



Children's Hospital of Eastern Ontario (CHEO)
1Door4Care Phase 1A - Parking Garage
Traffic Impact Assessment

B+H Architects

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401 Smyth Road – CHEO Parking Garage Phase 1A Traffic Impact Assessment –
Scoping + Forecasting Submission

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INTRODUCTION

EXP was retained by B+H Architects on behalf of Children’s Hospital of Eastern Ontario (CHEO) to prepare a Traffic Impact Assessment (TIA) for the parking garage being constructed as a part of the Phase 1 1Door4Care (1D4C) hospital expansion located at 401 Smyth Road. The proposed parking garage is to be located on the northwest corner of the Ring Road (E-W) and General Hospital Access Intersection as shown in **Figure 1**. The new parking garage is anticipated to house 1,050 parking spaces.

Figure 1: Site Location



1. SCREENING

A TIA screening form for the proposed development was completed to identify the needs of the TIA. A copy of the completed screening form is attached to this report as **Appendix A** and the findings are as follows:

- TRIP GENERATION** The proposed parking garage is anticipated to include 1,050 parking spaces. The proposed parking garage will generate more than 60-person trips due to an existing latent parking demand consisting of 360 staff; thus, it does trigger the trip generation component of the TIA.
- LOCATION** The parking garage is not in a design priority area or transit-oriented development zone and does not propose a new driveway to a boundary street; thus, the location triggers are not satisfied.
- SAFETY** The proposed development does not trigger any of the safety triggers.

Upon review of the City’s screening assessment, EXP has confirmed the need to complete a TIA for the proposed development.

2. SCOPING

2.1 Existing and Planned Conditions

2.1.1 Proposed Development

CHEO is planning to expand hospital facilities within the existing CHEO campus. This includes a proposed treatment center for children called 1Door4Care. As shown in **Figure 1**, the building is anticipated to displace the existing surface parking lot currently in that location. It is anticipated that this building will be occupied by 2025. As part of this expansion, a new 33,500 m² parking garage will also be constructed within the CHEO campus.

The focus of this TIA is on the parking garage as it will be constructed in 2024, prior to the 1D4C expansion.

As shown in **Figure 1**, the parking garage is anticipated to be located in the northwest quadrant of the intersection of General Hospital Access Road and Ring Road (E-W). The parking garage is expected to be a 7-storey building (including an open-air roof) that houses 1,050 parking spaces. The first two floors of the proposed structure will service visitor parking demand and the 5 floors above will service staff parking demand. It is anticipated that this parking garage will be constructed and open for use by 2024.

The site is currently zoned as Major Institutional (I2) Zone. The purpose of the I2 Zone is to:

- Ensure that major institutional uses such as hospitals, colleges, and universities are located at appropriate locations within areas designated as General Urban Area, Central Area, and Mixed-Use Centre in the Official Plan;
- Ensure that these large-scale high-traffic generating institutions locate only on large parcels of land, with direct access to an arterial road and near rapid transit stations;
- Impose regulations that ensure that the size and intensity of these uses are compatible with adjacent uses; and
- Permit minor institutional uses and provide for a range of ancillary service uses.

Table 1 outlines the proposed land uses that will be used for this analysis. They were obtained from the Institute of Transportation Engineer’s (ITE) *Trip Generation Manual 10th Edition*. Please note that the parking garage is not anticipated to generate any new trips. However, there are 360 staff on an existing parking waitlist. It is assumed spaces in the parking garage will be filled by this waitlist.

Table 1: Proposed Land Use

Land Use Code	Size	Land Use
610	33,500 m ²	Hospital (Parking Garage)

Vehicle access to the parking garage is anticipated to be provided from Ring Road (E-W) via a full movement access.

2.1.2 Existing Conditions

Roads and Traffic Control

The characteristics of the roads and intersections in the vicinity of the subject site are described below.

- Smyth Road
 - Smyth Road is a four-lane east-west running arterial road which features a posted speed limit of 50 km/h. The road features an urban cross-section with sidewalks on both sides of the road. Near the site, two intersections are signalized: Smyth Road / Ring Road (N-S) / South Haven Place and Smyth Road / General Hospital Access Road. Smyth Road / General Hospital Access Road features an eastbound left-turn lane and a westbound right-turn lane. Smyth Road is classified as a Spine Cycling Route and Truck Route by the City of Ottawa.
- Ring Road
 - Ring Road is a two-lane local road with a posted speed of 50 km/h that circles around the CHEO and the General Hospital Campus. Portions of Ring Road have sidewalk; however, it is not a continuous network. The northern portion of Ring Road features a multi-use path on its north side. The intersection of Ring Road (N-S) / Ring Road (E-W) in the southwest area of the campus is stop-controlled in the E-W direction. The Smyth Road / Ring Road (N-S) / South Haven Place intersection is signalized with southbound left and right turn lanes. North and southbound thru movements are not permitted at this intersection.
- General Hospital Access Road
 - General Hospital Access Road is a north-south running local road that connects Ring Road to Smyth Road and provides access to the Ottawa Hospital General Campus. The road features sidewalks on both sides of the road. The intersection of Smyth Road / General Hospital Access Road features two southbound left turn lanes and one right turn lane. The intersection with Ring Road (E-W) is stop-controlled in the southbound, eastbound, and westbound directions, and is free-flowing in the northbound direction.
- Hospital Link Road
 - Hospital Link Road is an east-west running two-lane local road with a posted speed of 50 km/h. The road connects Ring Road to Alta Vista Road. There is no sidewalk along Hospital Link Road; however, there is a bi-directional multiuse path on the south side of Hospital Link Road.

The existing lane configuration and traffic controls for the study area are presented in **Figure 2**.

Figure 2: Existing Lane Configuration and Traffic Controls



Walking and Cycling

Walking and cycling facilities are somewhat limited within and around the CHEO campus. Existing facilities are as follows:

- Smyth Road features sidewalk on both sides of the road.
- The northern portion of Ring Road has a bi-directional multi-use path on its north side.
- Sidewalk is present intermittently along portions of Ring Road.

Existing Transit Operations

The following transit routes pass by or enter the CHEO Campus:

- Route 45: Hospital to Hurdman & N Rideau
 - Route 45 is a route that runs between CHEO Campus and Hurdman Station. It runs 7 days a week with 15-minute weekday headways and 30-minute weekend headways. In the vicinity of the CHEO Campus, bus stops are located in the eastbound direction of Ring Road.
- Route 55: Elmvale to Westgate
 - Route 55 is a route that runs between Elmvale and Westgate, stopping at the CHEO campus as part of its route. It runs 7 days a week with 15-minute weekday headways and 30-minute weekend headways. In the vicinity of the CHEO Campus, a few bus stops are located along Ring Road and Smyth Road.

- Route 609: De La Salle to Elmvale
 - Route 609 is a route that runs between De La Salle and Elmvale, stopping along Smyth Road as part of its route. It runs a limited service on weekdays only. In the vicinity of the CHEO Campus, a few bus stops are located along Smyth Road.

Existing Traffic Management Measures

There are no existing traffic management measures currently provided near the site.

Traffic Volumes

Traffic volumes at the study intersections were provided by the City of Ottawa’s Transportation Services department or taken from a traffic study completed by Stantec in June 2021. The City of Ottawa traffic count is attached as **Appendix B**. Turning movement counts were collected during weekday AM and PM peak periods. **Table 2** shows the month and year that traffic counts were collected:

Table 2: Collected Turning Movement Counts

Location	Month / Year
Ring Road (N-S) / Hospital Link Road	February / 2020
Ring Road (N-S) / CHEO Access Road	February / 2020
Ring Road (N-S) / Ring Road (E-W)	February / 2020
Ring Road (N-S) / Smyth Road	October / 2022
CHEO Access Road / Ring Road (E-W)	February / 2020
Emergency Access Road / Ring Road (E-W)	February / 2020
General Hospital Access Road / Ring Road (E-W)	February / 2020
General Hospital Access Road / Smyth Road	December / 2019

To develop 2022 traffic volumes, a 1% annual growth rate was applied to the traffic counts collected prior to 2022. To develop the 1% growth rate, the City of Ottawa’s long-range model (Exhibit 2.11 of the 2013 TMP) was used to estimate the growth rate to/from the inner suburbs between 2011 and 2031.

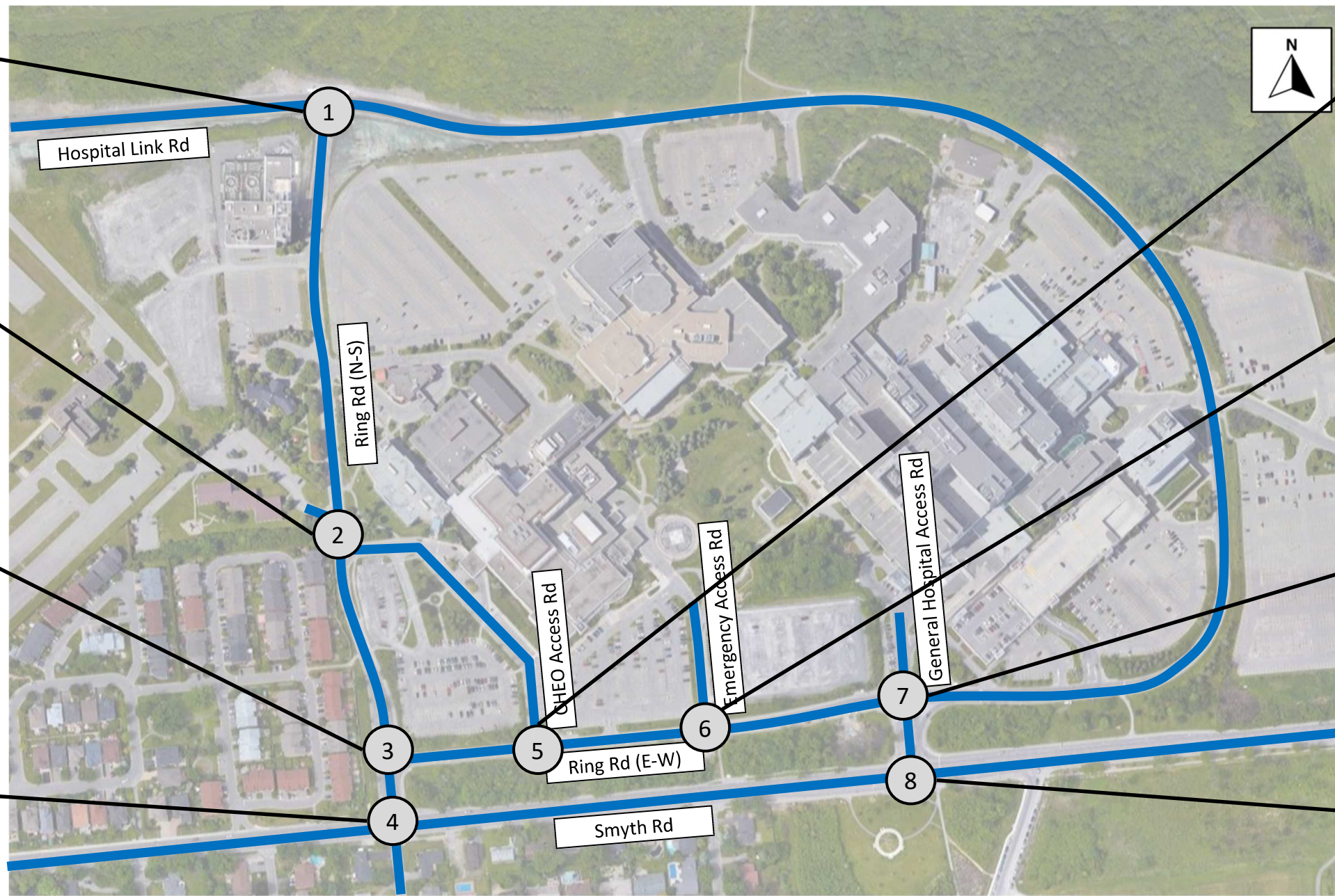
It should be noted that the growth rate was only applied to through traffic along Smyth Road as traffic growth on the CHEO campus is largely based on the expansion of on-site services and facilities. **Figure 3** illustrates the Existing 2022 traffic volumes at the study area intersections.

	← 72 (195) ↘ 34 (85)
Hospital Link Rd	↖ 36 (71) ↗ ↘ 87 (53)
	↖ 241 (56) ↗ ↘ 117 (23) ↗

↖ 4 (1) ↗ ↘ 72 (563) ↗ ↘ 26 (11) ↗	↖ 32 (17) ↗ ↖ 106 (124) ↗
↖ 2 (2) ↗ ↖ 19 (17) ↗	↖ 21 (7) ↗ ↖ 511 (142) ↗ ↖ 99 (22) ↗

↖ 165 (669) ↗ ↖ 32 (35) ↗	↖ 14 (57) ↗ ↖ 58 (85) ↗
	↖ 617 (114) ↗ ↖ 130 (53) ↗

↖ 119 (324) ↗ ↖ 0 (1) ↗ ↖ 28 (127) ↗	↖ 103 (11) ↗ ↖ 556 (878) ↗ ↖ 1 (4) ↗
Smyth Rd	↖ 6 (5) ↗ ↖ 0 (0) ↗ ↖ 0 (4) ↗
	↖ 2 (4) ↗



↖ 3 (7) ↗ ↖ 36 (24) ↗	↖ 81 (40) ↗ ↖ 69 (135) ↗
↖ 38 (26) ↗ ↖ 124 (62) ↗	

↖ 21 (53) ↗ ↖ 20 (45) ↗	↖ 51 (16) ↗ ↖ 69 (76) ↗
↖ 132 (24) ↗ ↖ 53 (70) ↗	

↖ 10 (26) ↗ ↖ 141 (155) ↗ ↖ 21 (21) ↗	↖ 7 (36) ↗ ↖ 23 (28) ↗ ↖ 173 (459) ↗
↖ 16 (20) ↗ ↖ 35 (10) ↗ ↖ 22 (85) ↗	↖ 132 (38) ↗ ↖ 157 (155) ↗ ↖ 516 (123) ↗

↖ 203 (369) ↗ ↖ 133 (330) ↗	↖ 427 (163) ↗ ↖ 687 (669) ↗
↖ 378 (153) ↗ ↖ 536 (800) ↗	

Legend
xx (yy) = AM (PM) PEAK HOUR VOLUMES

CHEO 1Door4Care Phase 1 Parking Garage - Traffic Impact Assessment
2022 Existing AM and PM Peak Hour Traffic Volumes

FIGURE 3

Not to Scale

Collision History

Collision data was provided by the City of Ottawa for the period of 2016 to 2020 along Smyth Road. Collision data was not available within the hospital campus as these are private roads. The collision data was reviewed to determine if there are any collision patterns during the five (5) year period. **Table 3** provides a summary of the collision data. The raw collision data can be found in **Appendix C**.

Table 3: Collision Data Summary

		Ring Road (N-S) / Smyth Road	General Hospital Access / Smyth Road	Smyth Road between Ring Road (N-S) and General Hospital Access
Classification	Non-Fatal Injury	4	1	2
	Property Damage Only	13	16	3
	Non-Reportable	-	1	-
Collision Type	Rear End	8	8	2
	Sideswipe	3	5	2
	Turning Movement	5	4	1
	Angle	1	-	-
	SMV Other	-	1	-
Driver Action	Following Too Close	6	4	1
	Failed to yield right-of-way	6	1	-
	Improper Lane Change	2	1	-
	Speed too fast for condition	1	-	-
	Lost Control	-	3	-
	Disobeyed Traffic Control	-	1	-
	Improper Turn	-	2	-
	Driving Properly	-	1	-
	Unknown	2	5	2
	Other	-	-	2
Environment	Clear	12	14	4
	Rain	3	2	1
	Snow	2	2	-
Light	Dawn	1	2	-
	Daylight	12	10	2
	Dusk	1	2	1
	Dark	3	4	2

The collision data presented in **Table 3** found that approximately 1 in 5 collisions that occurred along this section of Smyth Road resulted in a non-fatal injury, suggesting the majority of vehicles are travelling at low enough speeds so as not to cause bodily harm.

There were no identifiable collision patterns in the provided data which suggests there is not any specific area of concern. The main type of collision was rear-end (45%) followed by sideswipe (25%) and turning movement (25%). The most common type

of driver action was following too close (28%) or failing to yield the right-of-way (18%). The majority of collisions occurred in clear weather (75%) during the daytime (60%).

2.1.3 Planned Conditions

Planned Projects

Based on the City of Ottawa’s 2013 Transportation Master Plan, the following projects nearby the proposed development are scheduled to occur. Please note these projects are listed under the Road Network Concept plans and therefore are not anticipated to be finalized by the study’s ultimate horizon year.

- Alta Vista Transportation Corridor
 - Bus / High Occupancy vehicle lanes and transit signal priority between Riverside Drive and Ottawa Health Sciences Centre.
 - New four-lane road between Nicholas Street / Highway 417 interchange and Riverside Drive.
 - New four-lane road (including two peak-period bus lanes) between the Ottawa Health Sciences Centre and Walkley Road.

- Smyth Road
 - Transit signal priority and queue jump lanes between Alta Vista Transportation Corridor and St. Laurent Boulevard.

Planned Developments

Table 4 lists development applications that were identified on the City of Ottawa’s *Development Application Search Tool*.

Table 4: Development Application Summary

Location	Type	Year
700 Coronation	4-storey, 35-unit residential building with 47 parking spaces.	Unknown
355 Everest	8-storey mid-rise apartment building with 101 units and 3 levels of underground parking with 108 spaces.	2020
1967 Riverside	Infill of the existing hospital campus with a continuum of care seniors community consisting of a Long-Term Care Home (256 beds) in Phase 1, and a 15-storey registered retirement home (270 beds) and shared amenity space in the second phase.	Unknown
200 Steamline 230 Steamline 260 Steamline	A seven-building high-rise development to be constructed in three phases. The first phase of the proposal consists of two buildings, 15 and 22 storeys high, with a total of 414 units. When phase 3 is completed, a total of 1,890 units will be constructed.	Phase 1: 2021 Phase 2: 2027 Phase 3: 2031
1971 St-Laurent	Three 17-storey residential use buildings with at-grade residential and amenity space and public park space all fronting on St. Laurent Blvd. Parking is provided at-grade and within a proposed new multi-level above-ground parking garage.	Unknown

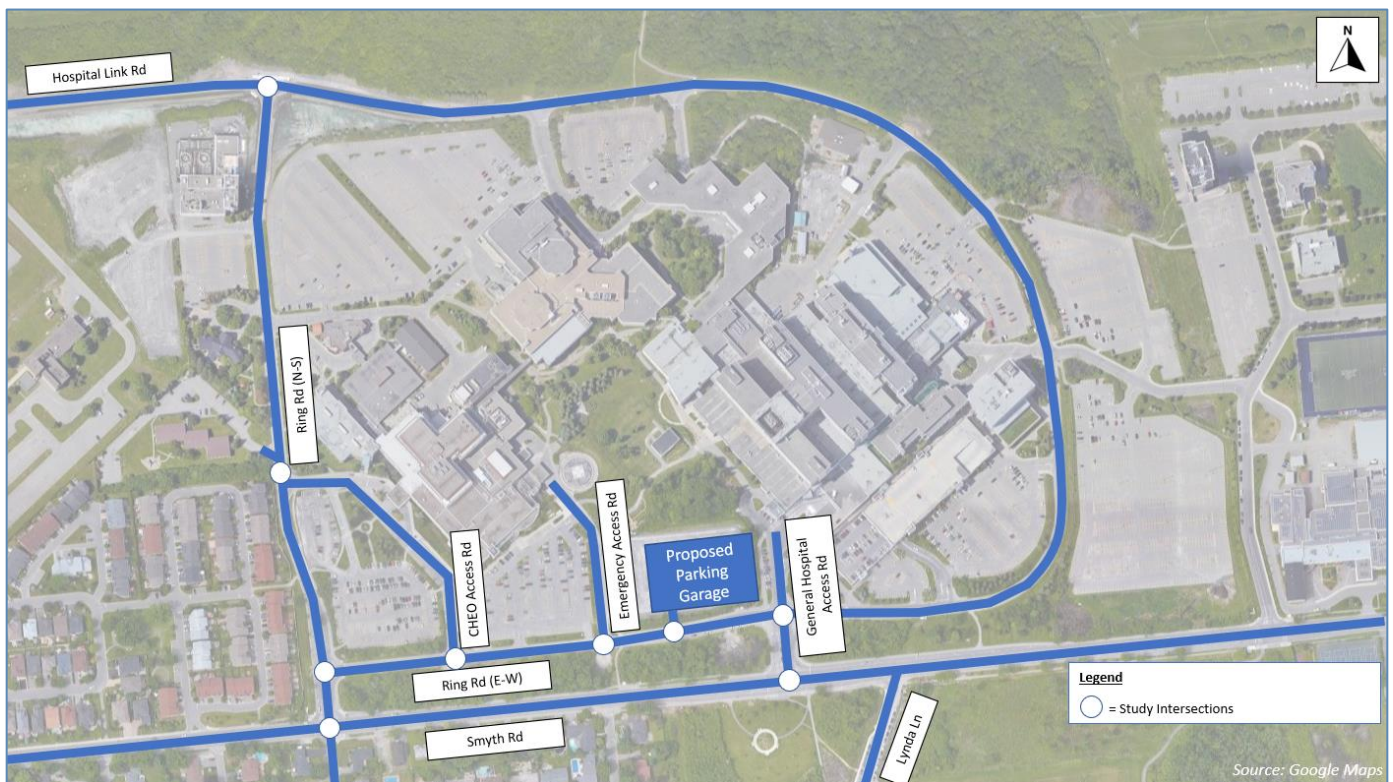
2.2 Study Area and Time Periods

2.2.1 Study Area

The proposed study area for this proposed development is shown in **Figure 4** and includes the following nine (9) intersections:

- Ring Road (N-S) / Hospital Link Road
- Ring Road (N-S) / CHEO Access Road
- Ring Road (N-S) / Ring Road (E-W)
- Ring Road (N-S) / Smyth Road
- CHEO Access Road / Ring Road (E-W)
- Emergency Access Road / Ring Road (E-W)
- Parking Garage Entrance / Ring Road (E-W)
- General Hospital Access Road / Ring Road (E-W)
- General Hospital Access Road / Smyth Road

Figure 4: Study Intersections



2.2.2 Time Periods

The proposed scope of the transportation assessment includes the following analysis time periods:

- Weekday AM peak hour of roadway
- Weekday PM peak hour of roadway

2.2.3 Horizon Years

The scope of the transportation assessment proposes the following horizon years:

- 2022 existing conditions
- 2024 future background conditions
- 2024 total future conditions (parking garage build-out)

A future TIA that incorporates the 1D4C building will be completed at a later date. Therefore, a 5-year future horizon is not being analyzed as part of this TIA.

2.3 Exemption Review

The Exemptions Review table from the City of Ottawa Transportation Impact Assessment Guidelines is summarized below in **Table 5**. Many elements are exempt as this TIA is only reviewing the parking garage. Another TIA will need to be completed when assessing the 1D4C building.

Table 5: Exemptions Review

Module	Element	Exemption Considerations	Exempt? (Yes/No)
Design Review Component			
Development Design	Circulation and Access	Only required for site plans	No
Development Design	New Street Networks	Only required for plans of subdivisions	Yes
Parking	Parking Supply	Only required for site plans	Yes
Parking	Spillover Parking	Only required for site plans where parking is 15% below unconstrained demand	Yes
Network Impact Component			
Transportation Demand Management	All Elements	Not required for site plans expected to have fewer than 60 employees and/or students on location at any given time	Yes
Neighbourhood Traffic Management	Adjacent Neighbourhoods	Only required when the development relies on local or collector streets for access and total volumes exceed ATM capacity thresholds	Yes
Network Concept		Only required when proposed development generates more than 200 person-trips during the peak hour in excess of the equivalent volume permitted by establishing zoning	Yes

3. Forecasting

3.1 Development Generated Travel Demand

3.1.1 Trip Generation and Mode Shares

Trip Generation Rates

Table 6 outlines the proposed trip generation rates that will be used for this analysis. They were obtained from the Institute of Transportation Engineer’s (ITE) *Trip Generation Manual 10th Edition*. It was assumed Code 610 – Hospital would be the most appropriate proposed land use.

Please note that the parking garage is not anticipated to generate any new trips. However, there are 360 staff on an existing parking waitlist. It is assumed spaces in the parking garage will be filled by this waitlist.

Table 6: Trip Generation Rates

Landuse Code	Employees	Peak Hour	Vehicle Trip Rate Per Employee	Entering	Exiting
Hospital (610)	360	AM	0.27	73%	27%
Hospital (610)	360	PM	0.28	27%	73%

Future Mode Share Targets

The CHEO parking garage is located in the Inner Area as defined by the City of Ottawa’s 2013 Transportation Master Plan. Based on information in the Transportation Master Plan, in 2011 the Inner Area had a transit mode share of 42% and 20% for trips going to and coming from the Inner Area. By 2031 this is expected to minorly increase (approx. 2%).

The City of Ottawa typically requires TIAs to develop mode share targets for proposed developments. However, mode share targets have not been developed for this TIA as a parking garage is only going to service auto driver or auto passenger trips. When a TIA is completed for the CHEO facility mode share targets can be further explored.

Person-Trip Generation

Using the rates noted in **Table 6**, EXP estimated the number of developed-generated auto-trips and person-trips. To calculate the person-trips, a conversion rate of 1.28 was applied as recommended by the City of Ottawa’s TIA guidelines. The estimated development-generated trips are shown in **Table 7**.

Table 7: Site-Generated Trips

Landuse Code	Trip Conversion	Weekday AM Peak Hour			Weekday PM Peak Hour		
		In	Out	Total	In	Out	Total
Hospital (610)	Auto Trips	97	71	26	101	27	74
	Conversion Factor	1.28	1.28	1.28	1.28	1.28	1.28
	Person Trips	124	91	34	129	35	94

The person-trips were then broken down into auto driver, auto passenger, transit, bicycle, walk, and other trips. To break down the trips into modal categories, the TRANS Committee’s 2011 Origin-Destination Survey was utilized. Specifically, information from the Alta Vista district portion of this survey was used. Estimated site-generated trips by travel mode are shown in **Table 8**. The 2011 Origin-Destination Survey (Alta Vista) can be found in **Appendix D**.

Table 8: Site-Generated Trips by Travel Mode

Travel Mode	AM Peak Hour Person-Trips				PM Peak Hour Person-Trips			
	Modal Split	Total	In	Out	Modal Split	Total	In	Out
Auto Driver	54%	67	49	18	59%	76	20	55
Auto Passenger	13%	16	11	4	15%	19	5	14
Transit	20%	24	18	7	17%	22	6	16
Bicycle	2%	3	2	1	2%	2	1	2
Walk	4%	6	4	2	4%	6	1	4
Other	7%	9	6	2	3%	4	1	3
Total	100%	124	91	34	100%	129	35	94

3.1.2 Trip Distribution

The distribution of site-generated traffic entering/exiting the site was developed using traffic data from the intersections of Smyth Road / Ring Road (N-S), Smyth Road / General Hospital Access Road, and Hospital Link Road / Ring Road (N-S). Key movements from these traffic counts were used to develop the proportion of traffic entering/exiting the site from each direction. The trip distribution percentages for site-generated traffic is presented in **Table 9**.

Table 9: Trip Distribution Percentages

	Intersection	Movement	AM Peak Hour %	PM Peak Hour %
Entering	Smyth Road / Ring Road (N-S)	EBL	40	33
	Smyth Road / General Hospital Access Road	WBR	47	59
	Hospital Link Road / Ring Road (N-S)	EBR	13	8
Exiting	Smyth Road / Ring Road (N-S)	SBR	14	45
	Smyth Road / General Hospital Access Road	SBL	68	46
	Hospital Link Road / Ring Road (N-S)	NBL	18	10

3.1.3 Trip Assignment

Site-generated trips were then assigned to the road network based on the proportions developed in **Section 3.1.2**. The AM and PM peak hour site-generated traffic volumes are presented in **Figure 5**.



CHEO 1Door4Care Phase 1 Parking Garage - Traffic Impact Assessment
Site Generated AM and PM Peak Hour Traffic Volumes

FIGURE 5

Not to Scale

3.2 Background Network Travel Demands

3.2.1 Transportation Network Plans

Transportation improvements are planned to occur near the development. However, as described in **Section 2.1.3**, these improvements are not anticipated to occur until well after the opening of the proposed parking garage. As such, adjustments to traffic volumes and the road network to account for these improvements have not been made within the TIA.

3.2.2 Background Growth

To develop the 2024 background traffic volumes, a 1% annual growth rate was applied to the 2022 traffic volumes.

To develop the 1% growth rate, the City of Ottawa's long-range model (Exhibit 2.11 of the 2013 TMP) was used to estimate the growth rate to/from the inner suburbs between 2011 and 2031.

It should be noted that the growth rate was only applied to through traffic along Smyth Road as traffic growth on the CHEO campus is largely based on the expansion of on-site services and facilities. **Figure 6** illustrates the Background 2024 AM and PM peak hour traffic volumes at the study area intersections. **Figure 7** illustrates the Total (Background + Site Generated) 2024 AM and PM peak hour traffic volumes.

3.2.3 Other Developments

Developments that are currently under construction or in the development approval process are listed in **Table 4**. Due to their locations and after reviewing available TIAs conducted for the developments, the developments are not anticipated to have a significant impact on the study area identified in this TIA. As such, trips generated by these developments have not applied.

3.3 Demand Rationalization

Demand rationalization is carried out when estimated future peak hour demand on the transportation network exceeds future capacity. Given the relatively small number of trips being added onto the road network in this TIA, it is not anticipated to be required. Demand rationalization has not been applied at this time, but will be considered if appropriate as TDM measures could be effective on the behaviour of CHEO staff.



CHEO 1Door4Care Phase 1 Parking Garage - Traffic Impact Assessment
2024 Background AM and PM Peak Hour Traffic Volumes

FIGURE 6

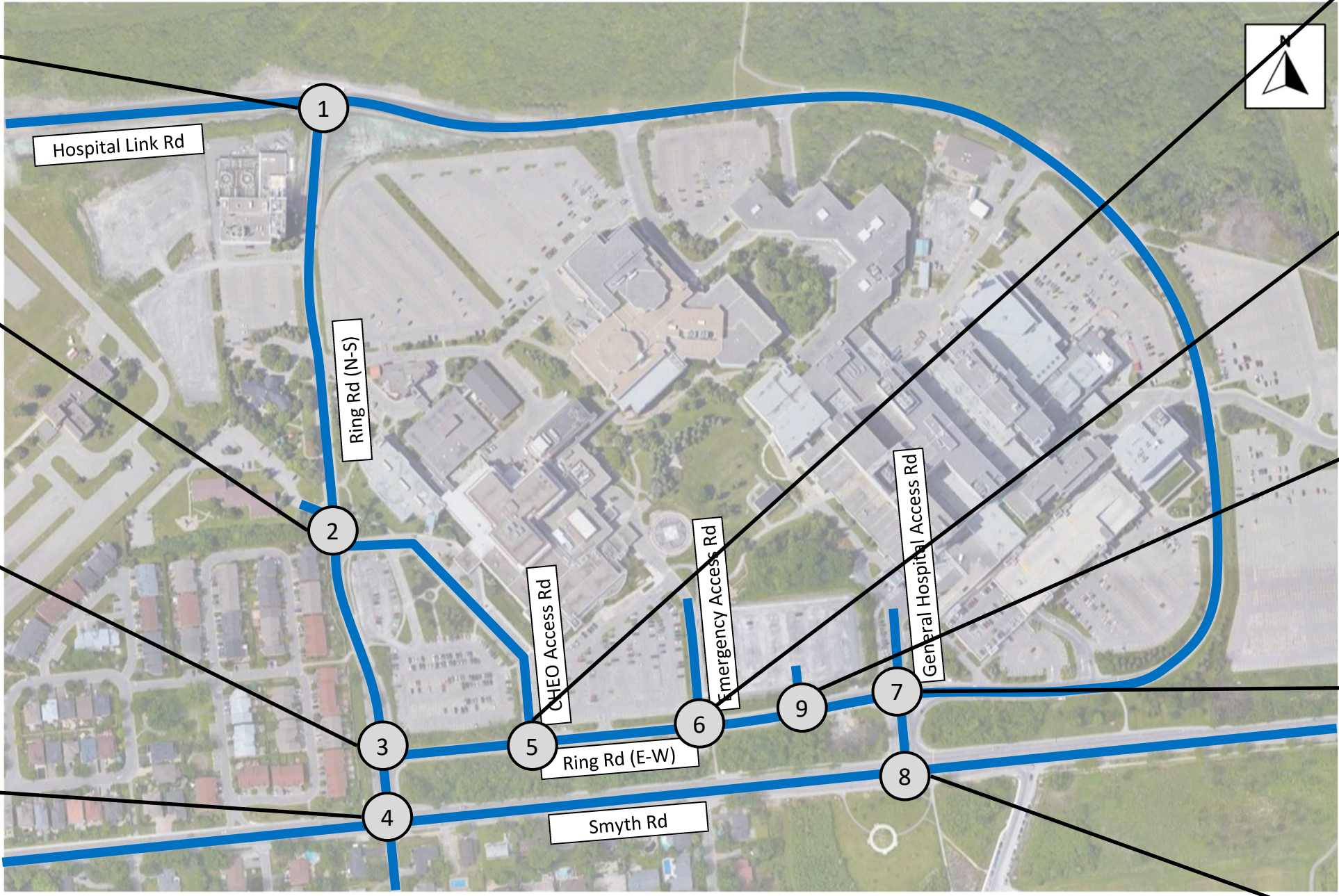
Not to Scale

	← 73 (199) ↘ 35 (87)
Hospital Link Rd	↙ 40 (82) ↘ ↗ 89 (54) ↘
	↖ 246 (57) ↗ ↘ 125 (26) ↗
	↖ Ring Rd (N-S) ↗

	↖ 4 (1) ↗ ↘ 79 (577) ↗ ↙ 27 (11) ↘
	↖ Ring Rd (N-S) ↗
	↖ 2 (2) ↗ ↘ 19 (17) ↗
	↖ CHEO West Access Rd ↗
	↖ 21 (7) ↗ ↘ 524 (155) ↗ ↙ 101 (22) ↘

	↖ 168 (682) ↗ ↘ 39 (39) ↗
	↖ Ring Rd (N-S) ↗
	↖ 62 (95) ↗ ↘ 629 (116) ↗ ↙ 153 (62) ↘
	↖ Ring Rd (E-W) ↗

	↖ 124 (339) ↗ ↘ 0 (1) ↗ ↙ 29 (130) ↘
	↖ Ring Rd (N-S) ↗
	↖ 105 (11) ↗ ↘ 567 (896) ↗ ↙ 1 (4) ↘
	↖ Smyth Rd ↗
	↖ 6 (5) ↗ ↘ 0 (0) ↗ ↙ 0 (4) ↘
	↖ South Haven Pl ↗



	↖ 3 (7) ↗ ↘ 37 (24) ↗
	↖ Ring Rd (E-W) ↗
	↖ 39 (27) ↗ ↘ 152 (74) ↗
	↖ CHEO South Access Rd ↗
	↖ 83 (41) ↗ ↘ 76 (156) ↗

	↖ 21 (54) ↗ ↘ 20 (46) ↗
	↖ Ring Rd (E-W) ↗
	↖ 135 (24) ↗ ↘ 80 (82) ↗
	↖ Emergency Access Rd ↗
	↖ 52 (16) ↗ ↘ 76 (96) ↗

	↖ 6 (18) ↗ ↘ 12 (37) ↗
	↖ Ring Rd (E-W) ↗
	↖ 26 (11) ↗ ↘ 74 (117) ↗
	↖ Parking Garage Access ↗
	↖ 23 (10) ↗ ↘ 168 (95) ↗

	↖ 10 (27) ↗ ↘ 144 (158) ↗ ↙ 21 (21) ↘
	↖ Ring Rd (E-W) ↗
	↖ 16 (20) ↗ ↘ 36 (10) ↗ ↙ 34 (124) ↘
	↖ Ring Rd (E-W) ↗
	↖ 7 (37) ↗ ↘ 23 (29) ↗ ↙ 176 (468) ↘
	↖ General Hospital Access Rd ↗
	↖ 158 (49) ↗ ↘ 160 (158) ↗ ↙ 526 (125) ↘

	↖ 207 (376) ↗ ↘ 148 (374) ↗
	↖ Smyth Rd ↗
	↖ 386 (156) ↗ ↘ 547 (816) ↗
	↖ General Hospital Access Rd ↗
	↖ 459 (176) ↗ ↘ 701 (682) ↗

Legend
xx (yy) = AM (PM) PEAK HOUR VOLUMES

CHEO 1Door4Care Phase 1 Parking Garage - Traffic Impact Assessment
2024 Total AM and PM Peak Hour Traffic Volumes

FIGURE 7

Not to Scale



EXP Services Inc.

Project Number: MRK-21023468-A0

Date: 02/11/2022

Appendix A – TIA Screening Form



Certification Form for TIA Study PM

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



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;



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;



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



I am either a licensed¹ or registered² professional in good standing, whose field of expertise



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.

Dated at this day of , 20 .

(City)

Name :

Professional title:



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

Office Contact Information (Please Print)	
Address:	<input type="text"/>
City / Postal Code:	<input type="text"/>
Telephone / Extension:	<input type="text"/>
E-Mail Address:	<input type="text"/>

Stamp



City of Ottawa 2017 TIA Guidelines Screening Form

1. Description of Proposed Development

Municipal Address	401 Smyth Road
Description of Location	NW corner of the Ring Road/General Hospital Access Intersection.
Land Use Classification	Parking Garage
Development Size (units)	N/A
Development Size (m ²)	1,050 space Parking Garage; 33,519 m ²
Number of Accesses and Locations	1 Access on Ring Road
Phase of Development	Phase 1 of 2 (there will be additional related to 1Door4Care).
Buildout Year	Parking Garage built and occupied by 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.

Parking Garage with 1,050 parking spaces. The proposed development will generate more than 60 new person trips due to an existing latent parking demand consisting of 360 staff. The garage will house displaced surface parking spaces on the hospital campus due to new building development as well as facilitate the latent demand.

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).



EXP Services Inc.

Project Number: MRK-21023468-A0

Date: 02/11/2022

Appendix B – City of Ottawa Turning Movement Counts

Turning Movement Count - Study Results

SMYTH RD @ SOUTH HAVEN PL/GENERAL HOSPITAL ENTRANCE W

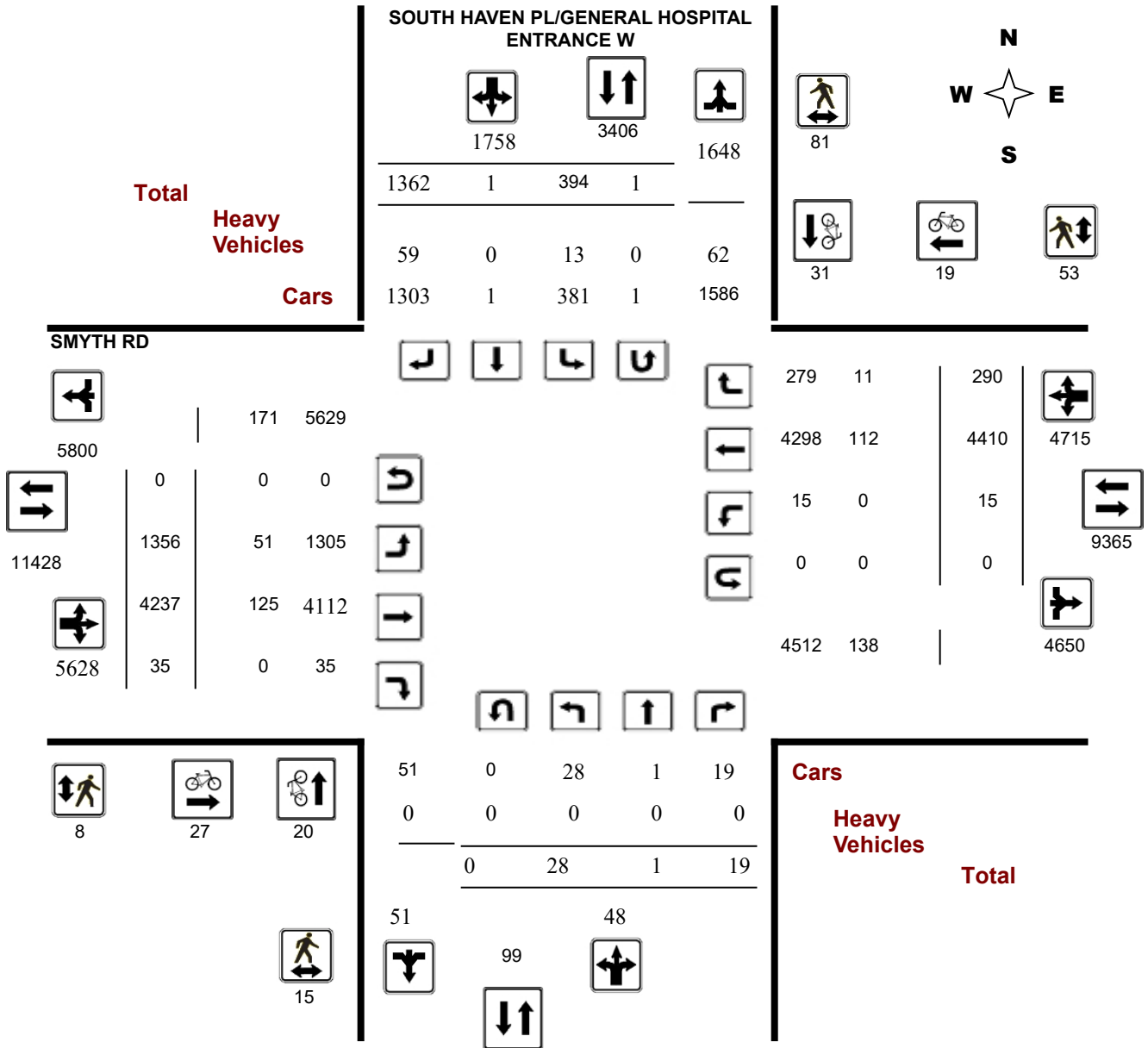
Survey Date: Tuesday, October 04, 2022

WO No: 40590

Start Time: 07:00

Device: Miovision

Full Study Diagram



Turning Movement Count - Study Results

SMYTH RD @ SOUTH HAVEN PL/GENERAL HOSPITAL ENTRANCE W

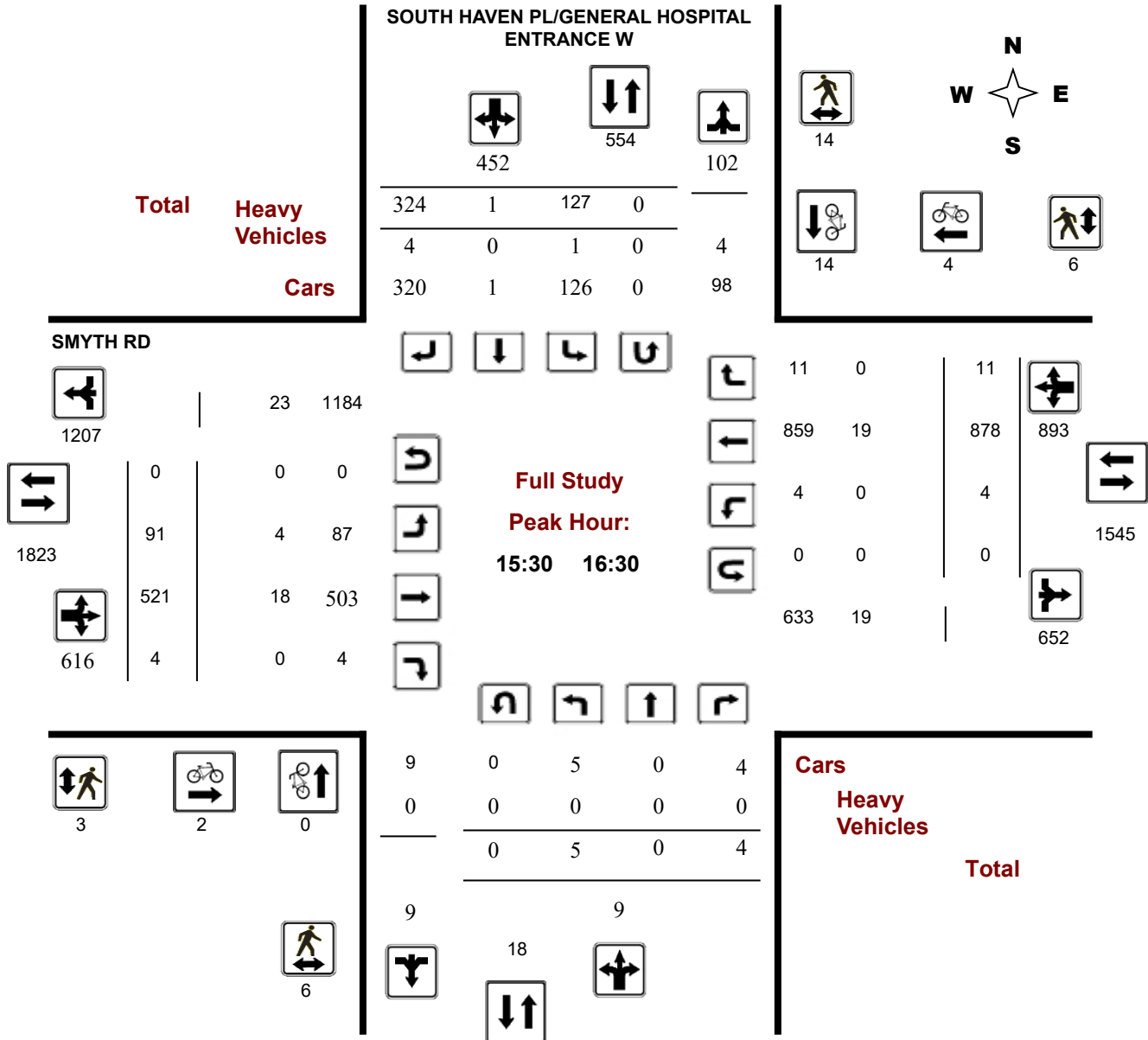
Survey Date: Tuesday, October 04, 2022

WO No: 40590

Start Time: 07:00

Device: Miovision

Full Study Peak Hour Diagram



Turning Movement Count - Peak Hour Diagram

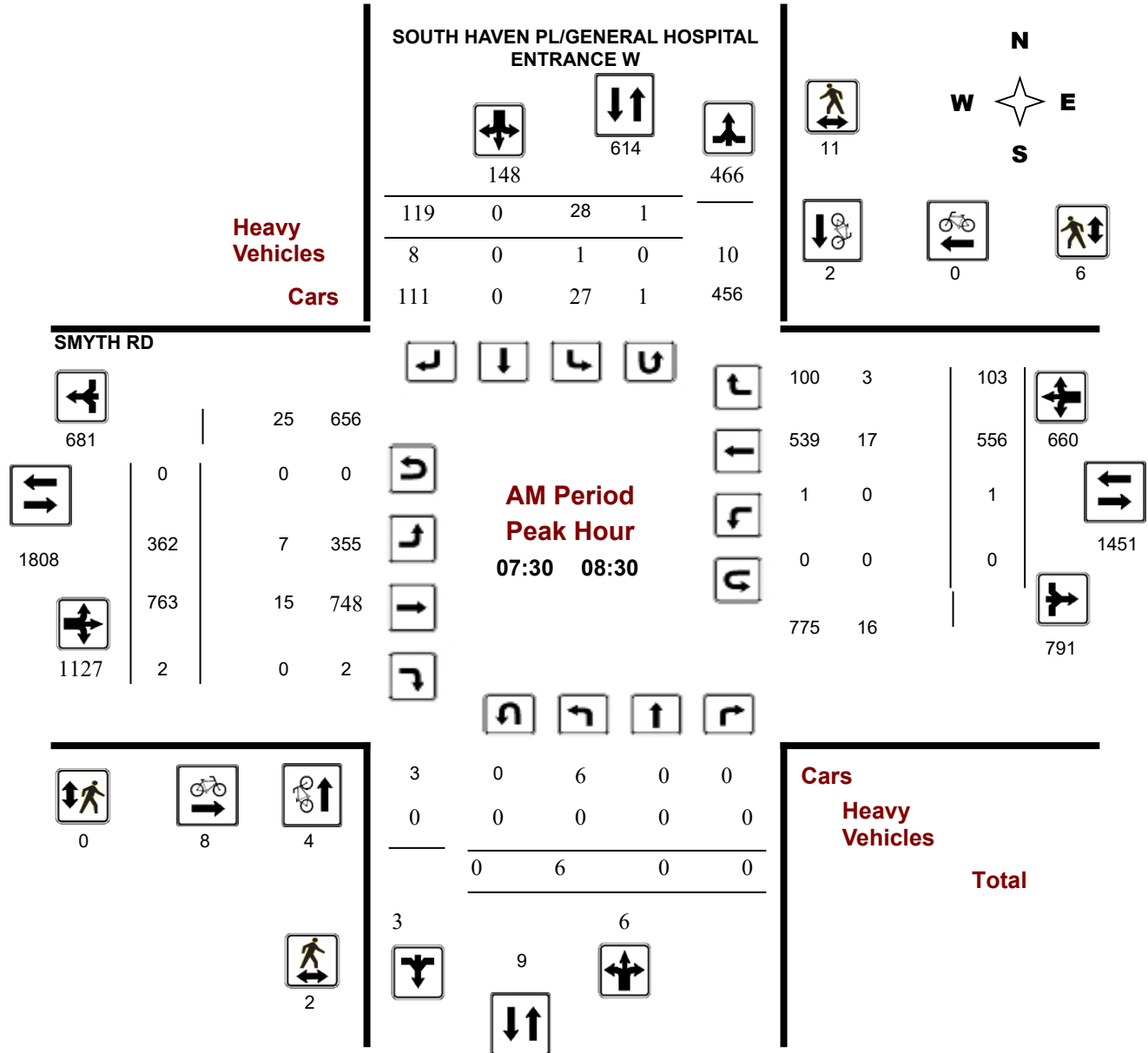
SMYTH RD @ SOUTH HAVEN PL/GENERAL HOSPITAL ENTRANCE W

Survey Date: Tuesday, October 04, 2022

Start Time: 07:00

WO No: 40590

Device: Miovision



Turning Movement Count - Peak Hour Diagram

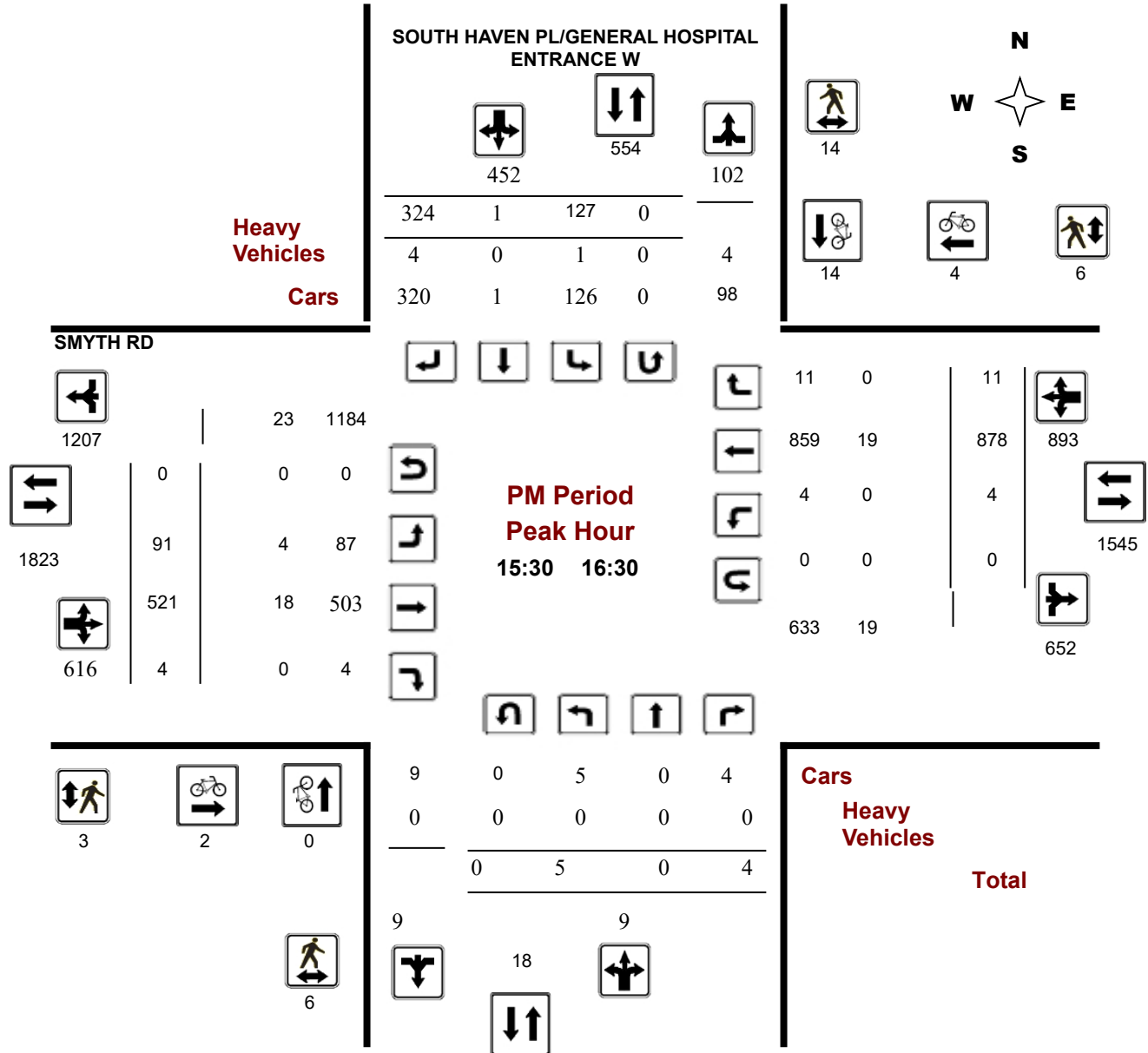
SMYTH RD @ SOUTH HAVEN PL/GENERAL HOSPITAL ENTRANCE W

Survey Date: Tuesday, October 04, 2022

Start Time: 07:00

WO No: 40590

Device: Miovision



Comments



Transportation Services - Traffic Services

Turning Movement Count - Study Results

SMYTH RD @ SOUTH HAVEN PL/GENERAL HOSPITAL ENTRANCE W

Survey Date: Tuesday, October 04, 2022

WO No: 40590

Start Time: 07:00

Device: Miovision

Full Study Summary (8 HR Standard)

Survey Date: Tuesday, October 04, 2022

Total Observed U-Turns

AADT Factor

Northbound: 0 Southbound: 1
 Eastbound: 0 Westbound: 0

.90

SOUTH HAVEN PL/GENERAL HOSPITAL ENTRANCE W

SMYTH RD

Period	Northbound				Southbound				STR TOT	Eastbound			Westbound			WB TOT	STR TOT	Grand Total	
	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT		LT	ST	RT	EB TOT	LT	ST				RT
07:00 08:00	4	0	1	5	28	0	99	127	132	337	713	1	1051	2	442	102	546	1597	1729
08:00 09:00	3	1	3	7	26	0	107	133	140	324	694	5	1023	2	564	77	643	1666	1806
09:00 10:00	3	0	1	4	22	0	129	151	155	201	511	3	715	3	401	34	438	1153	1308
11:30 12:30	3	0	3	6	28	0	152	180	186	111	428	4	543	2	465	15	482	1025	1211
12:30 13:30	3	0	3	6	31	0	150	181	187	147	407	4	558	1	441	23	465	1023	1210
15:00 16:00	5	0	5	10	119	0	296	415	425	113	551	6	670	3	822	23	848	1518	1943
16:00 17:00	4	0	1	5	102	1	258	361	366	67	469	2	538	2	697	3	702	1240	1606
17:00 18:00	3	0	2	5	38	0	171	209	214	56	464	10	530	0	578	13	591	1121	1335
Sub Total	28	1	19	48	394	1	1362	1757	1805	1356	4237	35	5628	15	4410	290	4715	10343	12148
U Turns				0				1	1				0				0	0	1
Total	28	1	19	48	394	1	1362	1758	1806	1356	4237	35	5628	15	4410	290	4715	10343	12149

EQ 12Hr 39 1 26 67 548 1 1893 2444 2510 1885 5889 49 7823 21 6130 403 6554 14377 16887

Note: These values are calculated by multiplying the totals by the appropriate expansion factor. **1.39**

AVG 12Hr 35 1 23 60 493 2 2232 2200 2259 1696 5300 44 7041 19 5517 363 5899 12939 15198

Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor. **.90**

AVG 24Hr 46 1 30 79 646 3 2924 2882 2959 2222 6943 58 9224 25 7227 476 7728 16950 19909

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

SMYTH RD @ SOUTH HAVEN PL/GENERAL HOSPITAL ENTRANCE W

Survey Date: Tuesday, October 04, 2022

WO No: 40590

Start Time: 07:00

Device: Miovision

Full Study Cyclist Volume

SOUTH HAVEN PL/GENERAL HOSPITAL
ENTRANCE W

SMYTH RD

Time Period	Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00 07:15	1	0	1	4	2	6	7
07:15 07:30	0	0	0	0	0	0	0
07:30 07:45	0	1	1	2	0	2	3
07:45 08:00	2	0	2	4	0	4	6
08:00 08:15	1	1	2	0	0	0	2
08:15 08:30	1	0	1	2	0	2	3
08:30 08:45	2	0	2	1	1	2	4
08:45 09:00	1	0	1	4	0	4	5
09:00 09:15	0	1	1	0	1	1	2
09:15 09:30	0	0	0	0	0	0	0
09:30 09:45	1	0	1	1	1	2	3
09:45 10:00	0	0	0	0	0	0	0
11:30 11:45	0	1	1	0	0	0	1
11:45 12:00	0	0	0	1	1	2	2
12:00 12:15	0	2	2	0	0	0	2
12:15 12:30	1	0	1	0	1	1	2
12:30 12:45	0	1	1	1	1	2	3
12:45 13:00	2	0	2	1	0	1	3
13:00 13:15	1	0	1	0	1	1	2
13:15 13:30	0	0	0	0	0	0	0
15:00 15:15	2	0	2	0	0	0	2
15:15 15:30	1	2	3	1	1	2	5
15:30 15:45	0	2	2	0	1	1	3
15:45 16:00	0	2	2	0	3	3	5
16:00 16:15	0	3	3	0	0	0	3
16:15 16:30	0	7	7	2	0	2	9
16:30 16:45	1	2	3	0	0	0	3
16:45 17:00	0	1	1	2	1	3	4
17:00 17:15	1	1	2	0	0	0	2
17:15 17:30	0	3	3	1	1	2	5
17:30 17:45	0	0	0	0	2	2	2
17:45 18:00	2	1	3	0	1	1	4
Total	20	31	51	27	19	46	97



Transportation Services - Traffic Services

Turning Movement Count - Study Results

SMYTH RD @ SOUTH HAVEN PL/GENERAL HOSPITAL ENTRANCE W

Survey Date: Tuesday, October 04, 2022

WO No: 40590

Start Time: 07:00

Device: Miovision

Full Study Pedestrian Volume

SOUTH HAVEN PL/GENERAL HOSPITAL ENTRANCE W

SMYTH 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	0	0	0	0
07:15 07:30	1	1	2	1	0	1	3
07:30 07:45	1	2	3	0	1	1	4
07:45 08:00	0	7	7	0	2	2	9
08:00 08:15	1	1	2	0	0	0	2
08:15 08:30	0	1	1	0	3	3	4
08:30 08:45	0	3	3	0	2	2	5
08:45 09:00	0	2	2	0	1	1	3
09:00 09:15	0	1	1	0	0	0	1
09:15 09:30	0	2	2	1	2	3	5
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	1	2	3	0	0	0	3
11:45 12:00	0	2	2	0	1	1	3
12:00 12:15	0	3	3	0	10	10	13
12:15 12:30	0	5	5	1	9	10	15
12:30 12:45	1	5	6	0	1	1	7
12:45 13:00	0	1	1	0	5	5	6
13:00 13:15	2	3	5	0	2	2	7
13:15 13:30	0	5	5	0	1	1	6
15:00 15:15	0	4	4	0	0	0	4
15:15 15:30	0	1	1	0	0	0	1
15:30 15:45	0	1	1	0	0	0	1
15:45 16:00	2	5	7	1	4	5	12
16:00 16:15	2	3	5	2	2	4	9
16:15 16:30	2	5	7	0	0	0	7
16:30 16:45	0	1	1	0	3	3	4
16:45 17:00	2	2	4	1	1	2	6
17:00 17:15	0	3	3	0	0	0	3
17:15 17:30	0	7	7	1	0	1	8
17:30 17:45	0	1	1	0	3	3	4
17:45 18:00	0	2	2	0	0	0	2
Total	15	81	96	8	53	61	157



Transportation Services - Traffic Services

Turning Movement Count - Study Results

SMYTH RD @ SOUTH HAVEN PL/GENERAL HOSPITAL ENTRANCE W

Survey Date: Tuesday, October 04, 2022

WO No: 40590

Start Time: 07:00

Device: Miovision

Full Study Heavy Vehicles

**SOUTH HAVEN PL/GENERAL
HOSPITAL ENTRANCE W**

SMYTH RD

Northbound

Southbound

Eastbound

Westbound

Time Period	Northbound			N TOT	Southbound			S TOT	STR TOT	Eastbound			E TOT	Westbound			W TOT	STR TOT	Grand Total
	LT	ST	RT		LT	ST	RT			LT	ST	RT		LT	ST	RT			
07:00 07:15	0	0	0	0	0	0	1	3	3	1	2	0	6	0	2	1	5	11	7
07:15 07:30	0	0	0	0	0	0	1	3	3	1	2	0	6	0	2	1	5	11	7
07:30 07:45	0	0	0	0	1	0	2	6	6	1	3	0	8	0	2	2	8	16	11
07:45 08:00	0	0	0	0	0	0	3	4	4	1	4	0	9	0	1	0	5	14	9
08:00 08:15	0	0	0	0	0	0	0	0	0	0	3	0	8	0	5	0	8	16	8
08:15 08:30	0	0	0	0	0	0	3	9	9	5	5	0	22	0	9	1	15	37	23
08:30 08:45	0	0	0	0	1	0	2	8	8	4	4	0	15	0	5	1	11	26	17
08:45 09:00	0	0	0	0	1	0	4	6	6	0	7	0	18	0	7	1	16	34	20
09:00 09:15	0	0	0	0	1	0	2	5	5	2	5	0	14	0	5	0	11	25	15
09:15 09:30	0	0	0	0	0	0	1	4	4	2	3	0	10	0	4	1	8	18	11
09:30 09:45	0	0	0	0	0	0	1	2	2	1	2	0	6	0	2	0	4	10	6
09:45 10:00	0	0	0	0	1	0	2	6	6	2	6	0	13	0	3	1	11	24	15
11:30 11:45	0	0	0	0	0	0	3	6	6	3	1	0	13	0	6	0	7	20	13
11:45 12:00	0	0	0	0	1	0	2	4	4	1	5	0	12	0	4	0	10	22	13
12:00 12:15	0	0	0	0	1	0	2	6	6	2	2	0	12	0	6	1	10	22	14
12:15 12:30	0	0	0	0	0	0	3	6	6	2	3	0	9	0	1	1	5	14	10
12:30 12:45	0	0	0	0	1	0	1	3	3	1	6	0	14	0	6	0	13	27	15
12:45 13:00	0	0	0	0	1	0	4	10	10	5	3	0	13	0	1	0	5	18	14
13:00 13:15	0	0	0	0	0	0	3	4	4	1	7	0	15	0	4	0	11	26	15
13:15 13:30	0	0	0	0	0	0	2	4	4	2	1	0	5	0	0	0	1	6	5
15:00 15:15	0	0	0	0	0	0	2	4	4	2	4	0	12	0	4	0	8	20	12
15:15 15:30	0	0	0	0	3	0	1	4	4	0	7	0	11	0	3	0	13	24	14
15:30 15:45	0	0	0	0	0	0	1	2	2	1	3	0	8	0	3	0	6	14	8
15:45 16:00	0	0	0	0	0	0	0	1	1	1	5	0	13	0	7	0	12	25	13
16:00 16:15	0	0	0	0	0	0	1	2	2	1	5	0	9	0	2	0	7	16	9
16:15 16:30	0	0	0	0	1	0	2	4	4	1	5	0	15	0	7	0	13	28	16
16:30 16:45	0	0	0	0	0	0	2	3	3	1	3	0	10	0	4	0	7	17	10
16:45 17:00	0	0	0	0	0	0	0	2	2	2	6	0	9	0	1	0	7	16	9
17:00 17:15	0	0	0	0	0	0	3	4	4	1	1	0	5	0	0	0	1	6	5
17:15 17:30	0	0	0	0	0	0	1	1	1	0	3	0	5	0	1	0	4	9	5
17:30 17:45	0	0	0	0	0	0	1	2	2	1	4	0	9	0	3	0	7	16	9
17:45 18:00	0	0	0	0	0	0	3	6	6	3	5	0	13	0	2	0	7	20	13
Total: None	0	0	0	0	13	0	59	134	134	51	125	0	347	0	112	11	261	608	371



Transportation Services - Traffic Services

Turning Movement Count - Study Results

SMYTH RD @ SOUTH HAVEN PL/GENERAL HOSPITAL ENTRANCE W

Survey Date: Tuesday, October 04, 2022

WO No: 40590

Start Time: 07:00

Device: Miovision

Full Study 15 Minute U-Turn Total

Time Period	SOUTH HAVEN PL/GENERAL HOSPITAL ENTRANCE W		SMYTH RD		Total	
	Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total		
07:00	07:15	0	0	0	0	
07:15	07:30	0	0	0	0	
07:30	07:45	0	1	0	1	
07:45	08:00	0	0	0	0	
08:00	08:15	0	0	0	0	
08:15	08:30	0	0	0	0	
08:30	08:45	0	0	0	0	
08:45	09:00	0	0	0	0	
09:00	09:15	0	0	0	0	
09:15	09:30	0	0	0	0	
09:30	09:45	0	0	0	0	
09:45	10:00	0	0	0	0	
11:30	11:45	0	0	0	0	
11:45	12:00	0	0	0	0	
12:00	12:15	0	0	0	0	
12:15	12:30	0	0	0	0	
12:30	12:45	0	0	0	0	
12:45	13:00	0	0	0	0	
13:00	13:15	0	0	0	0	
13:15	13:30	0	0	0	0	
15:00	15:15	0	0	0	0	
15:15	15:30	0	0	0	0	
15:30	15:45	0	0	0	0	
15:45	16:00	0	0	0	0	
16:00	16:15	0	0	0	0	
16:15	16:30	0	0	0	0	
16:30	16:45	0	0	0	0	
16:45	17:00	0	0	0	0	
17:00	17:15	0	0	0	0	
17:15	17:30	0	0	0	0	
17:30	17:45	0	0	0	0	
17:45	18:00	0	0	0	0	
Total		0	1	0	0	1



EXP Services Inc.

Project Number: MRK-21023468-A0

Date: 02/11/2022

Appendix C – City of Ottawa Collision Data



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 To: December 31, 2020

Location: SMYTH RD btwn GENERAL HOSPITAL & HIGHLAND TER

Traffic Control: No control

Total Collisions: 3

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Nov-15, Wed,17:00	Rain	Sideswipe	P.D. only	Wet	East	Unknown	Unknown	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
2018-Oct-03, Wed,23:50	Clear	Rear end	P.D. only	Dry	East	Pulling onto shoulder or toward curb	Automobile, station wagon	Other motor vehicle	0
					East	Overtaking	Police vehicle	Other motor vehicle	
2019-Apr-18, Thu,16:45	Clear	Sideswipe	P.D. only	Dry	East	Unknown	Unknown	Other motor vehicle	0
					East	Changing lanes	Automobile, station wagon	Other motor vehicle	

Location: SMYTH RD btwn HIGHLAND TER & SOUTH HAVEN PL

Traffic Control: No control

Total Collisions: 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Mar-09, Wed,19:13	Clear	Rear end	Non-fatal injury	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2016-Jun-30, Thu,13:14	Clear	Turning movement	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 To: December 31, 2020

Location: HIGHLAND TER @ SMYTH RD

Traffic Control: Stop sign

Total Collisions: 3

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2016-Nov-09, Wed,15:11	Clear	SMV other	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Pedestrian	1
2017-May-17, Wed,16:06	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Nov-20, Fri,18:08	Clear	Turning movement	Non-fatal injury	Dry	West	Turning left	Pick-up truck	Other motor vehicle	0
					West	Overtaking	Police vehicle	Other motor vehicle	

Location: SMYTH RD @ GENERAL HOSPITAL E

Traffic Control: Traffic signal

Total Collisions: 18

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2016-Sep-10, Sat,19:54	Clear	Turning movement	P.D. only	Dry	West	Making "U" turn	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Delivery van	Other motor vehicle	
2016-Oct-21, Fri,20:18	Rain	Sideswipe	P.D. only	Wet	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2016-Dec-09, Fri,08:57	Clear	Rear end	P.D. only	Ice	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Dec-08, Fri,06:52	Clear	Rear end	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
					West	Turning left	Automobile, station wagon	Other motor vehicle	
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Jan-26, Fri,08:30	Clear	Rear end	P.D. only	Loose snow	East	Unknown	Unknown	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jun-27, Wed,07:32	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 To: December 31, 2020

Location: SMYTH RD @ GENERAL HOSPITAL E

Traffic Control: Traffic signal

Total Collisions: 18

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2018-Jul-06, Fri,07:29	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Oct-17, Wed,11:10	Clear	Sideswipe	P.D. only	Dry	South	Unknown	Unknown	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Nov-30, Fri,15:32	Clear	Turning movement	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Jan-23, Wed,07:15	Snow	Sideswipe	Non-reportable	Packed snow	East	Changing lanes	Unknown	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Sep-05, Thu,07:57	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Sep-10, Tue,09:00	Clear	Rear end	P.D. only	Dry	West	Going ahead	Truck - dump	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
					West	Unknown	Unknown	Other motor vehicle	
2019-Dec-14, Sat,22:42	Snow	SMV other	P.D. only	Packed snow	East	Going ahead	Automobile, station wagon	Pole (utility, power)	0
2019-Dec-20, Fri,16:22	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Jan-15, Wed,18:00	Clear	Rear end	P.D. only	Dry	South	Going ahead	Municipal transit bus	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Jan-27, Mon,16:09	Clear	Rear end	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2020-Mar-03, Tue,11:30	Clear	Rear end	P.D. only	Loose snow	West	Going ahead	School van	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 To: December 31, 2020

Location: SMYTH RD @ GENERAL HOSPITAL E

Traffic Control: Traffic signal

Total Collisions: 18

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2020-Mar-10, Tue,09:10	Rain	Sideswipe	P.D. only	Wet	East	Going ahead	Unknown	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	

Location: SMYTH RD @ SOUTH HAVEN PL/GENERAL HOSPITAL ENTRANCE W

Traffic Control: Traffic signal

Total Collisions: 17

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Jun-10, Fri,09:15	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2016-Jul-07, Thu,11:24	Clear	Rear end	Non-fatal injury	Dry	West	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					West	Stopped	Passenger van	Other motor vehicle	
					West	Stopped	Pick-up truck	Other motor vehicle	
2016-Sep-17, Sat,15:43	Rain	Rear end	Non-fatal injury	Wet	West	Going ahead	Municipal transit bus	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Dec-07, Wed,14:34	Clear	Sideswipe	Non-fatal injury	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Dec-09, Fri,07:11	Snow	Rear end	P.D. only	Ice	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2017-Jan-27, Fri,09:43	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Jun-27, Tue,12:44	Clear	Turning movement	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 To: December 31, 2020

Location: SMYTH RD @ SOUTH HAVEN PL/GENERAL HOSPITAL ENTRANCE W

Traffic Control: Traffic signal

Total Collisions: 17

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Jun-27, Tue,13:43	Rain	Turning movement	P.D. only	Wet	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
2017-Aug-06, Sun,19:50	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Nov-03, Fri,19:44	Clear	Turning movement	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Bus (other)	Other motor vehicle	
2018-Nov-07, Wed,18:00	Rain	Rear end	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jan-07, Mon,08:35	Clear	Turning movement	P.D. only	Ice	West	Turning left	Passenger van	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jan-22, Tue,10:40	Clear	Angle	P.D. only	Packed snow	East	Going ahead	Unknown	Other motor vehicle	0
					North	Going ahead	Passenger van	Other motor vehicle	
2019-Aug-12, Mon,14:40	Clear	Sideswipe	P.D. only	Dry	East	Unknown	Unknown	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Nov-29, Fri,16:49	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Dec-04, Wed,09:50	Snow	Rear end	P.D. only	Wet	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Sep-29, Tue,19:59	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	



EXP Services Inc.

Project Number: MRK-21023468-A0

Date: 02/11/2022

Appendix D – 2011 Origin-Destination Survey (Alta Vista)

Alta Vista

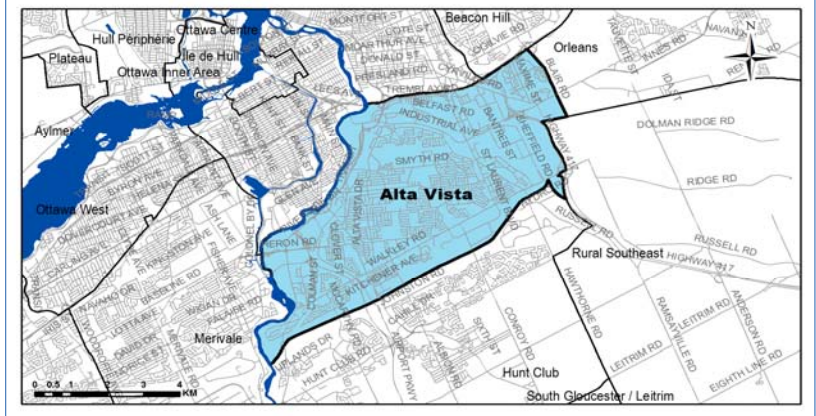
Demographic Characteristics

Population	74,770	Actively Travelled	59,190
Employed Population	32,910	Number of Vehicles	37,270
Households	32,590	Area (km ²)	38.5

Occupation Status (age 5+)	Male	Female	Total
Full Time Employed	15,840	12,940	28,780
Part Time Employed	1,660	2,470	4,130
Student	8,130	8,750	16,870
Retiree	6,200	8,840	15,030
Unemployed	1,200	950	2,150
Homemaker	50	2,150	2,200
Other	630	900	1,530
Total:	33,700	36,990	70,700

Traveller Characteristics	Male	Female	Total
Transit Pass Holders	7,620	9,140	16,760
Licensed Drivers	25,060	24,810	49,870
Telecommuters	140	60	200
Trips made by residents	92,440	98,770	191,210

Selected Indicators	
Daily Trips per Person (age 5+)	2.70
Vehicles per Person	0.50
Number of Persons per Household	2.29
Daily Trips per Household	5.87
Vehicles per Household	1.14
Workers per Household	1.01
Population Density (Pop/km ²)	1940

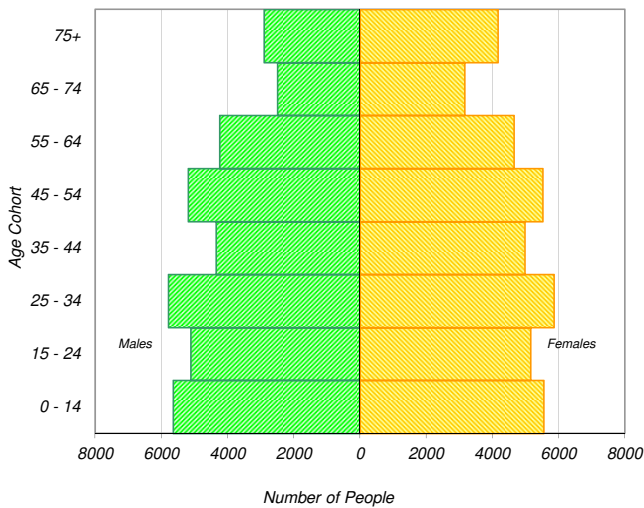


Household Size		
1 person	10,780	33%
2 persons	11,010	34%
3 persons	4,790	15%
4 persons	3,880	12%
5+ persons	2,130	7%
Total:	32,590	100%

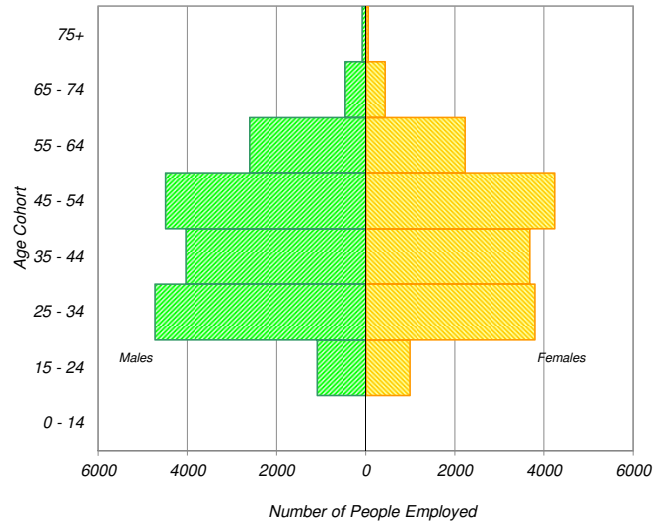
Households by Vehicle Availability		
0 vehicles	6,320	19%
1 vehicle	16,930	52%
2 vehicles	8,030	25%
3 vehicles	1,030	3%
4+ vehicles	290	1%
Total:	32,590	100%

Households by Dwelling Type		
Single-detached	12,320	38%
Semi-detached	1,790	5%
Townhouse	4,700	14%
Apartment/Condo	13,780	42%
Total:	32,590	100%

Population



Employed Population

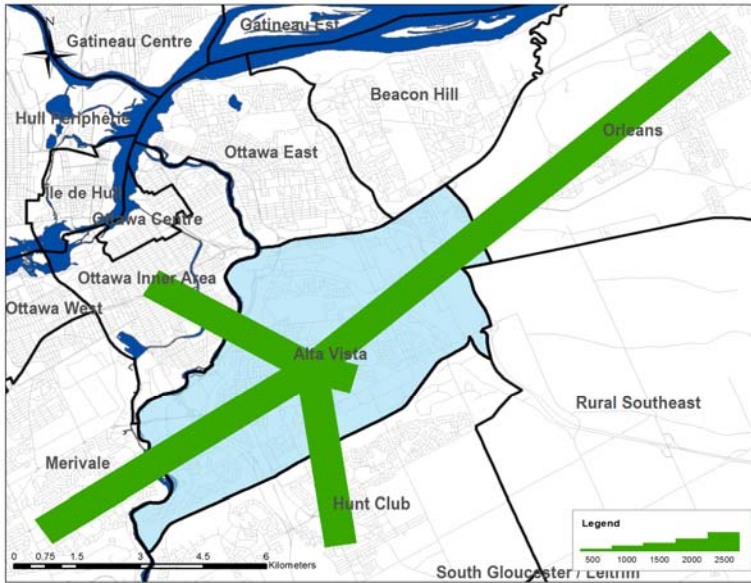


* In 2005 data was only collected for household members aged 11+ therefore these results cannot be compared to the 2011 data.

Travel Patterns

Top Five Origins of Trips to Alta Vista

AM Peak Period



Summary of Trips to and from Alta Vista

AM Peak Period (6:30 - 8:59)

Districts	Destinations of Trips From		Origins of Trips To	
	District	% Total	District	% Total
Ottawa Centre	4,180	10%	680	1%
Ottawa Inner Area	4,970	12%	4,270	7%
Ottawa East	1,940	5%	2,370	4%
Beacon Hill	2,690	7%	1,850	3%
Alta Vista	16,220	39%	16,220	27%
Hunt Club	1,980	5%	7,990	13%
Merivale	3,010	7%	3,690	6%
Ottawa West	1,160	3%	1,550	3%
Bayshore / Cedarview	830	2%	2,330	4%
Orléans	1,050	3%	5,890	10%
Rural East	110	0%	430	1%
Rural Southeast	140	0%	1,550	3%
South Gloucester / Leitrim	160	0%	1,970	3%
South Nepean	460	1%	2,360	4%
Rural Southwest	160	0%	690	1%
Kanata / Stittsville	660	2%	1,810	3%
Rural West	20	0%	180	0%
Île de Hull	710	2%	190	0%
Hull Périphérie	360	1%	420	1%
Plateau	0	0%	680	1%
Aylmer	40	0%	480	1%
Rural Northwest	40	0%	300	1%
Pointe Gatineau	20	0%	740	1%
Gatineau Est	220	1%	270	0%
Rural Northeast	10	0%	320	1%
Buckingham / Masson-Angers	10	0%	70	0%
Ontario Sub-Total:	39,740	97%	55,830	94%
Québec Sub-Total:	1,410	3%	3,470	6%
Total:	41,150	100%	59,300	100%

Trips by Trip Purpose

24 Hours	From District		To District		Within District	
Work or related	22,370	15%	46,540	31%	10,770	13%
School	8,550	6%	8,090	5%	6,440	8%
Shopping	16,500	11%	16,600	11%	14,550	17%
Leisure	11,940	8%	13,340	9%	7,720	9%
Medical	2,990	2%	7,860	5%	2,380	3%
Pick-up / drive passenger	9,390	6%	9,900	6%	6,990	8%
Return Home	75,570	50%	44,070	29%	33,060	39%
Other	4,870	3%	6,050	4%	3,240	4%
Total:	152,180	100%	152,450	100%	85,150	100%

AM Peak (06:30 - 08:59)	From District		To District		Within District	
Work or related	13,920	56%	28,300	66%	5,390	33%
School	5,340	21%	7,330	17%	5,600	35%
Shopping	510	2%	530	1%	320	2%
Leisure	570	2%	990	2%	480	3%
Medical	500	2%	1,760	4%	460	3%
Pick-up / drive passenger	1,790	7%	2,490	6%	2,110	13%
Return Home	1,380	6%	730	2%	910	6%
Other	910	4%	940	2%	930	6%
Total:	24,920	100%	43,070	100%	16,200	100%

PM Peak (15:30 - 17:59)	From District		To District		Within District	
Work or related	820	2%	1,340	5%	740	4%
School	550	1%	90	0%	70	0%
Shopping	3,920	9%	3,630	13%	2,830	14%
Leisure	2,550	6%	2,440	9%	1,580	8%
Medical	260	1%	670	2%	300	2%
Pick-up / drive passenger	3,310	7%	2,550	9%	2,390	12%
Return Home	31,900	72%	15,950	57%	11,310	58%
Other	1,270	3%	1,230	4%	440	2%
Total:	44,580	100%	27,900	100%	19,660	100%

Peak Period (%)	Total:	% of 24 Hours	Within District (%)
24 Hours	389,780		22%
AM Peak Period	84,190	22%	19%
PM Peak Period	92,140	24%	21%

Trips by Primary Travel Mode

24 Hours	From District		To District		Within District	
Auto Driver	92,240	61%	92,670	61%	43,390	51%
Auto Passenger	24,030	16%	24,040	16%	13,430	16%
Transit	27,890	18%	27,220	18%	6,520	8%
Bicycle	2,180	1%	2,110	1%	1,390	2%
Walk	1,440	1%	1,510	1%	15,170	18%
Other	4,420	3%	4,890	3%	5,260	6%
Total:	152,200	100%	152,440	100%	85,160	100%

AM Peak (06:30 - 08:59)	From District		To District		Within District	
Auto Driver	12,430	50%	26,810	62%	6,330	39%
Auto Passenger	3,040	12%	5,100	12%	2,500	15%
Transit	7,540	30%	7,300	17%	1,700	10%
Bicycle	750	3%	750	2%	340	2%
Walk	280	1%	280	1%	3,210	20%
Other	880	4%	2,850	7%	2,140	13%
Total:	24,920	100%	43,090	100%	16,220	100%

PM Peak (15:30 - 17:59)	From District		To District		Within District	
Auto Driver	28,570	64%	15,990	57%	9,640	49%
Auto Passenger	5,930	13%	4,230	15%	3,570	18%
Transit	7,460	17%	6,420	23%	1,500	8%
Bicycle	630	1%	610	2%	470	2%
Walk	340	1%	310	1%	3,280	17%
Other	1,660	4%	340	1%	1,210	6%
Total:	44,590	100%	27,900	100%	19,670	100%

Avg Vehicle Occupancy	From District		To District		Within District	
24 Hours	1.26		1.26		1.31	
AM Peak Period	1.24		1.19		1.39	
PM Peak Period	1.21		1.26		1.37	

Transit Modal Split	From District		To District		Within District	
24 Hours	19%		19%		10%	
AM Peak Period	33%		19%		16%	
PM Peak Period	18%		24%		10%	