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Att: Chris Marchand, P.Eng.  
**RAMAR Developments Ltd.**  
66 Temple Terrace  
Lower Sackville, NS B4C 0A7

**RE: A Traffic Impact Assessment Addendum – Winslow Drive -**

## **1.0 INTRODUCTION**

### *1.1 – Background*

In June 2020, the GRIFFIN transportation group inc. (GRIFFIN) submitted a Stage 2 Traffic Impact Study report to the Halifax Regional Municipality (HRM), in support of a planning application process for a proposed commercial development on the corners of Hammonds Plains Road and Winslow Drive. The development was to be comprised of up to 22,600 ft<sup>2</sup> of commercial floor space contained in multiple low-rise buildings. The subject lands had a zoning designation of R-1 (low-density, single-unit residential) within the *Beaver Bank, Hammonds Plains, and Upper Sackville Land Use By-Law Area*. This particular location is located outside the urban serviced area of Halifax Water, and within the community of Upper Tantallon. The location of these lands is contained in *Figure 1*.

### *1.2 – Current Development Plans*

Since June 2020, the proponent has changed their development plans - particularly for the two properties located in the northwest quadrant, referred to as civic #445 Winslow Drive (PID #41277765 and #41277773). The proponent is now submitting a planning application to HRM for approval to build one new building for residential use. The new building will be comprised of three floors above ground (low-rise) and will contain apartment-style units designed and marketed towards senior adult independent living. A total of 31 units are proposed to be built within the new multi-unit building.

Vehicle access will be provided via one new driveway connecting to Winslow Drive in the same location as originally examined in GRIFFIN's June 2020 TIS report. Several surface parking spaces will be provided for visitors and employees, as well as some underground parking spaces for residents. A total of 26 parking spaces are proposed which equates to less than one parking space per unit and follows HRM best practices with respect to the use of minimum parking rates.

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**Figure 1: Location of Subject Lands**



Source: HRM GIS Maps

### 1.3 – Terms of Reference

Our traffic impact assessment addendum associated with the proposed development is discussed in the following Sections. Since GRIFFIN recently completed a full quantitative TIS report in June 2020 for this same property, much of the information and site context remains the same. Further, the now proposed 31-unit senior adult independent living building is expected to generate fewer than 100 vph – the threshold that HRM uses to define the need for a qualitative or quantitative assessment. In completing this Stage 1 addendum letter, GRIFFIN has not only followed HRM traffic impact study guidelines for a development in a suburban / rural area, but also followed Institute of Transportation Engineers (ITE) and Transportation Association of Canada (TAC) best practices.

## 2.0 STUDY AREA AND SITE CONTEXT

### 2.1 – Access Via Winslow Drive

The subject property has direct frontage along Winslow Drive which HRM has classified as a local street. It has a two-lane, two-way rural cross-section with gravel shoulders and open ditches. It is generally aligned in a north-south direction and serves as a secondary access to the Westwood Hills subdivision, located to the north. It has a regulatory speed limit of 50 km/h and intersects with Hammonds Plains Road as a three-leg, stop-controlled intersection.

### 2.2 – Existing Traffic Volume Review

GRIFFIN gathered weekday peak hour traffic data in February 2020 to support the analysis steps previously completed as part of the June 2020 study report. These February 2020 data were recorded prior to the COVID-19 pandemic and associated travel restrictions; however, GRIFFIN elected to gather current November 2023 volumes on Winslow Drive to ensure quality data was being applied to this latest addendum.

**Table 1: Comparison of Winslow Drive Volumes – Weekday AM Peak Hour**

	February 2020	November 2023
Northbound (inbound)	11	11
Southbound (outbound)	23	14
<b>Two-way Total</b>	<b>34</b>	<b>25</b>

**Table 2: Comparison of Winslow Drive Volumes – Weekday PM Peak Hour**

	February 2020	November 2023
Northbound (inbound)	45	38
Southbound (outbound)	23	25
<b>Two-way Total</b>	<b>68</b>	<b>63</b>

The peak hour traffic volumes provided in *Tables 1* and *2* were recorded along Winslow Drive in the vicinity of the proposed access for civic #445. It was found that the February 2020 recorded volumes were slightly higher than the recently recorded November 2023 volumes. The most notable reduction occurred in the peak travel direction and this may be due in part to the post-pandemic work-from-home trend. Generally, GRIFFIN has concluded that baseline traffic demand is now less than the volumes applied to our June 2020 baseline assessment.

The current November 2023 peak hour volumes recorded by GRIFFIN’s automatic traffic recording (ATR) unit have been estimated to represent a daily volume of about 690 vehicles/day (vpd). Of course, these ATR data were gathered on weekdays and does not include traffic occurring on a weekend day. Therefore, the true average daily traffic (ADT) volume on Winslow Drive is expected to be less than 690 vpd.

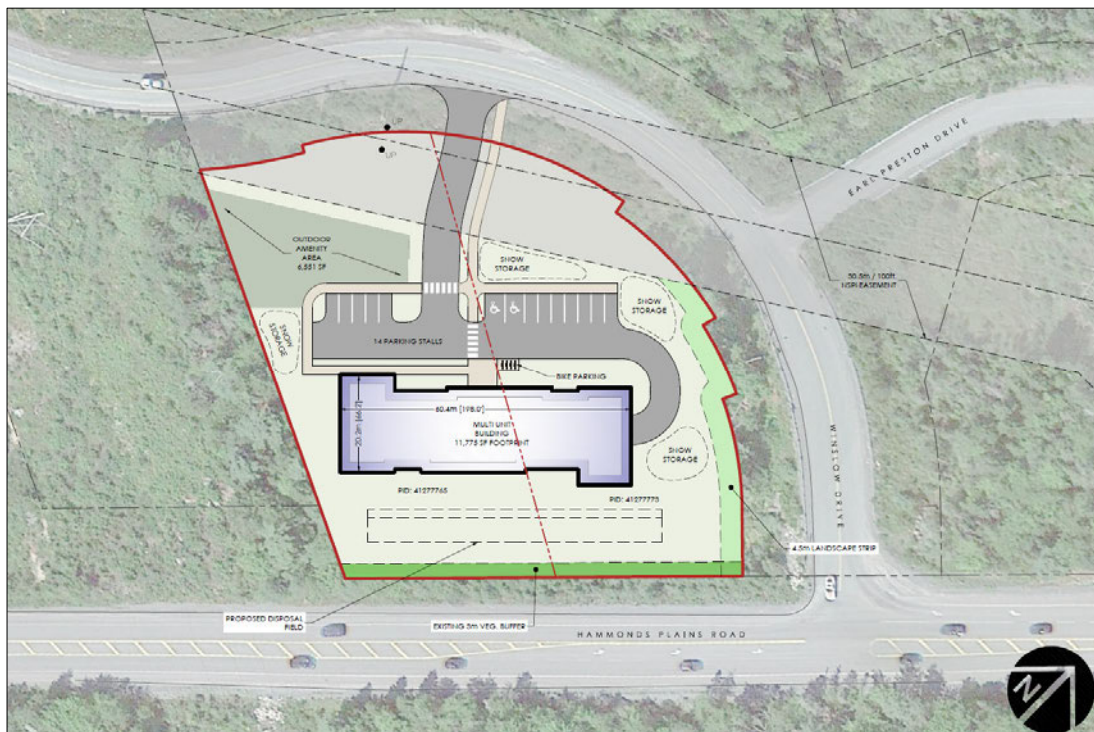
To help put these current conditions into perspective, GRIFFIN reviewed the Transportation Association of Canada’s (TAC) guidelines associated with the expected volumes on rural local two-lane, two-way roads. TAC’s guidelines suggest that typical volumes for a rural local road – the lowest class and thus lowest capacity – suggests these types of roads typically experience volumes of 1,000 vpd. Of course, this value has been identified as the typical volume and the maximum capacity would be a higher value. The estimated weekday daily volume of up to 690 vpd is obviously less than the typical volume of 1,000 vpd, and much less than the anticipated corridor capacity. Therefore, it was concluded there is some amount of residual capacity along Winslow Drive to accommodate future traffic growth. This conclusion also confirms observations made during the field review where there were large time gaps between vehicles in the traffic stream that had the potential to adequately accommodate turning vehicles from driveways and intersections.

### 3.0 THE PROPOSED DEVELOPMENT

#### 3.1 - Overview

The proponent has plans to build a three-floor, low-rise, residential building that will contain 31 apartment-style units. These units will be designed and marketed for senior adult independent living. A proposed site layout is provided in *Figure 2*.

**Figure 2: Proposed Site Layout**



Source: ZZAP

### 3.2 – Vehicle Access and Driver Visibility

Typically, a driver sight distance review is carried out as part of the traffic impact assessment process to identify any driver sight distance or visibility limitations up and downstream of a new site access or new intersection. Through our discussions with the proponent, the proposed driveway serving civic #445 remains in the same location that was evaluated in the June 2020 TIS report. Therefore, GRIFFIN did not complete a new or updated sight distance assessment, but rather have provided the same visibility field measurements that were recorded by GRIFFIN in February 2020.

GRIFFIN completed the visibility review process following the latest Transportation Association of Canada’s (TAC) *Geometric Design Guide for Canadian Roads* document (2017) as well as the Nova Scotia Department of Public Work’s field measurement best practices. At this early planning stage, GRIFFIN only assessed the minimum requirement for vehicles approaching the new access which is referred to as stopping sight distance (SSD). The provision of adequate SSD for vehicles traveling on the main roadway ensures drivers have sufficient forward visibility to identify a hazard in the roadway, and if needed, bring their vehicle to a stop.

GRIFFIN completed the field measurements using a hazard object height of 0.6m and a driver eye height of 1.05m. A summary of the SSD assessment at the proposed new driveway location is provided in *Table 3*.

**Table 3: Summary of Stopping Sight Distance Measurements at new Access (50 km/h)**

Measurement Location	Travel Direction	Available SSD	TAC Required SSD		Does Available Exceed Required?
			Base <sup>A</sup>	Slope Adjusted	
<b>Civic #445 Access</b> (19m east of steel barrier)	Northbound (toward Trunk 2)	59 m	65 m	59 m (+6%) <sup>B</sup>	YES
	Southbound (toward HPR)	93 m	65 m	70 m (-6%) <sup>B</sup>	YES

*A – 2017 TAC Chapter 2, Table 2.5.2, driver eye height of 1.05m, hazard object height of 0.6m.*

*B – An estimate of the actual slope along Winslow Drive.*

GRIFFIN concluded that the available driver visibility along Winslow Drive meets minimum TAC requirements for a 50 km/h operating speed.

It should be noted that no new driveways or accesses are proposed to connect to Hammonds Plains Road. Therefore, the proposed site driveway connecting to Winslow Drive appears to conform to the requirements of HRM’s By-Law S-300.

## 4.0 VEHICLE TRIP GENERATION

### 4.1 – New Vehicle Trips

Since the proposed development to be built on civic #445 has been revised from two commercial buildings to one new residential building there was a need to update the expected number of vehicle trips moving in/out of the new driveway. This process is referred to as the trip generation calculation process. Typically, traffic engineers use trip generation rates published by the Institute of Transportation Engineers (ITE), in the most recent *Trip Generation Manual, 11<sup>th</sup> Edition* document. Since the property is in a suburban / rural area we reviewed the trip rates contained in the Volume 3 document.

Despite the plans to build and market the proposed units to senior adult independent living, GRIFFIN elected to apply the regular low-rise apartment-style trip rate to remain conservative and yield higher-than-expected traffic volumes. As such, GRIFFIN utilized the rates consistent with ITE’s *Multifamily Housing (Low-Rise) Not Close to Rail – Land Use Code 220*. The ITE regression formulas were applied to estimate the expected number of new vehicle trips moving in/out of the proposed development. The detailed trip generation calculations are provided in *Table 4*.

**Table 4: Site Trip Generation for the Proposed Development**

	Size	Trip Rate	New Vehicle Trips / Hour		
			In	Out	Total
<b>AM Peak Hour</b>					
Multifamily Housing (Low-Rise) (ITE Code 220)	31 units	1.03/unit <sup>A</sup>	8 (24%)	24 (76%)	32
<b>AM Peak Total Trips</b>			<b>8</b>	<b>24</b>	<b>32</b>
<b>PM Peak Hour</b>					
Multifamily Housing (Low-Rise) (ITE Code 220)	31 units	1.10/unit <sup>A</sup>	21 (63%)	13 (37%)	34
<b>PM Peak Total Trips</b>			<b>21</b>	<b>13</b>	<b>34</b>

*A – ITE’s regression formula used to determine the per unit trip rate.*

Based on the results contained in *Table 4*, the proposed development is expected to generate the following peak hour trips:

- *Weekday AM Peak Hour: 32 new vehicle trips/hour (8 inbound and 24 outbound)*
- *Weekday PM Peak Hour: 34 new vehicle trips/hour (21 inbound and 13 outbound)*

The new site-generated traffic generally equates to adding one new vehicle trip every two minutes to the study area roads and intersections during peak times of the day. We previously concluded Winslow Drive has some amount of residual capacity that can accommodate increases of one trip every two minutes during peak times of the day. Given the relatively low traffic demand generated

by the proposed development, there is not expected to be any measurable change in operations on the study area roads and intersections.

In addition, GRIFFIN reviewed their previous traffic impact findings documented in their June 2020 TIS report. The above-noted conclusions are consistent with the earlier findings. The originally-proposed commercial buildings on the civic #445 property were expected to generate over 70 new vehicles per hour – double the amount of traffic expected to be generated by the newly proposed residential building.

#### *4.2 – Operations at the Hammonds Plains Road Intersection*

GRIFFIN completed a traffic signal warrant, auxiliary turn lane review, and an intersection capacity/operational evaluation at the Hammonds Plains Road / Winslow Drive intersection as part of the June 2020 TIS process. At the time, it was concluded that additional site-generated commercial traffic occurring by the 2027 planning horizon did not require any additional roadway infrastructure. The TAC traffic signal warrant at the Hammonds Plains Road intersection resulted in 53 points under a full build-out scenario. No auxiliary turn lane warrants were met and the stop-controlled intersection was forecasts to operate with delays of 65 s or less, v/c ratios of 0.71 or less, and queue lengths of 35 m or less.

GRIFFIN expects the previous analysis results to improve under the latest development proposal. This suggests the latest revised development plans for a new residential building will have less of an operational impact than previously expected. Our conclusion is based on the fact that there will be about a 50% reduction in site-generated traffic, combined with the fact that background traffic volumes on Winslow Drive are less than they were in February 2020.

## **5.0 CONCLUSIONS AND RECOMMENDATIONS**

### *5.1 - Conclusions*

The following conclusions were gleaned from the qualitative traffic impact assessment of the proposed development:

- In June 2020, the GRIFFIN transportation group inc. (GRIFFIN) submitted a Stage 2 Traffic Impact Study report for a previously proposed commercial development on the civic #445 Winslow Drive property. Since that time, the proponent has changed their plans and now proposes to build only one new building for residential use. The new building will be comprised of three floors above ground (low-rise) and will contain up to 31 apartment-style units designed and marketed towards senior adult independent living.
- It is understood the proposed new building is to be built and marketed towards senior adult independent living. However for analysis purposes, GRIFFIN assumed the proposed units would be occupied by a mix of tenants that would typically reside in a low-rise building with apartment-style units. As such, the vehicle trip generation rate that was

applied was consistent with multifamily housing units – ITE Land Use Code 220. The trip generation calculations were completed using the latest ITE trip generation rates contained in their Trip Generation Manual, 11<sup>th</sup> Edition (Volume 3) document. A 31-unit low-rise residential building is expected to generate up to **32 trips/hour** (8 inbound and 24 outbound) during the weekday morning peak period, and **34 trips/hour** (21 inbound and 13 outbound) during the weekday afternoon peak period.

- A review of GRIFFIN's June 2020 TIS report completed for a previously-proposed commercial development on the civic #445 property suggested that the site-generated trips would have an acceptable impact on the study area roads and intersections. No new auxiliary turn lanes or traffic control upgrades were required. Comparatively, the newly proposed residential building will generate about 50% fewer vehicle trips. Therefore, the latest qualitative assessment confirms the previous traffic impact results remain unchanged.
- GRIFFIN completed a stopping sight distance assessment at the proposed new driveway connection with Winslow Drive and determined the available sight distances met TAC guidelines for a 50 km/h operating speed. Winslow Drive has a regulatory posted speed limit of 50 km/h.

In summary, the traffic generated by a new 31-unit residential development is expected to have an acceptable level of impact on the traffic operating conditions along the Winslow Drive and Hammonds Plains Road corridors.

## 5.2 – Recommendations

Based on the findings of this qualitative review the following steps are recommended:

1. *Road Design*: That the geometric design of the proposed new driveway follows the latest Transportation Association of Canada (TAC) and HRM design guidelines contained in the most recent edition of their Municipal Design Guidelines document. This includes the accommodation of an appropriate truck design vehicle (i.e. garbage truck or emergency vehicle). One travel lane in each direction will provide sufficient capacity to accommodate up to 31 new residential units. No new auxiliary turn lanes or traffic control upgrades will be required at any of the study area intersections.
2. *By-Law Requirements*: That the municipal By-laws/Policy requirements for corner clearance, sight triangles, and driver visibility are met to ensure acceptable traffic operations are maintained throughout the planning, design, and construction phases of this project.
3. *Signs and Pavement Markings*: Should any new or changed signs and/or pavement markings be installed, that they follow the latest guidelines contained in TAC's Manual of Uniform Traffic Control Devices for Canada (MUTCDC) document.



## 6.0 CLOSING

The findings flowing from this traffic impact assessment addendum suggest the new vehicle trips generated by a proposed 31-unit residential development on the civic #445 property is expected to have an acceptable impact on the traffic operational performance of the study area streets and intersections. I would be happy to provide you with additional information or clarification regarding these matters and can be reached anytime by phone at (902) 266-9436 or by email at [jcopeland@griffininc.ca](mailto:jcopeland@griffininc.ca).

Sincerely,



**James J. Copeland, P.Eng., RSP1**  
Managing Principal – Traffic & Road Safety Engineer  
GRIFFIN transportation group inc.

