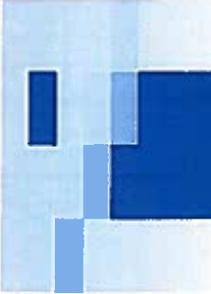


# ATTACHMENT

**D**

TRAFFIC  
IMPACT  
STATEMENT



**2032/2050 Robie Street Traffic Impact Statement**

April 2014

Prepared for  
Servant Dunbrack McKenzie & MacDonald Ltd

**JRL consulting**

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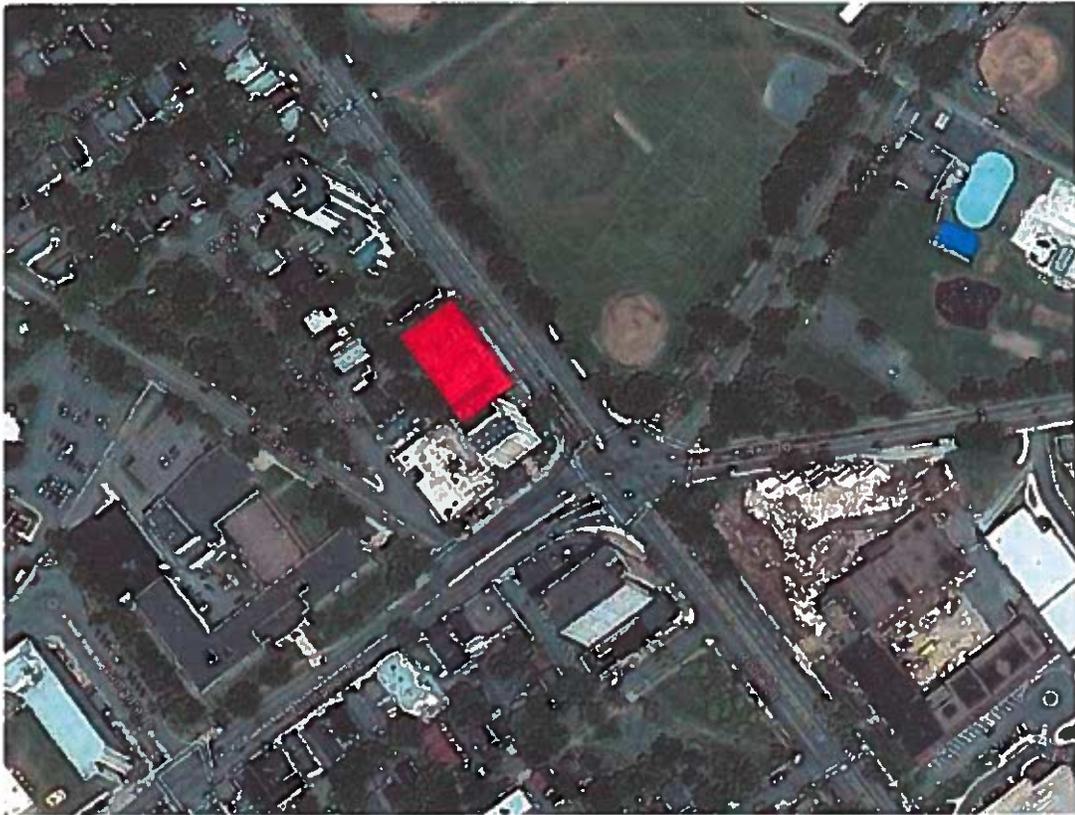
Prepared by  
Jeff R. LeBlanc, P.Eng., RCDD

# 1 Introduction

## 1.1 Background

Servant Dunbrack McKenzie & MacDonald Ltd. and Kassner/Goodspeed Architects, on behalf of Westwood Developments, are preparing a proposal to redevelop 2032 Robie Street that is currently occupied by a funeral home and associated parking along with 2050 Robie Street that is currently occupied by a single family home. Exhibit 1.1 shows the site in red in the context of the surrounding area in Halifax.

Exhibit 1.1 – 2032 and 2050 Robie Street in Halifax, Nova Scotia



Source: Google Earth

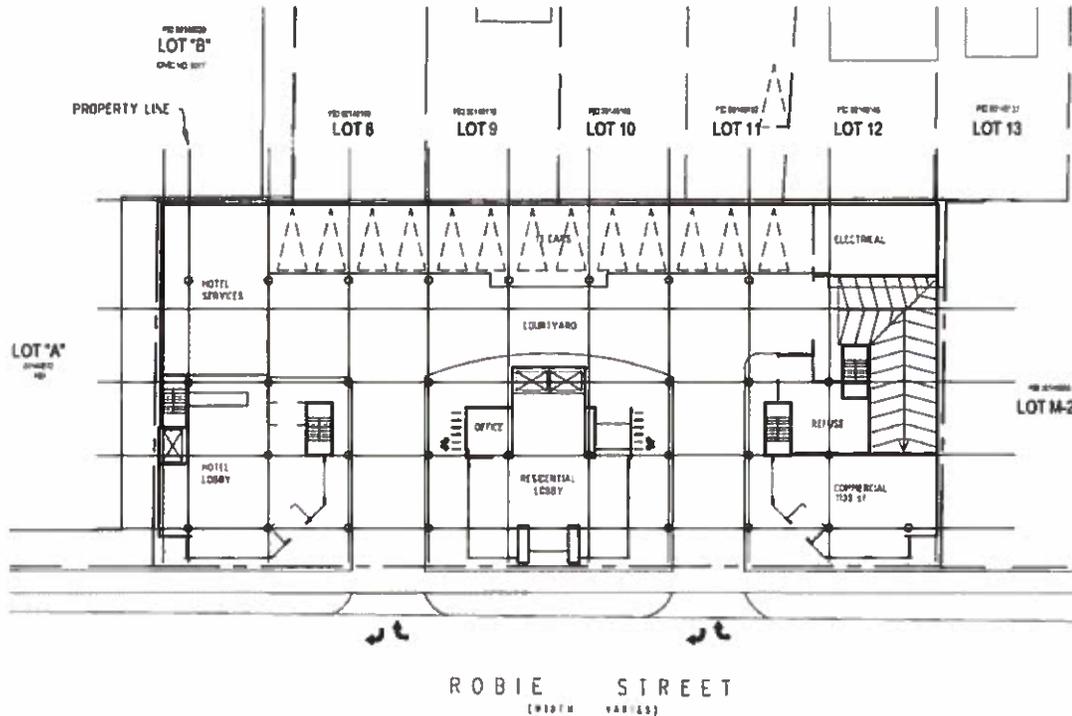
The proposed development will be 18 stories high and will include the following:

- 100 residential suites
- 55,600 square feet of general office space
- Parking for 106 cars

The existing funeral home is 6,200 square feet.

The proposed site plan shows a one way driveway in and a one way drive way out on Robie Street for southbound traffic only. Refer to Exhibit 1.2 for the proposed ground floor plan at 2032/2050 Robie Street in Halifax, Nova Scotia as provided by Servant Dunbrack McKenzie & MacDonald Ltd. and Kassner/Goodspeed Architects.

Exhibit 1.2 – 2032-2050 Robie Street Proposed Development Ground Floor Plan



JRL consulting inc. was retained by Servant Dunbrack McKenzie & MacDonald Ltd. to prepare a Traffic Impact Statement (TIS) to assess the potential traffic impacts of the proposed redevelopment at 2032/2050 Robie Street in Halifax, Nova Scotia

The purpose of a Traffic Impact Statement is to provide a high level overview of a proposed development including estimates of site-generated traffic along with an initial review of existing traffic counts in the general area of the proposed development. This information will form part of the initial application to HRM which will be reviewed by staff and council.

A detailed traffic impact study in accordance with Halifax Regional Municipality's *Guidelines for the Preparation of Transportation Impact Studies* may be required if the project proceeds to the next phase of the Development Application process. We are pleased to submit this report which summarizes our findings and provides the information required by HRM for review.

## 2 Existing Traffic Conditions

### 2.1 Description

The proposed redevelopment is located on the peninsula of Halifax near the eastern terminus of Quinpool Road at its intersection with Robie Street. The proposed site plan shows access from Robie Street for southbound traffic only as there is a median on Robie Street in this area near the Halifax Commons. Exhibit 2.1 summarizes HRM's Characteristics of Street Classes.

Exhibit 2.1 - HRM Characteristics of Street Classes

Characteristic	Arterial Street	Major Collector	Minor Collector	Local Industrial	Local Street
1. Traffic Service Function	First Consideration	Traffic movement primary consideration, land access secondary consideration, some parking	Traffic movement of equal importance with land access, parking permitted	Traffic movement secondary consideration with land access primary consideration, parking permitted	Traffic movement secondary consideration with land access primary consideration, parking permitted
2. Land Access Function	Limited Access with no parking				
3. Range of design traffic average daily volume	More than 20,000	12,000 to 20,000 or more	Up to 12,000	Less than 3,000	Less than 3,000
4. Characteristics of traffic flow	Uninterrupted flow except at signals; w/ pedestrian overpass	Uninterrupted flow except at signals and crosswalks	Interrupted flow	Interrupted flow	Interrupted flow
5. Average running speed in off-peak conditions	50-70 km/hr	40-60 km/hr	30-50 km/hr	15-30 km/hr	15-30 km/hr
6. Vehicle types	All types	All types but trucks may be limited	All types with truck limitation	All types	Passenger and service vehicles, transit buses; large vehicles restricted
7. Connects to	Expressways, arterials, major collectors, minor collectors	Expressways, arterials, major collectors, minor collectors, some locals	Arterials, major collectors, minor collectors, locals	Some major collectors, minor collectors, locals	Some major collectors, minor collectors, locals

**Quinpool Road** is major collector that runs from the Armdale Rotary to Robie Street and is a major artery for traffic on the Halifax Peninsula. It has two lanes in each of the eastbound and westbound lanes near the intersection with Robie Street. It is located in a major retail area in Halifax and provides direct access to many restaurants, offices, retail stores as well as residential homes and apartments. There are concrete sidewalks built to HRM specifications on Quinpool Road. The posted speed limit is 50km/hr.

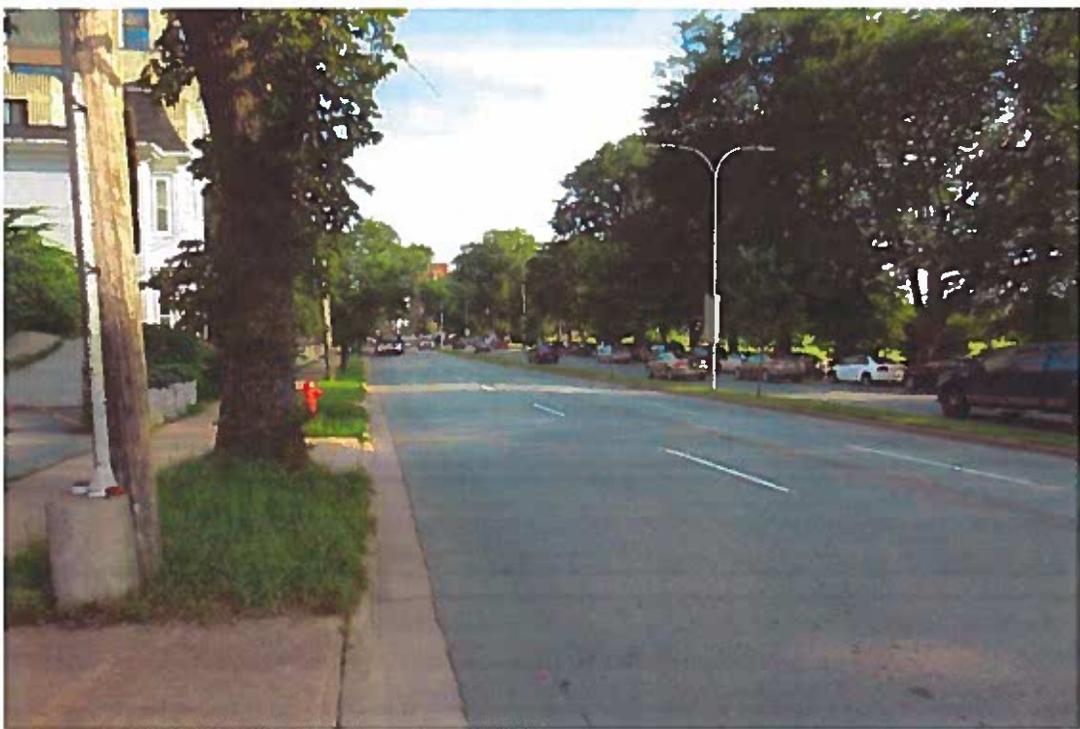
**Robie Street** is major collector that runs from the south end to the north end of the Halifax Peninsula and is a major artery for traffic. There are concrete sidewalks built to HRM specifications on Robie Street. The posted speed limit is 50km/hr. Robie Street has a dedicated south bound left turn lane, two southbound through lanes and a channelized southbound right turn lane at the Quinpool Road/Robie Street/Bell Road/Cogswell Street intersection in front of the proposed development.

Refer to Exhibit 2.2 for photos of the Study Area around the proposed redevelopment site on Robie Street in Halifax, Nova Scotia.

Exhibit 2.2 – Study Area Photos



2032-2050 Robie Street looking south



Robie Street looking north at 2032/2050 Robie Street



Robie Street looking south at 2032/2050 Robie Street



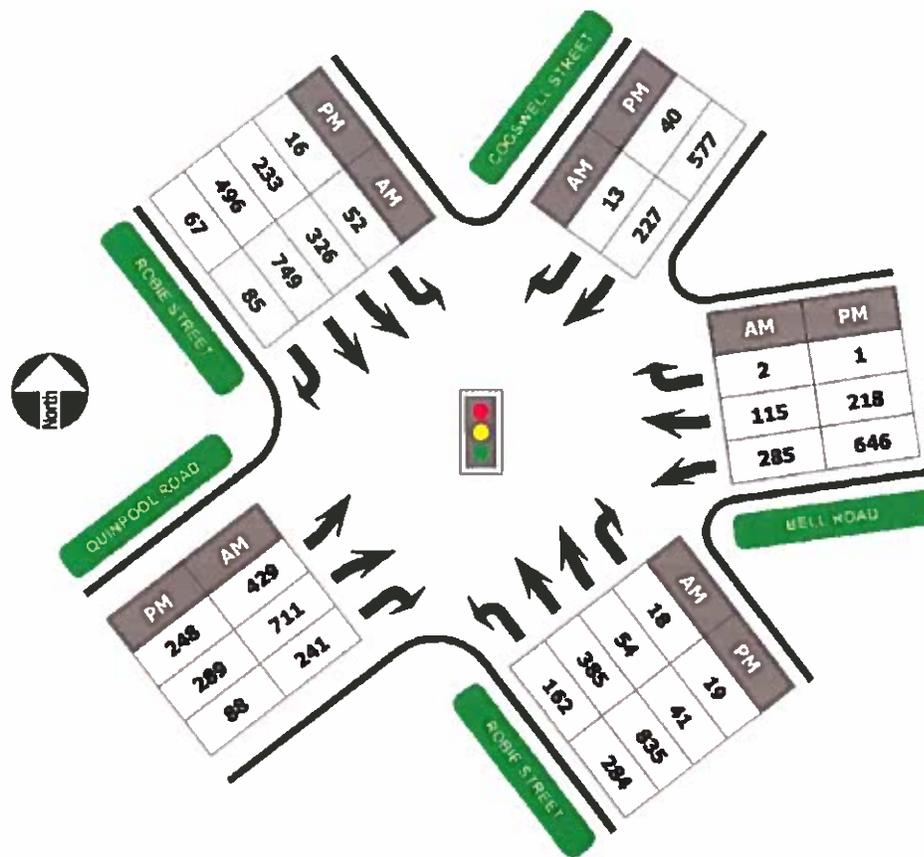
Robie Street at Quinpool Road/Cogswell Street/Bell Road Intersection

## 2.2 Existing Traffic Volumes

We completed a site review of the proposed redevelopment and analyzed the existing transportation network in the general area. Quinpool Road and Robie Street are very busy servicing a number of existing commercial developments including fast food restaurants, retail stores, restaurants, office buildings a hotel and the Halifax Commons Park. The proposed redevelopment is located near the signalized Quinpool Road/Robie Street/Bell Road/Cogswell Street intersection.

HRM completed AM and PM peak hour manual turning movement counts at this intersection in 2010 and we applied a two percent annual background growth factor to these counts to provide an estimate of current 2013 peak hour traffic volumes as summarized in Exhibit 2.3.

Exhibit 2.3 – Quinpool/Robie St/Bell Rd/Cogswell St Estimated Peak Hour Traffic Volumes 2013



## 2.3 Existing Trip Distribution

HRM manual turning movement counts at the Quinpool Road/Robie Street/Bell Road/Cogswell Street intersection provide an accurate picture of current trip distribution in the study area and we expect that traffic generated by the proposed redevelopment will follow similar patterns.

## 2.4 Transit and Pedestrians

Quinpool Road and Robie Street are well serviced by Metro Transit through multiple routes on these major arteries.

There are concrete sidewalks on all sides of all streets within the area surrounding the proposed development and we expect pedestrians will use these sidewalks in normal volumes for this area with an increased of overall pedestrian volumes driven by the new residential and office components.

The proposed redevelopment at 2032 and 2050 Robie Street is well suited to take advantage of HRM's Active Transportation Program that aims to help residents bike, walk and use other human power ways to move around the city.

## 3 Site Generated Traffic

### 3.1 Trip Generation

The proposed redevelopment at 2032/2050 Robie Street will include a total of 100 residential apartment units along with 55,600 square feet of general office space.

The properties currently contain a 6,200 square foot funeral home and associated parking as well as a single family home. We reviewed Institute for Transportation Engineer's Trip Generation manual and there are no rates provided for a funeral home. There is a general consensus that trips generated by a funeral home are not consistent and are outside of the AM and PM peak hour periods that are used in traffic analysis. We completed online research and did find that some municipalities in the United States carry estimated daily traffic volumes for funeral homes based 1,000 square feet of gross floor area (GFA). The city of Orlando, Florida uses a rate of 9.32 vehicles per 1,000 sqft of GFA for 24-hour volumes. We did not include an estimate of theoretical existing traffic created by the funeral home since the majority of these trips are generated outside of the AM and PM peak hours.

We completed trip generation estimates using equations provided in Institute for Transportation Engineer's Trip Generation Manual Ninth Edition.

We used the following ITE Land Use Codes to assess site generated trips for the proposed redevelopment at 2032-2050 Robie Street:

- ITE Land Use 710 General Office Building

*"A general office building houses multiple tenants; it is a location where affairs of business, commercial or industrial organizations, or professional persons or firms are conducted. AN office building or buildings may contain a mixture of tenants, including professional services; insurance companies; investment brokers; and tenant services, such as bank or savings and loan institution, a restaurant or cafeteria and service retail facilities."* The unit of measurement for average vehicle trip ends is 1,000 Square Feet Gross Floor Area.

- ITE Land Use 220 Apartment

*"Apartments are rental dwelling units that are located within the same building with at least three other dwelling units, for examples quadrplexes and all types of apartment buildings."* The unit of measurement for average vehicle trip ends is dwelling units.

Exhibit 3.2 – Estimated Future Site Generated Traffic Volumes at 2032/2050 Robie Street

LAND USE	QUANTITY	AM PEAK			PM PEAK		
		TOTAL	ENTER	EXIT	TOTAL	ENTER	EXIT
ITE Land Use 220 Apartment	100	53	20%	80%	73	65%	35%
			11	42		47	25
ITE Land Use 710 General Office	55,600	120	88%	12%	141	17%	83%
			105	14		24	117
TOTAL		172	116	157	213	71	117

The addition of the 100 residential units at this location has the potential to reduce traffic entering the Halifax Peninsula in this urban infill scenario as the location is very close to downtown Halifax which will promote use of transit and walking for its residents who work in the downtown core.

## 4 Conclusions and Recommendations

- This Traffic Impact Statement has provided a high level overview of the proposed redevelopment of 2032-2050 Robie Street that will include 100 residential apartments and 55,600 square feet of general office space.
- It includes an estimate of total new site generated trips as well as an analysis of existing traffic volumes in the surrounding area.
- The residential component of the proposed redevelopment has potential to reduce traffic entering the peninsula if it attracts residents who currently live off the peninsula and work downtown. The close proximity to downtown as well as numerous key transit routes may reduce the estimated traffic generated by the residential apartments as provided in this report based on ITE rates.
- We estimate that the proposed redevelopment will generate additional net new traffic volumes of 172 vehicles in the AM peak hour and 213 vehicles in the PM peak hour after our analysis of the estimated trips generated by the existing buildings in comparison to the estimated future site generated traffic.
- New site generated traffic will most likely follow existing trip distribution patterns along Quinpool Road and Robie Street in the AM and PM peak hours.
- A preliminary site review of stopping site distance at the proposed driveways on Robie Street which are located near existing driveways did not identify any issues with stopping site distance.

September 24, 2018

Mrs. Ashley Blissett, P. Eng.  
 Senior Development Engineer  
 HRM Planning and Development  
 PO Box 1749  
 Halifax, NS B3J 3A5

**RE: September 2018 Addendum Traffic Impact Statement -  
 2032-2050 Robie Street, Halifax, NS**

Dear Mrs. Blissett:

This is an Addendum Traffic Impact Statement for the redevelopment of multiple properties fronting Robie Street north of Quinpool Road in Halifax, NS (See Figure 1) that was previously reviewed in an April 2014 Traffic Impact Statement by JRL Consulting. This Addendum is required to account for the following changes to the residential, commercial and office components of the proposed development (See Figure 2) from those included in plans submitted to HRM:

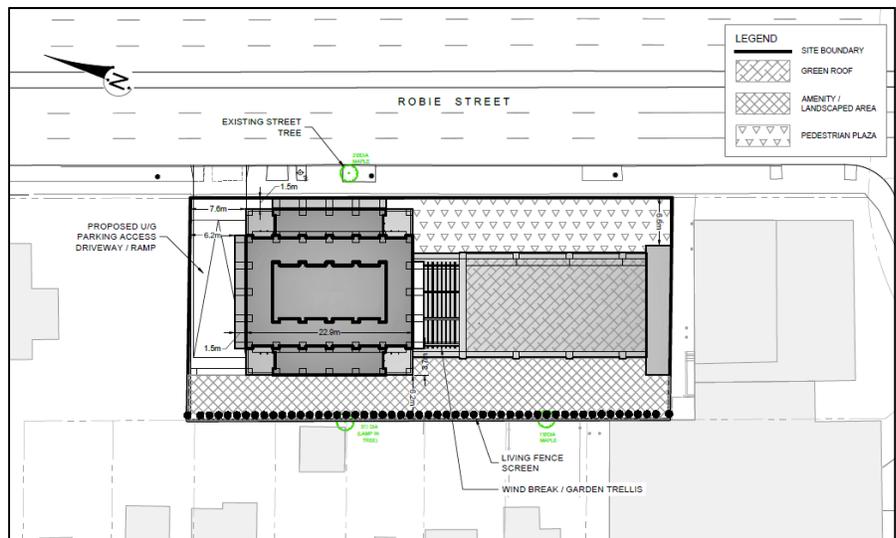
- Residential Units: The residential development is proposed to increase from 100 units to 102 units.
- Commercial Area: The ground floor commercial space is proposed to include approximately 2,125 square feet.
- Office Area: The office space (originally 55,600 square feet) is proposed to be eliminated.
- Site Access has been modified to be via a single two-way driveway onto Robie Street.



**Figure 1 – Site Location within Existing Transportation Network**

**SITE ACCESS**

Proposed site access to the approximately 102 underground parking stalls is planned to be from a two-way driveway with access onto Robie Street (See Figure 2).



**Figure 2 – Concept Plan**

There is currently a concrete median on Robie Street in this area and site access would be restricted to right-in, right-out. There is sufficient sight distance at the driveway (See Photos 1 and 2).



Photo 1 - Looking left (to the north) on Robie Street from the proposed site driveway



Photo 2 - Looking right (to the south) on Robie Street from the proposed site driveway

## TRIP GENERATION FOR PROPOSED SITE

The following trip generation estimates for the previously planned development and the proposed revised number of apartment units and commercial space are summarized in Table 1:

- Original Planned Development - Trip generation estimates for the original planned development include an estimated 137 two-way trips (86 entering and 51 exiting) during the AM peak hour and an estimated 145 two-way trips (54 entering and 91 exiting) during the PM peak hour.
- Revised Planned Development - Trip generation estimates for the revised development include an estimated 30 two-way trips (10 entering and 20 exiting) during the AM peak hour and an estimated 42 two-way trips (25 entering and 17 exiting) during the PM peak hour.
- Trip Reductions – The proposed changes in land use represents a decrease of an estimated 107 two-way trips (76 less entering and 31 less exiting) during the AM peak hour and a decrease of an estimated 103 two-way trips (29 less entering and 74 less exiting) during the PM peak hour.

Table 1 – Trip Generation

Land Use	Units <sup>2</sup>	Trip Generation Rates <sup>3, 4</sup>				Trips Generated <sup>5</sup>			
		AM Peak		PM Peak		AM Peak		PM Peak	
		In	Out	In	Out	In	Out	In	Out
<b>Trip Generation Estimates for the Original Proposed Development - Traffic Impact Statement (April 2014)<sup>1</sup></b>									
Apartment (ITE 220)	100	0.10	0.41	0.40	0.22	10	41	40	22
General Office <sup>4</sup> (ITE 710)	55.6	1.37	0.19	0.25	1.24	76	10	14	69
<b>Total Estimated Net Site Trips: April 2014 Site Plan<sup>6</sup></b>						<b>86</b>	<b>51</b>	<b>54</b>	<b>91</b>
<b>Trip Generation Estimates for the Proposed Development - Addendum Traffic Impact Statement (September 2018)</b>									
Multifamily Housing (High-Rise) <sup>7</sup> (ITE 222)	102	0.07	0.18	0.22	0.14	8	19	22	14
Retail <sup>8</sup> (ITE 826)	2.1	0.76	0.60	1.19	1.52	2	1	3	3
<b>Total Estimated Net Site Trips: September 2018 Addendum</b>						<b>10</b>	<b>20</b>	<b>25</b>	<b>17</b>
<b>Net Difference in Trip Generation Estimates</b>						<b>-76</b>	<b>-31</b>	<b>-29</b>	<b>-74</b>

Notes: 1. Land use codes are from *Trip Generation, 9th Edition*, (Institute of Transportation Engineers, Washington, 2012).  
 2. 'Number of residential units' for Residential, 'Gross Floor Area x 1000 square feet' for Office, 'Gross Leasable Area x 1000 square feet' for Specialty Retail.  
 3. Trip generation rates are 'vehicles per hour per unit' for Apartments and 'vehicles per hour per 1000 sq. ft.' for Office and Specialty Retail.  
 4. Average Trip Generation Rates were used as these rates are expected to provide a realistic estimate of the number of trips. Additionally, for General Office (Land Use 710) *Trip Generation, 9th Edition*, cautions against the use of regression curves for that land use on Page 1250.  
 5. Trips generated are 'vehicles per hour' for AM and PM peak hours.  
 6. These are the revised trip generation estimates for the April 2014 site plan using *Trip Generation, 9th Edition*.  
 7. Land use codes are from *Trip Generation, 10th Edition* (Institute of Transportation Engineers, Washington, 2017).  
 8. Since the 10<sup>th</sup> Edition does not include rates for Specialty Retail, rates for Land Use 826 from the 9<sup>th</sup> Edition have been used. Rates for 'Peak Hour of Adjacent Street Traffic' has been used to estimate PM peak hour trips. AM trip rates have been assumed to be 50% of PM rates with reversal of directional split.

## SUMMARY

1. This *September 2018 Addendum Traffic Impact Statement* has been prepared to review changes to the proposed residential / commercial development since development plans were submitted to HRM in April 2014.
2. Previously submitted development plans included a mixed-use building with 100 residential suites, 55,600 square feet (SF) of office space, and 106 underground parking spaces. The revised land use considered in this Addendum includes 102 residential suites, 2,125 SF of ground floor retail with no office space, and 102 underground parking spaces.
3. Vehicular access to the 102 underground parking stalls will be from a single two-way driveway onto Robie Street. Pedestrian access will be provided from Robie Street.
4. Trip generation estimates for the revised development include about 30 two-way trips (10 entering and 20 exiting) during the AM peak hour and an estimated 42 two-way trips (25 entering and 17 exiting) during the PM peak hour. This represents a substantial decrease in the estimated trips when compared to the estimates for the initially proposed development.

## CONCLUSION

5. With excellent access to several existing transit routes as well as nearby active transportation links along Windsor Street, Vernon Street, and Allan Street, the trips generated by this development are not expected to have any significant impact on levels of performance on adjacent streets and intersections or to the regional street system.”

If you have any questions or comments, please contact me by email at [patrick.hatton@wsp.com](mailto:patrick.hatton@wsp.com) or by telephone at 902-536-0954.

Sincerely,

**Original Signed**

Patrick Hatton, P.Eng.  
Traffic & Transportation Engineer  
WSP Canada Inc.

