DILLON CONSULTING

LS GP INC.

Walkley Road Apartments

2145 Walkley Road

Transportation Impact Assessment

March 2025 – 19-9285

Certification

1. I have reviewed and have a sound understanding of the objectives, needs, and requirements of the City of Ottawa's Official Plan and the Transportation Impact Assessment (2017) Guidelines, and the July 2023 TIA Update;
2. I have a sound knowledge of industry standard practice with respect to the presentation of transportation impact assessment reports, including multimodal level of service review;
3. I have substantial experience (more than 5 years) in undertaking and delivering transportation impact studies (analysis, reporting and geometric design) with strong background knowledge in transportation planning, engineering, or traffic operations; and,
4. I am either a licensed or registered professional in good standing, whose field of expertise is either transportation engineering or transportation planning.

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

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

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

Table of Contents

Figures

Tables

Appendices

1.0 Screening

1.1 Description of Proposed Development

Municipal Address	2415 Walkley Road, Ottawa, Ontario
Description of Location	LS GP INC.'s Walkley Road Apartment building is located on the north west corner of Walkley Road and Halifax Drive. The site is approximately 650m east of the intersection of Walkley Road and Conroy Road.
Ward	Ward 18 – Alta Vista
Land Use Classification	R5B H(39) Permitting various residential housing options And, Additional permitted uses include community centre, community health and resource centre, day care, office, recreational and athletic facility, and utility installation provided that they are located in a building containing dwelling units.
Development Size	176 new apartment units 157 net new parking spots: • 184 new underground + 36 surface parking spaces • 63 Parking spaces removed for redevelopment 93 Indoor Bicycle Parking Spaces + 5 outdoor Bicycle Spaces 1 Loading Space
Number of accesses and locations	1. Three accesses on Walkley Road, west of Halifax Drive (one exiting to be relocated) 2. One existing access on Halifax Drive, 250m north of Walkley Road
Phases of development	One phase
Build-out year	2028

1.2 Trip Generation Trigger

Land Use Type	Minimum Development Size	Yes	No
Single-family homes	60 units		x
Multi-Use Family (Low Rise)	90 units		x
Multi-Use Family (High Rise)	150 units	x	
Office	1,400 sq.m.		x
Industrial	7,000 sq.m.		x
Fast-food restaurant or coffee shop	110 sq.m.		x
Destination retail	1,800 sq.m.		x
Gas station or convenience market	90 sq.m.		x

1.3 Location Triggers

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

1.4 Safety Triggers

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

1.5 Summary

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

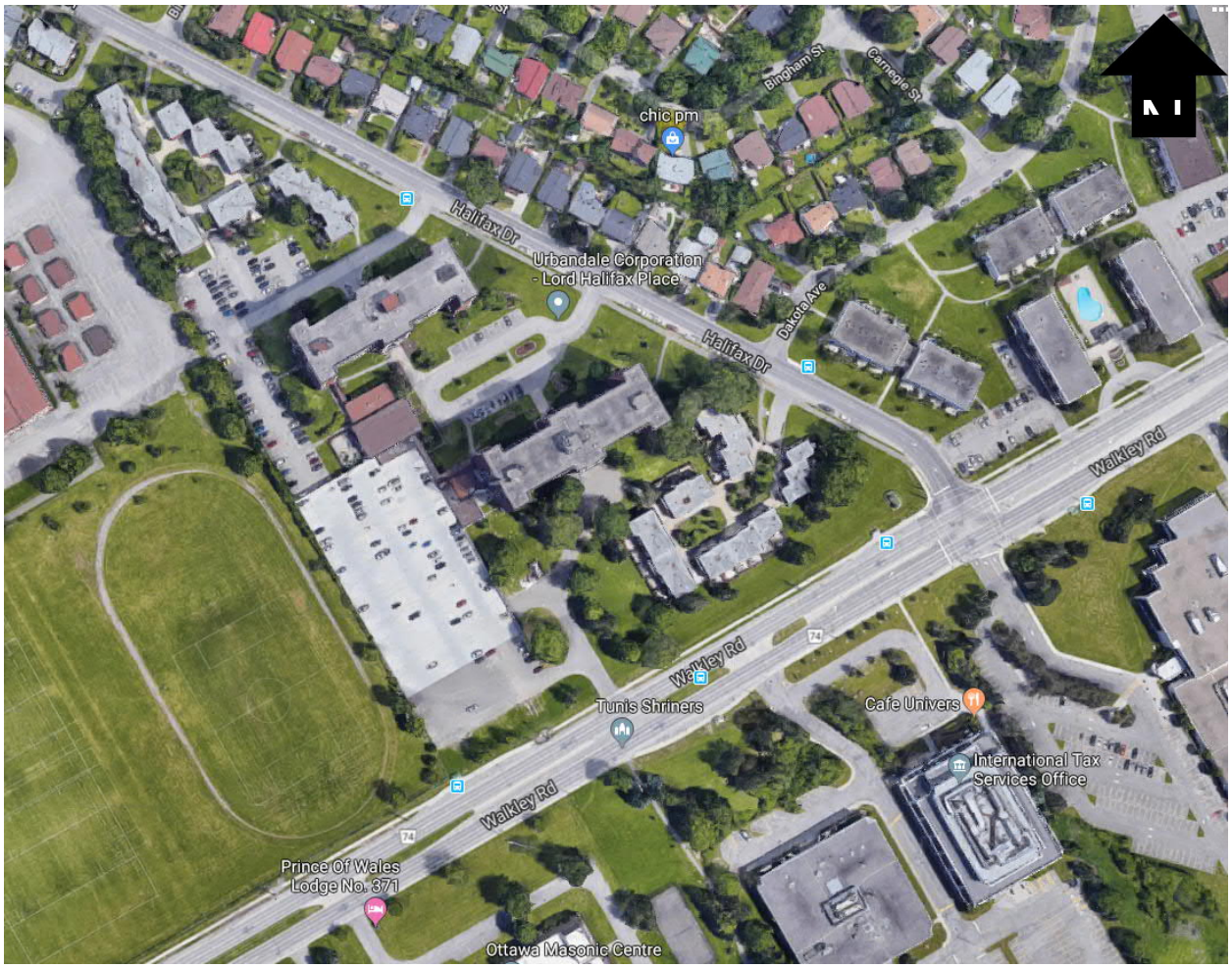
Since the development satisfies each of these triggers, both the design review component and the network impact component will be addressed in the TIA.

Figure 1 illustrates the site location. Figure 2 provides an aerial photo of the site.

Figure 1: Site Location

Source: geoOttawa, accessed February 19, 2019

Figure 2: Aerial Photo of 2190 Halifax Drive



Source: Google Maps, accessed July 2019

2.0 Scoping

2.1 Existing and Planned Conditions

2.1.1 Proposed Development

The proposed development will add 176 high-density residential apartment units to an existing complex on the northwest corner of Walkley Road and Halifax Drive.

The existing development, owned and operated by Urbandale Corporation, includes two towers with 360 units and 50 row homes. The site has 375 surface parking spaces and 234 underground parking spaces.

The proposal replaces part of the existing surface parking in the southwest corner of the lot with the new apartment tower and adds additional underground parking. The proposed site plan shifts the existing Walkley Road east access approximately 7 metres to the east and adds two additional accesses to Walkley Road.

The proposed new vehicle trips generated by the additional land use is identified in Table 1.

Table 1: Vehicle Trip Generation Totals

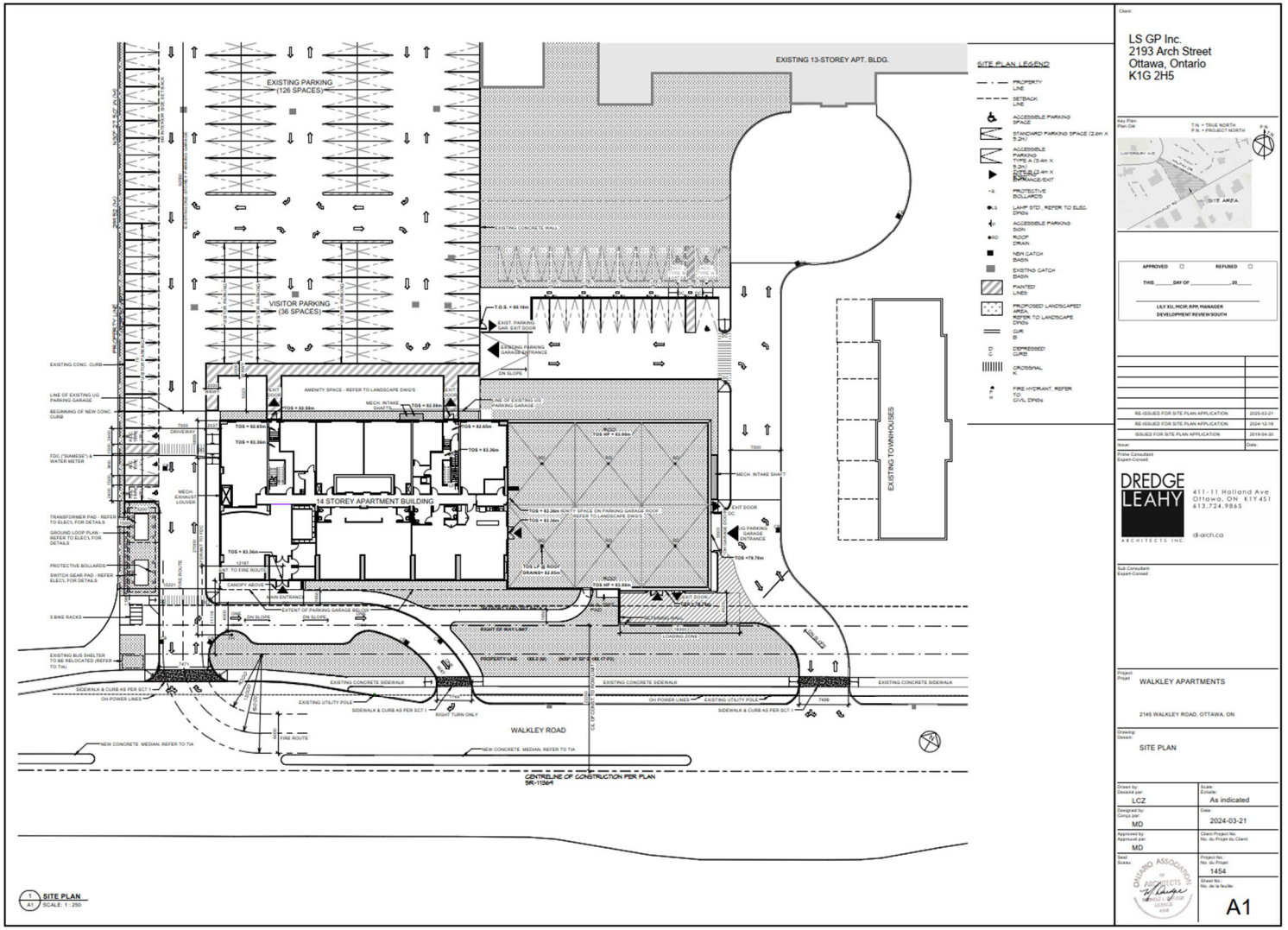
Land Use	Units	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
222: High-rise apartment, 10+ floors	176	26	8	18	31	18	13

Figure 3 illustrates the current layout of the site and Figure 4 illustrates the proposed site plan.

Figure 3: Existing Site Layout

Source: LS GP INC.

Figure 4: Proposed Site Plan



Source: Site plan, March 21, 2025 by Dredge Leahy.

2.1.2 Existing Conditions

2.1.2.1 Roads and Traffic Control

The roadways under consideration in the study area are described as follows:

Walkley Road	Walkley Road is four-lane arterial road located south of the proposed development. It is an important east-west corridor which extends from Mooney's Bay to Highway 417. The posted speed limit on Walkley Road is 50 km/h. Within the City's Official Plan, the right-of-way is indicated as 44.5 metres.
Halifax Drive	Halifax Drive is a two-lane collector road owned by the City of Ottawa. It connects Canterbury Avenue and the LS GP Inc. neighbourhood to Walkley Road. Halifax Drive has an unposted speed limit of 50 km/h.

2.1.2.2 Walking and Cycling

There are sidewalks along both sides of Walkley Road, and an asphalt sidewalk along the west side of Halifax Drive. Figure 5 illustrates the cycling facilities in the study area; there are no cycling facilities on Walkley Road.

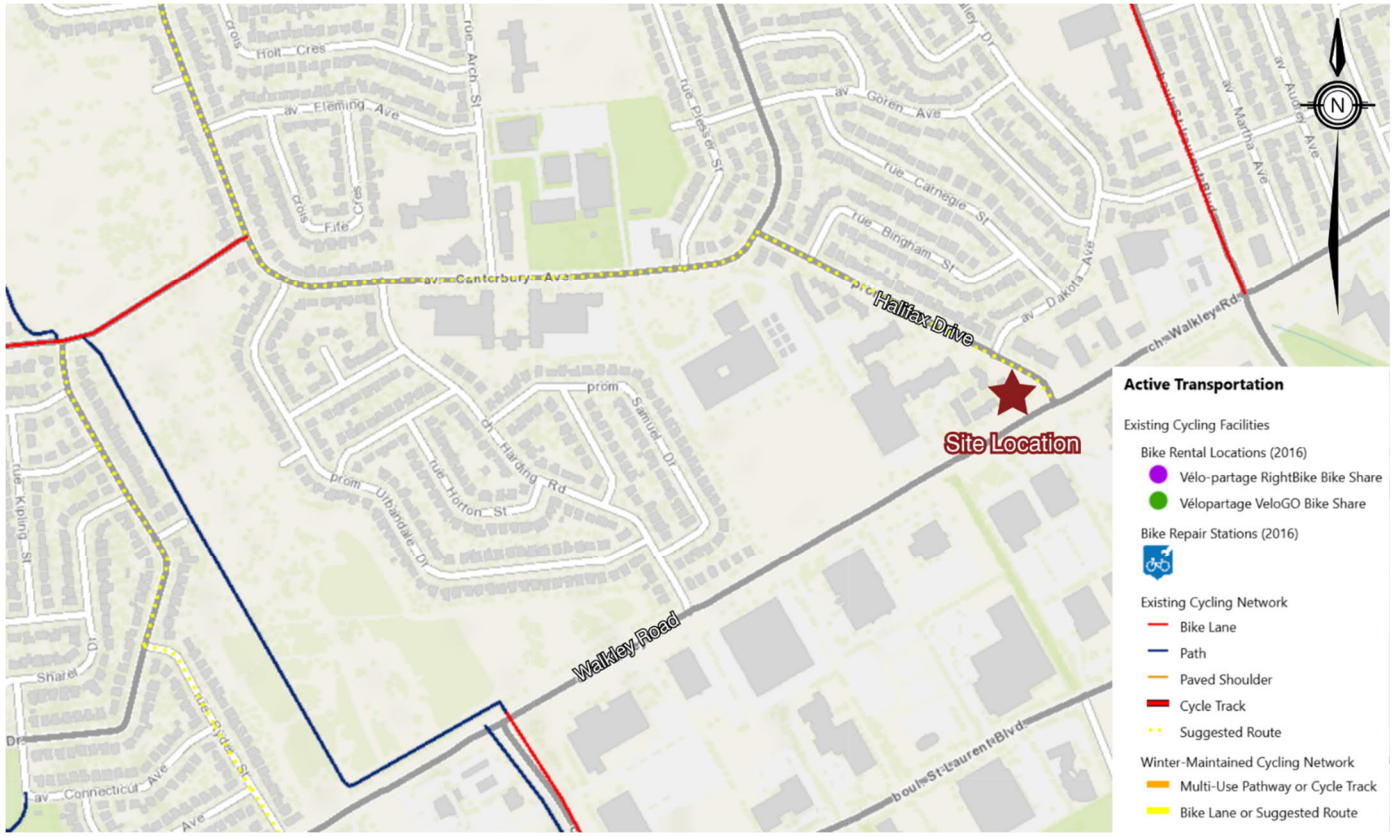
The City's Active Transportation Networks Map, April 2023 identifies Walkley Road and Halifax Drive as part of the Cross-Town Bikeway Network, as illustrated in

Figure 6.

2.1.2.3 Transit

Figure 7 shows the New Ways to Bus transit service to be implemented in April 2025 near the proposed development. Along Walkley Road, route 41 stops in front of the development with 13-minute service intervals during the peak periods. Route 48 also services the development along Halifax Drive with less than 20-minute headways during peak periods. Both routes operate seven days a week. The existing bus stop locations are shown on Figure 8

Figure 5: Existing Cycling Facilities

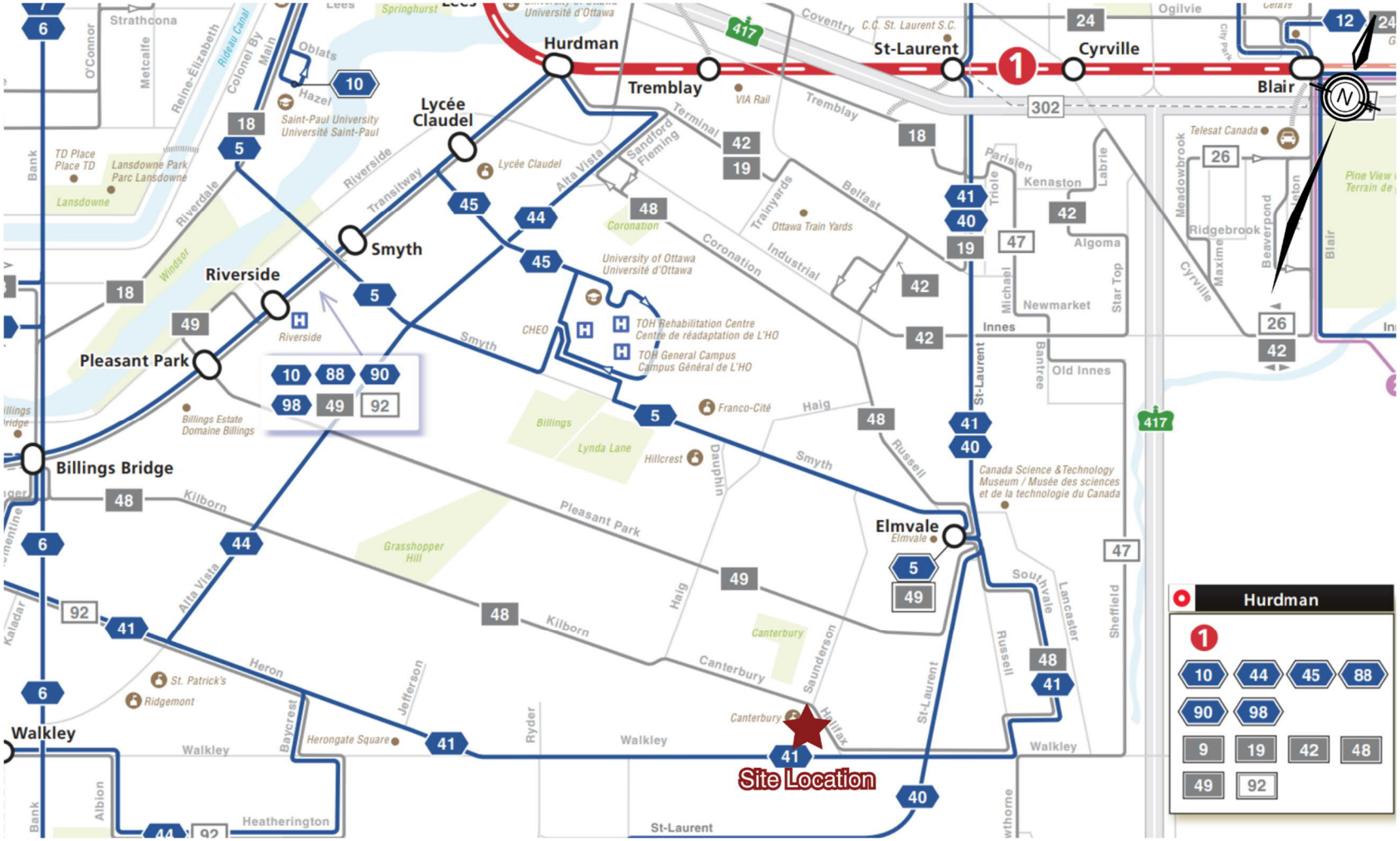


Source: geoOttawa, accessed March 14, 2025

Figure 6: Cross-Town Bikeway Network

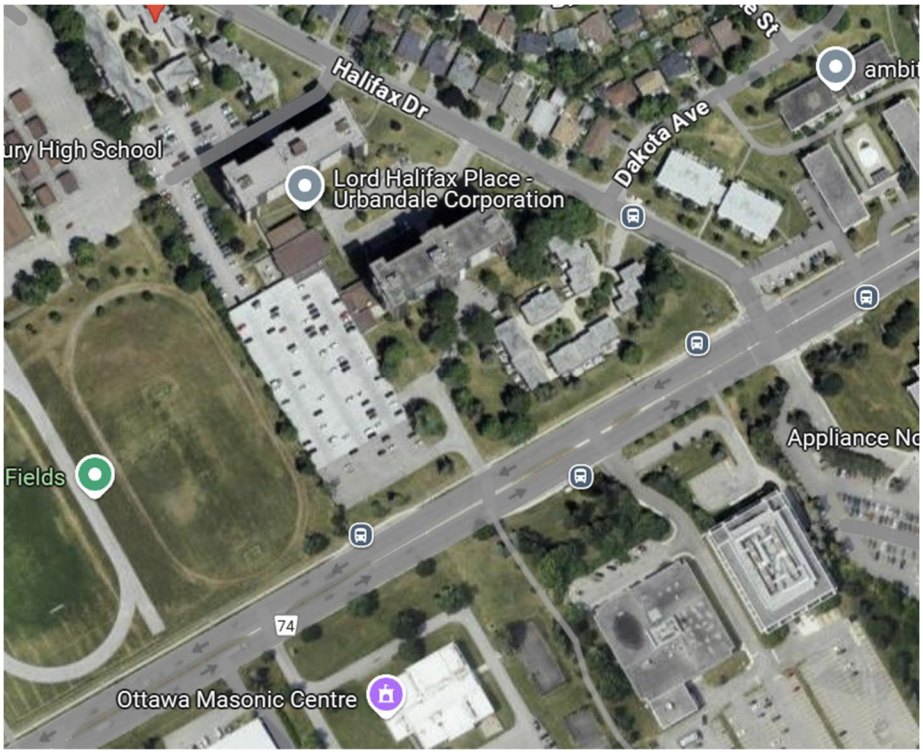
Source: City of Ottawa Active Transportation Network Maps, Cross-Town Bikeway Network, dated April 2023

Figure 7: Transit Service as of April 2025



Source: OC Transpo, accessed March 14th, 2025

Figure 8: Existing Bus Stop Locations



2.1.2.4 Traffic Management Measures

There are no traffic management measures in the study area.

2.1.2.5 Traffic Volumes

Table 2 summarizes the traffic count data used for this study. Historical counts were obtained to identify an appropriate background growth rate for the study area.

Table 2: Traffic Count Data

Intersection	Date	Source	Peak Hour
1. Walkley Road / Halifax Drive	July 2007	City of Ottawa	AM: 07:45-08:45 PM: 16:30–17:30
2. Walkley Road / Halifax Drive	June 2010	City of Ottawa	AM: 07:30-08:30 PM: 16:00-17:00
3. Walkley Road / Halifax Drive	December 2016	City of Ottawa	AM: 07:45-08:45 PM: 15:30-16:30
4. Walkley Road / Private Driveway	February 2019	Dillon	AM: 07:30-08:30 PM: 15:45-16:45
5. Halifax Drive / Private Driveway	February 2019	Dillon	AM: 08:15-09:15 PM: 15:30-16:30

Figure 7 illustrates the existing study area traffic volumes and Appendix A contains the existing traffic counts. Figure 8 illustrates the existing lane geometry and traffic control.

Figure 9: Existing Traffic Volumes

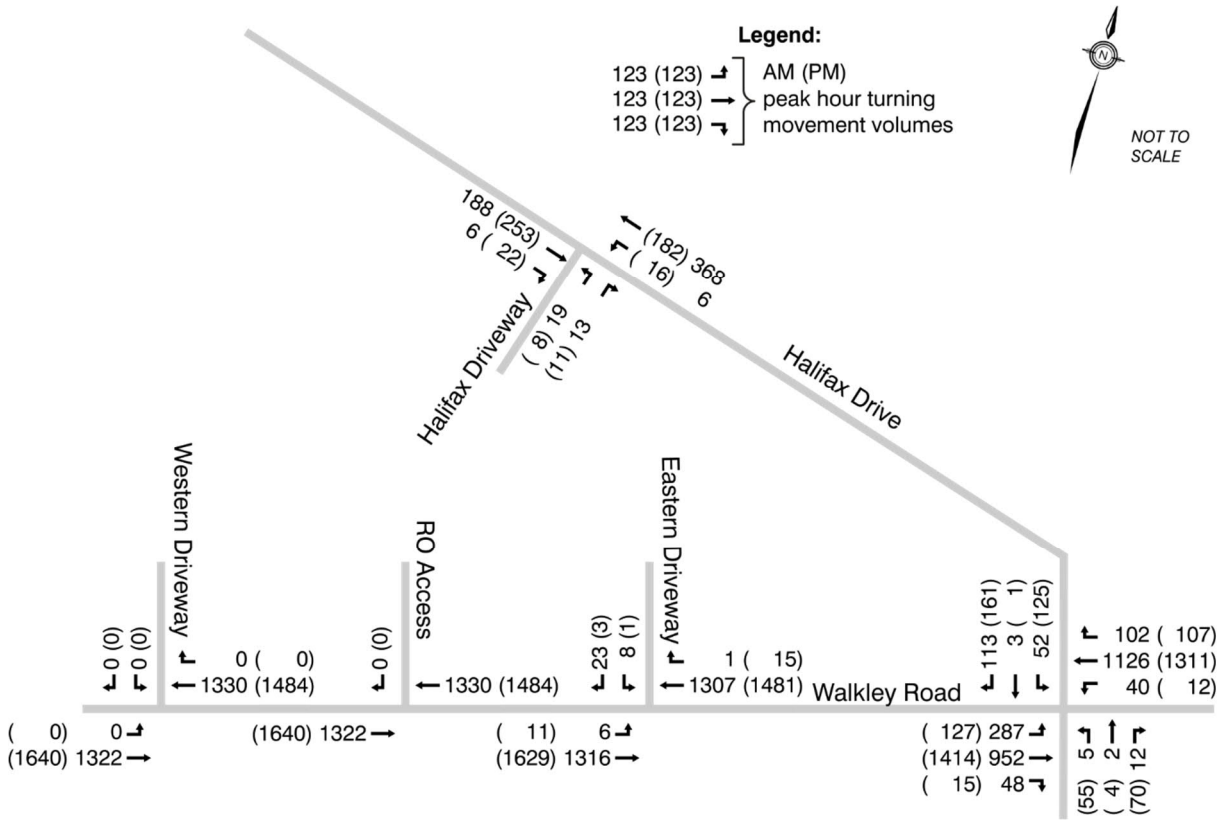
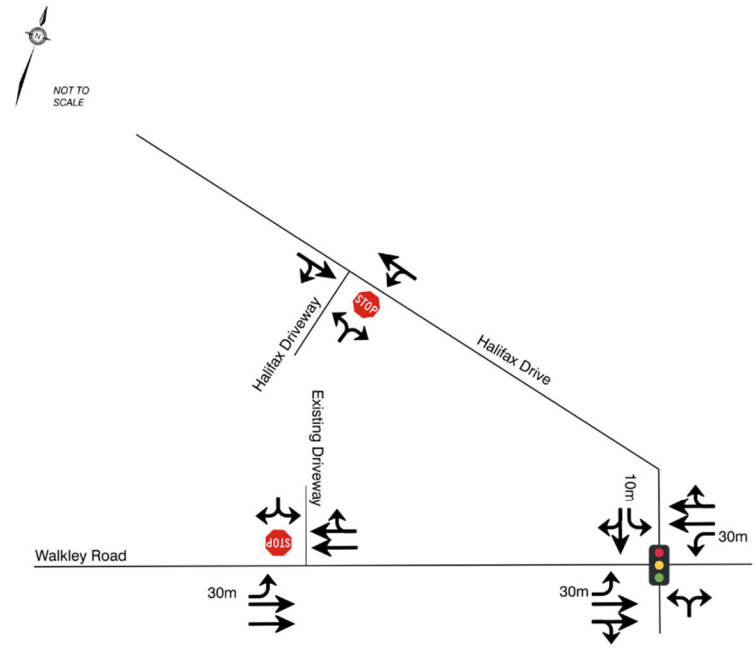


Figure 10: Existing Lane Configuration and Traffic Control



Legend:
Lane configuration
25m Turning lane storage

2.1.2.6 Collision History

At the intersection of Walkley Road / Halifax Drive, there were 18 collisions over four years from 2013 to 2018. Most collisions were rear-end collisions, resulting in property damage only. No fatal collisions were recorded in the study area. The collision breakdown is as follows:

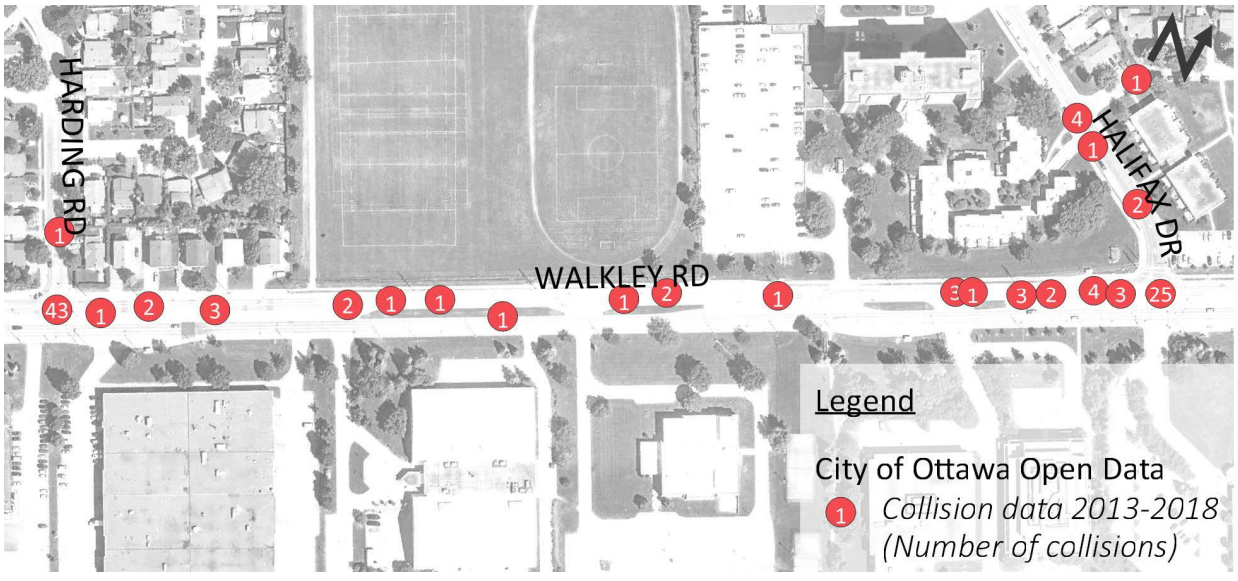
- 12 with property damage only;
- 6 with non-fatal injuries;
- 6 rear ends;
- 3 side swipe;
- 3 turning movement;
- 1 angle; and
- 5 other.

Midblock between Harding Road and Halifax Drive, there were 32 collisions from 2013 to 2018. Of these collisions, the following collision types occurred:

- 6 Angle;
- 12 Rear End;
- 6 Side Swipe;
- 5 turning; and,
- 1 other.

Figure 11 illustrates the location and frequency of the collision data as indicated within the City of Ottawa Open Source Collision Data. There were no collision pattern attributable to the existing site driveway.

Figure 11: Collision Frequency Plot - 2013 to 2018



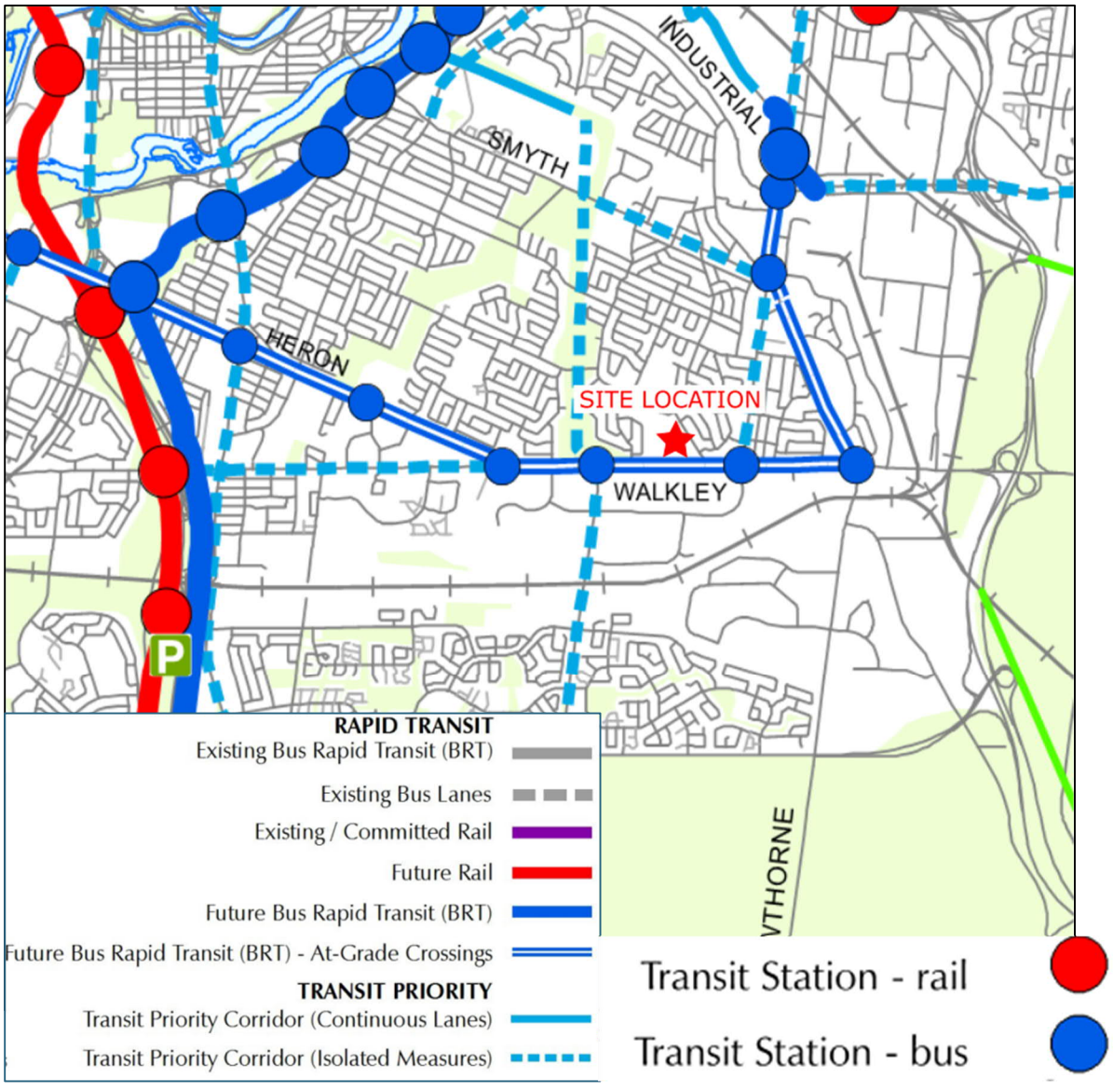
2.1.3 Planned Conditions

2.1.3.1 Road and Transit Network Modifications

The City of Ottawa 2013 TMP identifies Walkley Road as a transit priority corridor with at-grade crossings. However, the TMP does not include this project within the 2031 "Affordable" projects list and therefore the timing of this project is unknown. Figure 12 illustrates the planned transit network concept in the area of the site. The new TMP is underway however no list of planned projects has been released.

Halifax Drive is a collector road with no modification plans identified in the 2013 TMP.

Figure 12: Planned Transit Network Concept



2.1.3.2 Walking and Cycling

Walkley Road and Halifax Drive are identified as a part of the Cross-Town Bikeway Network.

There are sidewalks on both sides of Walkley Road and along the west side of Halifax Drive. The existing pedestrian facilities on Halifax Drive do not meet current Accessibility for Ontarians with Disabilities Act (AODA) standards; the sidewalk is less than 1.8m wide and has an asphalt surface instead of a concrete surface, as required by AODA standards.

The Active Transportation (AT) Projects document dated April 2023 identifies the Pedestrian and Cycling Projects that are planned within the new TMP. There are no planned AT improvements within the study area.

2.1.3.3 Future Background Developments

The City of Ottawa's development applications search tool was used to identify other developments within the study area that could impact study area intersections. In 2019, one background development was identified at 2480 Walkley Road, approximately 850 metres east of the site, with a buildout/occupancy date of 2020.

A recent search of the City of Ottawa's development applications search tool identified the following development applications:

Timbercreek Heron Gate was identified as a background development, located in the neighbourhood of Baycrest Drive and Cedarwood Drive, which is approximately 2.5 km to the west of the subject side.

Development applications were also identified at:

- 2020 Walkley Road / 2935 Conroy Road (redevelopment);
- 1900-1920 Walkley Road, 2425 Don Reid Drive; and,
- 1495 Heron Road.

2.2 Study Parameters

2.2.1 Study Area

The study area consists of the intersection of Walkley Road and Halifax Drive and the site driveways accessing Walkley Road and Halifax Drive.

2.2.2 Time Periods

The development is residential, so the weekday AM and PM peak hours will govern the analysis.

2.2.3 Horizon Years

Full occupancy of the new tower is expected in 2028. The analysis will assess transportation for the 2028 horizon year and the 2032 horizon year, representing 5 years post-buildout.

2.3 Exemptions Review

Table 3 presents the exemptions review table from the City of Ottawa's 2017 *Transportation Impact Assessment Guidelines*.

Table 3: Exemptions Review

Module	Element	Exemption Consideration	Status
4.1 Development Design	4.1.1 Design for Sustainable Modes	Always required	Included
	4.1.2 Circulation and Access	All site plan and zoning by-law applications	Included
	4.1.3 New Street Networks	All plans of subdivision	Not Included
4.2 Parking	4.2.1 Parking Supply	All site plan and zoning by-law applications	Included
4.3 Boundary Street Design		Always required	Included
4.5 Transportation Demand Management (TDM)[1]	4.5.1 Context for TDM	Always required	Included
	4.5.2 Need and Opportunity	Always required	Included
	4.5.3 TDM Program	Always required	Included
4.6 Neighbourhood Traffic Calming		If the development meets all of the following criteria along the route(s) that site generated traffic is expected to utilize between an arterial road and the site's access: 1. Access to Collector or Local; 2. "Significant sensitive land use presence" exists, where there is at least two of the following adjacent to the subject street segment: o School (within 250m walking distance); o Park; o Retirement / Older Adult Facility (i.e. long-term care and retirement homes);	Does not meet Criteria #2, 3, 4 or 5 Not Included

[1] The City of Ottawa Traffic Impact Assessment Guidelines (TIA) Revisions (2023) indicates that the TDM module is required for any development generating more than 60 person trips.

Module	Element	Exemption Consideration	Status
		o Licensed Child Care Centre; o Community Centre; or o 50%, or greater, of adjacent property along the route(s) is occupied by residential lands and a minimum of 10 occupied residential units are present on the route. 3. Application is for Zoning By-Law Amendment or Draft Plan of Subdivision; 4. At least 75 site-generated auto trips; 5. Site Trip Infiltration is expected. Site traffic will increase peak hour vehicle volumes along the route by 50% or more.	
4.7 Transit	4.7.1 Transit Route Capacity	> 75 site transit trips	Not included
	4.7.2 Transit Priority Requirements	> 75 site auto trips	Not included
4.8 Network Concept		When proposed development generates > 200 person-trips during the peak hour in excess of the equivalent volume permitted by established zoning.	Not included
4.9 Intersection Design	4.9.1 Intersection Controls (including site accesses)	> 75 site auto trips	Not included
	4.9.2 Intersection Design	> 75 site auto trips	Not included

3.0 Forecasting

3.1 Development-Generated Travel Demand

3.1.1 Trip Generation and Mode Shares

The proposed new development is comprised entirely of high-rise apartment units within a single tower. Since it will be similar to the existing adjacent development, Dillon used the existing development as a proxy to estimate trip generation for the proposed development. The observed trip generation rate was compared against the City's recommended method for trip generation calculations, the TRANS *Trip Generation Manual (2020).*

Table 4 compares the TRANS vehicle trip rates to the observed vehicle trip generation rates. The TRANS vehicle trip rates are similar than those observed at the site. The TRANS Trip Rates have been carried forward as the basis for the proposed site trip generation.

Table 4: Existing Site Trip Generation Rates

Source	Existing No. of Units	Peak Hour	In		Out		Total	
			Trips	Rate	Trips	Rate	Trips	Rate
Observed Trip Generation Rate	410	AM	19	0.05	63	0.15	82	0.20
		PM	64	0.16	23	0.06	87	0.21
TRANS Auto Trips	410	AM	19	0.05	41	0.10	60	0.15
		PM	42	0.10	31	0.07	73	0.18

The trip generation rates were obtained from the TRANS Trip Generation Manual, 2020. A Multi-Unit High Rise development is forecast to generate 0.8 person-trips in the AM peak hour and 0.90 person trips during the PM peak hour. A high-rise residential building with 260 dwelling units in the Alta Vista area is forecast to generate weekday AM and PM peak hour trips as summarized in Table 5.

Table 5: Revised Trip Generation by Mode (260 Dwelling Units)

RESIDENTIAL								
Travel Mode	Mode Share		AM Peak Hour			PM Peak Hour		
	AM	PM	Total	In	Out	Total	In	Out
Auto Driver	38%	45%	26	8	18	31	18	13
Auto Passenger	12%	16%	8	2	6	11	6	5
Transit	42%	28%	32	10	22	21	12	9
Cycling	2%	2%	2	1	1	2	1	1
Walking	7%	9%	5	2	3	7	4	3
Total Person Trips	100%	100%	73	23	50	72	41	31

As a residential development, this site will not be generating any pass-by trips. Appendix B contains the TRANS Tables used for these calculations.

3.1.2 Trip Distribution

Trip distribution was identified based on the existing distribution of traffic to/from the existing site, which was determined through a review of the existing traffic counts.

3.1.3 Trip Assignment

Figure 13 illustrates the site generated traffic assignment to the road network based on the trip distribution and logical routing through the transportation network.

Figure 14 illustrates the site generated traffic volumes. The number of new trips is relatively low to Walkley Road. The negative numbers indicated in the figure reflect a redistribution of some of the existing trips to the new driveway access at the west limit of the site.

Figure 13: Site Generated Traffic Assignment Percentages

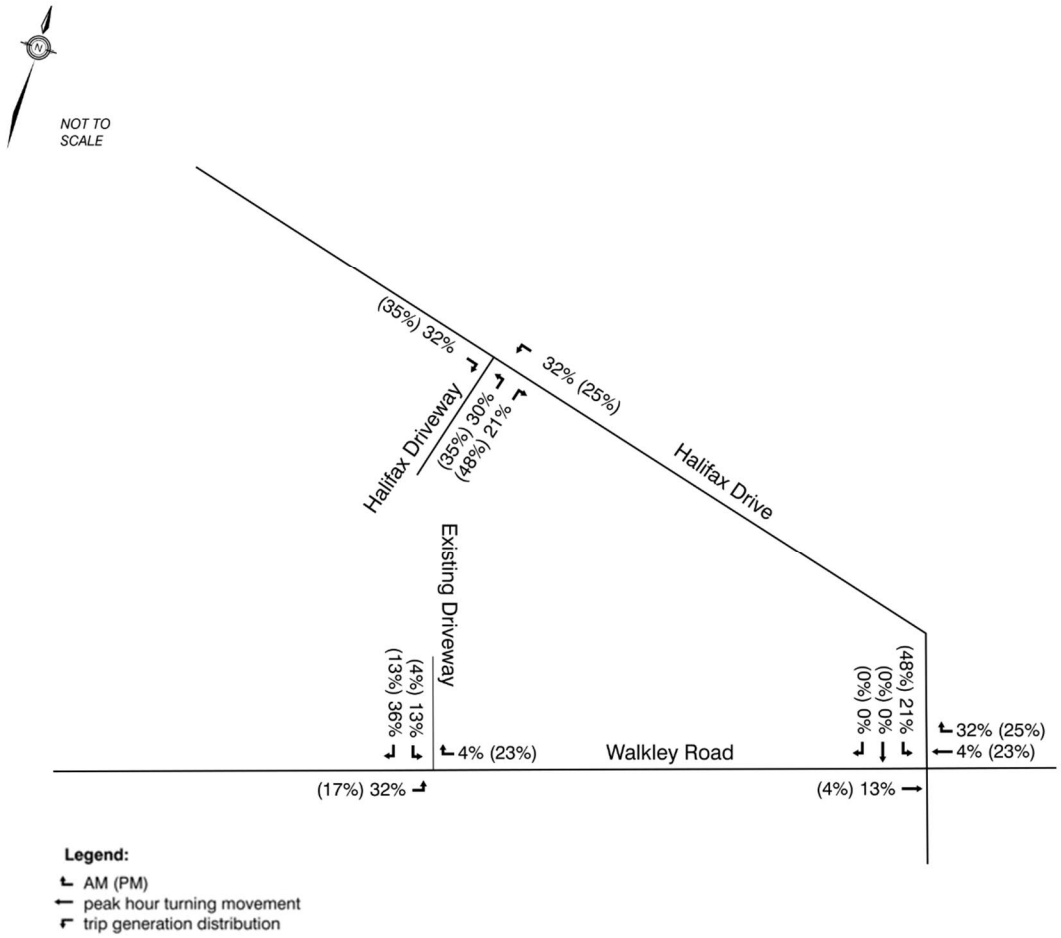
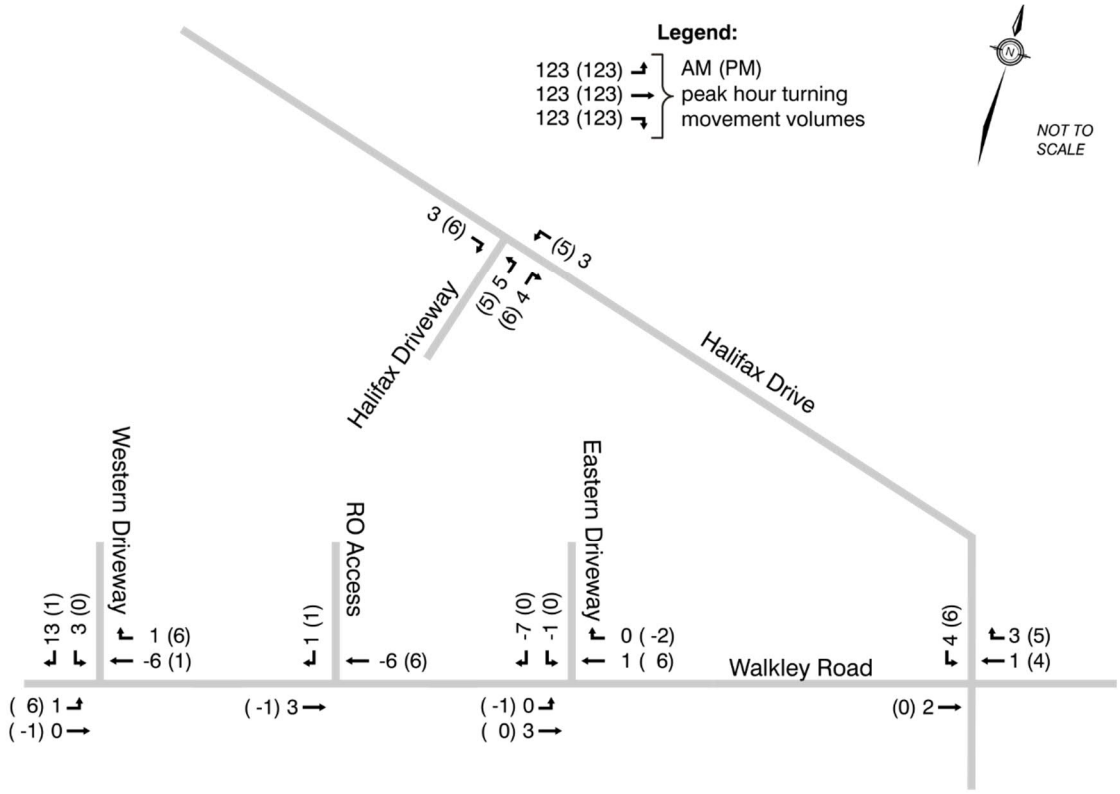


Figure 14: Site Generated Traffic Volumes



3.2 Background Network Travel Demand

3.2.1 Transportation Network Plan

The 2013 City of Ottawa TMP identifies Walkley Road as a future Bus Rapid Transit (BRT) corridor with dedicated median BRT bus lanes, and it is anticipated that Walkley Road will be widened to accommodate the median BRT bus lanes.

However, the TMP does not include this project within the 2031 Affordable Transit Network and therefore the transportation network plans will not impact background network travel demands. The TMP is currently being updated however the proposed future transit network has not released.

3.2.2 Background Growth

Background growth refers to additional future traffic volume generated by population and employment growth in parts of the City beyond the study area and adjacent neighbourhoods.

Historical traffic count data was obtained from the City. These historical traffic counts were reviewed, and the background annual traffic volume growth rate was determined to be 0.7%. To be conservative, a traffic volume growth rate of 1.0%, compounded annually, was used within the analysis.

3.2.3 Other Developments

A development at 2480 Walkley Road, approximately 850 metres east of the site, with a build/occupancy date of 2020 was to forecast to generate a total of 14 new trips in the AM peak hour, and 8 trips in the PM peak hour.

The Timbercreek Heron Gate Phases 2,3, and 4 are proposed to be complete somewhere around 2030, with full completion of the site by 2040. For the purposes of this study, to be conservative we have assumed that the 2030 traffic volumes as identified by its TIA will be in place by the buildout of our subject site in 2028 and would remain at the same level in 2032.

Timbercreek Heron Gate is located approximately 2.5 km to the west of our subject site the neighbourhood of Baycrest Drive and Cedarwood Drive. The latest Timbercreek Heron Gate development information was not available on the City Development Applications Search tool however a TIA for the development at 1900 Walkley Road included its forecast traffic volumes based on the Timbercreek Heron Gate Official Plan Amendment TIA, dated April 2021. Along Walkley Avenue to the east of Heron Road, by 2030, during the AM peak hour the site would generate 154 eastbound and 52 westbound trips, and during the PM peak hour the site would generate 83 eastbound and 132 westbound trips. We have assumed 85% of the traffic on Walkley would travel through the Halifax Drive intersection towards Highway 417.

The TIA completed for 1900-1920 Walkley Road indicates that the site generated traffic on Walkley Road would be less than 10 trips in the peak hour, therefore the traffic volumes from this development were not carried in this report.

A TIA completed for the 2020 Walkley Road and 2935 Conroy Road site redevelopment showed a very slight reduction in traffic volumes on Walkley Road but was not carried forward in this report.

A TIA completed for the 1495 Heron Road site redevelopment showed a slight increase in traffic volumes on Walkley Road, but the site impacts were not carried forward in this report as the volumes were not significant and the site is located approximately 2.5 km from the subject site.

3.2.4 Future Background Traffic Volumes

Figure 15 and Figure 16, respectively, illustrate the 2028 and 2032 future background traffic volumes.

Figure 15: 2028 Background Traffic Volumes

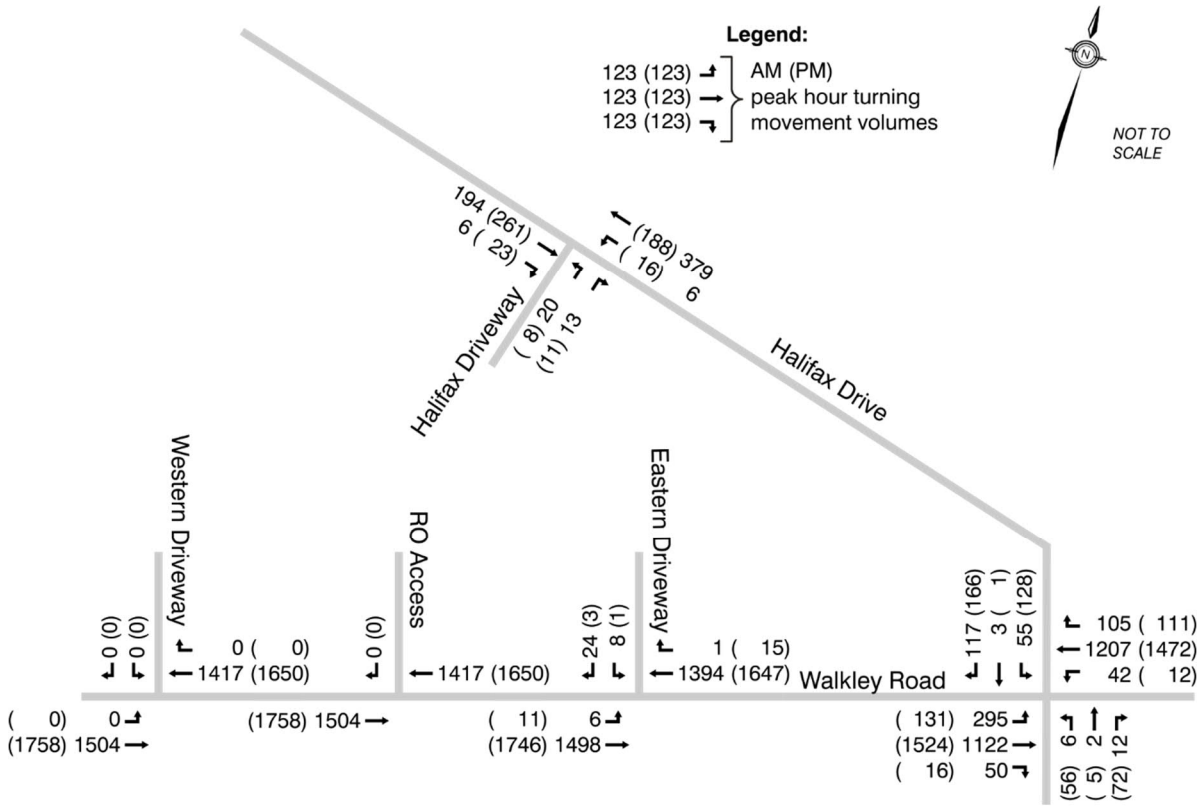
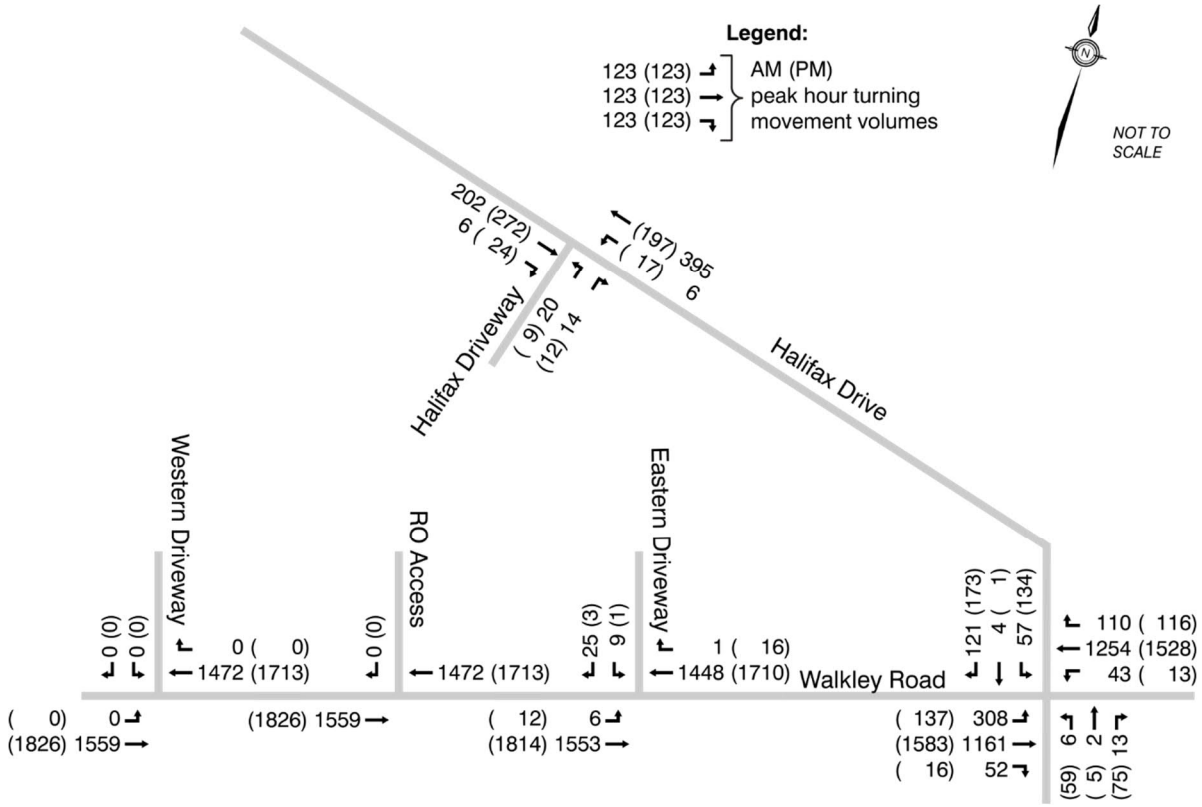


Figure 16: 2032 Background Traffic Volumes



3.3 Total Traffic

The total traffic volumes were calculated by adding the background traffic volumes and the site generated traffic volumes.

Figure 17 illustrates the total future traffic volumes with the new apartment tower being fully constructed and occupied in the 2021 occupancy year. Figure 18 illustrates the total traffic volumes five years post occupancy in 2026.

3.3.1 Demand Rationalization

Based on the forecasted traffic volumes on the adjacent roadways and the volume of traffic proposed to be generated by the development, we do not anticipate capacity limitations in the transportation network. Therefore, no adjustments to projected background or development-generated travel demands have been undertaken.

Figure 17: 2028 Total Traffic Volumes

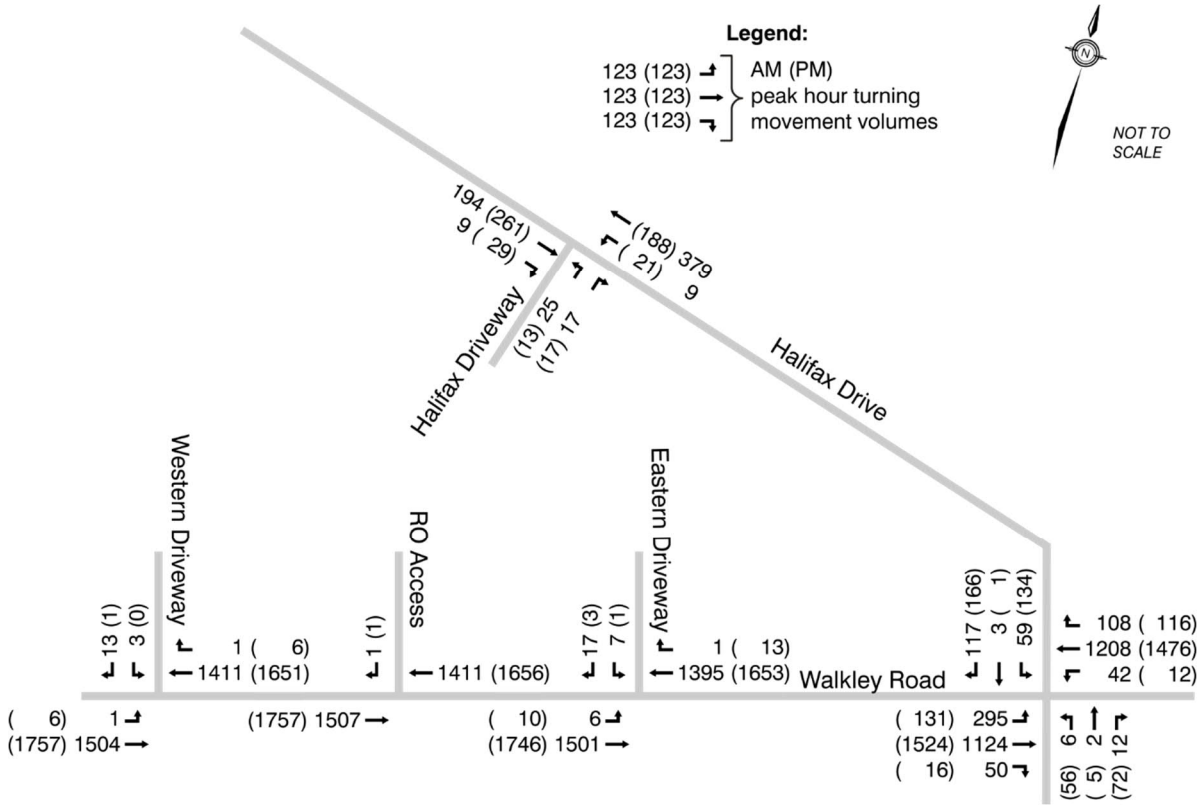
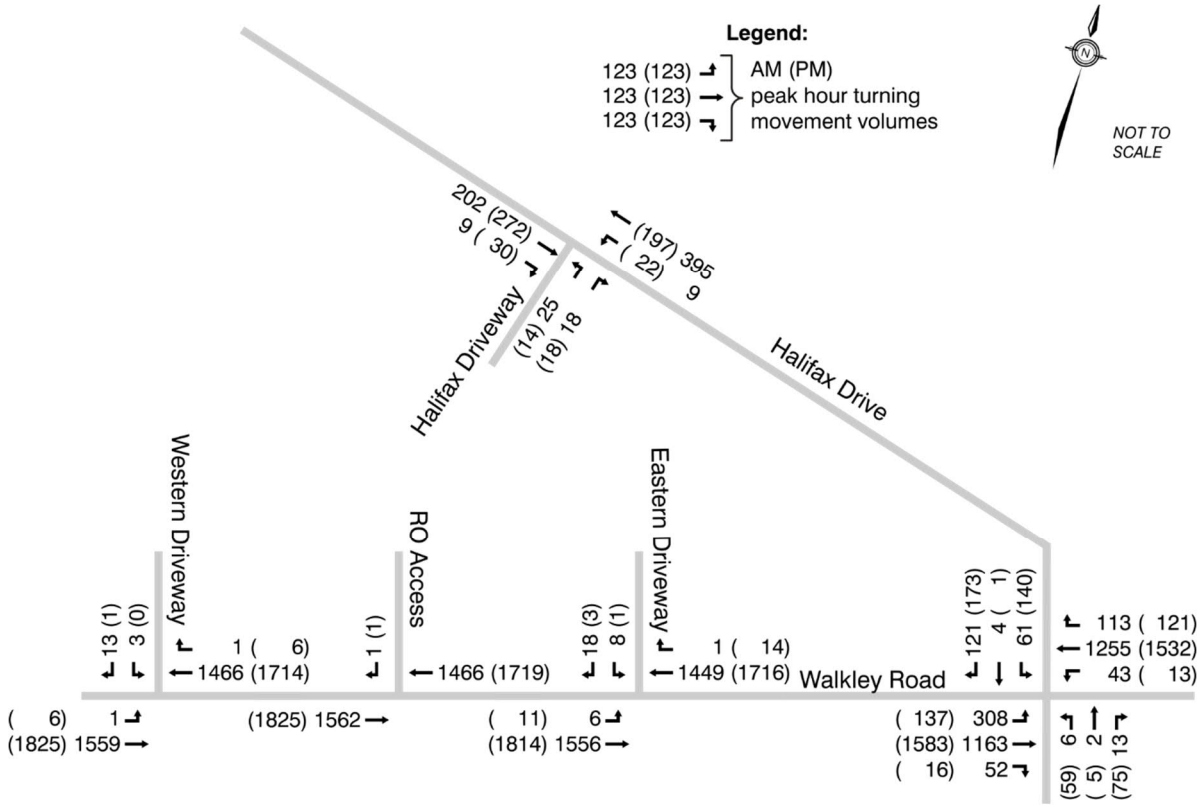


Figure 18: 2032 Total Traffic Volumes



4.0 Analysis

4.1 Development Design

4.1.1 Design for Sustainable Modes

The proposed development consists of a single apartment tower facing onto Walkley Road. All of the required TDM – Supportive Development Design and Infrastructure Checklist items and many of the other items that relate to the site plan are met, while some of the items of the checklist are not relevant for the site. The following are some of the other items to be included within the site design:

- the apartment tower is located close to Walkley Road, with no parking in-between the road and the building;
- the building front door access is located within approximately 35 metres of the public sidewalk and is provided with a concrete walkway between the front door and the sidewalk in either direction along the front access loop;
- the eastbound transit stop is to be located under 100 metres from the front door, the westbound transit stop is located approximately 250 metres from the front door;
- the building access faces the street, with good visibility;
- wayfinding signage will be included on the site;
- Five visitor bicycle parking spaces are to be located on the west side of the building within 15 metres of the front entrance;
- 93 secured bicycle parking spaces will be provided within P1 of the garage for permanent residents usage;
- a bicycle wash and maintenance station is included in P1 of the underground garage
- A building access door is provided from the underground bicycle parking area to the east driveway, from the Loading Zone area. The door is at grade with P1 and there are no internal stairs; and,
- a pickup-drop-off area is provided at the front door of the proposed development however a portion of this area is located within the ultimate 44.5 m right-of-way (ROW). A pick-up/drop off area is desirable and is a recommended feature within the draft City of Ottawa TIA Guidelines which have not yet been released.

Appendix C contains the TDM-supportive Development Design and Infrastructure checklist.

4.1.2 Circulation and Access

Guest parking, loading zones, and short-stay deliveries will be accommodated on-site. Walkley Road is proposed to have three access points. Two are full movement access at the west and east end of the site, and one outbound right-turn only access from the drop-off/pickup area in front of the building. The west driveway provides access to the above ground parking and drop-off/pickup loop. The east driveway

provides access to the underground parkade and bicycle parking area. Vehicles parked within the underground parking structure will also have access to Halifax Drive.

Access

The frontage of the proposed building and its driveways is approximately 110 meters, with the entire site extending to Halifax Drive, approximately 220 metres. The Private Approach By-Law Section 25.1 1v permits from 46 to 150 metres of frontage, one two-way private approach and two one-way private approaches or two two-way private approaches; and for each additional 90 metres of frontage in excess of 150 metres, one two-way private approach or two-one way private approaches. Given that the entire site provides 220 metres of frontage, the proposed two two-way and one one-way private approaches meet the bylaw requirement.

Circulation

A fire truck, garbage truck, and a standard automobile were modelled using AutoTURN software to show how each vehicle accesses the site. The fire truck will enter the Walkley Road west access and pull up beside the building towards the Siamese connections. The fire truck will reverse out of the driveway to travel westbound on Walkley Road as shown in Figure 19. The fire truck has sufficient space to maneuver within the site.

The garbage truck will access the site from the Walkley Road east access and pull up to the loading zone in front of the building to collect the refuse. The truck will back out of the loading zone toward Walkley Road, travel into the site and turn around at the cul-de-sac, then travel south to exit the site at Walkley Road. Figure 20 illustrates the garbage truck turning movement.

There are no site circulation issues with cars accessing the drop-off area, as shown in Figure 21.

Figure 19: Fire Truck Turning Movements

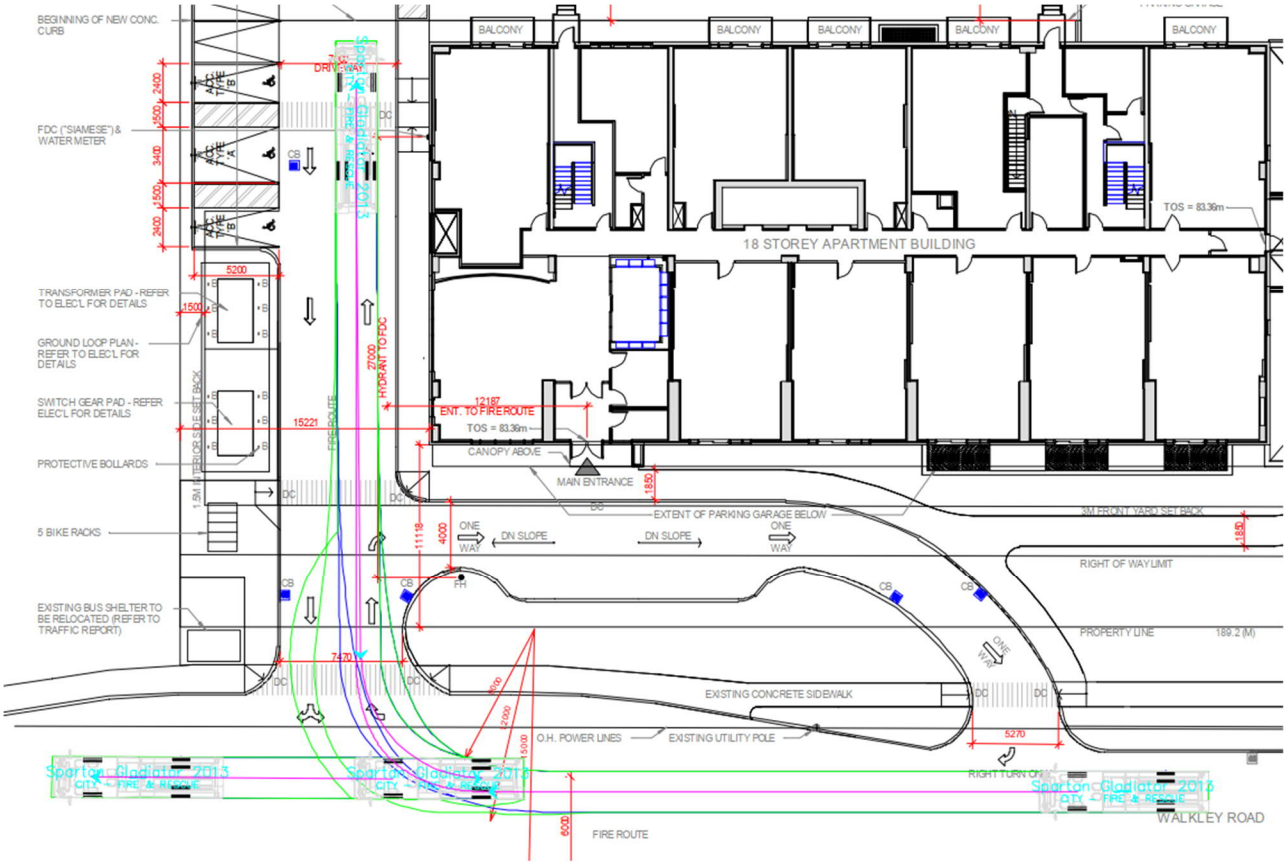


Figure 20: Garbage Truck Turning Movements

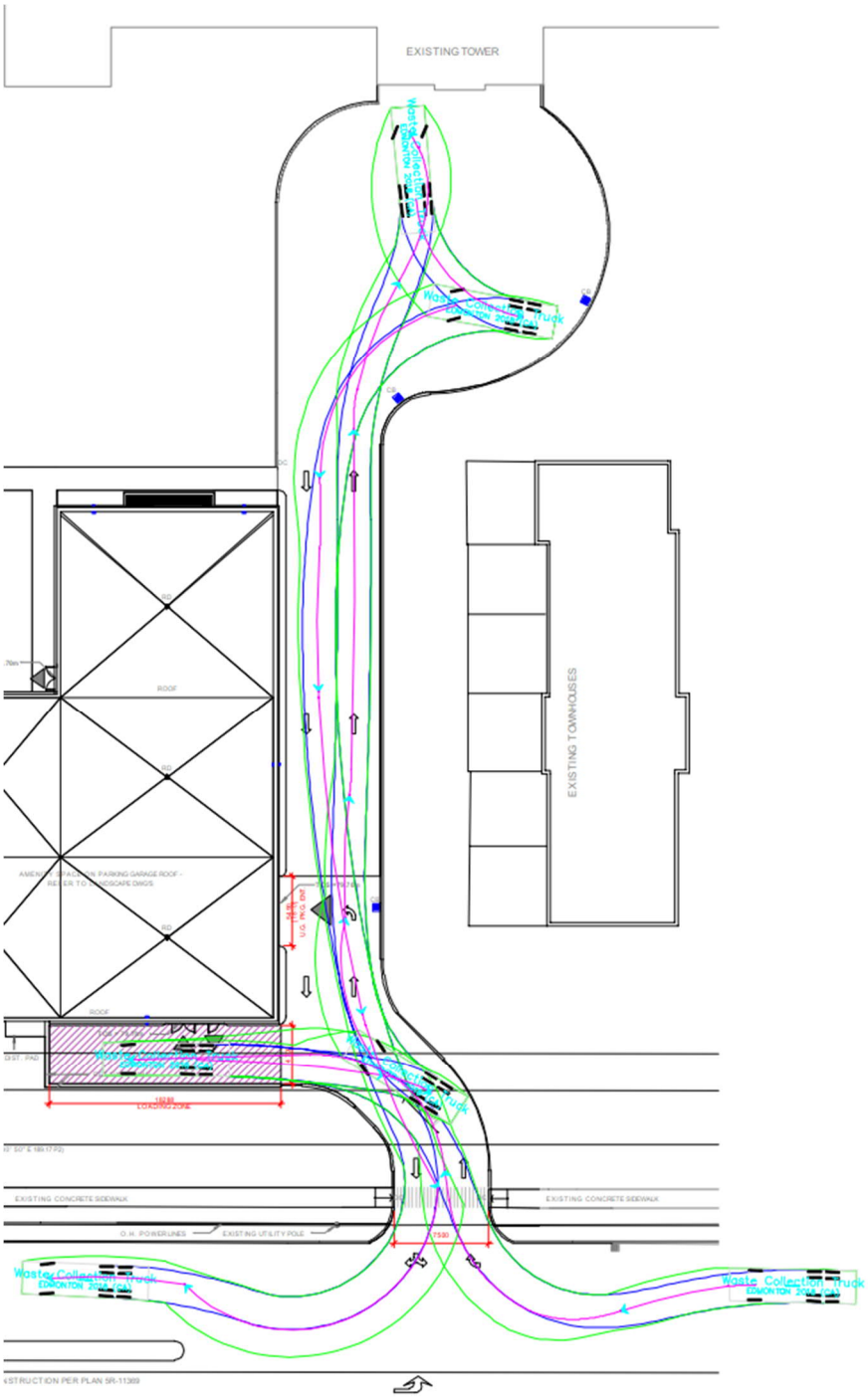
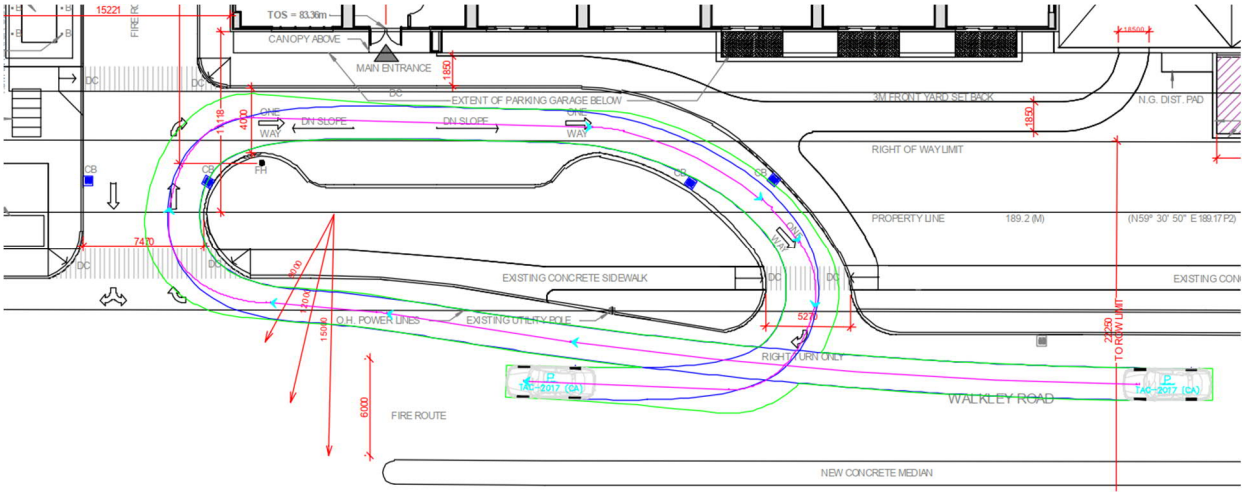


Figure 21: Automobile Access to the One-Way Drop-Off Loop



4.1.3 New Street Networks

Exempted during Screening and Scoping.

4.2 Parking

The following subsections address the proposed apartment building's auto and bicycle parking requirements.

4.2.1 Parking Supply

Auto Parking

The proposed development includes modifications to the existing on-site parking. The new development will result in a net increase of 258 parking spaces, achieved by:

- Removing 63 existing surface parking spaces to accommodate the new construction;
- Providing 184 new underground parking spaces;
- Adding 36 above-grade visitor spaces; and
- Total net new parking = 157 spaces.

Table 6 provides a summary of the site's parking spaces. The site parking modifications include:

Table 6: Parking Space Summary

Parking Type	Existing Parking Spaces (Excluding Garden Homes)	Proposed Change in Parking Spaces	Future Parking Supply (Excluding Garden Homes)
Surface	375	-63 + 36 = -27	348
Underground	169	184	358
Total	544	+157	701

Table 7 indicates the parking requirements for the existing and proposed apartment towers based on Part 4 of the City of Ottawa Zoning by-law 2008-250. Given that the row houses have separate designated parking, only the apartment towers were considered for this analysis. In total, the towers will provide 620 residential high-rise dwelling units. Section 101 of the By-Law addresses the minimum parking requirement, while Section 102 identifies the minimum visitor parking requirement.

Table 7: City of Ottawa By-law Vehicle Parking Requirements

Type	Parking space requirement per dwelling unit	Number of dwelling units	Number of parking spaces required	Notes
Tenants (overall)	0.5	536	268	The first 12 dwelling units are exempt
Visitors (overall)	0.2	536	Max = 60	First 12 dwelling units exempt, maximum 60 parking spaces required
Tenants (2145 Walkley)	0.5	176	88	The first 12 dwelling units are exempt,
Visitors (2145 Walkley Road)	0.2	176	36	First 12 dwelling units exempt, maximum 60 parking spaces required
Total No. of Parking Spaces Required by Zoning By-Law (Overall Development)			328	701 parking spaces provided
Total No. of Parking Spaces Required by Zoning By-Law (2145 Walkley Road)			124	220 parking spaces provided

The overall site provides sufficient parking and exceeds the zoning by-law requirement. The proposed high-rise at 2145 Walkley Road will offer more than the minimum number of parking spaces and meets the number of visitor parking spaces.

Bicycle Parking

The City of Ottawa By-law, Section 111, indicates that residential developments are to provide 0.5 bicycle parking spaces per dwelling unit, which equates to 88 bicycle parking spaces. Of these, at least 25% must be located in the building or another secure structure. The new tower will provide 93 indoor bicycle parking spots, which meets the by-law requirement. Five additional bicycle visitor spaces are to be provided on the west side of the building in close proximity to the front door (west side of the driveway). The design of the building allows for easy access to/from the east driveway and the underground bicycle parking area, within 40 metres of the public sidewalk.

4.2.2 Spillover Parking

Exempted during screening and scoping report.

4.3 Boundary Street Design

On Walkley Road, the existing centre median is proposed to be modified to accommodate the new driveway access locations. Appendix C contains the Road Modification Approvals (RMA) Drawing and Cost Estimate, and Appendix E contains the Functional Design Drawing for this work. The proposed development will not require any modifications to Halifax Drive.

4.3.1 Mobility

Table 8 summarizes the results of Multi-Modal Levels of Service (MMLOS) analysis for 'segments' (i.e. between signalized intersections). There are no planned network modifications within the horizon of this study, and the development is not anticipated to change the MMLOS analysis results; the MMLOS analysis results are the same for existing conditions and future condition within the horizon of this study.

Halifax Drive and Walkley Road are within 300 metres of the Canterbury High School of Arts and therefore the MMLOS targets are higher for pedestrians, cyclists, and transit. Since both Walkley Road and Halifax Drive are on the cross-town bikeway and within 300 metres of a school, the cycling target BLOS is LOS A. Walkley Road is a truck route and therefore the truck LOS target is D; there is no target for Halifax Drive.

Table 8: MMLOS Analysis – Segments

	Criteria	Target	Walkley Road	Halifax Drive
Pedestrian (PLOS)	Sidewalk width	A	1.5m	1.5m
	Boulevard width		1.5m	1.5m
	AADT > 3000?		Yes	Yes
	On-Street Parking		No	Yes
	Operating Speed		60 km/h	31 – 50 km/h
	Level of Service		E	C
Cycling (BLOS)	Type of facility	A for Walkley A for Halifax	Mixed traffic	Mixed traffic
	Number of travel lanes		4-5	2
	Bike lane width		n/a	n/a
	Operating speed		>=50 km/h	50 km/h
	Bike lane blockage freq.		Rare	Rare
	Level of Service		E	B
Transit (TLOS)	Type of facility	A (Future BRT) D (existing arterial)	Mixed traffic	Mixed traffic
	Parking/driveway friction		Vt/Vp >0.8	Vt/Vp >0.8
	Level of Service		D	D
Truck (TkLOS)	Number of lanes	D for Walkley No Target for Halifax Drive	2	1
	Lane width		3.4m - 3.5m	3.2m - 3.3m
	Level of Service		A	D

The PLOS and BLOS is below the target for Walkley Road and Halifax Drive. The pedestrian LOS could be improved by increasing the sidewalk and boulevard widths. The BLOS could be improved by the City implementing a segregated bicycle lane on Walkley Road. The BLOS on Halifax Drive could be improved by the City implementing curbside bike lanes. The TLOS meets the existing targets for Walkley Road and Halifax Drive. In the future, the Transit operations are planned to be modified to include bus rapid transit (BRT). When Walkley Road is widened for the BRT, it is anticipated that new pedestrian and cycling facilities would be designed to meet the MMLOS targets, and the BRT lanes will meet the transit targets.

4.3.2 Road Safety

Road safety was reviewed in Section 2.1.2.6. Between 2013 and 2018, there was one collision in proximity to the site driveway on Walkley Road. There were three collisions near the median breaks to the east and west servicing private approaches on the south side of Walkley Road.
The site access design should incorporate dedicated turn lanes on Walkley road to reduce the risk of rear end collisions.

4.4 Access Intersections Design

4.4.1 Location and Design of Access

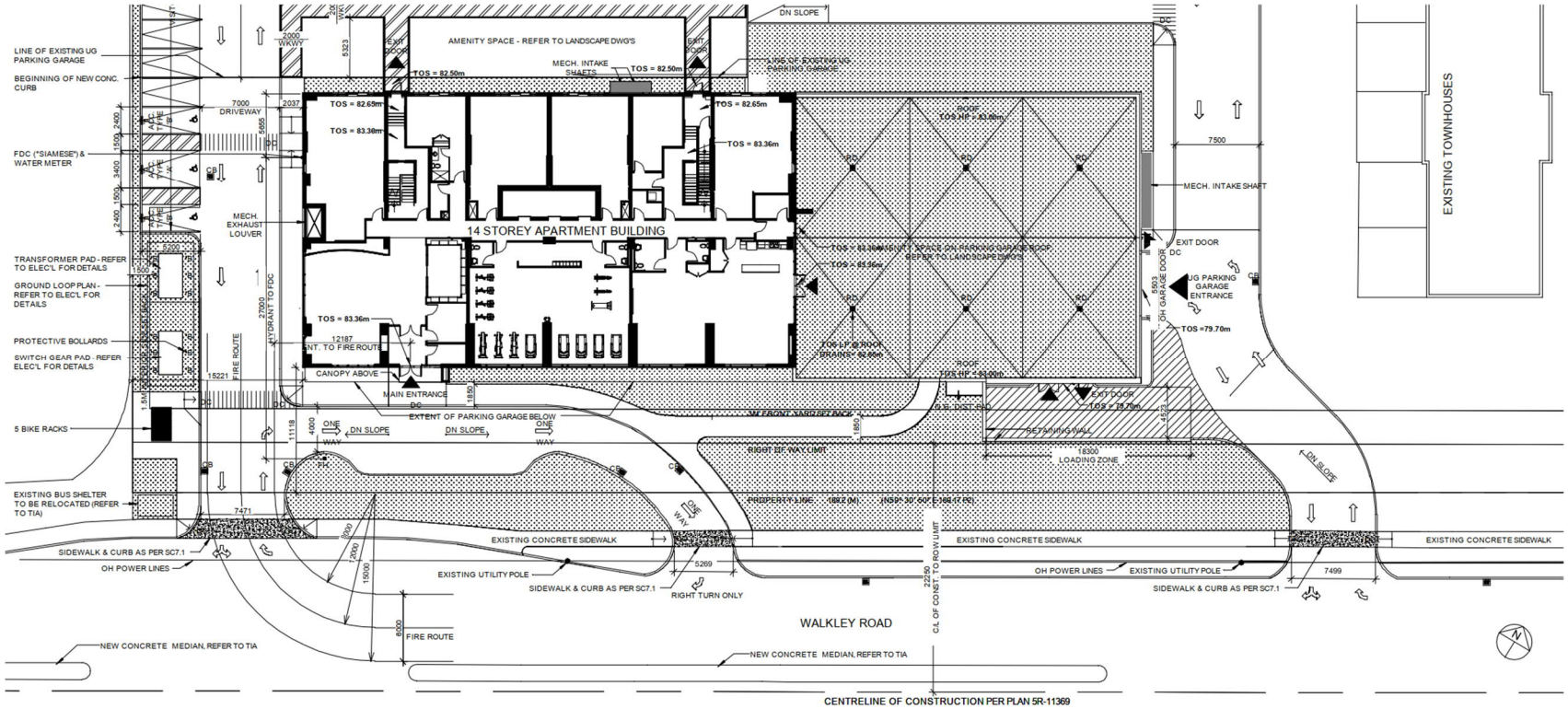
The existing driveway on Halifax Drive is not being modified. The proposed new driveways to Walkley Road are to be designed to meet the City of Ottawa Private Access By-law No. 2003-447 Section 25, as contained in Appendix F. These driveways will require modifications of the Walkley Road median to allow left turns into and out of the west and east site driveways.

The west driveway on Walkley Road conflicts with an existing bus stop location. Through discussions with OC Transpo in 2019, the decision was made to move the bus stop west of the proposed driveway.

The Government of Canada office complex driveway is located on the south side of Walkley Road, across and slightly east of the proposed development. Their driveway is offset to the east of the proposed site's eastern driveway, therefore there should be no left turning vehicle conflicts from Walkley Road.

The west driveway is proposed to be approximately 7.5 metres wide. The one-way loop is proposed to be approximately 5.3 metres wide and the east driveway providing access to the underground parking lot is proposed to be approximately 7.5 metres wide. The one-way outbound loop in front of the building, will operate as a right-out only access, enforced by the median design. The site plan access are shown in Figure 22.

Figure 22: Site Plan - Driveway Layout and Dimensions



4.4.2 Intersection Control

The anticipated traffic volumes at the proposed site driveways warrant single lane approaches with Stop control in advance of the public sidewalks, consistent with the Highway Traffic Act.

4.4.3 Intersection Design

Traffic volumes are below the threshold requiring MMLOS and Synchro analysis, therefore this section is exempt.

4.5 Transportation Demand Management

4.5.1 Transportation Demand Management (TDM) Context

Development Location and Involved Parties

The development is not located within a Transit-Oriented Development zone. The property is owned and is anticipated to be operated by LS GP INC.

Development Operation

The proposed residential building is anticipated to contain a total of 176 dwelling units. The unit breakdown is anticipated as:

- 9 three-bedroom units;
- 23 two-bedroom units; and,
- 144 one-bedroom units.

This is not a retirement or adult living facility and there are no age restrictions for tenants.

4.5.2 Need and Opportunity

The proposed development will be in keeping with the existing development on the site, where the auto trip rate is similar to that identified for the TAZ. Therefore, the risk of not achieving the target is low.

4.5.3 Transportation Demand Management

The City of Ottawa's Transportation Demand Management (TDM) checklists were reviewed and some of the recommended TDM measures are listed below:

- Providing local area maps with walking/cycling access routes at major entrances;
- Displaying relevant transit schedules and route maps at entrances;
- Provision of real-time transit arrival information;
- LS GP INC. is currently reviewing opportunities to work with on-site car share services;
- Unbundle parking costs from purchase or rental costs; and,
- Provide multimodal travel option information package to new residents.

Appendix C contains the TDM measures checklists.

4.6 Neighbourhood Traffic Management

Exempted during Scoping and Screening.

4.7 Transit

4.7.1 Route Capacity

The proposed development is forecasted to generate an additional 32 transit trips during the AM peak hour, and 21 transit trips during the PM peak hour, below the criteria to undertake a review of the transit impacts. OC Transpo routes #41 and #48 service the site.

Given the low number of persons generated by the site, the proposed development is not anticipated to have a significant impact on transit route capacity.

4.7.2 Transit Priority

Walkley Road is identified as a future BRT route (as mentioned in Section 2.1.3.1). The number of transit trips is below the threshold, and is therefore excempt.

4.8 Review of Network Concept

Exempted during Scoping and Screening.

4.9 Intersection Design

4.9.1 Intersection Control

The number of site generated trips is below the threshold, and this section is exempt.

4.9.2 Intersection Design

The number of site generated trips is below the threshold, and this section is exempt.

5.0 Conclusions

The proposed development will add 176 high-density residential apartment units to an existing complex on the northwest corner of Walkley Road and Halifax Drive.

The existing development, owned and operated by Urbandale Corporation, includes two towers with 360 units and 50 row homes. The existing site has 375 surface parking spaces and 234 underground parking spaces.

The proposal replaces part of the existing surface parking in the southwest corner of the lot with the new apartment tower and adds additional underground parking. The proposed site plan shifts the existing Walkley Road east access approximately 7 metres to the east and adds two additional accesses to Walkley Road.

The site is forecast to add 26 auto driver trips during the AM peak hour and 31 auto driver trips during the PM peak hour.

The City has no immediate plans to improve Walkley Road or Halifax Drive. In the longer term, Walkley Road is anticipated to be upgraded to include BRT. The City ROW requirement along Walkley Road is 44.5 metres from centreline. Both Walkley Road and Halifax Drive are on the Cross-Town Bikeway route.

The Timbercreek Heron Gate background development is of significance and is anticipated to develop over time and was considered within this TIA. Traffic volumes were grown at a rate of 1% annually to reflect future conditions.

The site provides 93 secured bicycle parking spaces will be provided within P1 of the garage for permanent residents usage, a bicycle wash and maintenance station, and the building access door from the P1 garage is at grade to the Loading Zone area, there are no internal stairs.

The site automobile parking exceeds the zoning requirements.

A pickup-drop-off area is provided at the front door of the proposed development however a portion of this area is located within the ultimate 44.5 m right-of-way (ROW). A pick-up/drop off area is desirable and is a recommended feature within the draft City of Ottawa TIA Guidelines which have not yet been released.

Based on the transportation assessment presented in this study, LS GP INC's proposed apartment building located at 2190 Halifax Drive should be permitted to proceed from a transportation impact perspective.

Appendix A

Traffic Counts

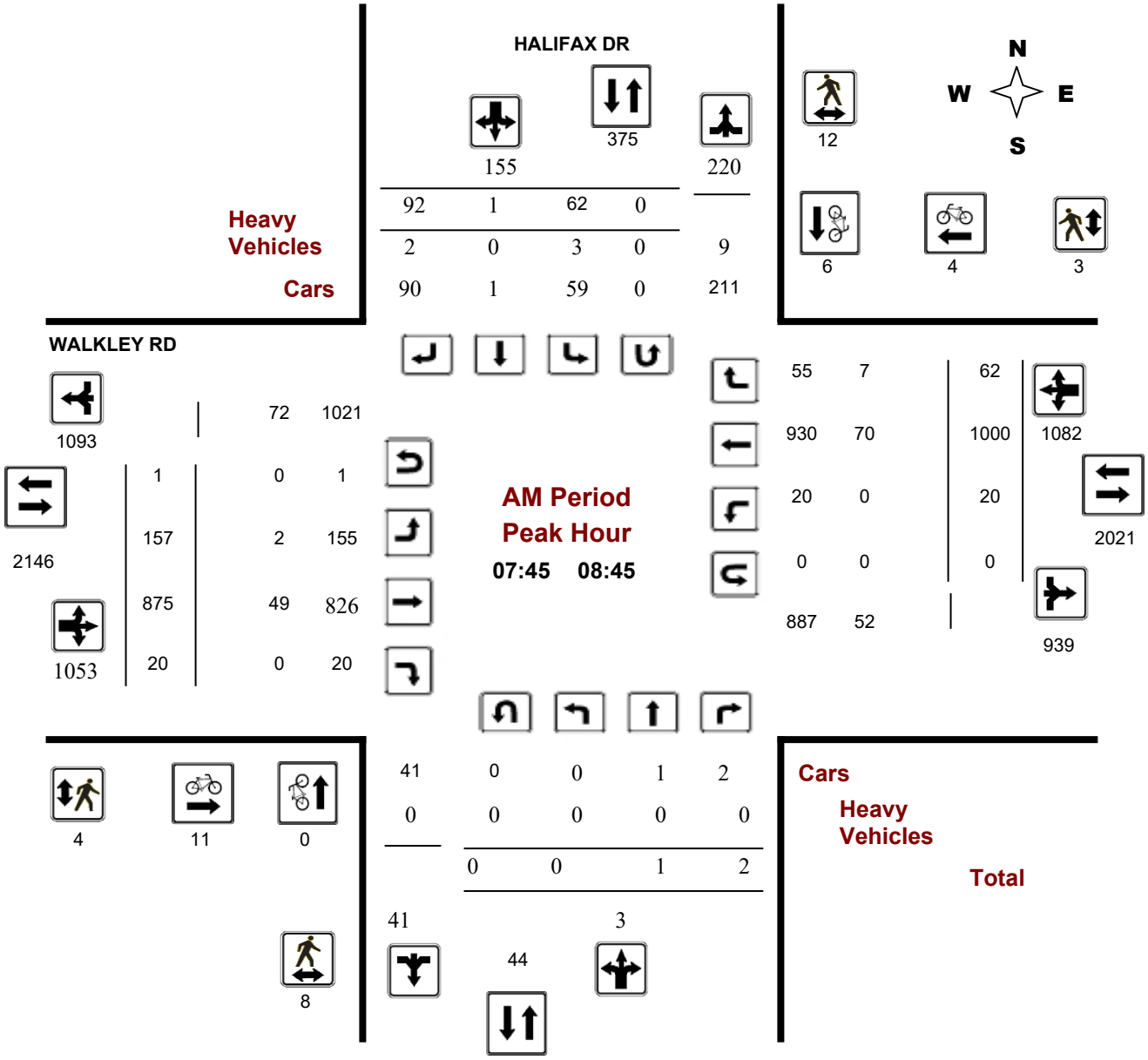
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

HALIFAX DR @ WALKLEY RD

Survey Date: Monday, July 23, 2007 **WO No:** 22685

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



Comments

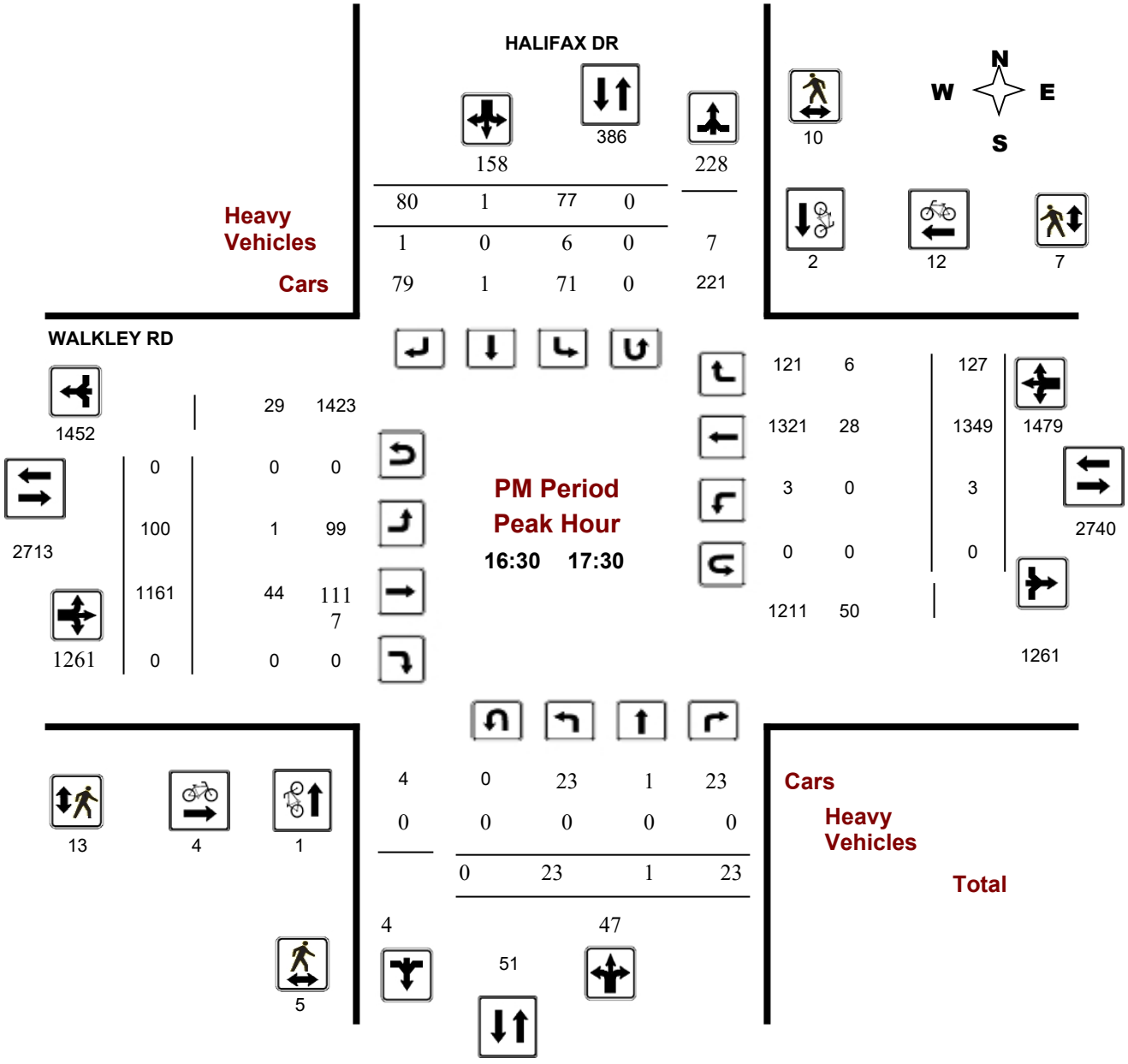
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

HALIFAX DR @ WALKLEY RD

Survey Date: Monday, July 23, 2007 **WO No:** 22685

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



Comments

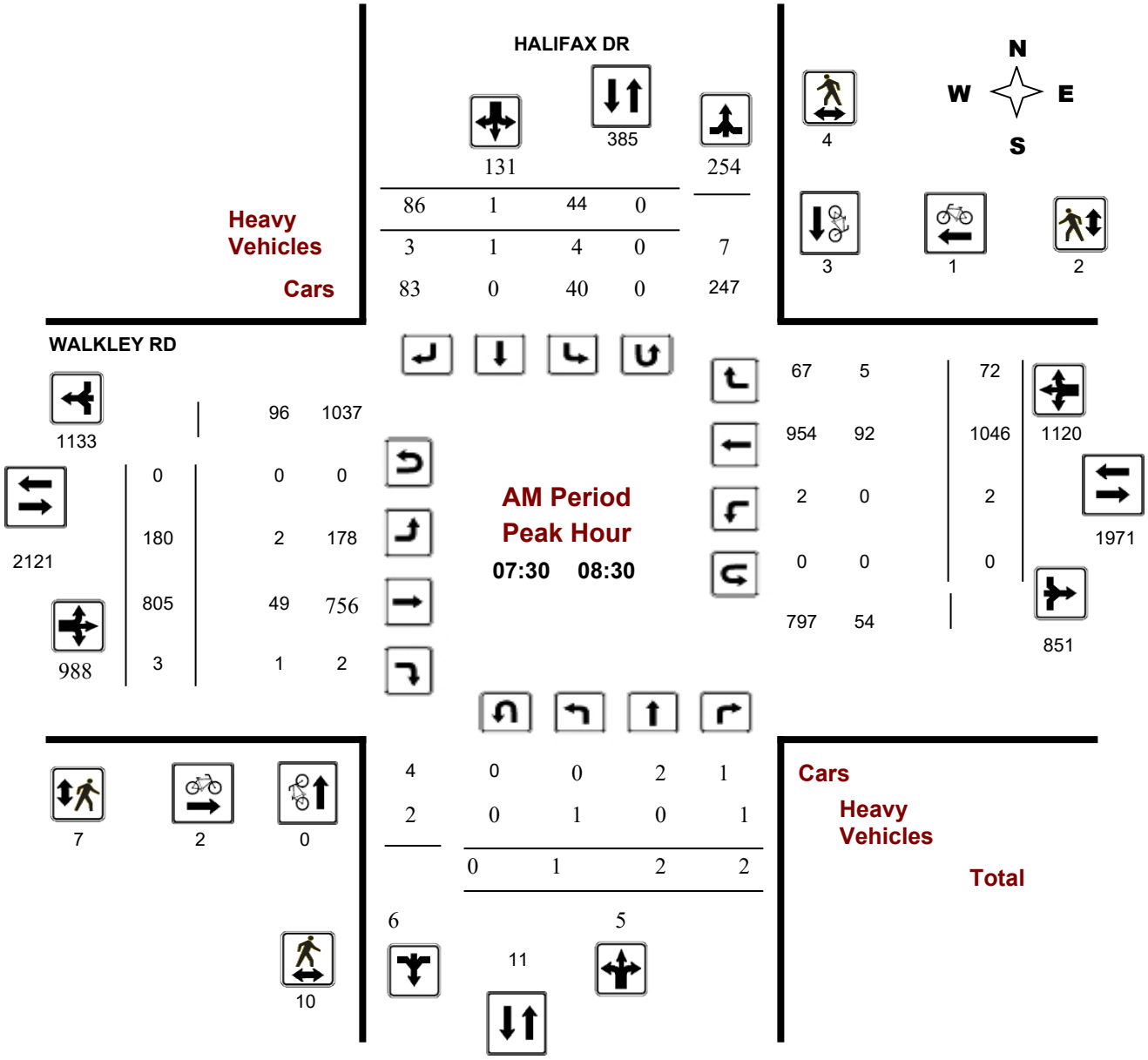
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

HALIFAX DR @ WALKLEY RD

Survey Date: Wednesday, June 23, 2010 **WO No:** 27070

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



Comments

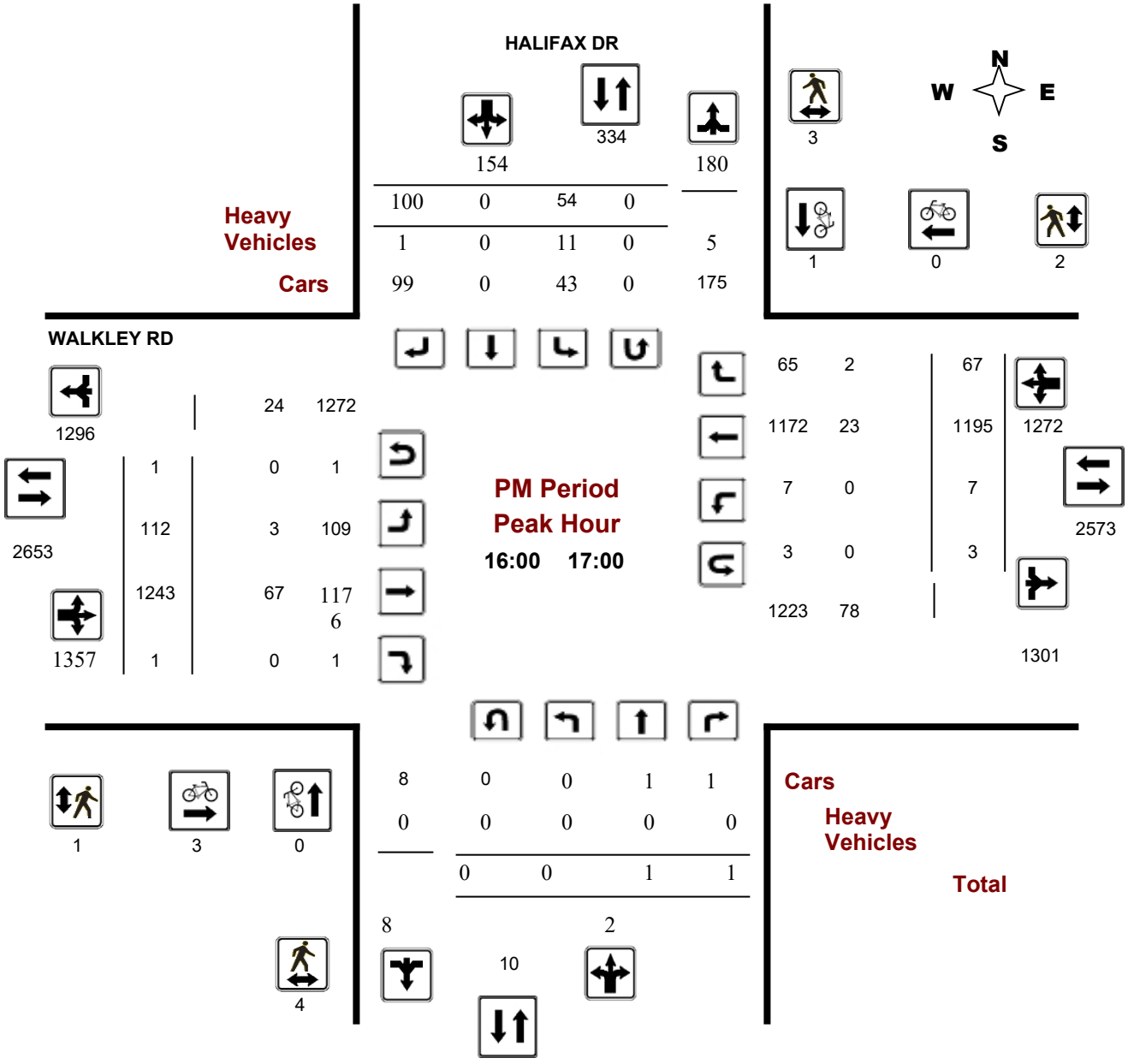
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

HALIFAX DR @ WALKLEY RD

Survey Date: Wednesday, June 23, 2010 **WO No:** 27070

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



Comments

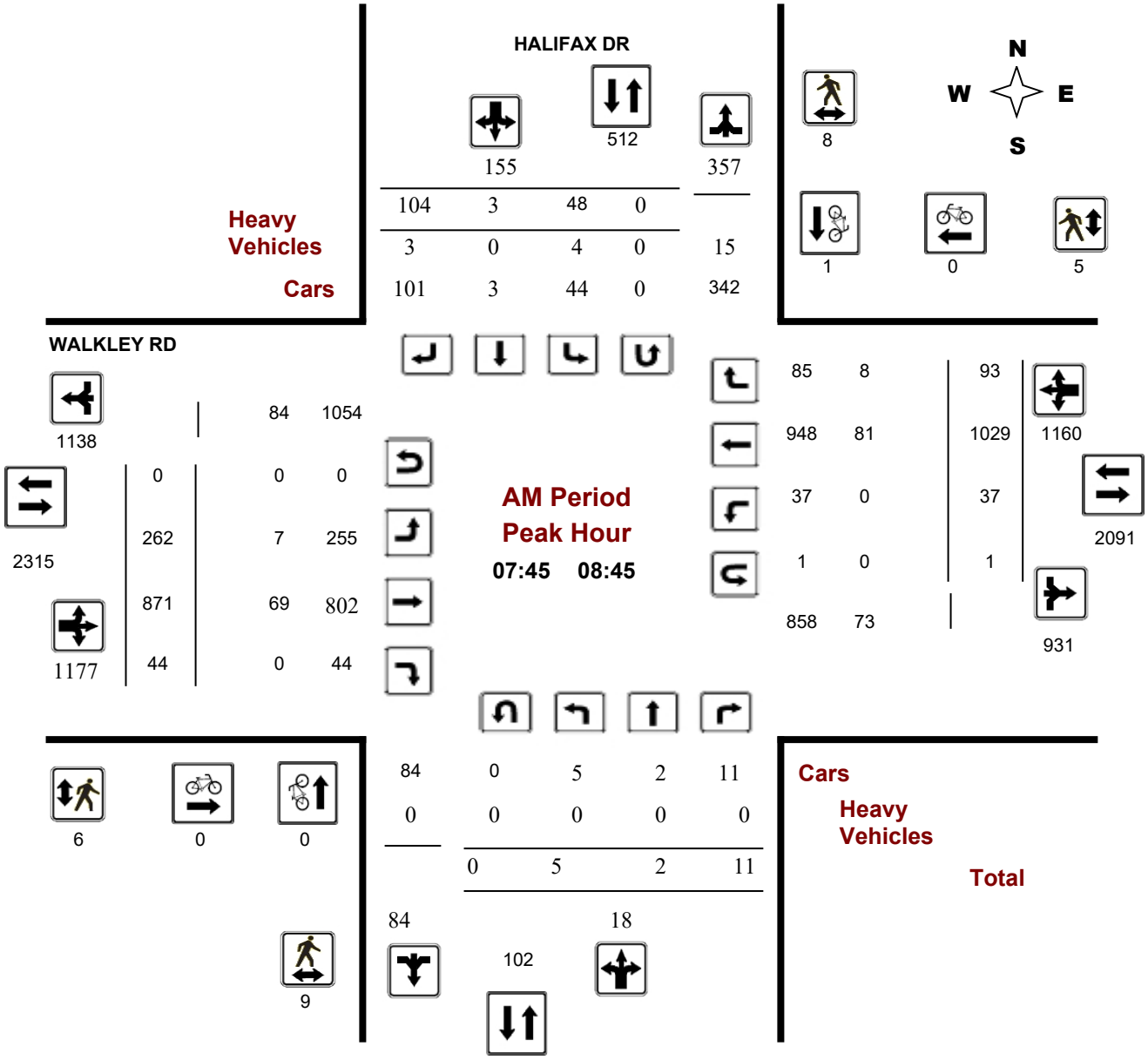
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

HALIFAX DR @ WALKLEY RD

Survey Date: Wednesday, December 07, 2016 **WO No:** 36597

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



Comments

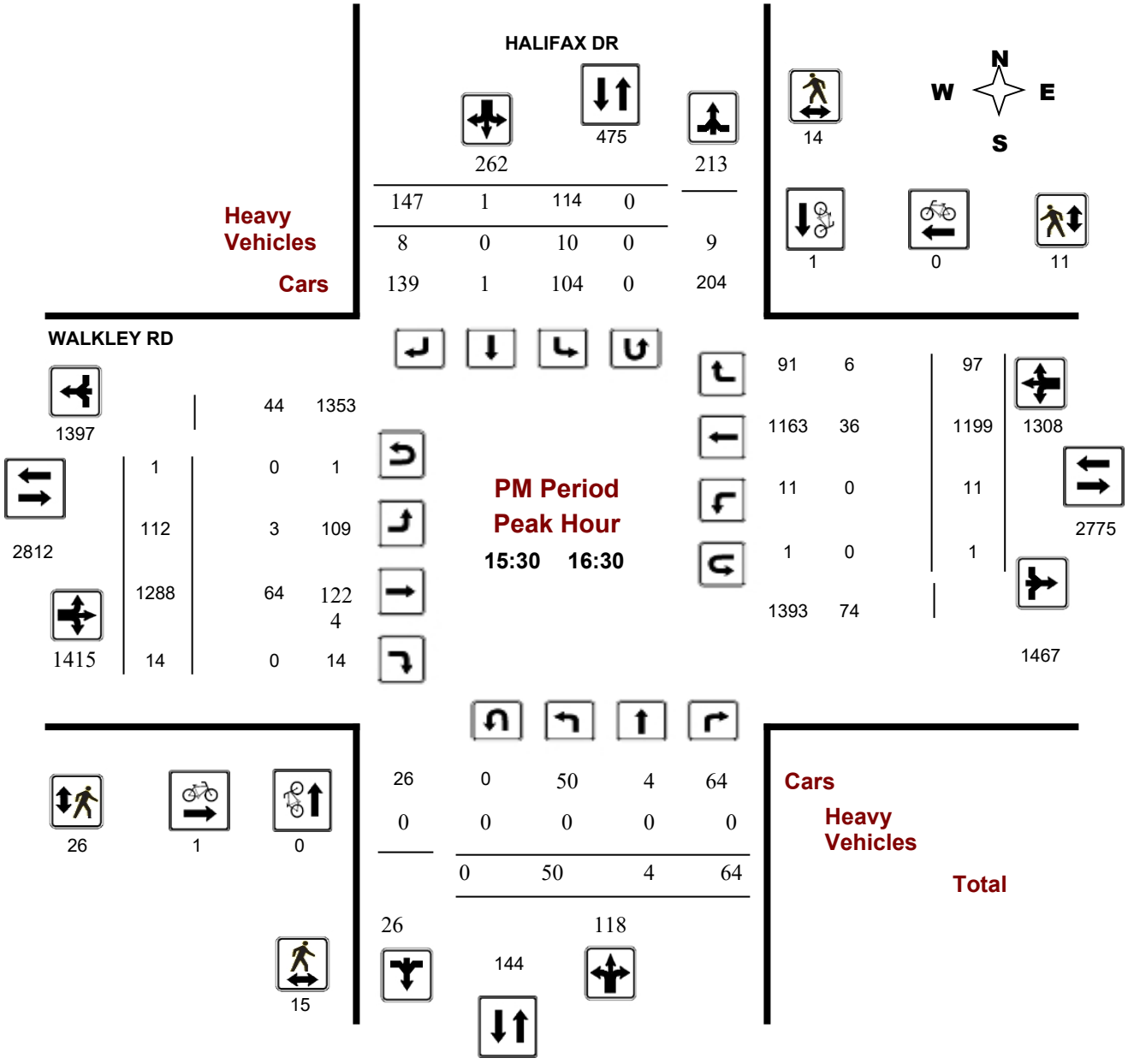
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

HALIFAX DR @ WALKLEY RD

Survey Date: Wednesday, December 07, 2016 **WO No:** 36597

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



Comments

Appendix B

TRANS Tables

Trans Tables

Table 3: Recommended Residential Person-trip Rates

ITE Land Use Code	Dwelling Unit Type	Period	Person-Trip Rate
210	Single-detached	AM	2.05
		PM	2.48
220	Multi-Unit (Low-Rise)	AM	1.35
		PM	1.58
221 & 222	Multi-Unit (High-Rise)	AM	0.80
		PM	0.90

Table 4: Adjustment Factors for Residential Trip Generation Rates

Factor	Application	Apply To	Period	Value
Peak Period Conversion Factor	**Peak period to peak hour conversion.** Because the 2020 TRANS Trip Generation Study reports trip generation rates by peak period, factors must be applied if the practitioner requires peak hour rates. In practice, the conversion to peak hour trip rates should occur **after** the application of modal shares.	Person-trip rates per peak period	AM	0.50
			PM	0.44
		Vehicle trip rates per peak period	AM	0.48
			PM	0.44
		Transit trip rates per peak period	AM	0.55
			PM	0.47
		Cycling trip rates per peak period	AM	0.58
			PM	0.48
		Walking trip rates per peak period	AM	0.58
			PM	0.52

Table 9: Recommended Vehicle Trip Directional Splits (Peak Period)

ITE Land Use Code	Dwelling Unit Type	Period	Inbound	Outbound
210	Single-detached	AM	30%	70%
		PM	62%	38%
220	Multi-Unit (Low-Rise)	AM	30%	70%
		PM	56%	44%
221 & 222	Multi-Unit (High-Rise)	AM	31%	69%
		PM	58%	42%

Table 8: Residential Mode Share for High-Rise Multifamily Housing

District	Period	Mode				
		Auto Driver	Auto Pass.	Transit	Cycling	Walking
Ottawa Centre	AM	18%	2%	26%	1%	52%
	PM	17%	9%	21%	1%	52%
Ottawa Inner Area	AM	26%	6%	28%	5%	34%
	PM	25%	8%	21%	6%	39%
Île de Hull	AM	27%	3%	37%	12%	21%
	PM	26%	8%	27%	11%	28%
Ottawa East	AM	39%	7%	38%	2%	13%
	PM	40%	14%	28%	3%	15%
Beacon Hill	AM	48%	9%	30%	3%	10%
	PM	52%	16%	28%	0%	4%
Alta Vista	AM	38%	12%	42%	2%	7%
	PM	45%	16%	28%	2%	9%
Hunt Club	AM	39%	6%	44%	1%	9%
	PM	44%	11%	35%	2%	9%
Merivale	AM	41%	6%	42%	2%	8%
	PM	41%	11%	33%	2%	13%
Ottawa West	AM	28%	11%	41%	3%	16%
	PM	33%	11%	26%	7%	23%
Bayshore/Cedarview	AM	40%	12%	38%	2%	8%
	PM	40%	15%	33%	1%	11%
Hull Périphérie	AM	48%	11%	30%	1%	10%
	PM	47%	15%	23%	3%	13%
Orleans	AM	54%	7%	29%	0%	10%
	PM	61%	13%	21%	0%	6%
South Gloucester / Leitrim	AM	50%	15%	25%	1%	9%
	PM	53%	17%	21%	1%	9%
South Nepean	AM	58%	6%	30%	2%	4%
	PM	54%	15%	25%	0%	7%
Kanata - Stittsville	AM	43%	26%	28%	0%	4%
	PM	55%	19%	21%	0%	5%
Plateau	AM	53%	9%	35%	3%	1%
	PM	65%	7%	25%	2%	1%
Aylmer	AM	45%	17%	25%	0%	13%
	PM	31%	21%	23%	4%	20%
Pointe Gatineau	AM	44%	15%	24%	3%	14%
	PM	52%	15%	20%	2%	11%
Gatineau Est	AM	53%	10%	25%	0%	12%
	PM	61%	10%	25%	0%	4%
Masson-Angers	AM	63%	15%	19%	0%	3%
	PM	64%	18%	16%	0%	1%
Other Rural Districts	AM	63%	15%	19%	0%	3%
	PM	64%	18%	16%	0%	1%

Appendix C

TDM Checklists

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
☒	Checked box indicates that the design will include this item

		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	☐ Not applicable
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)	☐ LS GP Inc is reviewing the option
	3.	**TRANSIT**	
	3.1	**Customer amenities**	
BASIC	3.1.1	Provide shelters, lighting and benches at any on-site transit stops	☐ Shelters are already in place on the street, transit will not be on-site
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	☐ Not Applicable
BETTER	3.1.3	Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	☐ Not Applicable

		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)*	☐ Designated spaces will not be provided at this time
	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	☐ LS GP Inc is reviewing the option
	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)	☐

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

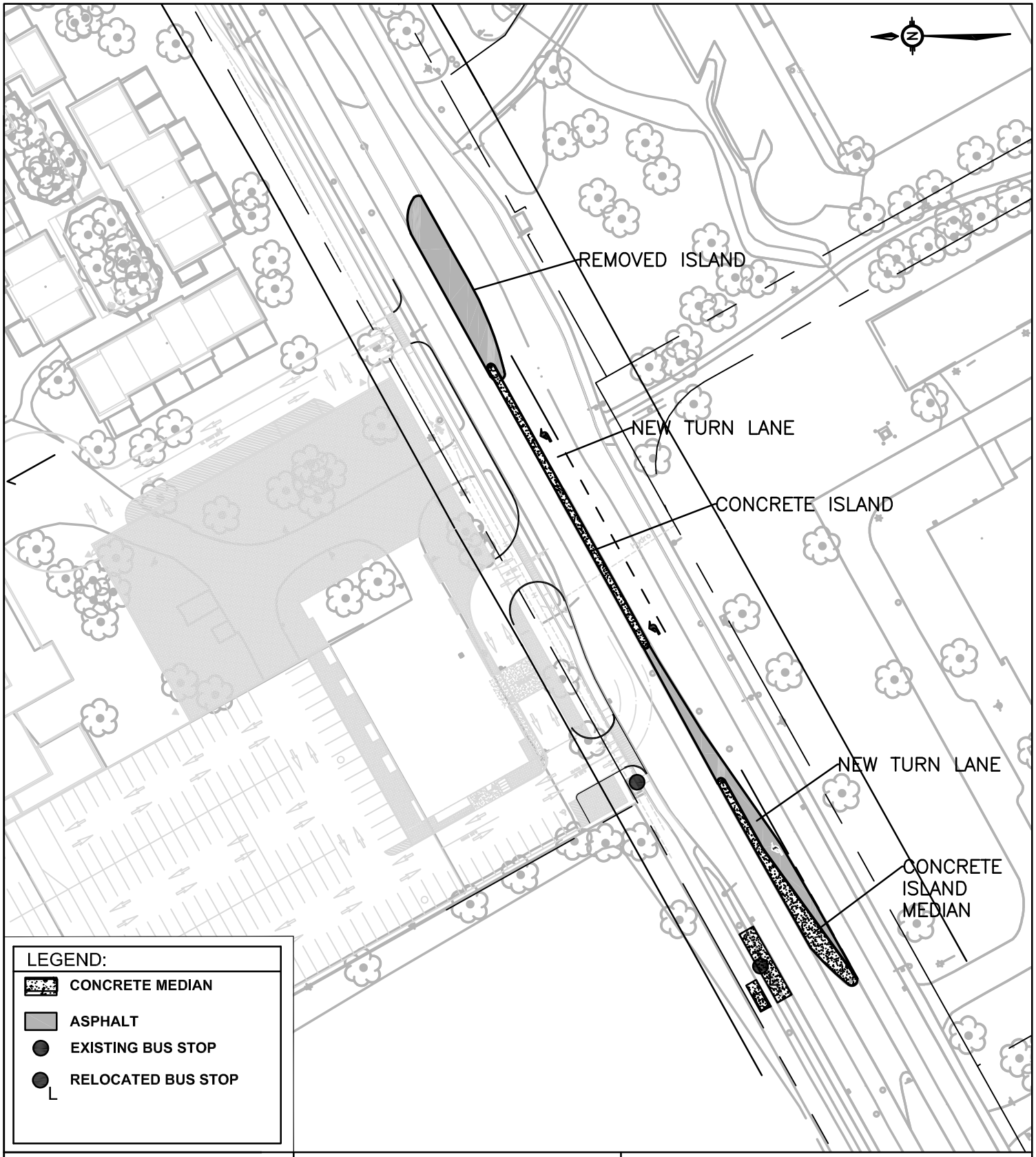
		TDM measures: *Residential developments*	Check if proposed & add descriptions
	1.	**TDM PROGRAM MANAGEMENT**	
	1.1	**Program coordinator**	
BASIC ★	1.1.1	Designate an internal coordinator, or contract with an external coordinator	☐ Not to be provided
	1.2	**Travel surveys**	
BETTER	1.2.1	Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress	☐ Not to be provided
	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)*	☒
	2.2	**Bicycle skills training**	
BETTER	2.2.1	Offer on-site cycling courses for residents, or subsidize off-site courses	☐ Not to be provided

		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)*	☒
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	☐ Not to be provided
BETTER	3.2.2	Offer at least one year of free monthly transit passes on residence purchase/move-in	☐ Not to be provided
	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)*	☐ Transit service is already servicing the property
	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)	☐ Not applicable
	4. CARSHARING & BIKESHARING		
	4.1	**Bikeshare stations & memberships**	
BETTER	4.1.1	Contract with provider to install on-site bikeshare station (*multi-family)*	☐ Not to be provided
BETTER	4.1.2	Provide residents with bikeshare memberships, either free or subsidized *(multi-family)*	☐ Not to be provided
	4.2	**Carshare vehicles & memberships**	
BETTER	4.2.1	Contract with provider to install on-site carshare vehicles and promote their use by residents	☐ LS GP Inc is reviewing this option
BETTER	4.2.2	Provide residents with carshare memberships, either free or subsidized	☐ Not to be provided
	5. PARKING		
	5.1	**Priced parking**	
BASIC ★	5.1.1	Unbundle parking cost from purchase price *(condominium)*	☐ LS GP Inc is reviewing this option
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	☐ Not to be provided

Appendix D

RMA Drawing and Cost Estimate



TRANSPORTATION SERVICES DEPARTMENT

PROPOSED ROADWAY MODIFICATIONS

WALKLEY ROAD WEST OF HALIFAX DRIVE

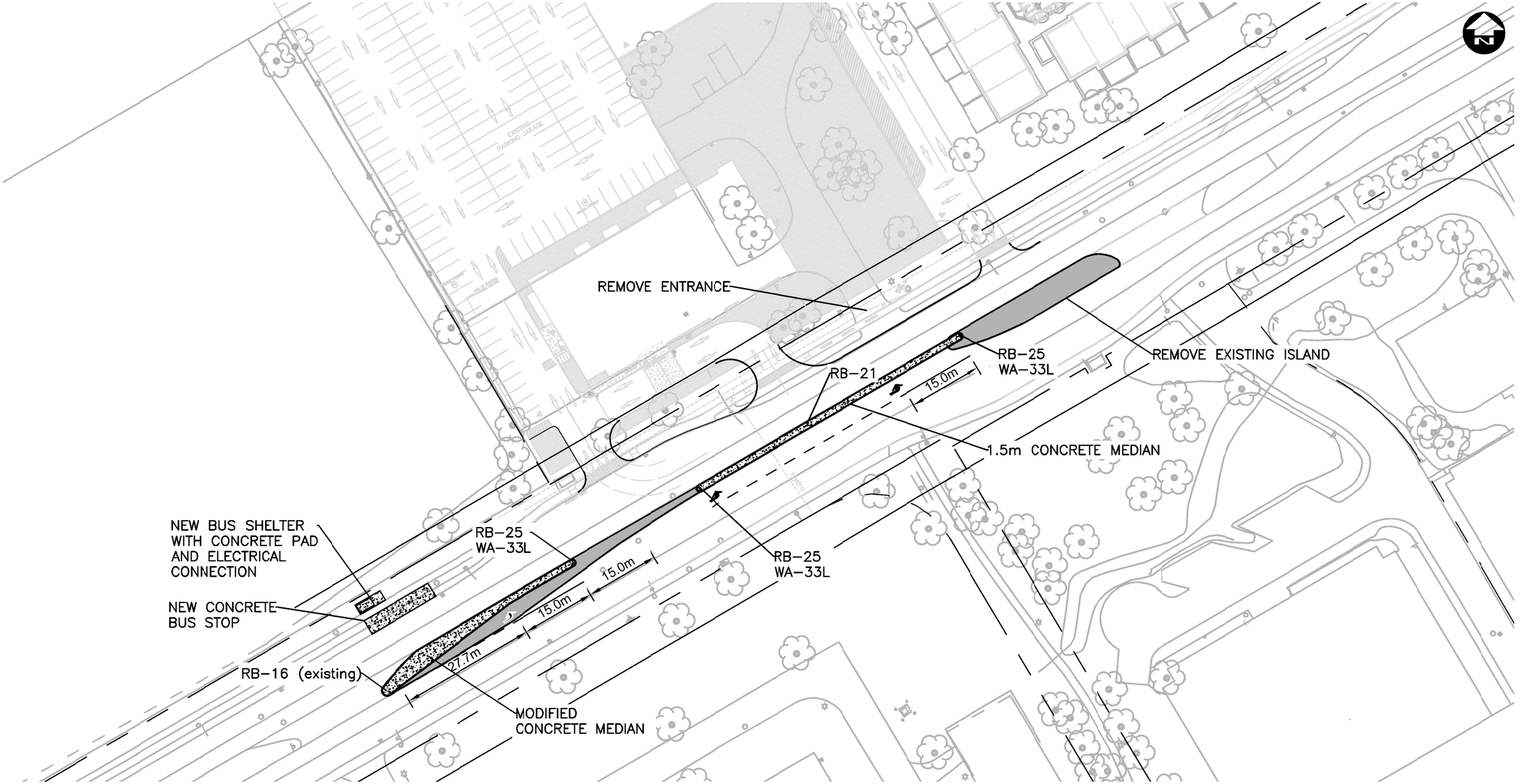
TRANSPORTATION ENGINEERING SERVICES

Approved By: X. XXX	Drawing No.: RMA-201x-XXX-XXXX
Completed By: DILLON CONSULTING LTD	
Scale: 1:1000	Date: MAR 2019

Walkkley Road Apartments CLASS D - CONSTRUCTION COST ESTIMATE						
No.	**Description**	**Spec**	**Unit**	**Quantity**	**Unit Price**	**Estimated Cost**
ROADWAY						
1	Traffic and Pedestrian Control		LS	1	$10,000	$10,000.00
2	Erosion and Sediment Control	805, F-1005	LS	1	$1,800	$1,800.00
3	Contract Initiation	F-1006	LS	1	$3,000	$3,000.00
4	Earth Excavation - Including Removals	L120.02, 2206, 510, F-2060, F-4104	m3	312	$40	$12,480.00
5	Earth Fill - Borrow	212	m3		$38	$0.00
6	Granular A	N280.01, 314, F-	t	334	$30	$10,032.12
7	Granular B	N280.03, 314, F-	t	272	$41	$11,161.51
8	Top Lift Asphalt	F-3101, F-3106, F-3130	t	55	$285	$15,545.84
9	Bottom Lift Asphalt	F-3101, F-3106, F-3130	t	93	$230	$21,392.90
10	Saw Cutting	510	m	353	$7	$2,471.00
11	Monolithic Concrete Median	351, 904, F-3510, F-9040, F-9045	m^2	266	$115	$30,590.00
12	Asphalt removal - Partial Depth	510	m^2	53	$25	$1,327.50
13	Pavement marking and signage		LS	1	$4,000	$4,000.00
					ROAD SUB-TOTAL	**$123,800.87**
BUS STOP RELOCATION						
1	Shelter Relocation		LS	1		$0.00
2	Conduit w/ Trenching	106, 603	m	50	$25	$1,250.00
3	Electrical Wiring					
4	Concrete Pad	351, F-3150	LS	1	$2,120	$2,120.00
5	Sidewalk	351, F3510, F-9040, F-9045	m^2	47	$170	$7,990.00
					BUS STOP RELOCATION SUB-TOTAL	**$11,360.00**
					CONSTRUCTION TOTAL	**$135,160.87**
					Engineering and Architectural Services 20.0%	$27,032.17
					Utilities 10.0%	$13,516.09
					Miscellaneous 5.0%	$6,758.04
					SUB-TOTAL	**$182,467.17**
					Contingency 40.0%	$72,986.87
					TOTAL PRELIMINARY COST ESTIMATE (PLUS HST)	**$255,454**

Appendix E

Functional Design Drawing



LEGEND

PROPERTY LINE

CONCRETE

NEW PAVEMENT

SCALE 1:750

0m 10m 20m

DILLON CONSULTING

LS GP INC
2190 HALIFAX ROAD APARTMENTS
FUNCTIONAL DESIGN
MEDIAN MODIFICATION

DATE: MARCH 2019
PROJECT: 19-9285
STATUS: DRAFT
CREATED BY: ETG
CHECKED BY: LDG

SHEET: 1

Ottawa

Appendix F

City of Ottawa Private Approach ByLaw

6.0

Section 25 - Private approaches for public and institutional purposes, commercial and industrial properties and multiple residential dwellings

1. The design, construction and location of private approaches for properties used for public purposes, institutional purposes, commercial purposes, industrial purposes or multiple residential dwellings shall be in accordance with the following:
    1. The maximum number of private approaches permitted shall be as follows:
        1. less than 20 metres of frontage, one (1) two-way private approach;
        2. 20 metres to 34 metres of frontage, one (1) two-way private approach or two (2) one-way private approaches;
        3. 35 metres to 45 metres of frontage, two (2) two-way private approaches or two (2) one-way private approaches;
        4. 46 metres to 150 metres of frontage, one two-way private approach and two one-way private approaches or two two-way private approaches; and
        5. for each additional 90 metres of frontage in excess of 150 metres, one two-way private approach or two one-way private approaches.
    2. On a corner lot or a lot abutting on more than one highway, the provisions of paragraph (a) hereof shall apply to each frontage separately.
    3. No private approach intended for two-way vehicular traffic shall exceed 9 metres in width at the street line, and at the curb line or roadway edge.
    4. No private approach intended for one-way vehicular traffic shall exceed 7.5 metres in width at the street (2015-207) line, and at the curb line or roadway edge.
    5. Despite the provisions of paragraphs (c) and (d) hereof, private approaches in excess of 9 metres in width at the street line, and at the curb line or edge of roadway, may be permitted for off-street bus loading areas, transport loading areas and stations operated by the Ottawa Fire Department.
    6. Despite clauses (a), (c) and (d), in the Mature Neighbourhoods the maximum widths of a private approach shall be determined in accordance with Section 139(10) of the Zoning By-law.
    7. The distance between the nearest limits of a private approach intended for two-way vehicular traffic and any other private approach to the same property shall be a minimum of 9 metres measured at the street line, and at the curb line or roadway edge.
    8. The minimum distance between the nearest limits of any two private approaches intended for one-way vehicular traffic to or from to the same property must not be less than 2 metres, measured at the street line, and at the curb line or roadway edge.
    9. Where, in the opinion of the General Manager, it is desirable to provide a median between two private approaches intended for one-way operation, such median shall have a minimum width of 2 metres.
    10. Where a median is provided pursuant to paragraph (i), the length of the median on private property shall be determined by the General Manager.

11. All one-way private approaches shall be designated with suitable signs erected in a conspicuous location adjacent to the highway to indicate the direction of traffic for which the private approach is intended, and all signs shall be erected and maintained by the owner to the satisfaction of the General Manager.
12. Despite the provisions of paragraphs (h) and (i) hereof, there shall be no more than two one-way private approaches on any given 35 metres of frontage.
13. Despite the provisions of paragraphs (a) and (g), where a property abuts on or is within 46 metres of an arterial or major collector highway as designated on the City of Ottawa Official Plan:
    1. in the case of a shopping centre, a public parking lot, a parking lot for the use of customers of a retail or wholesale business, a public garage, a personal service establishment or an eating establishment, any of which has a parking area which can accommodate the number of parking spaces set out in Column 1 of the following Table, the distances are calculated in accordance with Columns 1,3 and 4 of the following Table; and
    2. in the case of a hotel, an office building, an apartment building, a property used for public purposes, or an industrial development, any one of which has a parking area which can accommodate the number of parking spaces set out in Column 2 of the following table, the distances are calculated in accordance with Columns 2, 3 and 4 of the following Table;

    no private approach shall be constructed so that the distance between the nearest limit of a private approach and the nearest intersecting street line or its extension is less than the distance set out in Column 3 of the said table, or so that the distance between the nearest limit of a private approach intended for two-way vehicular traffic and any other private approach to the same property is less than the distance set out in Column 4 of the said table and all distances so referred to shall be measured at the street line:

COLUMN 1 NUMBER OF PARKING SPACES	COLUMN 2 NUMBER OF PARKING SPACES	COLUMN 3 DISTANCE BETWEEN THE PRI AND NEAREST INTERSECTING STREET LIN
Up to 49	20 to 99	18 metres
50 to 99	100 to 199	30 metres
100 to 199	200 to 299	45 metres
200 to 299	300 or more	60 metres
300 or more		75 metres

14. Where an owner whose property abuts two or more highways is unable to comply with the provisions of paragraph (m) of this section, a private approach shall be permitted only on the highway carrying the lesser volume of vehicular traffic and the private approach shall be located as far from the nearest intersections as possible, provided that in cases where the vehicular traffic volumes on the abutting highway are essentially

equal, a private approach shall be permitted only on the highway which allows the private approach to be located as far from the nearest intersection as possible.

15. No person shall construct a private approach within an intersection or on the corner radius of an intersection or within 1.5 metres of the point of tangency of such radius or so that the distance between the nearest limit of a private approach and the intersecting street line or its extension is less than 6 metres.
16. No person shall construct a private approach within 3 metres of any property line measured at the highway line and at the curb or the edge of the roadway unless the property abuts only one public highway and the width of the frontage does not allow a private approach width as required by this by-law in addition to the 3 metres offset from the adjoining property lines in which case the General Manager may reduce the off-set to a minimum of 0.3 metres provided that the proposed access is located,
    1. a safe distance from the access serving the adjacent property,
    2. in such a manner that there are adequate sight lines for vehicles exiting from the property, and
    3. in such a manner that it does not create a traffic hazard.
17. Subject to paragraph (p), in the case of a private approach including a culvert, the 3 metre setback from the adjacent property line shall be from the end of the culvert, headwall or closest part of the private approach to the adjacent property line.
18. Despite paragraph (p), a private approach may be constructed in such a manner that it is less than 3 metres from an adjoining property measured at the highway line and at the curb line or edge of the roadway if it is approved through Site Plan Control in accordance with the provision of the Planning Act and the City's Site Plan Control By-law.
19. No person shall construct a private approach serving any parking area with a grade exceeding 2% and the grade on the private approach shall descend in the direction of the roadway.
20. No person shall construct a private approach serving a parking area with less than 50 parking spaces, with a grade exceeding 2% within the private property for a distance of 6 metres from the highway line or future highway line.
21. No person shall construct a private approach serving a parking area with more than 50 parking spaces, with a grade exceeding 2% within the private property for a distance of 9 metres from the highway line or future highway line.
22. Despite paragraphs (t) and (u), the General Manager may issue a permit for a private approach subject to such conditions and restrictions as the General Manager may deem necessary provided that the proposed access is located;
    1. a safe distance from the access serving the adjacent
    2. in such a manner that there are adequate sight lines for vehicles exiting the property; and

3. in such a manner that it does not create a traffic hazard. (all of (f) to (v) herein 2015-107)