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 – Analysis 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 northeast corner of the Ring Road (E-W) and Emergency Access Road Intersection as shown in ***Figure 1***. The new parking garage is anticipated to house 1,083 parking spaces. Throughout this report the parking garage is considered to be the proposed development. The 1D4C building will have a separate and subsequent TIA completed and it will address the trip generation and travel impacts associated with it.

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 1,083 parking spaces. On its opening, the parking garage will replace existing surface parking lots currently used to service existing hospital trips. These surface parking lots will be displaced by the parking garage and the 1D4C building construction. However, given a pent-up demand for CHEO staff parking passes and room within the new garage to accommodate them before the occupation of the 1D4C building, some new vehicle trips will be generated. As a result, building the new parking garage will create more than 60 new vehicle trips; thus, it triggers 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 an existing surface parking lot currently in that location. It is anticipated that the 1D4C building will be occupied by 2027. As part of this expansion, a new 33,500 m^2 parking garage will also be constructed within the CHEO campus and it represents the "proposed development" in this TIA.

The parking garage will be constructed in 2024, prior to the 1D4C expansion that is expected to be complete by 2027. **Table 1** shows the breakdown of existing visitor/parking spaces in Lot B, Lot E and the new parking garage building.

Table 1: Parking Space Breakdown

Parking Facility	Staff Parking Spaces	Visitor Parking Spaces
Lot B	286	-
Lot E	-	270
New parking Garage	769	314

It should be noted that the current number of visitor parking spaces provided in Lot E is less than the amount that will be provided on the first two levels of the new parking garage. In addition, if the demand for visitor parking exceeds the available spaces, additional visitor parking will be permitted on the remaining upper levels of the new parking garage.

The parking garage will be 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 structure that houses 1,083 parking spaces, including and open-air roof level. 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.

On it's opening, the parking garage will replace Lot E, an existing 270 stall gravel visitor parking lot, and Lot B, an existing 286 stall staff parking lot, which will be displaced by the 1D4C building. ***Figure 2*** illustrates the parking lot impact due to the parking garage and the future 1D4C building construction.

Figure 2: Parking Facilities

The site is currently zoned as Major Institutional (I2) Zone. The purpose of the Zone I2 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 and/or service;
- 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 2 outlines the proposed land uses that will be referenced for this analysis as identified and obtained from the Institute of Transportation Engineer's (ITE) *Trip Generation Manual 11th Edition*. Please note that the parking garage is not anticipated to generate any new trips on its own but will facilitate the need for a pent-up demand that will generate new auto trips to the campus. There are up to 360 staff on an existing parking waitlist. It is assumed spare spaces in the parking garage will be filled by this waitlist. Information provided by the Trip Generation Manual with assist in identifying the share of the 360 staff parking volumes occurring at the peak travel times and the splits in and out of the garage.

Table 2: Proposed Land Use

Land Use Code	Size	Land Use
610	33,500 m^2	Hospital

Due to the 24/7 nature of hospital operations, staff will arrive during different periods of time throughout the day. While there will be an opportunity to accommodate more than 360 staff on an existing staff parking waitlist, the proposed parking garage is intended only to replace existing surface parking lots that will be removed and meet the minimum zoning by-law requirement for the proposed 1D4C development. There will be no oversupply of parking and we do not anticipate that the proposed parking structure will compromise long-term transportation demand management and sustainable mode share goals for the hospital campus. Such objectives can continue to be met by staff parking policy and pricing that continues to favour the use of public transit and alternative modes of travel.

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. Although an analysis of all intersections identified below has been undertaken, the focus of the TIA is to address the operation of those intersections that fall under the jurisdiction of the City of Ottawa and not those on the hospital road network.

- 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. Two signalized intersections serve the overall hospital and medical campus (CHEO/Ottawa General Hospital): Smyth Road / Ring Road (N-S) / South Haven Place (more focused to serve CHEO) and Smyth Road / General Hospital Access Road. Smyth Road / Ring Road (N-S) / South Haven Place features no turn lanes on Smyth Road. Smyth Road / General Hospital Access Road (more focused on serving OGH) 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 road with a posted speed of 50 km/h that circles 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, 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 its south side.

The existing lane configuration and traffic controls for the study area road network are presented in ***Figure*** 3.

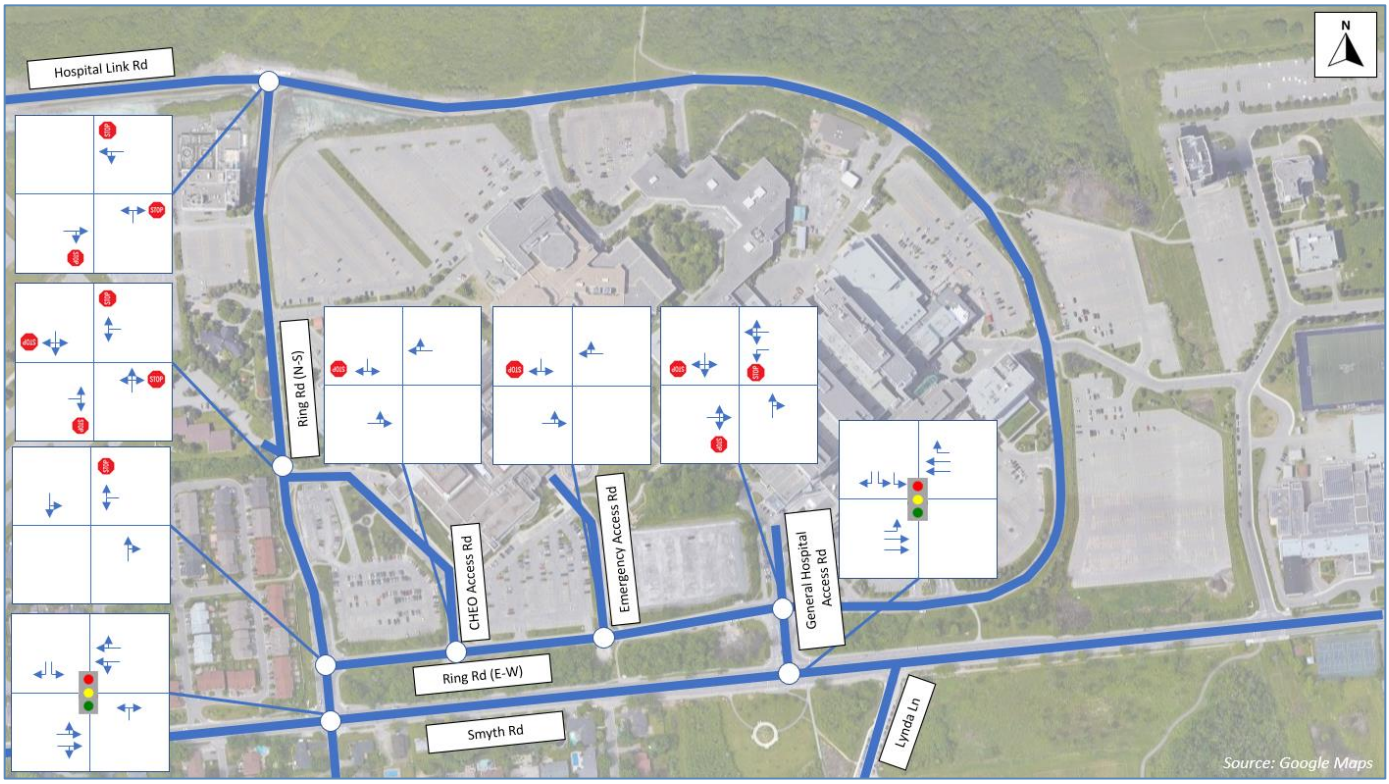


Figure 3: Existing Lane Configuration and Traffic Controls

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.
- Sidewalks are 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 and northbound direction of Ring Road.
- Route 55: Elmvale to Westgate
    - Route 55 is a route that runs between Elmvale and Westgate, stopping at the CHEO front door 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.

- Route 645: Hurdman
    - The first stop of the Route 645 is Smyth / Franco-Cité and the last stop is Hurdman Station stop A. Route 645 is operational during Wednesday, Thursday, and Friday, serving 10 stops and the total trip duration for this route is approximately 20 minute.

Snippets of the four route maps associated with these routes are shown in ***Figure 4***.

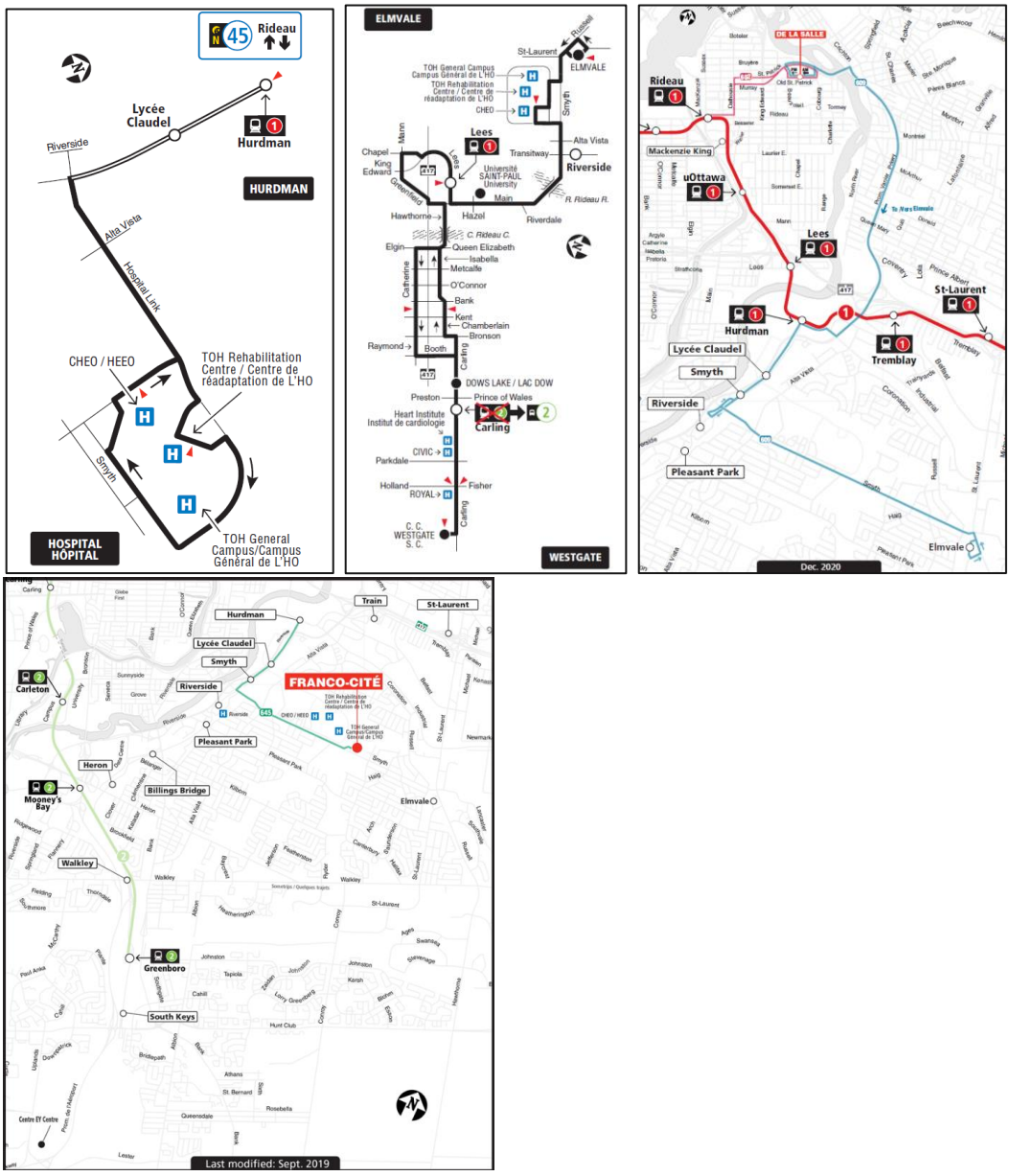


Figure 4: OC Transpo Transit Route Maps 45, 55, 609 and 645

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 Public Works Department or taken from a CHEO expansion traffic study completed by Stantec in September 2022. The Stantec report includes the City of Ottawa's traffic counts data are attached as ***Appendix B***. Turning movement counts were collected during weekday AM and PM peak periods. ***Table 3*** shows the month and year that traffic counts were collected.

Table 3: Collected Turning Movement Counts

Location	Month / Year	Source*
Ring Road (N-S) / Hospital Link Road	February / 2020	Stantec Traffic Study
Ring Road (N-S) / CHEO Access Road	February / 2020	Stantec Traffic Study
Ring Road (N-S) / Ring Road (E-W)	February / 2020	Stantec Traffic Study
Ring Road (N-S) / Smyth Road	October / 2022	City of Ottawa Traffic Count
CHEO Access Road / Ring Road (E-W)	February / 2020	Stantec Traffic Study
Emergency Access Road / Ring Road (E-W)	February / 2020	Stantec Traffic Study
General Hospital Access Road / Ring Road (E-W)	February / 2020	Stantec Traffic Study
General Hospital Access Road / Smyth Road	December / 2019	City of Ottawa Traffic Count

**Stantec Traffic Study is the 1Door4Care: Children's Hospital of Eastern Ontario (CHEO) 1Door4Care Project – Transportation Study (September 2022) prepared by Stantec.*

To develop 2022 traffic volumes, a 1.0 % annual growth rate was applied to the traffic counts collected prior to 2022. To develop the 1.0 % growth rate, the City of Ottawa's long-range model (Exhibit 2.11 of the 2013 TMP) was used to provide the growth rate to/from the inner suburbs between 2011 and 2031.

It should be noted that the growth rate was only applied to traffic along Smyth Road as traffic growth on the CHEO campus is largely based on the expansion of on-site services and facilities. ***Figure 5*** illustrates the existing 2022 traffic volumes at the study area intersections.

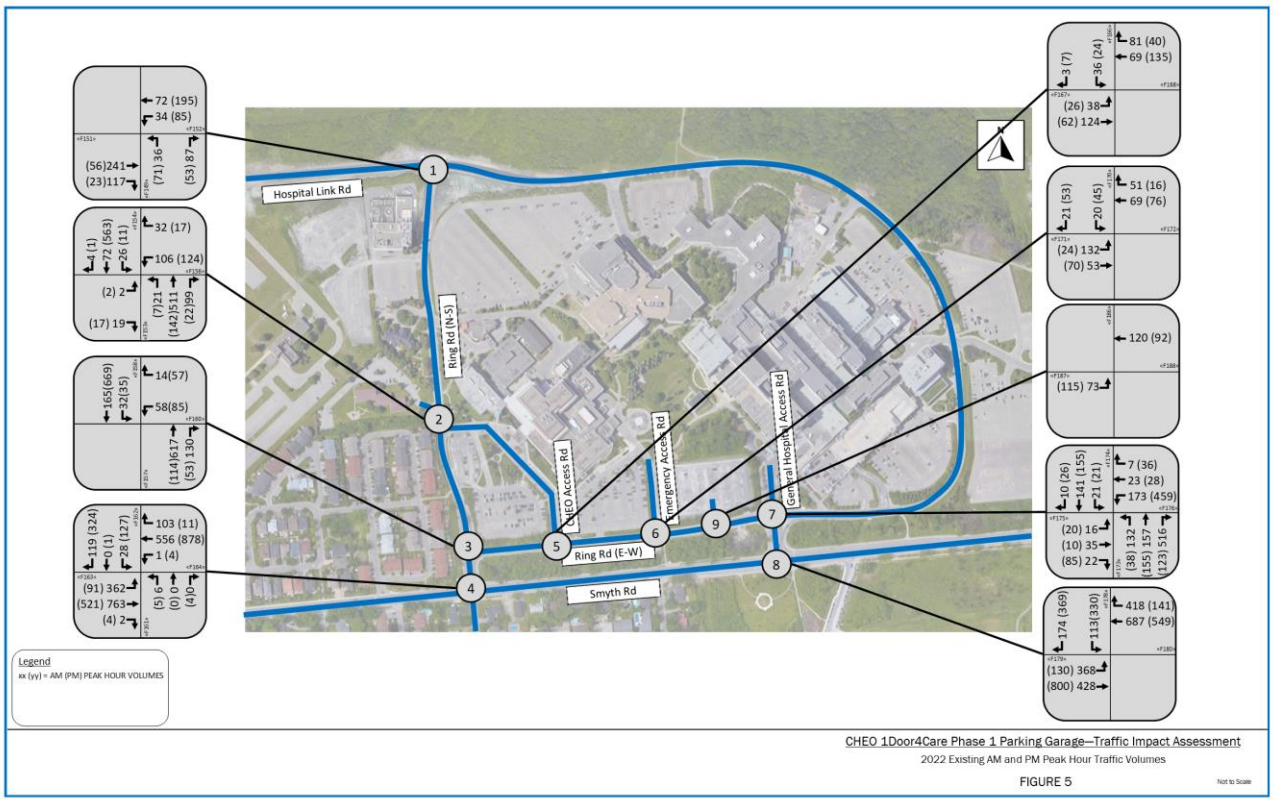


Figure 5: Existing 2022 AM and PM Peak Hour Volumes

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 4*** provides a summary of the collision data. The raw collision data can be found in ***Appendix C***.

Table 4: Collision Data Summary

	Collision Type	Ring Road (N-S) / Smyth Road	General Hospital Access / Smyth Road	Smyth Road between Ring Road (N-S) and General Hospital Access
Total	All	17	18	5
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 4*** 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 transportation 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 5 lists development applications that were identified on the City of Ottawa's *Development Application Search Tool*.

Table 5: 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 6*** and includes the following nine (9) intersections:

- Ring Road (N-S) / Hospital Link Road (City jurisdiction)
- Ring Road (N-S) / CHEO Access Road
- Ring Road (N-S) / Ring Road (E-W)
- Ring Road (N-S) / Smyth Road (City jurisdiction)
- 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 (City jurisdiction)

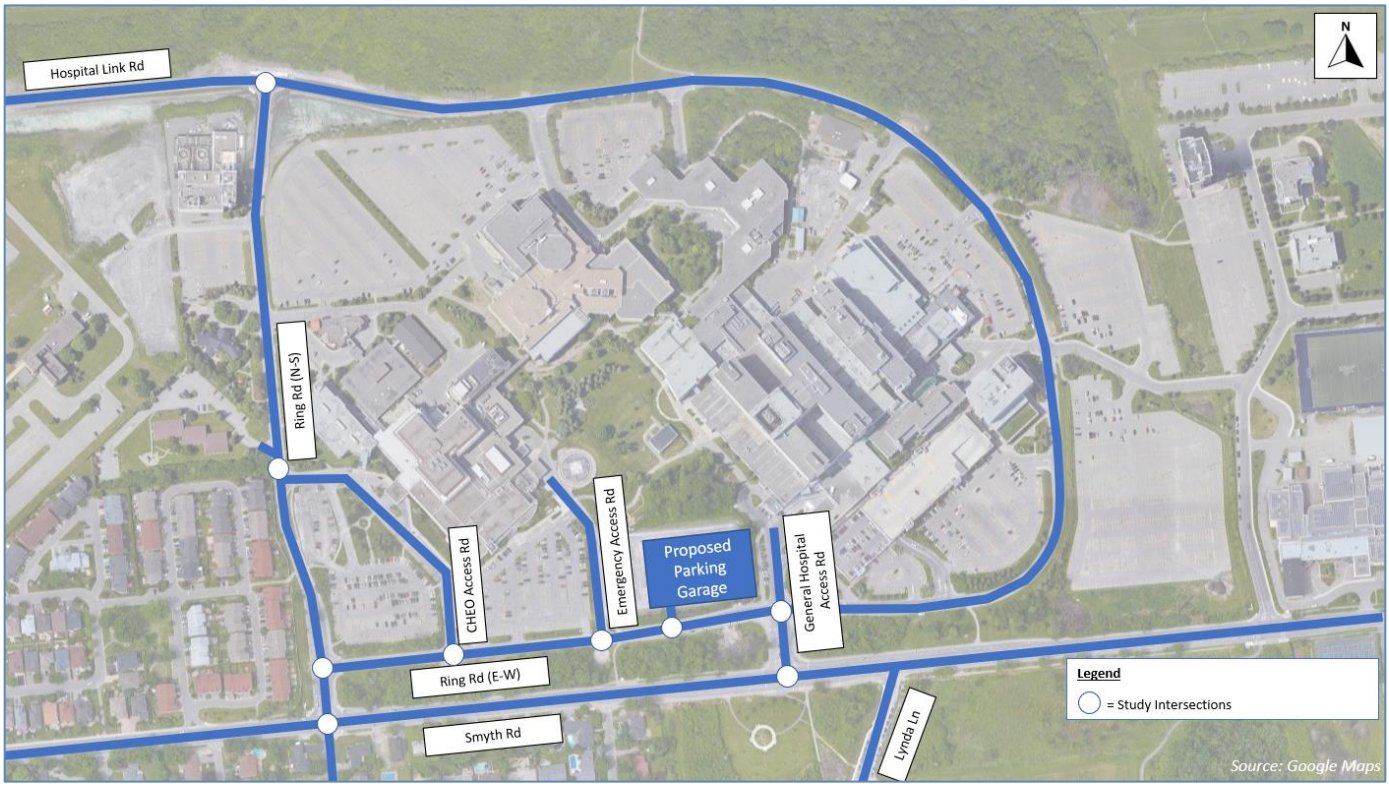


Figure 6: Study Area Intersections

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 future total conditions (parking garage build-out)

A future separate TIA that evaluates the 1D4C building impacts will be completed at a subsequent date. As the 1D4C building will be built within three years of the parking garage opening the 5-year future horizon period is not being analyzed as part of this TIA. That time period will be reflected on and addressed in the 1D4C building TIA.

2.3 Exemption Review

The Exemptions Review table from the City of Ottawa Transportation Impact Assessment Guidelines is summarized below in ***Table 6***. 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 6: Exemptions Review

Module	Element	Exemption Considerations	Exempt? (Yes/No)
Design Review Component			
4.1. Development Design	4.1.2. Circulation and Access	Only required for site plans	No
	4.1.3. New Street Networks	Only required for plans of subdivisions	Yes
4.2. Parking	4.2.1. Parking Supply	Only required for site plans	No
	4.2.2. Spillover Parking	Only required for site plans where parking is 15% below unconstrained demand	No
Network Impact Component			
4.5. 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
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	Yes
4.8. 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

Trip generation for this TIA is unique in that the number of staff parking passes available through CHEO will dictate the number of new trips being generated with the introduction of the parking garage. The remaining trips destined to the parking garage will include those form the displaced parking lots due to construction. These trips already exist and will form part of the background volumes. There will be minimal additional visitor parking spaces. Despite knowing the number of parking passes available, further information is still required to determine the distribution of those trips through out the day and within the peaks needs to be determined as does the split of trips into and out of the garage.

Table 7 outlines the proposed rates that will be applied to the new parking pass staff. Rates were obtained from the Institute of Transportation Engineer's (ITE) *Trip Generation Manual 11th Edition*. It was assumed Code 610 – Hospital would be the most appropriate proposed land use.

As previously stated, the parking garage is not anticipated to generate any new person trips. However, new trips will come from the 360 staff on an existing parking waitlist. These staff currently use an alternative mode (transit, vehicle passenger, cycle, or walk) or park their vehicles outside the hospital campus in the adjacent neighborhoods. With the construction of the parking garage, it is anticipated there will be a modal shift from transit / vehicle passenger /cycling / walking to driving as parking spaces in the parking garage will be filled by this waitlist.

Furthermore, the Ottawa General Hospital and CHEO have separate parking facilities with on-site signage that directs drivers to their own facilities. Visitors will follow the signs, so it is anticipated that no further trips will be generated. For staff parking, each of the two hospitals manage their own parking structure and they cater exclusively to their own staff. Given this, we do not see those attending OGH to use the CHEO parking structure and vice versa.

Table 7: Trip Generation Rates

Land Use Code	Employees	Peak Hour	Vehicle Trip Rate Per Employee	Entering	Exiting
Hospital (610)	360	AM Peak Hour of Generator	0.28	72%	28%
Hospital (610)	360	PM Peak Hour of Generator	0.28	30%	70%

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 vehicle trips. When a TIA is completed for the CHEO facility, mode share targets can be further explored.

Vehicle Trip Generation

Using the rates noted in ***Table 7*** *above*, EXP estimated the number of site-generated auto-trips. The estimated site-generated auto trips are shown in ***Table 8***. Also, the City of Ottawa's typical method of calculating person-trips was not completed as the proposed development is a parking garage and will only serve auto trips.

Table 8: Site-Generated Trips

Land Use Code	Trip Type	Weekday AM Peak Hour			Weekday PM Peak Hour		
		Total	In	Out	Total	In	Out
Hospital (610)	Auto Trips	101	73	28	101	30	71

While 360 staff are on the parking waitlist, the ITE auto trip rate was still applied to the number of employees as all vehicle trips are not anticipated to occur during the peak hours and are expected to be spread throughout the day. It should be noted that the 360 staff on the waitlist for future parking use were assumed to be spread out throughout the day due to the nature of shift work schedules. The first two floors of the new parking garage provide spaces for visitors this will accommodate the existing visitor parking spaces being eliminated in the future. A total of 770 of staff parking spaces will be provided.

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 are presented in ***Table 9***.

Table 9: Trip Distribution Percentages

	Intersection	Movement	AM Peak Hour %	PM Peak Hour %
Entering	Smyth Road / South Haven Place	Eastbound left	30	26
	Smyth Road / General Hospital Access Road	Eastbound left	10	10
	Smyth Road / General Hospital Access Road	Westbound right	47	55
	Hospital Link Road / Ring Road (N-S)	Eastbound right	13	9
Exiting	Smyth Road / South Haven Place	Southbound right	10	30
		Westbound through	6	14
	Smyth Road / General Hospital Access Road	Southbound left	64	46
	Hospital Link Road / Ring Road (N-S)	Northbound left	20	10

The AM and PM peak hour site-generated traffic distribution are presented by cardinal direction in **Figure 7**.

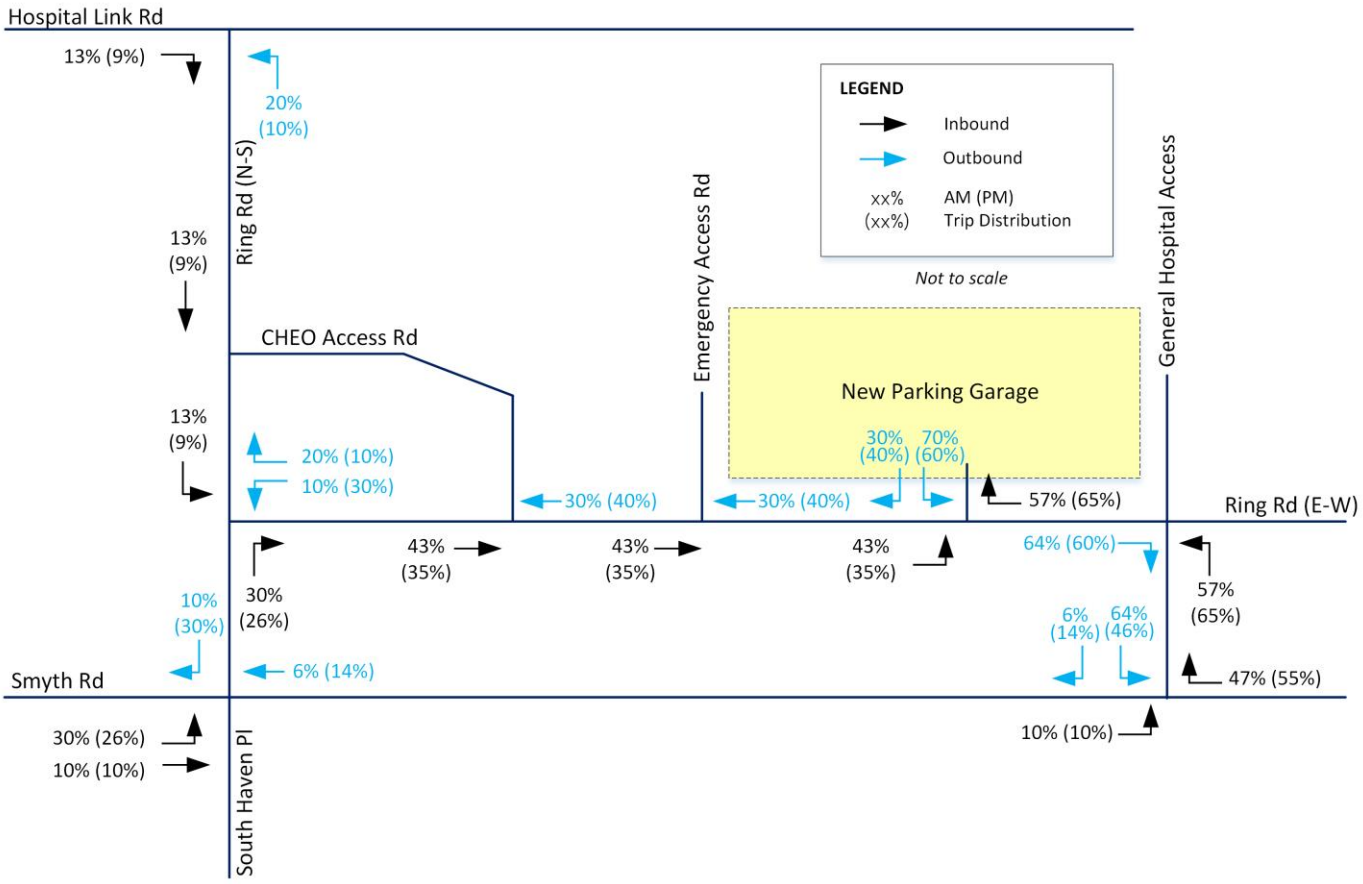


Figure 7: AM and PM Peak Hour Site Generated Trips Distribution

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 8***.

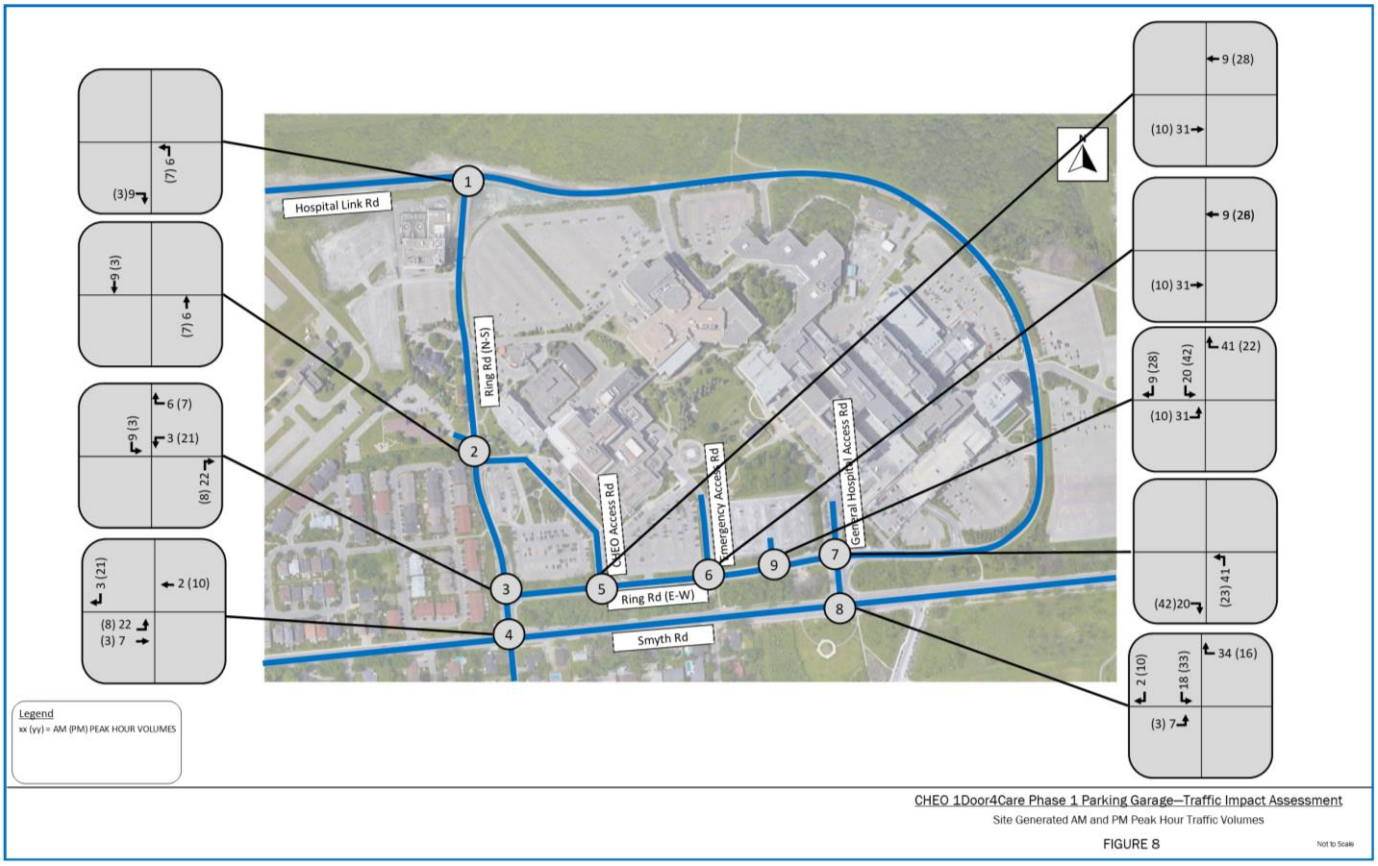


Figure 8: AM and PM Peak Hour Site Generated Trips

3.2 Background Network Travel Demands

3.2.1 Transportation Network Plans

Transportation network 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 1.0 % annual growth rate was applied to the 2022 traffic volumes.

To develop the 1.0 % 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 9*** illustrates the Background 2024 AM and PM peak hour traffic volumes at the study area intersections. ***Figure 10*** 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 5***. 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 and have been considered as part of the background growth (i.e., the 1.0 % annual growth rate applied).

3.2.4 Redistribution of Displaced Parking Trips

With the parking garage and 1D4C displacing existing surface parking lots (Lot B and E), those lot trips were reassigned on the internal road network to the parking garage.

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. It should be noted that the Ottawa Hospital is currently in the early stages of developing a TDM program for its various campuses. Partnering with The Ottawa Hospital for shared TDM measures such as a joint TDM program coordinator should be considered.

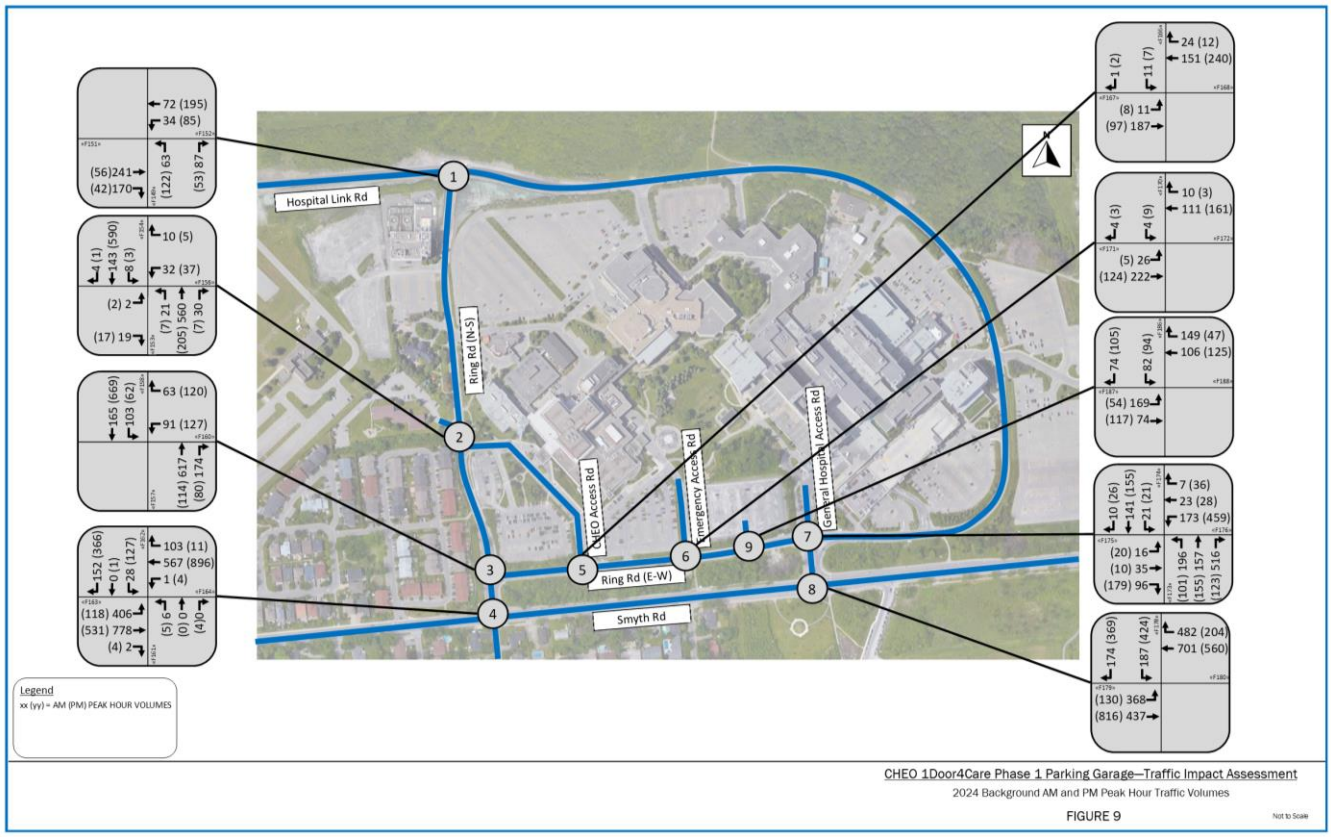


Figure 9: 2024 Background AM and PM Peak Hour Traffic Volumes

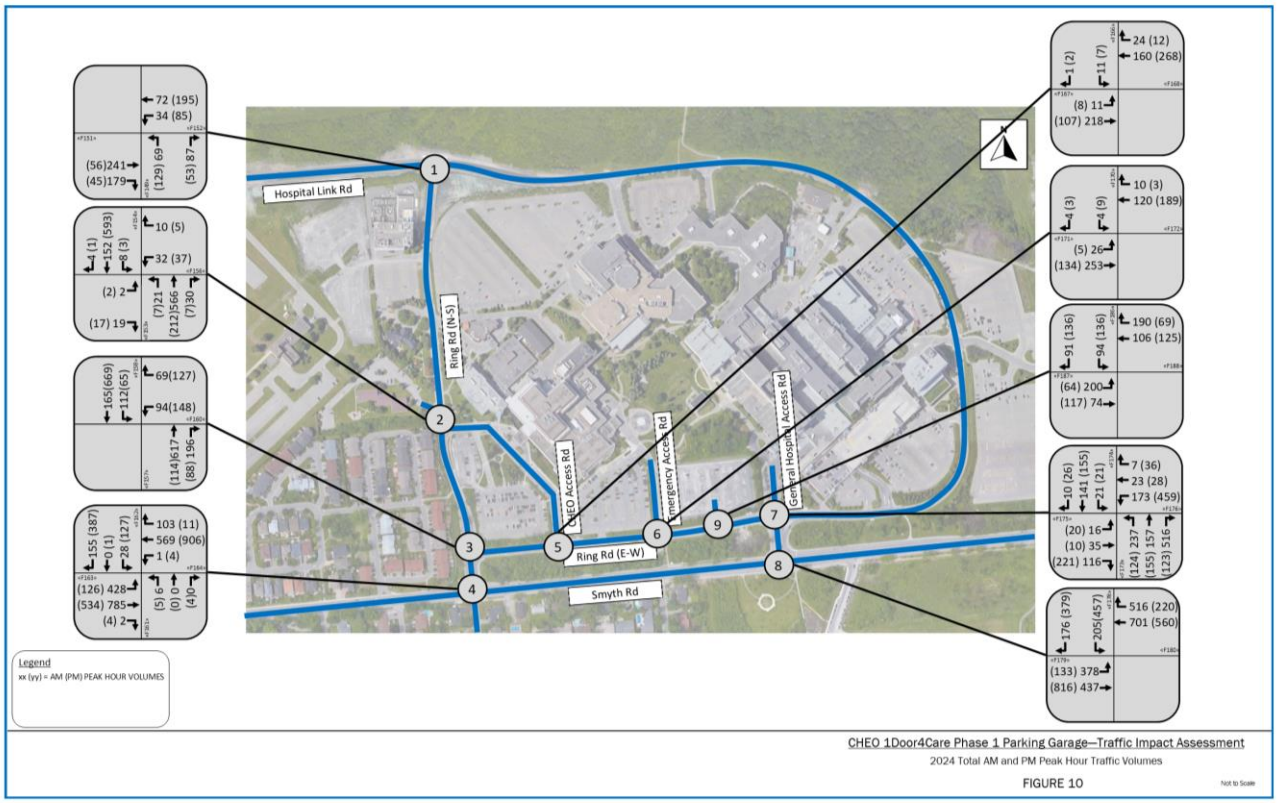


Figure 10: 2024 Total AM and PM Peak Hour Traffic Volumes

4. Analysis

4.1 Development Design

The proposed development and its transportation network elements were reviewed in order to ensure that a safe and efficient design has been proposed that will encourage walking, cycling, and transit use.

Pedestrian facilities will be provided between the proposed parking garage building entrance and the CHEO hospital facilities. A connection to the sidewalk along Ring Road (E-W) will be provided, as shown on the site plan. Sidewalks will be depressed and continuous across the study area road network, in accordance with City standards.

. A copy of the proposed site plan is included in ***Appendix E***.

OC Transpo's service will not have its riders destined to the parking garage so the associated design features for transit do not come into play. However, if one feels they should be in play, the guidelines for peak period service to provide service within a five minute (400m) walk of the proposed development should be confirmed. Stops #1806, #1808, $7044, #7072 and #7234 are all located within 400m actual walking distance (measured using legal crosswalks) of the proposed development. As stated previously, the nearest bus stops to the subject site are described in ***Section 2.1.2*** and shown in ***Figure 4***.

A review of the Transportation Demand Management (TDM) – Supportive Development Design and Infrastructure Checklist has been conducted. A copy of the TDM checklist is included in ***Appendix F***. All required TDM-supportive design and infrastructure measures in the TDM checklist are met.

4.1.1. Circulation and Access

For the purposed the proposed development will only consist of a parking garage building, loading or short-stay delivery service facilities are not expected to accommodate on the adjacent public street. The development Site Plans show the design of the developments access road which allows for large fire trucks to enter from Ring Road (E-W) without encroaching any curb line while turning. Municipal services such as waste disposal are expected to have no significant impact.

The turning movements of a fire truck, City transit bus, and a passenger vehicle around the boundary street are shown in ***Appendix G.***

4.2 Parking

The parking garage itself does not generate a need for parking. It is the medical related buildings on campus that generate the parking needs. However, if one was to apply the by-law rates to identify parking requirements the following would come into play. The subject site is located in Area C on Schedule 1 and 1A of the City of Ottawa's Zoning By-Law. Minimum vehicular and bicycle parking rates for the proposed uses are identified and are summarized in the following ***Table 10***.

Table 10: Parking Requirement Per Zoning By-Law

Land Use	Rate	Units/GFA	Required
Minimum Vehicle Parking			
Hospital	0.7 per 100 m^2 of gross floor area	33,500 m^2	234.5
		Proposed Vehicle Parking	**1,050 Total**
Minimum Bicycle Parking			
Hospital	1 per 1,000 m^2 of gross floor area	33,500 m^2	33.5
		Proposed Bicycle Parking	**40 Total**

The proposed development will include 1,083 parking spaces in a parking garage accessible via Ring Road (E-W), meeting the minimum Zoning By-law 2008-250 Consolidation parking requirements. As the proposed supply of on-site parking meets or exceeds the By-law requirement, no further review of vehicular parking is required.

As was the case for vehicle parking, bicycle parking would not apply for a parking garage. However, if bicycle parking was calculated for the garage the proposed development will include a total of 40 bicycle parking spaces, meeting the minimum Zoning By-law 2008-250 Consolidation parking requirements for all land uses in the Site Plan.

The TIA guidelines identify the need to review spillover parking when the parking supply is 15% below demand. As the 1,083 proposed parking spaces exceeded the required demand, a review of spillover parking is not required for the TIA.

4.3 Boundary Street Design

This section provides a review of the boundary streets using complete streets principles. The Multi-Modal Level of Service (MMLOS) guidelines produced by IBI Group in October 2015 were used to evaluate the levels of service for the boundary roadways for each mode of transportation. Schedule B of the City of Ottawa's Official Plan identifies entire study area road networks as being within the General Urban Area.

Targets for Pedestrians, Bicyclists, Transit, and Truck LOS for the boundary roadways adhere to those outlined in Exhibit 22 of the MMLOS guidelines. The boundary streets review evaluates the MMLOS for all boundary roadways based on existing conditions. ***Table 11*** summarizes the findings of the Segment MMLOS for Existing (2022) conditions.

Table 11: Segment MMLOS – Existing (2022) Conditions

	LEVEL OF SERVICE BY MODES			
Segments	**Pedestrian (PLOS)**	**Bicyclist (BLOS)**	**Transit (TLOS)**	**Truck (TkLOS)**
Emergency Access Road	B	C	D	C
General Hospital Access Road	B	C	D	C
Ring Road (E-W)	F	B	E	C
Target	**C**	**B**	**D**	**E**

The letters identified in red do not meet the MMLOS targets for their designated area. Given the development is an urban general area, the target level of service for pedestrians and bicyclist is high (PLOS 'C' and BLOS 'B'). As shown in ***Table 11***, the target levels of service for pedestrians and transit are not met for Ring Road (E-W), however this is only a temporary condition and is expected to be significantly improved prior to the horizon year of this study with the development of the 1D4C building construction with surrounding road and landscape updates.

The results of the Segment MMLOS for Future build out conditions are shown in **Table 12** with the detail design adjacent to the parking garage entrance. Detailed Segment MMLOS calculations can be found in ***Appendix H***.

Table 12: Segment MMLOS – Future (beyond 2024) Conditions

	LEVEL OF SERVICE BY MODES			
Segments	**Pedestrian (PLOS)**	**Bicyclist (BLOS)**	**Transit (TLOS)**	**Truck (TkLOS)**
Emergency Access Road	A	A	D	C
General Hospital Access Road	A	A	D	C
Ring Road (E-W)	A	A	E	C
Target	**C**	**B**	**D**	**E**

As part of the proposed improvements included with the MUPs and concrete bus shelter on Ring Road (E-W), both Pedestrian PLOS and Bicycle BLOS targets were improved on all boundary streets. However, both transit and truck level of service remains the same from existing conditions. For transit, the only improvement affecting transit users is increased concrete space at the bus stops, which is also more of a pedestrian improvement.

According to the City of Ottawa's Cycling Network Plan, Ring Road is not in the included in any regional cycling facilities. Ring Road is a private roadway which is part of the hospital campus and is intended to serve the local needs. Nonetheless, a MUP is proposed on one side of the Ring Road and will be part of the future hospital campus sustainable transportation network. It should be noted that the detailed design of the proposed turning lanes along Ring Road (E-W) will be finalized as part of the detail design process.

Transportation Association of Canada (TAC) Geometric Design Guidelines suggest a minimum spacing of 60m between adjacent intersections along a collector roadway. The proposed parking garage access is located 60m east of the existing Ring

Road (E-W)/ Emergency Access intersection, measured centreline to centreline, meeting the requirements of TAC.Emergency vehicles must have adequate, unobstructed access to the emergency department building. The new turning lanes proposed along Ring Road will enhance the traffic condition. With these turn lanes, delay time to through traffic can be significantly reduced, lead to improve safety. Center refuge island is provided at the east leg of the Emergency Access intersection which clearly divides road with an island at the crosswalk along Ring Road (E-W) will also ensure pedestrian's priority and safety, as well as the motorists who will use the network adjacent to the parking garage.

4.4 Access Intersections Design

The proposed parking garage building will be served by one entry/exit (allowing for two lane egress / two lane ingress) along Ring Road (E-W).

Section 25 (c) of the City of Ottawa's Private Approach By-Law identifies a requirement for two-way accesses driveway to have a width no greater than 9 m, as measured at the street line. Section 107 (1)(a) of the Zoning By-Law identifies a minimum width requirement of 6.7 m for a two-way driveway to a parking lot. The proposed access on Ring Road is approximately 15 m in width, measured at the property line, thereby meeting the requirements.

Section 25 (o) of the Private Approach By-Law identifies a requirement to provide a minimum spacing of 3 m between the nearest edge of the private approach and the property line, as measured at the street line. Due to the proximity of the site to the intersection of the Ring Road and Emergency Access Road it was suggested that the access to the subject property be as far east of the Ring Road and Emergency Access Road intersection as possible.

Section 25 (i) and (j) of the City of Ottawa's Private Approach By-law also identifies a requirement to provide a median between two private approaches intended for one-way operation, such median shall have a minimum width of 2 metres. And the length of the median on private property shall be determined by the General Manager.

The private approach to/from Emergency Access Road is to provide access to facilitate maintenance activities in the area. There is one exit lane connecting to the parking garage which will help to improve traffic flow at the main exit lanes of the parking structure. On the south side of this private approach street, there is a snow storage area and generator building for maintenance purposes. During winter maintenance activities, maintenance vehicles may access the site via the private road. As this proposed private access is a dead end, traffic on this roadway is anticipated to be minimal. Side street stop control is recommended on the proposed approach.

At the main garage access, the 12m long throat length accommodates the 95th percentile SimTraffic queue in the two exit lanes. Intersection sight distance (ISD) at the proposed access has been determined using the TAC Geometric Design Guide for Canadian Roads. The ISD for the access, for a design speed of 50 km/h (10 km/h above the posted speed limit), is as follows:

- Left Turn from Ring Road (E-W): 70 m
- Right Turn from Ring Road (E-W): 80 m

The required ISD for a passenger vehicle to turn left of right from the proposed access is shown in ***Figure 11.***

Figure 11: Ring Road (E-W) Access Intersection Sight Distance

The stopping sight distance (SSD) requirement for a design speed of 50 km/h is 65 m for vehicles turning left or right at the access. There is slight horizontal curvature along Ring Road (E-W) east of the proposed building entrance, however, as

demonstrated in ***Figure 11***, the ISD is not impacted. As such, it can be found that the required ISD and SSD at the access are adequate. Available sightlines are within recommended guidelines to allow safe all directional access to the development.

Synchro was utilized to evaluate the storage length of the proposed new turning lanes for eastbound left turn at Emergency Access Road / Ring Road, the eastbound left-turn at Access/Ring Road and the new westbound right-turn lane at Access / Ring Road. To illustrate this, the queue lengths for above three turn movement have been reviewed using SimTraffic (the simulation software that accompanies the Synchro traffic modeling software). The 95th percentile queue length refers to the queue length that accommodates 95% of the observed queues.

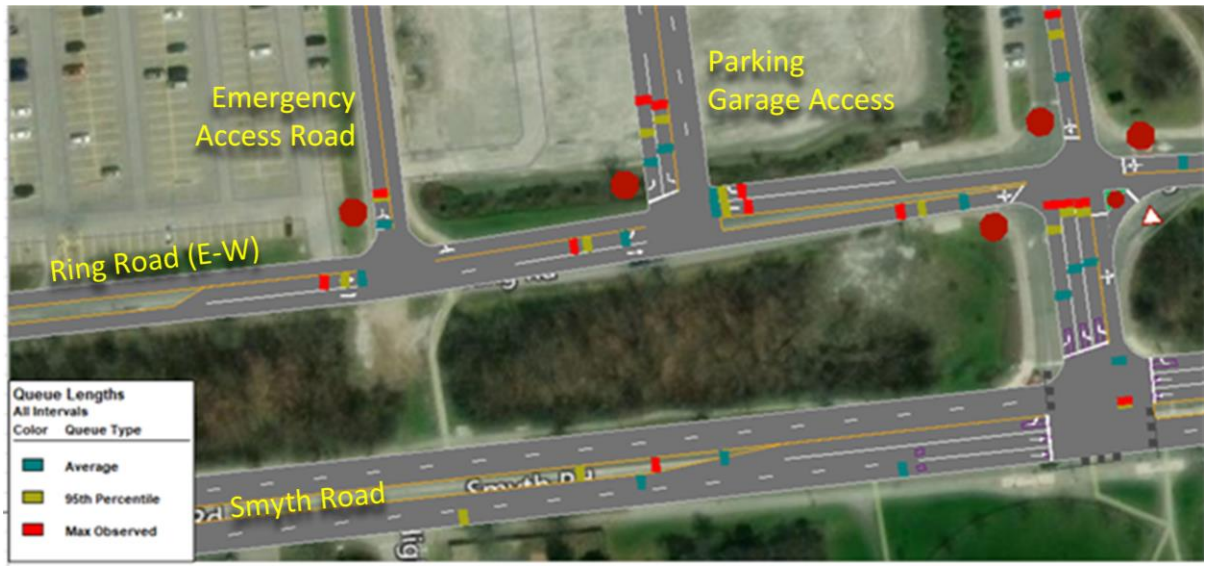


Figure 12: SimTraffic Queue Length Results

Based on the SimTraffic queuing assessment shown in ***Figure 12***, the 95th percentile queue lengths of very few car length which is reflective of the low volumes travelling within the site during the peak hour. This also shows that turning movement at three locations will rarely experience a delayed condition. In considering the above, the storage lengths shown on the site plan are sufficient to accommodate turning traffic along Ring Road (E-W) during both peak hour periods.

4.5 Transit

The transit trips are not anticipated to be generated by the subject parking garage building specifically. As described in ***Section 2.1.2***, OC Transpo routes #45 and #55 travel on 15-minute headways during the weekdays, 30-minute headways during the weekend. The existing transit services in the study area are anticipated to be sufficient to accommodate the demand from the proposed development.

4.6 Intersection Design

4.6.1. Existing Intersection MMLOS Analysis

This section provides a review of the signalized study area intersections using complete streets principles. The MMLOS guidelines produced by IBI Group in October 2015 were used to evaluate the LOS of the signalized study area intersections for each mode of transportation. The policy related area types for the study area intersections are described as follows:

- Smyth Road/Ring Road (N-S): General Urban Area;
- Smyth Road/General Hospital Access Road: General Urban Area.

The following ***Table 13*** summarizes the findings of the MMLOS intersection analysis. Detailed intersection MMLOS calculations are included in ***Appendix I***.

Table 13: Intersection MMLOS Summary

	LEVEL OF SERVICE BY MODES			
Intersection	**Pedestrian (PLOS)**	**Bicyclist (BLOS)**	**Transit (TLOS)**	**Truck (TkLOS)**
Smyth Road/Ring Road (N-S)	D	F	F	F
Target	**C**	C	**D**	**D**
Smyth Road/General Hospital Access Road	D	F	F	A
Target	**C**	**C**	**D**	**D**

Smyth Road/Ring Road (N-S)

There are limited opportunities to improve the current PLOS of each approach without reducing the number of travel lanes or restricting turning movements. The level of comfort can be increased by implementing zebra-striped crosswalks at each approach. There is also limited opportunity in improving the delay score for pedestrians without incurring major delays for vehicles.

MUP has design features that prioritize the safety of pedestrian and bicycle users by separating from the vehicular traffic by providing a dedicated space for pedestrians and cyclists away from motorized vehicles. This separation can increase safety by reducing the risk of collisions and conflicts with buses and trucks. MUP minimize the chances of collisions and improve overall safety for all users.

The BLOS is dependent on the number of travel lanes and operating speed. All approaches do not meet the target BLOS of C. Implementation of MUP on both north and south side on Smyth Road will enhance the cyclist user's convenience and this can be improved to the target of BLOS C.

The north approach does not meet the target TLOS of D. The TLOS is based on the average signal delay experienced by transit vehicles at each approach. The poor TLOS is a result of the average delay which includes travel time from end of queue to entering the intersection, and this will exceed more than 50 seconds at north approach. Reduction of traffic demands at the intersection would improve this level of service as would implementation of some form of transit signal priority such as a queue jump lane. The implementation of continuous bus lanes on Smyth Road would also improve the TLOS beyond the target TLOS of D.

The TkLOS is dependent on the number of lanes in each direction and the curb lane width. TkLOS could be improved to the target of D if the wider turning radii is provided at the south approach.

Smyth Road/General Hospital Access Road

There is limited opportunity in improving the delay score without incurring major delays for vehicles. The east approach has a divided cross-section with median. Regardless of the median on the east approach, there are limited opportunities to improve the current PLOS without reducing the number of travel lanes or restricting turning movements. The level of comfort can be increased by implementing zebra-striped crosswalks on each approach.

As this intersection is a T-intersection, there is no space available to implement a two-stage left-turn bike box for cyclists coming from the west approach. Two-stage left turn bike boxes can be implemented at the north and east approaches. A jug handle and crossride for cyclists coming from the west approach could be implemented along with the installation of a bicycle traffic signal. The implementation of a higher order cycling facility (e.g. cycle track) would improve the BLOS of this intersection based on right turn characteristics.

The north approach does not meet the target TLOS of D. The TLOS is based on the average signal delay experienced by transit vehicles on each approach. The poor TLOS is a result of the average delay which includes travel time from end of queue to entering the intersection, and this will exceed more than 40 seconds on the north approach. Reduction of traffic demands at the intersection would improve this level of service as would the implementation of some form of transit signal priority such as a queue jump lane. The implementation of continuous bus lanes on Smyth Road would also improve the TLOS beyond the target TLOS of D.

Smyth Road and General Hospital Access Road intersection will meet the City's target, operating with TkLOS of A.

4.6.2. Background Intersection Operations

Intersection capacity analysis has been completed for the 2024 background traffic conditions. The intersection parameters used in the analysis are consistent with the TIA guidelines (Saturation Flow rate: 1800 vphpl[1], Peak Hour Factor: 1.0 for future conditions). ***Table 14*** summarizes the results of the Synchro analysis for the 2024 background traffic conditions. Detailed Synchro reports are included in ***Appendix J***.

Table 14: 2024 Background Intersection Operations

Intersection	AM Peak Hour					PM Peak Hour				
	Critical Movement	Max v/c	LOS	Delay (s)	95th Queue (m)	Critical Movement	Max v/c	LOS	Delay (s)	95th Queue (m)
Hospital Link Road/Ring Road (N-S)	**Eastbound through-right**	**0.54**	**B**	**12**	**-**	**Westbound left-through**	**0.40**	**B**	**11**	**-**
CHEO Access Road/Ring Road (N-S)	Northbound left-through-right	0.72	C	18	-	Southbound left-through-right	0.81	C	24	-
Ring Road (E-W)/Ring Road (N-S)	Westbound left-right	0.57	D	35	25	Westbound left-right	0.75	E	39	44
Smyth Road/Ring Road (N-S)	**Eastbound left-through-right**	**0.74**	**B**	**11**	**127**	**Southbound left**	**0.58**	**D**	**50**	**45**
CHEO Access Road/Ring Road (E-W)	Westbound through-right	0.10	A	0	0	Westbound through-right	0.16	A	0	0
Emergency Access Road/Ring Road (E-W)	Westbound through-right	0.07	A	0	0	Westbound through-right	0.11	A	0	0
General Hospital Access Road/Ring Road (E-W)	Westbound left-through-right	0.38	B	14	-	Westbound left-through-right	1.16	F[2]	119	-
Smyth Road/General Hospital Access Road	**Southbound left**	**0.40**	**D**	**45**	**24**	**Southbound left**	**0.69**	**D**	**46**	**56**
Parking Garage Access/Ring Road (E-W)	Southbound left	0.16	C	15	5	Southbound left	0.18	B	13	5

The three intersections under the City's jurisdiction are the focus of this assessment and are highlighted in bold print in ***Table 14***. All have been found to operate at an acceptable level and within City standards. Although some of movements show higher delay and queuing associate with them, these negative impacts do not affect the operations of the traffic signal on Smyth Road. All other intersections are anticipated to operate with a LOS E or better during the weekday AM and PM peak hours.

It is noted that some existing trips at both Parking Lot B and Lot E have re-routed to the Parking Garage Access. Assumptions follow below:

[1] Vehicles per hour per lane
[2] Due to the limited storage at this intersection, Northbound traffic is currently uncontrolled to provide a priority to inbound movements towards the emergency department. However, there is no way to force Synchro to provide the results for an unusual level of intersection control, three-way stops control cannot be coded for a four-way intersection. As such, all-way (four-way) stops control was assumed/modelled in Synchro to provide results, which may not be an accurate result.

- 80% of traffic to/from Ring Road (E-W) would be re-routed to Parking Garage Access, with the remaining 20% of traffic proceeding to/from Emergency Access Road.
- 70% of traffic to/from CHEO Access Road would be re-routed to Parking Garage Access, with the remaining 30% of traffic proceeding to/from the main hospital building (CHEO).

This is a relatively small number of vehicles that appear during both peak hours, it would have minimal impacts on the existing traffic and does not have significant impacts to the study area intersections.

4.9.3 Total Intersection Operations

Intersection capacity analysis has been completed for the 2024 total traffic conditions. The intersection parameters used in the analysis are consistent with the TIA guidelines (Saturation Flow rate: 1800 vphpl, Peak Hour Factor: 1.0 for future conditions). ***Table 15*** summarizes the results of the Synchro analysis for the 2024 total traffic conditions. Detailed Synchro reports are included in ***Appendix J***.

Table 15: 2024 Total Intersection Operations

Intersection	AM Peak Hour					PM Peak Hour				
	Critical Movement	Max v/c	LOS	Delay (s)	95th Queue (m)	Critical Movement	Max v/c	LOS	Delay (s)	95th Queue (m)
Hospital Link Road/Ring Road (N-S)	**Eastbound through-right**	**0.49**	**B**	**12**	**-**	**Westbound left-through**	**0.41**	**B**	**11**	**-**
CHEO Access Road/Ring Road (N-S)	Northbound left-through-right	0.73	C	18	-	Southbound left-through-right	0.82	C	25	-
Ring Road (E-W)/Ring Road (N-S)	Westbound left-right	0.64	E	41	30	Westbound left-right	0.83	E	49	57
Smyth Road/Ring Road (N-S)	**Eastbound left-through-right**	**0.76**	**B**	**12**	**138**	**Southbound left**	**0.56**	**D**	**49**	**45**
CHEO Access Road/Ring Road (E-W)	Westbound through-right	0.08	A	0	0	Westbound through-right	0.18	A	0	0
Emergency Access Road/Ring Road (E-W)	Westbound through-right	0.09	A	0	0	Westbound through-right	0.12	A	0	0
General Hospital Access Road/Ring Road (E-W)	Westbound left-through-right	0.38	B	14	-	Westbound left-through-right	1.23	F[3]	147	-
Smyth Road/General Hospital Access Road	**Southbound left**	**0.42**	**D**	**45**	**26**	**Southbound left**	**0.71**	**D**	**46**	**62**
Parking Garage Access/Ring Road (E-W)	Southbound left	0.28	B	14	9	Southbound left	0.28	B	14	9

[3] As noted above in section 4.6.2, Synchro does not provide the results for an unusual level of intersection control. As such, all-way (four-way) stops control was assumed/modelled in Synchro to provide results, which may not be an accurate result.

As with the 2024 Background Conditions the three main City intersections operate at and acceptable levels of service when the parking trip are included in the traffic mix. All other intersections are anticipated to operate with a LOS E or better during the weekday AM and PM peak hours under 2024 total traffic conditions. The site trips added to the road network will not have a significant impact on the traffic operations. Additionally, all unsignalized intersection movements are expected to operate within capacity and with acceptable delays.

5. Conclusion and Recommendations

Based on the foregoing, the conclusions and recommendation of this TIA can be summarized as follows:

Development Design and Parking

- Pedestrian facilities will be provided between the parking garage building entrance and existing CHEO facilities. A connection to the sidewalk along Ring Road (E-W) will be provided, as shown on the site plan. Sidewalks will be continuous and depressed across the study area.
- OC Transpo stops #1806, #1808, $7044, #7072 and #7234 are located within a 400 m walking distance of the proposed parking garage entrance.
- With the 1083 proposed vehicular parking spaces, 40 proposed bicycle parking spaces will meet the requirement of the City of Ottawa's Zoning By-Law.

Boundary Street MMLOS

- All boundary streets within the study area meet the target segment level of service, with the exception of Ring Road (E-W). However, given the proposed site plan with its implementation of new sidewalks and MUPs across the study area, the future conditions will be significantly improved with the construction of the 1D4C building and surrounding landscape.

Access Design

- The proposed parking garage building will be served by one all-movement access along Ring Road (E-W). This access will be approximately 15 m in width and will meet all requirements of the City's Private Approach By-Law.
- Available sightlines are within recommended guidelines to allow safe all directional access to the proposed development.
- Based on the SimTraffic queuing assessment, ingress movements to the parking garage and the eastbound left movement at Emergency Access Road will not experience delays during both peak hour periods.

Transit

- The existing transit services in the study area are anticipated to be sufficient to accommodate the demand from the proposed development.

Intersection MMLOS

- The Smyth Road/Ring Road (N-S) intersection does not meet the target PLOS, BLOS, TLOS, or TkLOS.
- The Smyth Road/General Hospital Access Road intersection achieves the target TkLOS, however does not meet the target PLOS, BLOS, or TLOS.

Background Traffic Conditions

- A 1.0 % growth rate was applied to the study area road network.
- Under 2024 background traffic conditions, all intersections are anticipated to operate with a LOS E or better.

Total Traffic Conditions

- A 1.0 % growth rate was applied to the study area road network.
- Under 2024 total traffic conditions, all intersections are anticipated to operate with a LOS E or better. It is noted that traffic volumes on the westbound approach to the General Hospital Access Road/Ring Road (E-W) intersection are not related to the proposed development and represent existing background traffic conditions and anticipated traffic growth on the overall hospital campus.

In summary, no changes to the existing intersections within the study area are required to serve the proposed development of a 1083 space parking garage. Traffic growth expected from servicing the induced vehicular demand is anticipated to be modest and accommodated through the existing transportation infrastructure.

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 licensed[1] or registered[2] 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.

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

Dated at Ottawa (City) this 9 day of Sept, 20 22.

Name : Greg Kent

Professional title: Manager Traffic Engineering

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

Office Contact Information (Please Print)	
Address:	
City / Postal Code:	
Telephone / Extension:	
E-Mail Address:	

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 m2
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 onthe 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).

Appendix B

1Door4Care: Children's Hospital of Eastern Ontario (CHEO) 1Door4Care Project – Transportation Study (September 2022) prepared by Stantec

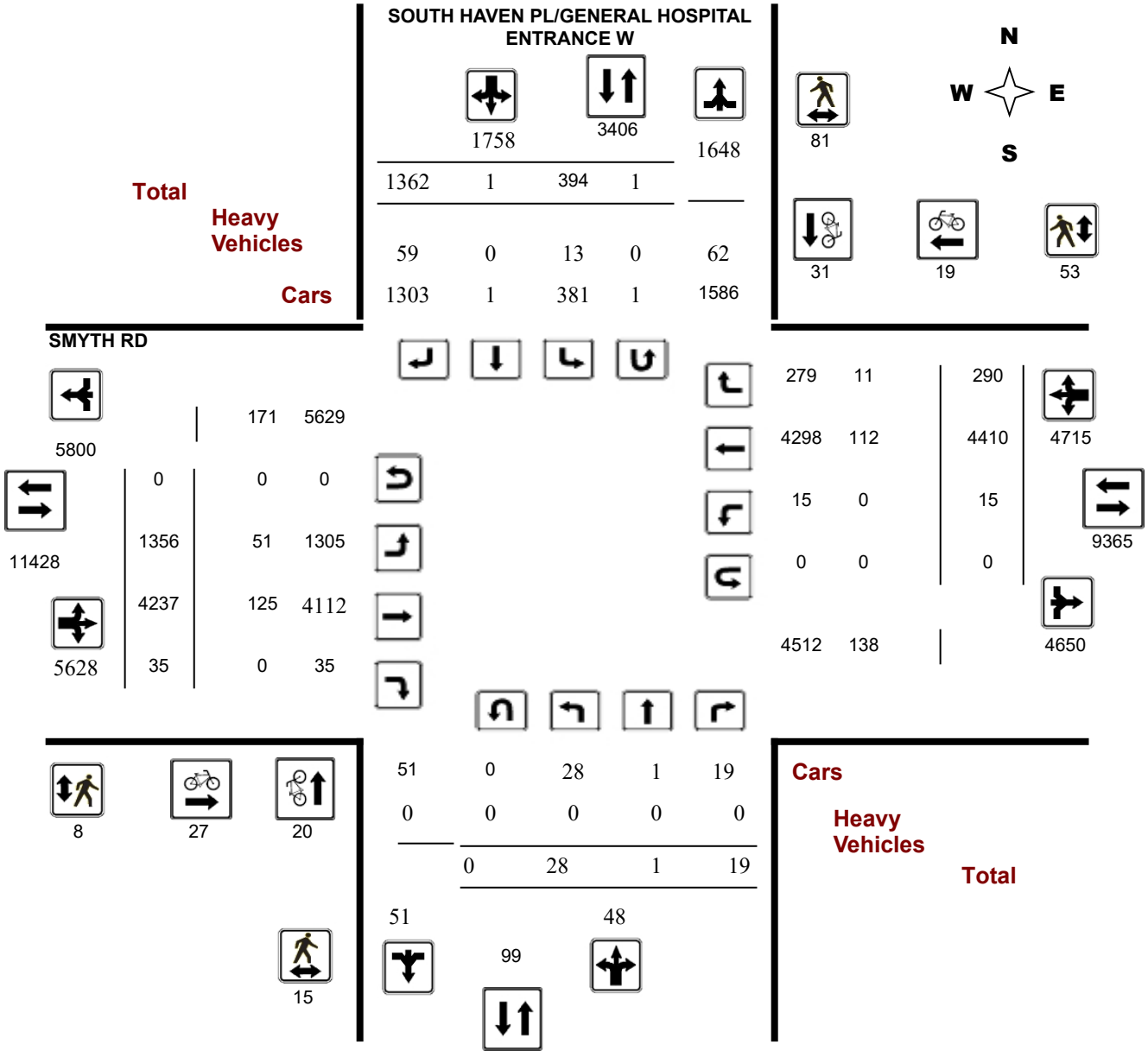
Transportation Services - Traffic Services

Turning Movement Count - Study Results

SMYTH RD @ SOUTH HAVEN PL/GENERAL HOSPITAL ENTRANCE W

Survey Date: Tuesday, October 04, 2022
Start Time: 07:00
WO No: 40590
Device: Miovision

Full Study Diagram



Transportation Services - Traffic Services

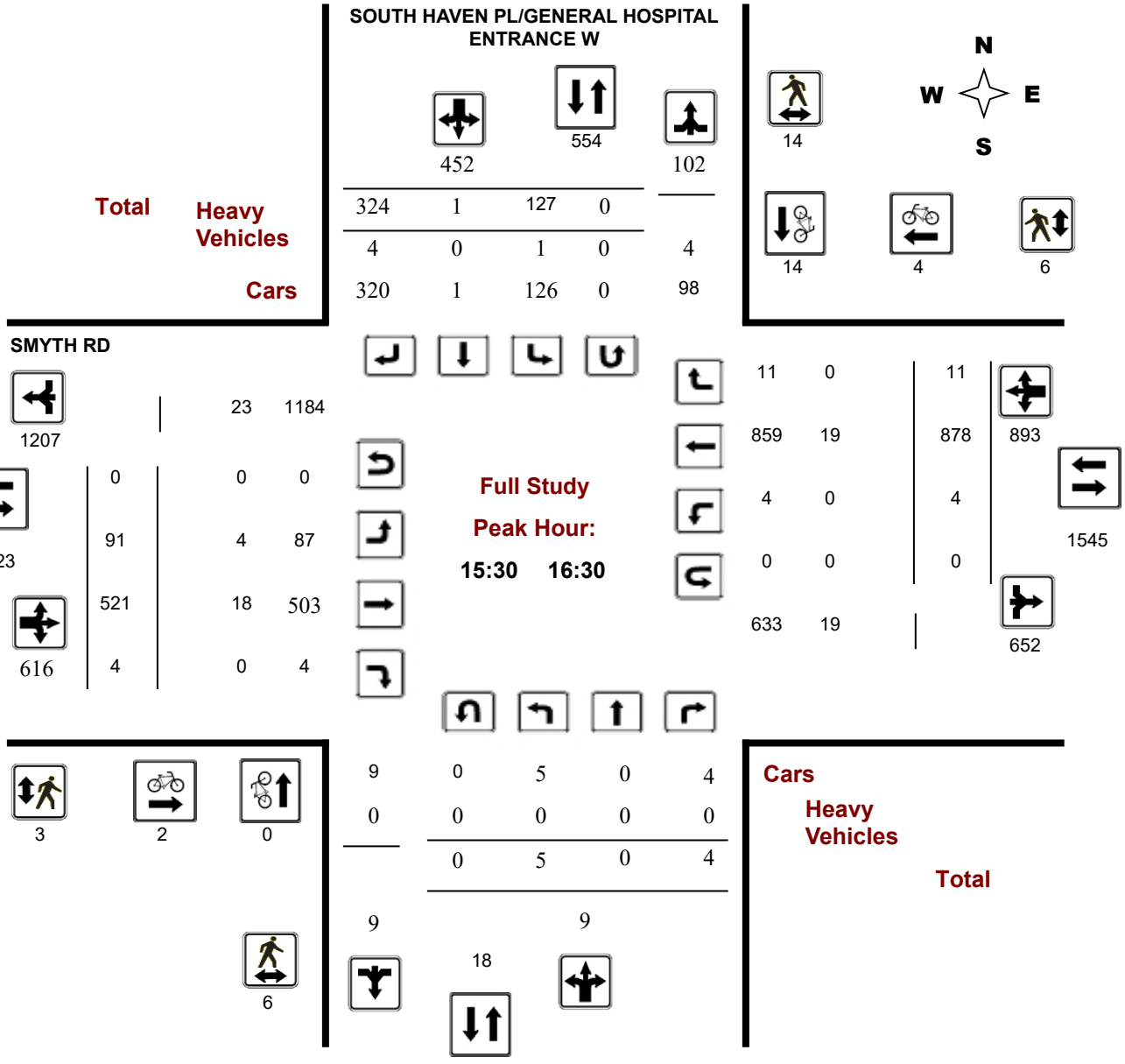
Turning Movement Count - Study Results

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 Peak Hour Diagram



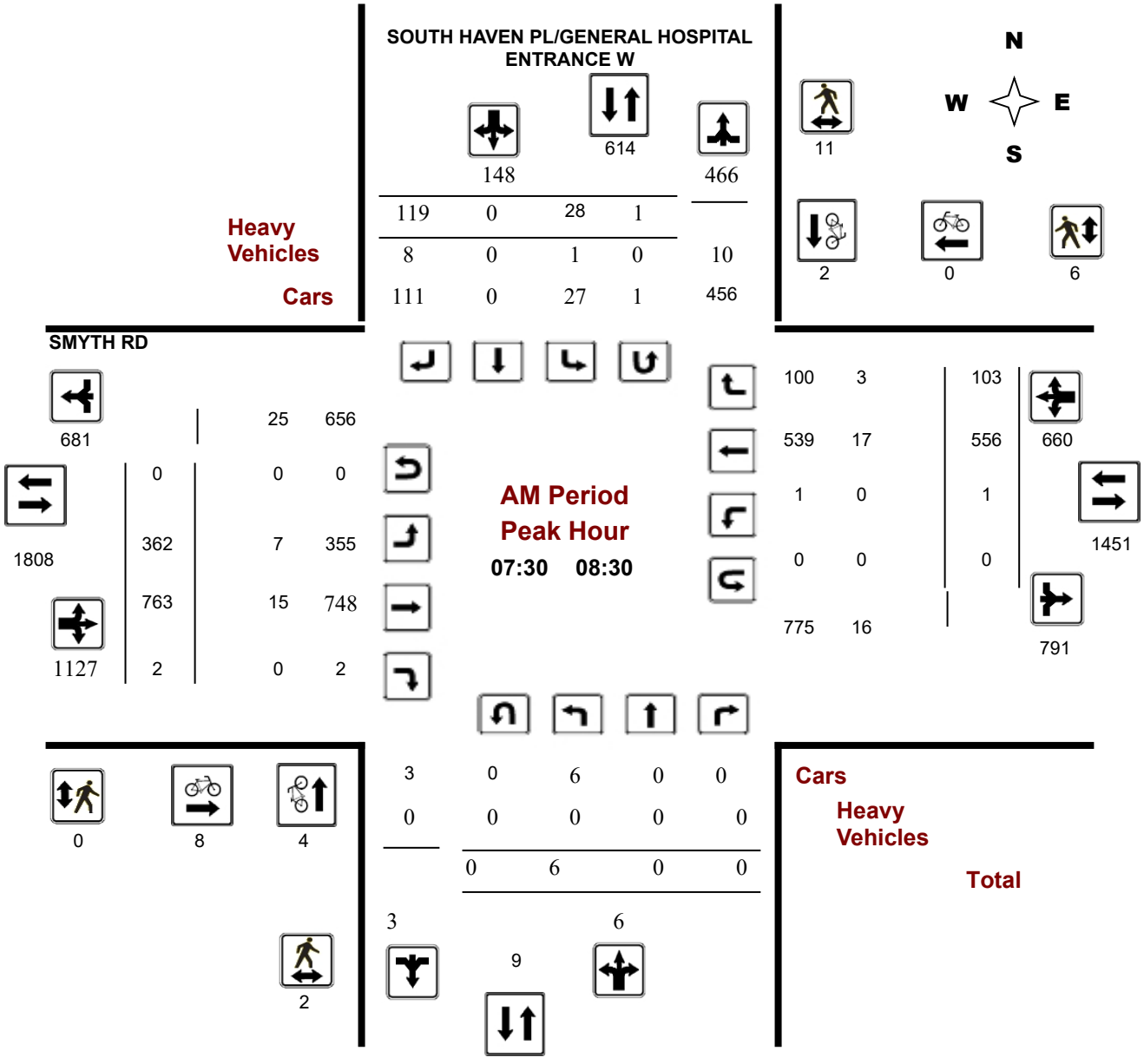
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

SMYTH RD @ SOUTH HAVEN PL/GENERAL HOSPITAL ENTRANCE W

Survey Date: Tuesday, October 04, 2022 **WO No:** 40590

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



Comments

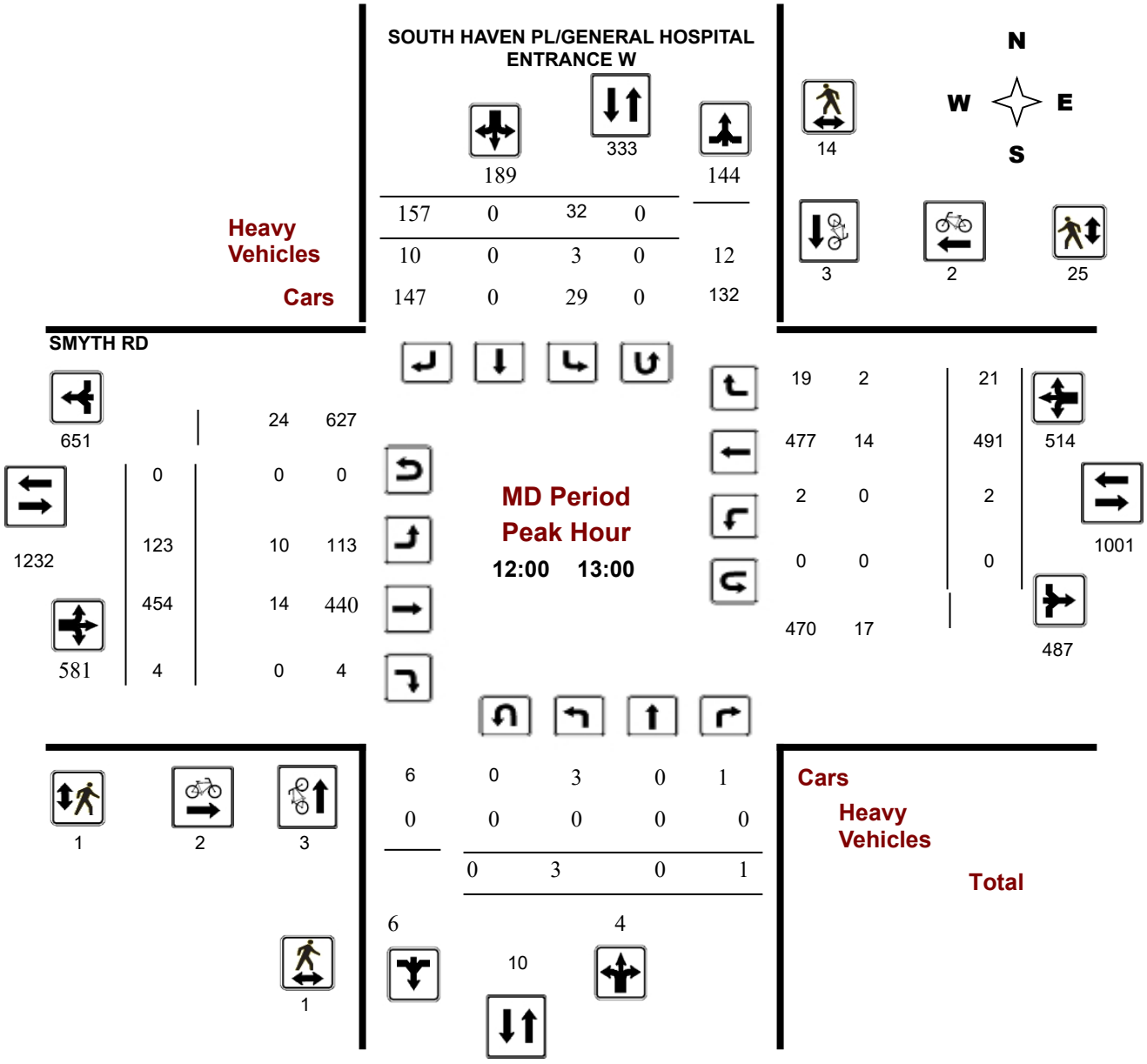
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

SMYTH RD @ SOUTH HAVEN PL/GENERAL HOSPITAL ENTRANCE W

Survey Date: Tuesday, October 04, 2022 **WO No:** 40590

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



Comments

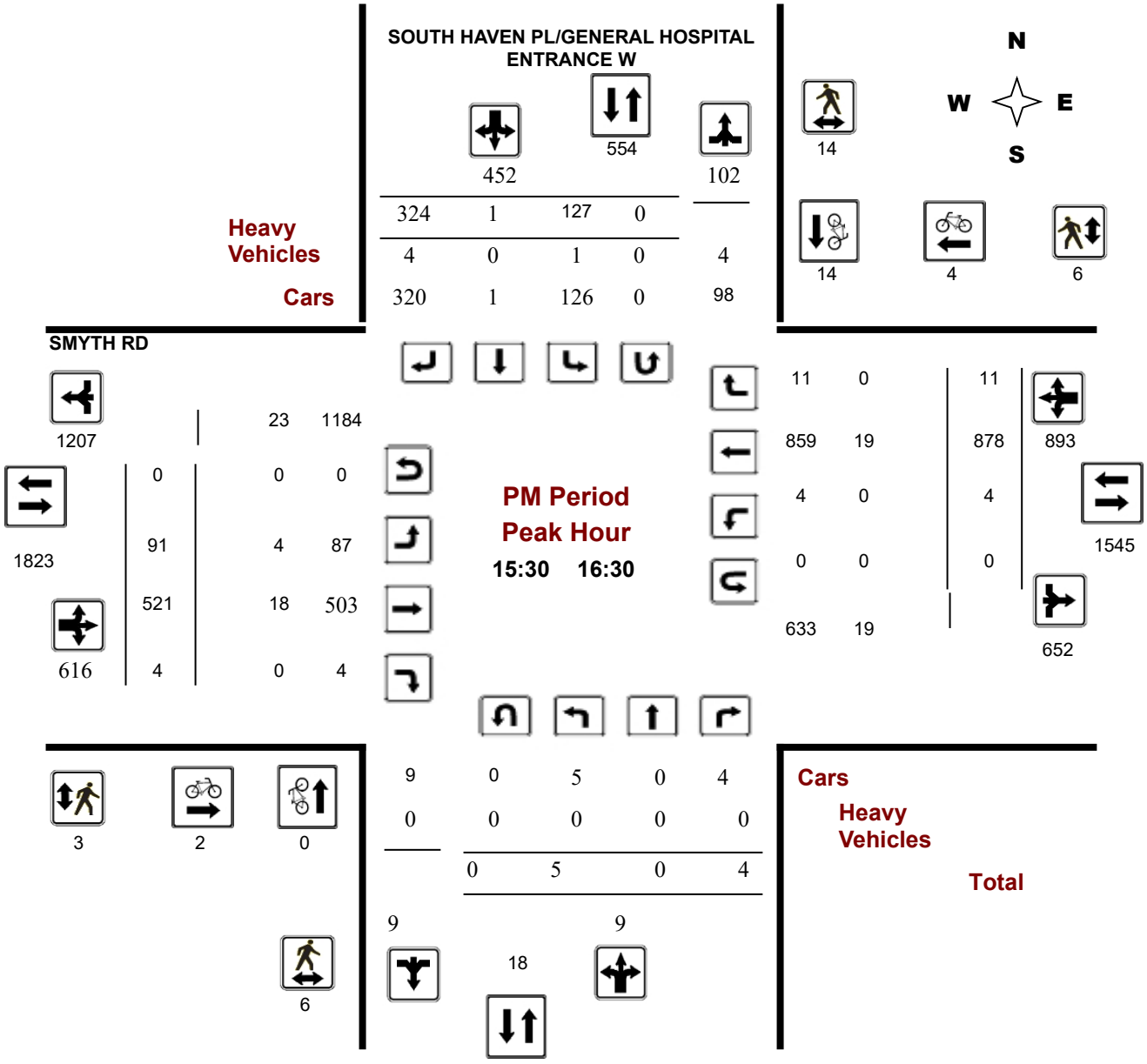
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

SMYTH RD @ SOUTH HAVEN PL/GENERAL HOSPITAL ENTRANCE W

Survey Date: Tuesday, October 04, 2022 **WO No:** 40590

Start Time: 07:00 **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

Northbound: 0 Southbound: 1

Eastbound: 0 Westbound: 0

AADT Factor

.90

	SOUTH HAVEN PL/GENERAL HOSPITAL ENTRANCE W									SMYTH RD									
	Northbound				Southbound					Eastbound				Westbound					
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Grand Total
07:00 08:00	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 — Northbound / Southbound

SMYTH RD — Eastbound / Westbound

Time Period		Northbound				Southbound					Eastbound				Westbound					
		LT	ST	RT	**N TOT**	LT	ST	RT	**S TOT**	**STR TOT**	LT	ST	RT	**E TOT**	LT	ST	RT	**W TOT**	**STR TOT**	**Grand Total**
07:00	07:15	0	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		
		Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	0
07:15	07:30	0	0	0	0	0
07:30	07:45	0	1	0	0	1
07:45	08:00	0	0	0	0	0
08:00	08:15	0	0	0	0	0
08:15	08:30	0	0	0	0	0
08:30	08:45	0	0	0	0	0
08:45	09:00	0	0	0	0	0
09:00	09:15	0	0	0	0	0
09:15	09:30	0	0	0	0	0
09:30	09:45	0	0	0	0	0
09:45	10:00	0	0	0	0	0
11:30	11:45	0	0	0	0	0
11:45	12:00	0	0	0	0	0
12:00	12:15	0	0	0	0	0
12:15	12:30	0	0	0	0	0
12:30	12:45	0	0	0	0	0
12:45	13:00	0	0	0	0	0
13:00	13:15	0	0	0	0	0
13:15	13:30	0	0	0	0	0
15:00	15:15	0	0	0	0	0
15:15	15:30	0	0	0	0	0
15:30	15:45	0	0	0	0	0
15:45	16:00	0	0	0	0	0
16:00	16:15	0	0	0	0	0
16:15	16:30	0	0	0	0	0
16:30	16:45	0	0	0	0	0
16:45	17:00	0	0	0	0	0
17:00	17:15	0	0	0	0	0
17:15	17:30	0	0	0	0	0
17:30	17:45	0	0	0	0	0
17:45	18:00	0	0	0	0	0
Total		0	1	0	0	1

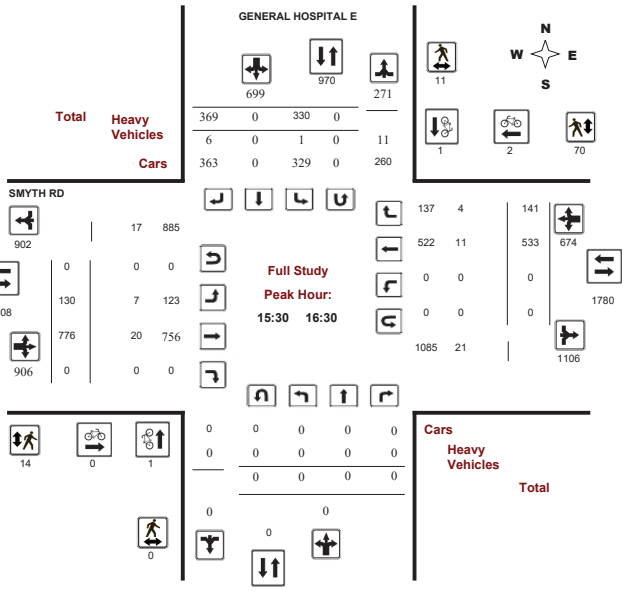
Transportation Services - Traffic Services

Turning Movement Count - Study Results

SMYTH RD @ GENERAL HOSPITAL E

Survey Date: Wednesday, December 11, 2019 **WO No:** 39229
Start Time: 07:00 **Device:** Miovision

Full Study Peak Hour Diagram

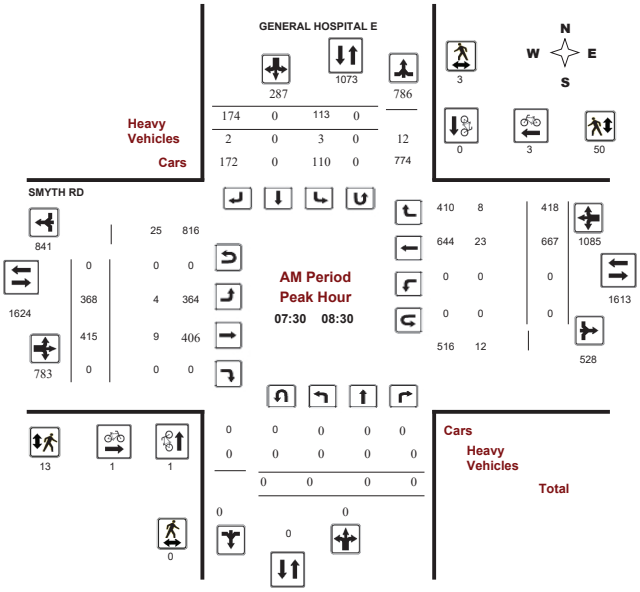


Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

SMYTH RD @ GENERAL HOSPITAL E

Survey Date: Wednesday, December 11, 2019 **WO No:** 39229
Start Time: 07:00 **Device:** Miovision



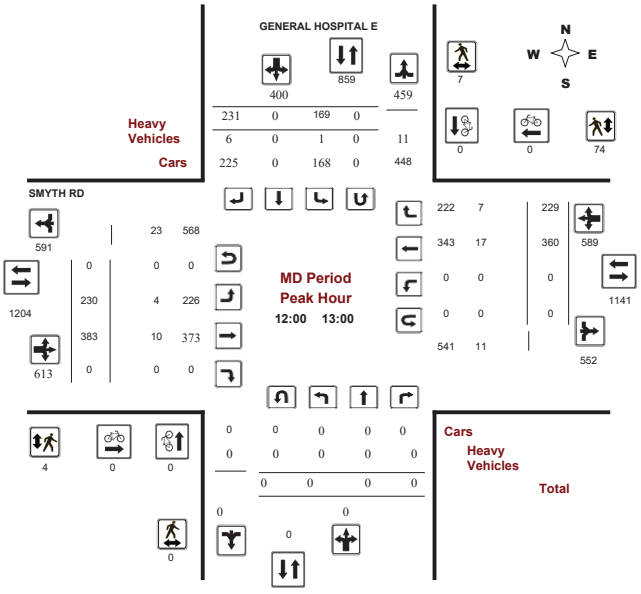
Comments

Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

SMYTH RD @ GENERAL HOSPITAL E

Survey Date: Wednesday, December 11, 2019 **WO No:** 39229
Start Time: 07:00 **Device:** Miovision



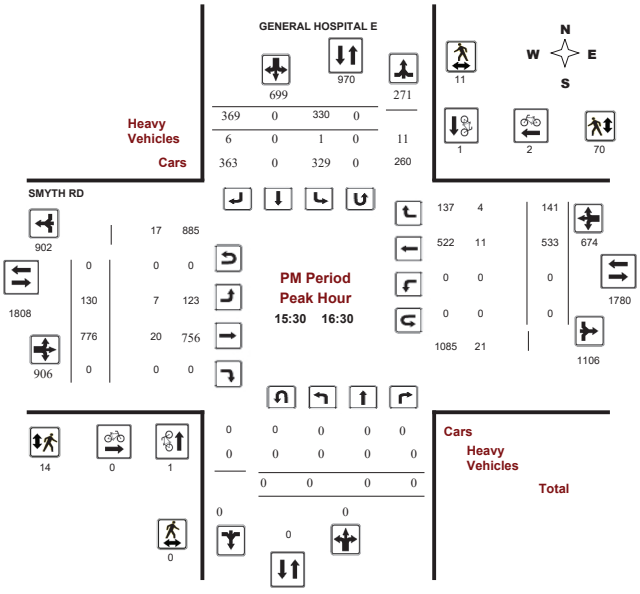
Comments

Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

SMYTH RD @ GENERAL HOSPITAL E

Survey Date: Wednesday, December 11, 2019 **WO No:** 39229
Start Time: 07:00 **Device:** Miovision



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

SMYTH RD @ GENERAL HOSPITAL E

Survey Date: Wednesday, December 11, 2019 **WO No:** 39229

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

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, December 11, 2019

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 0 Westbound: 1

AADT Factor 1.39

	GENERAL HOSPITAL E								SMYTH RD									
	Northbound				Southbound				Eastbound				Westbound					
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Grand Total
07:00 08:00	0	0	0	**0**	122	0	173	**295**	**295**	396	399	0	**795**	0	579	394	**973**	**1768**	**2063**
08:00 09:00	0	0	0	**0**	93	0	155	**248**	**248**	354	440	0	**794**	0	680	381	**1061**	**1855**	**2103**
09:00 10:00	0	0	0	**0**	143	0	156	**299**	**299**	294	378	0	**672**	0	400	240	**640**	**1312**	**1611**
11:30 12:30	0	0	0	**0**	162	0	256	**418**	**418**	183	391	0	**574**	0	369	197	**566**	**1140**	**1558**
12:30 13:30	0	0	0	**0**	163	0	201	**364**	**364**	239	353	0	**592**	0	358	238	**596**	**1188**	**1552**
15:00 16:00	0	0	0	**0**	286	0	371	**657**	**657**	162	641	0	**803**	0	582	149	**731**	**1534**	**2191**
16:00 17:00	0	0	0	**0**	307	0	303	**610**	**610**	117	756	0	**873**	0	458	126	**584**	**1457**	**2067**
17:00 18:00	0	0	0	**0**	148	0	238	**386**	**386**	87	582	0	**669**	0	370	90	**460**	**1129**	**1515**
Sub Total	0	0	0	**0**	1424	0	1853	**3277**	**3277**	1832	3940	0	**5772**	0	3796	1815	**5611**	**11383**	**14660**
U Turns				**0**				**0**	**0**				**0**				**1**	**1**	**1**
Total	0	0	0	**0**	1424	0	1853	**3277**	**3277**	1832	3940	0	**5772**	0	3796	1815	**5612**	**11384**	**14661**
EQ 12Hr	0	0	0	**0**	1979	0	2576	**4555**	**4555**	2546	5477	0	**8023**	0	5276	2523	**7801**	**15824**	**20379**

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

AVG 12Hr	0	0	0	**0**	1979	0	2576	**4555**	**4555**	2546	5477	0	**8023**	0	5276	2523	**7801**	**15824**	**20379**

Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor. **1**

AVG 24Hr	0	0	0	**0**	2593	0	3374	**5967**	**5967**	3336	7174	0	**10510**	0	6912	3305	**10219**	**20729**	**26696**

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 @ GENERAL HOSPITAL E

Survey Date: Wednesday, December 11, 2019 **WO No:** 39229

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

Full Study 15 Minute Increments

	GENERAL HOSPITAL E								SMYTH RD									
	Northbound				Southbound				Eastbound				Westbound					
Time Period	LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00 07:15	0	0	0	0	23	0	33	56	241	111	68	0	179	0	121	74	195	241	430
07:15 07:30	0	0	0	0	31	0	41	72	257	91	109	0	200	0	147	94	241	257	513
07:30 07:45	0	0	0	0	36	0	58	94	284	92	108	0	200	0	165	98	263	284	557
07:45 08:00	0	0	0	0	32	0	41	73	303	102	114	0	216	0	146	128	274	303	563
08:00 08:15	0	0	0	0	24	0	38	62	263	87	91	0	178	0	167	114	281	263	521
08:15 08:30	0	0	0	0	21	0	37	58	223	87	102	0	189	0	189	78	267	223	514
08:30 08:45	0	0	0	0	23	0	40	63	255	80	107	0	187	0	170	112	282	255	532
08:45 09:00	0	0	0	0	25	0	40	65	242	100	140	0	240	0	154	77	231	242	536
09:00 09:15	0	0	0	0	22	0	38	60	194	75	122	0	197	0	127	59	186	194	443
09:15 09:30	0	0	0	0	38	0	39	77	212	74	78	0	152	0	96	61	157	212	386
09:30 09:45	0	0	0	0	38	0	28	66	202	73	83	0	156	0	86	63	149	202	371
09:45 10:00	0	0	0	0	45	0	51	96	225	72	95	0	167	0	91	57	149	225	412
11:30 11:45	0	0	0	0	41	0	56	97	168	28	98	0	126	0	102	43	145	168	368
11:45 12:00	0	0	0	0	41	0	70	111	210	46	93	0	139	0	84	53	137	210	387
12:00 12:15	0	0	0	0	47	0	64	111	213	57	98	0	155	0	98	45	143	213	409
12:15 12:30	0	0	0	0	33	0	66	99	207	52	102	0	154	0	85	56	141	207	394
12:30 12:45	0	0	0	0	49	0	50	99	235	67	92	0	159	0	81	69	150	235	408
12:45 13:00	0	0	0	0	40	0	51	91	204	54	91	0	145	0	96	59	155	204	391
13:00 13:15	0	0	0	0	39	0	40	79	191	53	87	0	140	0	86	59	145	191	364
13:15 13:30	0	0	0	0	35	0	60	95	211	65	83	0	148	0	95	51	146	211	389
15:00 15:15	0	0	0	0	63	0	99	162	251	54	137	0	191	0	149	35	184	251	537
15:15 15:30	0	0	0	0	72	0	79	151	228	35	142	0	177	0	150	42	192	228	520
15:30 15:45	0	0	0	0	70	0	93	163	235	39	198	0	237	0	127	33	160	235	560
15:45 16:00	0	0	0	0	81	0	100	181	254	34	164	0	198	0	156	39	195	254	574
16:00 16:15	0	0	0	0	83	0	98	181	242	21	192	0	213	0	142	40	182	242	576
16:15 16:30	0	0	0	0	96	0	78	174	239	36	222	0	258	0	108	29	137	239	569
16:30 16:45	0	0	0	0	60	0	65	125	182	30	167	0	197	0	105	27	132	182	454
16:45 17:00	0	0	0	0	68	0	62	130	190	30	175	0	205	0	103	30	133	190	468
17:00 17:15	0	0	0	0	42	0	64	106	153	20	150	0	170	0	104	27	131	153	407
17:15 17:30	0	0	0	0	38	0	61	99	142	23	138	0	161	0	88	20	108	142	368
17:30 17:45	0	0	0	0	33	0	55	88	128	27	130	0	157	0	93	13	106	128	351
17:45 18:00	0	0	0	0	35	0	58	93	140	17	164	0	181	0	85	30	115	140	389
Total:	0	0	0	0	1424	0	1853	3277	6924	1832	3940	0	5772	0	3796	1815	5612	6924	14,661

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

SMYTH RD @ GENERAL HOSPITAL E

Survey Date: Wednesday, December 11, 2019 **WO No:** 39229

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

Full Study Cyclist Volume

	GENERAL HOSPITAL E			SMYTH RD			
Time Period	Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00 07:15	0	0	0	0	1	1	1
07:15 07:30	0	0	0	0	0	0	0
07:30 07:45	0	0	0	0	0	0	0
07:45 08:00	0	0	0	0	0	0	0
08:00 08:15	1	0	1	0	2	2	3
08:15 08:30	0	0	0	1	1	2	2
08:30 08:45	0	0	0	1	0	1	1
08:45 09:00	0	0	0	2	0	2	2
09:00 09:15	2	0	2	0	2	2	4
09:15 09:30	0	0	0	1	0	1	1
09:30 09:45	0	0	0	0	1	1	1
09:45 10:00	0	0	0	0	0	0	0
11:30 11:45	0	0	0	0	0	0	0
11:45 12:00	0	0	0	0	0	0	0
12:00 12:15	0	0	0	0	0	0	0
12:15 12:30	0	0	0	0	0	0	0
12:30 12:45	0	0	0	0	0	0	0
12:45 13:00	0	0	0	0	0	0	0
13:00 13:15	0	0	0	0	0	0	0
13:15 13:30	0	0	0	0	0	0	0
15:00 15:15	0	1	1	0	0	0	1
15:15 15:30	0	0	0	0	0	0	0
15:30 15:45	1	0	1	0	0	0	1
15:45 16:00	0	1	1	0	0	0	1
16:00 16:15	0	0	0	0	1	1	1
16:15 16:30	0	0	0	0	1	1	1
16:30 16:45	0	0	0	0	0	0	0
16:45 17:00	0	0	0	0	0	0	0
17:00 17:15	0	0	0	0	0	0	0
17:15 17:30	0	0	0	0	0	0	0
17:30 17:45	0	0	0	1	0	1	1
17:45 18:00	1	2	3	0	1	1	4
Total	5	4	**9**	6	10	16	25

Transportation Services - Traffic Services

Turning Movement Count - Study Results

SMYTH RD @ GENERAL HOSPITAL E

Survey Date: Wednesday, December 11, 2019 **WO No:** 39229

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

Full Study Pedestrian Volume

	GENERAL HOSPITAL E			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	4	**4**	**4**
07:15 07:30	0	1	**1**	3	4	**7**	**8**
07:30 07:45	0	2	**2**	3	5	**8**	**10**
07:45 08:00	0	1	**1**	4	8	**12**	**13**
08:00 08:15	0	0	**0**	4	17	**21**	**21**
08:15 08:30	0	0	**0**	2	20	**22**	**22**
08:30 08:45	0	2	**2**	3	14	**17**	**19**
08:45 09:00	0	0	**0**	1	7	**8**	**8**
09:00 09:15	0	3	**3**	0	21	**21**	**24**
09:15 09:30	0	0	**0**	1	23	**24**	**24**
09:30 09:45	0	0	**0**	1	21	**22**	**22**
09:45 10:00	0	2	**2**	2	21	**23**	**25**
11:30 11:45	0	0	**0**	2	28	**30**	**30**
11:45 12:00	0	2	**2**	6	19	**25**	**27**
12:00 12:15	0	2	**2**	0	18	**18**	**20**
12:15 12:30	0	1	**1**	2	11	**13**	**14**
12:30 12:45	0	2	**2**	1	18	**19**	**21**
12:45 13:00	0	2	**2**	1	27	**28**	**30**
13:00 13:15	0	0	**0**	3	28	**31**	**31**
13:15 13:30	0	0	**0**	1	21	**22**	**22**
15:00 15:15	0	0	**0**	3	12	**15**	**15**
15:15 15:30	0	1	**1**	2	13	**15**	**16**
15:30 15:45	0	3	**3**	5	13	**18**	**21**
15:45 16:00	0	6	**6**	2	20	**22**	**28**
16:00 16:15	0	1	**1**	3	14	**17**	**18**
16:15 16:30	0	1	**1**	4	23	**27**	**28**
16:30 16:45	0	1	**1**	7	16	**23**	**24**
16:45 17:00	0	1	**1**	0	17	**17**	**18**
17:00 17:15	0	4	**4**	1	7	**8**	**12**
17:15 17:30	0	1	**1**	0	7	**7**	**8**
17:30 17:45	0	0	**0**	0	1	**1**	**1**
17:45 18:00	0	2	**2**	6	5	**11**	**13**
Total	0	41	**41**	73	483	**556**	**597**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

SMYTH RD @ GENERAL HOSPITAL E

Survey Date: Wednesday, December 11, 2019 **WO No:** 39229

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

Full Study Heavy Vehicles

GENERAL HOSPITAL E — SMYTH RD

Time Period		Northbound LT	Northbound ST	Northbound RT	N TOT	Southbound LT	Southbound ST	Southbound RT	S TOT	STR TOT	Eastbound LT	Eastbound ST	Eastbound RT	E TOT	Westbound LT	Westbound ST	Westbound RT	W TOT	STR TOT	Grand Total
07:00	07:15	0	0	0	**0**	1	0	0	**5**	**5**	3	0	0	**13**	0	10	1	**12**	**25**	**15**
07:15	07:30	0	0	0	**0**	1	0	1	**3**	**3**	0	3	0	**11**	0	7	1	**12**	**23**	**13**
07:30	07:45	0	0	0	**0**	0	0	1	**4**	**4**	1	1	0	**8**	0	5	2	**8**	**16**	**10**
07:45	08:00	0	0	0	**0**	1	0	0	**6**	**6**	1	3	0	**7**	0	3	4	**11**	**18**	**12**
08:00	08:15	0	0	0	**0**	1	0	1	**4**	**4**	0	3	0	**9**	0	5	2	**11**	**20**	**12**
08:15	08:30	0	0	0	**0**	1	0	0	**3**	**3**	2	2	0	**14**	0	10	0	**13**	**27**	**15**
08:30	08:45	0	0	0	**0**	0	0	1	**4**	**4**	0	3	0	**8**	0	4	3	**10**	**18**	**11**
08:45	09:00	0	0	0	**0**	0	0	1	**4**	**4**	1	11	0	**16**	0	3	2	**16**	**32**	**18**
09:00	09:15	0	0	0	**0**	0	0	0	**4**	**4**	1	8	0	**20**	0	11	3	**22**	**42**	**23**
09:15	09:30	0	0	0	**0**	0	0	1	**6**	**6**	2	2	0	**8**	0	3	3	**8**	**16**	**11**
09:30	09:45	0	0	0	**0**	2	0	0	**4**	**4**	1	4	0	**7**	0	2	1	**9**	**16**	**10**
09:45	10:00	0	0	0	**0**	0	0	1	**3**	**3**	1	5	0	**14**	0	7	1	**13**	**27**	**15**
11:30	11:45	0	0	0	**0**	2	0	0	**7**	**7**	3	9	0	**16**	0	4	2	**17**	**33**	**20**
11:45	12:00	0	0	0	**0**	0	0	2	**8**	**8**	1	4	0	**8**	0	1	5	**10**	**18**	**13**
12:00	12:15	0	0	0	**0**	0	0	1	**4**	**4**	1	4	0	**7**	0	1	2	**7**	**14**	**9**
12:15	12:30	0	0	0	**0**	0	0	3	**5**	**5**	1	0	0	**7**	0	3	1	**4**	**11**	**8**
12:30	12:45	0	0	0	**0**	1	0	1	**7**	**7**	2	3	0	**15**	0	9	3	**16**	**31**	**19**
12:45	13:00	0	0	0	**0**	0	0	1	**2**	**2**	0	3	0	**8**	0	4	1	**8**	**16**	**9**
13:00	13:15	0	0	0	**0**	0	0	1	**5**	**5**	3	4	0	**13**	0	5	1	**10**	**23**	**14**
13:15	13:30	0	0	0	**0**	0	0	3	**6**	**6**	1	1	0	**6**	0	1	2	**4**	**10**	**8**
15:00	15:15	0	0	0	**0**	0	0	2	**6**	**6**	2	11	0	**22**	0	7	2	**20**	**42**	**24**
15:15	15:30	0	0	0	**0**	1	0	2	**4**	**4**	0	6	0	**12**	0	4	1	**12**	**24**	**14**
15:30	15:45	0	0	0	**0**	0	0	1	**5**	**5**	3	3	0	**10**	0	3	1	**7**	**17**	**11**
15:45	16:00	0	0	0	**0**	0	0	1	**1**	**1**	0	8	0	**16**	0	7	0	**15**	**31**	**16**
16:00	16:15	0	0	0	**0**	0	0	4	**7**	**7**	1	6	0	**12**	0	1	2	**9**	**21**	**14**
16:15	16:30	0	0	0	**0**	1	0	0	**5**	**5**	3	3	0	**6**	0	0	1	**5**	**11**	**8**
16:30	16:45	0	0	0	**0**	1	0	1	**3**	**3**	1	2	0	**5**	0	1	0	**4**	**9**	**6**
16:45	17:00	0	0	0	**0**	0	0	1	**4**	**4**	2	4	0	**7**	0	0	1	**5**	**12**	**8**
17:00	17:15	0	0	0	**0**	1	0	0	**4**	**4**	1	7	0	**10**	0	2	2	**12**	**22**	**13**
17:15	17:30	0	0	0	**0**	0	0	2	**5**	**5**	3	3	0	**8**	0	0	0	**3**	**11**	**8**
17:30	17:45	0	0	0	**0**	1	0	1	**5**	**5**	1	1	0	**4**	0	1	2	**5**	**9**	**7**
17:45	18:00	0	0	0	**0**	0	0	1	**4**	**4**	2	2	0	**7**	0	2	1	**5**	**12**	**8**
Total:	None	0	0	0	**0**	15	0	35	**147**	**147**	44	129	0	**334**	0	126	53	**323**	**657**	**402**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

SMYTH RD @ GENERAL HOSPITAL E

Survey Date: Wednesday, December 11, 2019 WO No: 39229

Start Time: 07:00 Device: Miovision

Full Study 15 Minute U-Turn Total

GENERAL HOSPITAL E — SMYTH RD

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

5473326 - HOSPITAL LINK RD @ RING RD - FEB ... - TMC
Thu Feb 20, 2020
Full Length (7 AM-10 AM, 11:30 AM-1:30 PM, 3 PM-6 PM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 754899, Location: 45.403939, -75.653508, Site Code: 39524103

Provided by: City of Ottawa
100 Constellation Dr,
Nepean, ON, K2G 5J9, CA

Leg / Direction	East Westbound					South Northbound					West Eastbound					
Time	T	L	U	App	Ped*	R	L	U	App	Ped*	R	T	U	App	Ped*	Int
2020-02-20 7:00AM	7	4	0	**11**	0	12	2	0	**14**	1	24	43	0	**67**	1	**92**
7:15AM	10	9	0	**19**	1	18	2	0	**20**	3	25	48	0	**73**	0	**112**
7:30AM	18	9	0	**27**	0	17	9	0	**26**	5	18	72	0	**90**	0	**143**
7:45AM	14	6	0	**20**	0	23	11	0	**34**	3	40	58	1	**99**	0	**153**
Hourly Total	49	28	0	**77**	1	70	24	0	**94**	12	107	221	1	**329**	1	**500**
8:00AM	18	10	0	**28**	0	23	7	0	**30**	4	31	43	0	**74**	0	**132**
8:15AM	22	9	0	**31**	0	24	9	0	**33**	2	28	68	0	**96**	0	**160**
8:30AM	14	13	0	**27**	0	22	9	0	**31**	3	23	33	0	**56**	0	**114**
8:45AM	15	13	0	**28**	0	22	7	0	**29**	4	24	37	0	**61**	0	**118**
Hourly Total	69	45	0	**114**	0	91	32	0	**123**	13	106	181	0	**287**	0	**524**
9:00AM	11	11	0	**22**	0	17	10	0	**27**	1	11	46	0	**57**	0	**106**
9:15AM	8	7	0	**15**	0	12	8	0	**20**	1	10	24	0	**34**	0	**69**
9:30AM	14	5	0	**19**	0	14	4	0	**18**	0	17	27	0	**44**	0	**81**
9:45AM	16	11	0	**27**	0	18	4	0	**22**	0	15	32	0	**47**	3	**96**
Hourly Total	49	34	0	**83**	0	61	26	0	**87**	2	53	129	0	**182**	3	**352**
11:30AM	14	5	0	**19**	0	10	6	0	**16**	0	6	13	0	**19**	0	**54**
11:45AM	12	6	0	**18**	0	12	5	0	**17**	0	6	10	0	**16**	0	**51**
Hourly Total	26	11	0	**37**	0	22	11	0	**33**	0	12	23	0	**35**	0	**105**
12:00PM	41	5	0	**46**	2	12	9	0	**21**	0	12	14	0	**26**	1	**93**
12:15PM	32	8	0	**40**	1	10	5	0	**15**	2	6	21	0	**27**	0	**82**
12:30PM	28	11	0	**39**	2	9	9	0	**18**	0	7	20	0	**27**	0	**84**
12:45PM	20	7	0	**27**	0	10	6	0	**16**	1	21	33	0	**54**	0	**97**
Hourly Total	121	31	0	**152**	5	41	29	0	**70**	3	46	88	0	**134**	1	**356**
1:00PM	16	5	0	**21**	0	11	13	0	**24**	0	6	20	0	**26**	0	**71**
1:15PM	12	8	0	**20**	1	16	2	0	**18**	1	13	18	0	**31**	1	**69**
Hourly Total	28	13	0	**41**	1	27	15	0	**42**	1	19	38	0	**57**	1	**140**
3:00PM	40	18	0	**58**	0	8	18	0	**26**	1	6	26	0	**32**	0	**116**
3:15PM	43	20	0	**63**	0	9	13	0	**22**	1	11	16	0	**27**	1	**112**
3:30PM	51	11	0	**62**	0	8	18	0	**26**	3	6	7	0	**13**	1	**101**
3:45PM	36	16	0	**52**	0	8	12	0	**20**	2	7	12	0	**19**	0	**91**
Hourly Total	170	65	0	**235**	0	33	61	0	**94**	7	30	61	0	**91**	2	**420**
4:00PM	65	31	0	**96**	0	17	28	0	**45**	1	7	13	0	**20**	2	**161**
4:15PM	46	20	0	**66**	0	15	14	0	**29**	5	4	18	0	**22**	0	**117**
4:30PM	48	18	0	**66**	0	13	17	0	**30**	2	5	13	0	**18**	1	**114**
4:45PM	29	14	1	**44**	0	8	15	0	**23**	3	2	12	0	**14**	0	**81**
Hourly Total	188	83	1	**272**	0	53	74	0	**127**	11	18	56	0	**74**	3	**473**
5:00PM	35	32	0	**67**	0	8	16	0	**24**	1	2	7	0	**9**	0	**100**
5:15PM	30	10	0	**40**	0	5	15	0	**20**	3	6	9	0	**15**	0	**75**
5:30PM	19	7	0	**26**	0	7	8	0	**15**	1	7	8	0	**15**	1	**56**
5:45PM	23	9	0	**32**	0	4	5	0	**9**	0	9	6	0	**15**	1	**56**
Hourly Total	107	58	0	**165**	0	24	44	0	**68**	5	24	30	0	**54**	2	**287**
Total	807	368	1	**1176**	7	422	316	0	**738**	54	415	827	1	**1243**	13	**3157**
% Approach	68.6%	31.3%	0.1%	-	-	57.2%	42.8%	0%	-	-	33.4%	66.5%	0.1%	-	-	-
% Total	25.6%	11.7%	0%	**37.3%**	-	13.4%	10.0%	0%	**23.4%**	-	13.1%	26.2%	0%	**39.4%**	-	-
Lights and Motorcycles	783	353	1	**1137**	-	403	274	0	**677**	-	403	772	1	**1176**	-	2990
% Lights and Motorcycles	97.0%	95.9%	100%	**96.7%**	-	95.5%	86.7%	0%	**91.7%**	-	97.1%	93.3%	100%	**94.6%**	-	94.7%
Heavy	23	15	0	**38**	-	19	41	0	**60**	-	10	54	0	**64**	-	162
% Heavy	2.9%	4.1%	0%	**3.2%**	-	4.5%	13.0%	0%	**8.1%**	-	2.4%	6.5%	0%	**5.1%**	-	5.1%
Bicycles on Road	1	0	0	**1**	-	0	1	0	**1**	-	2	1	0	**3**	-	5
% Bicycles on Road	0.1%	0%	0%	**0.1%**	-	0%	0.3%	0%	**0.1%**	-	0.5%	0.1%	0%	**0.2%**	-	0.2%
Pedestrians	-	-	-	-	7	-	-	-	-	54	-	-	-	-	11	
% Pedestrians	-	-	-	-	100%	-	-	-	-	100%	-	-	-	-	84.6%	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	2	

Leg / Direction	East Westbound					South Northbound					West Eastbound					
Time	T	L	U	App	Ped*	R	L	U	App	Ped*	R	T	U	App	Ped*	Int
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	15.4%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Figure 6 - 2021 Base Traffic Volumes – AM Peak Hour

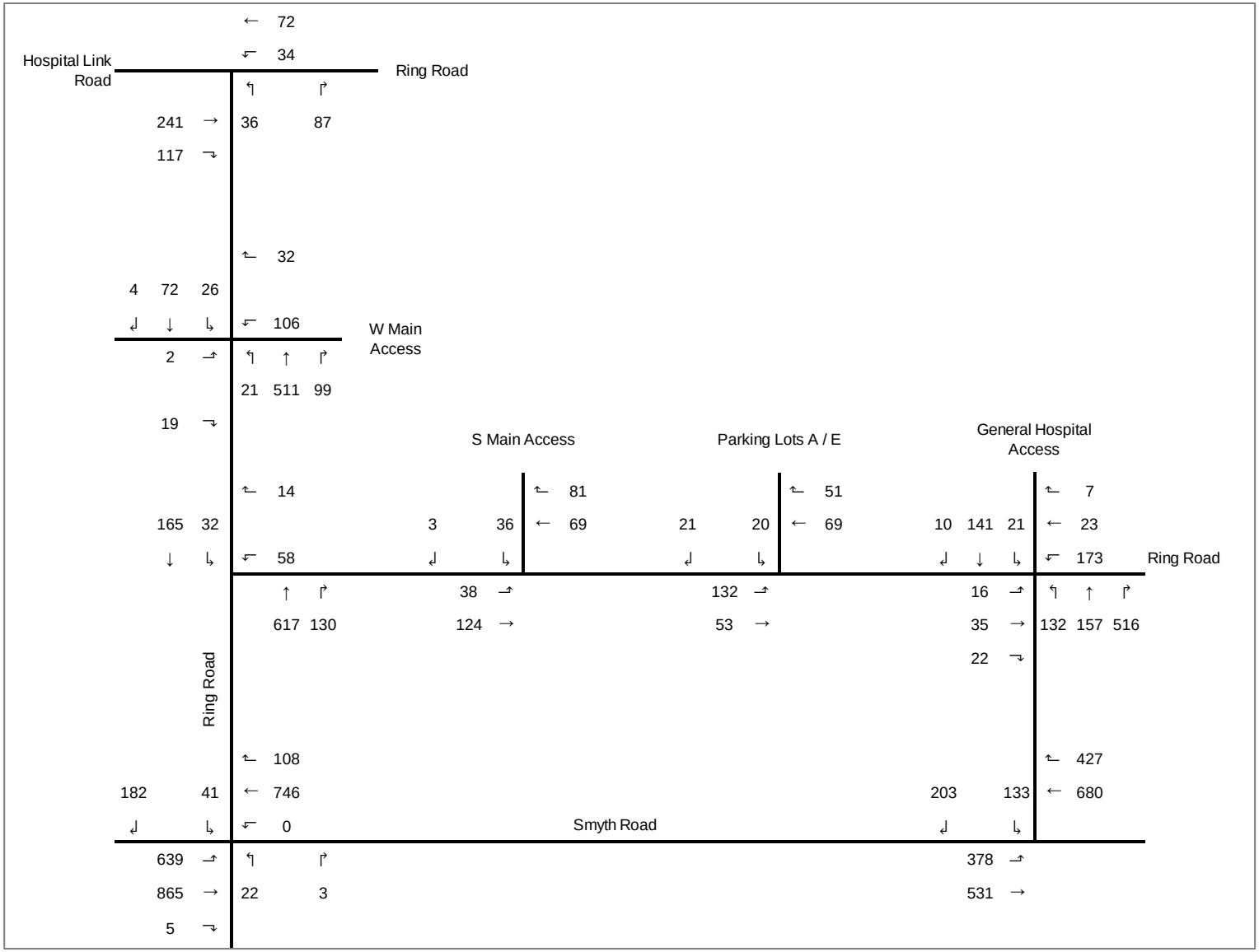
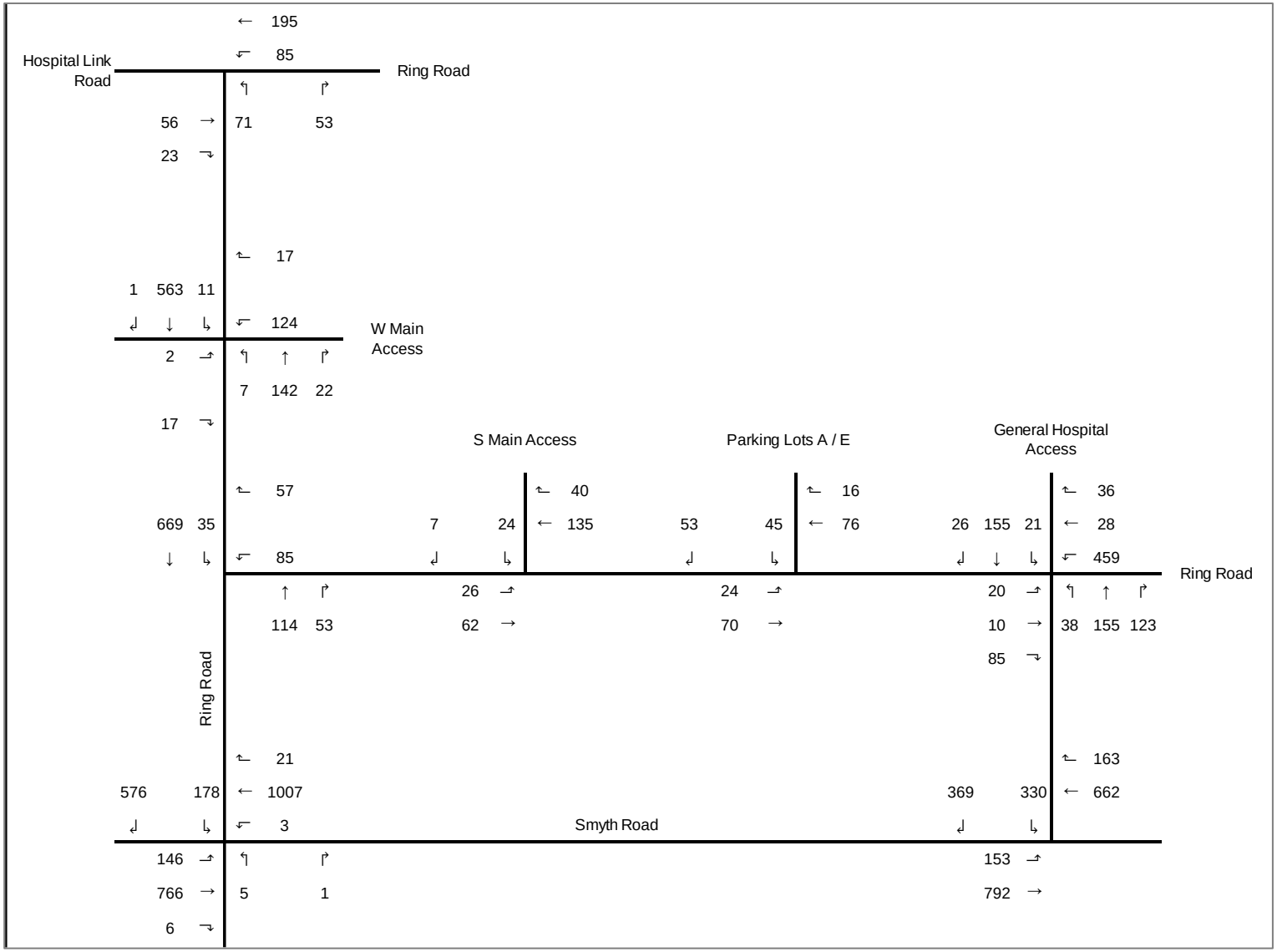


Figure 7 2021 Base Traffic Volumes – PM Peak Hour



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: HIGHLAND TER @ SMYTH RD

Traffic Control: Stop sign **Total Collisions:** 3

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	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 Manoeuver	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 Manoeuver	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	

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	

Appendix D

2011 Origin-Destination Survey (Alta Vista)

Alta Vista

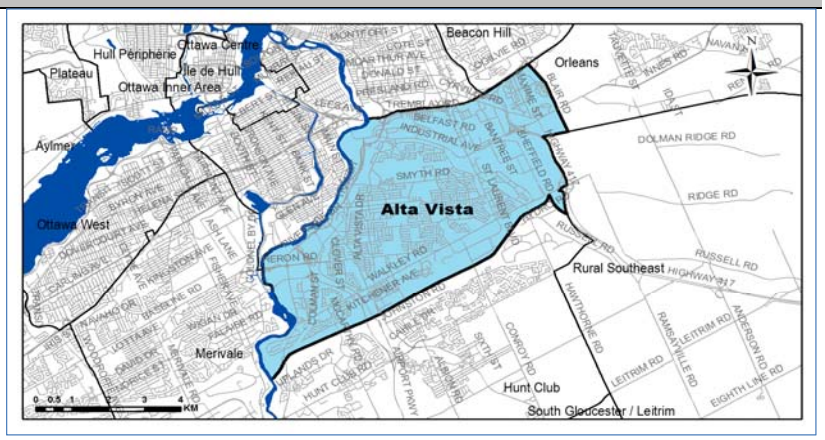
Demographic Characteristics

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/km2)	1940

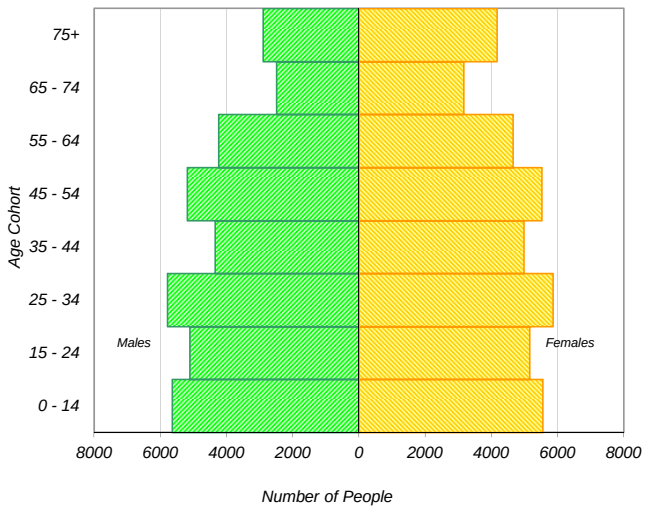


Household Size		
1 person	10,780	33%
2 persons	11,010	34%
3 persons	4,790	15%
4 persons	3,880	12%
5+ persons	2,130	7%
Total:	32,590	100%

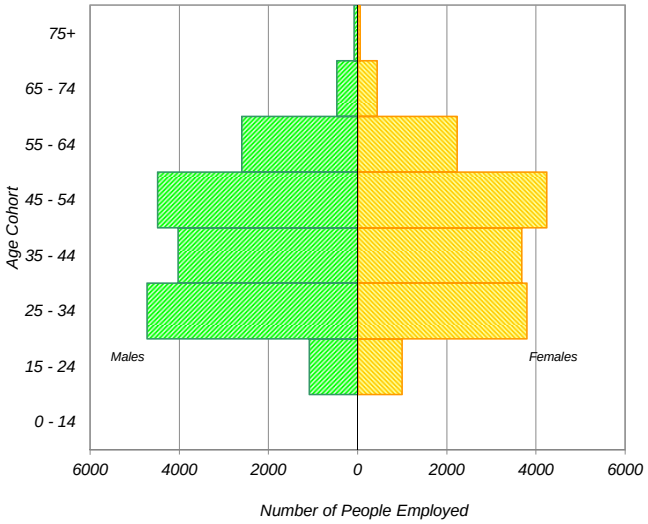
Households by Vehicle Availability		
0 vehicles	6,320	19%
1 vehicle	16,930	52%
2 vehicles	8,030	25%
3 vehicles	1,030	3%
4+ vehicles	290	1%
Total:	32,590	100%

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

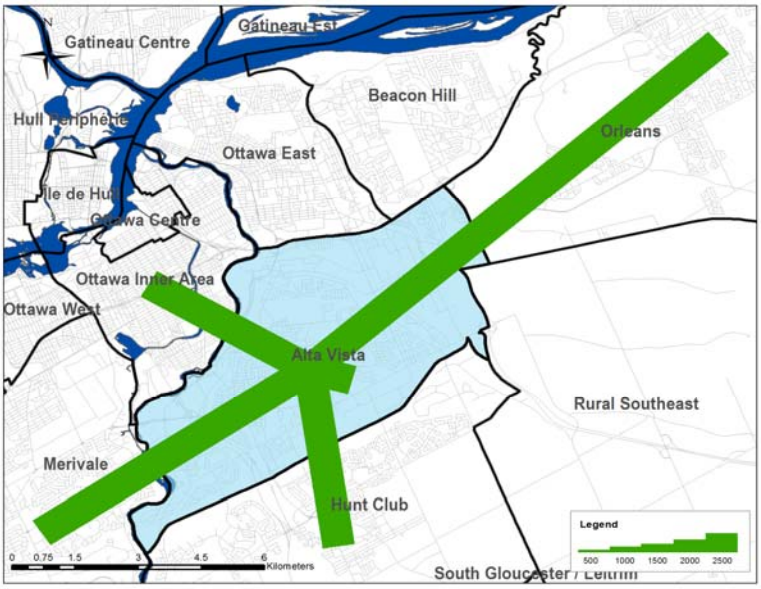


* In 2005 data was only collected for household members aged 11+ therefore these results cannot be compared to the 2011 data.

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 District	% Total	Origins of Trips To 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 / Stittsvile	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%

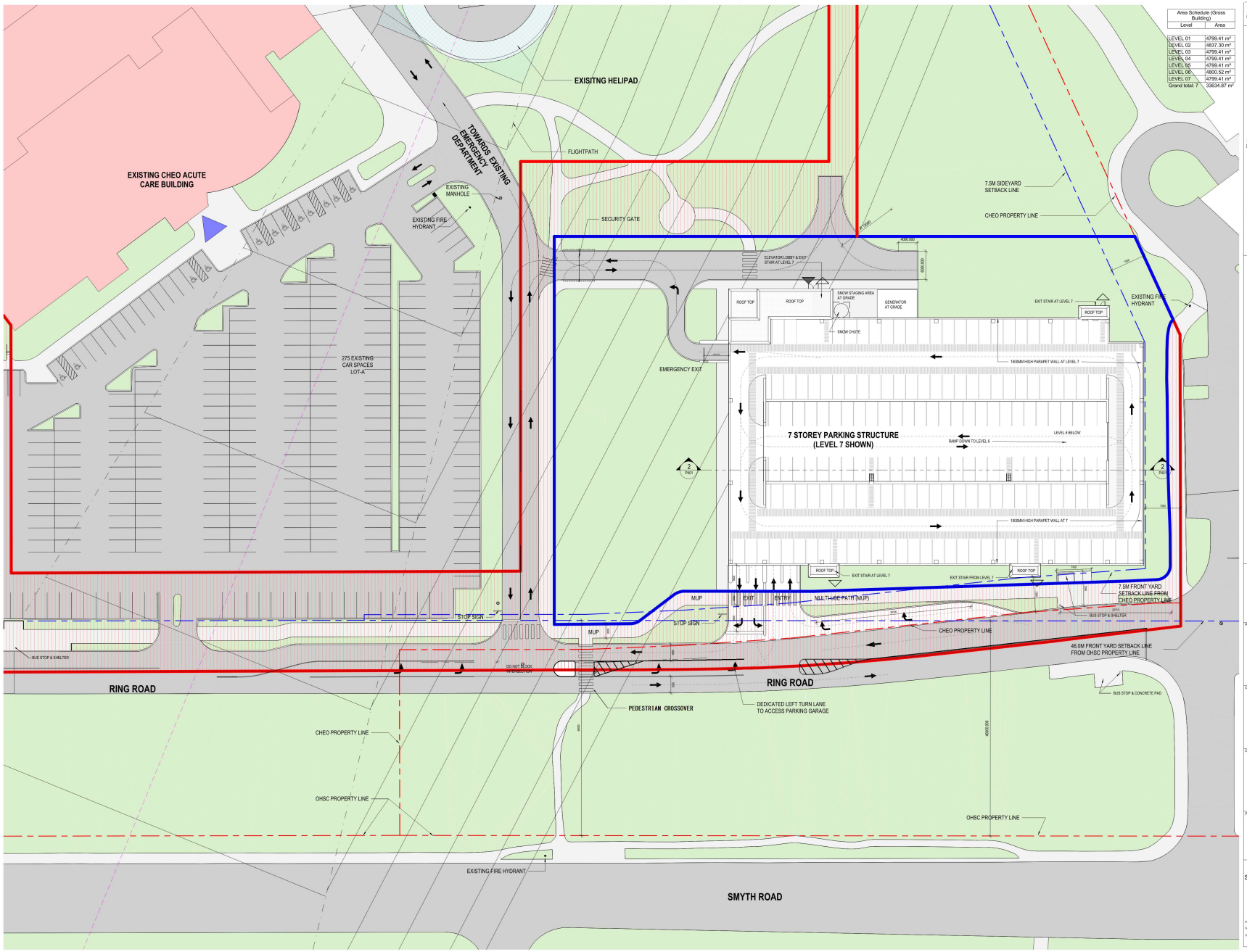
PM Peak (15:30 - 17:59)	From District		To District		Within District	
Auto Driver	28,570	64%	15,990	57%	9,640	49%
Auto Passenger	5,930	13%	4,230	15%	3,570	18%
Transit	7,460	17%	6,420	23%	1,500	8%
Bicycle	630	1%	610	2%	470	2%
Walk	340	1%	310	1%	3,280	17%
Other	1,660	4%	340	1%	1,210	6%
Total:	44,590	100%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

Appendix E

Proposed Site Plan



Area Schedule (Gross Building)	
Level	Area
LEVEL 01	4799.41 m²
LEVEL 02	4837.30 m²
LEVEL 03	4799.41 m²
LEVEL 04	4799.41 m²
LEVEL 05	4799.41 m²
LEVEL 06	4800.52 m²
LEVEL 07	4799.41 m²
Grand total: 7	33634.87 m²

Keyplan:

NO.	ISSUED FOR	DATE
1	ISSUED FOR SPC	29/04/22

Extent of Construction Site - Phase 1A

Extent of Construction Site - Phase 1B

Required Improvement Areas

PDC:

B+H
320 Bay Street, Suite 200
Toronto, ON, Canada, M5H 4A6
t. 416.596.2299 f. 416.596.0809

Client:

Infrastructure Ontario
1 Dundas St. West, Suite 2000
Toronto, ON M7A 1Z3
t. 416.327.2657

Client:

CHEO
401 Smyth Rd
Ottawa, ON K1H 8L1
t. 613.737.7600

Project:

1Door4Care
CHEO Integrated Treatment Centre

SITE PLAN - PHASE 1A

Arch. No: 2111095
Scale: As indicated
Date: 01/20/22

Sheet No: P003

Plan #: 18912 | File #: D07-12-22-0176

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Appendix F

Supportive TDM Development Design Checklist

TDM Measures Checklist:
Non-Residential Developments (office, institutional, retail or industrial)

Legend

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

★ — The measure is one of the most dependably effective tools to encourage the use of sustainable modes

		TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		1. TDM PROGRAM MANAGEMENT	
		1.1 Program coordinator	
BASIC	★	1.1.1 Designate an internal coordinator, or contract with an external coordinator	☒
		1.2 Travel surveys	
BETTER		1.2.1 Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress	☐
		2. WALKING AND CYCLING	
		2.1 Information on walking/cycling routes & destinations	
BASIC		2.1.1 Display local area maps with walking/cycling access routes and key destinations at major entrances	☒
		2.2 Bicycle skills training	
		Commuter travel	
BETTER	★	2.2.1 Offer on-site cycling courses for commuters, or subsidize off-site courses	☐
		2.3 Valet bike parking	
		Visitor travel	
BETTER		2.3.1 Offer secure valet bike parking during public events when demand exceeds fixed supply (e.g. for festivals, concerts, games)	☐

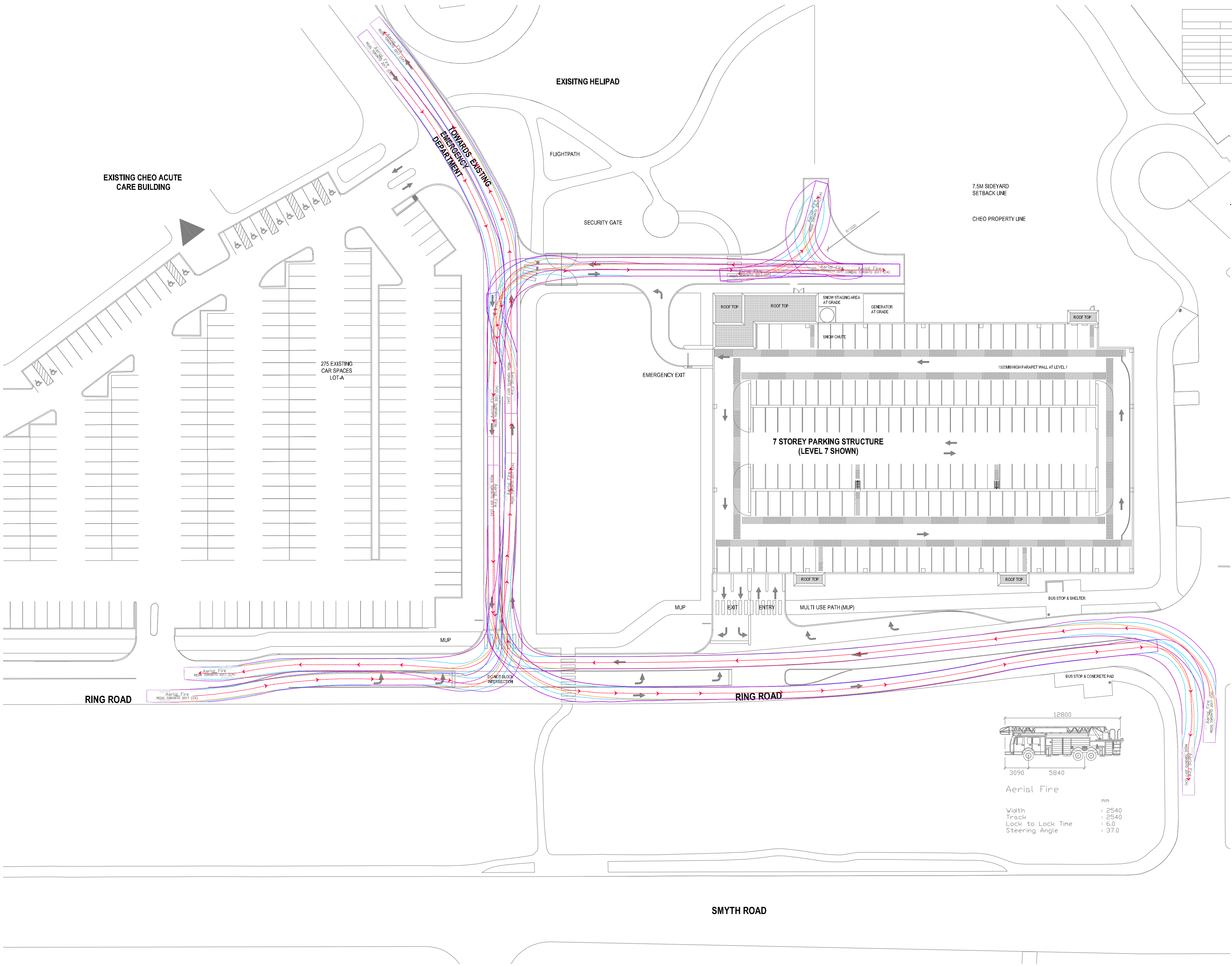
		TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		3. TRANSIT	
		3.1 Transit information	
BASIC	3.1.1	Display relevant transit schedules and route maps at entrances	☒
BASIC	3.1.2	Provide online links to OC Transpo and STO information	☒
BETTER	3.1.3	Provide real-time arrival information display at entrances	☐
		3.2 Transit fare incentives	
		Commuter travel	
BETTER	3.2.1	Offer preloaded PRESTO cards to encourage commuters to use transit	☐
BETTER ★	3.2.2	Subsidize or reimburse monthly transit pass purchases by employees	☐
		Visitor travel	
BETTER	3.2.3	Arrange inclusion of same-day transit fare in price of tickets (e.g. for festivals, concerts, games)	☐
		3.3 Enhanced public transit service	
		Commuter travel	
BETTER	3.3.1	Contract with OC Transpo to provide enhanced transit services (e.g. for shift changes, weekends)	☐
		Visitor travel	
BETTER	3.3.2	Contract with OC Transpo to provide enhanced transit services (e.g. for festivals, concerts, games)	☐
		3.4 Private transit service	
		Commuter travel	
BETTER	3.4.1	Provide shuttle service when OC Transpo cannot offer sufficient quality or capacity to serve demand (e.g. for shift changes, weekends)	☐
		Visitor travel	
BETTER	3.4.2	Provide shuttle service when OC Transpo cannot offer sufficient quality or capacity to serve demand (e.g. for festivals, concerts, games)	☐

			TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		4.	**RIDESHARING**	
		4.1	**Ridematching service**	
			Commuter travel	
BASIC	★	4.1.1	Provide a dedicated ridematching portal at OttawaRideMatch.com	☒
		4.2	**Carpool parking price incentives**	
			Commuter travel	
BETTER		4.2.1	Provide discounts on parking costs for registered carpools	☐
		4.3	**Vanpool service**	
			Commuter travel	
BETTER		4.3.1	Provide a vanpooling service for long-distance commuters	☐
		5.	**CARSHARING & BIKESHARING**	
		5.1	**Bikeshare stations & memberships**	
BETTER		5.1.1	Contract with provider to install on-site bikeshare station for use by commuters and visitors	☐
			Commuter travel	
BETTER		5.1.2	Provide employees with bikeshare memberships for local business travel	☐
		5.2	**Carshare vehicles & memberships**	
			Commuter travel	
BETTER		5.2.1	Contract with provider to install on-site carshare vehicles and promote their use by tenants	☐
BETTER		5.2.2	Provide employees with carshare memberships for local business travel	☐
		6.	**PARKING**	
		6.1	**Priced parking**	
			Commuter travel	
BASIC	★	6.1.1	Charge for long-term parking (daily, weekly, monthly)	☒
BASIC		6.1.2	Unbundle parking cost from lease rates at multi-tenant sites	☐
			Visitor travel	
BETTER		6.1.3	Charge for short-term parking (hourly)	☒

			TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		7.	**TDM MARKETING & COMMUNICATIONS**	
		7.1	**Multimodal travel information**	
			Commuter travel	
BASIC	★	7.1.1	Provide a multimodal travel option information package to new/relocating employees and students	☒
			Visitor travel	
BETTER	★	7.1.2	Include multimodal travel option information in invitations or advertising that attract visitors or customers (e.g. for festivals, concerts, games)	☐
		7.2	**Personalized trip planning**	
			Commuter travel	
BETTER	★	7.2.1	Offer personalized trip planning to new/relocating employees	☐
		7.3	**Promotions**	
			Commuter travel	
BETTER		7.3.1	Deliver promotions and incentives to maintain awareness, build understanding, and encourage trial of sustainable modes	☐
		8.	**OTHER INCENTIVES & AMENITIES**	
		8.1	**Emergency ride home**	
			Commuter travel	
BETTER	★	8.1.1	Provide emergency ride home service to non-driving commuters	☐
		8.2	**Alternative work arrangements**	
			Commuter travel	
BASIC	★	8.2.1	Encourage flexible work hours	☐
BETTER		8.2.2	Encourage compressed workweeks	☐
BETTER	★	8.2.3	Encourage telework	☐
		8.3	**Local business travel options**	
			Commuter travel	
BASIC	★	8.3.1	Provide local business travel options that minimize the need for employees to bring a personal car to work	☐
		8.4	**Commuter incentives**	
			Commuter travel	
BETTER		8.4.1	Offer employees a taxable, mode-neutral commuting allowance	☐
		8.5	**On-site amenities**	
			Commuter travel	
BETTER		8.5.1	Provide on-site amenities/services to minimize mid-day or mid-commute errands	☒

Appendix G

Turning Movement of Design Vehicles

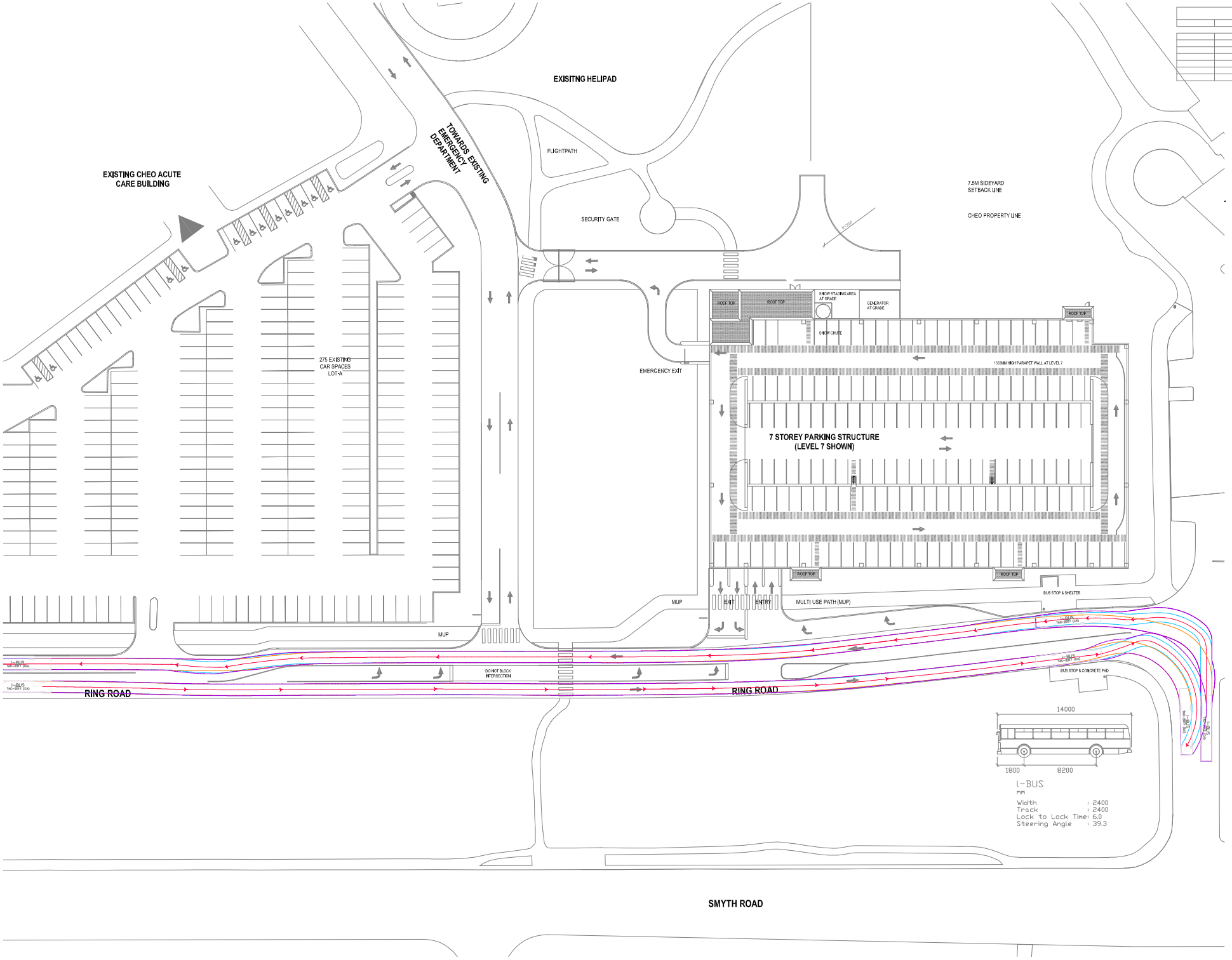


1Door4Care

CHEO Integrated Treatment Centre

FIRE TRUCK TURNING MOVEMENT

Figure 11



Extent of Construction Site – Phase 1A

Extent of Construction Site – Phase 1B

Retained Improvement Areas

1Door4Care

CHEO Integrated Treatment Centre

CITY TRANSIT BUS TURNING MOVEMENT

Figure 12

3/30/2023 12:53:27 PM

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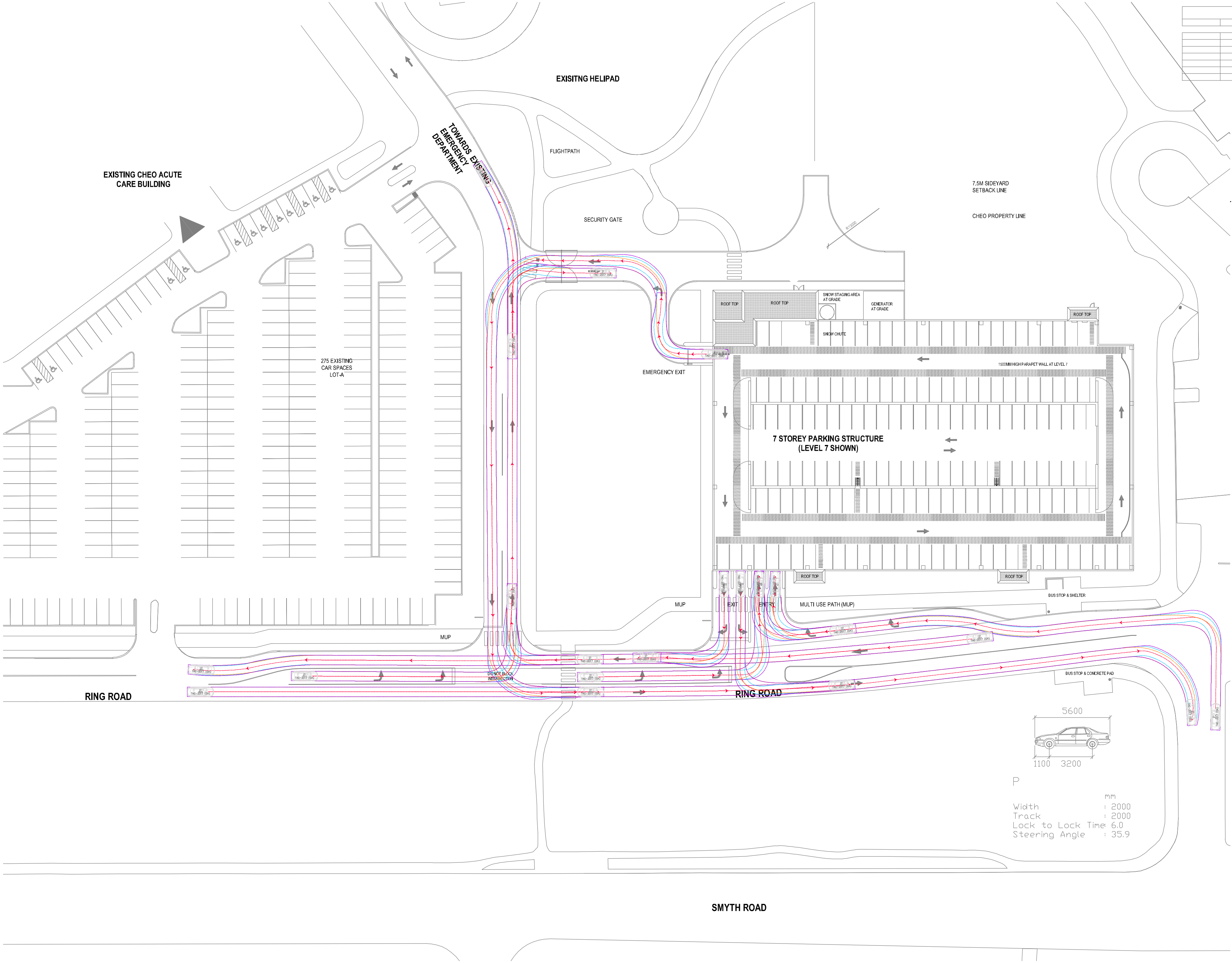


Extent of Construction Site - Phase 1A

Extent of Construction Site - Phase 1B

Required Improvement Areas

1Door4Care

CHEO Integrated Treatment Centre

PASSENGER CAR TURNING MOVEMENT

Figure 13

Appendix H

Detailed Segment MMLOS Calculation

Multi-Modal Level of Service Data Entry Form
CHEO Parking Garage TIA
Appendix H - Boundary Street MMLOS

2022		Emergency Access Road	General Hospital Access Road	Ring Road (E-W)
Pedestrian	Sidewalk Wdith	1.8	2.0 or more	No sidewalk
	Boulevard Width	0m	0m	0m
	Average Daily Curb Lane Traffic Volume	<3000 vpd	<3000 vpd	<3000 vpd
	On-street Parking	No	No	Yes
	Operating Speed	50km/h	50km/h	40km/h
	Level of Service	B	B	F
	Target	C	C	C
Cyclist	Road Classification	Local	Local	Local
	Bike Route Classification	N/A	N/A	N/A
	Type of Bikeway	Mixed	Mixed	Mixed
	Travel Lanes	2	2	2
	Centerline Markings	No	No	Yes
	Operating Speed	50km/h	50km/h	40km/h
	Level of Service	B	B	B
	Target	C	C	C
Transit	Facility Type	Mixed	Mixed	Mixed
	Friction/Congestion/Incident Potential	Limited	Limited	Limited
	Level of Service	D	D	E
	Target	D	D	D
Truck	Lane Width	3.5m to 3.7m	3.5m to 3.7m	3.5m to 3.7m
	Travel Lanes	1	1	1
	Level of Service	C	C	C
	Target	E	E	E

Multi-Modal Level of Service Data Entry Form
CHEO Parking Garage TIA
Appendix H - Boundary Street MMLOS

2024		Emergency Access Road	General Hospital Access Road	Ring Road (E-W)
Pedestrian	Sidewalk Wdith	2.0 or more	2.0 or more	2.0 or more
	Boulevard Width	0.5 to 2	0.5 to 2	0.5 to 2
	Average Daily Curb Lane Traffic Volume	<3000 vpd	<3000 vpd	<3000 vpd
	On-street Parking	No	No	Yes
	Operating Speed	50km/h	50km/h	40km/h
	Level of Service	A	A	A
	Target	C	C	C
Cyclist	Road Classification	Local	Local	Local
	Bike Route Classification	MUP provided	MUP provided	MUP provided
	Type of Bikeway	Mixed	Mixed	Mixed
	Travel Lanes	2	2	2
	Centerline Markings	No	No	Yes
	Operating Speed	50km/h	50km/h	40km/h
	Level of Service	A	A	A
	Target	C	C	C
Transit	Facility Type	Mixed	Mixed	Mixed
	Friction/Congestion/Incident Potential	Limited	Limited	Limited
	Level of Service	D	D	E
	Target	D	D	D
Truck	Lane Width	3.5m to 3.7m	3.5m to 3.7m	3.5m to 3.7m
	Travel Lanes	1	1	1
	Level of Service	C	C	C
	Target	E	E	E

Appendix I

Detailed Intersection MMLOS Calculation

Appendix I

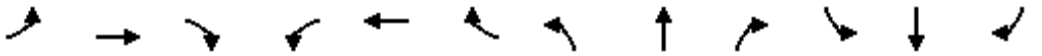
	Intersection	Smyth Road/Ring Road (N-S)				Smyth Road/General Hospital Access		
	Legs	NORTH	SOUTH	EAST	WEST	NORTH	EAST	WEST
Pedestrian	Island Refuge	Yes	No	No	No	Yes	Yes	No
	Lanes	3	2	4	4	4	4	4
	Conflicting Left Turns	permitted	permitted	no left turn	protected	permitted	permitted	protected
	Conflicting Right Turns	permitted	permitted	permitted	permitted	protected	permitted	no right turn
	Right Turn on Red	yes	yes	yes	yes	no	yes	N/A
	Pedestrian Leading Interval	no	no	no	no	no	no	no
	Parallel Radius	15m to 25m	15m to 25m	15m to 25m	15m to 25m	15m to 25m	15m to 25m	15m to 25m
	Parallel Channel	no channel	no channel	no channel	no channel	no channel	no channel	no channel
	Perpendicular Radius	15m to 25m	15m to 25m	15m to 25m	15m to 25m	15m to 25m	15m to 25m	15m to 25m
	Crosswalk Type	standard	standard	standard	standard	standard	standard	standard
	PETSI Score	72	88	58	62	65	57	57
	Delay Score	37	37	34	34	34	28	28
	Level of Service	D	D	D	D	D	C	C
	Target	C				C		
Cyclist	Type of Bikeway	mixed traffic	mixed traffic	mixed traffic	mixed traffic	mixed traffic	mixed traffic	mixed traffic
	Turning Speed	slow	slow	slow	slow	slow	slow	slow
	Right Turn Storage	25m-50m	25m-50m	25m-50m	25m-50m	25m-50m	25m-50m	25m-50m
	Dual Right Turn Lanes	No	No	No	No	No	No	No
	Shared Through-Right Lane	No	No	No	No	No	No	No
	Bike Box	No	No	No	No	No	No	No
	Lanes Crossed	1	1	1	1	1	1	1
	Dual Left Turn Lanes	No	No	No	No	No	No	No
	Approach Speed	50 km/h	50 km/h	50 km/h	50 km/h	50 km/h	50 km/h	50 km/h
	Level of Service	D	D	D	D	D	D	D
	Target	B				B		
Transit	Average Signal Delay	54.5	0.4	7.7	8.8	46.6	17.8	7.4
	Level of Service	F	A	B	B	F	C	B
	Target	D				D		
Truck	Turning Radius	10-15m	< 10m	10-15m	10-15m	10-15m	>15m	N/A
	Receiving Lanes	2	1	2	2	2	2	2
	Level of Service	A	F	A	A	A	A	-
	Target	D				D		

Appendix J

Detailed Synchro Report

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	241	117	34	72	36	87
Future Volume (vph)	241	117	34	72	36	87
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	0.0		0.0	0.0
Storage Lanes		0	0		1	0
Taper Length (m)			7.6		7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.956				0.904	
Flt Protected				0.984	0.986	
Satd. Flow (prot)	1668	0	0	1717	1555	0
Flt Permitted				0.984	0.986	
Satd. Flow (perm)	1668	0	0	1717	1555	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	396.5			285.4	334.8	
Travel Time (s)	28.5			20.5	24.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	268	130	38	80	40	97
Shared Lane Traffic (%)						
Lane Group Flow (vph)	398	0	0	118	137	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		



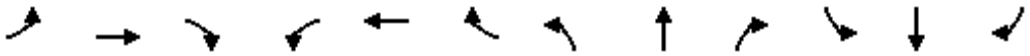
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	19	106	0	32	21	511	99	26	72	4
Future Volume (vph)	2	0	19	106	0	32	21	511	99	26	72	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.877			0.968			0.979			0.995	
Flt Protected		0.996			0.963			0.998			0.987	
Satd. Flow (prot)	0	1524	0	0	1627	0	0	1705	0	0	1714	0
Flt Permitted		0.996			0.963			0.998			0.987	
Satd. Flow (perm)	0	1524	0	0	1627	0	0	1705	0	0	1714	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		65.7			55.2			169.5			334.8	
Travel Time (s)		4.7			4.0			12.2			24.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	2	0	21	118	0	36	23	568	110	29	80	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	23	0	0	154	0	0	701	0	0	113	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 58.5%		ICU Level of Service B	
Analysis Period (min) 15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	58	14	617	130	32	165
Future Volume (vph)	58	14	617	130	32	165
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	1	0		0	0	
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.973		0.977			
Flt Protected	0.962					0.992
Satd. Flow (prot)	1633	0	1705	0	0	1731
Flt Permitted	0.962					0.992
Satd. Flow (perm)	1633	0	1705	0	0	1731
Link Speed (k/h)	50		50			50
Link Distance (m)	109.2		52.2			169.5
Travel Time (s)	7.9		3.8			12.2
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	64	16	686	144	36	183
Shared Lane Traffic (%)						
Lane Group Flow (vph)	80	0	830	0	0	219
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.6%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	362	763	2	1	556	103	6	0	0	28	0	119
Future Volume (vph)	362	763	2	1	556	103	6	0	0	28	0	119
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.977						0.850	
Flt Protected		0.984						0.950		0.950		
Satd. Flow (prot)	0	3263	0	0	3239	0	0	1658	0	1658	1483	0
Flt Permitted		0.603			0.954			0.534		0.753		
Satd. Flow (perm)	0	1999	0	0	3090	0	0	932	0	1314	1483	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					19						588	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		446.7			395.2			147.1			52.2	
Travel Time (s)		32.2			28.5			10.6			3.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	402	848	2	1	618	114	7	0	0	31	0	132
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1252	0	0	733	0	0	7	0	31	132	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	5	2		6	6		4	4		8	8	
Switch Phase												

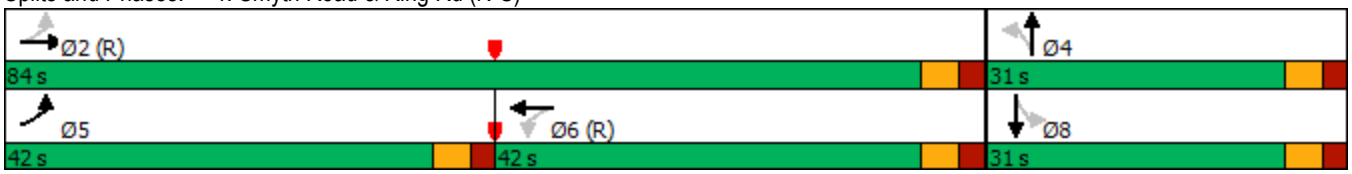


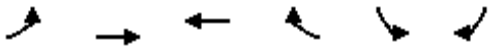
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	10.4	31.7		31.7	31.7		31.0	31.0		31.0	31.0	
Total Split (s)	42.0	84.0		42.0	42.0		31.0	31.0		31.0	31.0	
Total Split (%)	36.5%	73.0%		36.5%	36.5%		27.0%	27.0%		27.0%	27.0%	
Maximum Green (s)	36.6	78.3		36.3	36.3		25.5	25.5		25.5	25.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.1	2.4		2.4	2.4		2.2	2.2		2.2	2.2	
Lost Time Adjust (s)		0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)		5.7			5.7			5.5		5.5	5.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		19.0		19.0	19.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		10		10	10		10	10		10	10	
Act Effct Green (s)		91.2			91.2			12.6		12.6	12.6	
Actuated g/C Ratio		0.79			0.79			0.11		0.11	0.11	
v/c Ratio		0.79			0.30			0.07		0.22	0.19	
Control Delay		12.7			8.2			44.0		48.2	0.6	
Queue Delay		0.0			0.0			0.0		0.0	0.0	
Total Delay		12.7			8.2			44.0		48.2	0.6	
LOS		B			A			D		D	A	
Approach Delay		12.7			8.2			44.0			9.7	
Approach LOS		B			A			D			A	
Queue Length 50th (m)		56.8			12.0			1.5		6.7	0.0	
Queue Length 95th (m)		#160.0			100.5			5.2		14.2	0.0	
Internal Link Dist (m)		422.7			371.2			123.1			28.2	
Turn Bay Length (m)												
Base Capacity (vph)		1585			2454			206		291	786	
Starvation Cap Reductn		0			0			0		0	0	
Spillback Cap Reductn		0			0			0		0	0	
Storage Cap Reductn		0			0			0		0	0	
Reduced v/c Ratio		0.79			0.30			0.03		0.11	0.17	

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 115			
Offset: 35 (30%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 11.1		Intersection LOS: B	
Intersection Capacity Utilization 75.6%		ICU Level of Service D	
Analysis Period (min) 15			

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

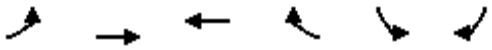
Splits and Phases: 4: Smyth Road & Ring Rd (N-S)





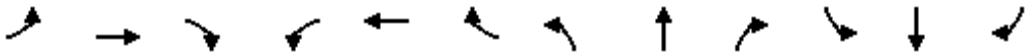
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	38	124	69	81	36	3
Future Volume (vph)	38	124	69	81	36	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			0.0	0.0	0.0
Storage Lanes	0			0	1	0
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.927		0.991	
Flt Protected		0.988			0.956	
Satd. Flow (prot)	0	1724	1618	0	1653	0
Flt Permitted		0.988			0.956	
Satd. Flow (perm)	0	1724	1618	0	1653	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		109.2	130.9		57.7	
Travel Time (s)		7.9	9.4		4.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	42	138	77	90	40	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	180	167	0	43	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.5%		ICU Level of Service A	
Analysis Period (min) 15			



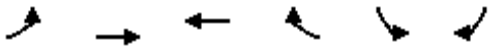
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	132	53	69	51	20	21
Future Volume (vph)	132	53	69	51	20	21
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			0.0	0.0	0.0
Storage Lanes	0			0	1	0
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.943		0.931	
Flt Protected		0.966			0.976	
Satd. Flow (prot)	0	1686	1646	0	1586	0
Flt Permitted		0.966			0.976	
Satd. Flow (perm)	0	1686	1646	0	1586	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		130.9	158.0		74.3	
Travel Time (s)		9.4	11.4		5.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	147	59	77	57	22	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	206	134	0	45	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 27.3%		ICU Level of Service A	
Analysis Period (min) 15			

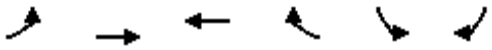


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	35	22	173	23	7	132	157	516	21	141	10
Future Volume (vph)	16	35	22	173	23	7	132	157	516	21	141	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.960			0.995			0.913			0.992	
Flt Protected		0.989			0.959			0.992			0.994	
Satd. Flow (prot)	0	1657	0	0	1665	0	0	1581	0	0	1721	0
Flt Permitted		0.989			0.959			0.992			0.994	
Satd. Flow (perm)	0	1657	0	0	1665	0	0	1581	0	0	1721	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		158.0			97.8			54.4			67.4	
Travel Time (s)		11.4			7.0			3.9			4.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	18	39	24	192	26	8	147	174	573	23	157	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	81	0	0	226	0	0	894	0	0	191	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	88.1%	ICU Level of Service	E
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	378	536	687	427	133	203	
Future Volume (vph)	378	536	687	427	133	203	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	
Grade (%)		0%	0%		0%		
Storage Length (m)	60.0			175.0	0.0	0.0	
Storage Lanes	1			1	2	1	
Taper Length (m)	30.0				7.6		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00	
Ped Bike Factor							
Frt				0.850		0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1658	3316	3316	1483	3216	1483	
Flt Permitted	0.258				0.950		
Satd. Flow (perm)	450	3316	3316	1483	3216	1483	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)				474		39	
Link Speed (k/h)		50	50		50		
Link Distance (m)		395.2	413.8		54.4		
Travel Time (s)		28.5	29.8		3.9		
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)							
Mid-Block Traffic (%)		0%	0%		0%		
Adj. Flow (vph)	420	596	763	474	148	226	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	420	596	763	474	148	226	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(m)		3.5	3.5		7.0		
Link Offset(m)		0.0	0.0		0.0		
Crosswalk Width(m)		4.9	4.9		4.9		
Two way Left Turn Lane							
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	
Turning Speed (k/h)	24			14	24	14	
Number of Detectors	1	2	2	1	1	1	
Detector Template	Left	Thru	Thru	Right	Left	Right	
Leading Detector (m)	6.1	30.5	30.5	6.1	6.1	6.1	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	pm+pt	NA	NA	pm+ov	custom	pm+ov	
Protected Phases	5	2	6	4	4	5	3
Permitted Phases	2			6	3	4 3	
Detector Phase	5	2	6	4	4	5	
Switch Phase							

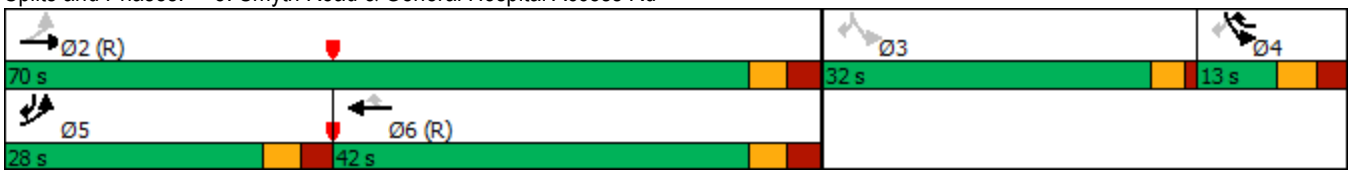


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0	10.0
Minimum Split (s)	23.9	24.4	41.4	11.1	11.1	23.9	32.0
Total Split (s)	28.0	70.0	42.0	13.0	13.0	28.0	32.0
Total Split (%)	24.3%	60.9%	36.5%	11.3%	11.3%	24.3%	28%
Maximum Green (s)	22.1	63.6	35.6	6.9	6.9	22.1	28.0
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.0
All-Red Time (s)	2.6	3.1	3.1	2.8	2.8	2.6	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	6.4	6.4	6.1	6.1	5.9	
Lead/Lag	Lead		Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	None	None	None
Walk Time (s)			7.0				7.0
Flash Dont Walk (s)			28.0				21.0
Pedestrian Calls (#/hr)			10				10
Act Effct Green (s)	87.3	86.8	56.7	71.2	15.7	46.0	
Actuated g/C Ratio	0.76	0.75	0.49	0.62	0.14	0.40	
v/c Ratio	0.71	0.24	0.47	0.43	0.34	0.37	
Control Delay	19.4	5.3	22.9	2.3	44.6	19.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	19.4	5.3	22.9	2.3	44.6	19.8	
LOS	B	A	C	A	D	B	
Approach Delay		11.1	15.0		29.6		
Approach LOS		B	B		C		
Queue Length 50th (m)	25.0	13.4	54.0	0.0	16.5	30.3	
Queue Length 95th (m)	m#96.9	29.5	103.0	9.9	19.2	32.2	
Internal Link Dist (m)		371.2	389.8		30.4		
Turn Bay Length (m)	60.0			175.0			
Base Capacity (vph)	600	2502	1636	1098	438	621	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.70	0.24	0.47	0.43	0.34	0.36	

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 115			
Offset: 43 (37%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 15.6		Intersection LOS: B	
Intersection Capacity Utilization 61.7%		ICU Level of Service B	
Analysis Period (min) 15			

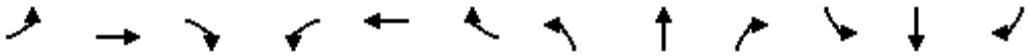
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Smyth Road & General Hospital Access Rd



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	241	117	34	72	36	87
Future Volume (vph)	241	117	34	72	36	87
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	0.0		0.0	0.0
Storage Lanes		0	0		1	0
Taper Length (m)			7.6		7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.956				0.904	
Flt Protected				0.984	0.986	
Satd. Flow (prot)	1668	0	0	1717	1555	0
Flt Permitted				0.984	0.986	
Satd. Flow (perm)	1668	0	0	1717	1555	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	396.5			285.4	334.8	
Travel Time (s)	28.5			20.5	24.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	268	130	38	80	40	97
Shared Lane Traffic (%)						
Lane Group Flow (vph)	398	0	0	118	137	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		



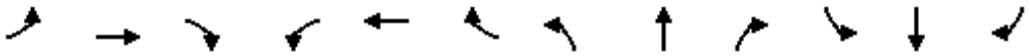
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	19	106	0	32	21	511	99	26	72	4
Future Volume (vph)	2	0	19	106	0	32	21	511	99	26	72	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.877			0.968			0.979			0.995	
Flt Protected		0.996			0.963			0.998			0.987	
Satd. Flow (prot)	0	1524	0	0	1627	0	0	1705	0	0	1714	0
Flt Permitted		0.996			0.963			0.998			0.987	
Satd. Flow (perm)	0	1524	0	0	1627	0	0	1705	0	0	1714	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		65.7			55.2			169.5			334.8	
Travel Time (s)		4.7			4.0			12.2			24.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	2	0	21	118	0	36	23	568	110	29	80	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	23	0	0	154	0	0	701	0	0	113	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 58.5%		ICU Level of Service B	
Analysis Period (min) 15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	58	14	617	130	32	165
Future Volume (vph)	58	14	617	130	32	165
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	1	0		0	0	
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.973		0.977			
Flt Protected	0.962					0.992
Satd. Flow (prot)	1633	0	1705	0	0	1731
Flt Permitted	0.962					0.992
Satd. Flow (perm)	1633	0	1705	0	0	1731
Link Speed (k/h)	50		50			50
Link Distance (m)	109.2		52.2			169.5
Travel Time (s)	7.9		3.8			12.2
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	64	16	686	144	36	183
Shared Lane Traffic (%)						
Lane Group Flow (vph)	80	0	830	0	0	219
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.6%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	362	763	2	1	556	103	6	0	0	28	0	119
Future Volume (vph)	362	763	2	1	556	103	6	0	0	28	0	119
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.977						0.850	
Flt Protected		0.984						0.950		0.950		
Satd. Flow (prot)	0	3263	0	0	3239	0	0	1658	0	1658	1483	0
Flt Permitted		0.603			0.954			0.534		0.753		
Satd. Flow (perm)	0	1999	0	0	3090	0	0	932	0	1314	1483	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					26						349	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		446.7			395.2			147.1			52.2	
Travel Time (s)		32.2			28.5			10.6			3.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	402	848	2	1	618	114	7	0	0	31	0	132
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1252	0	0	733	0	0	7	0	31	132	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	5	2		6	6		4	4		8	8	
Switch Phase												

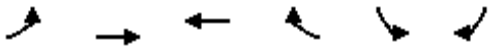


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	10.4	31.7		31.7	31.7		31.5	31.5		31.5	31.5	
Total Split (s)	16.0	78.0		62.0	62.0		37.0	37.0		37.0	37.0	
Total Split (%)	13.9%	67.8%		53.9%	53.9%		32.2%	32.2%		32.2%	32.2%	
Maximum Green (s)	10.6	72.3		56.3	56.3		31.5	31.5		31.5	31.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.1	2.4		2.4	2.4		2.2	2.2		2.2	2.2	
Lost Time Adjust (s)		0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)		5.7			5.7			5.5		5.5	5.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		19.0		19.0	19.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		10		10	10		10	10		10	10	
Act Effct Green (s)		91.2			91.2			12.6		12.6	12.6	
Actuated g/C Ratio		0.79			0.79			0.11		0.11	0.11	
v/c Ratio		0.79			0.30			0.07		0.22	0.28	
Control Delay		12.7			11.2			44.0		48.2	1.5	
Queue Delay		0.0			0.0			0.0		0.0	0.0	
Total Delay		12.7			11.2			44.0		48.2	1.5	
LOS		B			B			D		D	A	
Approach Delay		12.7			11.2			44.0			10.4	
Approach LOS		B			B			D			B	
Queue Length 50th (m)		56.8			22.2			1.5		6.7	0.0	
Queue Length 95th (m)		#160.0			90.3			5.2		14.2	0.0	
Internal Link Dist (m)		422.7			371.2			123.1			28.2	
Turn Bay Length (m)												
Base Capacity (vph)		1585			2456			255		359	659	
Starvation Cap Reductn		0			0			0		0	0	
Spillback Cap Reductn		0			0			0		0	0	
Storage Cap Reductn		0			0			0		0	0	
Reduced v/c Ratio		0.79			0.30			0.03		0.09	0.20	

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 115			
Offset: 35 (30%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 12.1		Intersection LOS: B	
Intersection Capacity Utilization 75.6%		ICU Level of Service D	
Analysis Period (min) 15			

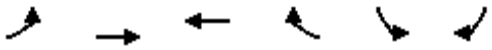
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Smyth Road & Ring Rd (N-S)



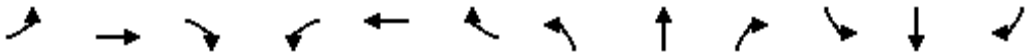
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	38	124	69	81	36	3
Future Volume (vph)	38	124	69	81	36	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			0.0	0.0	0.0
Storage Lanes	0			0	1	0
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.927		0.991	
Flt Protected		0.988			0.956	
Satd. Flow (prot)	0	1724	1618	0	1653	0
Flt Permitted		0.988			0.956	
Satd. Flow (perm)	0	1724	1618	0	1653	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		109.2	130.9		57.7	
Travel Time (s)		7.9	9.4		4.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	42	138	77	90	40	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	180	167	0	43	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.5%		ICU Level of Service A	
Analysis Period (min) 15			



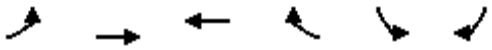
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	132	53	69	51	20	21
Future Volume (vph)	132	53	69	51	20	21
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			0.0	0.0	0.0
Storage Lanes	0			0	1	0
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.943		0.931	
Flt Protected		0.966			0.976	
Satd. Flow (prot)	0	1686	1646	0	1586	0
Flt Permitted		0.966			0.976	
Satd. Flow (perm)	0	1686	1646	0	1586	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		130.9	158.0		74.3	
Travel Time (s)		9.4	11.4		5.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	147	59	77	57	22	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	206	134	0	45	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 27.3%		ICU Level of Service A	
Analysis Period (min) 15			

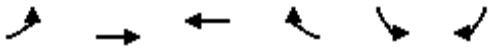


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	35	22	173	23	7	132	157	516	21	141	10
Future Volume (vph)	16	35	22	173	23	7	132	157	516	21	141	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.960			0.995			0.913			0.992	
Flt Protected		0.989			0.959			0.992			0.994	
Satd. Flow (prot)	0	1657	0	0	1665	0	0	1581	0	0	1721	0
Flt Permitted		0.989			0.959			0.992			0.994	
Satd. Flow (perm)	0	1657	0	0	1665	0	0	1581	0	0	1721	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		158.0			97.8			54.4			67.4	
Travel Time (s)		11.4			7.0			3.9			4.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	18	39	24	192	26	8	147	174	573	23	157	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	81	0	0	226	0	0	894	0	0	191	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	88.1%	ICU Level of Service	E
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	378	536	687	427	133	203	
Future Volume (vph)	378	536	687	427	133	203	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	
Grade (%)		0%	0%		0%		
Storage Length (m)	60.0			175.0	0.0	0.0	
Storage Lanes	1			1	2	1	
Taper Length (m)	30.0				7.6		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00	
Ped Bike Factor							
Frt				0.850		0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1658	3316	3316	1483	3216	1483	
Flt Permitted	0.179				0.950		
Satd. Flow (perm)	312	3316	3316	1483	3216	1483	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)				474		43	
Link Speed (k/h)		50	50		50		
Link Distance (m)		395.2	413.8		54.4		
Travel Time (s)		28.5	29.8		3.9		
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)							
Mid-Block Traffic (%)		0%	0%		0%		
Adj. Flow (vph)	420	596	763	474	148	226	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	420	596	763	474	148	226	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(m)		3.5	3.5		7.0		
Link Offset(m)		0.0	0.0		0.0		
Crosswalk Width(m)		4.9	4.9		4.9		
Two way Left Turn Lane							
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	
Turning Speed (k/h)	24			14	24	14	
Number of Detectors	1	2	2	1	1	1	
Detector Template	Left	Thru	Thru	Right	Left	Right	
Leading Detector (m)	6.1	30.5	30.5	6.1	6.1	6.1	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	pm+pt	NA	NA	pm+ov	custom	pm+ov	
Protected Phases	5	2	6	4	4	5	3
Permitted Phases	2			6	3	4 3	
Detector Phase	5	2	6	4	4	5	
Switch Phase							

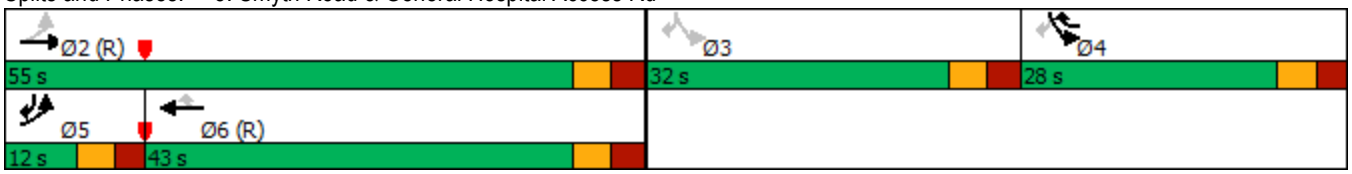


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.9	24.4	41.4	11.1	11.1	10.9	29.3
Total Split (s)	12.0	55.0	43.0	28.0	28.0	12.0	32.0
Total Split (%)	10.4%	47.8%	37.4%	24.3%	24.3%	10.4%	28%
Maximum Green (s)	6.1	48.6	36.6	21.9	21.9	6.1	25.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.6	3.1	3.1	2.8	2.8	2.6	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	6.4	6.4	6.1	6.1	5.9	
Lead/Lag	Lead		Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	Min	C-Max	C-Max	None	None	Min	None
Walk Time (s)			7.0				7.0
Flash Dont Walk (s)			28.0				16.0
Pedestrian Calls (#/hr)			10				10
Act Effct Green (s)	86.6	86.1	42.2	57.9	16.4	60.5	
Actuated g/C Ratio	0.75	0.75	0.37	0.50	0.14	0.53	
v/c Ratio	0.62	0.24	0.63	0.48	0.32	0.28	
Control Delay	23.8	5.9	32.7	2.7	43.7	13.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	23.8	5.9	32.7	2.7	43.7	13.8	
LOS	C	A	C	A	D	B	
Approach Delay		13.3	21.2		25.6		
Approach LOS		B	C		C		
Queue Length 50th (m)	41.1	13.3	66.5	0.0	16.5	24.4	
Queue Length 95th (m)	m#135.1	32.9	101.6	9.1	18.3	32.5	
Internal Link Dist (m)		371.2	389.8		30.4		
Turn Bay Length (m)	60.0			175.0			
Base Capacity (vph)	679	2483	1218	1082	776	799	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.62	0.24	0.63	0.44	0.19	0.28	

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 115			
Offset: 59 (51%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 18.8		Intersection LOS: B	
Intersection Capacity Utilization 61.7%		ICU Level of Service B	
Analysis Period (min) 15			

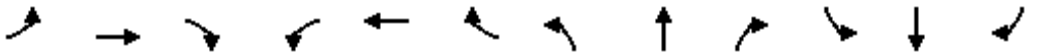
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Smyth Road & General Hospital Access Rd



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	241	170	34	72	63	87
Future Volume (vph)	241	170	34	72	63	87
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	0.0		0.0	0.0
Storage Lanes		0	0		1	0
Taper Length (m)			7.6		7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.944				0.922	
Flt Protected				0.984	0.979	
Satd. Flow (prot)	1647	0	0	1717	1575	0
Flt Permitted				0.984	0.979	
Satd. Flow (perm)	1647	0	0	1717	1575	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	396.5			285.4	325.9	
Travel Time (s)	28.5			20.5	23.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	241	170	34	72	63	87
Shared Lane Traffic (%)						
Lane Group Flow (vph)	411	0	0	106	150	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

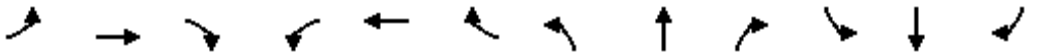


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	19	32	0	10	21	560	30	8	143	4
Future Volume (vph)	2	0	19	32	0	10	21	560	30	8	143	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.878			0.968			0.993			0.997	
Flt Protected		0.995			0.963			0.998			0.997	
Satd. Flow (prot)	0	1525	0	0	1627	0	0	1729	0	0	1735	0
Flt Permitted		0.995			0.963			0.998			0.997	
Satd. Flow (perm)	0	1525	0	0	1627	0	0	1729	0	0	1735	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		82.9			57.3			178.5			325.9	
Travel Time (s)		6.0			4.1			12.9			23.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	2	0	19	32	0	10	21	560	30	8	143	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	21	0	0	42	0	0	611	0	0	155	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

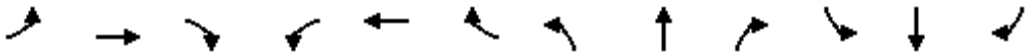
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 56.1%		ICU Level of Service B	
Analysis Period (min) 15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	91	63	617	174	103	165
Future Volume (vph)	91	63	617	174	103	165
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	1	0		0	0	
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.945		0.970			
Flt Protected	0.971					0.981
Satd. Flow (prot)	1601	0	1693	0	0	1712
Flt Permitted	0.971					0.981
Satd. Flow (perm)	1601	0	1693	0	0	1712
Link Speed (k/h)	50		50			50
Link Distance (m)	109.2		52.2			178.5
Travel Time (s)	7.9		3.8			12.9
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	91	63	617	174	103	165
Shared Lane Traffic (%)						
Lane Group Flow (vph)	154	0	791	0	0	268
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 80.0%		ICU Level of Service D	
Analysis Period (min) 15			



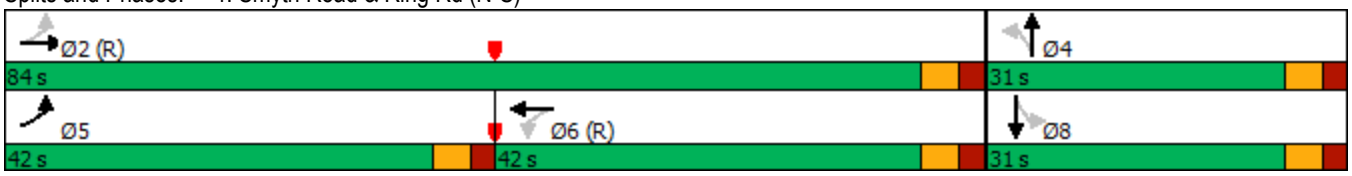
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	406	778	2	1	567	103	6	0	0	28	0	152
Future Volume (vph)	406	778	2	1	567	103	6	0	0	28	0	152
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.977						0.850	
Flt Protected		0.983						0.950		0.950		
Satd. Flow (prot)	0	3259	0	0	3239	0	0	1658	0	1658	1483	0
Flt Permitted		0.613			0.954			0.454		0.754		
Satd. Flow (perm)	0	2033	0	0	3090	0	0	792	0	1316	1483	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					19						598	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		446.7			395.2			147.1			52.2	
Travel Time (s)		32.2			28.5			10.6			3.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	406	778	2	1	567	103	6	0	0	28	0	152
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1186	0	0	671	0	0	6	0	28	152	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	5	2		6	6		4	4		8	8	
Switch Phase												

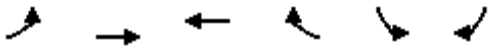


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	10.4	31.7		31.7	31.7		31.0	31.0		31.0	31.0	
Total Split (s)	42.0	84.0		42.0	42.0		31.0	31.0		31.0	31.0	
Total Split (%)	36.5%	73.0%		36.5%	36.5%		27.0%	27.0%		27.0%	27.0%	
Maximum Green (s)	36.6	78.3		36.3	36.3		25.5	25.5		25.5	25.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.1	2.4		2.4	2.4		2.2	2.2		2.2	2.2	
Lost Time Adjust (s)		0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)		5.7			5.7			5.5		5.5	5.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		19.0		19.0	19.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		10		10	10		10	10		10	10	
Act Effct Green (s)		91.2			91.2			12.6		12.6	12.6	
Actuated g/C Ratio		0.79			0.79			0.11		0.11	0.11	
v/c Ratio		0.74			0.27			0.07		0.19	0.22	
Control Delay		10.6			8.6			44.2		47.6	0.7	
Queue Delay		0.0			0.0			0.0		0.0	0.0	
Total Delay		10.6			8.6			44.2		47.6	0.7	
LOS		B			A			D		D	A	
Approach Delay		10.6			8.6			44.2			8.0	
Approach LOS		B			A			D			A	
Queue Length 50th (m)		48.0			11.5			1.3		6.0	0.0	
Queue Length 95th (m)		126.9			93.9			4.9		13.2	0.0	
Internal Link Dist (m)		422.7			371.2			123.1			28.2	
Turn Bay Length (m)												
Base Capacity (vph)		1612			2454			175		291	794	
Starvation Cap Reductn		0			0			0		0	0	
Spillback Cap Reductn		0			0			0		0	0	
Storage Cap Reductn		0			0			0		0	0	
Reduced v/c Ratio		0.74			0.27			0.03		0.10	0.19	

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 115			
Offset: 35 (30%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 9.8		Intersection LOS: A	
Intersection Capacity Utilization 79.3%		ICU Level of Service D	
Analysis Period (min) 15			

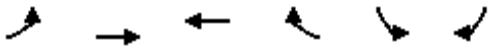
Splits and Phases: 4: Smyth Road & Ring Rd (N-S)





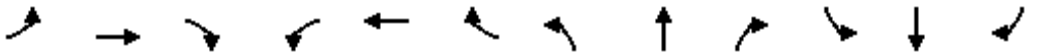
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	11	187	151	24	11	1
Future Volume (vph)	11	187	151	24	11	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			0.0	0.0	0.0
Storage Lanes	0			0	1	0
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.981		0.989	
Flt Protected		0.997			0.956	
Satd. Flow (prot)	0	1740	1712	0	1650	0
Flt Permitted		0.997			0.956	
Satd. Flow (perm)	0	1740	1712	0	1650	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		109.2	130.9		57.7	
Travel Time (s)		7.9	9.4		4.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	11	187	151	24	11	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	198	175	0	12	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.9%		ICU Level of Service A	
Analysis Period (min) 15			



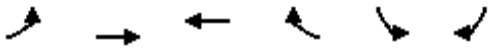
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	26	222	111	10	4	4
Future Volume (vph)	26	222	111	10	4	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	35.0			0.0	0.0	0.0
Storage Lanes	0			0	1	0
Taper Length (m)	7.6				7.6	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.989		0.932	
Flt Protected		0.995			0.976	
Satd. Flow (prot)	0	3299	1726	0	1587	0
Flt Permitted		0.995			0.976	
Satd. Flow (perm)	0	3299	1726	0	1587	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		130.9	64.8		106.6	
Travel Time (s)		9.4	4.7		7.7	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	26	222	111	10	4	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	248	121	0	8	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 27.4%		ICU Level of Service A	
Analysis Period (min) 15			

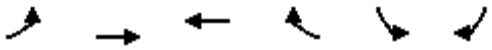


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	35	96	173	23	7	196	157	516	21	141	10
Future Volume (vph)	16	35	96	173	23	7	196	157	516	21	141	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.912			0.995			0.920			0.992	
Flt Protected		0.995			0.959			0.989			0.994	
Satd. Flow (prot)	0	1584	0	0	1665	0	0	1588	0	0	1721	0
Flt Permitted		0.995			0.959			0.989			0.994	
Satd. Flow (perm)	0	1584	0	0	1665	0	0	1588	0	0	1721	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		93.1			97.8			54.4			67.4	
Travel Time (s)		6.7			7.0			3.9			4.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	16	35	96	173	23	7	196	157	516	21	141	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	147	0	0	203	0	0	869	0	0	172	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	97.6%	ICU Level of Service	F
Analysis Period (min)	15		



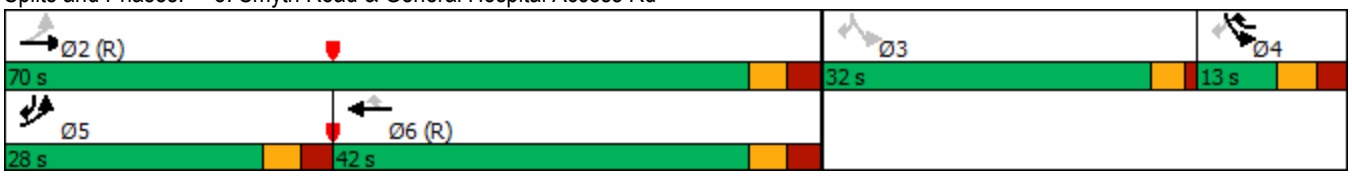
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	368	437	701	482	187	174	
Future Volume (vph)	368	437	701	482	187	174	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	
Grade (%)		0%	0%		0%		
Storage Length (m)	60.0			175.0	0.0	0.0	
Storage Lanes	1			1	2	1	
Taper Length (m)	30.0				7.6		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00	
Ped Bike Factor							
Frt				0.850		0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1658	3316	3316	1483	3216	1483	
Flt Permitted	0.307				0.950		
Satd. Flow (perm)	536	3316	3316	1483	3216	1483	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)				482		52	
Link Speed (k/h)		50	50		50		
Link Distance (m)		395.2	413.8		54.4		
Travel Time (s)		28.5	29.8		3.9		
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)							
Mid-Block Traffic (%)		0%	0%		0%		
Adj. Flow (vph)	368	437	701	482	187	174	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	368	437	701	482	187	174	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(m)		3.5	3.5		7.0		
Link Offset(m)		0.0	0.0		0.0		
Crosswalk Width(m)		4.9	4.9		4.9		
Two way Left Turn Lane							
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	
Turning Speed (k/h)	24			14	24	14	
Number of Detectors	1	2	2	1	1	1	
Detector Template	Left	Thru	Thru	Right	Left	Right	
Leading Detector (m)	6.1	30.5	30.5	6.1	6.1	6.1	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	pm+pt	NA	NA	pm+ov	custom	pm+ov	
Protected Phases	5	2	6	4	4	5	3
Permitted Phases	2			6	3	4 3	
Detector Phase	5	2	6	4	4	5	
Switch Phase							

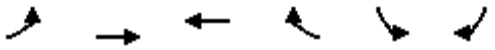


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0	10.0
Minimum Split (s)	23.9	24.4	41.4	11.1	11.1	23.9	32.0
Total Split (s)	28.0	70.0	42.0	13.0	13.0	28.0	32.0
Total Split (%)	24.3%	60.9%	36.5%	11.3%	11.3%	24.3%	28%
Maximum Green (s)	22.1	63.6	35.6	6.9	6.9	22.1	28.0
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.0
All-Red Time (s)	2.6	3.1	3.1	2.8	2.8	2.6	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	6.4	6.4	6.1	6.1	5.9	
Lead/Lag	Lead		Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	None	None	None
Walk Time (s)			7.0				7.0
Flash Dont Walk (s)			28.0				21.0
Pedestrian Calls (#/hr)			10				10
Act Effct Green (s)	86.1	85.6	63.9	79.6	16.9	38.8	
Actuated g/C Ratio	0.75	0.74	0.56	0.69	0.15	0.34	
v/c Ratio	0.66	0.18	0.38	0.41	0.40	0.33	
Control Delay	13.3	5.3	18.5	2.1	44.8	18.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	13.3	5.3	18.5	2.1	44.8	18.5	
LOS	B	A	B	A	D	B	
Approach Delay		9.0	11.8		32.1		
Approach LOS		A	B		C		
Queue Length 50th (m)	15.6	9.8	38.7	0.0	20.9	21.5	
Queue Length 95th (m)	53.4	20.8	93.3	10.0	23.6	22.3	
Internal Link Dist (m)		371.2	389.8		30.4		
Turn Bay Length (m)	60.0			175.0			
Base Capacity (vph)	616	2468	1842	1174	472	613	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.60	0.18	0.38	0.41	0.40	0.28	

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 115			
Offset: 43 (37%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 14.0		Intersection LOS: B	
Intersection Capacity Utilization 63.0%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 8: Smyth Road & General Hospital Access Rd



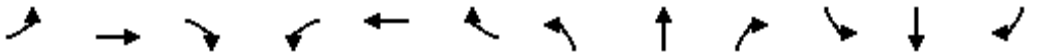


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	169	74	106	149	74	82
Future Volume (vph)	169	74	106	149	74	82
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			40.0	0.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1658	1745	1745	1483	1658	1483
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1658	1745	1745	1483	1658	1483
Link Speed (k/h)		50	50		50	
Link Distance (m)		64.8	93.1		57.0	
Travel Time (s)		4.7	6.7		4.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	169	74	106	149	74	82
Shared Lane Traffic (%)						
Lane Group Flow (vph)	169	74	106	149	74	82
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.5	3.5		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 27.5%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	56	42	85	195	122	53
Future Volume (vph)	56	42	85	195	122	53
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	0.0		0.0	0.0
Storage Lanes		0	0		1	0
Taper Length (m)			7.6		7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.942				0.959	
Flt Protected				0.985	0.966	
Satd. Flow (prot)	1644	0	0	1719	1617	0
Flt Permitted				0.985	0.966	
Satd. Flow (perm)	1644	0	0	1719	1617	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	396.5			285.4	325.9	
Travel Time (s)	28.5			20.5	23.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	62	47	94	217	136	59
Shared Lane Traffic (%)						
Lane Group Flow (vph)	109	0	0	311	195	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.7%		ICU Level of Service A	
Analysis Period (min) 15			



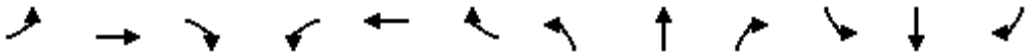
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	17	37	0	5	7	205	7	3	590	1
Future Volume (vph)	2	0	17	37	0	5	7	205	7	3	590	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.878			0.983			0.996				
Flt Protected		0.995			0.958			0.998				
Satd. Flow (prot)	0	1525	0	0	1643	0	0	1735	0	0	1745	0
Flt Permitted		0.995			0.958			0.998				
Satd. Flow (perm)	0	1525	0	0	1643	0	0	1735	0	0	1745	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		82.9			57.3			178.5			325.9	
Travel Time (s)		6.0			4.1			12.9			23.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	2	0	19	41	0	6	8	228	8	3	656	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	21	0	0	47	0	0	244	0	0	660	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	127	120	114	80	62	669
Future Volume (vph)	127	120	114	80	62	669
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	1	0		0	0	
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.934		0.944			
Flt Protected	0.975					0.996
Satd. Flow (prot)	1589	0	1647	0	0	1738
Flt Permitted	0.975					0.996
Satd. Flow (perm)	1589	0	1647	0	0	1738
Link Speed (k/h)	50		50			50
Link Distance (m)	109.2		52.2			178.5
Travel Time (s)	7.9		3.8			12.9
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	141	133	127	89	69	743
Shared Lane Traffic (%)						
Lane Group Flow (vph)	274	0	216	0	0	812
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 77.5%		ICU Level of Service D	
Analysis Period (min) 15			

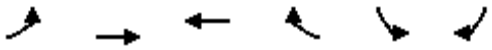
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	531	4	4	896	11	5	0	4	127	1	366
Future Volume (vph)	118	531	4	4	896	11	5	0	4	127	1	366
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.998			0.946			0.850	
Flt Protected		0.991						0.971		0.950		
Satd. Flow (prot)	0	3283	0	0	3309	0	0	1603	0	1658	1483	0
Flt Permitted		0.598			0.953			0.481		0.751		
Satd. Flow (perm)	0	1981	0	0	3154	0	0	794	0	1311	1483	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			1			77			234	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		446.7			395.2			147.1			52.2	
Travel Time (s)		32.2			28.5			10.6			3.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	131	590	4	4	996	12	6	0	4	141	1	407
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	725	0	0	1012	0	0	10	0	141	408	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	5	2		6	6		4	4		8	8	
Switch Phase												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	10.4	31.7		31.7	31.7		31.5	31.5		31.5	31.5	
Total Split (s)	16.0	78.0		62.0	62.0		37.0	37.0		37.0	37.0	
Total Split (%)	13.9%	67.8%		53.9%	53.9%		32.2%	32.2%		32.2%	32.2%	
Maximum Green (s)	10.6	72.3		56.3	56.3		31.5	31.5		31.5	31.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.1	2.4		2.4	2.4		2.2	2.2		2.2	2.2	
Lost Time Adjust (s)		0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)		5.7			5.7			5.5		5.5	5.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		19.0		19.0	19.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		10		10	10		10	10		10	10	
Act Effct Green (s)		82.4			82.4			21.4		21.4	21.4	
Actuated g/C Ratio		0.72			0.72			0.19		0.19	0.19	
v/c Ratio		0.51			0.45			0.05		0.58	0.88	
Control Delay		10.2			8.4			0.4		50.3	38.0	
Queue Delay		0.0			0.0			0.0		0.0	0.0	
Total Delay		10.2			8.4			0.4		50.3	38.0	
LOS		B			A			A		D	D	
Approach Delay		10.2			8.4			0.4			41.2	
Approach LOS		B			A			A			D	
Queue Length 50th (m)		34.7			25.3			0.0		29.0	39.9	
Queue Length 95th (m)		64.0			95.0			0.0		44.5	72.4	
Internal Link Dist (m)		422.7			371.2			123.1			28.2	
Turn Bay Length (m)												
Base Capacity (vph)		1418			2259			273		359	576	
Starvation Cap Reductn		0			0			0		0	0	
Spillback Cap Reductn		0			0			0		0	0	
Storage Cap Reductn		0			0			0		0	0	
Reduced v/c Ratio		0.51			0.45			0.04		0.39	0.71	

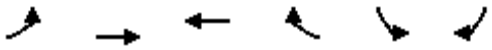
Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 115			
Offset: 35 (30%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 16.8		Intersection LOS: B	
Intersection Capacity Utilization 83.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 4: Smyth Road & Ring Rd (N-S)



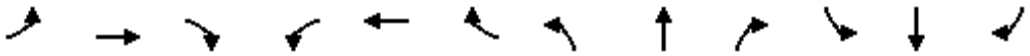
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	8	97	240	12	7	2
Future Volume (vph)	8	97	240	12	7	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			0.0	0.0	0.0
Storage Lanes	0			0	1	0
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.994		0.973	
Flt Protected		0.996			0.962	
Satd. Flow (prot)	0	1738	1735	0	1633	0
Flt Permitted		0.996			0.962	
Satd. Flow (perm)	0	1738	1735	0	1633	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		109.2	130.9		57.7	
Travel Time (s)		7.9	9.4		4.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	9	108	267	13	8	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	117	280	0	10	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.1%		ICU Level of Service A	
Analysis Period (min) 15			



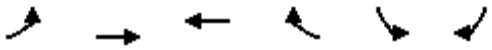
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	124	161	3	9	3
Future Volume (vph)	5	124	161	3	9	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	35.0			0.0	0.0	0.0
Storage Lanes	0			0	1	0
Taper Length (m)	7.6				7.6	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.998		0.969	
Flt Protected		0.998			0.963	
Satd. Flow (prot)	0	3309	1742	0	1628	0
Flt Permitted		0.998			0.963	
Satd. Flow (perm)	0	3309	1742	0	1628	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		130.9	64.8		106.6	
Travel Time (s)		9.4	4.7		7.7	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	6	138	179	3	10	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	144	182	0	13	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.1%		ICU Level of Service A	
Analysis Period (min) 15			

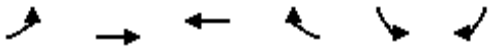


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	10	179	459	28	36	101	155	123	21	155	26
Future Volume (vph)	20	10	179	459	28	36	101	155	123	21	155	26
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.884			0.991			0.956			0.983	
Flt Protected		0.995			0.958			0.987			0.995	
Satd. Flow (prot)	0	1535	0	0	1657	0	0	1647	0	0	1707	0
Flt Permitted		0.995			0.958			0.987			0.995	
Satd. Flow (perm)	0	1535	0	0	1657	0	0	1647	0	0	1707	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		93.1			97.8			54.4			67.4	
Travel Time (s)		6.7			7.0			3.9			4.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	22	11	199	510	31	40	112	172	137	23	172	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	232	0	0	581	0	0	421	0	0	224	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	91.4%	ICU Level of Service	F
Analysis Period (min)	15		



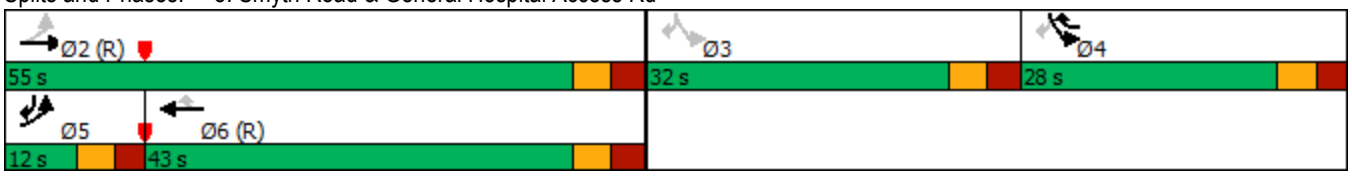
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	130	816	560	204	424	369	
Future Volume (vph)	130	816	560	204	424	369	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	
Grade (%)		0%	0%		0%		
Storage Length (m)	60.0			175.0	0.0	0.0	
Storage Lanes	1			1	2	1	
Taper Length (m)	30.0				7.6		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00	
Ped Bike Factor							
Frt				0.850		0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1658	3316	3316	1483	3216	1483	
Flt Permitted	0.334				0.950		
Satd. Flow (perm)	583	3316	3316	1483	3216	1483	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)				227		81	
Link Speed (k/h)		50	50		50		
Link Distance (m)		395.2	413.8		54.4		
Travel Time (s)		28.5	29.8		3.9		
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)							
Mid-Block Traffic (%)		0%	0%		0%		
Adj. Flow (vph)	144	907	622	227	471	410	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	144	907	622	227	471	410	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(m)		3.5	3.5		7.0		
Link Offset(m)		0.0	0.0		0.0		
Crosswalk Width(m)		4.9	4.9		4.9		
Two way Left Turn Lane							
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	
Turning Speed (k/h)	24			14	24	14	
Number of Detectors	1	2	2	1	1	1	
Detector Template	Left	Thru	Thru	Right	Left	Right	
Leading Detector (m)	6.1	30.5	30.5	6.1	6.1	6.1	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	pm+pt	NA	NA	pm+ov	custom	pm+ov	
Protected Phases	5	2	6	4	4	5	3
Permitted Phases	2			6	3	4 3	
Detector Phase	5	2	6	4	4	5	
Switch Phase							

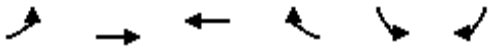


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.9	24.4	41.4	11.1	11.1	10.9	29.3
Total Split (s)	12.0	55.0	43.0	28.0	28.0	12.0	32.0
Total Split (%)	10.4%	47.8%	37.4%	24.3%	24.3%	10.4%	28%
Maximum Green (s)	6.1	48.6	36.6	21.9	21.9	6.1	25.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.6	3.1	3.1	2.8	2.8	2.6	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	6.4	6.4	6.1	6.1	5.9	
Lead/Lag	Lead		Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	Min	C-Max	C-Max	None	None	Min	None
Walk Time (s)			7.0				7.0
Flash Dont Walk (s)			28.0				16.0
Pedestrian Calls (#/hr)			10				10
Act Effct Green (s)	78.5	78.0	62.0	85.9	24.5	40.7	
Actuated g/C Ratio	0.68	0.68	0.54	0.75	0.21	0.35	
v/c Ratio	0.29	0.40	0.35	0.20	0.69	0.71	
Control Delay	8.0	8.1	17.8	1.4	46.2	31.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	8.0	8.1	17.8	1.4	46.2	31.2	
LOS	A	A	B	A	D	C	
Approach Delay		8.1	13.4		39.2		
Approach LOS		A	B		D		
Queue Length 50th (m)	7.1	36.3	37.5	0.0	52.2	66.8	
Queue Length 95th (m)	20.9	56.3	73.4	6.8	56.5	72.2	
Internal Link Dist (m)		371.2	389.8		30.4		
Turn Bay Length (m)	60.0			175.0			
Base Capacity (vph)	491	2247	1787	1207	795	577	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.29	0.40	0.35	0.19	0.59	0.71	

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 115			
Offset: 59 (51%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 19.6		Intersection LOS: B	
Intersection Capacity Utilization 52.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 8: Smyth Road & General Hospital Access Rd



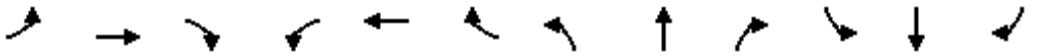


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	54	117	125	47	94	105
Future Volume (vph)	54	117	125	47	94	105
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			40.0	0.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1658	1745	1745	1483	1658	1483
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1658	1745	1745	1483	1658	1483
Link Speed (k/h)		50	50		50	
Link Distance (m)		64.8	93.1		57.0	
Travel Time (s)		4.7	6.7		4.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	60	130	139	52	104	117
Shared Lane Traffic (%)						
Lane Group Flow (vph)	60	130	139	52	104	117
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.5	3.5		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	97			97	97	97
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.8%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	241	179	34	72	69	87
Future Volume (vph)	241	179	34	72	69	87
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	0.0		0.0	0.0
Storage Lanes		0	0		1	0
Taper Length (m)			7.6		7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.942				0.925	
Flt Protected				0.984	0.978	
Satd. Flow (prot)	1644	0	0	1717	1579	0
Flt Permitted				0.984	0.978	
Satd. Flow (perm)	1644	0	0	1717	1579	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	396.5			285.4	325.9	
Travel Time (s)	28.5			20.5	23.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	241	179	34	72	69	87
Shared Lane Traffic (%)						
Lane Group Flow (vph)	420	0	0	106	156	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		



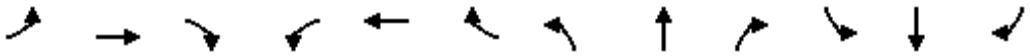
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	19	32	0	10	21	566	30	8	152	4
Future Volume (vph)	2	0	19	32	0	10	21	566	30	8	152	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.878			0.968			0.993			0.997	
Flt Protected		0.995			0.963			0.998			0.998	
Satd. Flow (prot)	0	1525	0	0	1627	0	0	1729	0	0	1736	0
Flt Permitted		0.995			0.963			0.998			0.998	
Satd. Flow (perm)	0	1525	0	0	1627	0	0	1729	0	0	1736	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		82.9			57.3			178.5			325.9	
Travel Time (s)		6.0			4.1			12.9			23.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	2	0	19	32	0	10	21	566	30	8	152	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	21	0	0	42	0	0	617	0	0	164	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 56.7%		ICU Level of Service B	
Analysis Period (min) 15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	94	69	617	196	112	165
Future Volume (vph)	94	69	617	196	112	165
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	1	0		0	0	
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.943		0.967			
Flt Protected	0.972					0.980
Satd. Flow (prot)	1600	0	1688	0	0	1710
Flt Permitted	0.972					0.980
Satd. Flow (perm)	1600	0	1688	0	0	1710
Link Speed (k/h)	50		50			50
Link Distance (m)	109.2		52.2			178.5
Travel Time (s)	7.9		3.8			12.9
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	94	69	617	196	112	165
Shared Lane Traffic (%)						
Lane Group Flow (vph)	163	0	813	0	0	277
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 82.5%		ICU Level of Service E	
Analysis Period (min) 15			

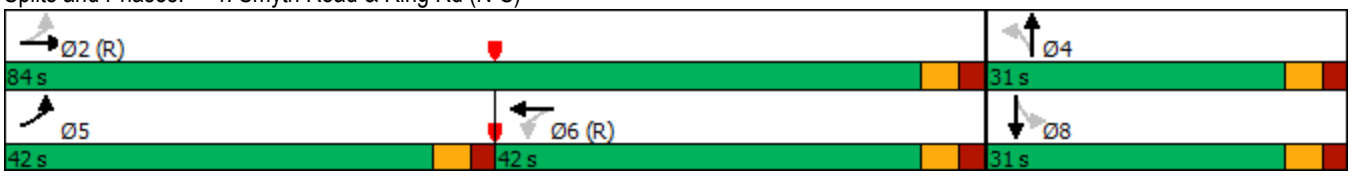
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	428	785	2	1	569	103	6	0	0	28	0	155
Future Volume (vph)	428	785	2	1	569	103	6	0	0	28	0	155
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.977						0.850	
Flt Protected		0.983						0.950		0.950		
Satd. Flow (prot)	0	3259	0	0	3239	0	0	1658	0	1658	1483	0
Flt Permitted		0.609			0.954			0.442		0.754		
Satd. Flow (perm)	0	2019	0	0	3090	0	0	771	0	1316	1483	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					19						597	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		446.7			395.2			147.1			52.2	
Travel Time (s)		32.2			28.5			10.6			3.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	428	785	2	1	569	103	6	0	0	28	0	155
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1215	0	0	673	0	0	6	0	28	155	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	5	2		6	6		4	4		8	8	
Switch Phase												

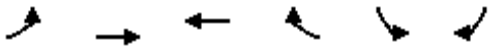


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	10.4	31.7		31.7	31.7		31.0	31.0		31.0	31.0	
Total Split (s)	42.0	84.0		42.0	42.0		31.0	31.0		31.0	31.0	
Total Split (%)	36.5%	73.0%		36.5%	36.5%		27.0%	27.0%		27.0%	27.0%	
Maximum Green (s)	36.6	78.3		36.3	36.3		25.5	25.5		25.5	25.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.1	2.4		2.4	2.4		2.2	2.2		2.2	2.2	
Lost Time Adjust (s)		0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)		5.7			5.7			5.5		5.5	5.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		19.0		19.0	19.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		10		10	10		10	10		10	10	
Act Effct Green (s)		91.2			91.2			12.6		12.6	12.6	
Actuated g/C Ratio		0.79			0.79			0.11		0.11	0.11	
v/c Ratio		0.76			0.27			0.07		0.19	0.22	
Control Delay		11.5			8.5			44.3		47.6	0.7	
Queue Delay		0.0			0.0			0.0		0.0	0.0	
Total Delay		11.5			8.5			44.3		47.6	0.7	
LOS		B			A			D		D	A	
Approach Delay		11.5			8.5			44.3			7.9	
Approach LOS		B			A			D			A	
Queue Length 50th (m)		51.7			11.5			1.3		6.0	0.0	
Queue Length 95th (m)		137.3			94.2			4.9		13.2	0.0	
Internal Link Dist (m)		422.7			371.2			123.1			28.2	
Turn Bay Length (m)												
Base Capacity (vph)		1600			2454			170		291	793	
Starvation Cap Reductn		0			0			0		0	0	
Spillback Cap Reductn		0			0			0		0	0	
Storage Cap Reductn		0			0			0		0	0	
Reduced v/c Ratio		0.76			0.27			0.04		0.10	0.20	

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 115			
Offset: 35 (30%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 10.3		Intersection LOS: B	
Intersection Capacity Utilization 80.4%		ICU Level of Service D	
Analysis Period (min) 15			

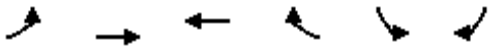
Splits and Phases: 4: Smyth Road & Ring Rd (N-S)





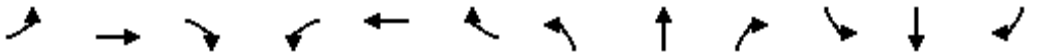
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	11	218	160	24	11	1
Future Volume (vph)	11	218	160	24	11	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			0.0	0.0	0.0
Storage Lanes	0			0	1	0
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.982		0.989	
Flt Protected		0.998			0.956	
Satd. Flow (prot)	0	1742	1714	0	1650	0
Flt Permitted		0.998			0.956	
Satd. Flow (perm)	0	1742	1714	0	1650	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		109.2	130.9		57.7	
Travel Time (s)		7.9	9.4		4.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	11	218	160	24	11	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	229	184	0	12	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.5	3.5		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.6%		ICU Level of Service A	
Analysis Period (min) 15			



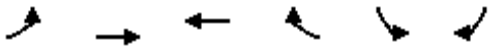
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	26	253	120	10	4	4
Future Volume (vph)	26	253	120	10	4	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	35.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.6				7.6	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.990		0.932	
Flt Protected		0.995			0.976	
Satd. Flow (prot)	0	3299	1728	0	1587	0
Flt Permitted		0.995			0.976	
Satd. Flow (perm)	0	3299	1728	0	1587	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		130.9	64.8		106.6	
Travel Time (s)		9.4	4.7		7.7	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	26	253	120	10	4	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	279	130	0	8	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.8%		ICU Level of Service A	
Analysis Period (min) 15			

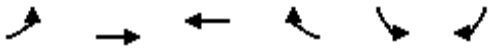


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	35	116	173	23	7	237	157	516	21	141	10
Future Volume (vph)	16	35	116	173	23	7	237	157	516	21	141	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.906			0.995			0.923			0.992	
Flt Protected		0.995			0.959			0.987			0.994	
Satd. Flow (prot)	0	1573	0	0	1665	0	0	1590	0	0	1721	0
Flt Permitted		0.995			0.959			0.987			0.994	
Satd. Flow (perm)	0	1573	0	0	1665	0	0	1590	0	0	1721	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		93.1			97.8			54.4			67.4	
Travel Time (s)		6.7			7.0			3.9			4.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	16	35	116	173	23	7	237	157	516	21	141	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	167	0	0	203	0	0	910	0	0	172	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	101.3%	ICU Level of Service	G
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	375	437	701	516	205	176	
Future Volume (vph)	375	437	701	516	205	176	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	
Grade (%)		0%	0%		0%		
Storage Length (m)	60.0			175.0	0.0	0.0	
Storage Lanes	1			1	2	1	
Taper Length (m)	30.0				7.6		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00	
Ped Bike Factor							
Frt				0.850		0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1658	3316	3316	1483	3216	1483	
Flt Permitted	0.304				0.950		
Satd. Flow (perm)	531	3316	3316	1483	3216	1483	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)				516		52	
Link Speed (k/h)		50	50		50		
Link Distance (m)		395.2	413.8		54.4		
Travel Time (s)		28.5	29.8		3.9		
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)							
Mid-Block Traffic (%)		0%	0%		0%		
Adj. Flow (vph)	375	437	701	516	205	176	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	375	437	701	516	205	176	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(m)		3.5	3.5		7.0		
Link Offset(m)		0.0	0.0		0.0		
Crosswalk Width(m)		4.9	4.9		4.9		
Two way Left Turn Lane							
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	
Turning Speed (k/h)	24			14	24	14	
Number of Detectors	1	2	2	1	1	1	
Detector Template	Left	Thru	Thru	Right	Left	Right	
Leading Detector (m)	6.1	30.5	30.5	6.1	6.1	6.1	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	pm+pt	NA	NA	pm+ov	custom	pm+ov	
Protected Phases	5	2	6	4	4	5	3
Permitted Phases	2			6	3	4 3	
Detector Phase	5	2	6	4	4	5	
Switch Phase							

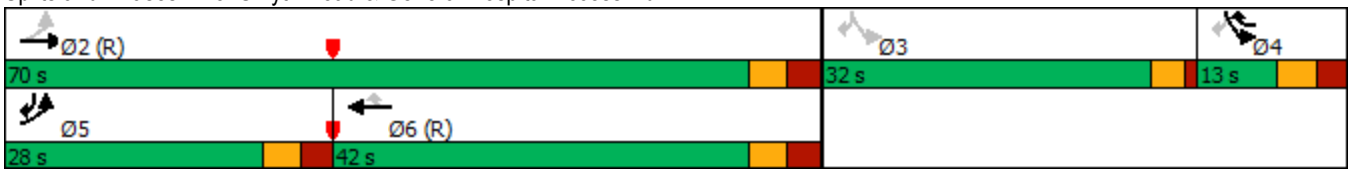


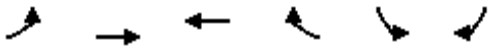
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0	10.0
Minimum Split (s)	23.9	24.4	41.4	11.1	11.1	23.9	32.0
Total Split (s)	28.0	70.0	42.0	13.0	13.0	28.0	32.0
Total Split (%)	24.3%	60.9%	36.5%	11.3%	11.3%	24.3%	28%
Maximum Green (s)	22.1	63.6	35.6	6.9	6.9	22.1	28.0
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.0
All-Red Time (s)	2.6	3.1	3.1	2.8	2.8	2.6	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	6.4	6.4	6.1	6.1	5.9	
Lead/Lag	Lead		Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	None	None	None
Walk Time (s)			7.0				7.0
Flash Dont Walk (s)			28.0				21.0
Pedestrian Calls (#/hr)			10				10
Act Effct Green (s)	85.6	85.1	62.8	79.0	17.4	39.9	
Actuated g/C Ratio	0.74	0.74	0.55	0.69	0.15	0.35	
v/c Ratio	0.68	0.18	0.39	0.44	0.42	0.32	
Control Delay	13.8	5.4	19.1	2.3	44.9	18.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	13.8	5.4	19.1	2.3	44.9	18.0	
LOS	B	A	B	A	D	B	
Approach Delay		9.3	12.0		32.5		
Approach LOS		A	B		C		
Queue Length 50th (m)	15.8	9.9	40.3	0.0	22.9	21.4	
Queue Length 95th (m)	m55.3	20.8	93.3	10.2	25.5	22.6	
Internal Link Dist (m)		371.2	389.8		30.4		
Turn Bay Length (m)	60.0			175.0			
Base Capacity (vph)	611	2454	1811	1179	486	618	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.61	0.18	0.39	0.44	0.42	0.28	

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 115			
Offset: 43 (37%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 14.3		Intersection LOS: B	
Intersection Capacity Utilization 65.7%		ICU Level of Service C	
Analysis Period (min) 15			

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

Splits and Phases: 8: Smyth Road & General Hospital Access Rd



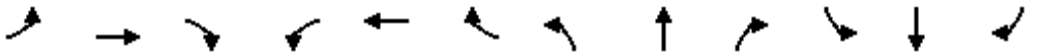


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	200	74	106	190	94	91
Future Volume (vph)	200	74	106	190	94	91
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			40.0	0.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1658	1745	1745	1483	1658	1483
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1658	1745	1745	1483	1658	1483
Link Speed (k/h)		50	50		50	
Link Distance (m)		64.8	93.1		57.0	
Travel Time (s)		4.7	6.7		4.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	200	74	106	190	94	91
Shared Lane Traffic (%)						
Lane Group Flow (vph)	200	74	106	190	94	91
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.5	3.5		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.8%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	56	45	85	195	129	53
Future Volume (vph)	56	45	85	195	129	53
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	0.0		0.0	0.0
Storage Lanes		0	0		1	0
Taper Length (m)			7.6		7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.940				0.961	
Flt Protected				0.985	0.966	
Satd. Flow (prot)	1640	0	0	1719	1620	0
Flt Permitted				0.985	0.966	
Satd. Flow (perm)	1640	0	0	1719	1620	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	396.5			285.4	325.9	
Travel Time (s)	28.5			20.5	23.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	62	50	94	217	143	59
Shared Lane Traffic (%)						
Lane Group Flow (vph)	112	0	0	311	202	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	40.1%	ICU Level of Service	A
Analysis Period (min)	15		



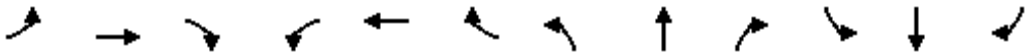
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	17	37	0	5	7	212	7	3	593	1
Future Volume (vph)	2	0	17	37	0	5	7	212	7	3	593	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.878			0.983			0.996				
Flt Protected		0.995			0.958			0.998				
Satd. Flow (prot)	0	1525	0	0	1643	0	0	1735	0	0	1745	0
Flt Permitted		0.995			0.958			0.998				
Satd. Flow (perm)	0	1525	0	0	1643	0	0	1735	0	0	1745	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		82.9			57.3			178.5			325.9	
Travel Time (s)		6.0			4.1			12.9			23.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	2	0	19	41	0	6	8	236	8	3	659	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	21	0	0	47	0	0	252	0	0	663	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.1%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	148	127	114	88	65	669
Future Volume (vph)	148	127	114	88	65	669
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	1	0		0	0	
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.938		0.941			
Flt Protected	0.974					0.996
Satd. Flow (prot)	1594	0	1642	0	0	1738
Flt Permitted	0.974					0.996
Satd. Flow (perm)	1594	0	1642	0	0	1738
Link Speed (k/h)	50		50			50
Link Distance (m)	109.2		52.2			178.5
Travel Time (s)	7.9		3.8			12.9
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	164	141	127	98	72	743
Shared Lane Traffic (%)						
Lane Group Flow (vph)	305	0	225	0	0	815
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 79.8%		ICU Level of Service D	
Analysis Period (min) 15			

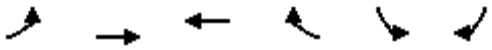
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	126	534	4	4	906	11	5	0	4	127	1	387
Future Volume (vph)	126	534	4	4	906	11	5	0	4	127	1	387
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.998			0.946			0.850	
Flt Protected		0.991						0.971		0.950		
Satd. Flow (prot)	0	3283	0	0	3309	0	0	1603	0	1658	1483	0
Flt Permitted		0.580			0.953			0.499		0.751		
Satd. Flow (perm)	0	1921	0	0	3154	0	0	824	0	1311	1483	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			1			77			232	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		446.7			395.2			147.1			52.2	
Travel Time (s)		32.2			28.5			10.6			3.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	140	593	4	4	1007	12	6	0	4	141	1	430
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	737	0	0	1023	0	0	10	0	141	431	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	5	2		6	6		4	4		8	8	
Switch Phase												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	10.4	31.7		31.7	31.7		31.5	31.5		31.5	31.5	
Total Split (s)	16.0	78.0		62.0	62.0		37.0	37.0		37.0	37.0	
Total Split (%)	13.9%	67.8%		53.9%	53.9%		32.2%	32.2%		32.2%	32.2%	
Maximum Green (s)	10.6	72.3		56.3	56.3		31.5	31.5		31.5	31.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.1	2.4		2.4	2.4		2.2	2.2		2.2	2.2	
Lost Time Adjust (s)		0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)		5.7			5.7			5.5		5.5	5.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		19.0		19.0	19.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		10		10	10		10	10		10	10	
Act Effct Green (s)		80.8			80.8			23.0		23.0	23.0	
Actuated g/C Ratio		0.70			0.70			0.20		0.20	0.20	
v/c Ratio		0.55			0.46			0.04		0.54	0.90	
Control Delay		11.6			9.3			0.3		47.0	41.4	
Queue Delay		0.0			0.0			0.0		0.0	0.0	
Total Delay		11.6			9.3			0.3		47.0	41.4	
LOS		B			A			A		D	D	
Approach Delay		11.6			9.3			0.3			42.8	
Approach LOS		B			A			A			D	
Queue Length 50th (m)		39.3			25.5			0.0		28.2	46.0	
Queue Length 95th (m)		67.3			103.5			0.0		44.5	81.5	
Internal Link Dist (m)		422.7			371.2			123.1			28.2	
Turn Bay Length (m)												
Base Capacity (vph)		1350			2216			281		359	574	
Starvation Cap Reductn		0			0			0		0	0	
Spillback Cap Reductn		0			0			0		0	0	
Storage Cap Reductn		0			0			0		0	0	
Reduced v/c Ratio		0.55			0.46			0.04		0.39	0.75	

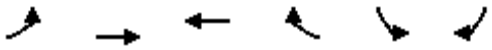
Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 115			
Offset: 35 (30%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 18.2		Intersection LOS: B	
Intersection Capacity Utilization 85.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 4: Smyth Road & Ring Rd (N-S)



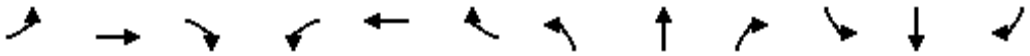
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	8	107	268	12	7	2
Future Volume (vph)	8	107	268	12	7	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			0.0	0.0	0.0
Storage Lanes	0			0	1	0
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.994		0.973	
Flt Protected		0.996			0.962	
Satd. Flow (prot)	0	1738	1735	0	1633	0
Flt Permitted		0.996			0.962	
Satd. Flow (perm)	0	1738	1735	0	1633	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		109.2	130.9		57.7	
Travel Time (s)		7.9	9.4		4.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	9	119	298	13	8	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	128	311	0	10	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.5	3.5		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.7%		ICU Level of Service A	
Analysis Period (min) 15			



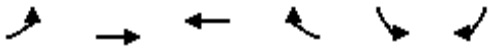
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	134	189	3	9	3
Future Volume (vph)	5	134	189	3	9	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	35.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.6				7.6	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.998		0.969	
Flt Protected		0.998			0.963	
Satd. Flow (prot)	0	3309	1742	0	1628	0
Flt Permitted		0.998			0.963	
Satd. Flow (perm)	0	3309	1742	0	1628	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		130.9	64.8		106.6	
Travel Time (s)		9.4	4.7		7.7	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	6	149	210	3	10	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	155	213	0	13	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.7%		ICU Level of Service A	
Analysis Period (min) 15			

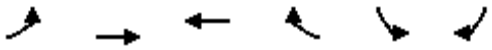


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	10	221	459	28	36	124	155	123	21	155	26
Future Volume (vph)	20	10	221	459	28	36	124	155	123	21	155	26
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.881			0.991			0.959			0.983	
Flt Protected		0.996			0.958			0.985			0.995	
Satd. Flow (prot)	0	1531	0	0	1657	0	0	1648	0	0	1707	0
Flt Permitted		0.996			0.958			0.985			0.995	
Satd. Flow (perm)	0	1531	0	0	1657	0	0	1648	0	0	1707	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		93.1			97.8			54.4			67.4	
Travel Time (s)		6.7			7.0			3.9			4.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	22	11	246	510	31	40	138	172	137	23	172	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	279	0	0	581	0	0	447	0	0	224	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	95.4%	ICU Level of Service	F
Analysis Period (min)	15		



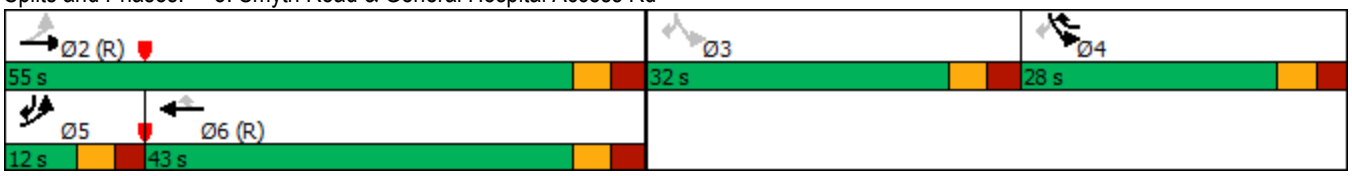
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	133	816	560	220	457	379	
Future Volume (vph)	133	816	560	220	457	379	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	
Grade (%)		0%	0%		0%		
Storage Length (m)	60.0			175.0	0.0	0.0	
Storage Lanes	1			1	2	1	
Taper Length (m)	30.0				7.6		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00	
Ped Bike Factor							
Frt				0.850		0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1658	3316	3316	1483	3216	1483	
Flt Permitted	0.331				0.950		
Satd. Flow (perm)	578	3316	3316	1483	3216	1483	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)				244		81	
Link Speed (k/h)		50	50		50		
Link Distance (m)		395.2	413.8		54.4		
Travel Time (s)		28.5	29.8		3.9		
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)							
Mid-Block Traffic (%)		0%	0%		0%		
Adj. Flow (vph)	148	907	622	244	508	421	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	148	907	622	244	508	421	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(m)		3.5	3.5		7.0		
Link Offset(m)		0.0	0.0		0.0		
Crosswalk Width(m)		4.9	4.9		4.9		
Two way Left Turn Lane							
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	
Turning Speed (k/h)	24			14	24	14	
Number of Detectors	1	2	2	1	1	1	
Detector Template	Left	Thru	Thru	Right	Left	Right	
Leading Detector (m)	6.1	30.5	30.5	6.1	6.1	6.1	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	pm+pt	NA	NA	pm+ov	custom	pm+ov	
Protected Phases	5	2	6	4	4	5	3
Permitted Phases	2			6	3	4 3	
Detector Phase	5	2	6	4	4	5	
Switch Phase							

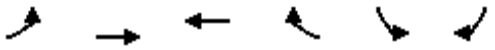


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.9	24.4	41.4	11.1	11.1	10.9	29.3
Total Split (s)	12.0	55.0	43.0	28.0	28.0	12.0	32.0
Total Split (%)	10.4%	47.8%	37.4%	24.3%	24.3%	10.4%	28%
Maximum Green (s)	6.1	48.6	36.6	21.9	21.9	6.1	25.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.6	3.1	3.1	2.8	2.8	2.6	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	6.4	6.4	6.1	6.1	5.9	
Lead/Lag	Lead		Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	Min	C-Max	C-Max	None	None	Min	None
Walk Time (s)			7.0				7.0
Flash Dont Walk (s)			28.0				16.0
Pedestrian Calls (#/hr)			10				10
Act Effct Green (s)	77.1	76.6	60.8	86.0	25.9	41.9	
Actuated g/C Ratio	0.67	0.67	0.53	0.75	0.23	0.36	
v/c Ratio	0.31	0.41	0.36	0.21	0.70	0.71	
Control Delay	8.6	8.6	18.6	1.4	45.6	30.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	8.6	8.6	18.6	1.4	45.6	30.7	
LOS	A	A	B	A	D	C	
Approach Delay		8.6	13.8		38.9		
Approach LOS		A	B		D		
Queue Length 50th (m)	8.5	40.3	38.6	0.0	55.7	68.5	
Queue Length 95th (m)	21.5	56.7	75.2	7.0	60.2	73.0	
Internal Link Dist (m)		371.2	389.8		30.4		
Turn Bay Length (m)	60.0			175.0			
Base Capacity (vph)	480	2208	1752	1205	813	591	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.31	0.41	0.36	0.20	0.62	0.71	

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 115			
Offset: 59 (51%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 20.0		Intersection LOS: C	
Intersection Capacity Utilization 53.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 8: Smyth Road & General Hospital Access Rd





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	64	117	125	69	136	133
Future Volume (vph)	64	117	125	69	136	133
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			40.0	0.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1658	1745	1745	1483	1658	1483
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1658	1745	1745	1483	1658	1483
Link Speed (k/h)		50	50		50	
Link Distance (m)		64.8	93.1		57.0	
Travel Time (s)		4.7	6.7		4.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	71	130	139	77	151	148
Shared Lane Traffic (%)						
Lane Group Flow (vph)	71	130	139	77	151	148
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.5	3.5		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	97			97	97	97
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.6%		ICU Level of Service A	
Analysis Period (min) 15			