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**Glenn Woodford, P.Eng.**  
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*DesignPoint Engineering & Surveying Ltd.*  
200 Waterfront Drive, Suite 100  
Bedford, NS B4A 4J4

**RE: A updated Traffic Impact Statement for a proposed development on Wellington Street**

Dear Mr. Woodford:

**INTRODUCTION**

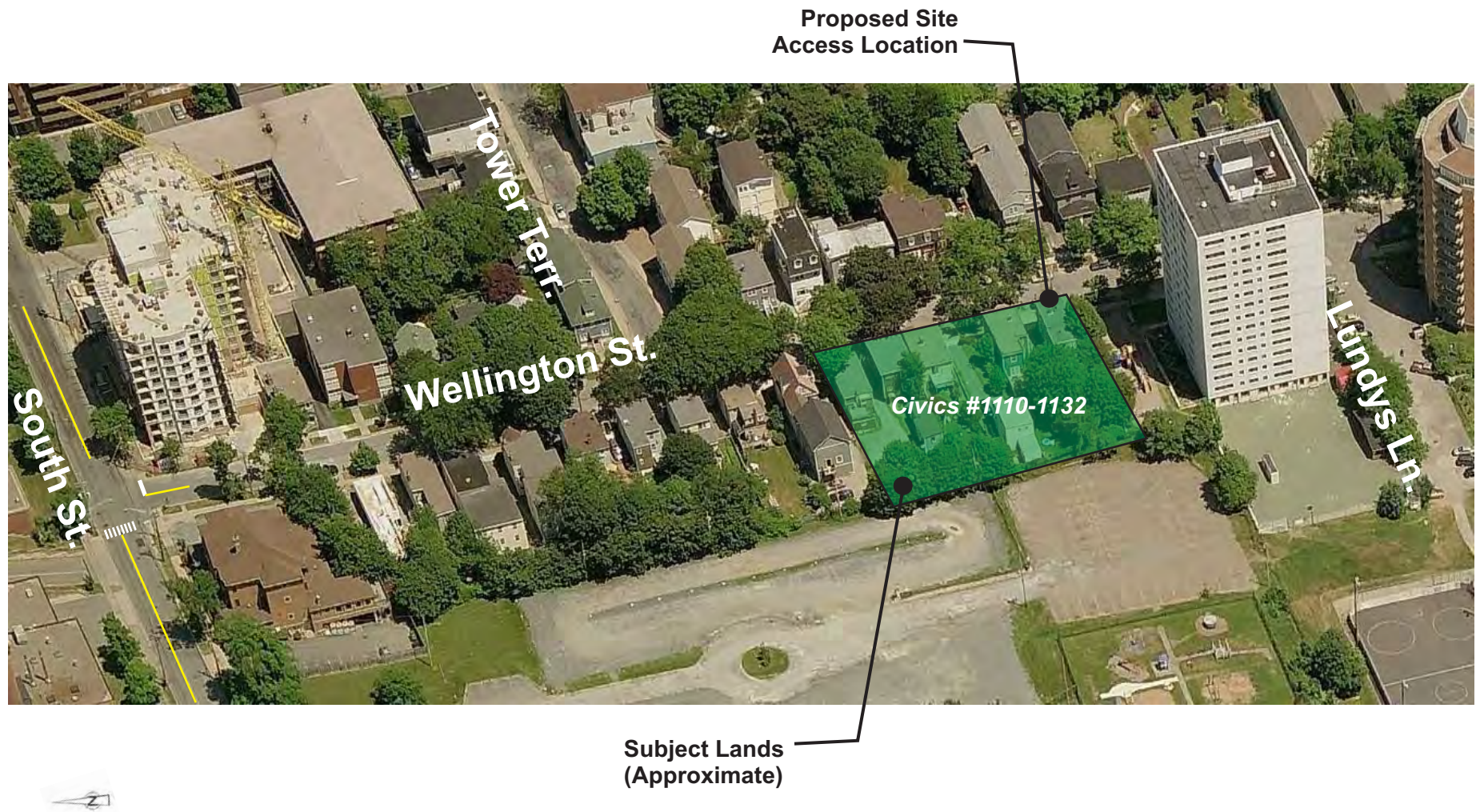
At the request of *DesignPoint Engineering & Surveying Ltd.*, the GRIFFIN transportation group inc. has carried out a qualitative Stage 1 - Traffic Impact Assessment in support of the planning application process for a proposed high-density, multi-story residential building to be located at civic #1110-1132 Wellington Street in the south end of Halifax, Halifax Regional Municipality (HRM). The proposed development will be comprised of one multi-story building that will contain a mix of 1 and 2-bedroom units – totaling 101 units.

There are six individual properties that will be consolidated into the proposed development and all are located on the west side of Wellington Street. They include six existing detached homes that are comprised of civics #1110, #1116, #1120, #1122, #1126, #1130 and #1132. The subject properties all have an R-2A (General Residential Conversion Zone) Zoning designation and they are located in the HRM Urban Service Area, within the Halifax Peninsula Land Use By-law area.

It should be noted that GRIFFIN had already completed a traffic impact statement letter for this development, dated July 27<sup>th</sup>, 2016. The previous assessment was based a 95-unit development. Since that time, the size of the proposed development as increased to 101 units and this current letter provides an update to that earlier work.

The traffic impact assessment associated with the proposed 101-unit residential development is discussed in the following Sections. The site context is generally illustrated in *Figure 1* and a site concept plan is contained in *Figure 2*.

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Source: Bing Maps



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## Study Area and Site Context

Figure  
1





## STUDY AREA AND SITE CONEXT

Wellington Street is generally aligned in a north-south direction with a two-lane urban cross-section measuring 8.3 m wide (one travel lane in each direction plus on-street parking). It is under the jurisdiction of the HRM and appears to function as a local residential street. The total length of this street measures about 400 m.

There are three existing accesses serving vehicular traffic entering/exiting the existing detached homes. It is understood that the existing accesses will be replaced with a single driveway serving the proposed building.

## EXISTING TRAFFIC CONDITIONS

Since the proposed development will be residential in nature and is predominantly surrounded by other residential housing, a university as well as supporting neighbourhood commercial land use types it seemed reasonable to assume the highest overall study area volumes would occur during the weekday morning and afternoon peak periods. Therefore, these two peak times were selected and used in this assessment.

A site visit and data collection effort was carried out on Thursday July 21<sup>st</sup>, 2016 to review sight lines, observe traffic volumes, driver behavior and so forth. In addition, a traffic impact statement letter prepared in July 2014 for a proposed development on an adjacent property was obtained through HRM's website<sup>1</sup>. Traffic counts in this earlier work were recorded in 2014 for the intersections of South / Wellington and Inglis / Wellington. The July 2014 peak hour traffic data are contained in *Table 1*.

**Table 1: Peak Hour Traffic Volumes on South and Inglis Streets (July 2014)**

	AM Peak (vph)			PM Peak (vph)		
	Eastbound	Westbound	Two-way	Eastbound	Westbound	Two-way
South St.	407	271	678	375	485	860
Inglis St.	333	343	676	358	443	801
Wellington St <sup>A</sup>	-	-	136	-	-	141

*vph – vehicles per hour*

*A – Wellington St. volumes recorded at north end of street where volumes are highest.*

The July 2014 peak hour volumes shown in *Table 1* were compared to the results of the peak hour short counts gathered in July 2016 by GRIFFIN. There appeared to be very little change in the two-

<sup>1</sup> Traffic Impact Analysis Letter for 1034-1056 Wellington Street.  
Prepared for Dino Capital Limited by WSP. July 18, 2014.

way traffic volumes along Wellington Street between the 2014 and 2016 data sets. It was therefore assumed there has only been limited traffic growth in this area of Halifax in the recent past and this is characteristic of older established neighbourhoods in urban areas.

Based on the observed peak hour volume using Wellington Street there appears to be residual capacity provided by the two-lane, two-way cross-section. The two-way vehicle demand equates to an average volume of 1 car every 30-seconds along this street. It should also be noted that there was little to no through trips observed during the weekday PM peak and a large portion of the traffic on the street is generated by its residents.

### ON-STREET PARKING

There are regulatory parking signs installed along both sides of Wellington Street in the vicinity of the proposed development. Along the west side of the street 1-hour parking is permitted between 8:00 and 18:00, Monday to Friday combined with a parking restriction early Tuesday mornings to accommodate street cleaning activities. Along the east side of the street parking is prohibited between 8:00 and 18:00 (daily) combined with restrictions early Wednesday mornings to accommodate street cleaning activities. The posted signs observed during the field review are shown in *Figure 3*.

**Figure 3: Regulatory Parking Signs on Wellington Street**



*Parking Signs – East Side*



*Parking Signs – West Side*

The on-street parking demand was observed during the weekday PM peak and at about 16:30 there were numerous spaces available on the west side of the street within the 1-hour parking zone. At around 17:00 the available spaces began to fill and by 17:10 the majority of the spaces were occupied. This is likely due in part to the lack of available off-street parking at the area residences combined with the 1-hour parking restriction that ends at 18:00.

Therefore, due to the high existing parking demands during weekday afternoons the proposed development should not rely on utilizing any portion of the existing on-street parking supply along Wellington Street in order to meet the HRM By-law parking requirements.

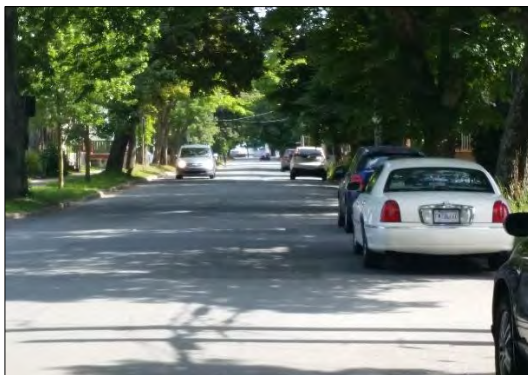
#### SIGHTLINE REVIEW

Typically, a driver sight line review is carried out as part of the traffic impact assessment process to ensure drivers have sufficient distance to perform avoidance movements or bring their vehicle to a stop. The concept site plan shown in *Figure 2* locates the vehicle access point near the south boundary of the subject lands, generally where the existing civic #1110 building is located. However, to allow for flexibility in the design process, a general sight line review was carried out along the frontage of the proposed development. Guidelines contained in the Transportation Association of Canada's (TAC) Geometric Design Guide for Canadian Roads were followed.

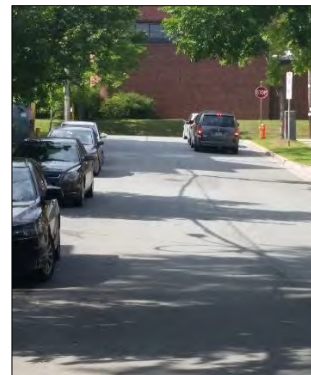
The posted speed limit along Wellington Street is 50 km/h and it was observed during the field review that drivers were generally adhering to this speed. This is likely due to the fact that Wellington Street is relatively short in length, has an enclosed cross-section with mature trees and on-street parking. Therefore, a 50 km/h operating speed was used in this review and the minimum stopping sight distance (SSD) requirement associated with this speed is 65 m.

The available sightlines were reviewed along the frontage of the proposed development. Given the straight alignment of Wellington Street there appeared to be sufficient sight lines that exceeded the minimum requirement. However, the provision of adequate driver sight lines to/from the driveway location will likely require the elimination of some on-street parking spaces adjacent to the proposed access location (at the access, as well as spaces immediately to the north and south). In addition, the By-Law corner clearance and sight triangle requirements will also need to be verified at the design stage of the project. The observed sight lines along Wellington Street are provided in *Figure 4*.

**Figure 4: View along Wellington Street in Vicinity of Development**



*Looking south along Wellington Street*



*Looking north along Wellington Street*

## SITE TRIP GENERATION

In order to assess the change in traffic volumes on the study area streets under future conditions, there was a need to determine 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. Based on our review of the residential land use type being proposed it was determined that the ITE trip generation rate for high-density residential units is appropriate. As such, ITE's *Trip Generation, 9<sup>th</sup> Edition* document was used and the forecast site-generated trips are summarized in *Table 2*.

**Table 2: Site Trip Generation for the Proposed Residential Development**

	Size	ITE Trip Rate	Vehicle Trips / Hour		
			In	Out	Total
AM Peak Hour					
High-rise Condo / Townhomes (232)	101 units	0.34/unit	6	28	34
PM Peak Hour					
High-rise Condo / Townhomes (232)	101 units	0.38/unit	24	14	38

It should be noted that there has been no vehicle trip reduction factor applied to the ITE trip rates. The GRIFFIN transportation group believes that the impact of alternative modes such as walking, cycling and public transit are inherent in the ITE trip rate for this land use type as the supporting research would have been carried out for similar multi-story residential buildings in similar high-density urban areas. In addition, this assessment has not explicitly considered the elimination of trips associated with the existing seven residences that will be removed. The elimination of these vehicle trips would further reduce the impact of the proposed development.

In summary, the proposed multi-story residential building is expected to generate 34 trips/hour (6 inbound and 28 outbound) during the weekday morning peak period and 38 trips/hour (24 inbound and 14 outbound) during the weekday afternoon peak period. This generally equates to about one vehicle trip every two minutes during peak times of the day. These trips will be further split in the north and south travel directions along Wellington Street and then further dissipated along the South Street and Inglis Street corridors.



## TRAFFIC IMPACTS ON SURROUNDING STREETS

The qualitative assessment of the current traffic operational conditions on Wellington Street and the study area intersections used observations gleaned from the field review as well as the intersection capacity results provided in the July 2014 letter from WSP regarding the adjacent development at civic #1034-1056. As discussed earlier in this letter the peak period traffic volumes observed traveling along the Wellington Street corridor appear to be below the capacity for this type of street and there were minimal delay times observed for drivers entering the Wellington Street intersections with South Street and Inglis Street. In addition, the forecast site-generated traffic for a proposed 101-unit high-density residential development will generate an additional vehicle trip every two minutes during peak times of a typical weekday. Therefore, it is expected these new vehicle trips can be accommodated in the Wellington Street corridor and its unsignalized intersections with only a marginal impact on traffic operations.

## FINDINGS & CONCLUSIONS

The following conclusions were gleaned from the qualitative traffic impact assessment of the proposed multi-story residential development located on Wellington Street:

- The two-way peak hour traffic demand using Wellington Street that was recorded in July 2014 indicates the highest hourly volume occurs during the afternoon peak. Near the South Street intersection the hourly volume is about 140 vph (an estimate of about 1,400 vehicles/day) while near the Inglis Street intersection the hourly volume is about 70 vph (an estimate of about 700 vehicles/day). These volumes were observed to be below the capacity for this residential street as no operational issues were observed and vehicle queues at the stop-controlled intersections were minimal.
- The proposed residential development will be comprised of 101 units. This is estimated to generate 34 trips/hour (6 inbound and 28 outbound) during the weekday morning peak period and 38 trips/hour (24 inbound and 14 outbound) during the weekday afternoon peak period.
- The qualitative traffic operational assessment suggests there is residual capacity on the study area street system. It appears the new traffic volumes generated by the proposed development are expected to have a negligible impact on traffic operations along the Wellington, South and Inglis Street corridors.
- Due to the high existing parking demands observed by GRIFFIN during the July 2016 site visit the proposed development should not rely on utilizing any portion of the existing on-street parking supply along Wellington Street in order to meet the HRM By-law parking requirements.



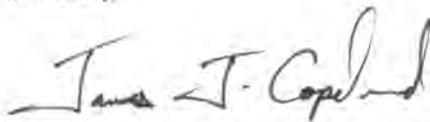
Based on the findings of this qualitative review the following steps are recommended:

- That the design of the proposed vehicle access follow Transportation Association of Canada (TAC) and HRM design guidelines contained in the most recent edition of their Municipal Design Guidelines document.
- That HRM By-law requirements for corner clearance and sight triangles are met to ensure both approaching and departing driver sightlines are maintained throughout the planning, design and construction phases of this project. This will likely require the removal of on-street parking spaces adjacent to the proposed access connecting to Wellington Street.
- That the parking supply for this proposed development meet HRM By-law requirements without utilizing any of the existing on-street parking supply along Wellington Street.

#### CLOSING

The findings flowing from this qualitative traffic impact statement indicate the new trips generated by the proposed 101-unit multi-story residential development – located at civic #1110-1132 Wellington Street – are expected to have an acceptable level of impact on 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.**  
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