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ORANGEVILLE • FERGUS • GRAVENHURST • HARRISTON

January 18, 2023

Town of Orangeville
87 Broadway
ORANGEVILLE, Ontario
L9W 1K1

Attention: Mr. Tony Dulisse, C.E.T.

RE: INTERSECTION ANALYSIS
Alder Street/Sherwood Street and Alder Street/Glengarry
Road
Town of Orangeville
Our File: I4752A

Dear Mr. Dulisse:

Triton Engineering Services Limited undertook a traffic count at the intersections of Alder Street and Sherwood Street, and Alder Street and Glengarry Road, to provide a comparison of vehicle volumes and pedestrian crossing volumes at each intersection. The count at the Sherwood intersection was undertaken on Tuesday, December 20, 2022 and the count at the Glengarry intersection was undertaken on Monday, December 19, 2022. Both counts were an 8-hour count as required by an all-way stop analysis in accordance to OTM Book 5 for a collector road, undertaken from 7:00 am to 9:00 am, from 11:00 am to 2:00 pm, and from 3:00 pm to 6:00 pm. A summary of the vehicle and pedestrian movements for each intersection is attached, broken down into 15-minute intervals.

A traffic count and letter were undertaken for the Alder Street and Sherwood Street intersection in June 2022. The results confirmed that an all-way stop was not warranted based on vehicle and pedestrian volumes. The Town installed an all-way stop at the intersection during the summer of 2022 in response to concerns raised that there was not an available location for pedestrians to cross Alder Street between Riddell Road and B Line. A school crossing is also provided at the east side of the Alder and Glengarry intersection, although it does not meet the standard in OTM Book 11, which requires double white crosswalk lines, blue background Wc-2 and Wc-2A signs, and Wc-2t and Wc-2At tabs attached to the crossing signs.

Both intersections were analysed for an all-way stop to determine if volumes were approaching the minimum thresholds. The warrant for an all-way stop is determined from Book 5 of the Ontario Traffic Manual. The latest version was released in 2021 and contains updated warrants, including different warrants for urban arterial roads, collector and rural arterial roads, and local roads. Alder Street is considered a minor collector and Sherwood Street and Glengarry Road are considered local roads. For a collector road, the warrant is:

- 375 vehicles per hour for each of any eight hours in a day;
- combined vehicular and pedestrian volume on the minor street wishing to enter the intersection

exceeding 150 units per hour for the same eight hours, or combined vehicular and pedestrian volume on the minor street wishing to enter the intersection exceeding 120 units per hour for the same eight hours with an average delay to all minor street traffic of 30s or more; and,

- a volume split that does not exceed 70/30 as measured over the entire eight hour count, with the major street volume only including vehicles and the minor street volume including vehicles and pedestrians wishing to cross the major street (for a three-legged intersection, a 75/25 split is permissible).

For a local road, the warrant is:

- 200 vehicles per hour for each of any four hours in a day;
- combined vehicular and pedestrian volume on the minor street wishing to enter the intersection exceeding 75 units per hour for the same four hours; and,
- a volume split that does not exceed 70/30 as measured over the entire eight hour count, with the major street volume only including vehicles and the minor street volume including vehicles and pedestrians wishing to cross the major street (for a three-legged intersection, a 75/25 split is permissible).

Alder Street and Sherwood Street

The highest hourly volume recorded was 224 vehicles from 8:15 am to 9:15 am, the highest combined vehicular and pedestrian volume on the minor street was 38 vehicles and pedestrians from 8:15 am to 9:15 am, and the split during the eight hour count was 87/13. The intersection traffic volumes do not exceed the minimum volumes for any single hour of the day, the minor street vehicle and pedestrian volumes do not exceed 120 units for any single hour of the day, and the minor street traffic is less than 30% of total intersection traffic; therefore an all-way stop is not warranted under the collector road criteria.

The volume recorded exceeded the required 200 vehicles in only two of the counted: 224 vehicles from 8:15 am to 9:15 am and 210 vehicles from 3:00 pm to 4:00 pm. The highest combined vehicular and pedestrian volume on the minor street was 38 vehicles and pedestrians from 8:15 am to 9:15 am and the split during the eight hour count was 87/13. The intersection traffic volumes do not exceed the minimum volumes for all four highest counted hours of the day, the minor street vehicle and pedestrian volumes do not exceed 75 units for any single hour of the day, and the minor street traffic is less than 30% of total intersection traffic; therefore an all-way stop is not warranted under the local road criteria.

Alder Street and Glengarry Road

The highest hourly volume recorded was 201 vehicles from 8:15 am to 9:15 am, the highest combined vehicular and pedestrian volume on the minor street was 34 vehicles and pedestrians from 8:15 am to 9:15 am, and the split during the eight hour count was 89/11. The intersection traffic volumes do not exceed the minimum volumes for any single hour of the day, the minor street vehicle and pedestrian volumes do not exceed 120 units for any single hour of the day, and the minor street traffic is less than 30% of total intersection traffic; therefore an all-way stop is not warranted under the collector road criteria.

The highest hourly volume recorded was 201 vehicles from 8:15 am to 9:15 am, but this was the only hour that exceeded 200 vehicles. The highest combined vehicular and pedestrian volume on the minor street was 38 vehicles and pedestrians from 8:15 am to 9:15 am and the split during the eight hour count was 89/11. The intersection traffic volumes do not exceed the minimum volumes for all four highest counted hours of the day, the minor street vehicle and pedestrian volumes do not exceed 75 units for any single hour of the day, and the minor street traffic is less than 30% of total intersection traffic; therefore an all-way stop is not warranted under the local road criteria.

Pedestrian Crossing Volumes

The traffic count included pedestrians crossing volumes on each street of the intersections and are

summarized for the total eight hour count in the table below.

Table 1: Eight hour Pedestrian Crossing Volumes

Alder Street and Sherwood Street	
Pedestrians Crossing Alder	11
Pedestrians Crossing Sherwood	39
Alder Street and Glengarry Road	
Pedestrians Crossing Alder	14
Pedestrians Crossing Glengarry	17

As shown in the table above, the volumes crossing Alder Street are very similar, but twice as many pedestrians cross Sherwood Street compared to Glengarry Road. Glengarry Road has a sidewalk on the east side of the road and provides a more direct route to Spencer Avenue Elementary School, which may indicate that pedestrians cross Sherwood Street and access the school via the sidewalk on Glengarry Road.

Summary

Neither intersection meets the warrants for an all-way stop, but the volumes at the Alder and Sherwood intersection are closer. More pedestrians cross Alder Street at Glengarry Road since it provides a more direct route to the school, but the difference in volume is minimal.

We trust that this is the information you require, and please call if we can be of further assistance.

Yours very truly,

TRITON ENGINEERING SERVICES LIMITED



Taylor Kramp, P. Eng.

cc Howard Wray, P.Eng.

Vehicle and Pedestrian Movements
Alder Street and Sherwood Street

Traffic Counts

Date of Count: December 20, 2022

Weekday AM Traffic Count Summary - Alder Street & Sherwood Street

Time	Total Vehicles							Pedestrians Crossing	
	NB on Sherwood		WB on Alder		EB on Alder		SUM	Sherwood	Alder
	left	right	left	through	through	right			
7:00 am to 7:15 am	0	0	0	0	0	0	0	0	0
7:15 am to 7:30 am	0	0	0	0	0	0	0	0	0
7:30 am to 7:45 am	0	4	3	6	4	0	17	1	1
7:45 am to 8:00 am	0	4	0	6	12	1	23	1	0
8:00 am to 8:15 am	2	2	2	5	6	0	17	1	0
8:15 am to 8:30 am	1	4	8	7	25	4	49	0	1
8:30 am to 8:45 am	1	3	1	10	42	2	59	4	0
8:45 am to 9:00 am	1	6	2	18	36	0	63	7	1
11:00 am to 11:15 am	0	5	4	8	6	1	24	2	0
11:15 am to 11:30 am	0	2	4	6	5	1	18	0	0
11:30 am to 11:45 am	0	4	4	8	8	0	24	0	0
11:45 am to 12:00 pm	0	5	3	8	7	0	23	0	0
Totals	6	49	37	108	180	9	389	18	4

Date of Count: December 20, 2022

Weekday PM Traffic Count Summary - Alder Street & Sherwood Street

Time	Total Vehicles							Pedestrians Crossing	
	NB on Sherwood		WB on Alder		EB on Alder		SUM	Sherwood	Alder
	left	right	left	through	through	right			
12:00 pm to 12:15 pm	1	1	2	7	10	0	21	0	0
12:15 pm to 12:30 pm	1	4	2	15	11	1	34	0	2
12:30 pm to 12:45 pm	0	3	4	16	5	0	28	0	2
12:45 pm to 1:00 pm	1	0	2	11	5	0	19	1	0
1:00 pm to 1:15 pm	0	0	0	0	0	0	0	0	0
1:15 pm to 1:30 pm	0	0	0	0	0	0	0	0	0
1:30 pm to 1:45 pm	0	0	0	0	0	0	0	0	0
1:45 pm to 2:00 pm	0	0	0	0	0	0	0	0	0
3:00 pm to 3:15pm	3	5	5	35	23	3	74	7	2
3:15 pm to 3:30pm	5	2	4	18	12	0	41	0	1
3:30 pm to 3:45 pm	4	0	11	16	21	1	53	0	0
3:45 pm to 4:00 pm	2	3	6	19	12	0	42	3	0
4:00 pm to 4:15 pm	1	3	5	23	14	0	46	0	0
4:15 pm to 4:30 pm	2	1	1	12	16	1	33	0	0
4:30 pm to 4:45 pm	0	5	2	21	18	1	47	3	0
4:45 pm to 5:00 pm	1	5	2	24	19	1	52	0	0
5:00 pm to 5:15 pm	2	1	5	19	10	2	39	0	0
5:15 pm to 5:30 pm	6	1	7	15	14	1	44	0	0
5:30 pm to 5:45 pm	5	1	6	22	12	0	46	0	0
5:45 pm to 6:00 pm	3	2	1	14	17	2	39	0	0
Totals	40	45	76	344	277	20	802	21	7

Vehicle and Pedestrian Movements
Alder Street and Glengarry Road

Traffic Counts

Date of Count: December 19, 2022

Weekday AM Traffic Count Summary - Alder Street & Glengarry Road

Time	Total Vehicles							Pedestrians Crossing	
	NB on Glengarry		WB on Alder		EB on Alder		SUM	Glengarry	Alder
	left	right	left	through	through	right			
7:00 am to 7:15 am	0	0	0	0	0	0	0	0	0
7:15 am to 7:30 am	0	0	0	0	0	0	0	0	0
7:30 am to 7:45 am	1	1	0	6	1	0	9	0	0
7:45 am to 8:00 am	1	0	0	5	7	0	13	0	0
8:00 am to 8:15 am	1	3	0	7	8	0	19	0	0
8:15 am to 8:30 am	1	1	3	9	21	0	35	3	3
8:30 am to 8:45 am	6	7	1	9	41	2	66	2	0
8:45 am to 9:00 am	0	5	2	21	37	0	65	1	1
11:00 am to 11:15 am	0	3	1	9	3	0	16	0	1
11:15 am to 11:30 am	0	2	0	7	11	1	21	1	0
11:30 am to 11:45 am	0	4	3	12	12	0	31	0	1
11:45 am to 12:00 pm	0	1	0	5	2	1	9	0	0
Totals	11	30	14	108	162	6	331	7	6

Date of Count: December 19, 2022

Weekday PM Traffic Count Summary - Alder Street & Glengarry Road

Time	Total Vehicles							Pedestrians Crossing	
	NB on Glengarry		WB on Alder		EB on Alder		SUM	Glengarry	Alder
	left	right	left	through	through	right			
12:00 pm to 12:15 pm	1	2	2	11	8	0	24	0	0
12:15 pm to 12:30 pm	0	3	2	6	7	2	20	0	0
12:30 pm to 12:45 pm	0	1	5	8	6	0	20	0	0
12:45 pm to 1:00 pm	0	7	0	9	3	1	20	0	0
1:00 pm to 1:15 pm	0	0	0	0	0	0	0	0	0
1:15 pm to 1:30 pm	0	0	0	0	0	0	0	0	0
1:30 pm to 1:45 pm	0	0	0	0	0	0	0	0	0
1:45 pm to 2:00 pm	0	0	0	0	0	0	0	0	0
3:00 pm to 3:15pm	0	5	4	33	12	0	54	6	1
3:15 pm to 3:30pm	0	0	2	22	7	0	31	1	1
3:30 pm to 3:45 pm	0	1	3	12	15	1	32	0	0
3:45 pm to 4:00 pm	0	1	2	13	13	0	29	0	0
4:00 pm to 4:15 pm	0	2	3	14	12	3	34	0	0
4:15 pm to 4:30 pm	0	1	3	14	10	0	28	0	0
4:30 pm to 4:45 pm	0	2	1	12	6	0	21	0	1
4:45 pm to 5:00 pm	0	1	2	12	14	2	31	0	0
5:00 pm to 5:15 pm	2	3	1	10	15	0	31	0	0
5:15 pm to 5:30 pm	1	3	4	25	11	0	44	0	0
5:30 pm to 5:45 pm	0	2	2	15	16	1	36	0	0
5:45 pm to 6:00 pm	0	2	3	13	5	0	23	0	1
Totals	7	44	48	284	205	11	599	10	8