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Project No. 232054

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**Re: 217 Waverley Road – Traffic Impact Statement**

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**1 Introduction**

Harbourside Transportation Consultants has completed a traffic impact statement, as per Halifax Regional Municipality (HRM) requirements, in support of the development application for the proposed residential development at 217 Waverley Road in Dartmouth, Nova Scotia.

**2 Site Context**

The proposed development is located on Waverley Road. The site context is shown in Figure 1. The subject site has one existing access point to the site, as well as an access point to the residential lots of Civic #209 and #211, which will be impacted by the footprint of this development.



Figure 1: Site Context

### 3 Existing Transportation Network

Waverley Road is a major collector roadway that runs north-south from Trunk 2 to Highway 111. Near the subject site, Waverley Road has a two-lane cross section with on-street bike lanes and sidewalks on both sides of the roadway. A crosswalk is provided to cross Waverley Road near the site at Micmac Drive. Waverley Road has a posted speed limit of 50km/h. The Waverley Road cross section near the subject site is shown in Figure 2.





Figure 2: Waverley Road

#### 4 Transit

The area is serviced by Halifax Transit Routes 55 Port Wallace. There are bus stops in both directions on Waverley Road within a 50 metre walking distance of the subject site.



## 5 Proposed Development

The proposed development plan consists of a high-rise residential building with a total of 141 units. The development will include 74 surface parking spaces, 15 visitor parking spaces and 172 underground spaces for a total of 261 spaces. The proposed site development plan is shown in Figure 3.

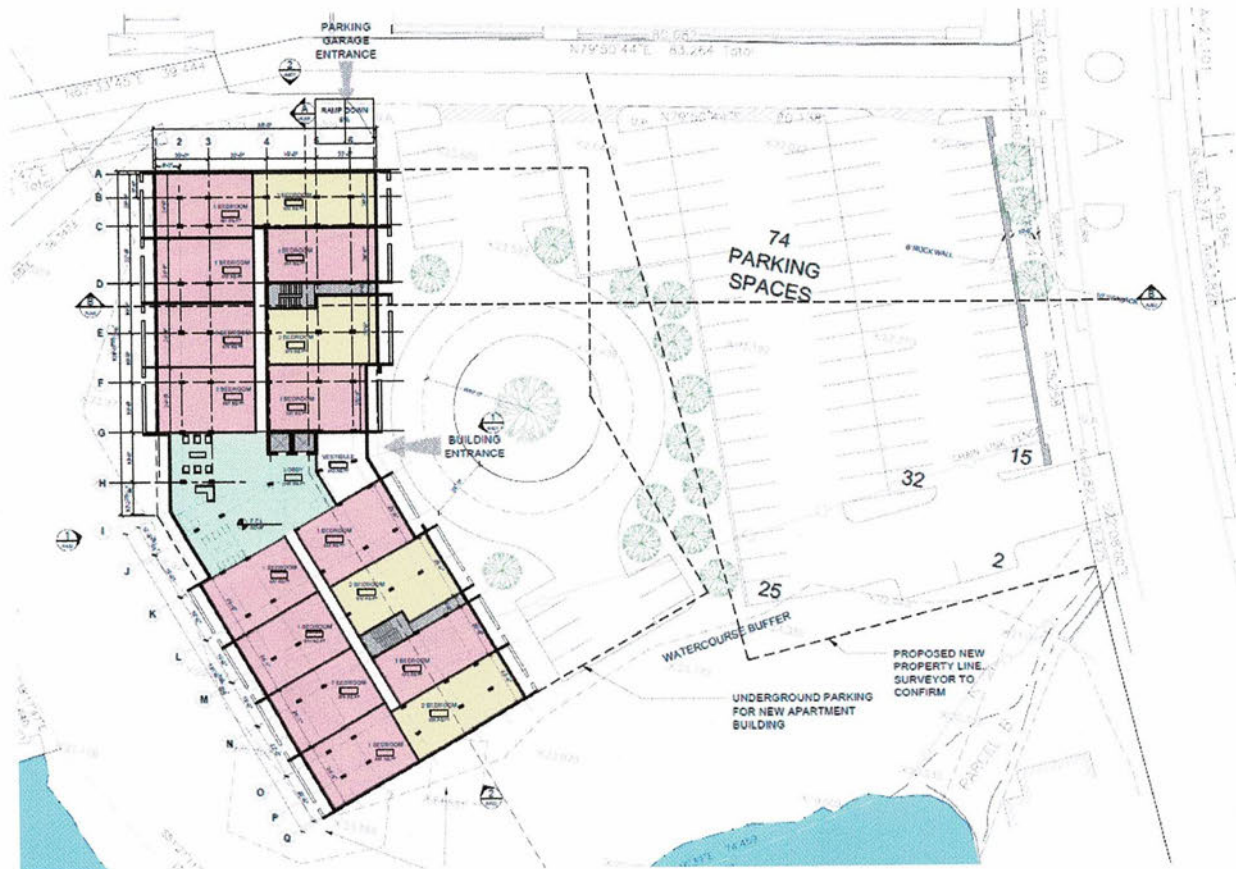


Figure 3: Site Development Plan

The proposed development will include two access points on Waverley Road. There are four existing access points (or existing curb entrances) on the subject site exiting onto Waverley Road, as shown in Figure 4. The access point on the northern edge of the parcel (#1) will be maintained. The second and third access points (#2 and #3) will not be used, and the southernmost access point (#4) previously used to access Civic #209 and #211 will be used as the second access from Waverley Road to the subject site.



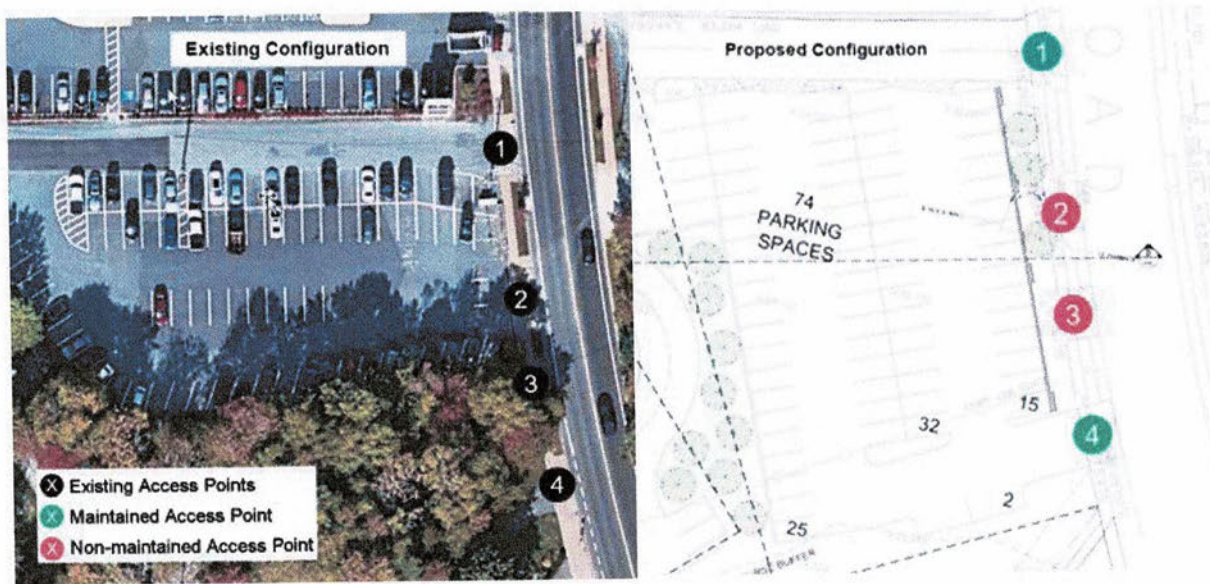


Figure 4: Access Point Configuration - Existing vs. Proposed

## 6 Site Trip Generation

The Institute of Transportation Engineers (ITE) *Trip Generation Manual*<sup>1</sup> was used to estimate the vehicle trip generation for the site. Land use code 222 Multifamily Housing (High-Rise), General Urban/Suburban was used for the proposed residential building. Table 1 summarizes the trip generation rates for the land use code.

Table 1: Trip Generation Rates

Land Use	AM Peak Hour			PM Peak Hour		
	Rate	Entering	Exiting	Rate	Entering	Exiting
222 Multifamily Housing (High-Rise)	$T = 0.22(X) + 18.85$	26%	74%	$T = 0.26(X) + 23.12$	62%	38%

Note: Units are in dwelling unit for residential uses.

The weekday morning (AM) and afternoon (PM) peak hour trip generation estimates and modal split adjustments for the site are summarized in Table 2. On a typical weekday, the site is estimated to generate 50 vehicle trips in the morning peak hour (13 trips entering and 37 trips exiting) and 60 vehicle trips in the afternoon peak hour (37 trips entering and 23 trips exiting).

<sup>1</sup> *Trip Generation Manual*, 11<sup>th</sup> Edition, Institute of Transportation Engineers, September 2021.



Table 2: Trip Generation Estimates

Land Use	Units	AM Peak Hour			PM Peak Hour		
		Total	Entering	Exiting	Total	Entering	Exiting
222 Multifamily Housing (High-Rise)	141	50	13	37	60	37	23
Total Trips Generated (vph)		50	13	37	60	37	23

Note: Units are in dwelling unit for residential uses.

### 6.1 Impact to Surrounding Roadways

All site generated vehicle traffic will travel along Waverley Road. Based on field observations, the peak-direction traffic on Waverley Road is southbound during the AM peak hour (travelling towards Highway 111 and downtown Dartmouth) and northbound during the PM peak hour.

The trip generation estimates indicate that the proposed development will generate approximately 55 additional vehicle trips in the peak-direction of traffic on Waverley Road during the AM and PM peak hours.

A recent volume count near the subject site was collected in October 2020 on Braemar Drive between Maple Drive and Braeside Court (approximately 700m south of the subject site). The peak hour two-way volume, as well as the comparison to the added volumes is shown in Table 3. Overall, the added volumes only add 4.8% to the AM peak hour and 4.2% to the PM peak hour.

It is anticipated that the new vehicle trips associated with the proposed development can be accommodated along Waverley Road with a negligible impact on traffic operations. It should be noted that this consists of a high-level qualitative assessment, therefore no analytical capacity calculations have been completed to support the assessment.

Table 3: Site Traffic vs. Existing Traffic Comparison

AM Traffic from Site	Existing AM Peak Hour Traffic	% Traffic Added	PM Traffic from Site	Existing PM Peak Hour Traffic	% Traffic Added
50	1048	4.8%	60	1416	4.2%

It should be noted the proposed access point #4 on the south end of the site is directly adjacent to the existing bus stop. This may affect both the access and the bus stop both during and after construction and should be considered.





## 7 Access Sight Distance Review

A sight distance review was completed for both access points on Waverley Road to confirm that the sight lines meet the minimum stopping and decision sight distance requirements of the Transportation Association of Canada's (TAC) *Geometric Design Guide for Canadian Roads*<sup>2</sup>.

The minimum stopping and decision sight distance requirements for a two-lane roadway with a design speed of 50 km/h are:

- ▶ Minimum stopping sight distance = 65 metres;
- ▶ Minimum turning sight distance – left-turn from stop = 105 metres; and
- ▶ Minimum turning sight distance – right-turn from stop = 95 metres.

It should be noted the labelling of the access points in this section match the labelling in Figure 4.

### 7.1 Site Access #1

The decision sight line south of the access on Waverley Road (looking to the right) is shown in Figure 5. The sight line extends to the Irving gas station south of the subject site, indicating there is over 200 metres of sight distance available. The minimum stopping and turning sight distance requirements are met south of the access.

The decision sight line north of the access on Waverley Road (looking to the left) is shown in Figure 6. The sight line extends to the intersection of Waverley Road and Boutiliers Lane, indicating there is approximately 200 metres of sight distance available. The minimum stopping and turning sight distance requirements are met north of the access.

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<sup>2</sup> *Geometric Design Guide for Canadian Roads*, Transportation Association of Canada, June 2017.





Figure 5: Site Access #1 Sight Line South of Access (Looking to the Right)



Figure 6: Site Access #1 Sight Line North of Access (Looking to the Left)





#### Site Access #4

The decision sight line south of the access on Waverley Road (looking to the right) is shown in Figure 7. The sight line extends to the Irving gas station south of the subject site, indicating there is over 160 metres of sight distance available. The minimum stopping and turning sight distance requirements are met south of the access.

The decision sight line north of the access on Waverley Road (looking to the left) is shown in Figure 8. The sight line extends to the intersection of Waverley Road and Boutilliers Lane, indicating there is approximately 225 metres of sight distance available. The minimum stopping and turning sight distance requirements are met north of the access.



Figure 7: Site Access #4 Sight Line South of Access (Looking to the Right)





Figure 8: Site Access #4 Sight Line North of Access (Looking to the Left)





## 8 Conclusions and Recommendations

Harbourside Transportation Consultants has completed a traffic impact statement, as per Halifax Regional Municipality requirements, to support the development application for the proposed development at 217 Waverley Road in Dartmouth, Nova Scotia.

The following conclusions were gathered from the traffic impact statement:

- ▶ The proposed development will be a high-rise residential building including 141 units.
- ▶ Access to the proposed development parcel will be based on the existing access on Waverley Road as well as a new access point at the south end of the subject site. The reconfiguration and consolidation of accesses to the development will eliminate two existing access points (#2 and #3) on Waverley Road.
- ▶ The vehicle trip generation estimates for the proposed development were quantified using trip generation rates obtained from the ITE Trip Generation Manual (11th edition). The proposed development is expected to generate 50 vehicle trips in the AM peak hour (13 trips in/37 trips out) and 60 vehicle trips in the PM peak hour (37 trips in/23 trips out).
- ▶ All site generated vehicle traffic will travel along Waverley Road, the peak-direction traffic on Waverley Road is southbound during the AM peak hour (travelling towards Highway 111 and downtown Dartmouth) and northbound during the PM peak hour.
- ▶ The development will generate approximately 55 additional vehicle trips in the peak direction of traffic on Waverley Road during the AM and PM peak hours. It is anticipated that the new vehicle trips associated with the proposed development can be accommodated along Waverley Road with a negligible impact on traffic operations.
- ▶ The proposed access point #4 is directly adjacent to the existing bus stop. This may affect both the access and the bus stop both during and after construction and should be considered.

If there are any questions or additional discussion, please feel free to contact the undersigned.

Regards,



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