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August 3, 2019

Perry Lake Developments  
31 Sterns Court  
Dartmouth, NS  
B3B 1W7  
*Attention: Mr. Larry Gibson*

**RE: PROPOSED SUBDIVISION- INGRAM DRIVE, FALL RIVER, NOVA SCOTIA**

Dear Larry:

Further to our conversations, we have reviewed the May 15, 2018 Traffic Impact Statement by GRIFFIN Transportation Group Inc. (GRIFFIN) for the proposed development of the above subdivision. Of interest are the impacts, if any, the latest development layout may have on traffic.

This document is an **update** of the GRIFFIN statement; and contains many direct quotes from the GRIFFIN May 15, 2018 letter report.

The conclusion of the updated report is as follows:

**“The findings flowing from this qualitative traffic impact statement indicate the new site-generated trips associated with a proposed 143-unit medium density residential development are expected to have an acceptable level of impact on the study area streets and intersections.”**

I trust this is the information you require, but should you have any questions please contact me at 902-678-2774.

Yours truly,

ORIGINAL SIGNED

A. W. Dewar, P. Eng.

AWD/ajs

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# INGRAM DRIVE

## Updated Traffic Impact Assessment

Newly Proposed Development

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## INTRODUCTION

The GRIFFIN Stage 1 - Traffic Impact Assessment was carried out in support of the planning application process for a proposed residential development located on Ingram Drive (PID's #40844375, #40551277, #00472910, #00472902, and #40551558) in the community of Windsor Junction, Halifax Regional Municipality (HRM).

The newly proposed development will be comprised of eleven buildings containing 143 medium density residential units. This includes three low-rise buildings (120 total units), and four low-rise condominium/townhome buildings (19 total units), and four single family (4 units).

*“In 2016, GRIFFIN had prepared a traffic impact statement for a then proposed mixed-use development on these same lands with vehicle access via Ingram Drive and Cobequid Road. The developer has changed both the land use types and vehicle access since then, and as such, GRIFFIN has prepared a new traffic impact statement to assess the new development now being contemplated – focused only a residential land use type with one access to Ingram Drive.*

*The subject lands measure about 29 acres and are generally bounded by the terminus of Ingram Drive, an active railway line to the south and the Highway 102 right-of-way to the east. Access to the development will be provided via an extension of Ingram Drive to the south by about 100m. These lands currently have a zoning designation of Residential Comprehensive Development District (RCDD) within the Land Use By-law Planning Districts 14 / 17 (i.e. Shubenacadie Lakes Land Use By-law area) and is within the HRM Water Service Area. The site context is generally illustrated in Figure 1.”*



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**Figure 1: Study Area and Site Context**



### Study Area

The proposed lands are currently undeveloped. Ingram Drive will be the only access to/from the proposed development in HRM; and appears to function as a minor collector road through the existing Fall River Village/Perry Lake Estates subdivision.

*“The major service area is assumed to be located to the west in Lower Sackville. Therefore, the main travel route in and out of this southern portion of the Fall River Village / Perry Lake Estates subdivision for the majority of current and future residents is comprised of the Ingram Drive/Winley Drive/Windsor Junction Road/Cobequid Road route.”*

### Existing Traffic Conditions

The existing traffic conditions are described in detail in the May 15, 2018 GRIFFIN letter, and supported by the data collection effort carried out in June 3<sup>rd</sup>, 2016 and the HRM 2014 study of the peak hour traffic volumes at the Cobequid Road/Windsor Junction Road intersection. See Figure 2.



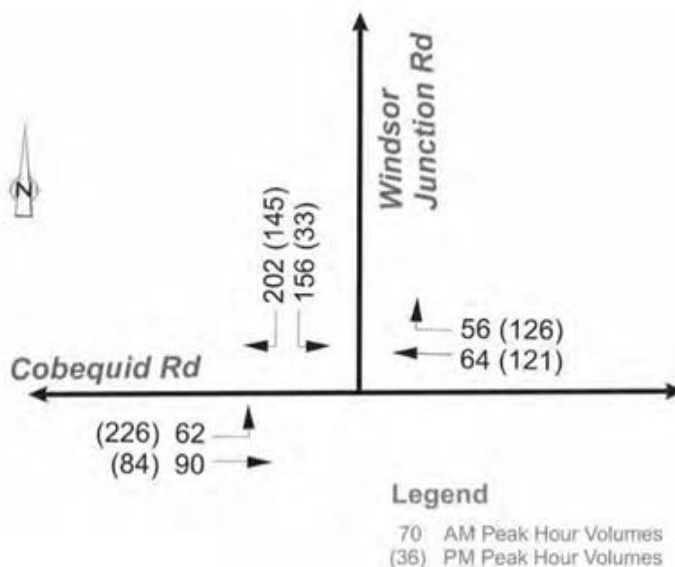
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**Figure 2: HRM's 2014 peak hour traffic volume data at the Cobequid Road / Windsor Junction Road Intersection**



*"Considering the peak period volumes shown in Figure 2 and the capacity provided by the two-lane, two-way roadways in the study area it appears there is residual capacity available in the Ingram Drive, Winley Drive, Windsor Junction Road and Cobequid Road corridors that can accommodate some future traffic growth."*

### Trip Generation

In order to assess the change in traffic volumes on the study area streets under future conditions, there was a need to estimate the number of new vehicles that would be entering and exiting the proposed development. This is referred to as the trip generation calculation process. Typically, traffic engineers use trip generation rates published by the Institute of Transportation Engineers (ITE) to forecast site-generated volumes for specific land use types, if deemed appropriate. As such, ITE's Trip Generation, 9th Edition document was used to identify the most appropriate land use type and trip rate for this study. As shown in the proposed site layout contained in Figure 3, the residential units are planned to be medium density; and contained within seven separate low-rise buildings and four single family dwellings.



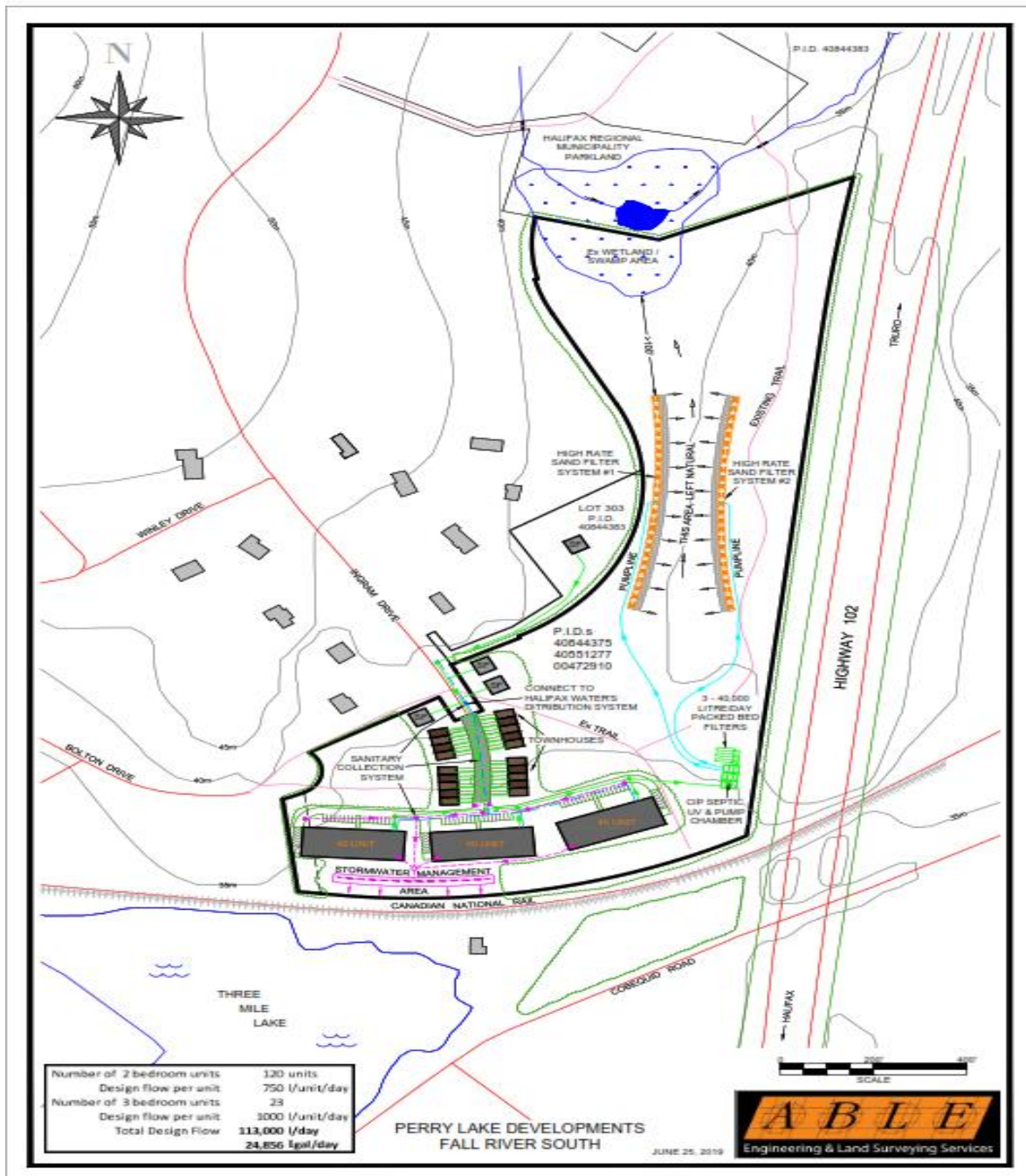
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Figure 3 – Proposed Site Plan



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Based on information provided from the developer, the following Table 1 has been prepared to show the intended types of residential units within each building type along with the corresponding ITE land use code.

**Table 1 - Types of Residential Units**

<b>Buildings</b>	<b>Unit Type Being Built</b>	<b>ITE'S Land Use Type</b>
Buildings 1 - 4	Low-rise Condominiums/ townhouses (19 units)	LU Code 231: Condominium/Townhouse - low-rise
Buildings 5-8	Low-rise rental apartments (120 units)	LU Code 220: Apartment - General
Buildings SF 1 - 4	Single Family Dwellings (4 units)	LU Code 210: Single Family

A summary of the AM and PM peak hour site-generated trips is provided in Table 2. The calculation results suggest the proposed medium-density residential development is expected to generate a total of 80 trips/hour (17 inbound and 63 outbound) during the weekday morning peak period, and 103 trips/hour (66 inbound and 37 outbound) during the weekday afternoon peak period. This generally equates to an average of about one vehicle trip every minute during the morning peak, and less than two vehicle trips every minute during the afternoon peak.



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**Table 2: Site Trip Generation for the Proposed Residential Development (vehicles/hour)**

New Vehicle Trips / Hour							
	Size	Trip Rate	In		Out		Total
AM Peak Hour							
Condominium/Townhouse Low-rise (231)	19 units	0.67/unit	3	25%	10	75%	13
Apartment - General (220)	120 units	0.53/unit	13	20%	51	80%	64
Single Family (210)	4 units	1.00/unit	1	30%	3	70%	4
AM Peak Total Trips			17		63		80
PM Peak Hour							
Condominium/Townhouse Low-rise (231)	19 units	0.78/unit	9	58%	6	42%	15
Apartment - General (220)	120 units	0.70/unit	55	65%	29	35%	84
Single Family (210)	4 units	1.00/unit	3	70%	1	30%	4
PM Peak Total Trips			66		37		103

### Traffic Impacts on Surrounding Area

The qualitative assessment of the current peak hour traffic demands at the nearby Cobequid Road/Windsor Junction Road intersection was carried out based on the assumption the majority of the site-generated trips will move to/from the Cobequid Road corridor. As discussed earlier, the peak period traffic volumes observed using this intersection appear to be below the capacity for this type of suburban/rural facility; and there were minimal delay times observed during the field review.



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In addition, the forecast site-generated traffic associated with the proposed 143 residential units is expected to generate about one vehicle trip every minute during the morning peak, and less than two vehicle trips every minute during the afternoon peak. Based on the findings of the field review observations, it is expected these new vehicle trips can be accommodated along the Ingram Drive, Winley Drive, and Windsor Junction Road corridors as well as at the Cobequid Road/Windsor Junction Road intersection, with only a marginal impact on traffic operations. Since this is only a qualitative Stage 1 impact assessment, no analytical capacity calculations have been carried out at this time.

### Conclusions

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

- The proposed mixed-use development will be comprised of 143 medium-density residential units, contained within 11 buildings. These include three, 3-storey buildings with 60 units each, which will be built and marketed as rental apartments, plus four condominium/townhome buildings, with 4-5 units each and 5 single family dwellings. Using appropriate trip rates for these types of residential units referenced from ITE's trip generation document, the proposed development is expected to generate 803 trips/hour (17 inbound and 63 outbound) during the weekday morning peak period, and 103 trips/hour (66 inbound and 37 outbound) during the weekday afternoon peak period.
- The qualitative traffic operational assessment suggests there is residual capacity on the study area street system for some traffic growth, and it appears the new traffic volumes generated by the proposed development are expected to only have a marginal impact on traffic operations.

In summary, the traffic generated by the proposed residential development is expected to have an acceptable level of impact on the traffic operating conditions along Ingram Drive, Winley Drive, Windsor Junction Road, and the Windsor Junction Road/Cobequid Road intersection. Based on this assessment the following steps are recommended:



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- The design of the Ingram Drive extension and the site accesses to the proposed parking areas contained in the proposed development follow Transportation Association of Canada (TAC) and HRM design guidelines contained in the most recent edition of their Municipal Design Guidelines document. As part of the design process, all new signage and pavement markings should be designed and installed in accordance with the most recent version of the Manual of Uniform Traffic Control Devices for Canada (MUTCDC).
- HRM By-law requirements, including requirements for corner clearance and sight triangles are met to ensure both approaching and departing driver sight lines are maintained throughout the planning, design, and construction phases of this project. This would include all driveway connections with public roads/streets, property accesses, and active transportation crossings.

**The findings flowing from this qualitative traffic impact statement indicate the new site-generated trips associated with a proposed 143-unit medium density residential development are expected to have an acceptable level of impact on the study area streets and intersections.**



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