DILLON CONSULTING

2513287 ONTARIO INC

2822 Carp Road New Multi-Use Development

Updated Transportation Impact Assessment

August 2022 - 20-3703

Certification

1. I have reviewed and have a sound understanding of the objectives, needs, and requirements of the City of Ottawa's Official Plan and the Transportation Impact Assessment (2017) Guidelines;

2. I have a sound knowledge of industry standard practice with respect to the presentation of transportation impact assessment reports, including multimodal 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 or registered professional in good standing, whose field of expertise is either transportation engineering or transportation planning.

Signature of individual certifier that s/he meets the above four criteria.

Eric Stewart, P.Eng.
Associate
Transportation Engineer
Project Manager
101-177 Colonnade Road
Nepean, ON K2E 7J4

Phone: (613) 745-2213 x3017
estewart@dillon.ca

Doug Green, P.Eng., Associate
Transportation Engineer
101-177 Colonnade Road
Nepean, ON K2E 7J4

Phone: (613) 745-2213 x3052
dgreen@dillon.ca

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1.0 Screening

1.1 Description of Proposed Development

Description of Location	The site is located on the east side of Carp Road, south of Arbourbrook Boulevard. The site is currently occupied by a used car dealer, it is bound by commercial property to the north, farm land to the east and south and Carp Road to the west, all surrounding land is zone as Rural Commercial (RC). The buildings are to be located in proximity to the existing structure at 2822 Carp Road with a driveway access to Carp Road near the southern extent of the property.
Ward	Ward 5 – West Carleton – March (Eli El-Chantiry)
Land Use Classification	RC9 – Rural Commercial Zone 9 for Carp Road Corridor (Highway commercial Restricted). Relevant permitted uses include: automobile service station, heavy equipment and vehicle sales, rental and servicing, parking lot, warehouse, light industrial, service and repair shop, and office.
Development Size	There will be a multi-tenant commercial building with a combined GFA of 599 square metres (sq.m). The following land uses are expected to occupy the property: auto sales, auto body repair, retail, and general warehousing.
Accesses	One access on Carp Road
Phases	One phase
Build-out year	2023

1.2 Trip Generation Trigger

Land Use Type	Minimum Development Size	Yes	No
Single-family homes	40 units		x
Townhomes or apartments	90 units		x
Office	3,500 sq.m.		x
Industrial	5,000 sq.m.		x
Fast-food restaurant or coffee shop	100 sq.m.		x
Destination retail	1,000 sq.m.		x
Gas station or convenience market	75 sq.m.		x
Other	60 person trips or more during weekday peak hours		x

1.3 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

1.4 Safety Triggers

	Yes	No
Are posted speed limits on a boundary street 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

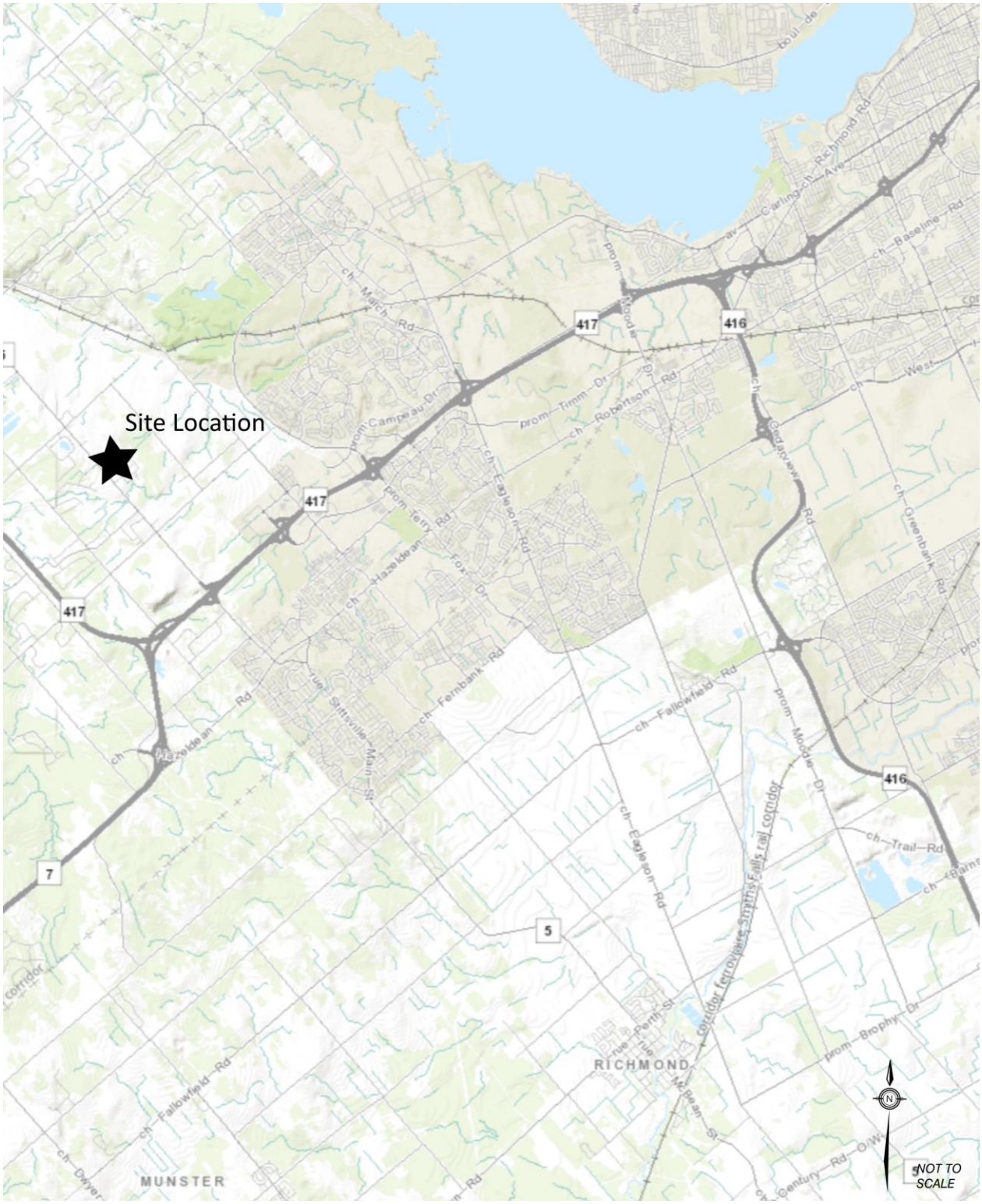
1.5 Summary

	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	

Since the development satisfies the location and safety triggers, both the design review component and the network impact component will be addressed in the TIA.

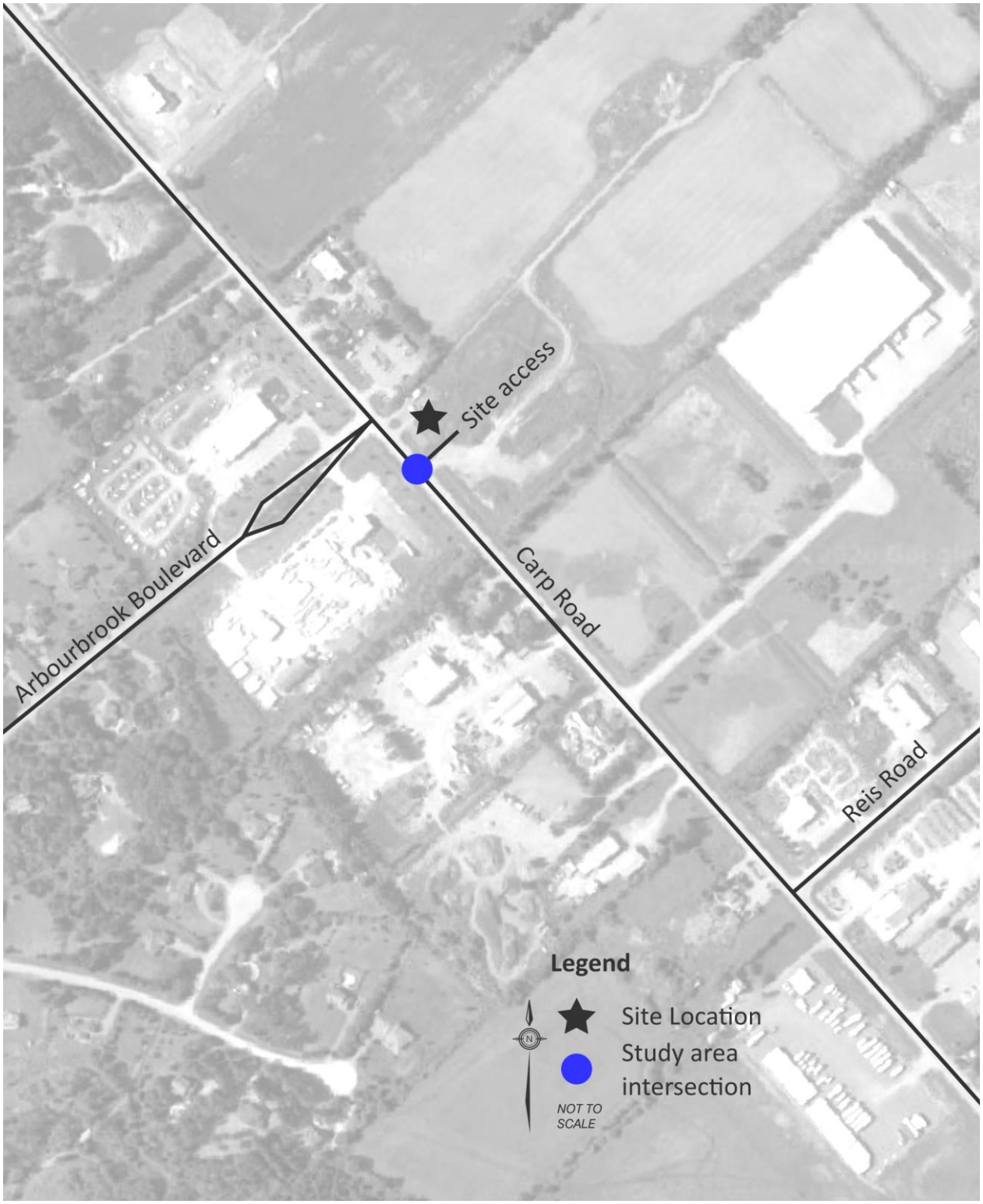
Figure 1 illustrates the site location. **Figure 2** illustrates the study area intersections.

Figure 1: Site Location



Background map source: geoOttawa, accessed October 2020

Figure 2: Study Area Intersection



Background map source: Google Maps, accessed October 2020

2.0 Scoping

2.1 Existing and Planned Conditions

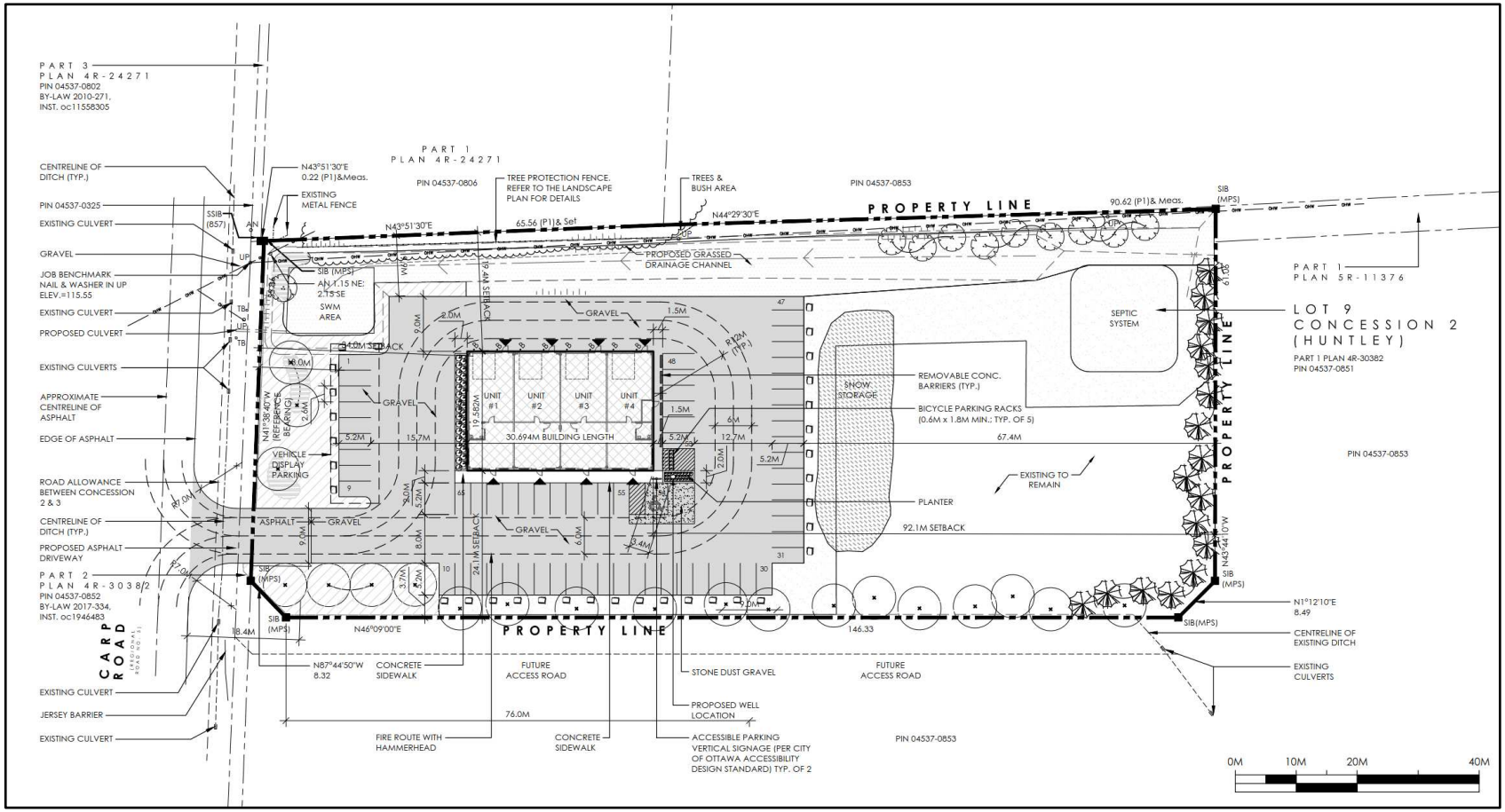
2.1.1 Proposed Development

A multi-tenant commercial building is proposed to be constructed to house auto sales, retail, general warehousing and parking areas for staff and vehicles. The site plan provides for 65 auto parking spaces total, one (1) of which will be accessible parking and five (5) bicycle parking spaces.

The site plan indicates a future proposed access road south of the site to be developed by others, connecting Carp Road to a potential rural commercial development east of the site location, but the future access road is not a part of this development application or site plan.

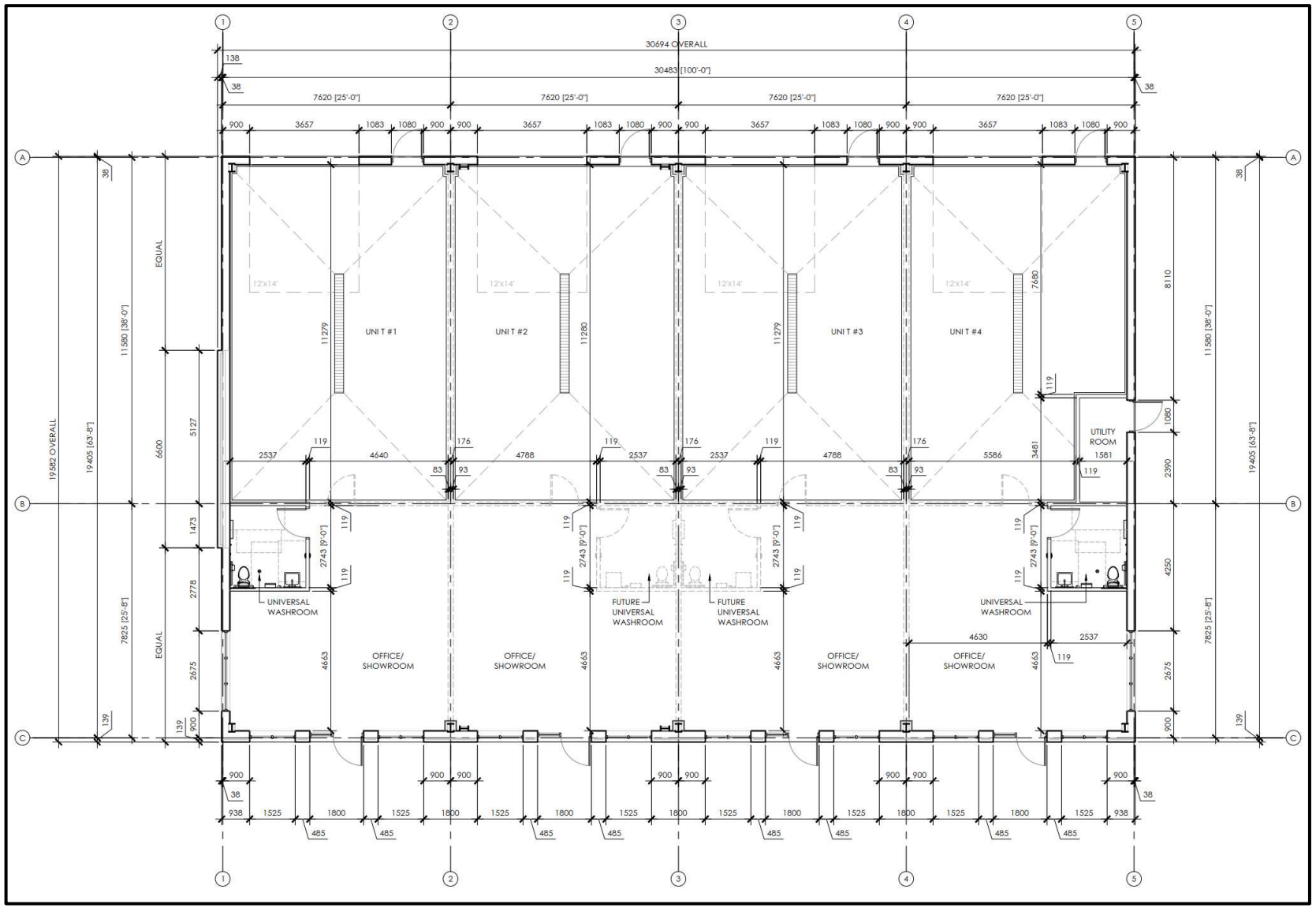
Figure 3 illustrates the proposed site plan, floor plan, and elevations.

Figure 3: Proposed Site Plan, Floor Plan, and Elevations



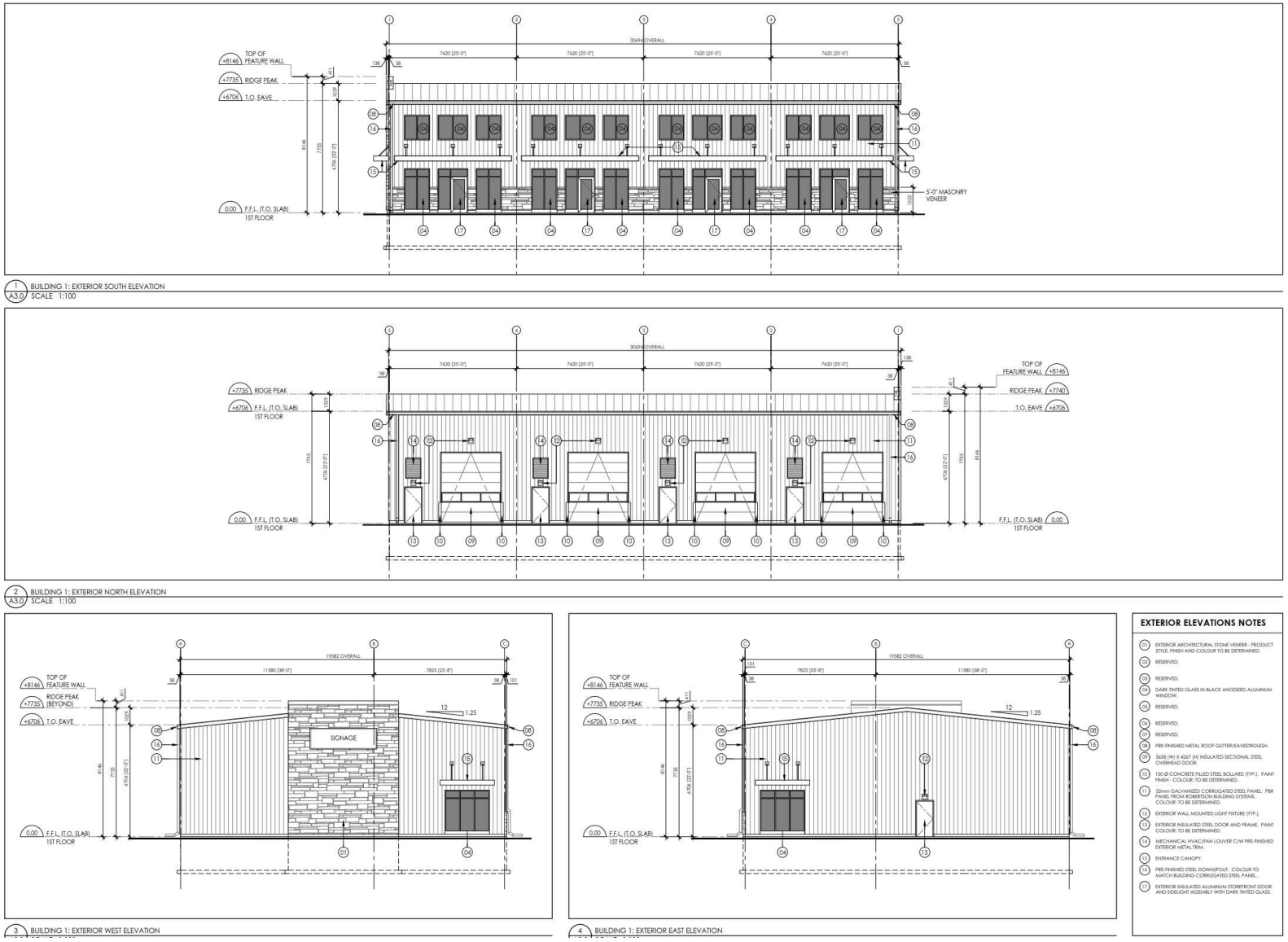
Source: Site plan plotted 2022-07-13, provided by Argue Construction Ltd.

Figure 3: Proposed Site Plan, Floor Plan, and Elevations *(continued)*



Source: Site plan plotted 2022-07-13, provided by Argue Construction Ltd.

Figure 3: Proposed Site Plan, Floor Plan, and Elevations *(continued)*



Source: Site plan plotted 2022-07-13, provided by Argue Construction Ltd.

2.1.2 Existing Conditions

2.1.2.1 Roads and Traffic Control

There are two roadways in the study area, they are described as follows:

Carp Road is a two-lane undivided, municipally-owned rural Arterial road with a posted speed limit of 80 km/h with paved shoulders. Carp Road is a truck route which runs north-south from Stittsville to Fitzroy Township and is classified as a cycling Spine Route within the study area.

The operating speed on Carp Road frequently approaches 100 km/h; the nearest traffic control signals are located approximately 2 kilometers (km) south at Richardson Side Road and 4 km north at March Road. There are no auxiliary turning lanes on Carp Road between these two signalized intersections.

Arbourbrook Boulevard is a two-lane, municipally-owned rural Local road with an unposted speed limit of 50 km/h and gravel shoulders. It is approximately 600 m long and runs east-west connecting Cyd Street to Carp Road. It serves approximately 35 residential homes as well as Pride Marine Group (Boat repair shop) and Nepean Building Supplies.

2.1.2.2 Existing Driveways to Adjacent Developments

Within 200 metres north of the site driveway, there are eight driveways to residential and small commercial properties. Approximately 30 metres north of the site driveway is Arbourbrook Road, which provides access to two rural commercial properties and a residential subdivision.

2.1.2.3 Walking and Cycling

There is a paved shoulder on Carp Road which could be used by pedestrians and cyclists, but otherwise there are no pedestrian or cycling facilities in the vicinity of the site. However, Carp Road is classified as a cycling Spine Route in the City's Transportation Master Plan.

2.1.2.4 Transit

There are virtually no transit routes in the study area. OC Transpo route #303 travels north on Carp Road once a week on Wednesday.

2.1.2.5 Traffic Management Measures

There are no traffic management measures in the study area.

2.1.2.6 Traffic Volumes

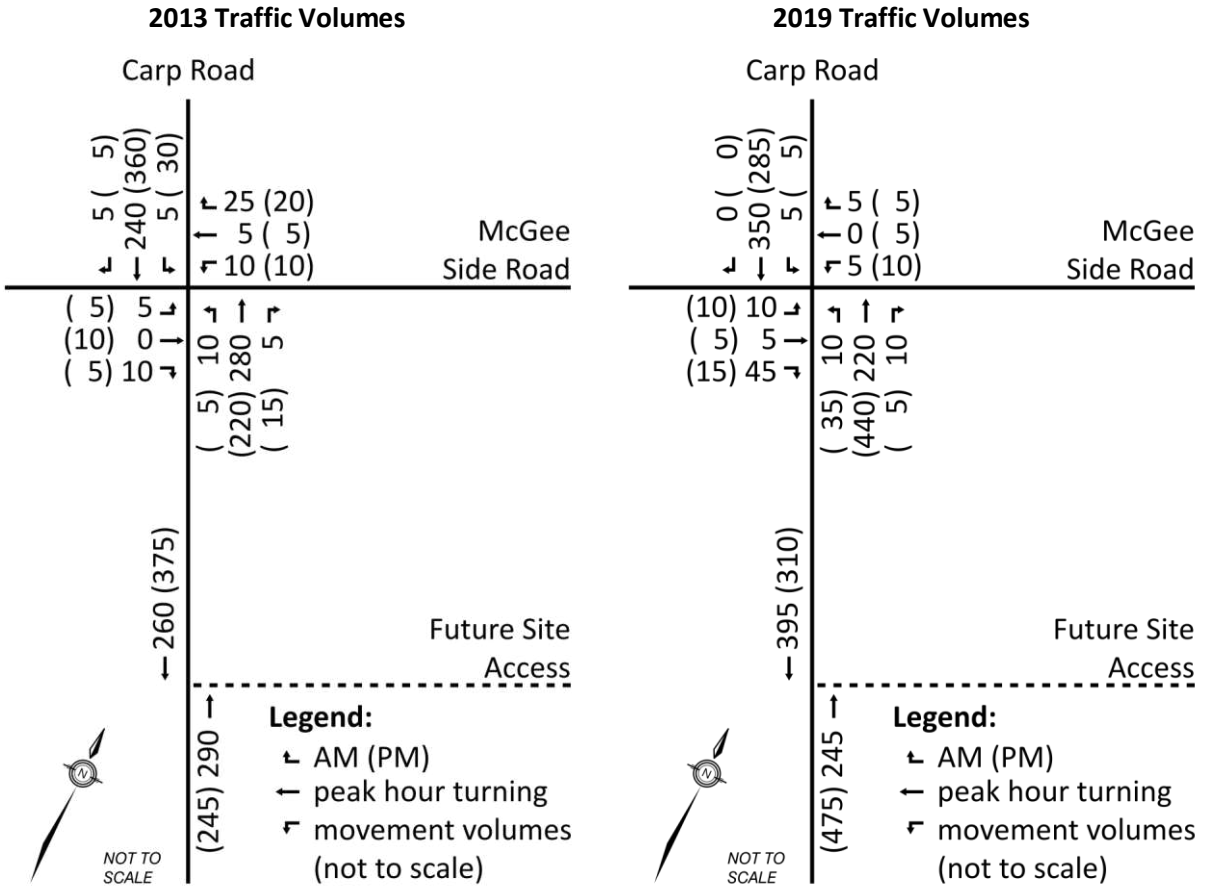
Table 1 summarizes the traffic count data used for this study. Traffic counts were used at the intersection of Carp Road at McGee Side road, located approximately 1 km north of the proposed site location. Historical counts were obtained to identify an appropriate background growth rate for the study area.

Table 1: Traffic Count Data

Intersection	Date	Source	Roadway Peak Hour
Carp Road / McGee Side Road	December 2013	Delcan Corporation (now Parsons)	**AM:** 7:30 – 8:30 **PM:** 4:00 – 5:00
	October 2019	Dillon Consulting Limited	**AM**: 6:45 – 7:45 **PM**: 4:15 – 5:15

Figure 4 and illustrates the 2013 and 2019 traffic volumes, which have been rounded to the nearest five (5) vehicles. The 2019 traffic volumes are significantly higher southbound during the AM peak hour and northbound during the PM peak hour, as compared to the December 2013 traffic volume data. **Appendix A** contains the existing traffic counts.

Figure 4: 2013 and 2019 Traffic Volumes



Note: inconsistencies are due to rounding

2.1.2.7 Collision History

Within approximately 200m of the proposed site access on Carp Road, there have been 10 collisions between 2013 and 2018 (inclusive). A brief summary is below:

- one (1) non-fatal injury occurred, seven (7) collisions experienced property damage only, and two (2) collisions did not have information regarding collision type;
- the type of impact from the collisions were turning movement (four collisions), single motor vehicle (three collisions), rear end (one collision), angle (one collision), and approaching (one collision);
- seven collisions occurred during clear weather, two during snow and one during rain;
- seven collisions occurred during daylight, two in the dark and one occurred dawn; and,
- the surface conditions during the time of collisions were wet (five collisions), dry (two collisions), slush (one collision), ice (one collisions), and two collision did not have information regarding surface conditions.

Overall there does not appear to be a history of collisions at the intersection and therefore no further investigation was performed.

2.1.3 Planned Conditions

2.1.3.1 Road and Transit Network Modifications

The City of Ottawa Transportation Master Plan (2013) does not identify any planned road network or transit network modifications in the vicinity of the site.

2.1.3.2 Walking and Cycling

Carp Road is identified as a Spine cycling route on the City's Primary Rural Cycling Network.

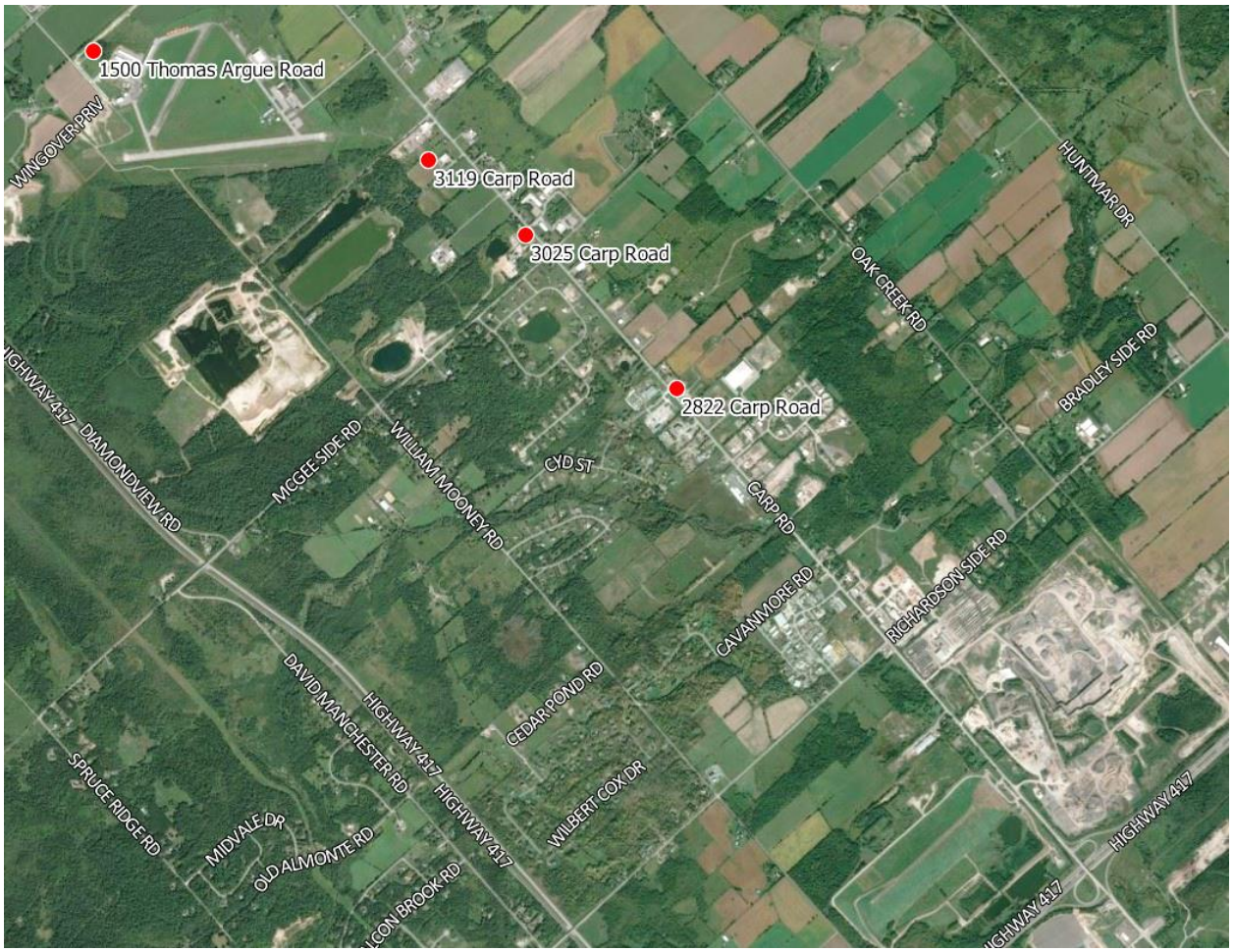
2.1.3.3 Future Background Developments

The City of Ottawa's Development Application website was reviewed to identify development applications in the vicinity of the site that might impact traffic volumes at study area intersections. The following applications were found; however, they may be dormant as they are several years old:

- 3119 Carp Road (a rural commercial/industrial subdivision of approximately 300,000 sq.ft.);
- 3025 Carp Road (warehouse rental bays, truck repair bays, and office space development with a GFA of approximately 875 sq.m); and,
- 1500 Thomas Argue Drive (zoning application to add cannabis production facility on the subject lands).

Figure 5 illustrates the location of these background developments with respect to the site at 2822 Carp Road and Highway 417.

Figure 5: Background Developments



2.2 Study Parameters

2.2.1 Study Area

The study area is limited to the Carp Road site access and turning movements in and out of the site. The TIA will also discuss the potential future access south of the site via a separate potential development.

2.2.2 Time Periods

The analysis will consider the weekday AM and PM roadway peak hours.

2.2.3 Horizon Years

Full occupancy of the site is expected in 2023. The transportation analysis will assess existing conditions, 2023 horizon year, and the 2028 horizon year conditions (5 years after build out).

2.3 Exemptions Review

Table 2 lists the TIA modules that will be excluded from this TIA.

Table 2: Exemptions Review

Module	Element	Exemption Consideration	Status
Design Review Component			
4.1 Development Design	4.1.2 Circulation and Access	Only required for site plans	Included
	4.1.3 New Street Networks	Only required for plans of subdivision	Excluded
4.2 Parking	4.2.1 Parking Supply	Only required for site plans	Included
	4.2.2 Spillover Parking	Only required for site plans where parking supply is 15% below unconstrained demand	Exempt
4.3 Boundary Street	All Elements	Exempt.	Exempt
Network Impact Component			
4.5 Transportation Demand Mgmt.	All Elements	Not required for non-residential sites plans expected to have < 60 employees and/or students on location at any given time	Exempt
4.6 Neighbourhood Traffic Management	4.6.1 Adjacent Neighbourhoods	Only required when the development relies on Local or Collector streets for access and total volumes exceed ATM capacity thresholds	Exempt
4.7 Transit	All Elements	Exempt since there is limited transit service	Exempt
4.8 Network Concept	All Elements	Only required when proposed development generates more than 200 person trips during the peak hour in excess of the equivalent volume permitted by zoning	Exempt
4.9 Intersection Design	All Elements	Not required if site generation trigger is not met.	Exempt

3.0 Forecasting

3.1 Development-Generated Travel Demand

3.1.1 Trip Generation and Mode Shares

Table 3 summarizes the anticipated trip generation for the site during the peak hour of adjacent roadway traffic. The trip generation is based on the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 10th Edition*. The ITE Trip Generation Manual does not have trip generation rates for every land use, so related land uses were used to estimate trip generation.

Given the location of the site, the site is anticipated to have a high auto mode share in line with typical ITE auto rates (assumed to be ~90%) and therefore no adjustments were made to the ITE trip generation.

Table 3: Proposed Development Vehicle Trip

Site Plan Land Use	ITE Land Use	GFA (sq.m.)	GFA 1,000 Sq. Ft.	AM Peak Hour			PM Peak Hour		
				No. Trips	In	Out	No. Trips	In	Out
Auto sales	841: auto sales, used	61.19	0.66	3	76%	24%	3	47%	53%
Auto body repair	943: auto parts and service centre	89.67	0.97	3	73%	27%	3	40%	60%
Retail	816: hardware /paint store	182.37	1.96	6	54%	46%	5	47%	53%
General warehouse	150: warehousing	266.03	2.86	30	77%	23%	23	27%	73%
Total		**599.26**	**6.45**	**42**	-	-	**34**	-	-

Table 4 summarizes the trip generation for the proposed development. The site is not anticipated to generate pass-by trips.

Table 4: Proposed Development Vehicle Trip Generation Traffic Volumes

Site Plan Land Use	ITE Land Use	AM Peak Hour		PM Peak Hour	
		In	Out	In	Out
Auto sales	841: auto sales, used	2	1	2	2
Auto body repair	943: auto parts and service centre	2	1	1	2
Retail	816: hardware/paint store	3	3	3	3
General warehouse	150: warehousing	20	11	6	17
Total		**27**	**16**	**12**	**24**

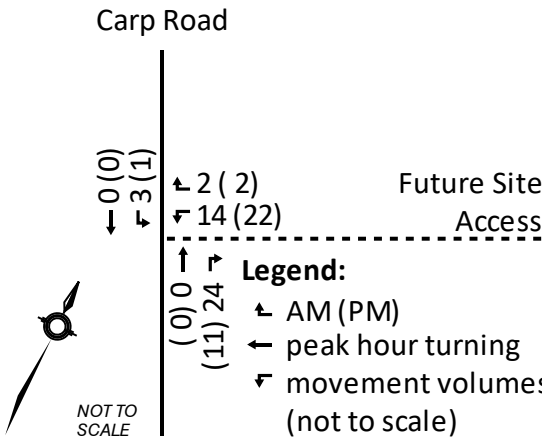
3.1.2 Trip Distribution

The trip distribution assumed within this analysis is 10% to/from the north and 90% to/from the south along Carp Road. This assumed that the majority of employees and customers would be from Ottawa which is south of the site.

3.1.3 Trip Assignment

Figure 6 illustrates the traffic volumes generated by the development during the peak hour of adjacent road traffic. Overall these volumes are very low and are not anticipated to create operational issues. The southbound left turn into the site is only three (3) vehicles during the AM peak hour which would not warrant a left turn lane into the site.

Figure 6: Site Generated Traffic Volumes



3.2 Background Network Travel Demand

3.2.1 Transportation Network Plan

There are no planned transportation network changes that would result in a change to the background network travel demands.

3.2.2 Background Traffic Volume Growth

The 2013 traffic count data was compared to the 2019 traffic count data to determine the growth rate in background traffic volumes. **Table 5** summarizes the traffic volume growth rates at the proposed access on Carp Road based on the peak hours of each count.

The southbound direction has experienced 7% annual increase for the weekday AM peak hour and a 3% annual decrease during the weekday PM peak hour. The northbound direction shows a 3% annual decrease during the weekday AM peak hour and a 12% annual increase during the weekday PM peak hour.

Table 5: Traffic Growth Rate along Carp Road at Site Access Location

Approach	2013		2019		Compound Annual Growth Rate (CAGR)	
	AM 7:30 8:30	PM 4-5	AM 6:45-7:30	PM 4:15-5:15	AM	PM
Southbound	260	375	395	310	7%	-3%
Northbound	290	245	245	475	-3%	12%
Total / Average	**550**	**620**	**640**	**785**	**3%**	**4%**

Large increases or decreases of -3% to 12% are likely due to a single large development, construction activity, or may be a result of the limited amount of available historical traffic volume data. Growth rates greater than 3% annually are high and unlikely to be sustained.

For the purpose of this analysis, the following growth rates were used for the analysis; these rates were reviewed and approved by the City in 2019 for a different TIA just north of this site:

- 3% for southbound approach during the AM peak hour;
- 0% for northbound approach during the AM peak hour;
- 3% for northbound approach during the PM peak hour; and,
- 0% for southbound approach during the PM peak hour.

3.2.3 Other Background Developments

The City of Ottawa's development applications tool identified three background developments that could impact study area intersections.

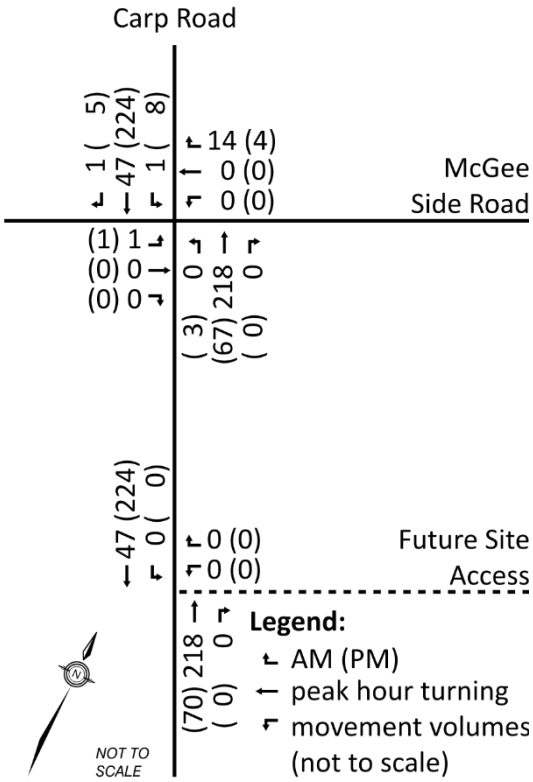
The following background developments were identified:

- 3119 Carp Road (a rural commercial/industrial subdivision of approximately 300,000 sq.ft.);
- 3025 Carp Road (warehouse rental bays, truck repair bays, and office space development with a GFA of approximately 875 sq.m); and,
- 1500 Thomas Argue Drive (zoning application to add cannabis production facility on the subject lands).

Figure 7 illustrates the total traffic generated from the three background developments listed above.

Appendix B contains the TIA for 3119 Carp Road and 3025 Carp Road, it also contains the site trip generation figure for the development at 1500 Thomas Argue Drive; an electronic format was not available so City staff provided a figure showing site generated traffic volumes.

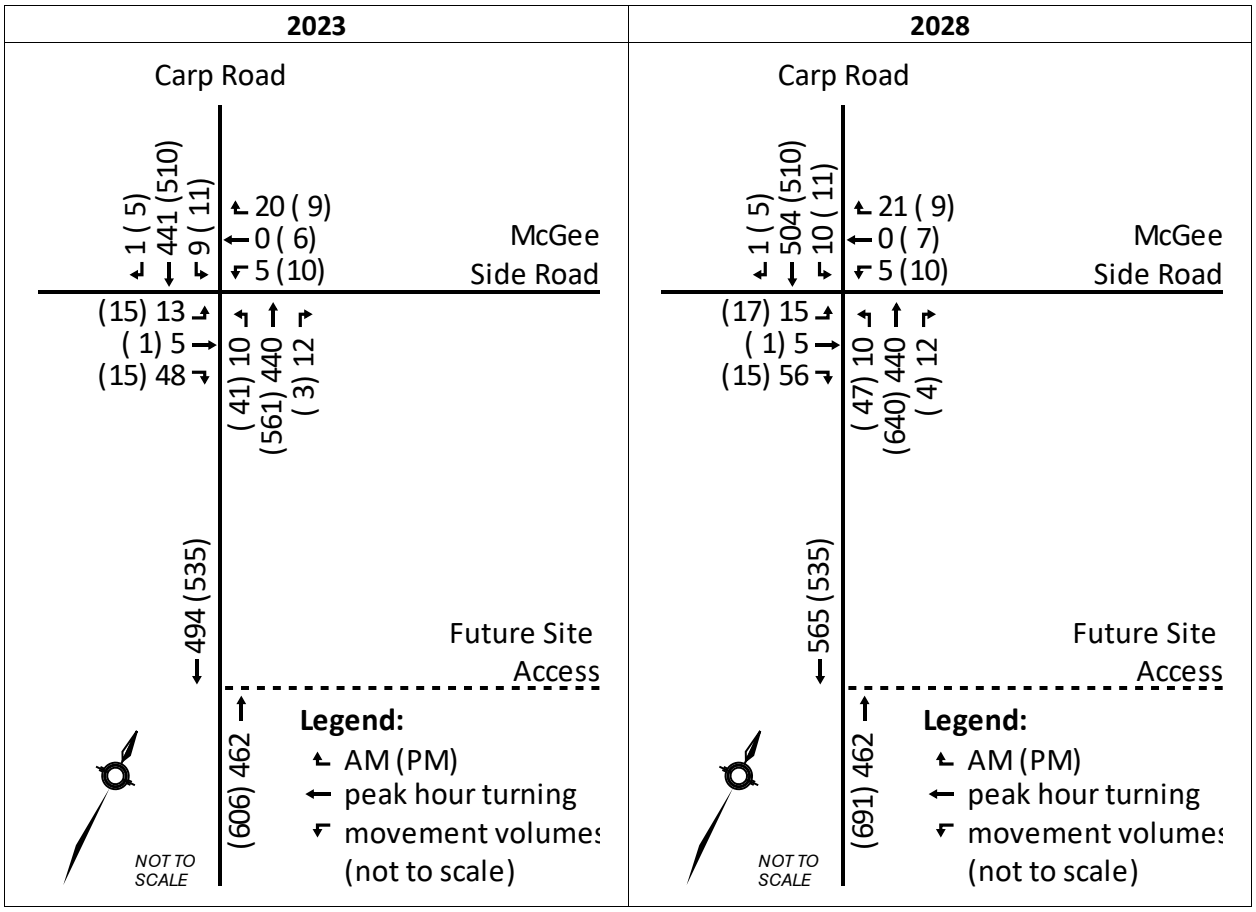
Figure 7: Traffic Volume From Other Developments



3.2.4 Future Background Traffic Volumes

Figure 8 illustrates the 2023 and 2028 future background traffic volumes, which is the sum of the background traffic volume grown to the horizon year, plus traffic generated by the other developments listed above. Note that the traffic volumes have been rounded to the nearest five.

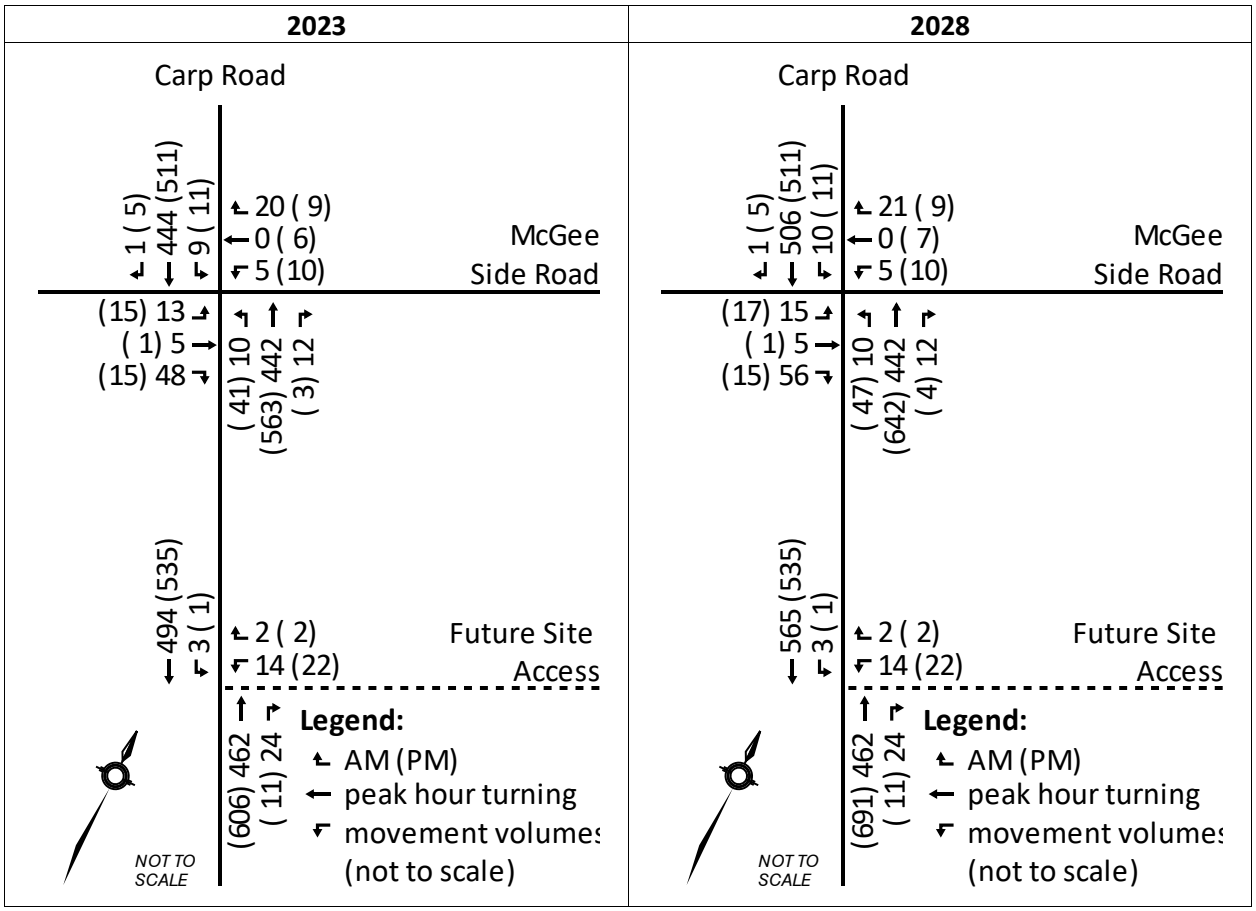
Figure 8: Background Traffic Volumes – 2023 and 2028



3.3 Total Forecast Traffic Volumes

The total traffic volumes were calculated by adding the background traffic volumes and the site generated traffic volumes. **Figure 9** illustrates the total future traffic volumes, rounded to the nearest five.

Figure 9: Total Traffic Volumes – 2023 and 2028



4.0 Analysis

4.1 Development Design

4.1.1 Design for Sustainable Modes

The TDM-supportive design and infrastructure measures checklist for non-residential developments was reviewed to determine if any of the measures were applicable to the site. **Appendix C** contains the checklist and notes.

Measures to provide sidewalks, an accessible parking space, a ramp for the accessible parking space, and bicycle racks were applicable to the site and were already included in the design.

The TDM checklist suggests providing shower & change facilities; this is not provided as part of the main building but tenants have the ability to add shower facilities if they chose to do so. A dedicated secure bicycle parking area and bicycle repair station are not applicable to the site given the site location and the expectation that there will be few, if any, cyclists using these facilities.

4.1.2 Circulation and Access

The majority of vehicles on site are anticipated to be passenger vehicles. The laneway is wide (6.7m) and many of the loading bays (except for 2) are located away from customer parking spaces, reducing the potential for conflicts with parked vehicles. The site provides more parking spaces than required by bylaw and these parking spaces can be used by the site's developments (auto sales, auto body repair, and auto repair) as loading areas.

Servicing the septic system at the back of the property may be challenging if all parking spaces are occupied. Blocking off parking spaces before septic system servicing should resolve any potential issues. Snow clearing using a small tractor or a truck with a snow plow is not anticipated to be an issue.

4.1.3 New Street Networks

The site plan shows a potential future access road south of the site. This access road would be included in a potential commercial business park. The timing of this access road is not known since it is not part of the 2822 Carp Road application. This TIA does not seek approval to build this access road; however, City staff requested a discussion about it.

The potential access road is approximately 65 metres south of the Arbourbrook Boulevard. The distance between the future intersection and Arbourbrook Boulevard is to short to provide back-to-back left turn lanes should they be required in the future. The requirement for back-to-back left turn lanes would be

based on the traffic volumes generated by the potential future commercial business park to the east and south of the subject site.

The potential future access road should be moved to the southern portion of the adjacent property which would be approximately 140 metres south of Arbourbrook Boulevard which would be more likely to permit proper left turn lanes should they be required.

Figure 10 illustrates:

(1) the location of the potential future access road as illustrated on the site plan,
(2) the recommended location for the future access road opposite Arbourbrook Boulevard; and,
(3) the alternate location if opposite Arbourbrook Avenue is not possible.

If the future access road south of the site is constructed, the 2822 Carp Road development should create a driveway to the new access road (as illustrated on the site plan). The existing Carp Road driveway should be closed or restricted to right-in/right-out only. This would improve safety since it consolidates the location of left turns to and from Carp Road, and removes the potential for miscommunication during signaling for closely spaced intersections.

Figure 10: Potential New Access Road Locations

Background image source: geoOttawa; yellow lines show property parcel boundaries

4.2 Parking

4.2.1 Parking Supply

Table 6 indicates the parking requirements for the proposed development based on Part 4 of the City of Ottawa Zoning by-law 2016-249.

The by-law requirements show that 17 vehicle parking spaces, one (1) accessible space and four (4) bicycle parking spaces are required. The building design includes 65 vehicle parking spaces, one (1) accessible parking space, and five (5) bicycle parking spaces. This site provides more parking spaces than required and therefore the spillover parking assessment is not required.

Table 6: City of Ottawa By-law Parking Requirements (By-law 2016-249)

Land Use	Size (sq.m.)	Service Bays	Vehicle Parking Spaces (By-law Table 101)		Bicycle Parking Spaces (By-law Table 111A)	
			Rate	Spaces Required	Rate	Spaces Required
Automobile Dealership	61	1	2 per 100 m^2 of showroom/sale area GFA, 2 per service bay, 1 per 100 m^2 of other GFA	61 m^2/100 m^2 + 2x1 service bay **3.2 (4)**	1 per 500 m^2 of GFA	0.12 **(1)**
Automobile Body Shop	89	1	3 per service bay	1x3 service bays **3**	1 per 500 m^2 of GFA	0.18 **(1)**
Retail Store	182	-	3.4 per 100 m^2 of GFA	182/100*3.4 **6.2 (7)**	1 per 250 m^2 of GFA	0.73 **(1)**
Warehouse	266	-	0.8 per 100 m^2 of GFA	266/100*0.8 **2.1 (3)**	1 per 2000 m^2 of GFA	0.13 **(1)**
Total	**599**	**-**	**-**	**17 Spaces**	**-**	**4 Spaces**

4.2.2 Spillover Parking

Exempted during screening and scoping report.

4.3 Boundary Street Design

Exempted at pre-consultation meeting.

4.4 Access Intersections

4.4.1 Location and Design of Access

The site access is located on the east side of Carp Road approximately 30 metres south of the Arbourbrook Boulevard intersection, which is a two-way stop-controlled, three-leg intersection. The

majority of traffic generated by the site is anticipated to be primarily to and from the south of the site. Site traffic is not anticipated to create a safety concern.

4.4.2 Intersection Control

Table 7 summarizes the site access intersection performance based on the future traffic volumes and **Appendix D** contains the Synchro reports. The analysis demonstrates that the site access will operate well as a two-way, stop-controlled intersection. The 2023 horizon was not analyzed since the 2028 intersection performance is acceptable.

Table 7: Intersection Performance - Site Access

Scenario	Mvmt.	LOS		Delay (s)		V/C		Queue (veh)	
		AM	PM	AM	PM	AM	PM	AM	PM
2028 Total Traffic	WBL/R	C	D	21	28.5	0.07	0.15	0.2	0.5
	SBL/T	A	A	8.4	9.2	0.00	0.00	0.0	0.0

Note: LOS means Level of Service, Mvmt. means turning movement, "V/C" means Volume-to-Capacity ratio, Queue (veh) means 95th percentile queue length in terms of the number of vehicles queued.

4.4.3 Intersection Design - Site Access

The site is expected to generate less than five (5) southbound left turns during any given peak hour, therefore a left turn lane is not warranted due to the low volume of turning vehicles.

4.5 Transportation Demand Management

Exempted during screening and scoping report.

4.6 Neighbourhood Traffic Management

Exempted during screening and scoping report.

4.7 Transit

Exempt since there is limited transit service in the area.

4.8 Network Concept

Exempted during screening and scoping report.

4.9 Intersection Control and Design

Exempt during screen and scoping.

5.0 Conclusions

The site is anticipated to generate less than 30 vehicle trips during the AM and PM peak hours, with the majority of these vehicle trips originating or destined to the south. Very few vehicles (less than 5 vehicles in the peak hour) are anticipated to turn into the site from the north therefore a southbound left turn lane is not warranted. Two-way stop control is appropriate for the site driveway onto Carp Road.

The site is anticipated to operate well with plenty of parking spaces that can be used by the various land uses on the site. Some parking spaces may need to reserved/cleared before septic servicing. The site should use finely graded aggregate or an asphalt surface on the parking lot to provide better access for cyclists, wheelchairs, and people with other mobility aids.

If the potential future access road is built (to service a commercial business park east/south of 2822 Carp Road), it should be located as far south from Arbourbrook Avenue as possible. The 2822 Carp Road development should seek to gain access to any future roadway connection to Carp Road, either via a direct internal roadway connection or through a joint access arrangement with adjacent properties.

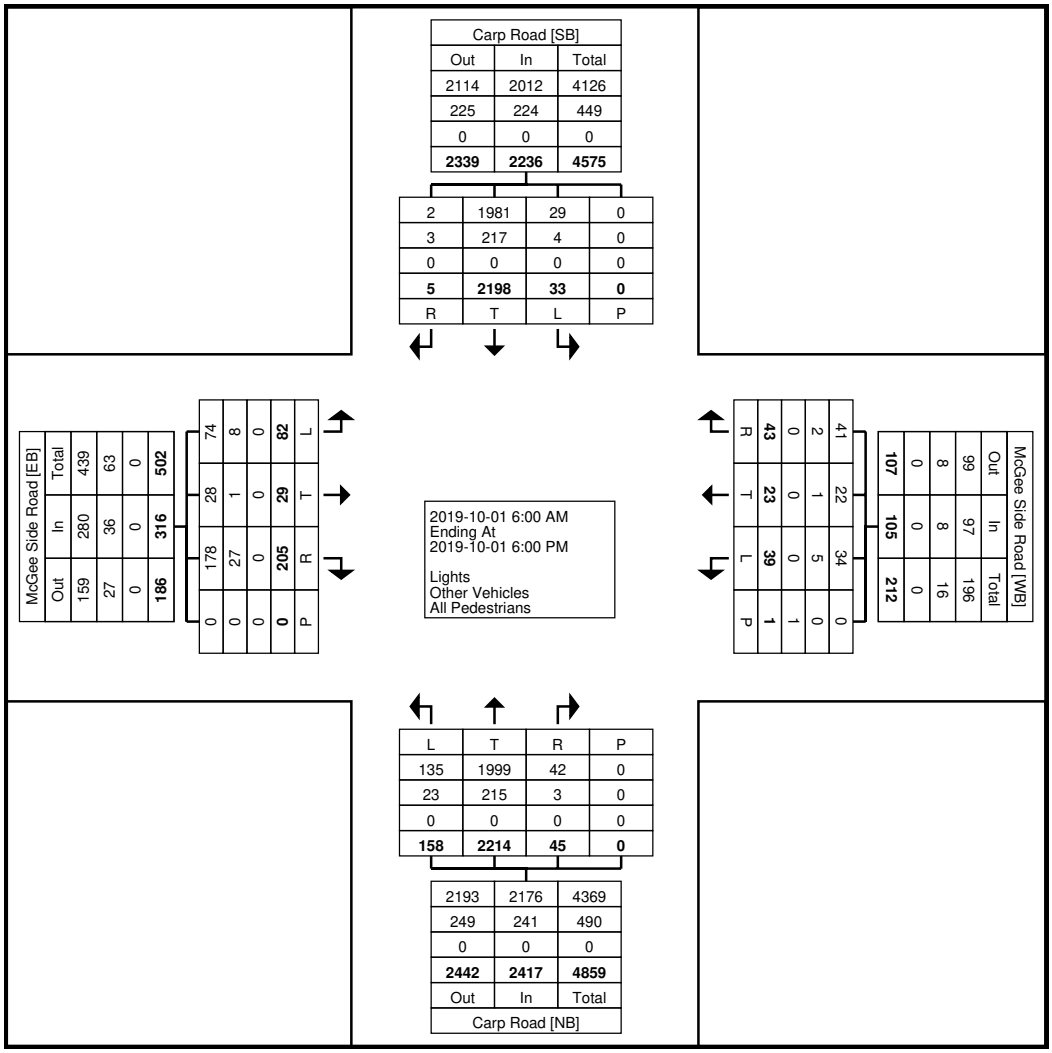
From a transportation operations perspective, the proposed development at 2822 Carp Road should be permitted to proceed.

Appendix A

Traffic Counts

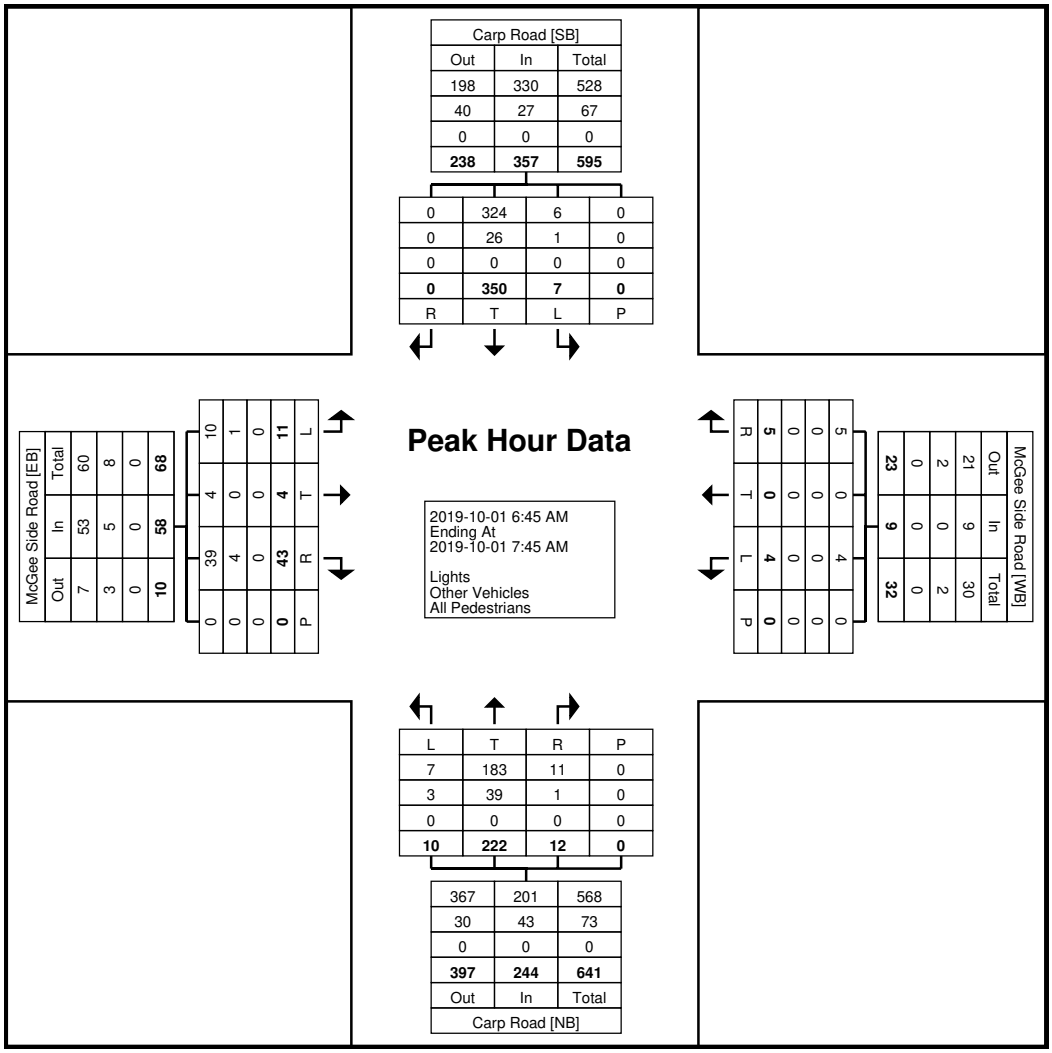
Dillon Consulting Ltd. (Ottawa)
177 Colonnade Rd
Suite 101
Ottawa, Ontario, Canada K2E 7J4
(613) 745-2213 estewart@dillon.ca

Count Name: 191661 Badger
Daylighting 3025 Carp Road TIA
Site Code:
Start Date: 2019-10-01



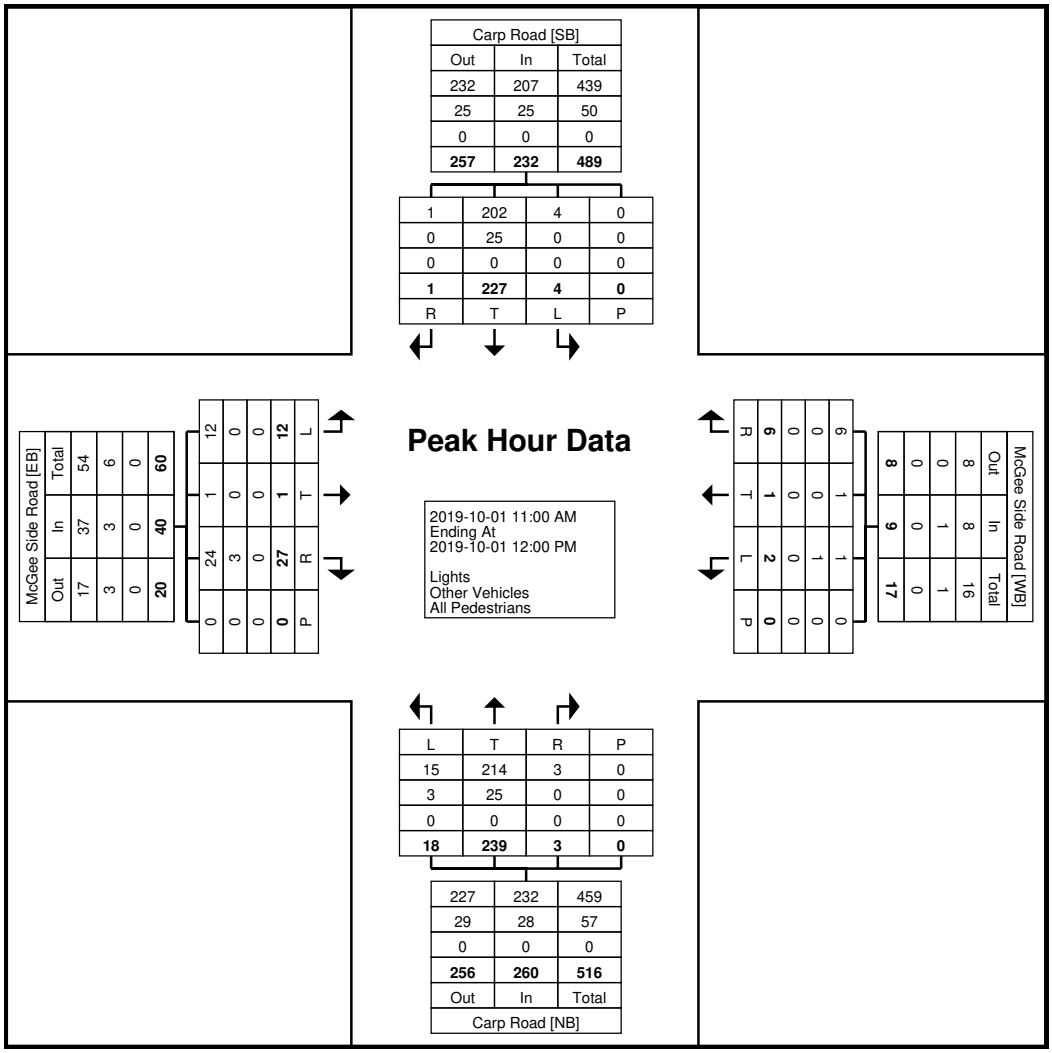
Turning Movement Data Plot

Dillon Consulting Ltd. (Ottawa)
177 Colonnade Rd
Suite 101
Ottawa, Ontario, Canada K2E 7J4
(613) 745-2213 estewart@dillon.ca



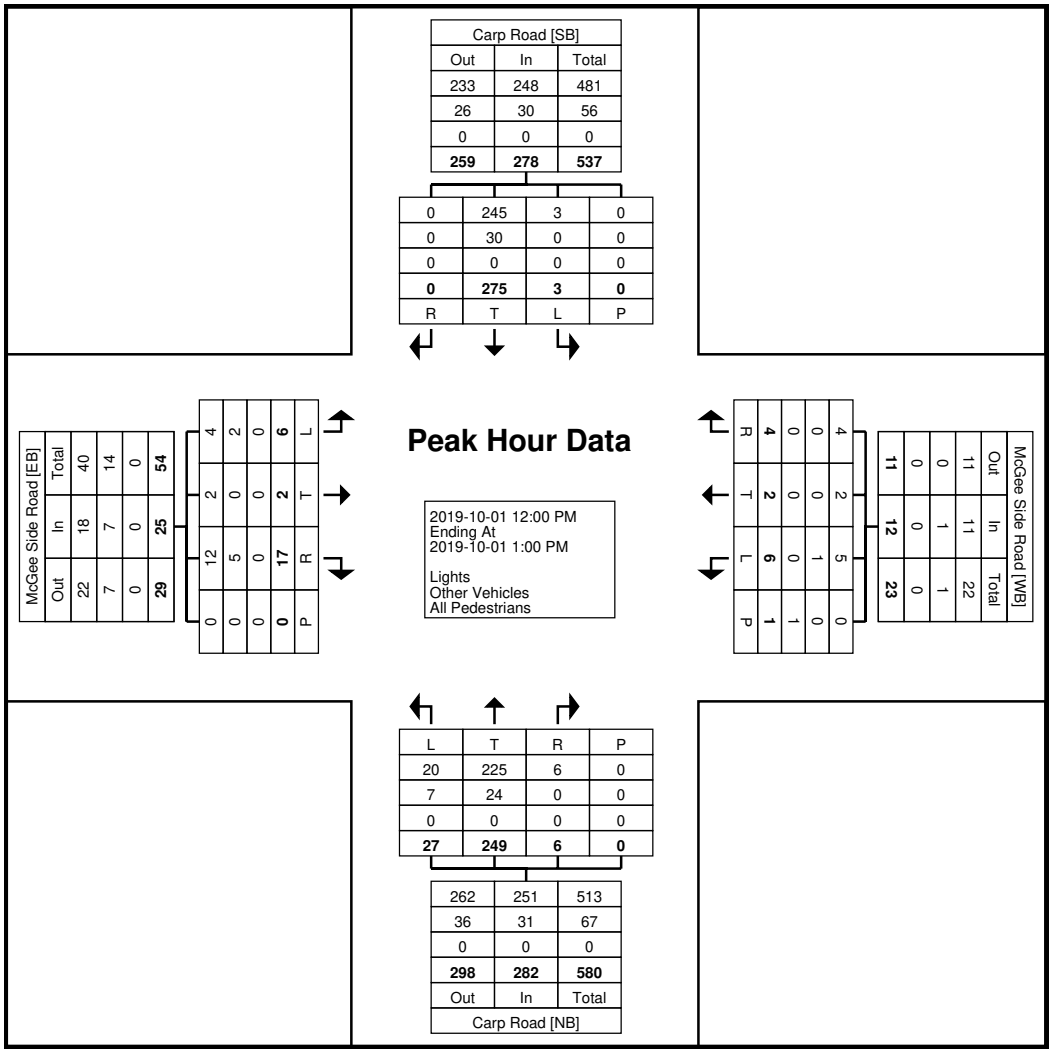
Turning Movement Peak Hour Data Plot (6:45 AM)

Dillon Consulting Ltd. (Ottawa)
177 Colonnade Rd
Suite 101
Ottawa, Ontario, Canada K2E 7J4
(613) 745-2213 estewart@dillon.ca



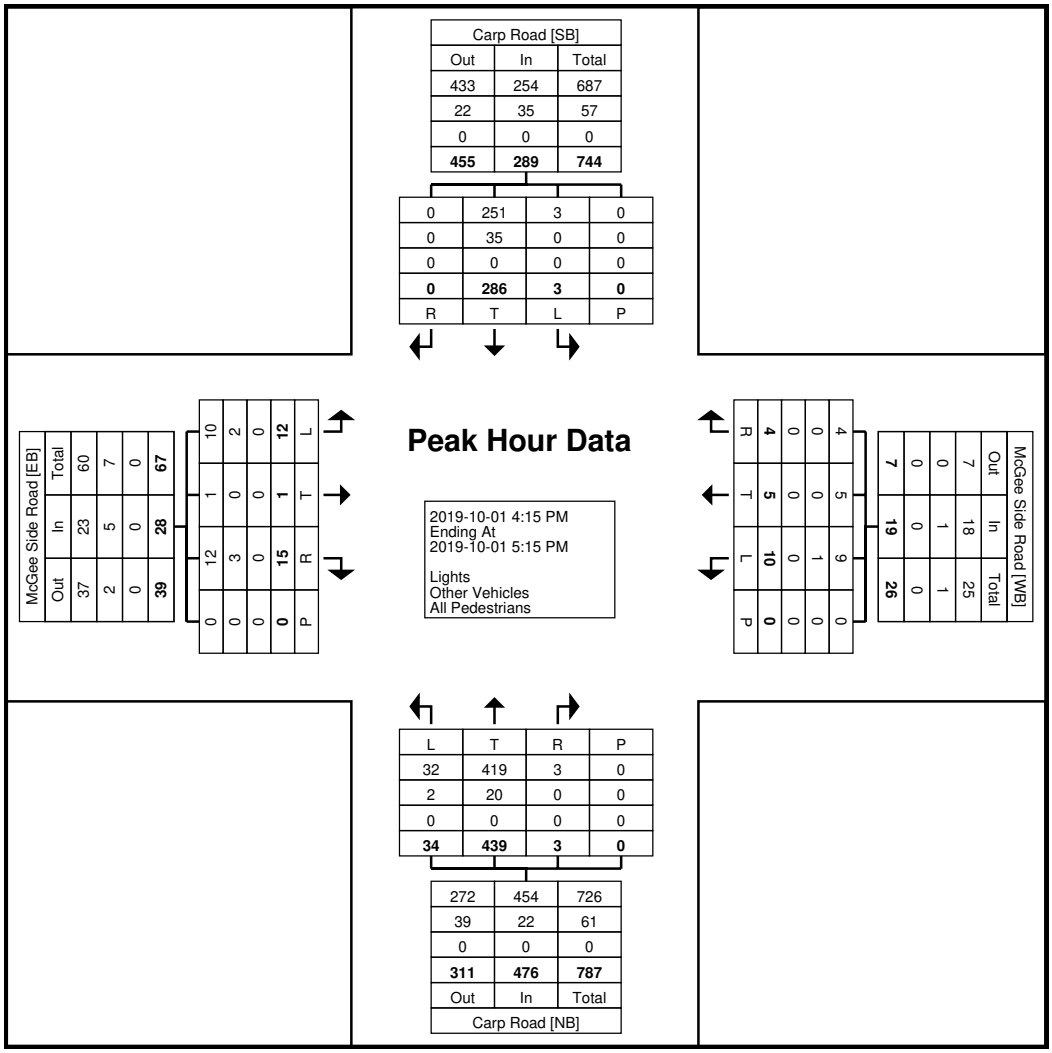
Turning Movement Peak Hour Data Plot (11:00 AM)

Dillon Consulting Ltd. (Ottawa)
177 Colonnade Rd
Suite 101
Ottawa, Ontario, Canada K2E 7J4
(613) 745-2213 estewart@dillon.ca



Turning Movement Peak Hour Data Plot (12:00 PM)

Dillon Consulting Ltd. (Ottawa)
177 Colonnade Rd
Suite 101
Ottawa, Ontario, Canada K2E 7J4
(613) 745-2213 estewart@dillon.ca



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

Dillon Consulting Ltd. (Ottawa)
177 Colonnade Rd
Suite 101
Ottawa, Ontario, Canada K2E 7J4
(613) 745-2213 estewart@dillon.ca

Count Name: 191661 Badger
Daylighting 3025 Carp Road TIA
Site Code:
Start Date: 2019-10-01

Turning Movement Data

Start Time	Carp Road Southbound					McGee Side Road Westbound					Carp Road Northbound					McGee Side Road Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
6:00 AM	0	46	0	0	46	0	0	1	0	1	0	10	0	0	10	6	1	0	0	7	64
6:15 AM	0	99	0	0	99	0	1	0	0	1	1	30	0	0	31	5	3	0	0	8	139
6:30 AM	1	108	2	0	111	1	0	0	0	1	5	30	1	0	36	10	1	1	0	12	160
6:45 AM	0	93	4	0	97	1	0	1	0	2	5	53	3	0	61	11	1	1	0	13	173
Hourly Total	1	346	6	0	353	2	1	2	0	5	11	123	4	0	138	32	6	2	0	40	536
7:00 AM	0	77	1	0	78	2	0	2	0	4	3	43	2	0	48	9	1	3	0	13	143
7:15 AM	0	97	1	0	98	1	0	1	0	2	4	64	3	0	71	14	0	3	0	17	188
7:30 AM	0	83	1	0	84	1	0	0	0	1	0	62	2	0	64	9	2	4	0	15	164
7:45 AM	0	63	1	0	64	2	0	1	0	3	0	69	2	0	71	12	1	4	0	17	155
Hourly Total	0	320	4	0	324	6	0	4	0	10	7	238	9	0	254	44	4	14	0	62	650
8:00 AM	0	80	2	0	82	0	2	1	0	3	0	53	1	0	54	7	2	12	0	21	160
8:15 AM	0	71	0	0	71	1	0	0	0	1	1	52	2	0	55	9	3	2	0	14	141
8:30 AM	0	55	2	0	57	1	0	0	0	1	2	44	0	0	46	6	1	1	0	8	112
8:45 AM	0	76	2	0	78	5	2	0	0	7	2	64	4	0	70	5	0	4	0	9	164
Hourly Total	0	282	6	0	288	7	4	1	0	12	5	213	7	0	225	27	6	19	0	52	577
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	53	0	0	53	2	1	1	0	4	1	56	5	0	62	6	0	3	0	9	128
11:15 AM	1	59	1	0	61	3	0	0	0	3	0	62	4	0	66	4	1	5	0	10	140
11:30 AM	0	59	1	0	60	0	0	1	0	1	0	55	6	0	61	8	0	4	0	12	134
11:45 AM	0	56	2	0	58	1	0	0	0	1	2	66	3	0	71	9	0	0	0	9	139
Hourly Total	1	227	4	0	232	6	1	2	0	9	3	239	18	0	260	27	1	12	0	40	541
12:00 PM	0	76	0	0	76	2	1	0	1	3	0	61	4	0	65	5	1	0	0	6	150
12:15 PM	0	77	2	0	79	0	0	4	0	4	1	61	11	0	73	4	1	3	0	8	164
12:30 PM	0	70	0	0	70	0	0	0	0	0	3	58	8	0	69	4	0	2	0	6	145
12:45 PM	0	52	1	0	53	2	1	2	0	5	2	69	4	0	75	4	0	1	0	5	138
Hourly Total	0	275	3	0	278	4	2	6	1	12	6	249	27	0	282	17	2	6	0	25	597
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	3	57	2	0	62	0	2	2	0	4	0	78	6	0	84	6	3	1	0	10	160
3:15 PM	0	66	2	0	68	2	0	0	0	2	1	88	5	0	94	3	1	5	0	9	173
3:30 PM	0	56	0	0	56	4	3	11	0	18	1	102	6	0	109	4	1	1	0	6	189
3:45 PM	0	68	0	0	68	4	3	1	0	8	3	82	6	0	91	5	1	2	0	8	175
Hourly Total	3	247	4	0	254	10	8	14	0	32	5	350	23	0	378	18	6	9	0	33	697
4:00 PM	0	69	1	0	70	2	0	0	0	2	1	113	11	0	125	5	1	1	0	7	204
4:15 PM	0	73	1	0	74	1	1	1	0	3	1	92	11	0	104	2	0	4	0	6	187
4:30 PM	0	74	0	0	74	2	2	4	0	8	0	127	9	0	136	2	0	3	0	5	223
4:45 PM	0	61	2	0	63	1	0	1	0	2	1	107	9	0	117	6	0	4	0	10	192
Hourly Total	0	277	4	0	281	6	3	6	0	15	3	439	40	0	482	15	1	12	0	28	806
5:00 PM	0	78	0	0	78	0	2	4	0	6	1	113	5	0	119	5	1	1	0	7	210
5:15 PM	0	52	1	0	53	0	0	0	0	0	1	98	9	0	108	4	1	2	0	7	168
5:30 PM	0	45	1	0	46	0	1	0	0	1	3	80	10	0	93	7	1	1	0	9	149
5:45 PM	0	49	0	0	49	2	1	0	0	3	0	72	6	0	78	9	0	4	0	13	143
Hourly Total	0	224	2	0	226	2	4	4	0	10	5	363	30	0	398	25	3	8	0	36	670
Grand Total	5	2198	33	0	2236	43	23	39	1	105	45	2214	158	0	2417	205	29	82	0	316	5074
Approach %	0.2	98.3	1.5	-	-	41.0	21.9	37.1	-	-	1.9	91.6	6.5	-	-	64.9	9.2	25.9	-	-	-
Total %	0.1	43.3	0.7	-	44.1	0.8	0.5	0.8	-	2.1	0.9	43.6	3.1	-	47.6	4.0	0.6	1.6	-	6.2	-
Lights	2	1981	29	-	2012	41	22	34	-	97	42	1999	135	-	2176	178	28	74	-	280	4565
% Lights	40.0	90.1	87.9	-	90.0	95.3	95.7	87.2	-	92.4	93.3	90.3	85.4	-	90.0	86.8	96.6	90.2	-	88.6	90.0
Other Vehicles	3	217	4	-	224	2	1	5	-	8	3	215	23	-	241	27	1	8	-	36	509
% Other Vehicles	60.0	9.9	12.1	-	10.0	4.7	4.3	12.8	-	7.6	6.7	9.7	14.6	-	10.0	13.2	3.4	9.8	-	11.4	10.0
All Pedestrians	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-
% All Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: 191661 Badger
Daylighting 3025 Carp Road TIA
Site Code:
Start Date: 2019-10-01

Turning Movement Peak Hour Data (6:45 AM)

Start Time	Carp Road Southbound					McGee Side Road Westbound					Carp Road Northbound					McGee Side Road Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
6:45 AM	0	93	4	0	97	1	0	1	0	2	5	53	3	0	61	11	1	1	0	13	173
7:00 AM	0	77	1	0	78	2	0	2	0	4	3	43	2	0	48	9	1	3	0	13	143
7:15 AM	0	97	1	0	98	1	0	1	0	2	4	64	3	0	71	14	0	3	0	17	188
7:30 AM	0	83	1	0	84	1	0	0	0	1	0	62	2	0	64	9	2	4	0	15	164
Total	0	350	7	0	357	5	0	4	0	9	12	222	10	0	244	43	4	11	0	58	668
Approach %	0.0	98.0	2.0	-	-	55.6	0.0	44.4	-	-	4.9	91.0	4.1	-	-	74.1	6.9	19.0	-	-	-
Total %	0.0	52.4	1.0	-	53.4	0.7	0.0	0.6	-	1.3	1.8	33.2	1.5	-	36.5	6.4	0.6	1.6	-	8.7	-
PHF	0.000	0.902	0.438	-	0.911	0.625	0.000	0.500	-	0.563	0.600	0.867	0.833	-	0.859	0.768	0.500	0.688	-	0.853	0.888
Lights	0	324	6	-	330	5	0	4	-	9	11	183	7	-	201	39	4	10	-	53	593
% Lights	-	92.6	85.7	-	92.4	100.0	-	100.0	-	100.0	91.7	82.4	70.0	-	82.4	90.7	100.0	90.9	-	91.4	88.8
Other Vehicles	0	26	1	-	27	0	0	0	-	0	1	39	3	-	43	4	0	1	-	5	75
% Other Vehicles	-	7.4	14.3	-	7.6	0.0	-	0.0	-	0.0	8.3	17.6	30.0	-	17.6	9.3	0.0	9.1	-	8.6	11.2
All Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% All Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Dillon Consulting Ltd. (Ottawa)
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Count Name: 191661 Badger
Daylighting 3025 Carp Road TIA
Site Code:
Start Date: 2019-10-01

Turning Movement Peak Hour Data (11:00 AM)

Start Time	Carp Road Southbound					McGee Side Road Westbound					Carp Road Northbound					McGee Side Road Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
11:00 AM	0	53	0	0	53	2	1	1	0	4	1	56	5	0	62	6	0	3	0	9	128
11:15 AM	1	59	1	0	61	3	0	0	0	3	0	62	4	0	66	4	1	5	0	10	140
11:30 AM	0	59	1	0	60	0	0	1	0	1	0	55	6	0	61	8	0	4	0	12	134
11:45 AM	0	56	2	0	58	1	0	0	0	1	2	66	3	0	71	9	0	0	0	9	139
Total	1	227	4	0	232	6	1	2	0	9	3	239	18	0	260	27	1	12	0	40	541
Approach %	0.4	97.8	1.7	-	-	66.7	11.1	22.2	-	-	1.2	91.9	6.9	-	-	67.5	2.5	30.0	-	-	-
Total %	0.2	42.0	0.7	-	42.9	1.1	0.2	0.4	-	1.7	0.6	44.2	3.3	-	48.1	5.0	0.2	2.2	-	7.4	-
PHF	0.250	0.962	0.500	-	0.951	0.500	0.250	0.500	-	0.563	0.375	0.905	0.750	-	0.915	0.750	0.250	0.600	-	0.833	0.966
Lights	1	202	4	-	207	6	1	1	-	8	3	214	15	-	232	24	1	12	-	37	484
% Lights	100.0	89.0	100.0	-	89.2	100.0	100.0	50.0	-	88.9	100.0	89.5	83.3	-	89.2	88.9	100.0	100.0	-	92.5	89.5
Other Vehicles	0	25	0	-	25	0	0	1	-	1	0	25	3	-	28	3	0	0	-	3	57
% Other Vehicles	0.0	11.0	0.0	-	10.8	0.0	0.0	50.0	-	11.1	0.0	10.5	16.7	-	10.8	11.1	0.0	0.0	-	7.5	10.5
All Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% All Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Dillon Consulting Ltd. (Ottawa)
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Turning Movement Peak Hour Data (12:00 PM)

Start Time	Carp Road Southbound					McGee Side Road Westbound					Carp Road Northbound					McGee Side Road Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
12:00 PM	0	76	0	0	76	2	1	0	1	3	0	61	4	0	65	5	1	0	0	6	150
12:15 PM	0	77	2	0	79	0	0	4	0	4	1	61	11	0	73	4	1	3	0	8	164
12:30 PM	0	70	0	0	70	0	0	0	0	0	3	58	8	0	69	4	0	2	0	6	145
12:45 PM	0	52	1	0	53	2	1	2	0	5	2	69	4	0	75	4	0	1	0	5	138
Total	0	275	3	0	278	4	2	6	1	12	6	249	27	0	282	17	2	6	0	25	597
Approach %	0.0	98.9	1.1	-	-	33.3	16.7	50.0	-	-	2.1	88.3	9.6	-	-	68.0	8.0	24.0	-	-	-
Total %	0.0	46.1	0.5	-	46.6	0.7	0.3	1.0	-	2.0	1.0	41.7	4.5	-	47.2	2.8	0.3	1.0	-	4.2	-
PHF	0.000	0.893	0.375	-	0.880	0.500	0.500	0.375	-	0.600	0.500	0.902	0.614	-	0.940	0.850	0.500	0.500	-	0.781	0.910
Lights	0	245	3	-	248	4	2	5	-	11	6	225	20	-	251	12	2	4	-	18	528
% Lights	-	89.1	100.0	-	89.2	100.0	100.0	83.3	-	91.7	100.0	90.4	74.1	-	89.0	70.6	100.0	66.7	-	72.0	88.4
Other Vehicles	0	30	0	-	30	0	0	1	-	1	0	24	7	-	31	5	0	2	-	7	69
% Other Vehicles	-	10.9	0.0	-	10.8	0.0	0.0	16.7	-	8.3	0.0	9.6	25.9	-	11.0	29.4	0.0	33.3	-	28.0	11.6
All Pedestrians	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-
% All Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-

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Turning Movement Peak Hour Data (4:15 PM)

Start Time	Carp Road Southbound					McGee Side Road Westbound					Carp Road Northbound					McGee Side Road Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
4:15 PM	0	73	1	0	74	1	1	1	0	3	1	92	11	0	104	2	0	4	0	6	187
4:30 PM	0	74	0	0	74	2	2	4	0	8	0	127	9	0	136	2	0	3	0	5	223
4:45 PM	0	61	2	0	63	1	0	1	0	2	1	107	9	0	117	6	0	4	0	10	192
5:00 PM	0	78	0	0	78	0	2	4	0	6	1	113	5	0	119	5	1	1	0	7	210
Total	0	286	3	0	289	4	5	10	0	19	3	439	34	0	476	15	1	12	0	28	812
Approach %	0.0	99.0	1.0	-	-	21.1	26.3	52.6	-	-	0.6	92.2	7.1	-	-	53.6	3.6	42.9	-	-	-
Total %	0.0	35.2	0.4	-	35.6	0.5	0.6	1.2	-	2.3	0.4	54.1	4.2	-	58.6	1.8	0.1	1.5	-	3.4	-
PHF	0.000	0.917	0.375	-	0.926	0.500	0.625	0.625	-	0.594	0.750	0.864	0.773	-	0.875	0.625	0.250	0.750	-	0.700	0.910
Lights	0	251	3	-	254	4	5	9	-	18	3	419	32	-	454	12	1	10	-	23	749
% Lights	-	87.8	100.0	-	87.9	100.0	100.0	90.0	-	94.7	100.0	95.4	94.1	-	95.4	80.0	100.0	83.3	-	82.1	92.2
Other Vehicles	0	35	0	-	35	0	0	1	-	1	0	20	2	-	22	3	0	2	-	5	63
% Other Vehicles	-	12.2	0.0	-	12.1	0.0	0.0	10.0	-	5.3	0.0	4.6	5.9	-	4.6	20.0	0.0	16.7	-	17.9	7.8
All Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% All Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DIRECTIONAL TRAFFIC FLOW

Intersection: **Carp** at **McGee Side**

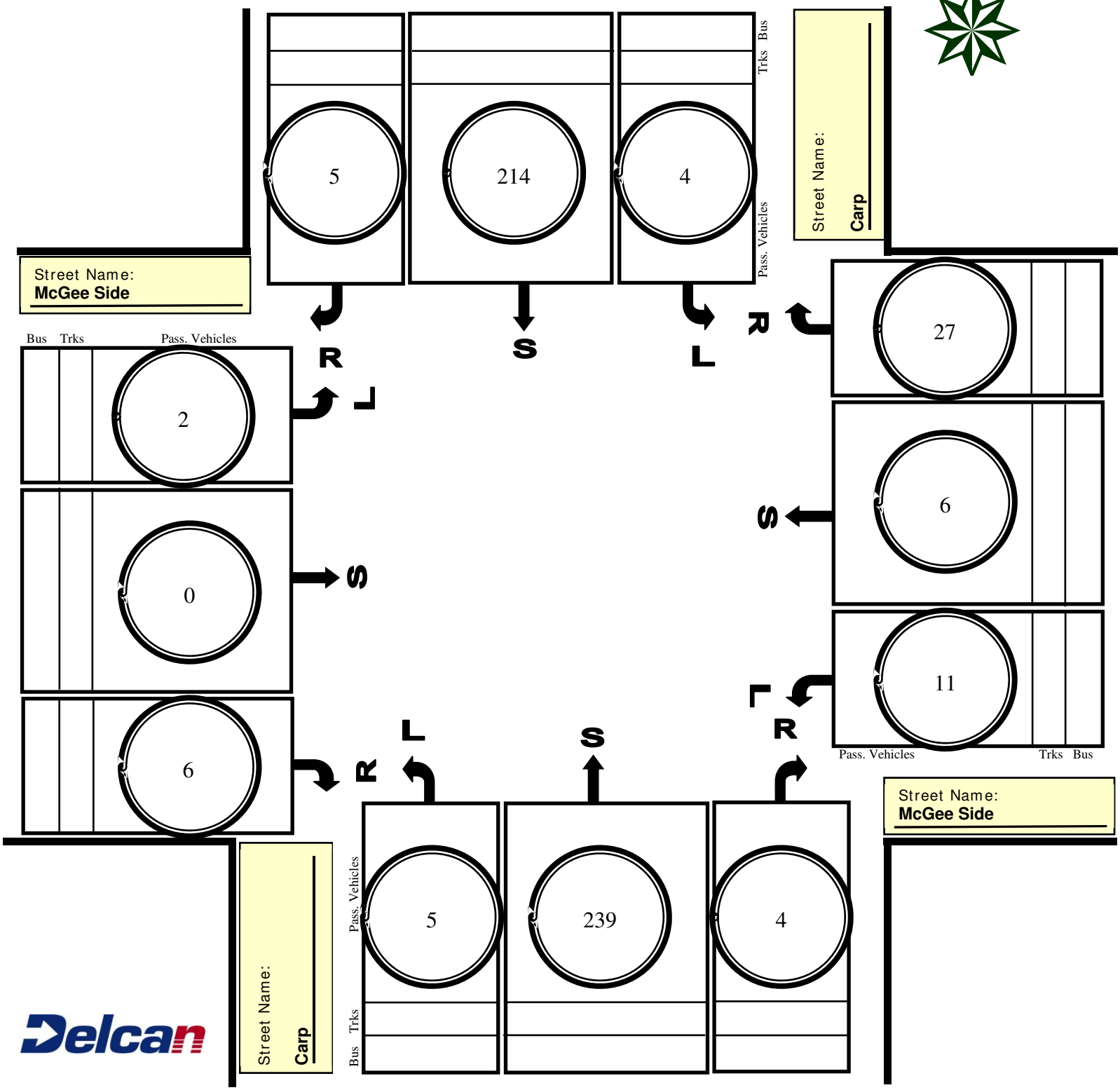
DATE: Day: **4** Month: **December** Year: **2013** Day of Week: **Wednesday**

Observer: **Cathie Lytle** Weather: **Clear**

Chkd by: ..... Date: .....

TIME PERIOD: From: **7 : 30** To: **8 : 30**

Instructions: 1) Use tally marks to indicate vehicles.
2) Use one sheet for each 15-minute period.



Delcan

DIRECTIONAL TRAFFIC FLOW

Intersection: **Carp** at **McGee Side**

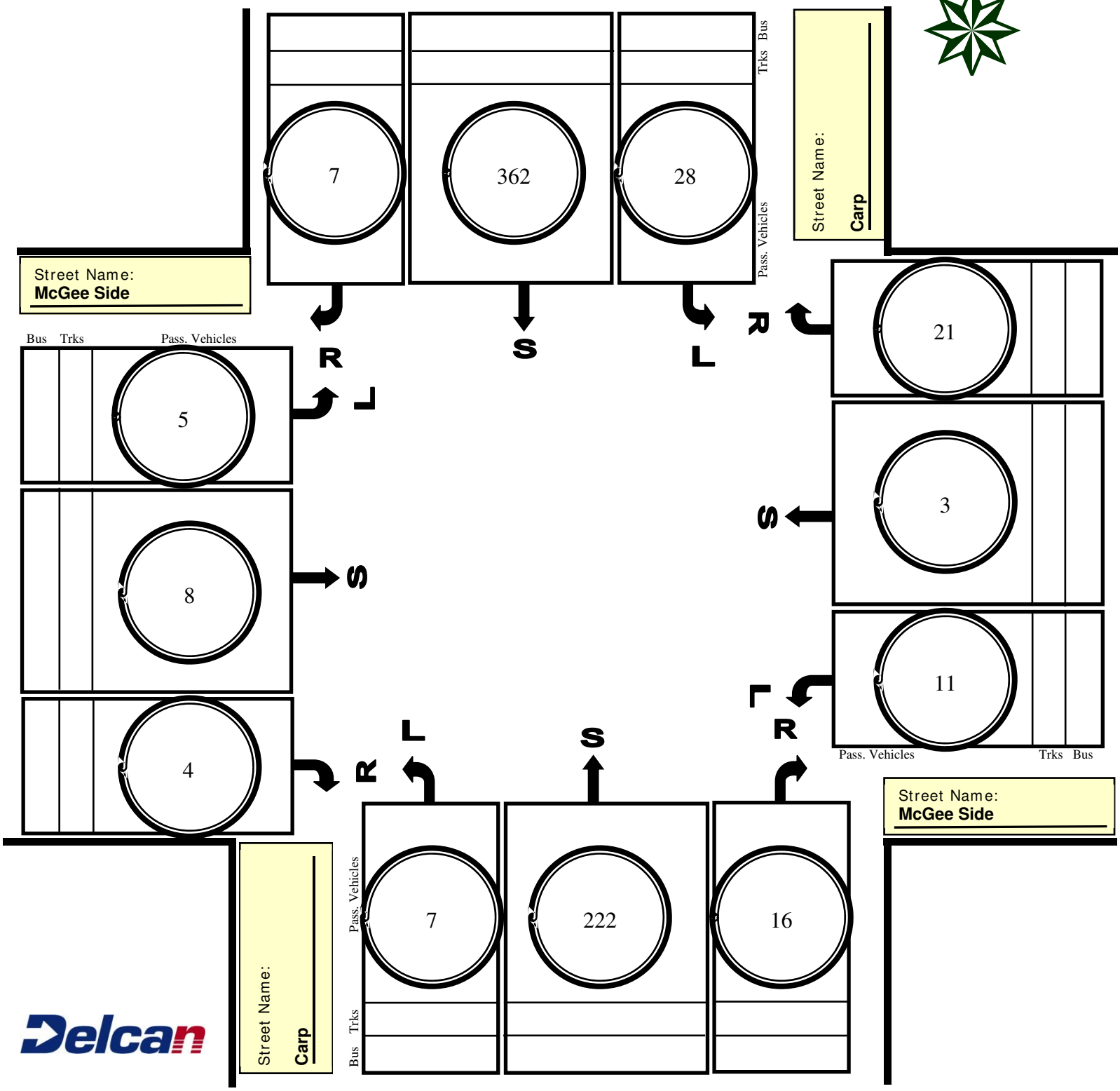
DATE: Day: **4** Month: **December** Year: **2013** Day of Week: **Wednesday**

Observer: **Cathie Lytle** Weather: **Clear**

Chkd by: ..... Date: .....

TIME PERIOD: From: **4 : 00** To: **5 : 00**

Instructions: 1) Use tally marks to indicate vehicles.
2) Use one sheet for each 15-minute period.



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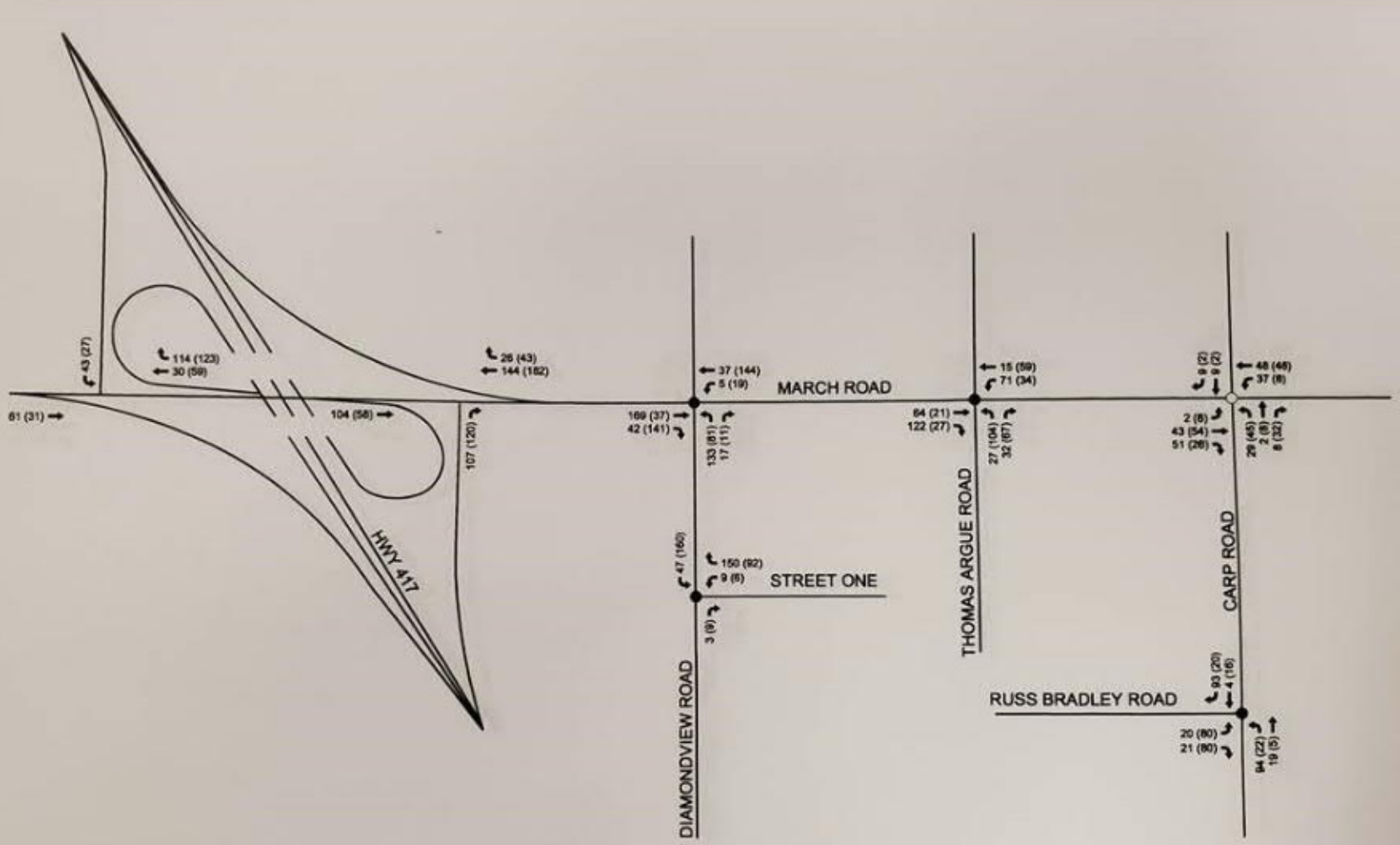
Appendix B

Background Developments



NOVATECH
ENGINEERING
CONSULTANTS LTD.
ENGINEERS & PLANNERS
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada
K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
email: novainfo@novatech-eng.com

LEGEND

- ● Unsignalized Intersection
- ○ Signalized Intersection
- xx VPH AM Peak Hour
- (xx) VPH PM Peak Hour

WEST CAPITAL AIRPARK

BUILDOUT SITE TRIPS

NOV 2011 102085 FIGURE 7

Figure 5: Assignment of Projected Site-Generated Traffic

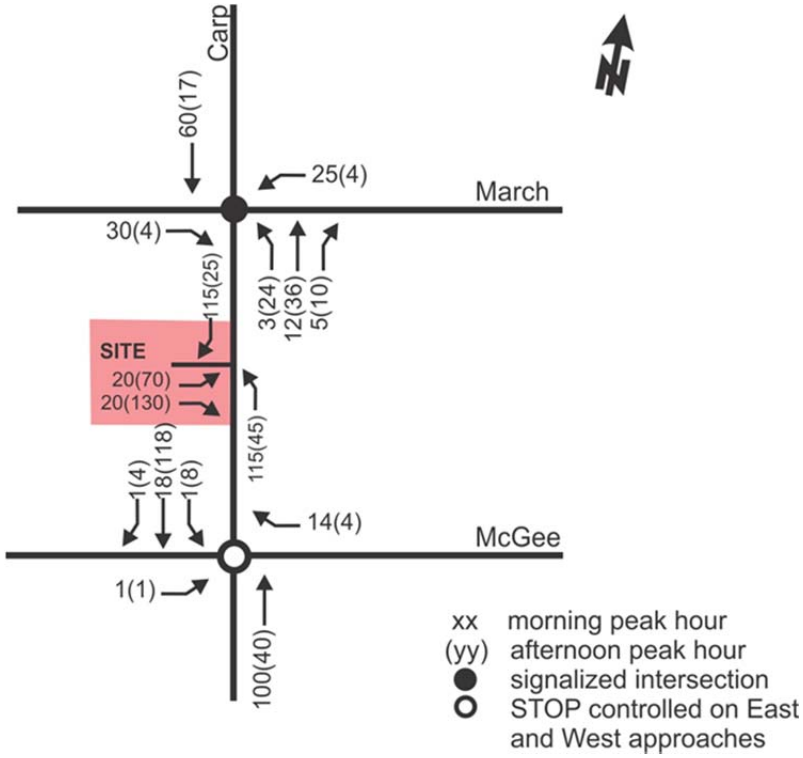


Figure 6: Total Projected Horizon Year Traffic Volumes

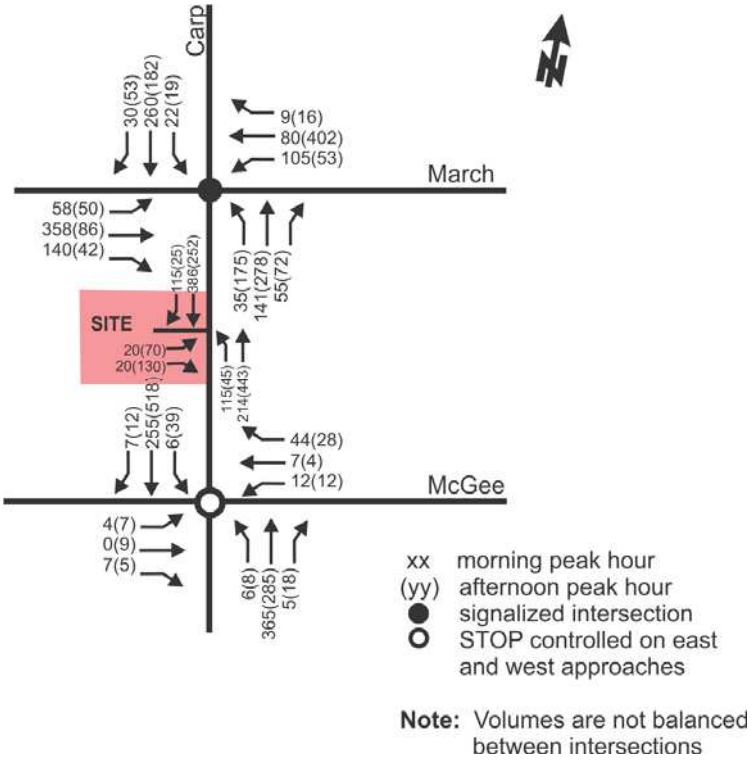
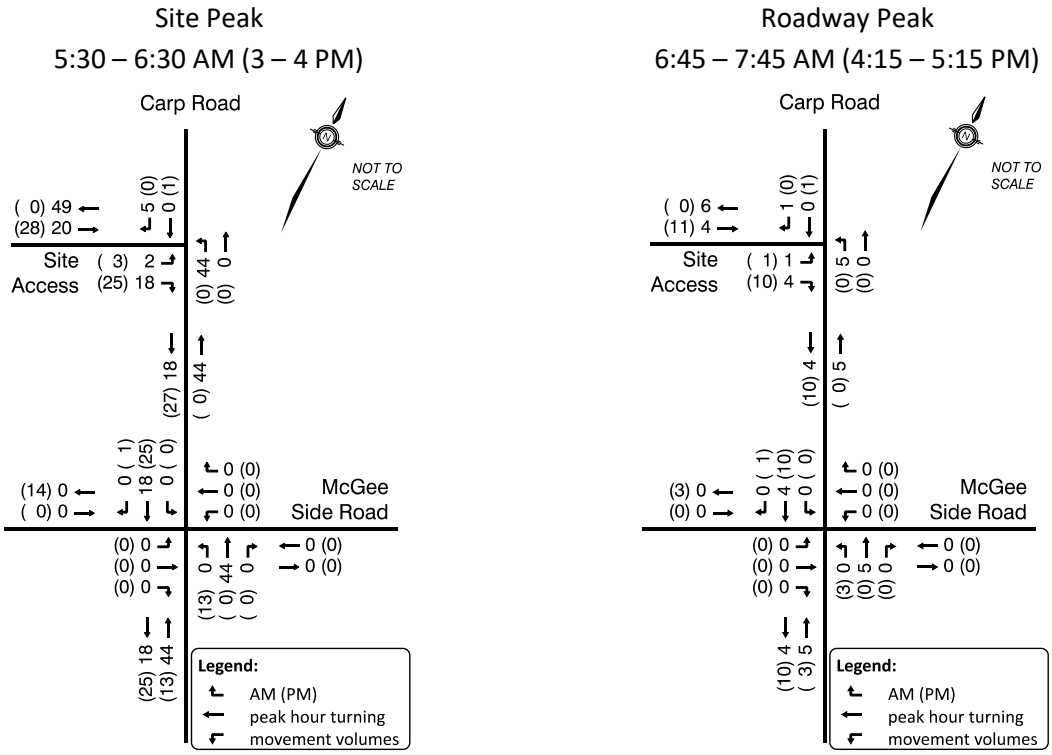


Figure 7: Site Generated Traffic Volumes



3.2 Background Network Travel Demand

3.2.1 Transportation Network Plan

There are no planned transportation network changes that would result in a change to the background network travel demands.

3.2.2 Background Traffic Volume Growth

The 2013 traffic count data was compared to the 2019 traffic count data to determine the growth rate in background traffic volumes. **Table 4** summarizes the traffic volume growth rates at the Carp Road and McGee Side Road intersection based on the peak hours of each count. **Table 5** summarizes traffic volume growth rates based on using the exact same peak hour as was observed in the 2013 traffic count.

The southbound direction has experienced 5-8% annual increase for the weekday AM peak hour and a 5-6% annual decrease during the weekday PM peak hour. The northbound direction shows virtually no change during the weekday AM peak hour and a 12% annual increase during the weekday PM peak hour.

Appendix C

TDM Checklist

TDM-Supportive Development Design and Infrastructure Checklist:
Non-Residential Developments (office, institutional, retail or industrial)

Legend

REQUIRED	The Official Plan or Zoning By-law provides related guidance that must be followed
BASIC	The measure is generally feasible and effective, and in most cases would benefit the development and its users
BETTER	The measure could maximize support for users of sustainable modes, and optimize development performance

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	1.	**WALKING & CYCLING: ROUTES**	
	1.1	**Building location & access points**	
BASIC	1.1.1	Locate building close to the street, and do not locate parking areas between the street and building entrances	☐ N/A – rural site
BASIC	1.1.2	Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	☐ N/A – rural site
BASIC	1.1.3	Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	☐ N/A – rural site
	1.2	**Facilities for walking & cycling**	
REQUIRED	1.2.1	Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations *(see Official Plan policy 4.3.3)*	☐ N/A – there is no transit nearby
REQUIRED	1.2.2	Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances through such measures as: reducing distances between public sidewalks and major building entrances; providing walkways from public streets to major building entrances; within a site, providing walkways along the front of adjoining buildings, between adjacent buildings, and connecting areas where people may congregate, such as courtyards and transit stops; and providing weather protection through canopies, colonnades, and other design elements wherever possible *(see Official Plan policy 4.3.12)*	☐ N/A – rural site

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
REQUIRED	1.2.3	Provide sidewalks of smooth, well-drained walking surfaces of contrasting materials or treatments to differentiate pedestrian areas from vehicle areas, and provide marked pedestrian crosswalks at intersection sidewalks *(see Official Plan policy 4.3.10)*	☑ Rural site. Sidewalks provided at front of building.
REQUIRED	1.2.4	Make sidewalks and open space areas easily accessible through features such as gradual grade transition, depressed curbs at street corners and convenient access to extra-wide parking spaces and ramps *(see Official Plan policy 4.3.10)*	☑ Site plan has ramp for accessible parking space. Hatched area
REQUIRED	1.2.5	Include adequately spaced inter-block/street cycling and pedestrian connections to facilitate travel by active transportation. Provide links to the existing or planned network of public sidewalks, multi-use pathways and on-road cycle routes. Where public sidewalks and multi-use pathways intersect with roads, consider providing traffic control devices to give priority to cyclists and pedestrians *(see Official Plan policy 4.3.11)*	☐ N/A – rural site
BASIC	1.2.6	Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	☐ N/A – rural site
BASIC	1.2.7	Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	☐ N/A – rural site
BASIC	1.2.8	Design roads used for access or circulation by cyclists using a target operating speed of no more than 30 km/h, or provide a separated cycling facility	☐ N/A – rural site
	1.3	**Amenities for walking & cycling**	
BASIC	1.3.1	Provide lighting, landscaping and benches along walking and cycling routes between building entrances and streets, sidewalks and trails	☐ N/A – small site
BASIC	1.3.2	Provide wayfinding signage for site access (where required, e.g. when multiple buildings or entrances exist) and egress (where warranted, such as when directions to reach transit stops/stations, trails or other common destinations are not obvious)	☐ N/A – small site

	TDM-supportive design & infrastructure measures: *Non-residential developments*		Check if completed & add descriptions, explanations or plan/drawing references
	2.	**WALKING & CYCLING: END-OF-TRIP FACILITIES**	
	2.1	**Bicycle parking**	
REQUIRED	2.1.1	Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible *(see Official Plan policy 4.3.6)*	☑ Bicycle parking provided beside building
REQUIRED	2.1.2	Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas *(see Zoning By-law Section 111)*	☑
REQUIRED	2.1.3	Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored *(see Zoning By-law Section 111)*	☑
BASIC	2.1.4	Provide bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met), plus the expected peak number of customer/visitor cyclists	☐ N/A – Rural location likely to result in few bicycle trips
BETTER	2.1.5	Provide bicycle parking spaces equivalent to the expected number of commuter and customer/visitor cyclists, plus an additional buffer (e.g. 25 percent extra) to encourage other cyclists and ensure adequate capacity in peak cycling season	☐ N/A – Rural location likely to result in few bicycle trips
	2.2	**Secure bicycle parking**	
REQUIRED	2.2.1	Where more than 50 bicycle parking spaces are provided for a single office building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers *(see Zoning By-law Section 111)*	☐ N/A – only 5 bicycle parking spaces are provided
BETTER	2.2.2	Provide secure bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met)	☐ N/A – Rural location likely to result in few bicycle trips
	2.3	**Shower & change facilities**	
BASIC	2.3.1	Provide shower and change facilities for the use of active commuters	☐ Tenants have ability add shower.
BETTER	2.3.2	In addition to shower and change facilities, provide dedicated lockers, grooming stations, drying racks and laundry facilities for the use of active commuters	☐ Tenants have ability add shower.
	2.4	**Bicycle repair station**	
BETTER	2.4.1	Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	☐ N/A – small site, low demand

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	3.	**TRANSIT**	
	3.1	**Customer amenities**	
BASIC	3.1.1	Provide shelters, lighting and benches at any on-site transit stops	☐ N/A – no transit
BASIC	3.1.2	Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	☐ N/A – no transit
BETTER	3.1.3	Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	☐ N/A – no transit
	4.	**RIDESHARING**	
	4.1	**Pick-up & drop-off facilities**	
BASIC	4.1.1	Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones	☐ N/A – small site, low demand
	4.2	**Carpool parking**	
BASIC	4.2.1	Provide signed parking spaces for carpools in a priority location close to a major building entrance, sufficient in number to accommodate the mode share target for carpools	☐ N/A – small site, low demand
BETTER	4.2.2	At large developments, provide spaces for carpools in a separate, access-controlled parking area to simplify enforcement	☐ N/A – small site, low demand
	5.	**CARSHARING & BIKESHARING**	
	5.1	**Carshare parking spaces**	
BETTER	5.1.1	Provide carshare parking spaces in permitted non-residential zones, occupying either required or provided parking spaces *(see Zoning By-law Section 94)*	☐ N/A – small site
	5.2	**Bikeshare station location**	
BETTER	5.2.1	Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	☐ N/A – small site

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	6.	**PARKING**	
	6.1	**Number of parking spaces**	
REQUIRED	6.1.1	Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for	☑ 17 required by by-law, 65 provided to facilitate potential car dealership operations
BASIC	6.1.2	Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking	☐ N/A – small, rural site
BASIC	6.1.3	Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly *(see Zoning By-law Section 104)*	☐ N/A – multiple uses, but some uses require parking for business operations
BETTER	6.1.4	Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking *(see Zoning By-law Section 111)*	☐ N/A – due to rural site location
	6.2	**Separate long-term & short-term parking areas**	
BETTER	6.2.1	Separate short-term and long-term parking areas using signage or physical barriers, to permit access controls and simplify enforcement (i.e. to discourage employees from parking in visitor spaces, and vice versa)	☐ N/A – small site
	7.	**OTHER**	
	7.1	**On-site amenities to minimize off-site trips**	
BETTER	7.1.1	Provide on-site amenities to minimize mid-day or mid-commute errands	☐ N/A – small site

Appendix D

Synchro Reports

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	2	462	24	3	565
Future Vol, veh/h	14	2	462	24	3	565
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	9	0	0	7
Mvmt Flow	15	2	502	26	3	614

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1135	515	0	0	528	0
Stage 1	515	-	-	-	-	-
Stage 2	620	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	226	564	-	-	1049	-
Stage 1	604	-	-	-	-	-
Stage 2	540	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	225	564	-	-	1049	-
Mov Cap-2 Maneuver	225	-	-	-	-	-
Stage 1	604	-	-	-	-	-
Stage 2	538	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	243	1049	-
HCM Lane V/C Ratio	-	-	0.072	0.003	-
HCM Control Delay (s)	-	-	21	8.4	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	2	691	11	1	535
Future Vol, veh/h	22	2	691	11	1	535
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	4	0	0	7
Mvmt Flow	24	2	751	12	1	582

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1341	757	0	0	763	0
Stage 1	757	-	-	-	-	-
Stage 2	584	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	170	411	-	-	859	-
Stage 1	467	-	-	-	-	-
Stage 2	561	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	170	411	-	-	859	-
Mov Cap-2 Maneuver	170	-	-	-	-	-
Stage 1	467	-	-	-	-	-
Stage 2	560	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	28.5	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	179	859	-
HCM Lane V/C Ratio	-	-	0.146	0.001	-
HCM Control Delay (s)	-	-	28.5	9.2	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0	-