

TRAFFIC IMPACT STATEMENT

Presented to: Joe Ruscio, Joe Ruscio Professional Corporation

Project: 22 MacDonald Avenue Traffic Impact Statement (CIMA+ File Number: Z0022811)

From: Jaime Garcia, CIMA+

Date: January 13th, 2025

Subject: 22 MacDonald Avenue Traffic Impact Statement

1. Introduction

CIMA+ Canada Inc. (CIMA+) was retained by Joe Ruscio Professional Corporation to develop a traffic impact statement for a proposed development at 22 MacDonald Avenue, Sault Ste Marie.

The proposed development is in the northwest corner of MacDonald Avenue and Gladstone Avenue. The site location is shown in **Figure 1**.

Currently, the subject site is zoned as "Parks and Recreation" and is proposed to be a "High Density Residential Zone" with an 8-storey, 230-unit apartment.

1.1 Adjacent Roads

The subject site is bounded by two roads: MacDonald Avenue and Gladstone Avenue.

Based on the City of Sault Ste Marie Official Plan Schedule 'D', **MacDonald Avenue** is classified as an **Urban Collector**. It runs east-west and has a two-lane cross section and bounds the subject site on the south.

Gladstone Avenue is a two-lane local road running north-south on the east side of the subject site.



Figure 1 - Site Location

1.2 Existing Traffic Volumes:

Gladstone Avenue:

The City conducted a full day traffic count on Gladstone Avenue from 10:00am June 16, 2011 to 14:00pm June 17, 2011. Based on the traffic count, the highest hourly volume is 86 veh/hr for two directions and occurred between 14:00-15:00. The 24-hour daily traffic volume is 964 vehicles.

MacDonald Avenue:

The City provided a full day traffic count for MacDonald Avenue counted from 14:00pm June 20, 2016 to 22:00pm June 27, 2016. Based on the traffic count, the highest hourly volume is 265 veh/hr for two directions and occurred between 16:00-17:00. The highest 24-hour daily traffic volume is 3080 vehicles.

The existing two-way peak hour and daily traffic volumes are also shown in **Figure 1**.

1.3 Existing Speeds

Gladstone Avenue:

Hourly speeds were measured at the same time as the traffic counts summarized in Section 1.2. The majority of vehicles were shown to travel at an operating speed lower than 40km/h with occasional vehicles operated between 40km/h and 50km/h. There were no vehicles with a speed over 50km/h. The speed study statistics results are as shown in **Table 1**.

Table 1 - Speed Study Results on Gladstone Avenue

Results	Northbound	Southbound
Average Speed (km/h)	20	20
85 th %ile* Speed (km/h)	35	35

MacDonald Avenue:

Based on the City’s speed study, the majority vehicles operated at speed lower than 60km/h with only the occasional vehicle operating between 60km/h and 70km/h. There were no records of speed over 70km/h. The speed study statistics results are as shown in **Table 2**.

Table 2 - Speed Study Results on MacDonald Avenue

Results	Eastbound	Westbound
Average Speed (km/h)	39	33
Median Speed (km/h)	44	39
85 th %ile* Speed (km/h)	53	49

Given that there are no speed limit signs on these two roads, it is assumed that the speed limits are 50 km/h. In summary, vehicles operate at a reasonable speed along the two roads in question with some vehicles over the limit on MacDonald Avenue which is not unusual. As volumes increase on a roadway, speeds tend to go down.

* This row indicates that 85% of all observed vehicles operate at or below the stated speed shown in the table.

2. Site Generated Traffic

From the Institution of Transportation Engineers (ITE) Trip Generation Manual 10th Edition, the site generated traffic volumes on adjacent streets during weekday AM peak hour, PM peak hour, and weekday daily can be obtained. Since the proposed development is a high-rise apartment with 230 units, the appropriate Land Use Category is # 222. The estimated site generated trips are shown in **Table 3**.

Table 3 - Site Generated Trip Estimates

Weekday AM Peak Hour		Weekday PM Peak Hour		Weekday Daily	
Trip Rate	Estimated Trips	Trip Rate	Estimated Trips	Trip Rate	Estimated Trips
0.31	71	0.36	83	4.45	1,204

Based on the site location relative to the City, site trip distribution is estimated as **Table 4**.

Table 4 - Site Trip Distribution

Direction	West on MacDonald	East on MacDonald	North on Gladstone
% of total	50%	30%	20%
Total Trips (AM)	36	21	14
Total Trips (PM)	42	25	17
Total Trips (Daily)	602	361	241

The site generated traffic volumes assigned to the road are as shown in **Figure 2**.

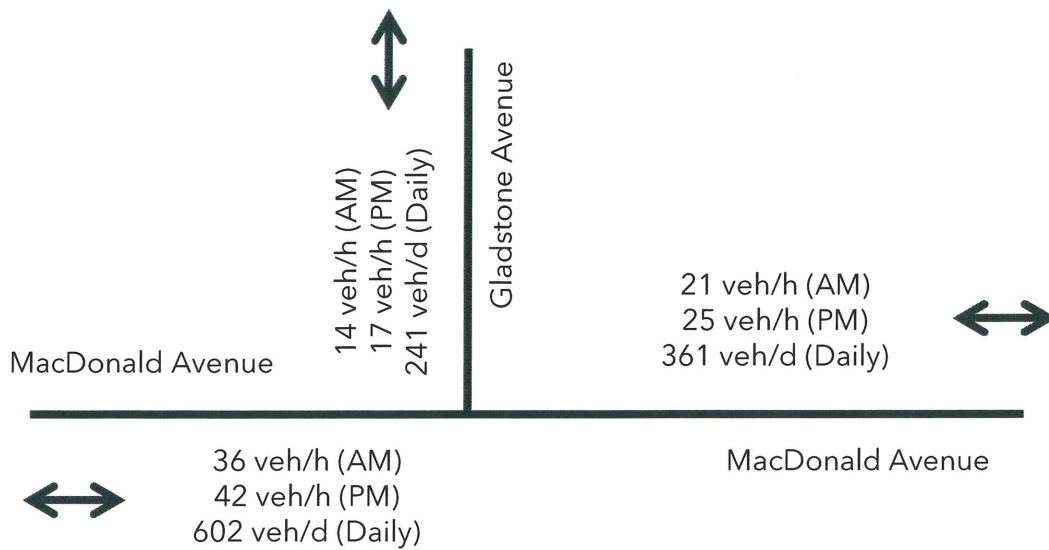


Figure 2 - Site Traffic Volumes

3. Total Traffic Volumes

Traffic volumes on the adjacent streets are currently very low; since the site generated trips are also low, traffic volumes will remain low. With the development in place, the peak hour volume would be 307 veh/hr (PM peak hour) and daily volume would be 3682 veh/day on MacDonald Avenue.

On Gladstone Avenue, the peak hour volume would be 103 vehicles (PM peak hour) and a daily volume of 1205 vehicles. The daily traffic volumes with and without the development are shown in **Figure 3**.

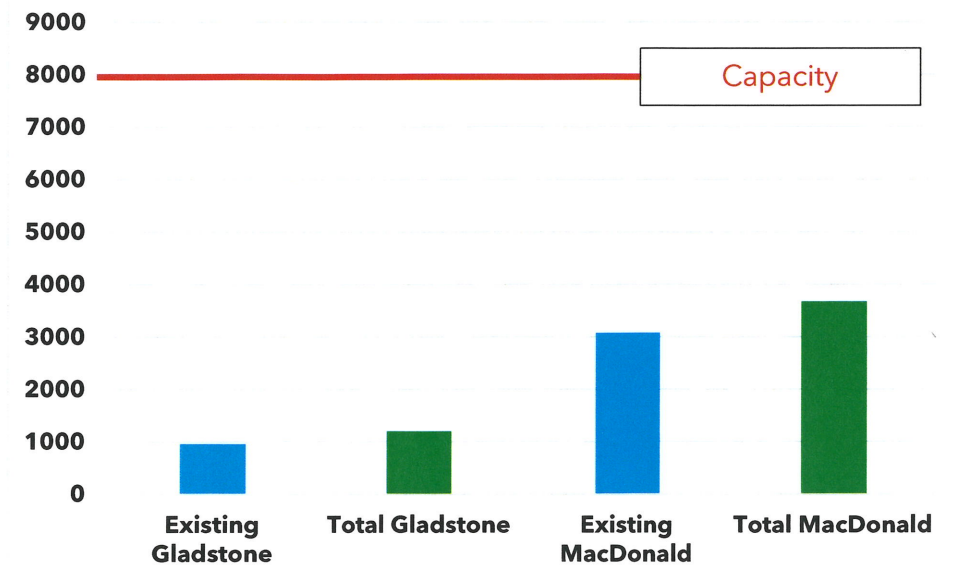


Figure 3 - Total Traffic Volumes (total includes apartment traffic)

Generally, a two-lane road similar to Gladstone Avenue and MacDonald Avenue can accommodate peak hour traffic volumes up to 800 veh/hr and daily traffic volumes up to 8000 veh/day while maintaining a good level of service (*Reference: Geometric Design Guide for Canadian Roads Table 2.6.5*). In **Figure 3** above, the capacity figure indicated by the red line is shown to illustrate the fairly low volumes (existing and post apartment) present.

There is currently transit services adjacent to the site with a bus stop located on MacDonald Avenue. Due to the convenience of transit service, some residents of the proposed apartment may use the transit service and reduce the calculated traffic generation numbers.

4. Past Traffic Volumes

In the past there was a high school, Sault Collegiate Heights (closed in 1995), on MacDonald Avenue and an Elementary school, King George V Public School (closed in 1992). Based on the City traffic counts provided by the City, when the two schools were in operation, the daily traffic volume on MacDonald Avenue was 5228 veh/d (counted on June 9, 1988), and on Gladstone 1087 veh/d (counted on October 27, 1988).

TRAFFIC IMPACT STATEMENT

22 MacDonald Avenue Traffic Impact Statement
January 13th, 2025 - Jaime Garcia, CIMA+
CIMA+ Ref.: Z0022811

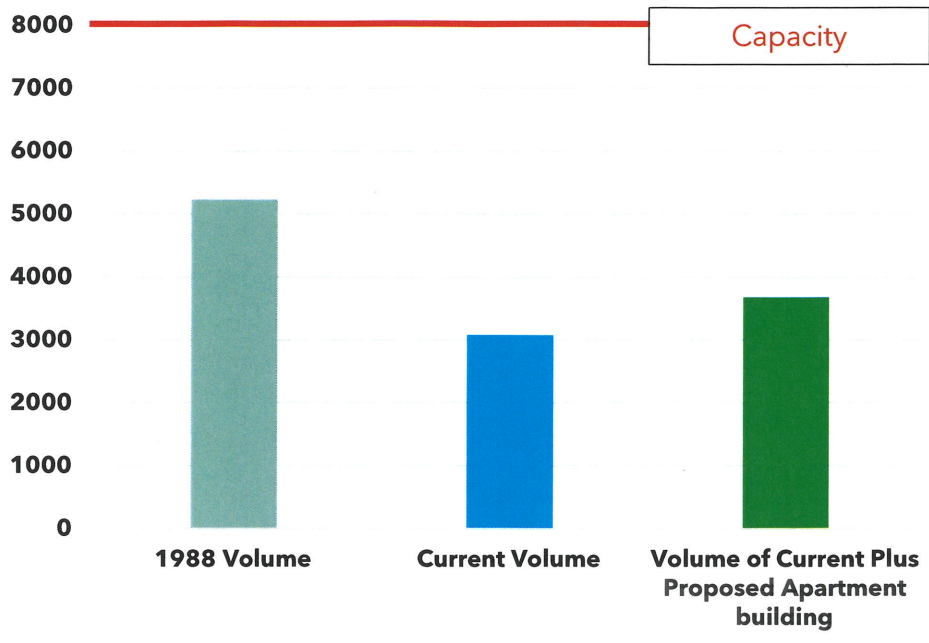


Figure 4 - Traffic Volumes on MacDonald Avenue

A simple comparison shows that when the two schools were in operation, traffic volumes were much higher than current volumes and also anticipated volumes when the apartment is in place.

5. Conclusions

1. Generally, two-lane roads like MacDonald Avenue can accommodate daily traffic volumes of 8,000 veh/h without experiencing congestion (*Reference: Geometry Design Guide for Canadian Roads Table 2.6.5*). Currently MacDonald Avenue carries about 3,000 veh/day and Gladstone Avenue 1,000 veh/day.
2. The subject apartment site will generate a moderate volume of traffic, approximately 83 vehicles in the peak hour and 1205 vehicles daily. Therefore, impact on the adjacent streets, MacDonald Avenue and Gladstone Avenue will be insignificant.
3. With the apartment building in place, traffic volumes on MacDonald Avenue are expected to rise from 3,000 veh/day to about 3,600 veh/day, a figure still well below capacity.
4. Traffic volumes on MacDonald Avenue were higher in the 1980s (approximately 5,200) when two schools were located in the immediate area. With the apartment building in place, traffic volumes will be much lower (3,600) than they were in the 1980s.

Sincerely

CIMA CANADA INC.



Jaime Garcia, P.Eng., Ph.D.

Senior Project Manager | Transportation

