Perm	Perm	NA	Perm	Prot	NA		Prot
Protected Phases		7	4				8		5	2		1
Permitted Phases	7				8	8		8				
Actuated Green, G (s)		10.7	44.0			28.8	28.8	28.8	9.6	26.1		31.2
Effective Green, g (s)		10.7	44.0			28.8	28.8	28.8	9.6	26.1		31.2
Actuated g/C Ratio		0.09	0.37			0.24	0.24	0.24	0.08	0.22		0.26
Clearance Time (s)		4.5	6.6			6.6	6.6	6.6	6.0	6.1		6.0
Vehicle Extension (s)		3.0	3.0			3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		115	1210			187	786	350	268	696		440
v/s Ratio Prot			0.14				c0.19		0.05	c0.15		c0.27
v/s Ratio Perm		c0.09				0.12		0.07				
v/c Ratio		1.00	0.37			0.50	0.79	0.29	0.60	0.69		1.04
Uniform Delay, d1		54.6	27.9			39.4	42.8	37.3	53.4	43.2		44.4
Progression Factor		1.00	1.00			1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2		83.9	0.2			2.1	5.5	0.5	3.8	5.4		52.6
Delay (s)		138.6	28.1			41.5	48.2	37.8	57.2	48.6		97.0
Level of Service		F	C			D	D	D	E	D		F
Approach Delay (s)			48.6				43.8			50.8		
Approach LOS			D				D			D		

Intersection Summary			
HCM 2000 Control Delay	48.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.2
Intersection Capacity Utilization	91.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

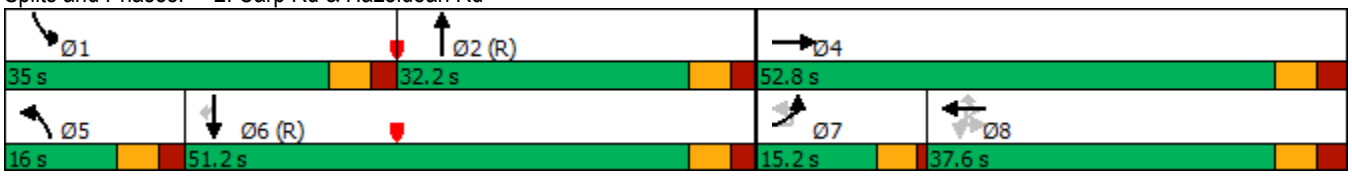
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	598	289
Future Volume (vph)	598	289
Ideal Flow (vphpl)	1800	1800
Lane Width	3.6	3.5
Total Lost time (s)	6.1	6.1
Lane Util. Factor	0.95	1.00
Frpb, ped/bikes	1.00	0.98
Flpb, ped/bikes	1.00	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	3353	1482
Flt Permitted	1.00	1.00
Satd. Flow (perm)	3353	1482
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	598	289
RTOR Reduction (vph)	0	129
Lane Group Flow (vph)	598	160
Confl. Peds. (#/hr)		6
Heavy Vehicles (%)	2%	0%
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Actuated Green, G (s)	47.7	47.7
Effective Green, g (s)	47.7	47.7
Actuated g/C Ratio	0.40	0.40
Clearance Time (s)	6.1	6.1
Vehicle Extension (s)	3.0	3.0
Lane Grp Cap (vph)	1332	589
v/s Ratio Prot	0.18	
v/s Ratio Perm		0.11
v/c Ratio	0.45	0.27
Uniform Delay, d1	26.5	24.4
Progression Factor	1.00	1.00
Incremental Delay, d2	1.1	1.1
Delay (s)	27.6	25.6
Level of Service	C	C
Approach Delay (s)	50.7	
Approach LOS	D	

Intersection Summary

Phase Number	1	2	4	5	6	7	8
Movement	SBL	NBT	EBT	NBL	SBT	EBL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize							
Recall Mode	None	C-Max	None	None	C-Max	None	None
Maximum Split (s)	35	32.2	52.8	16	51.2	15.2	37.6
Maximum Split (%)	29.2%	26.8%	44.0%	13.3%	42.7%	12.7%	31.3%
Minimum Split (s)	11	31.1	37.6	11	31.1	9.5	37.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.5	3.7
All-Red Time (s)	2.3	2.4	2.9	2.3	2.4	1	2.9
Minimum Initial (s)	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0
Walk Time (s)		7	7		7		7
Flash Dont Walk (s)		18	24		18		24
Dual Entry	No	Yes	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	85	0	32.2	85	101	32.2	47.4
End Time (s)	0	32.2	85	101	32.2	47.4	85
Yield/Force Off (s)	114	26.1	78.4	95	26.1	42.9	78.4
Yield/Force Off 170(s)	114	8.1	54.4	95	8.1	42.9	54.4
Local Start Time (s)	85	0	32.2	85	101	32.2	47.4
Local Yield (s)	114	26.1	78.4	95	26.1	42.9	78.4
Local Yield 170(s)	114	8.1	54.4	95	8.1	42.9	54.4

Intersection Summary		
Cycle Length	120	
Control Type	Actuated-Coordinated	
Natural Cycle	120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green		

Splits and Phases: 2: Carp Rd & Hazeldean Rd



Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	89	144	552	259	155	110	375	590	133	88	587
Future Volume (vph)	1	89	144	552	259	155	110	375	590	133	88	587
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.7	3.5	3.2	3.9	3.6	3.6	3.7	3.5	3.6	3.7	3.1	3.5
Total Lost time (s)		5.1	5.1	5.1	5.1	5.1		5.5	5.5		5.5	5.5
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frpb, ped/bikes		1.00	1.00	0.96	1.00	0.97		1.00	0.99		1.00	1.00
Flpb, ped/bikes		0.92	1.00	1.00	0.99	1.00		1.00	1.00		1.00	1.00
Frt		1.00	1.00	0.85	1.00	0.94		1.00	0.97		1.00	1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)		1548	1720	1468	1698	1605		1595	1717		1612	1728
Flt Permitted		0.60	1.00	1.00	0.47	1.00		0.09	1.00		0.26	1.00
Satd. Flow (perm)		971	1720	1468	845	1605		159	1717		449	1728
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	89	144	552	259	155	110	375	590	133	88	587
RTOR Reduction (vph)	0	0	0	283	0	24	0	0	7	0	0	0
Lane Group Flow (vph)	0	90	144	269	259	241	0	375	716	0	88	587
Confl. Peds. (#/hr)	28	23		10	10		23	28		13	13	
Confl. Bikes (#/hr)							2			3		
Heavy Vehicles (%)	0%	0%	0%	3%	0%	1%	3%	6%	1%	1%	0%	3%
Turn Type	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA
Protected Phases			4		3	8		5	2		1	6
Permitted Phases	4	4		4	8			2			6	
Actuated Green, G (s)		21.5	21.5	21.5	33.3	33.3		66.1	56.5		42.6	38.5
Effective Green, g (s)		21.5	21.5	21.5	33.3	33.3		66.1	56.5		42.6	38.5
Actuated g/C Ratio		0.20	0.20	0.20	0.30	0.30		0.60	0.51		0.39	0.35
Clearance Time (s)		5.1	5.1	5.1	5.1	5.1		5.5	5.5		5.5	5.5
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)		189	336	286	307	485		384	881		217	604
v/s Ratio Prot			0.08		c0.05	0.15		c0.20	0.42		0.02	0.34
v/s Ratio Perm		0.09		0.18	c0.20			c0.39			0.14	
v/c Ratio		0.48	0.43	0.94	0.84	0.50		0.98	0.81		0.41	0.97
Uniform Delay, d1		39.3	38.9	43.6	36.1	31.5		33.6	22.3		22.6	35.2
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.9	0.9	36.9	18.6	0.8		39.3	8.1		1.2	30.3
Delay (s)		41.1	39.7	80.5	54.7	32.3		72.9	30.4		23.9	65.5
Level of Service		D	D	F	D	C		E	C		C	E
Approach Delay (s)			68.6			43.4			44.9			57.2
Approach LOS			E			D			D			E

Intersection Summary			
HCM 2000 Control Delay	53.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.2
Intersection Capacity Utilization	98.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

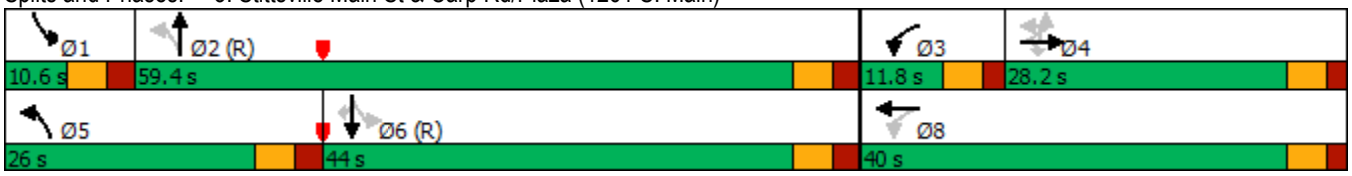
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	58
Future Volume (vph)	58
Ideal Flow (vphpl)	1800
Lane Width	3.5
Total Lost time (s)	5.5
Lane Util. Factor	1.00
Frpb, ped/bikes	0.92
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1388
Flt Permitted	1.00
Satd. Flow (perm)	1388
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	58
RTOR Reduction (vph)	38
Lane Group Flow (vph)	20
Confl. Peds. (#/hr)	28
Confl. Bikes (#/hr)	
Heavy Vehicles (%)	0%
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	38.5
Effective Green, g (s)	38.5
Actuated g/C Ratio	0.35
Clearance Time (s)	5.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	485
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.04
Uniform Delay, d1	23.6
Progression Factor	1.00
Incremental Delay, d2	0.2
Delay (s)	23.7
Level of Service	C
Approach Delay (s)	
Approach LOS	

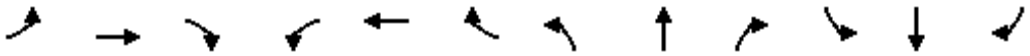
Intersection Summary

Phase Number	1	2	3	4	5	6	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize							
Recall Mode	None	C-Max	None	None	None	C-Max	None
Maximum Split (s)	10.6	59.4	11.8	28.2	26	44	40
Maximum Split (%)	9.6%	54.0%	10.7%	25.6%	23.6%	40.0%	36.4%
Minimum Split (s)	10.5	29.5	10.1	28.1	10.5	29.5	28.1
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.2	2.2	1.8	1.8	2.2	2.2	1.8
Minimum Initial (s)	5	10	5	10	5	10	10
Vehicle Extension (s)	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0
Walk Time (s)		7		7		7	7
Flash Dont Walk (s)		17		16		17	16
Dual Entry	No	Yes	No	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	84	94.6	44	55.8	84	0	44
End Time (s)	94.6	44	55.8	84	0	44	84
Yield/Force Off (s)	89.1	38.5	50.7	78.9	104.5	38.5	78.9
Yield/Force Off 170(s)	89.1	21.5	50.7	62.9	104.5	21.5	62.9
Local Start Time (s)	84	94.6	44	55.8	84	0	44
Local Yield (s)	89.1	38.5	50.7	78.9	104.5	38.5	78.9
Local Yield 170(s)	89.1	21.5	50.7	62.9	104.5	21.5	62.9

Intersection Summary	
Cycle Length	110
Control Type	Actuated-Coordinated
Natural Cycle	110
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 3: Stittsville Main St & Carp Rd/Plaza (1261 S. Main)

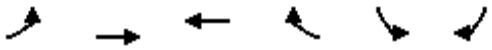




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	54	136	6	34	6	85	6	41	41	6	25
Future Volume (Veh/h)	40	54	136	6	34	6	85	6	41	41	6	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	40	54	136	6	34	6	85	6	41	41	6	25
Pedestrians		5			5			5			5	
Lane Width (m)		4.8			4.8			4.8			4.8	
Walking Speed (m/s)		1.0			1.0			1.0			1.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		322										
pX, platoon unblocked												
vC, conflicting volume	45			195			289	264	132	305	329	47
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	45			195			289	264	132	305	329	47
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			86	99	95	93	99	98
cM capacity (veh/h)	1553			1369			612	614	905	585	565	1009

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	230	46	132	72
Volume Left	40	6	85	41
Volume Right	136	6	41	25
cSH	1553	1369	681	683
Volume to Capacity	0.03	0.00	0.19	0.11
Queue Length 95th (m)	0.6	0.1	5.0	2.5
Control Delay (s)	1.5	1.0	11.6	10.9
Lane LOS	A	A	B	B
Approach Delay (s)	1.5	1.0	11.6	10.9
Approach LOS			B	B

Intersection Summary				
Average Delay	5.6			
Intersection Capacity Utilization	38.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	822	1105	50	12	46
Future Volume (Veh/h)	11	822	1105	50	12	46
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	11	822	1105	50	12	46
Pedestrians					5	
Lane Width (m)					4.8	
Walking Speed (m/s)					1.0	
Percent Blockage					1	
Right turn flare (veh)						
Median type		Raised	Raised			
Median storage veh)		1	1			
Upstream signal (m)		281				
pX, platoon unblocked					0.99	
vC, conflicting volume	1160				1568	582
vC1, stage 1 conf vol					1135	
vC2, stage 2 conf vol					433	
vCu, unblocked vol	1160				1550	582
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	98				94	90
cM capacity (veh/h)	605				210	458

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	11	411	411	737	418	58
Volume Left	11	0	0	0	0	12
Volume Right	0	0	0	0	50	46
cSH	605	1700	1700	1700	1700	368
Volume to Capacity	0.02	0.24	0.24	0.43	0.25	0.16
Queue Length 95th (m)	0.4	0.0	0.0	0.0	0.0	3.9
Control Delay (s)	11.1	0.0	0.0	0.0	0.0	16.6
Lane LOS	B					C
Approach Delay (s)	0.1			0.0		16.6
Approach LOS						C

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		