

Ontario Avenue - Traffic and Parking Brief - Technical Memorandum

January 18, 2024

To	Dominic Spedalieri	Tel	416-671-6546
Copy to		Email	dominic@realtave.ca
From	Vanessa Skelton, P. Eng.	Ref. No.	12618204
Subject	Traffic and Parking Brief for Proposed Development South of 5567 Ontario Avenue in Niagara Falls		

1. Introduction

GHD completed a traffic and parking brief to demonstrate that the single lane proposed driveway access will have adequate safety once the site development is completed. The parking demand and utilization of the existing site at 5567 Ontario Avenue, Niagara Falls, Ontario was observed to justify the reduction in parking supply proposed under full build-out conditions. The full build-out conditions occur after the completion of the new building and will consist of a shared driveway entrance and parking for both apartment buildings. The existing parking lot will be redeveloped with a single driveway entrance and shared parking for both buildings.

This technical memorandum includes the following components for the traffic brief:

- Utilization of the Institute of Transportation Engineers (ITE) *Trip Generation Manual* to forecast the number of trips generated by the existing and proposed dwelling units that would be entering and exiting the proposed driveway access during the morning (AM) and afternoon (PM) peak hours under full build-out conditions.
- Assessment of the proposed access design with the Transportation Association of Canada (TAC) *Geometric Design Guide for Canadian Roads (GDGCR)*. Specific attention was given to the elements presented in Section 8.9 Driveways including, but not limited to sight distance, width, and clear throat lengths.
- Discussion of the potential and frequency of vehicular conflict within and at the proposed driveway access under full build-out conditions and recommend any mitigation measures, if necessary.

The parking brief includes the following components:

- Assessment of the parking demand through the observed utilization of the existing parking supply at 5567 Ontario Avenue through a site visit prior to the AM peak hour, during the midday (MD) peak hour, and after the PM peak hour on a typical weekday and a typical weekend day.
- Development of an aggregate parking utilization rate based on the number of existing dwelling units and the parking demand.
- Comments on the appropriateness of the proposed parking supply as depicted within the proposed site plan for the intended development based on the aggregate parking utilization rate.

2. Proposed Development

The subject site is situated adjacent to an existing building at 5567 Ontario Avenue in Niagara Falls, Ontario. Ontario Avenue is a local road, with one lane per direction and a posted speed limit of 50 km/h. DSV Capital Management Corporation intends to build a residential building with 3-storeys and 11 dwelling units. The proposed site plan is illustrated in Figure 1.

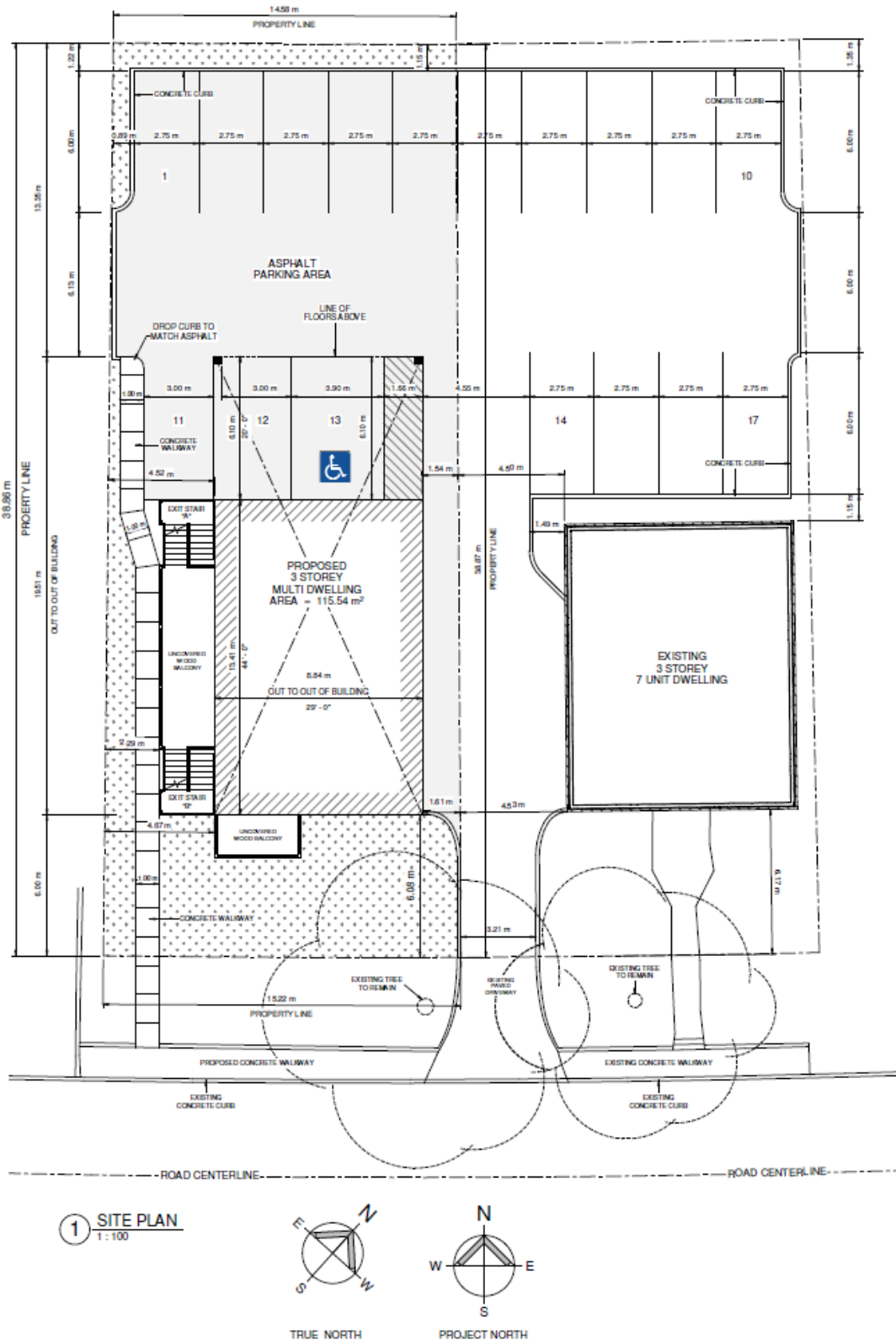


Figure 1 Proposed Site Plan

3. Trips Generated

The ITE Trip Generation Manual was used to forecast the number of trips generated by the existing and proposed dwelling units that would be entering and exiting the proposed driveway access during the morning (AM) and afternoon (PM) peak hours under fully occupied conditions. The values from the 11th Edition of Trip Generation Manual for the two residential apartment building are presented in **Table 1**. Land Use Code 220, representing low-rise multifamily housing, was used to determine the average trip generation rate, the directional distribution, and total trips. The average rate was used to determine the trips generated rather than the fitted curve equation due to the better correlation between the average rate results for the low number of dwelling units proposed in this development. The two shared buildings will have a total of 18 dwelling units with the proposed building having 11 dwelling units and the existing building having 7 dwelling units.

Table 1 AM and PM Peak Period Trip Generation for Two Residential Apartments

Land Use Code	Land Use Description	Independent Variable	Time Period	Units	Average Rate	Directional Distribution		Calculated Trip Ends		
						Enter	Exit	Total Trips	Entry	Exit
220	Multifamily Housing (Low-Rise)	Number of dwelling units	AM	18	0.40	24%	76%	7	2	5
			PM	18	0.51	63%	37%	9	6	3

The trip generation calculation shows that are 7 total trips in the morning (AM) period, with 2 entering and 5 exiting the property. There are 9 total trips in the evening (PM) period with 6 entering and 3 exiting the property.

4. Sight Distance Assessment

The minimum required stopping sight distance was compared to the observed stopping sight distances for the eastbound and westbound direction of travel along Ontario Avenue approaching 5567 Ontario Avenue.

As per TAC GDGCR, stopping sight distance is based upon driver eye height, vehicle tail or brake light height, design speed, and roadway geometry. Ontario Avenue has a regulatory posted speed limit of 50 km/h within the vicinity of 5567 Ontario Avenue. The assumed operational speed of the road is 10 km/h higher than the posted speed limit.

Table 2 presents the required minimum stopping sight distance variables and the associated values for Ontario Avenue.

Table 2 Required Minimum Stopping Sight Distance and Associated Values

Variable	TAC GDGCR Reference	Associated Value
Driver Eye Height	Section 2.4.2.3 Driver Eye Height	1.08 metres
Vehicle Tail or Brake Light Height	Section 2.5.2.1 Object Height	0.60 metres
Posted Speed	Not Applicable	50 kilometres/hour
Design Speed	Not Applicable	60 kilometres/hour
Minimum Required Stopping Sight Distance based on Design Speed	Table 2.5.2. Stopping Sight Distance on Level Roadways for Automobiles	85 metres

The minimum required stopping sight distance for the eastbound and westbound vehicles travelling along Ontario Avenue is 85 metres.

Stopping sight distances were measured on a map for the eastbound and westbound direction of travel along Ontario Avenue from the driveway at 5567 Ontario Avenue and are presented in **Table 3**.

Table 3 Observed Stopping Sight Distances from Google Earth Streetview

Direction of Travel	Measured Stopping Sight Distance
Eastbound	150 m
Westbound	50 m (Road Ends)

Based on the minimum required stopping sight distance of 85 metres, eastbound direction of travel is adequate at 150 metres. Ontario Avenue is closed to the east of Hiram Street, therefore there is only 50 m of roadway to the west of the site driveway, therefore there is no sight distance issue in the west direction.

5. Driveway Access Location and Design

The proposed site plan illustrates an entry driveway width of 3.2 metres. Based on TAC GDGCR Table 8.9.1: Typical Driveway Dimensions, a two-way residential driveway should have a width between 2.0 and 7.3 metres. The proposed driveway meets the requirements of the TAC GDGCR guidelines.

Table 8.9.1: Typical Driveway^c Dimensions

Dimension (m)	Land Use		
	Residential	Commercial	Industrial
Width (W)			
- One way	3.0 ^a – 4.3	4.5 ^a – 7.5	5.0 – 9.0
- Two way	2.0 ^a – 7.3	7.2 ^a – 12.0 ^b	9.0 ^a – 15.0 ^b
Right turn radius (R)	3.0 – 4.5	4.5 – 12.0	9.0 – 15.0

Notes:

- a. Minimum widths are normally used with radii at or near the upper end of the specified range
- b. Increased widths may be considered for capacity purposes; where up to 3 exit lanes and 2 entry lanes are employed, 17.0 m is the maximum width exclusive of any median
- c. Applicable to driveways only, not road intersections

The maximum width of driveway or parking area in the front yard of a lot as specified in Section 4.19 Parking in Yards 2008-148 of the City of Niagara Falls By-Law 79-200 (Zoning By-Law) is 60% of the frontage to a maximum of 9.0 metres for a 3-storey residential apartment within the Residential Two Zone (R2). Based on the site plan, the requirement for maximum width is satisfied.

6. Vehicular Conflict Under Full Build Conditions at Proposed Driveway

A motorist slowly exiting the parking lot of the property will be able to stop to make way for vehicle entering the parking lot from Ontario Avenue. Likewise, the vehicle slowly entering the property from Ontario Avenue will be able to stop to make way for the motorist getting out of the parking lot of the property. During the morning AM peak period, 7 total trips are expected with 5 exiting and 2 entering the property. In the evening PM peak period, 9 total trips are expected with 3 exiting and 6 entering the property. There are expected to be no problems with vehicular conflict along the driveway under full build-out conditions.

7. Zoning and Parking Requirements

7.1 Niagara Zoning and Parking Policy

The parking rate for Zone R2 in the City of Niagara Falls is *1.4 parking space per unit*. Based on this rate, the required parking spaces is 10 parking spaces for the existing building and 15 parking spaces for the proposed building. The proposed site plan accommodates 16 non-accessible and 1 accessible parking space which does not meet the requirements from the zoning-by-law.

7.2 Parking Needs According to Existing Use

The site visit was conducted for both weekday and weekend on the existing apartment to determine the number of occupied parking spaces. The site visits were conducted on Saturday, July 22, 2023, and Tuesday, July 25, 2023. Site visits included inspections at 7 AM, 12 PM, noon, and 7 PM for both weekend and weekday for 5 minutes to determine the number of occupied parking space during those time periods. There are 7 apartment units on the existing building in 5567 Ontario Avenue. An estimate from the site visit showed that 7 parked vehicles could fit in the parking area. **Table 4** shows the results of the number of occupied parking spaces noted during the site visit.

Table 4 Occupied Parking Spaces in 5567 Ontario Avenue

Parking Time Zone	# of Parking Spaces Occupied
Saturday, July 22, 2023 – 7 AM	4 Spaces
Saturday, July 22, 2023 – 12 PM Noon	3 Spaces
Saturday, July 22, 2023 – 7 PM	4 Spaces
Tuesday, July 25, 2023 – 7 AM	4 Spaces
Tuesday, July 25, 2023 – 12 PM Noon	3 Spaces
Tuesday, July 25, 2023 – 7 PM	4 Spaces

Based on the existing use of the parking area and the number of units in the existing building, the rate of parking currently is 0.5 spaces per unit assuming that all units are occupied. However, if only 4 of the apartments were occupied, then the parking rate is 0.92 spaces per unit.

7.3 Future Parking Needs

The proposed building will have 11 dwelling units and together with the existing building gives a total of 18 dwelling units. Using the rate of 0.92 parking space per dwelling units, there would need to be 17 parking spaces for both buildings.

Based on the parking space occupancy calculations, a rate of 0.92 spaces per dwelling unit would be sufficient. Therefore, the parking spaces provided, as shown on the site plan, will be sufficient to service the two buildings.

8. Conclusion

Through an assessment of trip generation, sight distance, driveway access location and design, and zoning and parking requirements, the following conclusions can be drawn:

- When the site is fully operational, with all 18 units occupied, there will be 7 total trips with 2 entering and 5 exiting during the AM peak hour and 9 total trips with 6 entering and 3 exiting during the PM peak hour.
- There are no issues with site access, sight lines, driveway access location and design and vehicular conflict.

- The site visit resulted in an aggregate parking rate of 0.92 parking space per dwelling unit, resulting in the need for 17 parking spaces. The site plan shows 17 parking spaces therefore the supplied parking spaces will not be an issue.

Regards,

Vanessa Skelton, P. Eng.
Project Manager, Transportation
+1 613 288-1727
Vanessa.skelton@ghd.com

Scope and Limitations

This technical memorandum has been prepared by GHD for DSV Capital Management Corp and NPG Planning Solutions. It is not prepared as, and is not represented to be, a deliverable suitable for reliance by any person for any purpose. It is not intended for circulation or incorporation into other documents. The matters discussed in this memorandum are limited to those specifically detailed in the memorandum and are subject to any limitations or assumptions specially set out.

Accessibility of Documents

If this Technical Memorandum is required to be accessible in any other format this can be provided by GHD upon request and at an additional cost if necessary.