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1705 Carling Avenue

Transportation Impact Assessment

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Transportation Impact Assessment

Prepared By:

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May 2018

Novatech File: 117216
Ref: R-2018-013

May 3, 2018

City of Ottawa
Planning and Growth Management Department
110 Laurier Ave. W., 4th Floor,
Ottawa, Ontario K1P 1J1

Attention: Mr. Wally Dubyk
Project Manager, Infrastructure Approvals

Dear Mr. Dubyk:

Reference: 1705 Carling Avenue
Transportation Impact Assessment
Novatech File No. 117216

We are pleased to submit the following Transportation Impact Assessment in support of a Site Plan Application for 1705 Carling Avenue, for your review and signoff. The structure and format of this report is in accordance with the City of Ottawa Transportation Impact Assessment Guidelines (June 2017).

If you have any questions or comments regarding this report, please feel free to contact Jennifer Luong, or the undersigned.

Yours truly,

NOVATECH

Joshua Audia, B.Sc.
E.I.T. | Transportation/Traffic

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EXECUTIVE SUMMARY

This Transportation Impact Assessment has been prepared in support of a redevelopment of the property located at 1705 Carling Avenue. The subject site is currently occupied by an 80-unit motel, a 3,500 ft^2 restaurant and one residence at the back of the property.

The proposed redevelopment will include a 9-storey mixed use building with 68 seniors' apartments and 130 residential care units, and a combination of surface and underground parking.

The redevelopment will replace the current businesses with a 9-storey mixed use building (68 seniors' apartments and 130 residential care units), with ground floor and outdoor amenities for use by the residents, and a total of 70 vehicle parking spaces (24 surface, 46 underground). The upper three levels of the building are intended for independent seniors' living, and the lower six levels are intended for assisted living. The building entrance on Carling Avenue will serve both the seniors' apartments and the residential care facility, in accordance with the zoning by-law requirement for a principal entrance. The residence at the north end of the subject site will be removed as part of the current application. A dedicated municipal parkette is proposed at the northwest corner of the site.

The study area for this report includes the boundary street Carling Avenue, as well as the signalized intersections at Carling Avenue/Broadview Avenue and Carling Avenue/Cole Avenue/Clyde Avenue.

The selected time periods for the analysis are the weekday AM and PM peak hours, as they represent the 'worst case' combination of site generated traffic and adjacent street traffic. Anticipated parking requirements will also be reviewed for the subject site. The proposed redevelopment is expected to be completed by the year 2019.

The conclusions and recommendations of this TIA can be summarized as follows:

Forecasting

- The net decrease in trips generated by the proposed redevelopment is approximately 35 person trips in the AM peak hour and 39 person trips in the PM peak hour, which includes a decrease of approximately 22 vehicle trips in the AM peak hour and 24 vehicle trips in the PM peak hour.

Development Design and Parking

- Pedestrian facilities will be provided between the entrances to the retirement residence and the drop-off/pick-up and parking areas, as well as a connection to the sidewalk along Carling Avenue. Sidewalks will be depressed and continuous across the right-in/right-out accesses, in accordance with City standards. A pedestrian facility will also be provided at the back of the building, linking the deck, pond, and landscaped area to the municipal park to be developed on Tillbury Avenue.

- All bicycle parking will be provided in the single-level parking garage.

- All required TDM-supportive design and infrastructure measures in the TDM checklist are met.

- Garbage collection and loading will occur within the subject site, north of the residential building and adjacent to the underground parking access ramp.

- A shuttle for residents and ambulances are both accommodated by the looped access to the main building entrance.

- Approximately 70 vehicle parking spaces and 51 bicycle parking spaces are proposed for the subject site, meeting the requirements of the ZBL.

Boundary Streets

- Between Broadview Avenue and Cole Avenue/Clyde Avenue, Carling Avenue does not meet the target PLOS, BLOS, or TLOS. Carling Avenue does meet the target TkLOS and Auto LOS.

- The Rapid Transit and Transit Priority Network identifies Carling Avenue as having at-grade LRT in its Network Concept and continuous transit lanes in its Affordable Network. While these improvements to the transit network are being implemented, there may be opportunities to improve the pedestrian and bicycle levels of services as well, as discussed further below.

- Per Exhibit 4 of the MMLOS guidelines, the PLOS of Carling Avenue can be improved to the target PLOS C by implementing sidewalks with a minimum width of 2.0m and a minimum sidewalk boulevard width of 2.0m.

- Per Exhibit 11 of the MMLOS guidelines, the BLOS of Carling Avenue can be improved to a BLOS A by implementing a cycle track or other physically separated bikeway. The *Ontario Traffic Manual – Book 18* identifies separated bicycle facilities as most appropriate for Carling Avenue, given the high operating speed and daily traffic volumes.

- The implementation of either at-grade LRT or continuous bus lanes along Carling Avenue will improve the transit level of service well beyond the target TLOS D.

Access Design

- The proposed redevelopment will be served by a right-in/right-out driveway at the eastern edge of the property, along with a lay-by along Carling Avenue approximately 18m west of the driveway access.

- Section 25 (c) of the *Private Approach By-Law* identifies a maximum width of 9m for two-way accesses. This requirement is met by the proposed driveway and lay-by.

- Section 25 (f) of the *Private Approach By-Law* identifies a minimum distance of 9m between a two-way access and any other private approach for the same property. This requirement is met by the proposed driveway and lay-by.

- Section 25 (l) of the *Private Approach By-Law* identifies a minimum distance of 30m between the private approach and the nearest intersecting street line. This requirement is met by the proposed driveway.

- Section 25 (o) of the *Private Approach By-Law* identifies a minimum distance of 3m between the nearest edge of the private approach and the property line, as measured at the street line. Based on the ROW widening along Carling Avenue, this requirement is not met by the proposed driveway. Section 25 (o) also states that a relaxation of the minimum clearance distance of 3m to 0.3m is permissible by the General Manager, if there are no safety issues

associated with doing so. Safety concerns are not anticipated. A waiver of the private approach by-law will be required.

- If the proposed lay-by is not provided, it is anticipated that drop-off/pick-up activities may occur curbside along Carling Avenue, causing a greater impact on safety and traffic operations.

Transportation Demand Management

- The property manager has agreed to implement the following TDM measures:
    - Offer pre-loaded PRESTO cards to encourage commuters to use transit;
    - Provide a multi-modal travel option information package to new/relocating employees and residents;
    - Provide on-site amenities/services to minimize off-site errands for staff;
    - Provide shuttle service for seniors' homes or lifestyle communities (ie. scheduled mall or supermarket runs).

- The property manager has also noted that hard copies of local area maps and transit maps with schedules will be provided to residents and staff as hard copies, rather than displaying these at all major entrances to the building.

1.0 INTRODUCTION

This Transportation Impact Assessment has been prepared in support of a redevelopment of the property located at 1705 Carling Avenue. The subject site is currently occupied by an 80-unit motel, a 3,500 ft^2 restaurant and one residence at the back of the property.

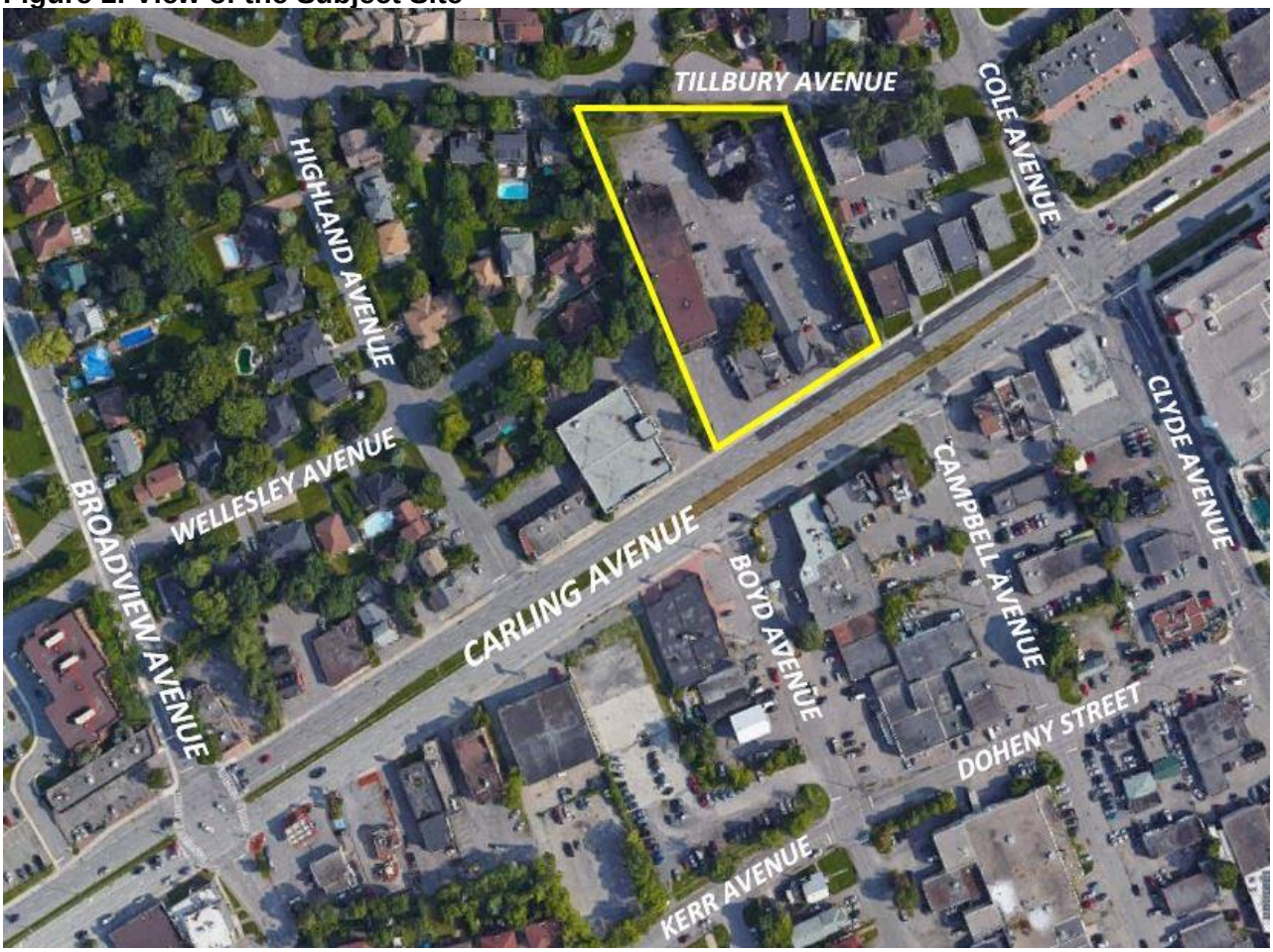
The proposed redevelopment will include a 9-storey mixed use building with 68 seniors' apartments and 130 residential care units, and a combination of surface and underground parking.

The 0.92-hectare subject site is midblock on the north side of Carling Avenue, between Cole Avenue and Highland Avenue, and is surrounded by the following:

- Tillbury Avenue to the north;
- Low-rise apartments to the east;
- Carling Avenue to the south; and
- Commercial and residential properties to the west.

A view of the subject site is provided in **Figure 1**.

Figure 1: View of the Subject Site



2.0 PROPOSED DEVELOPMENT

The redevelopment will replace the current businesses with a 9-storey mixed use building (68 seniors' apartments and 130 residential care units), with ground floor and outdoor amenities for use by the residents, and a total of 70 vehicle parking spaces (24 surface, 46 underground). The upper three levels of the building are intended for independent seniors' living, and the lower six levels are intended for assisted living. The building entrance on Carling Avenue will serve both the seniors' apartments and the residential care facility, in accordance with the zoning by-law requirement for a principal entrance. The residence at the north end of the subject site will be removed as part of the current application. A dedicated municipal parkette is proposed at the northwest corner of the site.

Current access to the property is provided by a right-in/right-out (RIRO) access to the motel and a looped RIRO access to the restaurant.

The proposed development is anticipated to be constructed in a single phase in 2019.

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

3.0 SCREENING

3.1 Screening Form

The City's 2017 TIA Guidelines identify three triggers for completing a TIA report, including trip generation, location, and safety. The criteria for each trigger are outlined in the City's TIA Screening Form.

The results of the screening review are as follows:

- Trip Generation Trigger: The development is not expected to generate an additional 60 person trips in any peak hour. Further assessment is not required based on this trigger.

- Location Triggers – The development is located along Carling Avenue, which is designated as a Transit Priority route in the City's Affordable Plan, a Rapid Transit route in the City's Network Concept, and a Spine Cycling Route in the City's Cycling Network. It is also located in a Design Priority Area. Further assessment is required based on this trigger.

- Safety Triggers – The proposed accesses are within 150 metres of the traffic signal at Carling Avenue/Cole Avenue/Clyde Avenue. Further assessment is required based on this trigger.

A copy of the TIA Screening Form is included in **Appendix B**.

4.0 SCOPING

4.1 Existing Conditions

4.1.1 Roadways

Carling Avenue is an arterial roadway that generally runs on an east-west alignment between March Road in Kanata and Bronson Avenue. It has a six-lane divided urban cross-section, sidewalks on both sides of the roadway, and a posted speed limit of 60 km/h. Carling Avenue is classified as an urban truck route, allowing full loads. Street parking is not permitted. The right-of-way (ROW) at the subject site is currently 30m. The City of Ottawa's Official Plan identifies a ROW protection for Carling Avenue of 44.5m throughout the entire study area.

Broadview Avenue is a collector roadway that generally runs on an north-south alignment between Richmond Road and Carling Avenue. It continues as a local roadway south of Carling Avenue until it meets Ernest Avenue. It has a two-lane undivided urban cross-section, with sidewalks on both sides of the roadway north of Carling Avenue near the subject site. Broadview Avenue has a posted speed limit of 40 km/h north of Carling Avenue and an unposted speed limit of 50 km/h south of Carling Avenue. North of Carling Avenue, traffic calming devices have been installed, specifically flex posts in the school zone for Notre Dame High School and curb extensions at a number of all-way stop-controlled intersections. Broadview Avenue is not classified as a truck route. North of Carling Avenue, street parking is not permitted between 8:00 AM and 5:00 PM on weekdays. South of Carling Avenue, street parking is only permitted on the east side of Broadview Avenue.

Highland Avenue is a local roadway that runs on a north-south alignment between Carling Avenue and Byron Avenue. At Tillbury Avenue, the roadway jogs a half block to the west. It has a two-lane undivided urban cross-section, no sidewalks, and an unposted speed limit of 50km/h. Highland Avenue is not classified as a truck route. South of Tillbury Avenue, street parking is not permitted between 9:00 AM and 5:00 PM on weekdays.

Boyd Avenue is a local roadway that runs on a north-south alignment between Carling Avenue and a cul-de-sac just north of the Queensway. It has a two-lane undivided urban cross-section, no sidewalks, and an unposted speed limit of 50km/h. Boyd Avenue is not classified as a truck route. Street parking is permitted on both sides of the roadway.

Campbell Avenue is a local roadway that runs on a north-south alignment between Carling Avenue and Dobbie Street. It has a two-lane undivided urban cross-section, no sidewalks, and an unposted speed limit of 50km/h. Campbell Avenue is not classified as a truck route. Street parking is permitted on both sides of the roadway.

Clyde Avenue is a local roadway that runs on a north-south alignment between Carling Avenue and Maitland Avenue. It is discontinuous south of the Queensway overpass. Going north through the intersection with Carling Avenue, Clyde Avenue becomes Cole Avenue. Near Carling Avenue, it has a two-lane undivided urban cross-section, sidewalks on the east side, and an unposted speed limit of 50 km/h. Clyde Avenue is classified as a truck route, allowing full loads. Street parking is not permitted.

Cole Avenue is a local roadway that runs on a north-south alignment between Dovercourt Avenue and Carling Avenue. Going south through the intersection with Carling Avenue, Cole Avenue becomes Clyde Avenue. At 150m north of the intersection with Carling Avenue, Cole Avenue comes

to a T-intersection with Roosevelt Avenue. Cole Avenue continues west at this T until turning north again towards Dovercourt Avenue, while Roosevelt Avenue heads east and then north. It has a two-lane undivided urban cross-section, and sidewalks on both sides of the roadway south of Tillbury Avenue. North of Tillbury Avenue, sidewalks are only on the east side. The posted speed limit is 40 km/h. Cole Avenue is not classified as a truck route. Parking is not permitted between Tillbury Avenue and Carling Avenue, but is fully permitted north of Tillbury Avenue.

Tillbury Avenue is a local roadway that runs on an east-west alignment between Wavell Avenue and Churchill Avenue North. At the north end of the subject site, Tillbury Avenue is discontinuous where only pedestrians and cyclists can pass through a gap in the guardrails. It has a two-lane undivided urban cross-section, and no sidewalks except for east of Cole Avenue. The roadway has an unposted speed limit of 50 km/h. Tillbury Avenue is not classified as a truck route. Parking is not permitted between 8:00 AM and 4:00 PM on weekdays.

4.1.2 Intersections

Carling Avenue/Broadview Avenue

- Signalized intersection
- Northbound/Southbound: one shared through/right turn lane and one left turn lane
- Eastbound/Westbound: one shared through/right turn lane, two through lanes, and one left turn lane
- Priority pavement markings at the northbound/southbound crosswalks

Carling Avenue/Cole Avenue/Clyde Avenue

- Signalized intersection
- Northbound: one right turn lane, one through lane, and one left turn lane
- Southbound: one shared through/right turn lane and one left turn lane
- Eastbound/Westbound: one shared through/right turn lane, two through lanes, and one left turn lane

4.1.3 Driveways

In accordance with the City's 2017 TIA guidelines, a review of adjacent driveways along the boundary roads are provided as follows:

Carling Avenue, North Side:

- 4 driveways to businesses at 1723, 1755, 1767 & 1775 Carling Avenue
- 1 driveway to a residence at 1765 Carling Avenue
- 2 driveways to a low-rise apartment complex at 1691, 1695, 1699 & 1703 Carling Avenue, 748 Cole Avenue, and 426 & 432 Tillbury Avenue

Carling Avenue, South Side:

- 6 driveways to businesses at 1688, 1696, 1702, 1754, 1762, 1766, 1772, 1778 & 1784 Carling Avenue

Tillbury Avenue, North Side:

- 7 driveways to residences at 423, 425, 431, 433, 435 & 437 Tillbury Avenue, and 729 Golden Avenue

Tillbury Avenue, South Side:

- 3 driveways to a low-rise apartment complex at 1691, 1695, 1699 & 1703 Carling Avenue, 748 Cole Avenue, and 426 & 432 Tillbury Avenue

4.1.4 Pedestrian and Cycling Facilities

Concrete sidewalks are provided on both sides of Carling Avenue.

Carling Avenue is classified as a Spine Cycling Route. There are no designated cycling facilities. Cole Avenue south of Roosevelt Avenue is designated as a local cycling route.

4.1.5 Transit

The nearest bus stops to the subject site are stop #0350 (for route 50; south of Carling Avenue on the west side of Clyde Avenue), #4908 (for routes 50 and 85; east of Clyde Avenue on the south side of Carling Avenue), #7479 and #7480 (for route 85; between Highland Avenue and Cole Avenue on the north side of Carling Avenue), and #7481 (for route 85; west of Boyd Avenue on the south side of Carling Avenue). These bus stop locations are shown in **Figure 2**.

Figure 2: OC Transpo Bus Stop Locations

OC Transpo Route 50 travels from Tunney's Pasture to Lincoln Fields. On weekdays, the route operates every 15 minutes between 3:30pm and 7:00pm, and every 30 minutes from 7:00am-3:30pm and 7:00pm-9:30pm. On Saturdays, the route operates every 30 minutes between 9:00am and 7:00pm. It does not operate on Sundays.

OC Transpo Route 85 travels from Lees to Bayshore. On weekdays, the route operates every 10 minutes from 8:00am-10:00am and 11:00am-1:00pm, every 15 minutes from 6:00am-8:00am and 1:00pm-7:00pm, every 20 minutes from 7:00pm-12:00am, and every 30 minutes from 4:30am-8:00am.

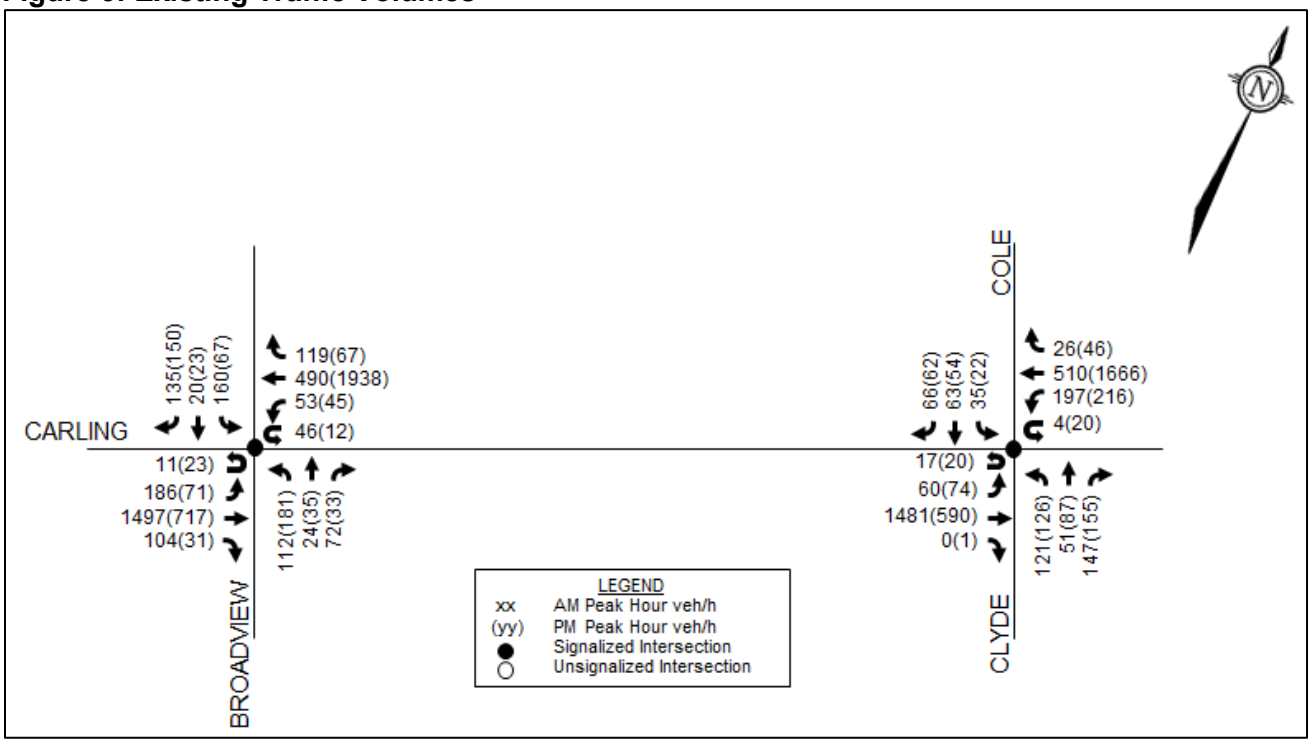
4.1.6 Existing Traffic Volumes

Weekday traffic counts completed by the City of Ottawa were used to determine the existing pedestrian, cyclist and vehicular traffic volumes at the study area intersections. The traffic counts were completed on the following dates:

- Carling Avenue/Broadview Avenue April 20, 2017
- Carling Avenue/Cole Avenue/Clyde Avenue January 27, 2016

Existing AM and PM peak hour volumes are shown in **Figure 3**.

Figure 3: Existing Traffic Volumes



4.1.7 Collision Records

Historical collision data from the last five years was obtained from the City's Public Works and Service Department for the study area intersections. Copies of the collision summary reports are included in **Appendix D**.

The collision data has been evaluated to determine if there are any identifiable collision patterns. The following **Table 1** summarizes the number of collisions at each intersection and roadway segment from January 1, 2012 to December 31, 2016.

Table 1: Reported Collisions

Segment	Number of Reported Collisions
Carling Avenue/Broadview Avenue	50
Carling Avenue/Cole Avenue/Clyde Avenue	45
Carling Avenue between Broadview Avenue & Cole Avenue	10

Carling Avenue/Broadview Avenue
A total of 50 collisions were reported at this intersection over the last five years, of which there were 13 rear-end impacts, 22 turning movement impacts, six sideswipe impacts, six angle impacts, and three single-vehicle/other impacts. Eight of the collisions caused injuries, but none caused fatalities.

Of the 13 rear-end impacts, one occurred at the northbound approach, seven occurred at the eastbound approach (one left turn and six through vehicle incidents), and five occurred at the westbound approach. For eastbound drivers, approaches to a former Petro-Canada gas station and Tim Hortons are immediately after the intersection. These driveways may have been a factor for the

eastbound rear-end impacts. Street level photography shows the gas station was removed between May 2016 and August 2017.

Of the 22 turning movement impacts, one involved left turns at the northbound approach, 16 involved a left turn at the eastbound approach, and five involved left turns at the westbound approach. Eastbound and westbound vehicles that wish to turn left have a protected and permitted turn phase. Given the traffic volumes of Carling Avenue, heavy oncoming traffic is likely a factor in these collisions.

Of the six sideswipe impacts, two occurred at the southbound approach, one occurred at the eastbound approach, and three occurred at the westbound approach.

Of the six angle impacts, three involved a northbound vehicle and an eastbound vehicle, one involved a northbound vehicle and a westbound vehicle, and two involved a southbound vehicle and a westbound vehicle.

Carling Avenue/Cole Avenue/Clyde Avenue
A total of 45 collisions were reported at this intersection over the last five years, of which there were five rear-end impacts, 28 turning movement impacts, four sideswipe impacts, three angle impacts, and five single-vehicle/other impacts. Eleven of the collisions caused injuries, but none caused fatalities.

Of the five rear-end impacts, one occurred at the eastbound approach, and four occurred at the westbound approach.

Of the 28 turning movement impacts, two involved turns at the northbound approach (two left turns), two involved turns at the southbound approach (one left turn and one right turn), twelve involved turns at the eastbound approach (eight left turns and four U-turns), and twelve involved turns at the westbound approach (nine left turns, two U-turns and one right turn).

Concerns were raised at the pre-consultation about the safety of westbound and eastbound U-turns at this intersection. The collision data shows six U-turn incidents in the past five years, equating to one incident every ten months. Currently, eastbound and westbound drivers intending to make a U-turn can do so during a protected and permitted left turn phase.

Ontario Traffic Manual (OTM) Book 12 – Traffic Signals provides guidelines on determining the type of left turn phase. The OTM suggests consideration should be given to providing a fully protected left-turn phase where:

- Geometric or visibility problems exist at the intersection, or there is a historical pattern involving left-turning vehicles;
- Capacity analysis indicates that dual left turn lanes are required; or
- The opposing traffic has high volumes, resulting in poor availability of gaps.

Due to the heavy traffic volumes along Carling Avenue and the collision history involving eastbound and westbound vehicles, the City should consider providing a fully protected left-turn phase for the eastbound and westbound left turn movements at the Carling Avenue/Cole Avenue/Clyde Avenue intersection.

Carling Avenue between Broadview Avenue and Cole Avenue/Clyde Avenue
A total of ten collisions were reported on Carling Avenue between the two intersections listed above over the last five years. In this period, there was one rear-end impact, three turning movement impacts, four sideswipe impacts, and two single-vehicle/other impacts. Two of the collisions caused injuries, but none caused fatalities. Six of the ten collisions occurred in poor weather conditions.

4.2 Planned Conditions

The City of Ottawa's 2013 TMP identifies Carling Avenue as a Design Priority Area, as well as a Transit Priority Corridor with continuous lanes as part of Ottawa's Affordable Rapid Transit and Transit Priority Network. An existing traffic lane in each direction will be repurposed to become an exclusive bus lane.

The City's 2031 Network Concept identifies Light Rail Transit in the median of Carling Avenue with at-grade crossings, between Lincoln Fields station and the Carling O-Train station.

There are no other developments under construction, approved, or in the approval process within the study area.

4.3 Study Area and Time Periods

The study area for this report includes the boundary streets Carling Avenue and Tillbury Avenue, as well as the signalized intersections at Carling Avenue/Broadview Avenue and Carling Avenue/Cole Avenue/Clyde Avenue.

The selected time periods for the analysis are the weekday AM and PM peak hours, as they represent the 'worst case' combination of site generated traffic and adjacent street traffic. Anticipated parking requirements will also be reviewed for the subject site. The proposed redevelopment is expected to be completed by the year 2019.

4.4 Exemptions Review

As the trip generation trigger was not met, Neighbourhood Traffic Management (Module 4.6), Network Concept (Module 4.8), and Network Intersections (Module 4.9) are not required for analysis. The number of trips generated by the proposed development, compared to the existing development, is shown in Section 5.1. A decrease in the number of transit trips generated is estimated following the build-out of the proposed development, and therefore Transit (Module 4.7) has not been included in further analysis. Therefore, the following modules will be included in the TIA report:

- Module 4.1: Development Design
- Module 4.2: Parking
- Module 4.3: Boundary Streets
- Module 4.4: Access Intersections
- Module 4.5: Transportation Demand Management

5.0 FORECASTING

5.1 Trip Generation

Currently, the subject site is occupied by an 80-unit motel and a restaurant with 3,500 ft^2 GFA. The proposed redevelopment will include 68 seniors' apartments on the top three floors and 130 residential care units. All amenities provided on the ground floor will only be provided to the building's residents and their guests. Although the seniors' apartments are intended for independent residents who don't require care, it is anticipated that the residents will also not be as mobile as the tenants of a typical apartment. For this reason, the person trips generated by the redevelopment will be estimated assuming solely the congregate care land use.

The person trips generated by the proposed redevelopment, compared to those generated by the existing development, are summarized in **Table 2**. All trip generation values were calculated using the *ITE Trip Generation Manual, 9th Edition*.

Table 2: Person Trip Generation

Land Use	ITE Code	Units/GFA	AM Peak (PPH[1])			PM Peak (PPH)		
			IN	OUT	TOT	IN	OUT	TOT
Existing Development								
Motel	320	80 units	17	29	46	26	22	48
Quality Restaurant	931	3,500 ft^2	4	0	4	23	11	34
		Total	**21**	**29**	**50**	**49**	**33**	**82**
Proposed Redevelopment								
Congregate Care	253	198 units	9	6	15	24	19	43
		Total	**9**	**6**	**15**	**24**	**19**	**43**
		Difference	**-12**	**-23**	**-35**	**-25**	**-14**	**-39**

1) PPH = Persons Per Hour – Calculated using an ITE Trip to Person Trip factor of 1.28, consistent with the 2017 TIA Guidelines

Based on the previous table, the proposed redevelopment is anticipated to reduce the trips generated by 35 person trips during the AM peak hour and 39 person trips during the PM peak hour.

The modal shares for the proposed redevelopment are anticipated to be consistent with the modal shares outlined in the *2011 Trans O-D Survey Report*, specific to the Ottawa West region. The modal share values applied to the trips generated by the existing motel are based on all observed trips to/from the Ottawa West district with an origin or destination beyond that area. The modal share values applied to the trips generated by the existing restaurant and the proposed residence are based on all observed trips to/from/within the Ottawa West district. A full breakdown of the projected net decrease in person trips by modal share are shown in **Table 3**.

Table 3: Person Trips by Modal Share

Travel Mode	Modal Share	AM Peak			PM Peak		
		IN	OUT	TOT	IN	OUT	TOT
Existing Development							
Motel Person Trips		*17*	*29*	*46*	*26*	*22*	*48*
Auto Driver	60%	10	18	28	16	13	29
Auto Passenger	15%	3	4	7	4	3	7
Transit	20%	3	6	9	5	5	10
Non-Auto	5%	1	1	2	1	1	2
Restaurant Person Trips		*4*	*0*	*4*	*23*	*11*	*34*
Auto Driver	50%	2	0	2	12	5	17
Auto Passenger	15%	1	0	1	4	1	5
Transit	20%	1	0	1	4	3	7
Non-Auto	15%	0	0	0	3	2	5
Auto Driver (Total)		**12**	**18**	**30**	**28**	**18**	**46**
Auto Passenger (Total)		**4**	**4**	**8**	**8**	**4**	**12**
Transit (Total)		**4**	**6**	**10**	**9**	**8**	**17**
Non-Auto (Total)		**1**	**1**	**2**	**4**	**3**	**7**
Proposed Redevelopment							
Residential Person Trips		*9*	*6*	*15*	*24*	*19*	*43*
Auto Driver	50%	5	3	8	12	10	22
Auto Passenger	15%	1	1	2	4	3	7
Transit	20%	2	1	3	5	3	8
Non-Auto	15%	1	1	2	3	3	6
Auto Driver (Total)		**5**	**3**	**8**	**12**	**10**	**22**
Auto Passenger (Total)		**1**	**1**	**2**	**4**	**3**	**7**
Transit (Total)		**2**	**1**	**3**	**5**	**3**	**8**
Non-Auto (Total)		**1**	**1**	**2**	**3**	**3**	**6**
Auto Driver (Difference)		-7	-15	-22	-16	-8	-24
Auto Pass. (Difference)		-3	-3	-6	-4	-1	-5
Transit (Difference)		-2	-5	-7	-4	-5	-9
Non-Auto (Difference)		0	0	0	-1	0	-1

Based on the previous table, the proposed development is anticipated to generate 22 fewer vehicle trips during the AM peak hour and 24 fewer vehicle trips during the PM peak hour.

It is acknowledged that some trips generated by the existing development are likely to be internally captured (for example, guests staying at the motel making a trip to the restaurant and vice versa). Trips generated by the existing development account for less than 1% of the total traffic within the study area, and it has been assumed for simplicity that all trips generated by the existing development have an origin and destination that lies beyond the subject site (i.e. external trips).

5.2 Trip Distribution

The assumed distribution of trips generated by the existing and proposed development has been derived from existing traffic patterns within the study area. As trips generated from the existing motel will have more of a regional draw, while the existing restaurant and the proposed retirement residence will predominantly originate within the district, the distribution of each use will be different.

Trips generated by the existing motel are anticipated to have a more regional draw, with a higher percentage of trips to/from Highway 417 to the south. Based on the off-peak count data along Carling Avenue, eastbound and westbound traffic is generally evenly split. Similarly, it has been assumed that 50% of the motel trips originate from the east on Carling Avenue and 50% of the motel trips originate from the west on Carling Avenue. The ramps to Highway 417 nearest to the subject site are both accessed via Carling Avenue. In summary, the distribution for the existing motel can be described as follows:

- 50% to/from the east via Carling Avenue
- 50% to/from the west via Carling Avenue

The distribution for the existing restaurant and the proposed retirement residence have been derived based on the Annual Average Daily Traffic (AADT) along the study area roadways, and can be described as follows:

- 5% to/from the north via Broadview Avenue
- 5% to/from the north via Cole Avenue
- 5% to/from the south via Broadview Avenue
- 5% to/from the south via Clyde Avenue
- 40% to/from the east via Carling Avenue
- 40% to/from the west via Carling Avenue

5.3 Trip Assignment

Due to the existing median along Carling Avenue, some traffic will be required to perform a U-turn manoeuvre to access the subject site. All trips arriving to the study area via the intersection of Carling Avenue/Broadview Avenue will perform a U-turn at the intersection of Carling Avenue/Cole Avenue/ Clyde Avenue. Similarly, all trips departing from the study area via the intersection of Carling Avenue/ Cole Avenue/Clyde Avenue will perform a U-turn at the intersection of Carling Avenue/Broadview Avenue.

5.4 Other Area Development

There are no other developments identified as under construction, approved, or in the approval process within the study area.

Trips generated by the existing developments are shown in **Figure 3**. Trips generated by the proposed redevelopment are shown in **Figure 4**. Total traffic volumes, which include the net site traffic, are shown in **Figure 5**.

Figure 3: Existing Site-Generated Traffic Volumes

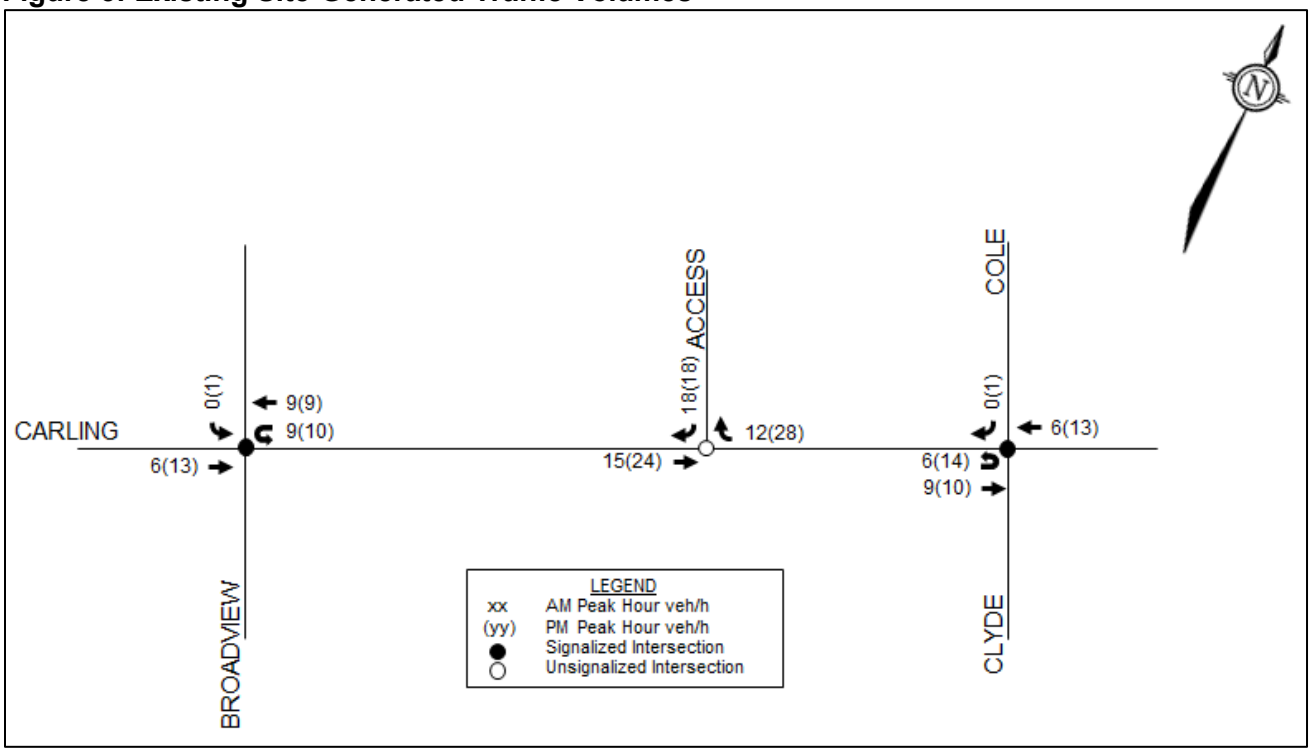


Figure 4: Proposed Redevelopment Traffic Volumes

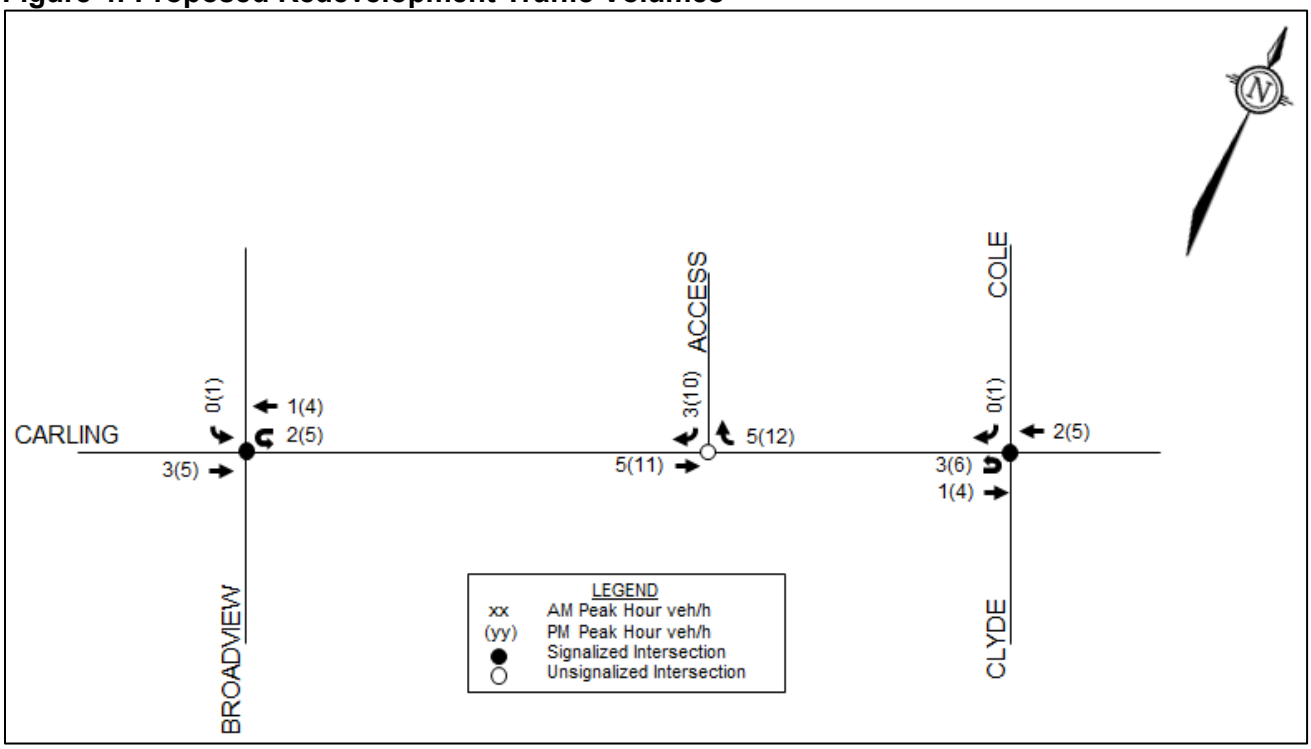
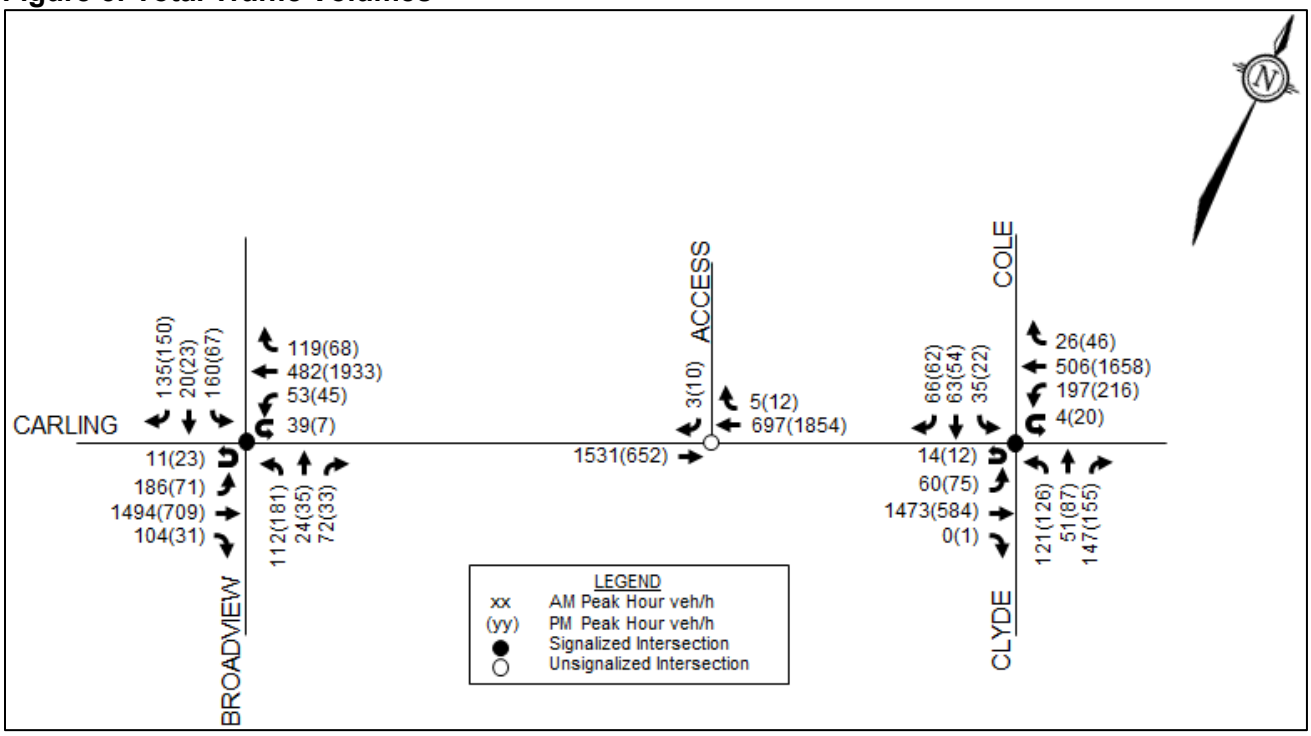


Figure 5: Total Traffic Volumes



6.0 ANALYSIS

6.1 Development Design

6.1.1 Design for Sustainable Modes

Pedestrian facilities will be provided between the entrances to the retirement residence and the drop-off/pick-up and parking areas, as well as a connection to the sidewalk along Carling Avenue. Sidewalks will be depressed and continuous across the right-in/right-out accesses, in accordance with City standards. A pedestrian facility will also be provided at the back of the building, linking the deck, pond, and landscaped area to the municipal park to be developed on Tillbury Avenue.

All bicycle parking will be provided in the single-level parking garage. The number of bicycle parking spaces is reviewed in Section 6.2.

The nearest bus stops are noted in Section 4.1.5. Measured from the main building entrance, the walking distance is approximately 210m to stop #0350, approximately 280m to stop #4908, and approximately 100m to stop #7479.

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 E**. All required TDM-supportive design and infrastructure measures in the TDM checklist are met.

6.1.2 Circulation and Access

Vehicles for garbage collection and deliveries will be accommodated with a receiving and loading space at the north side of the proposed retirement residence, directly east of the ramp to the underground parking garage. An AutoTURN analysis was performed for a MSU (Medium Single Unit) design vehicle entering and exiting both the access to the subject site, as well as the loading space. The parking lot will contain a restricted area where no vehicles will be permitted to park directly across from the loading space, which will allow the design vehicle enough space to reverse into the space. The design vehicle will be required to cross one lane of traffic on Carling Avenue when entering and exiting the subject site. Turning movements for an MSU truck entering and exiting the site, as well as entering and exiting the loading space, are shown in **Figure 6**.

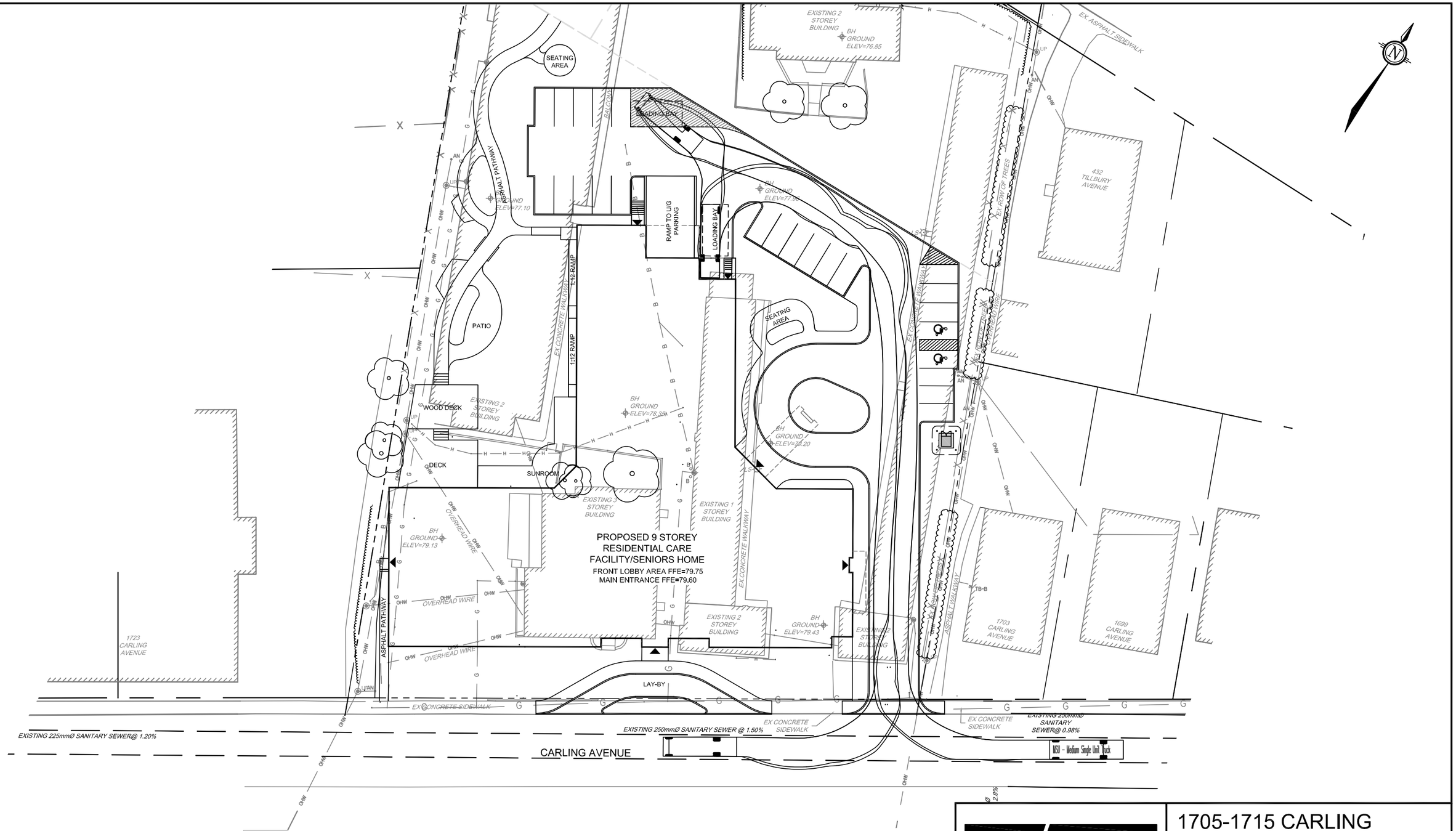
A shuttle service will be provided to residents who wish to make a mall or supermarket run. An AutoTURN analysis was performed for an LSU (Light Single Unit) design vehicle entering the looped access from the north end of the parking lot and exiting the looped access toward Carling Avenue. These turning movements are shown in **Figure 7**.

Ambulances will also use the looped access when responding to emergencies. A mountable concrete apron will be installed around the perimeter of the landscaped island within the looped access to accommodate the ambulance's turning movements. An AutoTURN analysis was performed for a North American Ambulance design vehicle entering and exiting the looped access. These turning movements are shown in **Figure 8**.

The fire route for the proposed development is curbside along Carling Avenue.

6.2 Parking

The subject site is located in Area B on Schedule 1 and Area Y on Schedule 1A of the City of Ottawa's *Zoning By-Law* (ZBL). Minimum vehicular and bicycle parking rates for the proposed development are identified in the ZBL, and are summarized in **Table 4**.



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1705-1715 CARLING AVENUE

MEDIUM SINGLE UNIT MOVEMENTS

SCALE	DATE	JOB	FIGURE
1 : 500	APR 2018	117216	FIG 6

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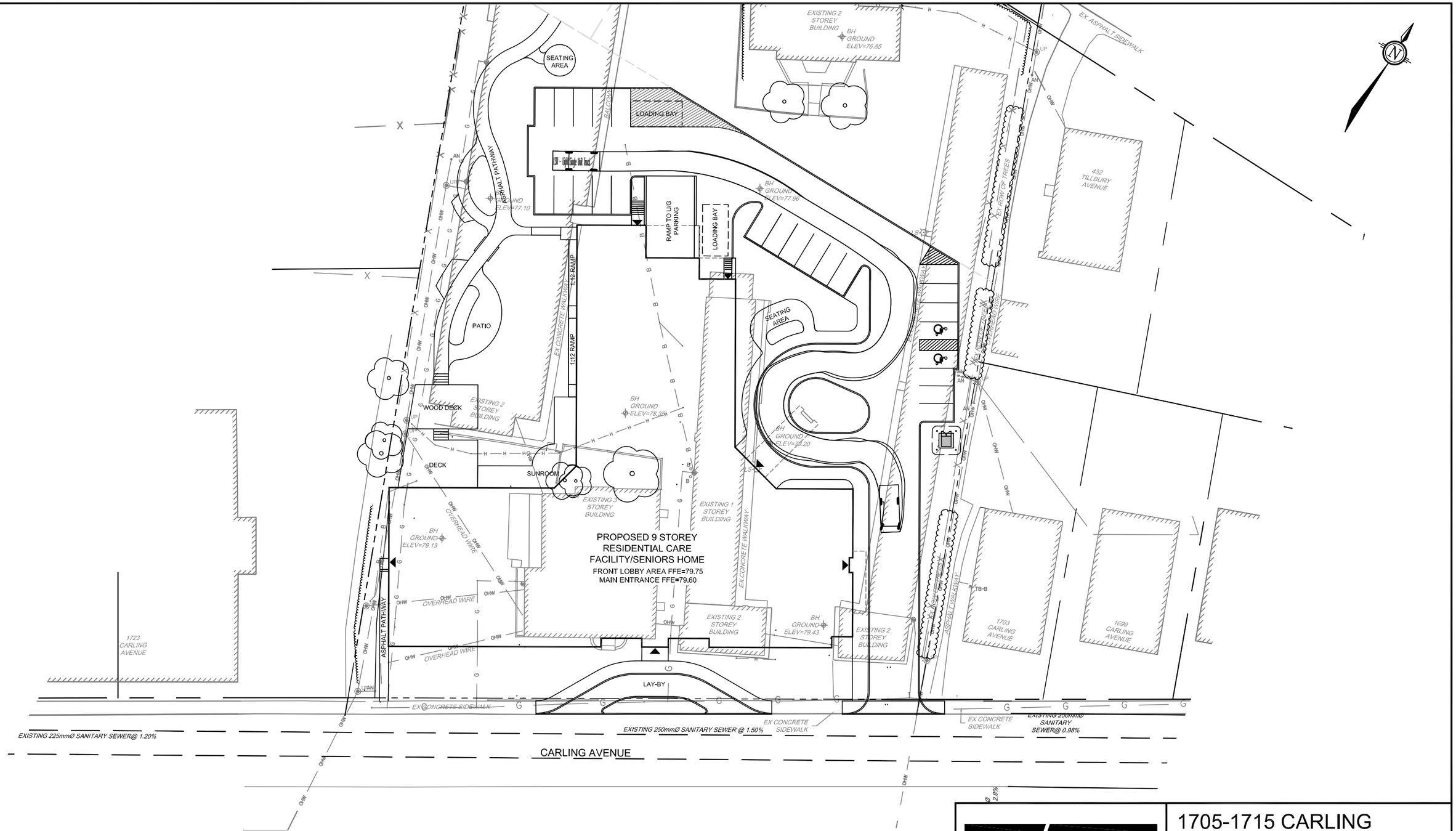

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1705-1715 CARLING AVENUE

LIGHT SINGLE UNIT MOVEMENTS

SCALE	DATE	JOB	FIGURE
1 : 500	APR 2018	117216	FIG 7

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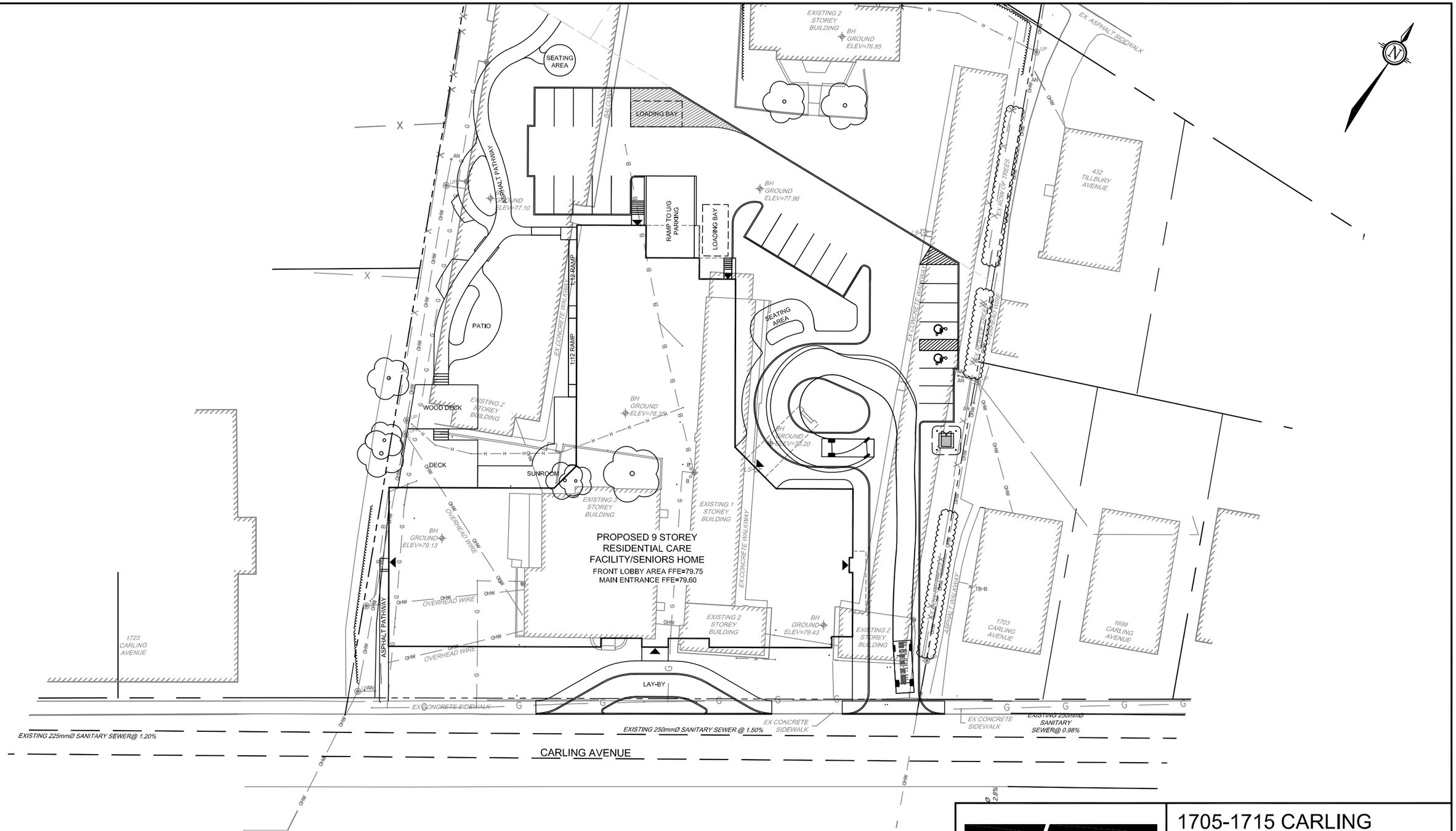
SHT11X17.DWG - 279mmX432mm



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1705-1715 CARLING AVENUE

NORTH AMERICAN AMBULANCE MOVEMENTS

SCALE	DATE	JOB	FIGURE
1 : 500	APR 2018	117216	FIG 8

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Table 4: Parking Requirements Per Zoning By-Law

Land Use	Rate	Units/GFA	Required
Vehicle Parking (minimum)			
Residential Care Facility	0.125 per dwelling unit	130 units	16
Medical, Health or Personal Services	0.50 per 100 m^2 GFA	1,045 m^2	5
Apartment Building, Mid-High Rise	0.50 per dwelling unit after the first 12 units; 0.10 per dwelling unit after the first 12 for visitors	68 units	28 6
		Minimum	**55**
		Provided	**70**
Bicycle Parking (minimum)			
Residential Care Facility	No requirement	130 units	0
Medical, Health or Personal Services	1.0 per 250 m^2 GFA‡	1,045 m^2	4
Apartment Building, Mid-High Rise	0.50 per dwelling unit	68 units	34
		Minimum	**38**
		Provided	**51**

‡ Unlike with vehicular parking, there is no direct bicycle parking rate for "Medical, Health or Personal Services." Of the relevant land uses, the strictest bicycle parking rate has been chosen to maintain a conservative analysis.

Based on the foregoing table, both the vehicular and bicycle parking provided for the proposed redevelopment will meet the minimum requirements identified in the ZBL.

The minimum number of loading spaces for the proposed development are identified in the ZBL, based on the land use and gross floor area. The gross floor area of the medical, health or personal services mentioned in the previous table is approximately 1,045 m^2. The ZBL identifies a minimum requirement of 1 loading space for 'all other non-residential uses' between 350 m^2 and 1,999 m^2 GFA. Therefore, the proposed development meets this requirement.

6.3 Boundary Streets

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 Carling Avenue for each mode of transportation. Schedule B of the City of Ottawa's Official Plan identifies Carling Avenue as an Arterial Main Street within the entire study area. For the study area, the boundary streets review evaluates the MMLOS for Carling Avenue based on existing conditions.

6.3.1 Pedestrian Level of Service (PLOS)

Exhibit 4 of the MMLOS guidelines has been used to evaluate the segment PLOS of Carling Avenue. Exhibit 22 of the MMLOS guidelines suggests a target PLOS C for Arterial Main Streets. The results of the segment PLOS analysis are summarized in **Table 5**.

Table 5: PLOS Segment Analysis

Sidewalk Width	Boulevard Width	Avg. Daily Curb Lane Traffic Volume	Presence of On-Street Parking	Operating Speed[1]	Segment PLOS
Carling Avenue (north side)					
1.8m	0m	> 3000 vpd	No	70 km/h	F
Carling Avenue (south side)					
1.8m	0m	> 3000 vpd	No	70 km/h	F

1. Operating speed taken as the posted speed limit plus 10 km/h

6.3.2 Bicycle Level of Service (BLOS)

Exhibit 11 of the MMLOS guidelines has been used to evaluate the segment BLOS of Carling Avenue. Exhibit 22 of the MMLOS guidelines suggests a target BLOS C for Spine Cycling Routes on Arterial Main Streets. The results of the segment BLOS analysis are summarized in **Table 6**.

Table 6: Segment BLOS Analysis

Road Class	Bike Route	Type of Bikeway	Travel Lanes	Operating Speed	Segment BLOS
Carling Avenue, eastbound (Broadview Avenue to Cole Avenue/Clyde Avenue)					
Arterial	Spine Route	Mixed Traffic	3	70 km/h	F
Carling Avenue, westbound (Cole Avenue/Clyde Avenue to Broadview Avenue)					
Arterial	Spine Route	Mixed Traffic	3	70 km/h	F

6.3.3 Transit Level of Service (TLOS)

Exhibit 15 of the MMLOS guidelines has been used to evaluate the segment TLOS of Carling Avenue. Exhibit 22 of the MMLOS guidelines suggests a target TLOS D for Transit Priority Corridors with Isolated Measures. Carling Avenue has been assessed using this target for the existing condition, as buses currently operate in mixed traffic. The results of the segment TLOS analysis are summarized in **Table 7**.

Table 7: Segment TLOS Analysis

Facility Type	Level/Exposure to Congestion Delay, Friction and Incidents			Segment TLOS
	Congestion	Friction	Incident Potential	
Carling Avenue, eastbound (Broadview Avenue to Cole Avenue/Clyde Avenue)				
Mixed Traffic – Limited Parking/Driveway Friction	Yes	Low	Medium	D
Carling Avenue, westbound (Cole Avenue/Clyde Avenue to Broadview Avenue)				
Mixed Traffic – Moderate Parking/Driveway Friction	Yes	Medium	Medium	E

6.3.4 Truck Level of Service (TkLOS)

Exhibit 20 of the MMLOS guidelines has been used to evaluate the segment TkLOS of Carling Avenue. Exhibit 22 of the MMLOS guidelines suggests a target TkLOS D for truck routes along an Arterial Main Street. The results of the segment TkLOS analysis are summarized in **Table 8**.

Table 8: TkLOS Segment Analysis

Curb Lane Width	Number of Travel Lanes Per Direction	Segment TkLOS
Carling Avenue, eastbound (Broadview Avenue to Cole Avenue/Clyde Avenue)		
≤ 3.3m	3	C
Carling Avenue, westbound (Cole Avenue/Clyde Avenue to Broadview Avenue)		
≤ 3.3m	3	C

6.3.5 Vehicular Level of Service (Auto LOS)

Exhibit 22 of the MMLOS guidelines suggests a target Auto LOS D for Arterial Main Streets. The typical lane capacity along the study area roadways are based on the City's guidelines for the TRANS Long-Range Transportation Model. The lane capacity along the boundary streets has been estimated based on roadway classification and general characteristics (i.e. suburban with limited access, urban with on-street parking, etc.). The results of the Auto LOS analysis are summarized in **Table 9**.

Table 9: Auto LOS Segment Analysis

Direction	Directional Capacity	Traffic Volumes		V/C Ratio and LOS			
		AM Peak	PM Peak	AM Peak		PM Peak	
				V/C	LOS	V/C	LOS
Carling Avenue (Broadview Avenue to Cole Avenue/Clyde Avenue)							
Eastbound	3,000 vph	1,775	829	0.59	A	0.28	A
Westbound	3,000 vph	714	2,062	0.24	A	0.69	B

6.3.6 Segment MMLOS Summary

A summary of the results of the segment MMLOS analysis for Carling Avenue are provided in **Table 10**.

Table 10: Segment MMLOS Summary

	Segment	Carling Avenue
Pedestrian	Sidewalk Width	1.8m
	Boulevard Width	0m
	Average Daily Curb Lane Traffic Volume	> 3000 vpd
	On-Street Parking	No
	Operating Speed	70 km/h
	Level of Service	F
	Target	C
Cyclist	Road Classification	Arterial
	Bike Route Classification	Spine Route
	Type of Bikeway	Mixed Traffic
	Travel Lanes	3
	Operating Speed	70 km/h
	Level of Service	F
	Target	C
Transit	Facility Type	Mixed Traffic
	Friction/Congestion/Incident Potential	Moderate
	Level of Service	E
	Target	D
Truck	Lane Width	≤ 3.3 m
	Travel Lanes (per direction)	3
	Level of Service	C
	Target	D
Auto	Level of Service	B
	Target	D

Results of the segment MMLOS analysis indicated that Carling Avenue does not meet the target PLOS C, BLOS C, or TLOS D, but does meet the target TkLOS D and Auto LOS D. The current ROW along Carling Avenue is 30m within the study area, with a ROW protection of 44.5m. The land required for a future road widening is anticipated to be taken equally from both sides of the centerline, which equates to 7.25m on both the north and south sides. The Rapid Transit and Transit Priority Network identifies Carling Avenue as having at-grade LRT in its Network Concept and continuous transit lanes in its Affordable Network. While these improvements to the transit network are being implemented, there may be opportunities to improve the pedestrian and bicycle levels of services as well, as discussed further below.

The pedestrian level of service of Carling Avenue is currently failing. This is attributable to two main features: an operating speed of 70 km/h and average daily curb lane traffic volumes far greater than 3000 vehicles/day. With a reduction of the operating speed to 60 km/h, the best PLOS possible for this segment is the target PLOS C, which can be achieved by implementing sidewalks with a minimum width of 2.0m and a minimum sidewalk boulevard width of 2.0m.

The bicycle level of service of Carling Avenue is currently failing. This is attributable to the operating speed of 70 km/h. The *Ontario Traffic Manual – Book 18* describes the desirable cycling facility for a roadway, given the roadway's average annual daily traffic (AADT) and operating speed. For

roadways with an AADT of over 15,000 vehicles per day and an operating speed of 50 km/h or higher, the *Ontario Traffic Manual* states that 'a separated facility or an alternate road' should be considered. The implementation of a cycle track or other physically separated bikeway would improve the BLOS of this segment to a BLOS A.

As discussed above, the City has identified transit improvements to Carling Avenue in the *2013 Transportation Master Plan* (TMP). The implementation of either at-grade LRT or continuous bus lanes on Carling Avenue will improve the TLOS beyond the target TLOS D.

6.4 Access Design

The existing depressed curb accesses to the subject site will be removed as part of the proposed redevelopment, and full-height curb and sidewalks will be reinstated as per City standards. A single two-way driveway is proposed at the eastern edge of the subject site, along with a proposed lay-by on Carling Avenue approximately 18m west of the proposed driveway (measured from nearest edge to nearest edge at the existing ROW).

Section 25 (c) of the City of Ottawa's *Private Approach By-Law* identifies a requirement for two-way accesses to have a width no greater than 9m, as measured at the street line. The proposed driveway is approximately 6.7m in width, thereby meeting this requirement. A width of 3m is proposed for the one-way lay-by.

Section 25 (f) of the *Private Approach By-Law* identifies a minimum distance of 9m between a two-way and any other private approach to the same property, as measured at the street line. The proposed driveway and lay-by are separated by approximately 18m (measured nearest edge to nearest edge at the street line), thereby meeting this requirement.

Section 25 (l) of the *Private Approach By-Law* identifies a requirement to provide a minimum distance of 30m between the private approach and the nearest intersecting street line. The proposed driveway is located approximately 80m west of Cole Avenue and 285m east of Broadview Avenue (both measured from nearest edge to ROW), thereby meeting this requirement.

Section 25 (o) of the *Private Approach By-Law* identifies a requirement to provide a minimum spacing of 3m between the nearest edge of the private approach and the property line as measured at the street line. The spacing between the nearest edge of the proposed driveway and the property line is approximately 1.4m at the widened right-of-way. This is less than the minimum spacing required. Section 25 (o) provides for flexibility in this requirement, subject to the approval of the General Manager. Provided that there will be no safety issues, the General Manager can reduce this requirement to 0.3m. It is noteworthy that the nearest neighbouring approach is approximately 15m east of the proposed driveway (measuring nearest edge to nearest edge at the street line). Safety concerns are not anticipated. A waiver of the private approach by-law will be required.

A lay-by with a curbed island is proposed along Carling Avenue as a pick-up/drop-off zone for residents of the seniors' apartments. The island will act as a buffer between vehicles using the lay-by and general traffic on Carling Avenue. The lay-by will be approximately 27m in length, 3m in width with a 1.8m sidewalk, with a curbed island that is approximately 2.5m in width. The proposed lay-by will form part of the required RMA submission in support of the site plan control application. If a lay-by is not provided, it is anticipated that drop-off/pick-up activities may occur curbside along Carling Avenue, with a much greater impact on safety and traffic operations.

6.5 Transportation Demand Management

The subject site is located within a Design Priority Area (DPA), as defined by the City of Ottawa's Official Plan. The residential care units will be staffed 24 hours a day, with three shifts. The day shift will be staffed by 25 employees, the evening shift will be staffed by 14 employees, and the night shift will be staffed by 5 employees.

Although there are less than 60 employees that will be on-site at any given time, a review of the non-residential and residential components of the City of Ottawa's *TDM Measures Checklist* have been performed with the property manager, and is provided in **Appendix E**.

The following measures will be implemented upon buildout of the proposed retirement residence:

- Offer pre-loaded PRESTO cards to encourage commuters to use transit;
- Provide a multi-modal travel option information package to new/relocating employees and residents;
- Provide on-site amenities/services to minimize off-site errands for staff;
- Provide shuttle service for seniors' homes or lifestyle communities (ie. scheduled mall or supermarket runs).

The *TDM Measures Checklist* also identifies displaying local area maps with walking/cycling access routes, as well as transit maps and schedules, at all major entrances. The property manager has noted that these resources will be provided as hard copies for staff and residents.

7.0 CONCLUSIONS AND RECOMMENDATIONS

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

Forecasting

- The net decrease in trips generated by the proposed redevelopment is approximately 35 person trips in the AM peak hour and 39 person trips in the PM peak hour, which includes a decrease of approximately 22 vehicle trips in the AM peak hour and 24 vehicle trips in the PM peak hour.

Development Design and Parking

- Pedestrian facilities will be provided between the entrances to the retirement residence and the drop-off/pick-up and parking areas, as well as a connection to the sidewalk along Carling Avenue. Sidewalks will be depressed and continuous across the right-in/right-out accesses, in accordance with City standards. A pedestrian facility will also be provided at the back of the building, linking the deck, pond, and landscaped area to the municipal park to be developed on Tillbury Avenue.

- All bicycle parking will be provided in the single-level parking garage.

- All required TDM-supportive design and infrastructure measures in the TDM checklist are met.

- Garbage collection and loading will occur within the subject site, north of the residential building and adjacent to the underground parking access ramp.

- A shuttle for residents and ambulances are both accommodated by the looped access to the main building entrance.

- Approximately 70 vehicle parking spaces and 51 bicycle parking spaces are proposed for the subject site, meeting the requirements of the ZBL.

Boundary Streets

- Between Broadview Avenue and Cole Avenue/Clyde Avenue, Carling Avenue does not meet the target PLOS, BLOS, or TLOS. Carling Avenue does meet the target TkLOS and Auto LOS.

- The Rapid Transit and Transit Priority Network identifies Carling Avenue as having at-grade LRT in its Network Concept and continuous transit lanes in its Affordable Network. While these improvements to the transit network are being implemented, there may be opportunities to improve the pedestrian and bicycle levels of services as well, as discussed further below.

- Per Exhibit 4 of the MMLOS guidelines, the PLOS of Carling Avenue can be improved to the target PLOS C by implementing sidewalks with a minimum width of 2.0m and a minimum sidewalk boulevard width of 2.0m.

- Per Exhibit 11 of the MMLOS guidelines, the BLOS of Carling Avenue can be improved to a BLOS A by implementing a cycle track or other physically separated bikeway. The *Ontario Traffic Manual – Book 18* identifies separated bicycle facilities as most appropriate for Carling Avenue, given the high operating speed and daily traffic volumes.

- The implementation of either at-grade LRT or continuous bus lanes along Carling Avenue will improve the transit level of service well beyond the target TLOS D.

Access Design

- The proposed redevelopment will be served by a right-in/right-out driveway at the eastern edge of the property, along with a lay-by along Carling Avenue approximately 18m west of the driveway access.

- Section 25 (c) of the *Private Approach By-Law* identifies a maximum width of 9m for two-way accesses. This requirement is met by the proposed driveway and lay-by.

- Section 25 (f) of the *Private Approach By-Law* identifies a minimum distance of 9m between a two-way access and any other private approach for the same property. This requirement is met by the proposed driveway and lay-by.

- Section 25 (l) of the *Private Approach By-Law* identifies a minimum distance of 30m between the private approach and the nearest intersecting street line. This requirement is met by the proposed driveway.

- Section 25 (o) of the *Private Approach By-Law* identifies a minimum distance of 3m between the nearest edge of the private approach and the property line, as measured at the street line. Based on the ROW widening along Carling Avenue, this requirement is not met by the proposed driveway. Section 25 (o) provides for flexibility in this requirement, subject to the approval of the General Manager. Provided that there will be no safety issues, the General

Manager can reduce this requirement to 0.3m. Safety concerns are not anticipated. A waiver of the private approach by-law will be required.

- If the proposed lay-by is not provided, it is anticipated that drop-off/pick-up activities may occur curbside along Carling Avenue, causing a greater impact on safety and traffic operations.

Transportation Demand Management

- The property manager has agreed to implement the following TDM measures:
  - Offer pre-loaded PRESTO cards to encourage commuters to use transit;
  - Provide a multi-modal travel option information package to new/relocating employees and residents;
  - Provide on-site amenities/services to minimize off-site errands for staff;
  - Provide shuttle service for seniors' homes or lifestyle communities (ie. scheduled mall or supermarket runs).

- The property manager has also noted that hard copies of local area maps and transit maps with schedules will be provided to residents and staff as hard copies, rather than displaying these at all major entrances to the building.

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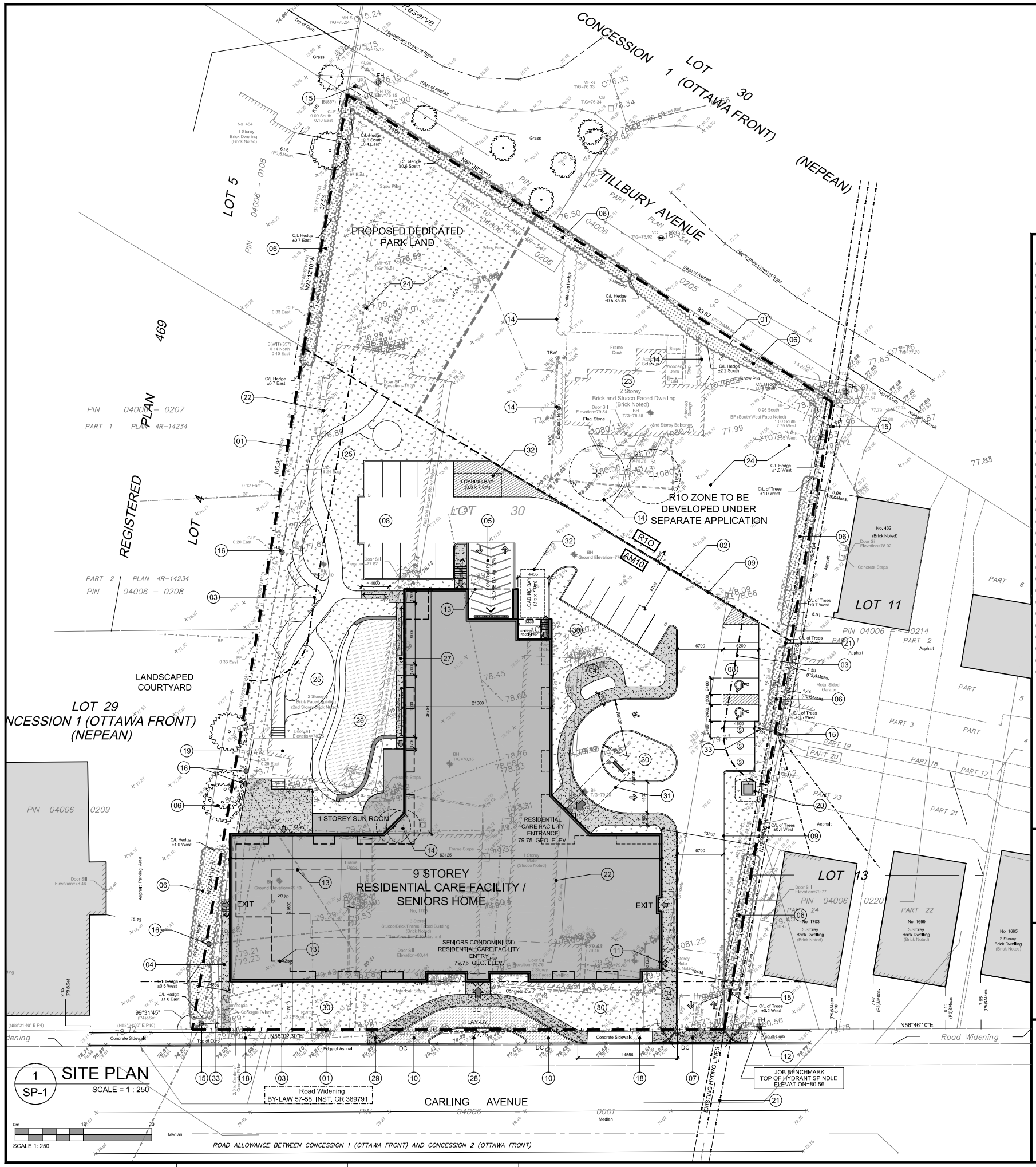
APPENDIX A

Conceptual Site Plan



1 SITE PLAN
SP-1
SCALE = 1 : 250

KEY MAP

DRAWING NOTES

1. PROPERTY LINE
2. ZONING LIMIT
3. ROAD WIDENING / YARD SETBACK
4. HARD SURFACE SIDEWALK / PATH , SEE LANDSCAPE
5. PARKING GARAGE ENTRY DRIVEWAY / RAMP WITH TRENCH DRAIN
6. EXISTING TREE / PLANT MATERIAL TO REMAIN
7. DEPRESSED CURB / SIDEWALK TO CITY STANDARDS
8. STAFF / VISITOR ASPHALT PARKING LOT
9. 150mm BARRIER CURB
10. EXISTING CURB AND SIDEWALK TO BE REMOVED AND REPLACED WITH DEPRESSED CURB AND LAY-BY TO CITY STANDARD
11. SIAMESE CONNECTION
12. EXISTING FIRE HYDRANT
13. OUTLINE OF BUILDING ABOVE
14. EXISTING TREE / PLANT MATERIAL TO BE REMOVED
15. EXISTING UTILITY POLE
16. EXISTING UTILITY POLE TO BE REMOVED
17. EXISTING HYDRO / UTILITY LINES TO BE REMOVED
18. EXISTING CONCRETE SIDEWALK WITH STREET CURB
19. PRIVATE PATIOS AT GRADE
20. PROPOSED LOCATION OF HYDRO EQUIPMENT
21. APPROXIMATE LOCATION OF OVERHEAD UTILITY LINES
22. REMOVE EXISTING COMMERCIAL BUILDING
23. REMOVE EXISTING RESIDENTIAL DWELLING
24. REMOVE EXISTING ASPHALT PARKING LOT
25. LANDSCAPED COURTYARD, SEE LANDSCAPE PLAN
26. POND, SEE LANDSCAPE PLAN
27. BARRIER FREE CONCRETE RAMP AS PER O.B.C. 3.8.3.4.
28. REPLACE SIDEWALK WITH SOFT LANDSCAPING
29. 1.8m WIDE CONCRETE SIDEWALK TO CITY STANDARDS
30. SOFT LANDSCAPING, SEE LANDSCAPE PLAN
31. ENTRY CANOPY
32. 3.5 x 7.0m LOADING BAY
33. EXISTING UTILITY POLE GUIDE WIRE
34.
35.

SITE PLAN SYMBOLS

- HARD SURFACE WALK / PATH
- WATER FEATURE
- ASPHALT LAY-BY
- NEW CITY SIDEWALK
- SOFT LANDSCAPING
- TWO WAY VEHICLE CIRCULATION
- MAIN ENTRANCE
- SERVICE / EXIT DOOR
- PROPERTY LINE

SURVEYOR

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LEGAL DESCRIPTION

SKETCH ILLUSTRATING CONCRETE CURBS AND CENTRELINE OF CARLING AVENUE IN FRONT OF 1705-1715 CARLING AVENUE
BEING

PART OF LOT 30
CONCESSION 1 (OTTAWA FRONT)
Geographic Township of Nepean CITY OF OTTAWA
Surveyed by Annis, O'Sullivan, Vollebekk Ltd.

PROJECT DEVELOPER

The Founders Residences LP
20 Holly Street, Suite 300
Toronto ON, M4S 3B1
1-833-688-2921
Email: bwstewart01@gmail.com

PLANNER

Novatech Eng. Consultants Limited
200 - 240 Michael Cowpland Drive
Ottawa, Ontario, K2M 1P6
Tel: 613 254-9643
Fax: 613 254-5867
Email: d.seehar@novatech-eng.com
Email: m.Chown@novatech-eng.com

PROJECT INFORMATION

ZONING Zoning By-Law 2008-250	AM10 / R1O
SITE AREA	8,928.75 sq. m. (96,109) sq. ft.
BUILDING HEIGHT	AM10 - 30.0 M / R1O - 8.0M

PROJECT STATISTICS

BUILDING HEIGHT		29.9 M
AVERAGE MEAN GRADE		(GEO. ELEV.) 68.00

GROSS BUILDING - AREAS
(CITY OF OTTAWA'S DEFINITION)

P1 PARKING LEVEL		N/A
GROUND FLOOR		N/A
2nd to 6th FLOOR	5 x 1,469.3 sq. m. 5 x (15,812) sq. ft.	7,344.9 sq. m. (79,060) sq. ft.
7th FLOOR		1,416.4 sq. m. (15,246) sq. ft.
8th & 9th FLOOR	2 x 1,245.6 sq. m. 2 x (13,420) sq. ft.	2,493.5 sq. m. (26,840) sq. ft.
MECHANICAL FLOOR		N/A
TOTAL AREA		11,254.8 sq. m. (121,146) sq. ft.

UNIT STATISTICS

RESIDENTIAL CARE FACILITY	
JUNIOR 1 BED UNIT	10
1 BED UNIT	85
1 BED UNIT + DEN	15
2 BED UNIT	20
TOTAL	130
SENIOR APARTMENTS	
JUNIOR 1 BED UNIT	2
1 BED UNIT	40
1 BED UNIT + DEN	16
2 BED UNIT	10
TOTAL	68
MEDICAL / HEALTH / PERSONAL SERVICE AREA	1,045.5 sq. m. (11,253) sq. ft.

AMENITY AREA

EXTERIOR COMMUNAL AT GRADE	1,022.0 sq. m. 11,000 sq. ft.
1st FLOOR COMMUNAL AMENITY ROOM	518.1 sq. m. 5,555 sq. ft.
10th FLOOR COMMUNAL AMENITY ROOM	296.4 sq. m. 3,190 sq. ft.
7th & 8th FLOOR COMMUNAL ROOF TOP PATIO	171.8 sq. m. 1,850 sq. ft.
PRIVATE BALCONIES	615.0 sq. m. 6,620 sq. ft.
TOTAL =	2,621.4 sq. m. 28,217 sq. ft.

REQUIRED (196 UNITS X 6 m²) = 1,176 m² / 12,658 ft²

CAR PARKING

REQUIRED by ZONING BY-LAW

RESIDENCE CARE FACILITY	- 0.25 PER UNIT (130 UNITS)	33
RESIDENTIAL UNITS	- 0.5 PER UNIT (66 UNITS) (AFTER 12 UNITS)	27
VISITOR	- 0.1 PER RESIDENTIAL UNIT (AFTER 12 UNITS)	5
MEDICAL, HEALTH & PERSONAL SERVICES	- 0.5 PER 100m² OF G.F.A.	5
TOTAL		70

PROVIDED

AT GRADE PARKING		25
UNDERGROUND P1 LEVEL PARKING		45
TOTAL		70
STANDARD PARKING SPACE (2.6 X 5.2)	95.0%	67
SMALL CAR PARKING SPACE (2.4 X 4.6)	5.0%	3

BICYCLE PARKING

REQUIRED

CARE FACILITY UNIT	- NOT REQUIRED	0
RESIDENCE UNIT	- 0.5 PER UNIT (66 UNITS)	33
MEDICAL, HEALTH & PERSONAL SERVICES	- 1.0 PER 250m² OF G.F.A.	3
TOTAL		36

PROVIDED

UNDERGROUND PARKING LEVEL	51

LOT COVERAGE

PAVED SURFACE =	1,559.2 sq. m.	17.46%
BUILDING FOOTPRINT =	2,145.7 sq. m.	24.03%
LANDSCAPE OPEN SPACE =	2,397.3 sq. m.	26.85%
PROPOSED PARK =	895.2 sq. m.	10.03%
R1O ZONE =	1,931.4 sq. m.	21.63%
TOTAL =	8,928.75 sq. m.	100.0%

NOTATION SYMBOLS:

- (00) INDICATES DRAWING NOTES, LISTED ON EACH SHEET.
- (W) INDICATES ASSEMBLIE TYPE; REFER TO TYPICAL ASSEMBLIES SCHEDUAL.
- (W) INDICATES WINDOW TYPE; REFER TO WINDOW ELEVATIONS AND DETAILS ON A900 SERIES.
- (D00) INDICATES DOOR TYPE; REFER TO DOOR SCHEDULE AND DETAILS ON A600 SERIES.
- DETAIL NUMBER
- (00) TITLE / SCALE — DETAIL REFERENCE PAGE
- DETAIL CROSS REFERENCE PAGE

LRT ALIGNMENT DISCLAIMER

APPROXIMATE LRT TUNNEL AND SHORING ALLOWANCE LOCATION TAKEN FROM CITY OF OTTAWA DRAWINGS *CONFEDERATION LINE WEST LRT EXTENSION - TUNNEY'S PASTURE STATION TO BASELINE STATION; PLAN AND PROFILE - NEW ORCHARD STATION 95+170+ 95+770 SHEET 16, DATED JUNE 2, 2016 & GENERAL ARRANGEMENT - RICHMOND ROAD TUNNEL SHEET 102, DATED FEBRUARY 10, 2016*

No.	DESCRIPTION	DATE
3		
2		
1		
3	ISSUED FOR SITE PLAN CONTROL	Apr. 20, 18
1	ISSUED FOR DESIGN CONCEPT	Mar. 02, 18

REVISIONS:

ARCHITECT SEAL: ONTARIO ASSOCIATION OF ARCHITECTS — RODERICK LAHEY — LICENCE 4376 — SEAL DATE: STAMP DATE

NORTH ARROW:

CLIENT: The Founders Residences Westboro

ARCHITECT:
rla/architecture
roderick lahey architect inc.
56 beech street, ottawa, ontario K1S 3j6
t.613.724.9932 f.613.724.1209 rlaarchitecture.ca

PROJECT TITLE:
The Founders Residences Westboro
1705 CARLING AVENUE
OTTAWA ONTARIO

SHEET TITLE:
SITE PLAN

DRAWN: RV	CHECKED: J.S.
SCALE: 1:250	SHEET No. SP-1
PROJECT No. 1740	

APPENDIX B

TIA Screening Form

City of Ottawa 2017 TIA Guidelines Screening Form

1. Description of Proposed Development

Municipal Address	**1705 Carling Avenue**
Description of Location	**The 0.92-hectare property is midblock between Highland Avenue and Cole Avenue. It is bound by Tillbury Avenue to the north, Carling Avenue to the south, existing residences to the east and existing businesses to the west.**
Land Use Classification	**Seniors' apartments/Residential care facility**
Development Size (units)	**68 apartment units, 130 residential care units**
Development Size (m^2)	
Number of Accesses and Locations	**1 lay-by for drop-off and pickup, and 1 right-in/right-out access on Carling Avenue**
Phase of Development	**1**
Buildout Year	**2019**

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, <u>the Trip Generation Trigger is satisfied.</u>

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?	✓	
Is the development in a Design Priority Area (DPA) or Transit-oriented Development (TOD) zone?*	✓	

**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,' <u>the Location Trigger is satisfied</u>.

4. Safety Triggers

	Yes	No
Are posted speed limits on a boundary street are 80 km/hr or greater?		✓
Are there any horizontal/vertical curvatures on a boundary street limits sight lines at a proposed driveway?		✓
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)?	✓	
Is the proposed driveway within auxiliary lanes of an intersection?		✓
Does the proposed driveway make use of an existing median break that serves an existing site?		✓
Is there is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development?		✓
Does the development include a drive-thru facility?		✓

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

5. Summary

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

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 C

Traffic Count Data

Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

CARLING AVE @ BROADVIEW AVE

Survey Date: Thursday, April 20, 2017 **WO No:** 36953

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

BROADVIEW AVE

Total		315	644		329
Heavy Vehicles	135	20	160	0	
Cars	5	0	4	0	11
	130	20	156	0	318

30

0 0 39

N W E S

CARLING AVE

748		32	716		112	7	119
2546	11	0	11		463	27	490
	186	3	183		53	0	53
1798	1497	23	1474		46	0	46
	104	0	104		1747	28	

708 2483 1775

AM Period

Peak Hour:

08:00 09:00

98 0 1

46

Total	177	0	112	23	71
Heavy Vehicles	0	0	0	1	1
Cars		0	112	24	72

177 385 208

Comments

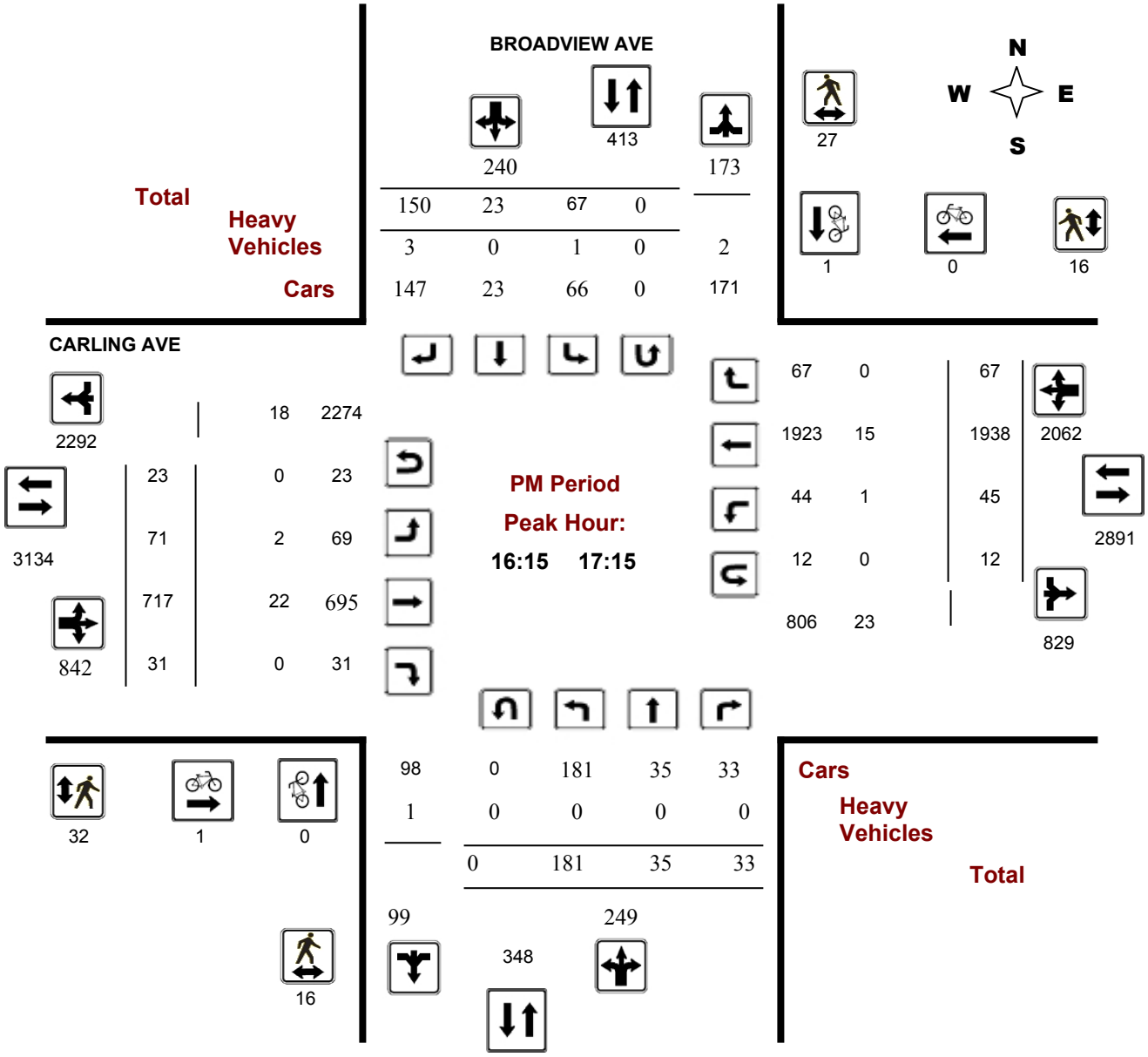
Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

CARLING AVE @ BROADVIEW AVE

Survey Date: Thursday, April 20, 2017 **WO No:** 36953

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



Comments

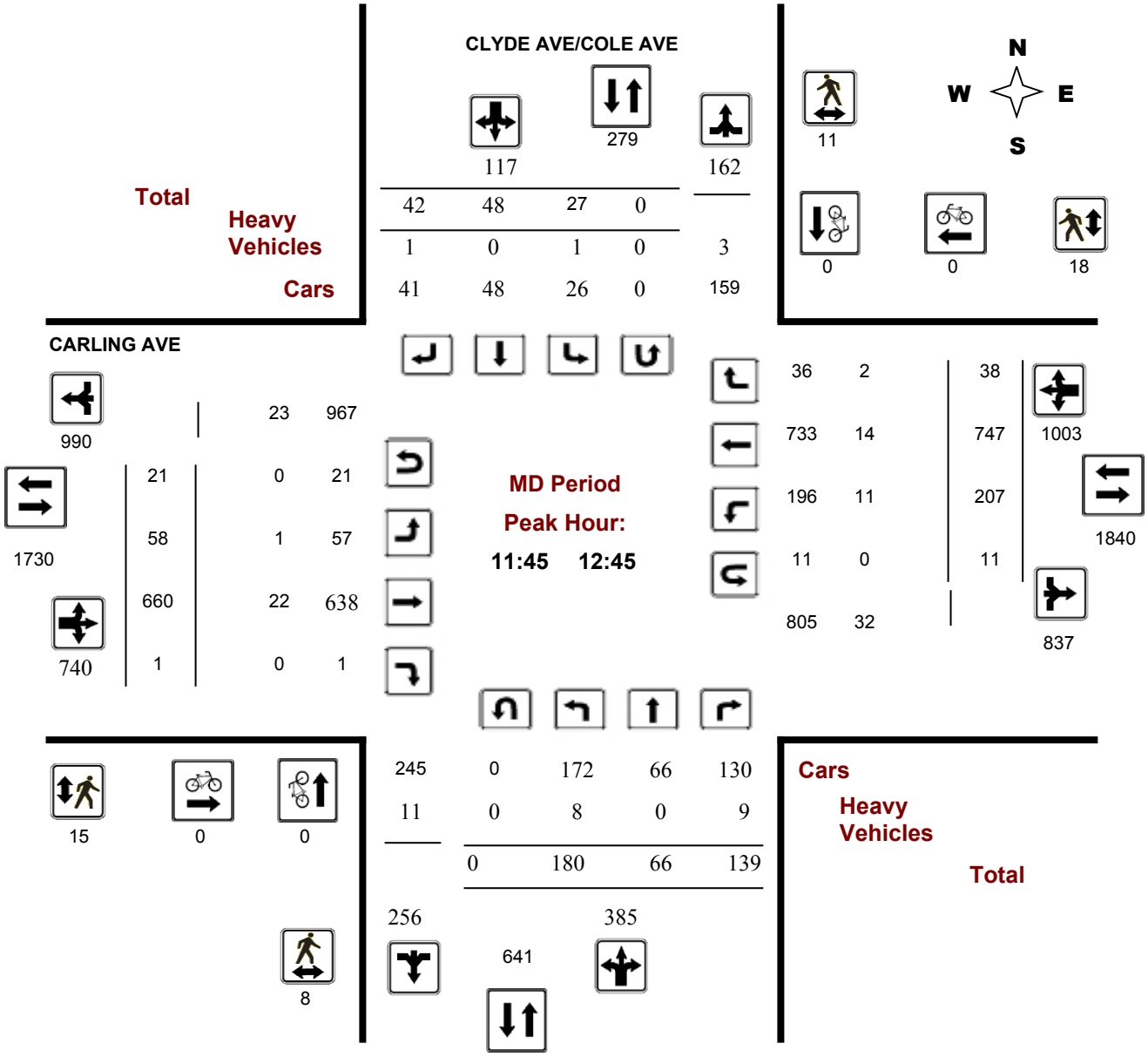
Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

CARLING AVE @ CLYDE AVE/COLE AVE

Survey Date: Wednesday, January 27, 2016 **WO No:** 35669

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



Comments

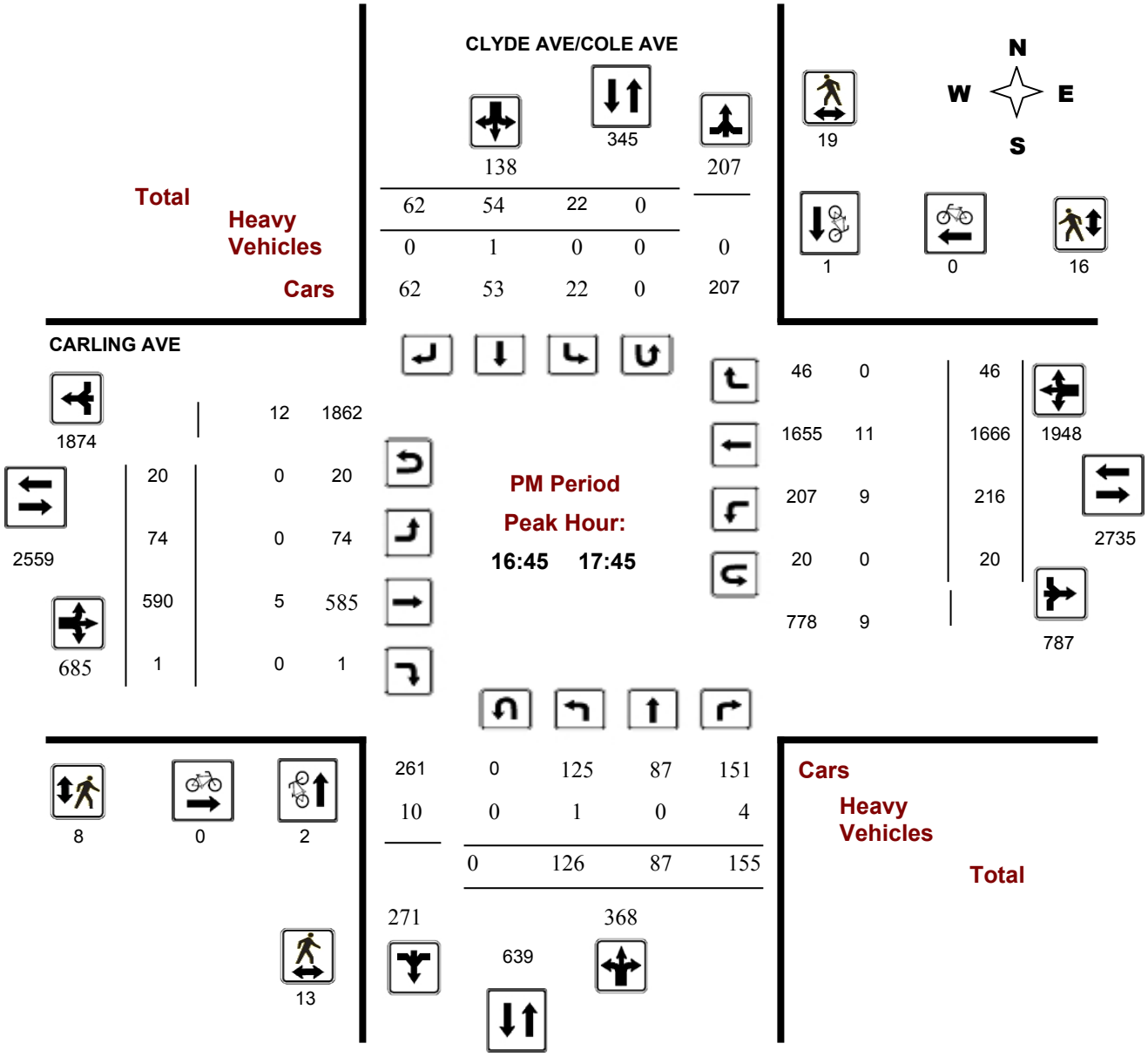
Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

CARLING AVE @ CLYDE AVE/COLE AVE

Survey Date: Wednesday, January 27, 2016 **WO No:** 35669

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



Comments

APPENDIX D

Collision Records

Collision Main Detail Summary

OnTRAC Reporting System

FROM: 2012-01-01 TO: 2014-01-01

BROADVIEW AVE & CARLING AVE

Former Municipality: **Ottawa** Traffic Control: **Traffic signal** Number of Collisions: **20**

	DATE	DAY	TIME	ENV	LIGHT	IMPACT TYPE	CLASS	DIR	SURFACE COND'N	VEHICLE MANOEUVRE	VEHICLE TYPE	FIRST EVENT	No. PED
1	2012-05-02	We	14:00	Clear	Daylight	Turning	P.D. only	V1 E	Dry	Turning left	Pick-up truck	Other motor vehicle	0
								V2 W	Dry	Going ahead	Pick-up truck	Other motor vehicle	
2	2012-05-11	Fri	16:00	Clear	Daylight	Rear end	P.D. only	V1 N	Dry	Going ahead	School bus	Other motor vehicle	0
								V2 N	Dry	Slowing or	Pick-up truck	Other motor vehicle	
3	2012-06-01	Fri	19:58	Rain	Daylight	Turning	P.D. only	V1 E	Wet	Turning left	Pick-up truck	Other motor vehicle	0
								V2 W	Wet	Going ahead	Automobile, station	Other motor vehicle	
4	2012-06-02	Sat	14:58	Rain	Daylight	Turning	P.D. only	V1 E	Wet	Turning left	Automobile, station	Other motor vehicle	0
								V2 W	Wet	Going ahead	Pick-up truck	Other motor vehicle	
5	2012-09-04	Tue	18:27	Rain	Daylight	Turning	Non-fatal	V1 W	Wet	Going ahead	Passenger van	Other motor vehicle	0
								V2 E	Wet	Turning left	Automobile, station	Other motor vehicle	
6	2012-10-03	We	15:08	Clear	Daylight	Sideswipe	P.D. only	V1 S	Dry	Changing lanes	Automobile, station	Other motor vehicle	0
								V2 S	Dry	Turning left	Automobile, station	Other motor vehicle	
7	2012-11-27	Tue	16:33	Clear	Dusk	Turning	P.D. only	V1 W	Dry	Turning left	Automobile, station	Other motor vehicle	0
								V2 E	Dry	Going ahead	Passenger van	Other motor vehicle	
8	2012-12-19	We	12:15	Clear	Daylight	Rear end	P.D. only	V1 E	Slush	Slowing or	Truck - closed	Other motor vehicle	0
								V2 E	Slush	Stopped	Automobile, station	Other motor vehicle	
9	2013-01-09	We	17:28	Clear	Dusk	Rear end	P.D. only	V1 W	Wet	Slowing or	Automobile, station	Other motor vehicle	0
								V2 W	Wet	Stopped	Automobile, station	Other motor vehicle	
10	2013-01-15	Tue	11:50	Clear	Daylight	Rear end	P.D. only	V1 W	Dry	Going ahead	Automobile, station	Other motor vehicle	0
								V2 W	Dry	Stopped	Pick-up truck	Other motor vehicle	
11	2013-02-26	Tue	15:41	Clear	Daylight	Turning	P.D. only	V1 E	Dry	Turning left	Automobile, station	Other motor vehicle	0
								V2 W	Dry	Going ahead	Pick-up truck	Other motor vehicle	
12	2013-04-26	Fri	09:40	Rain	Daylight	Sideswipe	P.D. only	V1 W	Wet	Going ahead	Pick-up truck	Other motor vehicle	0
								V2 W	Wet	Turning right	Automobile, station	Other motor vehicle	

(Note: Time of Day = "00:00" represents unknown collision time

13	2013-07-20	Sat	16:43	Clear	Daylight	Other	P.D. only	V1	S	Dry	Reversing	Pick-up truck	Other motor vehicle	0
								V2	N	Dry	Stopped	Automobile, station	Other motor vehicle	
14	2013-07-26	Fri	18:32	Clear	Daylight	Other	P.D. only	V1	N	Dry	Reversing	Truck and trailer	Other motor vehicle	0
								V2	S	Dry	Stopped	Passenger van	Other motor vehicle	
15	2013-09-12	Thu	10:20	Clear	Daylight	Turning	P.D. only	V1	E	Dry	Turning left	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Going ahead	Pick-up truck	Other motor vehicle	
16	2013-10-22	Tue	17:00	Clear	Daylight	Sideswipe	P.D. only	V1	S	Dry	Changing lanes	Automobile, station	Other motor vehicle	0
								V2	S	Dry	Turning left	Automobile, station	Other motor vehicle	
17	2013-11-29	Fri	15:37	Clear	Daylight	Turning	Non-fatal	V1	W	Dry	Turning left	Automobile, station	Other motor vehicle	0
								V2	E	Dry	Going ahead	Automobile, station	Other motor vehicle	
18	2013-12-07	Sat	13:30	Clear	Daylight	Turning	Non-fatal	V1	W	Dry	Turning left	Automobile, station	Other motor vehicle	0
								V2	E	Dry	Going ahead	Automobile, station	Other motor vehicle	
19	2013-12-10	Tue	14:30	Clear	Daylight	Angle	P.D. only	V1	N	Slush	Turning right	Automobile, station	Other motor vehicle	0
								V2	E	Slush	Going ahead	Pick-up truck	Other motor vehicle	
20	2013-12-16	Mo	14:45	Clear	Daylight	Angle	P.D. only	V1	E	Loose snow	Turning right	Automobile, station	Other motor vehicle	0
								V2	N	Slush	Turning left	Delivery van	Other motor vehicle	

CARLING AVE & CLYDE AVE

Former Municipality: **Ottawa** Traffic Control: **Traffic signal** Number of Collisions: **19**

	DATE	DAY	TIME	ENV	LIGHT	IMPACT TYPE	CLASS	DIR	SURFACE COND'N	VEHICLE MANOEUVRE	VEHICLE TYPE	FIRST EVENT	No. PED
21	2012-01-16	Mo	13:20	Snow	Daylight	Turning	P.D. only	V1	W	Loose snow	Turning right	Automobile, station	Other motor vehicle	0
								V2	W	Loose snow	Going ahead	Snow plow	Other motor vehicle	
22	2012-01-21	Sat	13:30	Clear	Daylight	Angle	P.D. only	V1	N	Dry	Going ahead	Automobile, station	Other motor vehicle	
								V2	E	Dry	Going ahead	Pick-up truck	Other motor vehicle	
23	2012-02-04	Sat	19:16	Clear	Dark	Angle	P.D. only	V1	S	Dry	Going ahead	Automobile, station	Other motor vehicle	0
								V2	E	Dry	Going ahead	Automobile, station	Other motor vehicle	
24	2012-03-04	Sun	20:44	Clear	Dark	Turning	Non-fatal	V1	W	Wet	Turning left	Automobile, station	Other motor vehicle	0
								V2	E	Wet	Going ahead	Pick-up truck	Other motor vehicle	

(Note: Time of Day = "00:00" represents unknown collision time

25	2012-05-22	Tue	12:06	Clear	Daylight	Turning	P.D. only	V1	E	Dry	Turning right	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Turning left	Delivery van	Other motor vehicle	
26	2012-06-16	Sat	17:15	Clear	Daylight	Turning	P.D. only	V1	E	Dry	Turning left	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Going ahead	Pick-up truck	Other motor vehicle	
27	2012-06-27	We	16:30	Clear	Daylight	Sideswipe	P.D. only	V1	W	Dry	Making U-Turn	Bus (other)	Other motor vehicle	0
								V2	W	Dry	Stopped	Pick-up truck	Other motor vehicle	
28	2012-08-30	Thu	12:15	Clear	Daylight	Rear end	P.D. only	V1	W	Dry	Slowing or	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Slowing or	Passenger van	Other motor vehicle	
29	2012-09-11	Tue	15:19	Clear	Daylight	Turning	P.D. only	V1	W	Dry	Turning left	Automobile, station	Other motor vehicle	0
								V2	E	Dry	Going ahead	Automobile, station	Other motor vehicle	
30	2013-01-24	Thu	16:00	Clear	Daylight	Turning	P.D. only	V1	W	Wet	Turning left	Pick-up truck	Other motor vehicle	0
								V2	E	Wet	Going ahead	Automobile, station	Other motor vehicle	
31	2013-01-28	Mo	12:20	Snow	Daylight	Angle	P.D. only	V1	N	Loose snow	Turning right	Automobile, station	Other motor vehicle	0
								V2	E	Loose snow	Going ahead	Automobile, station	Other motor vehicle	
32	2013-03-23	Sat	16:18	Clear	Daylight	Turning	Non-fatal	V1	E	Dry	Turning left	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Going ahead	Pick-up truck	Other motor vehicle	
33	2013-03-28	Thu	16:38	Clear	Daylight	Turning	Non-fatal	V1	E	Dry	Turning left	Pick-up truck	Other motor vehicle	0
								V2	W	Dry	Going ahead	Automobile, station	Other motor vehicle	
								V3	E	Dry	Turning left	Automobile, station	Other motor vehicle	
34	2013-04-11	Thu	20:17	Clear	Dusk	Rear end	Non-fatal	V1	E	Dry	Going ahead	Pick-up truck	Other motor vehicle	0
								V2	E	Dry	Stopped	Automobile, station	Other motor vehicle	
								V3	E	Dry	Stopped	Pick-up truck	Other motor vehicle	
35	2013-05-09	Thu	09:21	Clear	Daylight	Other	P.D. only	V1	E	Dry	Changing lanes	Pick-up truck	Curb	0
								V2	E	Dry	Stopped	Pick-up truck	Other motor vehicle	
								V3	E	Dry	Stopped	Automobile, station	Other motor vehicle	
36	2013-06-29	Sat	12:03	Clear	Daylight	Turning	P.D. only	V1	E	Dry	Turning left	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Going ahead	Automobile, station	Other motor vehicle	
37	2013-09-14	Sat	13:30	Clear	Daylight	Turning	P.D. only	V1	E	Dry	Turning left	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Going ahead	Pick-up truck	Other motor vehicle	

(Note: Time of Day = "00:00" represents unknown collision time

38	2013-11-04	Mo	16:31	Clear	Dusk	Turning	Non-fatal	V1	W	Dry	Turning left	Automobile, station	Other motor vehicle	0
								V2	E	Dry	Going ahead	Automobile, station	Other motor vehicle	
39	2013-11-29	Fri	16:00	Clear	Dusk	Rear end	P.D. only	V1	W	Dry	Changing lanes	Automobile, station	Other motor vehicle	0
								V2	W	Unknown	Stopped	Automobile, station	Other motor vehicle	

CARLING AVE EB, BOYD AVE to BROADVIEW AVE

Former Municipality: **Ottawa** Traffic Control: **No control** Number of Collisions: **3**

	DATE	DAY	TIME	ENV	LIGHT	IMPACT TYPE	CLASS	DIR		SURFACE COND'N	VEHICLE MANOEUVRE	VEHICLE TYPE	FIRST EVENT	No. PED
40	2013-01-31	Thu	08:45	Clear	Daylight	Sideswipe	P.D. only	V1	E	Dry	Changing lanes	Automobile, station	Other motor vehicle	
								V2	E	Dry	Going ahead	Automobile, station	Other motor vehicle	
41	2013-02-09	Sat	12:30	Clear	Daylight	Turning	P.D. only	V1	E	Slush	Turning right	Pick-up truck	Other motor vehicle	0
								V2	E	Slush	Going ahead	Automobile, station	Other motor vehicle	
42	2013-12-17	Tue	09:30	Snow	Daylight	Turning	P.D. only	V1	E	Loose snow	Turning right	Automobile, station	Other motor vehicle	0
								V2	E	Loose snow	Going ahead	Pick-up truck	Other motor vehicle	

CARLING AVE WB, BROADVIEW AVE to HIGHLAND AVE

Former Municipality: **Ottawa** Traffic Control: **No control** Number of Collisions: **1**

	DATE	DAY	TIME	ENV	LIGHT	IMPACT TYPE	CLASS	DIR		SURFACE COND'N	VEHICLE MANOEUVRE	VEHICLE TYPE	FIRST EVENT	No. PED
43	2013-10-31	Thu	15:39	Rain	Daylight	Rear end	Non-fatal	V1	W	Wet	Slowing or	Automobile, station	Other motor vehicle	0
								V2	W	Wet	Stopped	Automobile, station	Other motor vehicle	

CARLING AVE WB, CLYDE AVE to HIGHLAND AVE

Former Municipality: **Ottawa** Traffic Control: **No control** Number of Collisions: **2**

	DATE	DAY	TIME	ENV	LIGHT	IMPACT TYPE	CLASS	DIR		SURFACE COND'N	VEHICLE MANOEUVRE	VEHICLE TYPE	FIRST EVENT	No. PED
44	2013-02-12	Tue	15:35	Clear	Daylight	Sideswipe	P.D. only	V1	W	Wet	Overtaking	Municipal transit bus	Other motor vehicle	0
								V2	W	Wet	Stopped	Municipal transit bus	Other motor vehicle	
45	2013-03-15	Fri	14:30	Clear	Daylight	Sideswipe	P.D. only	V1	W	Wet	Changing lanes	Automobile, station	Other motor vehicle	0
								V2	W	Wet	Unknown	Automobile, station	Other motor vehicle	

(Note: Time of Day = "00:00" represents unknown collision time

City Operations - Transportation Services

Collision Details Report - Public Version

From: January 1, 2014 **To:** December 31, 2016

Location: CARLING AVE @ BROADVIEW AVE

Traffic Control: Traffic signal **Total Collisions:** 30

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2014-Jan-28, Tue,17:15	Clear	Rear end	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	
					East	Turning left	Pick-up truck	Other motor vehicle	
2014-Feb-04, Tue,17:53	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2014-Feb-27, Thu,17:21	Clear	Turning movement	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	
					East	Going ahead	Passenger van	Other motor vehicle	
2014-Apr-06, Sun,16:09	Clear	Rear end	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	
					East	Stopped	Passenger van	Other motor vehicle	
2014-May-13, Tue,13:00	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	
					East	Going ahead	Ambulance	Other motor vehicle	
2014-Mar-19, Wed,14:57	Clear	Turning movement	P.D. only	Dry	East	Turning left	Pick-up truck	Other motor vehicle	

					East	Turning left	Pick-up truck	Other motor vehicle
2014-Jun-09, Mon,10:56	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Sep-26, Fri,08:25	Clear	Sideswipe	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle
					East	Changing lanes	Pick-up truck	Other motor vehicle
2014-Nov-12, Wed,17:07	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Passenger van	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Jan-26, Mon,09:06	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Turning left	Pick-up truck	Other motor vehicle
2015-Jan-23, Fri,11:10	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					East	Stopped	Pick-up truck	Other motor vehicle
2014-Dec-19, Fri,16:32	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Unknown	Other motor vehicle
					West	Stopped	Automobile, station wagon	Other motor vehicle
					West	Stopped	Automobile, station wagon	Other motor vehicle
					West	Stopped	Automobile, station wagon	Other motor vehicle

2015-May-11, Mon,11:30	Clear	Turning movement	P.D. only	Dry	East	Turning left	Pick-up truck	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Apr-23, Thu,11:44	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Pick-up truck	Other motor vehicle
					East	Stopped	Pick-up truck	Other motor vehicle
2015-Apr-28, Tue,09:15	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Pick-up truck	Other motor vehicle
2015-Apr-28, Tue,16:48	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle
					West	Stopped	Automobile, station wagon	Other motor vehicle
2015-Feb-01, Sun,14:38	Clear	Angle	P.D. only	Dry	East	Going ahead	Passenger van	Other motor vehicle
					North	Turning left	Automobile, station wagon	Other motor vehicle
2014-Jul-22, Tue,09:17	Clear	Rear end	P.D. only	Dry	East	Going ahead	Truck - closed	Other motor vehicle
					East	Stopped	Pick-up truck	Other motor vehicle
2015-Aug-20, Thu,13:25	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					West	Stopped	Pick-up truck	Other motor vehicle

2015-Jul-22, Wed,18:12	Clear	Turning movement	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Nov-23, Mon,15:08	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Stopped	Automobile, station wagon	Other motor vehicle
2016-Feb-25, Thu,11:30	Clear	Turning movement	P.D. only	Slush	East	Turning left	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Mar-03, Thu,06:14	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Pick-up truck	Other motor vehicle
2016-Oct-11, Tue,12:10	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Passenger van	Other motor vehicle
					East	Stopped	Automobile, station wagon	Other motor vehicle
2015-Dec-31, Thu,19:15	Snow	Turning movement	P.D. only	Slush	East	Turning left	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Dec-14, Mon,14:03	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle

2016-Mar-02, Wed,13:43	Clear	Angle	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Jan-27, Wed,16:15	Clear	Turning movement	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	
					East	Turning left	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Pick-up truck	Other motor vehicle	
2016-Jul-28, Thu,13:36	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Passenger van	Other motor vehicle	
					West	Stopped	Pick-up truck	Other motor vehicle	
2016-Dec-14, Wed,15:32	Clear	SMV other	Non-fatal injury	Dry	West	Turning right	Automobile, station wagon	Pedestrian	1

Location: CARLING AVE @ CLYDE AVE/COLE AVE

Traffic Control: Traffic signal **Total Collisions:** 26

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2014-Jan-29, Wed,15:37	Clear	Turning movement	P.D. only	Slush	North	Turning left	Automobile, station wagon	Other motor vehicle	
					South	Going ahead	Delivery van	Other motor vehicle	
2014-Mar-12, Wed,17:04	Drifting Snow	Turning movement	P.D. only	Packed snow	West	Turning left	Automobile, station wagon	Other motor vehicle	
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2014-Apr-16, Wed,10:05	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Delivery van	Other motor vehicle	

					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2014-Mar-25, Tue,15:40	Clear	Turning movement	P.D. only	Dry	East	Turning left	Pick-up truck	Other motor vehicle	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2014-Jan-30, Thu,13:05	Clear	SMV other	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Pedestrian	1
2014-Jul-19, Sat,12:01	Clear	Turning movement	P.D. only	Dry	East	Making "U" turn	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2014-Dec-05, Fri,14:15	Clear	Turning movement	Non-fatal injury	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	
					East	Going ahead	Passenger van	Other motor vehicle	
2014-Nov-14, Fri,16:14	Snow	Turning movement	P.D. only	Wet	East	Making "U" turn	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2014-Nov-06, Thu,11:59	Clear	Sideswipe	P.D. only	Dry	East	Turning left	Truck - dump	Other motor vehicle	
					East	Stopped	Truck - dump	Other motor vehicle	
2015-Feb-10, Tue,17:34	Clear	Turning movement	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	
					West	Making "U" turn	Pick-up truck	Other motor vehicle	

2014-Sep-25, Thu,12:15	Clear	Sideswipe	P.D. only	Dry	West	Unknown	Unknown	Other motor vehicle
					West	Turning right	Automobile, station wagon	Other motor vehicle
2014-Oct-29, Wed,15:31	Clear	Turning movement	P.D. only	Dry	West	Turning left	Unknown	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Dec-11, Thu,03:15	Snow	SMV other	P.D. only	Loose snow	East	Going ahead	Automobile, station wagon	Curb
2014-Sep-04, Thu,08:20	Clear	Angle	P.D. only	Dry	East	Making "U" turn	Passenger van	Other motor vehicle
					North	Turning left	Automobile, station wagon	Other motor vehicle
2014-Nov-27, Thu,11:34	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Jan-05, Mon,17:51	Clear	Sideswipe	P.D. only	Wet	West	Changing lanes	Passenger van	Other motor vehicle
					West	Going ahead	Pick-up truck	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Feb-19, Thu,16:10	Snow	Rear end	P.D. only	Loose snow	West	Going ahead	Unknown	Other motor vehicle
					West	Stopped	Automobile, station wagon	Other motor vehicle
					West	Stopped	Automobile, station wagon	Other motor vehicle

					West	Stopped	Automobile, station wagon	Other motor vehicle
2015-Mar-27, Fri,08:15	Snow	Rear end	P.D. only	Wet	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					West	Stopped	Pick-up truck	Other motor vehicle
2015-Sep-15, Tue,14:46	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Feb-12, Fri,09:41	Clear	Turning movement	Non-fatal injury	Wet	West	Turning left	Pick-up truck	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Aug-02, Tue,10:00	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Passenger van	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Aug-05, Wed,18:30	Clear	Turning movement	P.D. only	Dry	South	Turning left	Passenger van	Other motor vehicle
					North	Going ahead	Passenger van	Other motor vehicle
2015-Jul-23, Thu,19:14	Clear	Turning movement	P.D. only	Dry	South	Turning right	Pick-up truck	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Dec-08, Tue,09:09	Clear	Turning movement	P.D. only	Dry	East	Making "U" turn	Automobile, station wagon	Other motor vehicle

					West	Going ahead	Municipal transit bus	Other motor vehicle	
2016-Oct-08, Sat,15:20	Clear	SMV other	P.D. only	Dry	East	Turning right	Truck and trailer	Pole (utility, power)	
2016-Nov-28, Mon,08:41	Clear	SMV other	Non-fatal injury	Dry	North	Turning right	Automobile, station wagon	Pedestrian	1

Location: CARLING AVE @ HIGHLAND AVE

Traffic Control: Stop sign **Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-May-29, Fri,13:12	Clear	Angle	Non-fatal injury	Dry	East	Going ahead	Bicycle	Other motor vehicle	
					South	Turning right	Automobile, station wagon	Cyclist	
2016-Sep-14, Wed,19:01	Clear	Angle	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: CARLING AVE WB btwn HIGHLAND AVE & COLE AVE

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
2015-Mar-12, Thu,17:10	Clear	SMV other	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Ran off road	
2014-Dec-17, Wed,16:45	Rain	Sideswipe	P.D. only	Wet	West	Changing lanes	Pick-up truck	Other motor vehicle	
					West	Going ahead	Passenger van	Other motor vehicle	

APPENDIX E

TDM Checklists

TRANSPORTATION DEMAND MANAGEMENT

TDM-Supportive Development Design and Infrastructure Checklist

TDM-Supportive Development Design and Infrastructure Checklist:
Residential Developments (multi-family or condominium)

Legend

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

		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	1.	**WALKING & CYCLING: ROUTES**	
	1.1	**Building location & access points**	
BASIC	1.1.1	Locate building close to the street, and do not locate parking areas between the street and building entrances	☑
BASIC	1.1.2	Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	☑
BASIC	1.1.3	Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	☑
	1.2	**Facilities for walking & cycling**	
REQUIRED	1.2.1	Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations *(see Official Plan policy 4.3.3)*	☑
REQUIRED	1.2.2	Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances through such measures as: reducing distances between public sidewalks and major building entrances; providing walkways from public streets to major building entrances; within a site, providing walkways along the front of adjoining buildings, between adjacent buildings, and connecting areas where people may congregate, such as courtyards and transit stops; and providing weather protection through canopies, colonnades, and other design elements wherever possible *(see Official Plan policy 4.3.12)*	☑

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

		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	2.	**WALKING & CYCLING: END-OF-TRIP FACILITIES**	
	2.1	**Bicycle parking**	
REQUIRED	2.1.1	Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible *(see Official Plan policy 4.3.6)*	☑
REQUIRED	2.1.2	Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas *(see Zoning By-law Section 111)*	☑
REQUIRED	2.1.3	Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored *(see Zoning By-law Section 111)*	☑
BASIC	2.1.4	Provide bicycle parking spaces equivalent to the expected number of resident-owned bicycles, plus the expected peak number of visitor cyclists	☑
	2.2	**Secure bicycle parking**	
REQUIRED	2.2.1	Where more than 50 bicycle parking spaces are provided for a single residential building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers *(see Zoning By-law Section 111)*	☑
BETTER	2.2.2	Provide secure bicycle parking spaces equivalent to at least the number of units at condominiums or multi-family residential developments	☒
	2.3	**Bicycle repair station**	
BETTER	2.3.1	Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	☒
	3.	**TRANSIT**	
	3.1	**Customer amenities**	
BASIC	3.1.1	Provide shelters, lighting and benches at any on-site transit stops	☒
BASIC	3.1.2	Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	☒
BETTER	3.1.3	Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	☒

		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	4.	**RIDESHARING**	
	4.1	**Pick-up & drop-off facilities**	
BASIC	4.1.1	Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones	☑
	5.	**CARSHARING & BIKESHARING**	
	5.1	**Carshare parking spaces**	
BETTER	5.1.1	Provide up to three carshare parking spaces in an R3, R4 or R5 Zone for specified residential uses *(see Zoning By-law Section 94)*	☒
	5.2	**Bikeshare station location**	
BETTER	5.2.1	Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	☒
	6.	**PARKING**	
	6.1	**Number of parking spaces**	
REQUIRED	6.1.1	Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for	☑
BASIC	6.1.2	Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking	☒
BASIC	6.1.3	Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly *(see Zoning By-law Section 104)*	☒
BETTER	6.1.4	Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking *(see Zoning By-law Section 111)*	☒
	6.2	**Separate long-term & short-term parking areas**	
BETTER	6.2.1	Provide separate areas for short-term and long-term parking (using signage or physical barriers) to permit access controls and simplify enforcement (i.e. to discourage residents from parking in visitor spaces, and vice versa)	☒

TRANSPORTATION DEMAND MANAGEMENT

TDM Measures 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	☒ - hard copies will be available
		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	☒ - hard copies will be available
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	☑

TDM Measures Checklist:
Residential Developments (multi-family, condominium or subdivision)

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: *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 *(multi-family, condominium)*	☒ - hard copies will be available
		2.2	**Bicycle skills training**	
BETTER		2.2.1	Offer on-site cycling courses for residents, or subsidize off-site courses	☒

			TDM measures: *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 *(multi-family, condominium)*	☒ - hard copies will be available
BETTER		3.1.2	Provide real-time arrival information display at entrances *(multi-family, condominium)*	☒
		3.2	**Transit fare incentives**	
BASIC	★	3.2.1	Offer PRESTO cards preloaded with one monthly transit pass on residence purchase/move-in, to encourage residents to use transit	☒
BETTER		3.2.2	Offer at least one year of free monthly transit passes on residence purchase/move-in	☒
		3.3	**Enhanced public transit service**	
BETTER	★	3.3.1	Contract with OC Transpo to provide early transit services until regular services are warranted by occupancy levels *(subdivision)*	☒
		3.4	**Private transit service**	
BETTER		3.4.1	Provide shuttle service for seniors homes or lifestyle communities (e.g. scheduled mall or supermarket runs)	☑
		4.	**CARSHARING & BIKESHARING**	
		4.1	**Bikeshare stations & memberships**	
BETTER		4.1.1	Contract with provider to install on-site bikeshare station (*multi-family)*	☒
BETTER		4.1.2	Provide residents with bikeshare memberships, either free or subsidized *(multi-family)*	☒
		4.2	**Carshare vehicles & memberships**	
BETTER		4.2.1	Contract with provider to install on-site carshare vehicles and promote their use by residents	☒
BETTER		4.2.2	Provide residents with carshare memberships, either free or subsidized	☒
		5.	**PARKING**	
		5.1	**Priced parking**	
BASIC	★	5.1.1	Unbundle parking cost from purchase price *(condominium)*	☒
BASIC	★	5.1.2	Unbundle parking cost from monthly rent *(multi-family)*	☒

		TDM measures: *Residential developments*	Check if proposed & add descriptions
		6. TDM MARKETING & COMMUNICATIONS	
		6.1 Multimodal travel information	
BASIC	★	6.1.1 Provide a multimodal travel option information package to new residents	☑
		6.2 Personalized trip planning	
BETTER	★	6.2.1 Offer personalized trip planning to new residents	☒