



March 1, 2024
Project No. 242019

Paul Dec, Planner MCIP LPP
Upland Planning + Design Studio
1489 Hollis Street, Level 2
Halifax, NS B3J 3M5

Re: 749 Windgate Drive – Traffic Impact Statement

1 Introduction

Harbourside Transportation Consultants has completed a traffic impact statement, as per Halifax Regional Municipality (HRM) requirements, in support of the rezoning application for Civic #749 Windgate Drive (PID #40373276) in Beaver Bank, Nova Scotia.

The subject site is currently within the MU-1 (Mixed Use 1) Zone of the Land Use By-Law for Beaver Bank, Hammonds Plains and Upper Sackville¹. The rezoning application is being submitted to allow the operation of an auto repair and sales business which is permitted under the I-1 (Mixed Industrial) Zone.

2 Site Context

The subject site is located on Windgate Drive east of Rivendale Drive. The site context is shown in Figure 1.

3 Existing Transportation Network

Windgate Drive is a major collector roadway that runs east-west from Beaver Bank Road to Windsor Junction Road. Windgate Drive has a two-lane cross-section with one travel lane in each direction. Windgate Drive has a posted speed limit of 70 km/h. There is no transit service on Windgate Drive and there are no existing walking or cycling facilities.

The Windgate Drive cross section near the subject site is shown in Figure 2.

¹ Land Use By-Law for Beaver Bank, Hammonds Plains and Upper Sackville, Halifax Regional Municipality, February 2017.



Figure 1: Site Context



Figure 2: Windgate Drive

4 Site Access

Vehicle access to/from the site is accommodated through one driveway on Windgate Drive. A sight distance review was completed at the existing access location 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 Roads².

The minimum stopping and turning sight distance requirements for a two-lane roadway with a design speed of 70 km/h are:

- ▶ Minimum stopping sight distance = 105 metres;
- ▶ Minimum turning sight distance – left-turn from stop = 150 metres; and
- ▶ Minimum turning sight distance – right-turn from stop = 130 metres.

The sight line west of the access (looking to the right) is shown in Figure 3. There is approximately 170 metres of sight distance looking to the right of the access. The stopping sight distance and turning sight distance requirements are met west of the access.

The sight line east of the access (looking to the left) is shown in Figure 4. There is approximately 140 metres of sight distance looking to the left of the access. The stopping sight distance and turning sight distance requirements are met west of the access.



Figure 3: Sight Line West of Access (Looking to the Right)

² Geometric Design Guide for Canadian Roads, Transportation Association of Canada, June 2017.



Figure 4: Sight Line East of Access (Looking to the Left)

5 Current Business Operations

The existing business operating on the subject site is a construction and excavation company. The site consists of a 1,160ft² administrative building and a 1,500ft² garage. The existing site plan is shown in Figure 5.

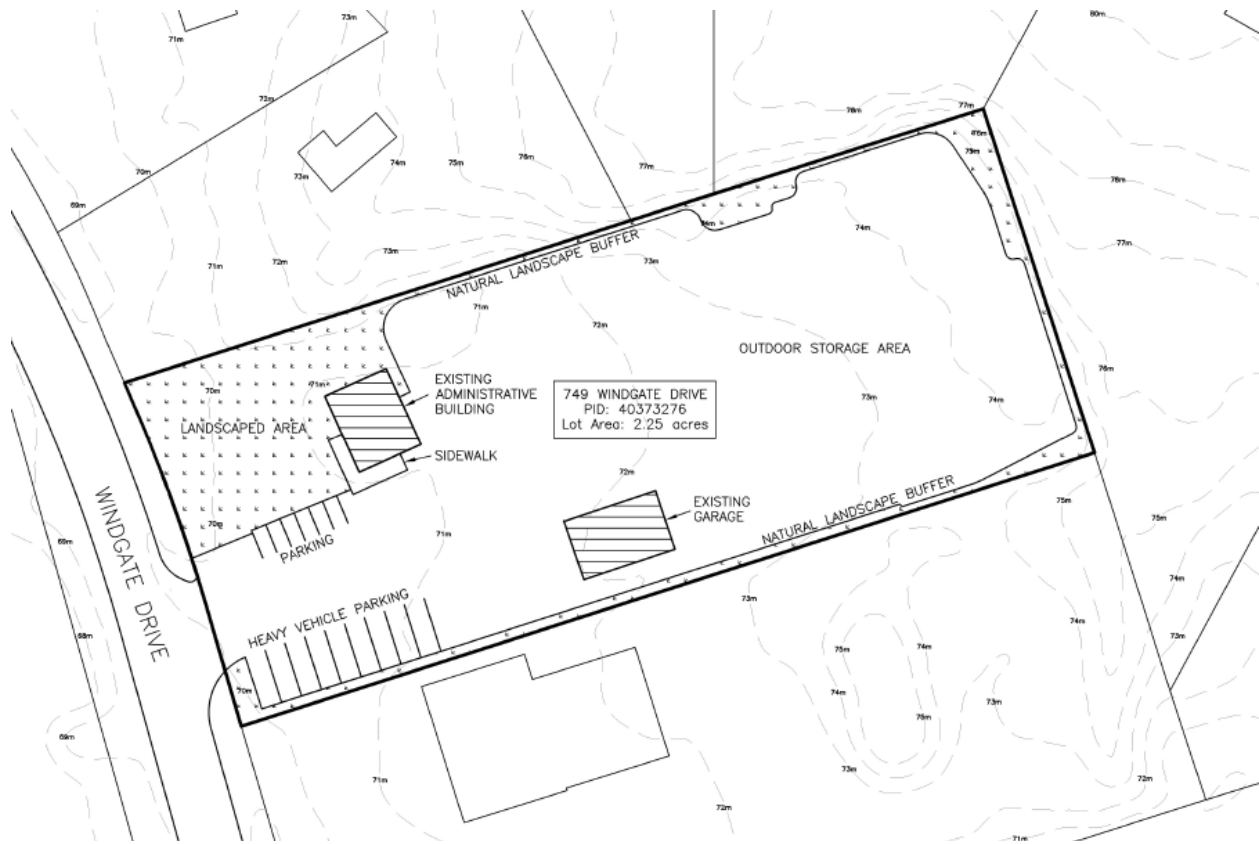


Figure 5: Existing Site Plan

5.1 Trip Generation

The Institute of Transportation Engineers (ITE) Trip Generation Manual³ was used to estimate the vehicle trip generation for the existing site land use. Land use code 180 Specialty Trade Contractor was used for the existing business. Table 1 summarizes the trip generation rates for the land use code.

Table 1: Trip Generation Rates - Existing Land Use

Land Use	AM Peak Hour			PM Peak Hour		
	Rate	Entering	Exiting	Rate	Entering	Exiting
180 Specialty Trade Contractor	1.66	74%	26%	1.93	32%	68%

Note: Rates are in vehicles per hour vph/1000ft² of gross floor area (GFA).

The weekday morning (AM) and afternoon (PM) peak hour trip generation estimates for the site's existing land use are summarized in Table 2. On a typical weekday, the site is estimated to generate 4 vehicle trips in the AM peak hour and 5 vehicle trips in the PM peak hour.

Table 2: Trip Generation Estimates - Existing Land Use

Land Use	Qty	AM Peak Hour			PM Peak Hour		
		Total	Entering	Exiting	Total	Entering	Exiting
180 Specialty Trade Contractor	2.66	4	3	1	5	2	3

³ Trip Generation Manual, 11th edition, Institute of Transportation Engineers, September 2021.

6 Proposed Business Operations

The proposed rezoning application would enable the operation of a used car sales business on the subject site. The existing buildings on site would be maintained and converted into a sales and service office and a car maintenance garage. The proposed rezoning site plan is shown in Figure 6.

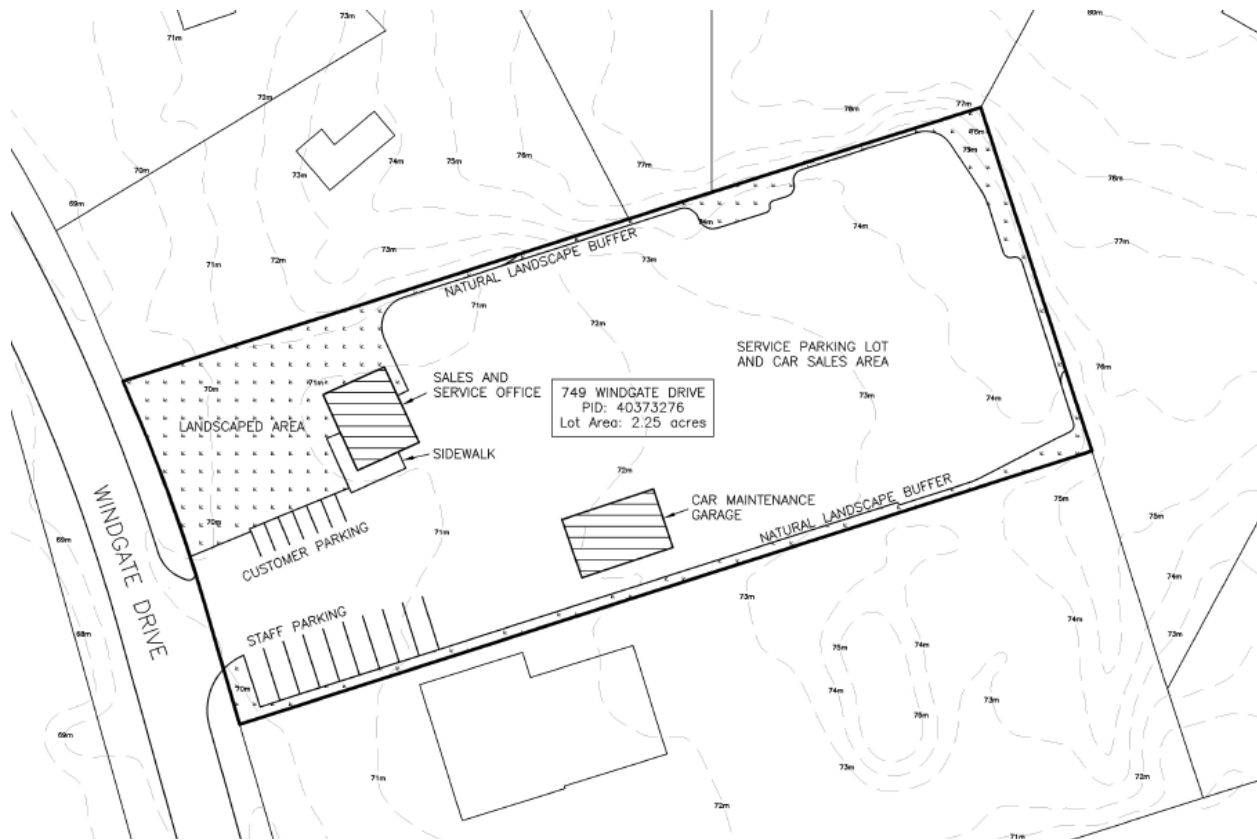


Figure 6: Proposed Rezoning Site Plan

6.1 Trip Generation

Land use code 841 Automobile Sales (Used) was used to estimate the vehicle trip generation for the proposed site land use. Table 3 summarizes the trip generation rates for the land use code.

Table 3: Trip Generation Rates - Proposed Land Use

Land Use	AM Peak Hour			PM Peak Hour		
	Rate	Entering	Exiting	Rate	Entering	Exiting
841 Automobile Sales (Used)	2.13	76%	24%	3.75	47%	53%

Note: Rates are in vehicles per hour vph/1000ft² of gross floor area (GFA).

The weekday AM and PM peak hour trip generation estimates for the site's proposed land use are summarized in Table 4. On a typical weekday, the site is estimated to generate 6 vehicle trips in the AM peak hour and 10 vehicle trips in the PM peak hour.

Table 4: Trip Generation Estimates – Proposed Land Use

Land Use	Qty	AM Peak Hour			PM Peak Hour		
		Total	Entering	Exiting	Total	Entering	Exiting
841 Automobile Sales (Used)	2.66	6	4	2	10	5	5

7 Traffic Impacts

Table 5 compares the trips generated by the existing land use and the proposed land use with the rezoning. The proposed land use is expected to increase trips to/from the site by 2 trips in the AM peak hour and 5 trips in the PM peak hour.

Table 5: Comparison of Trip Generation Estimates

Land Use	AM Peak Hour			PM Peak Hour		
	Total	Entering	Exiting	Total	Entering	Exiting
Existing Land Use	4	3	1	5	2	3
Proposed Land Use	6	4	2	10	5	5
Net Trips Generated (vph)	+2	+1	+1	+5	+3	+2

8 Conclusions and Recommendations

The change in operations on the site will result in a negligible increase in trips to/from the site. It is anticipated that the new vehicle trips can be accommodated on Windgate Drive with no appreciable impact on traffic operations.

If you have any questions or additional discussion, please feel free to contact the undersigned.

Regards,



Michael MacDonald, P. Eng.
Senior Transportation Engineer, Principal
Tel: 902-405-4655
Email: mmacdonald@harboursideengineering.ca

