

LDS Consultants Inc.
2323 Trafalgar Street
London, Ontario N5V 4K4

March 6, 2024
SBM-24-0404

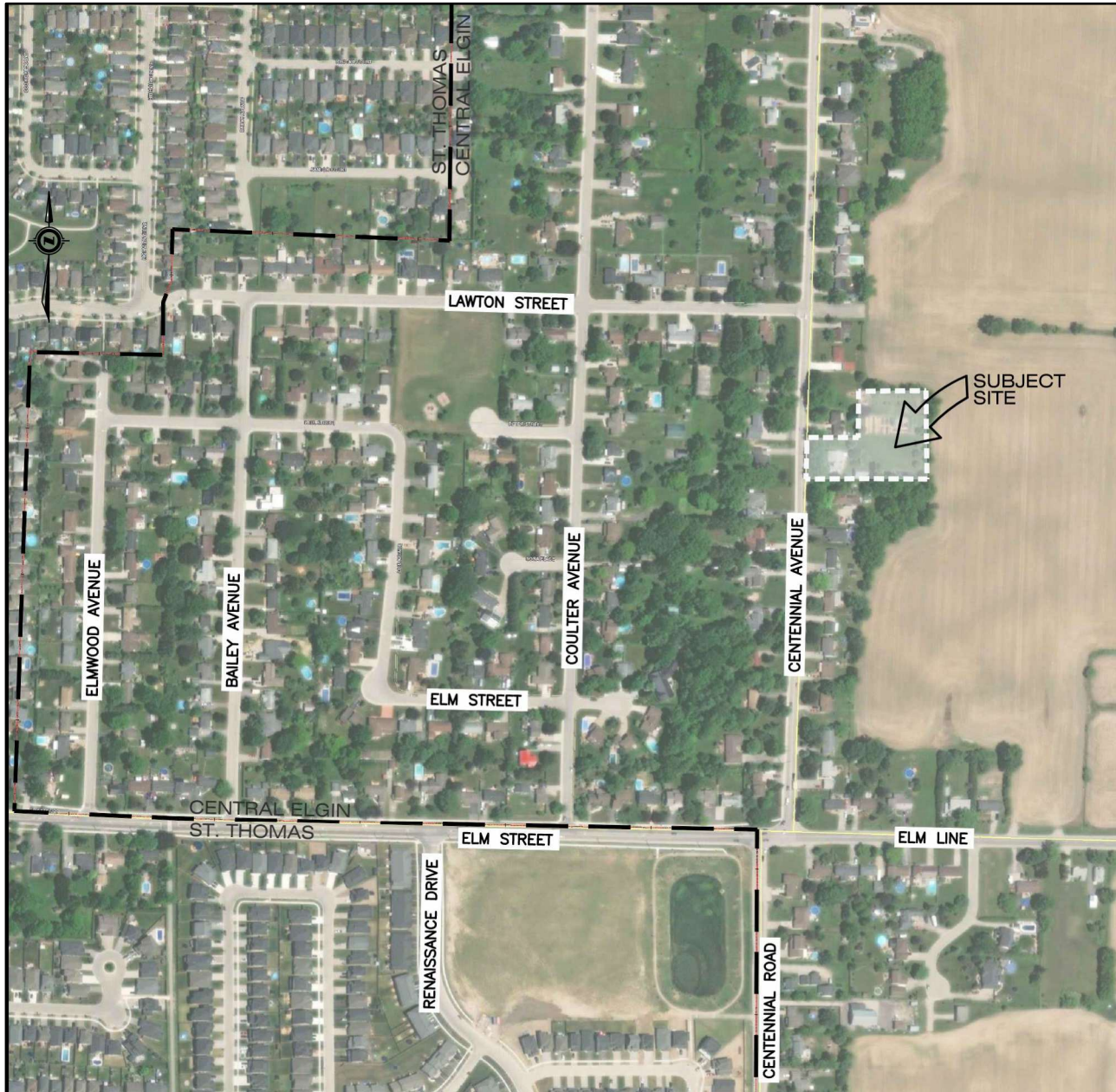
Attn: Aminat Shobowale

**Re: Traffic Impact Brief
216 Centennial Avenue
Central Elgin, Ontario**

1 INTRODUCTION

This Traffic Impact Brief (TIB) has been prepared by Strik, Baldinelli, Moniz Ltd. (SBM) to identify traffic impacts, or a lack thereof, associated with the proposed residential development located at 216 Centennial Avenue in Central Elgin, Ontario. The development is proposed to include eight single detached dwellings with a single vehicular access on Centennial Avenue. The location of the proposed development is illustrated in Figure 1.

Figure 1: Site Location



Aerial Image Source: Elgin Mapping

2 EXISTING CONDITIONS

A site visit was conducted on March 2, 2024 to confirm the existing road conditions surrounding the site.

The subject site is bounded by the Centennial Avenue (Elgin County Road 28) right-of-way (ROW) to the west and residential properties to the northwest and south, with agricultural land to the east, as shown in Figure 2.

Figure 2: Site Area



Aerial Image Source: Google Earth

Centennial Avenue (Elgin County Road 28) is a two-lane arterial road running north-south along the west edge of Central Elgin, near the boundary with the City of St. Thomas. It has an urban cross-section (curb and gutter) with a sidewalk on the west side and a posted speed limit of 50 km/h.

Traffic count data from the County of Elgin (included in Appendix A) shows an average daily traffic volume on Centennial Avenue of 6100 vehicles per day for 2023 with the peak hour (during the PM) having a two-way volume of 579 vehicles per hour. Considering a typical planning capacity of 800-900 vehicles per hour per lane, Centennial Avenue has significant reserve capacity.

Nearby local transit service is provided by Railway City Transit with five routes in St. Thomas. The nearest transit stop to the subject site is for the Fanshawe Route 5, located on Highview Drive at Manor Road, approximately 1.1 km west of the site. Service runs 7:15am-5:45pm with afterhours on demand service from 6:15-7:15am and 5:45-9:45pm.

There are no designated cycling facilities through the study area and we are not aware of any planned active transportation improvements along Centennial Avenue.

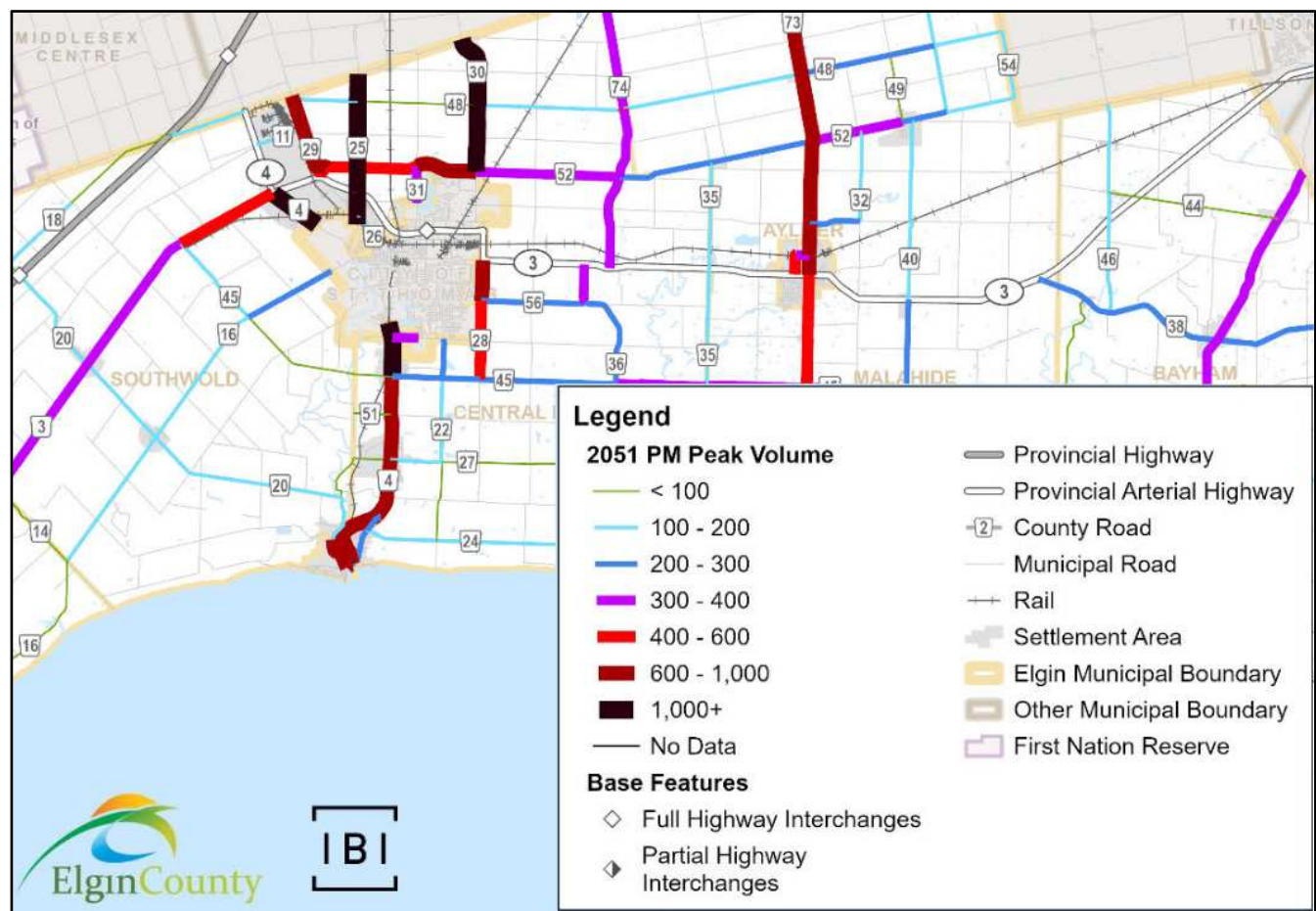
3 FUTURE BACKGROUND TRAFFIC

The County of Elgin is currently developing a Transportation Master Plan (TMP) and the *Phase 1: Needs and Opportunities Report*¹ (referred to hereafter as the *TMP Phase 1 Report*) was published in 2022, which provides traffic volume forecasting for Elgin County roads.

The *TMP Phase 1 Report* forecasted future peak hour traffic for a planning horizon of 2051. Traffic growth was estimated at a rate similar to the projected population growth for each municipality, which for the Municipality of Central Elgin is 30% growth between 2021 and 2051.

Excerpts from the *TMP Phase 1 Report* figures illustrating traffic volumes and volume-to-capacity ratios for the 2051 PM peak hour are shown in Figure 3 and Figure 4, respectively.

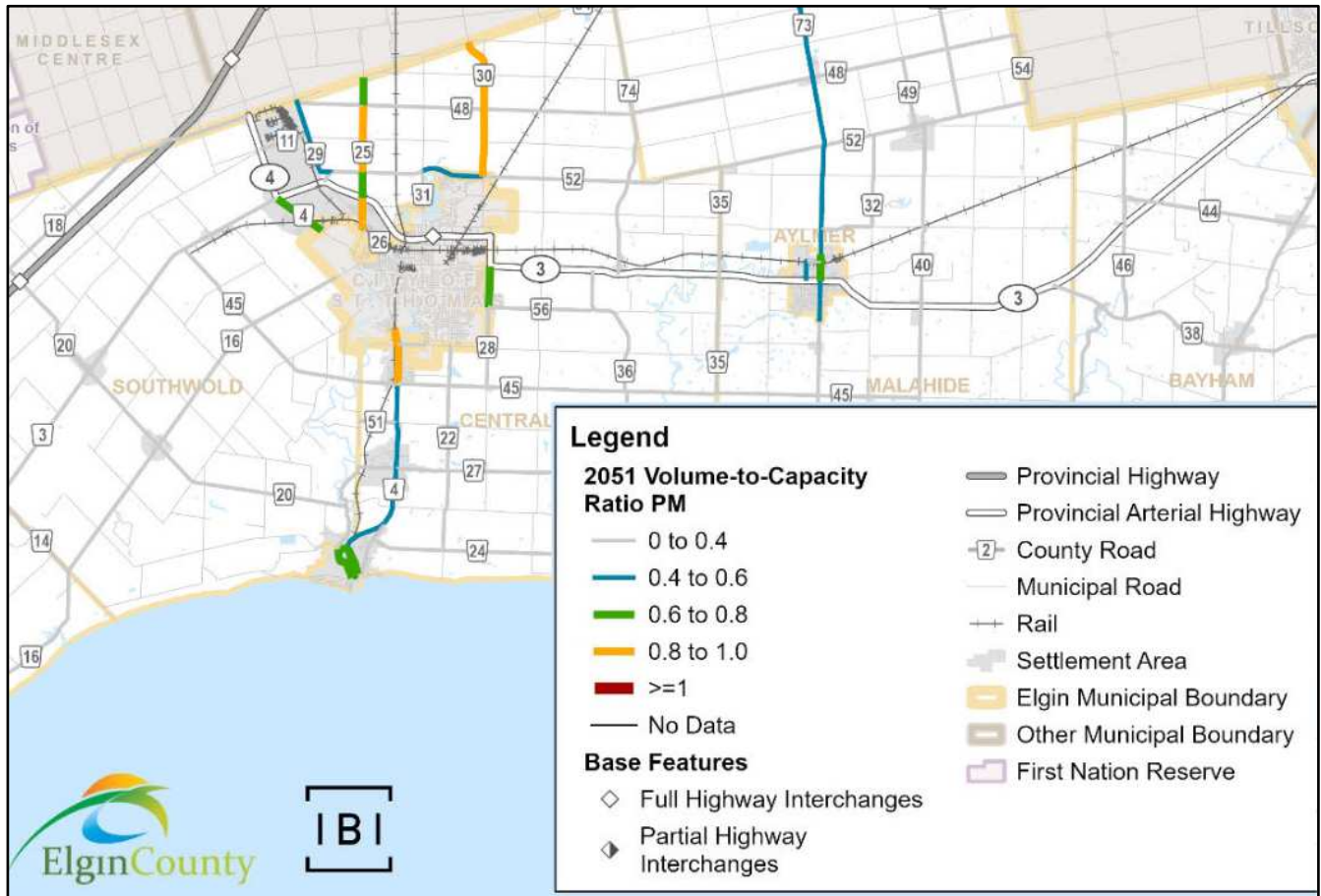
Figure 3: 2051 PM Peak Hour Traffic Volumes



Source: Exhibit 8.15 from County of Elgin Transportation Master Plan – Interim Report Phase 1: Needs and Opportunities (IBI Group, March 14, 2022)

¹ County of Elgin Transportation Master Plan – Interim Report Phase 1: Needs and Opportunities (IBI Group, March 14, 2022)
<https://engageelgin.ca/22378/widgets/93739/documents/77448>

Figure 4: 2051 PM Peak Hour Volume-to-Capacity Ratios



Source: Exhibit 8.17 from County of Elgin Transportation Master Plan – Interim Report Phase 1: Needs and Opportunities (IBI Group, March 14, 2022)

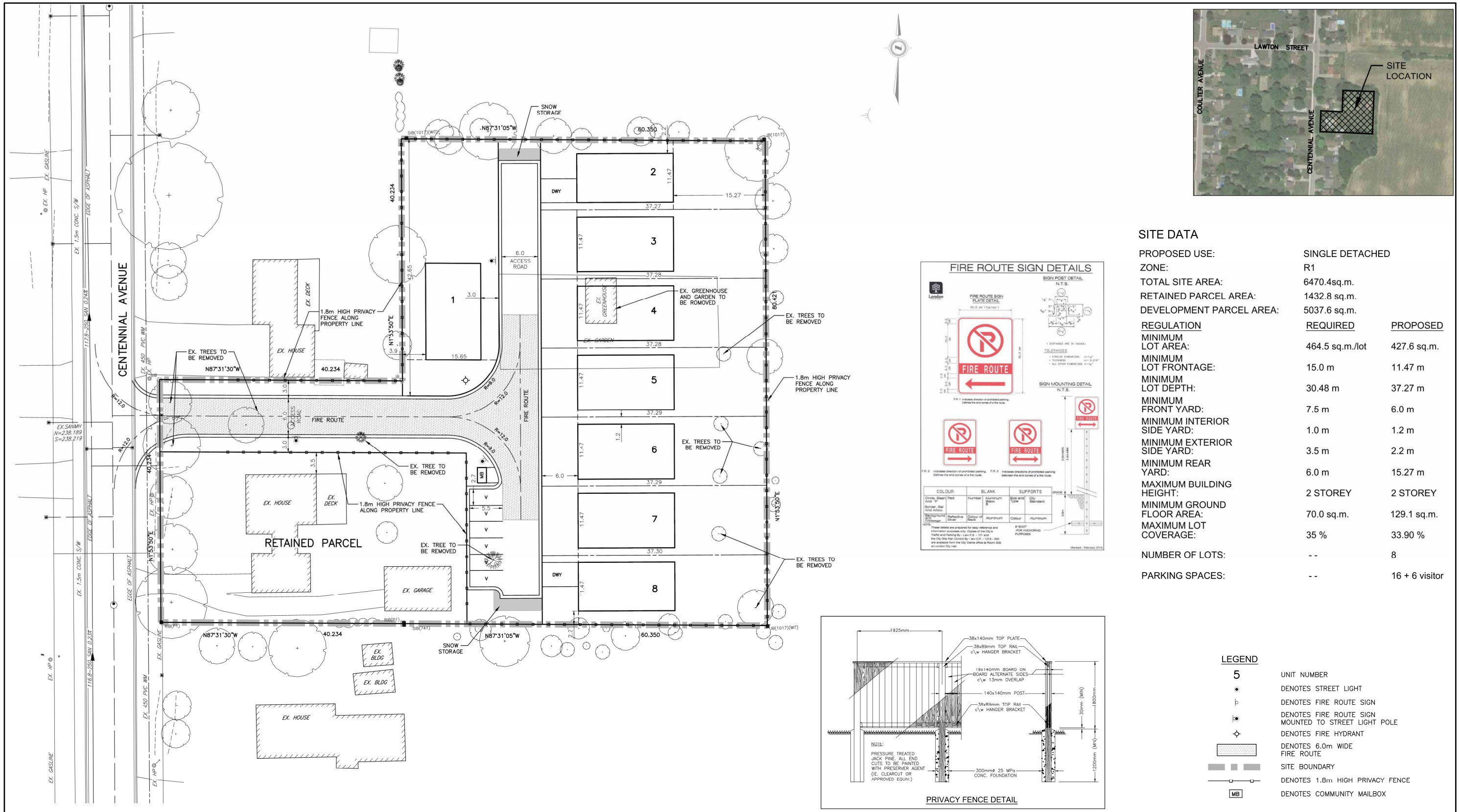
From Figure 3, it can be seen that Centennial Avenue is forecast to have traffic volumes between 600 vph and 1000 vph during the 2051 PM peak hour, and Figure 4 shows this will equate to a volume-to-capacity ratio between 0.6 and 0.8, indicating that there is expected to be reserve capacity on Centennial Avenue through the long term.

4 PROPOSED DEVELOPMENT

The subject development is proposed to include eight new single detached dwellings with the existing single detached dwelling on the property (fronting Centennial Avenue) being retained. A cropped version of the Site Plan by LDS Consultants Inc. is shown in Figure 5 and the full version of the drawing is included in Appendix B.

As shown on the Site Plan, access to the new units is proposed via a new full-movement driveway connecting to Centennial Avenue along the north side of the site.

Figure 5: Site Plan



SITE DATA

PROPOSED USE:	SINGLE DETACHED	
ZONE:	R1	
TOTAL SITE AREA:	6470.4sq.m.	
RETAINED PARCEL AREA:	1432.8 sq.m.	
DEVELOPMENT PARCEL AREA:	5037.6 sq.m.	
REGULATION	REQUIRED	PROPOSED
MINIMUM LOT AREA:	464.5 sq.m./lot	427.6 sq.m.
MINIMUM LOT FRONTAGE:	15.0 m	11.47 m
MINIMUM LOT DEPTH:	30.48 m	37.27 m
MINIMUM FRONT YARD:	7.5 m	6.0 m
MINIMUM INTERIOR SIDE YARD:	1.0 m	1.2 m
MINIMUM EXTERIOR SIDE YARD:	3.5 m	2.2 m
MINIMUM REAR YARD:	6.0 m	15.27 m
MAXIMUM BUILDING HEIGHT:	2 STOREY	2 STOREY
MINIMUM GROUND FLOOR AREA:	70.0 sq.m.	129.1 sq.m.
MAXIMUM LOT COVERAGE:	35 %	33.90 %
NUMBER OF LOTS:	--	8
PARKING SPACES:	--	16 + 6 visitor

4.1 SITE TRAFFIC

Site generated traffic volumes from the proposed development have been estimated based on trip rate information contained in the Institute of Transportation Engineers (ITE) *Trip Generation Manual 11th Edition* (ITE September 2021). The land use “Single Family Detached” (ITE Land Use Code 210) was selected to best represent the proposed residential use and the resulting trip generation estimates for the peak hours are summarized in Table 1.

Table 1: Trip Generation Summary

ITE LAND USE DESCRIPTION	Units	AM PEAK HOUR TRIPS			PM PEAK HOUR TRIPS		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Single Family Detached LUC 210	8	2	5	7	6	3	9

As shown in Table 1, the new trip generation (two-way) for the proposed development is forecast to be only seven and nine trips in the AM and PM peak hours, respectively.

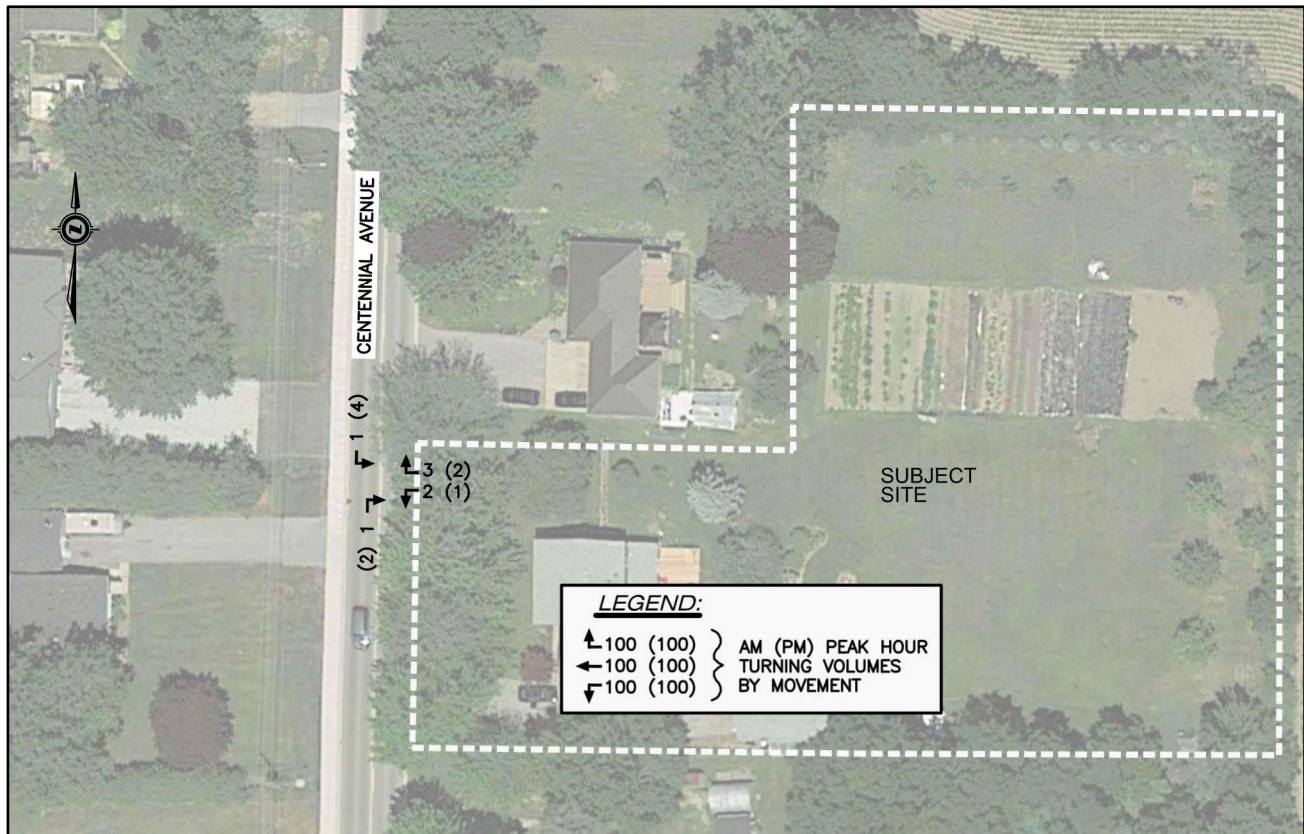
The anticipated trip distribution of the forecast development traffic is based on expected origins/destinations for the area and is summarized in Table 2.

Table 2: New Trip Distribution Summary

DIRECTION TO / FROM	VIA	IN	OUT
North	Centennial Avenue	60%	60%
South	Centennial Avenue	40%	40%
	Total	100%	100%

The resulting site traffic on Centennial Avenue is illustrated in Figure 6. It is noted that alternative distributions would likely only see a change of one or two trips in any given direction (i.e. negligible difference).

Figure 6: Site Traffic



From Figure 6, it can be seen that the traffic volumes generated by the proposed development are quite minor with the maximum new traffic on any road section being only six vehicles in the heaviest peak hour (PM), which is an average of only one additional vehicle every 10 minutes. This minor amount of new traffic will have no impact on the surrounding road network and the site access should operate well.

5 SITE ACCESS CONSIDERATIONS

The proposed site access will be located on the east side of Centennial Avenue approximately 120 m to the south of Lawton Street and 350 north of Elm Street (measured between centerlines), therefore there are no conflicts with existing intersections.

With respect to driveway spacing, there will be approximately 3.7 m between the north edge of the proposed site access and the existing driveway to the north for the residence at 212 Centennial Avenue. While this is closer than would be ideal, with the very low volumes using both driveways, we do not anticipate any conflicts or operational issues between the two driveways.

Sightlines at the proposed site access location were reviewed and compared with recommended sight distances from the Transportation Association of Canada (TAC) *Geometric Design Guide for Canadian Roads* (June 2017). Based on a design speed of 60 km/h, a minimum sight distance of 130 m is recommended to accommodate turning movements from the proposed site access. The sight distance from the proposed site access is unrestricted to the north and is approximately 150 m to the south (limited by vertical curve on the road), which

are both greater than the recommended 130 m, therefore there are no visibility concerns with the proposed site access location.

The highest left turn volume into the site (PM peak hour) will represent less than 2% of the total southbound volume on Centennial Avenue, which is well below the 5% threshold for considering left turn lane warrants, therefore a southbound left turn lane is not required.

Pedestrian traffic from the site will need to cross to the west side of Centennial Avenue to use the sidewalk, as is the case for all residences on the east side of Centennial Avenue.

6 CONCLUSIONS

Based on the analysis completed for this Traffic Impact Statement, the following has been concluded:

- The proposed residential development is expected to generate a total of only 7 new trips in the AM peak hour (2 in and 5 out) and 9 trips during the PM peak hour (6 in and 3 out).
- The *TMP Phase 1 Report* indicates that there will continue to be reserve capacity on Centennial Avenue throughout a 2051 horizon period.
- The minor traffic from the proposed development will have no discernible impact on the surrounding road network and the site access will operate well.
- The site access location provides acceptable sightlines on Centennial Avenue.
- The site access will be located closer to the existing residential driveway to the north than would be ideal, however, given the very low volumes of traffic using both driveways, we believe the proposed spacing is acceptable and we do not anticipate any conflicts or operational issues between the two driveways.
- No improvements to the external road network are required to accommodate the proposed development.

7 LIMITATIONS

This TIB was prepared by Strik, Baldinelli, Moniz Ltd. for LDS Consultants Inc., the Municipality of Central Elgin, and the County of Elgin. Use of this TIB by any third party, or any reliance upon its findings, is solely the responsibility of that party. Strik, Baldinelli, Moniz Ltd. accepts no responsibility for damages, if any, suffered by a third party as a result of decisions made or actions undertaken as a result of this report. Third party use of this TIB, without the express written consent of the Consultant, denies any claims, whether in contract, tort, and/or any other cause of action in law, against the Consultant.

All findings and conclusions presented in this TIB are based on the conditions as they appeared during the period of the review. This TIB is not intended to be exhaustive in scope or to imply a risk-free property. It should be recognised that the passage of time may alter the opinions, conclusions, and recommendations provided herein.

SBM's review was limited to the documents referenced above and/or on the SBM drawings provided separately. SBM Ltd. accepts no responsibility for the accuracy of the information provided by others. All designs and recommendations presented in this TIB are based on the information available at the time of the review.

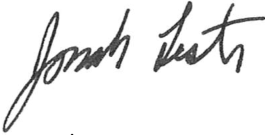
This document is deemed to be the intellectual property of SBM Ltd. In accordance with Canadian copyright law.

8 CLOSURE

We trust this TIB meets your satisfaction. Should you have any questions or require further information, please do not hesitate to contact the undersigned.

Strik, Baldinelli, Moniz Ltd.

Planning • Civil • Structural • Mechanical • Electrical



Jonah Lester, P. Eng.
Transportation Engineer



APPENDIX A

Traffic Count Data

TRAFFIC ANALYSIS

REPORT

For Project: #28 South of #03
Project Notes:
Location/Name: Directions Merged
Report Generated: 06-27-2023 14:31
Speed Intervals 1 km/h
Time Intervals Instant
Traffic Report From 06-26-2023 10:00:00 through 06-27-2023 11:59:59
85th Percentile Speed 63 km/h
85th Percentile Vehicles 5616
Max Speed 128 km/h on 06-26-2023 16:02:05
Total Vehicles 6607
AADT: 6098

Volumes - weekly counts

Time	5 Day	7 Day
Average Daily	3303	3303
AM Peak 07:00	494	494
PM Peak 04:00	579	579

Speed

Speed Limit: 60
85th Percentile Speed: 63
Average Speed: 56.67

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Count over limit	1038	582	N/A	N/A	N/A	N/A	N/A
% over limit	24.4	24.7	N/A	N/A	N/A	N/A	N/A
Avg Speeder	64.5	64.5	N/A	N/A	N/A	N/A	N/A

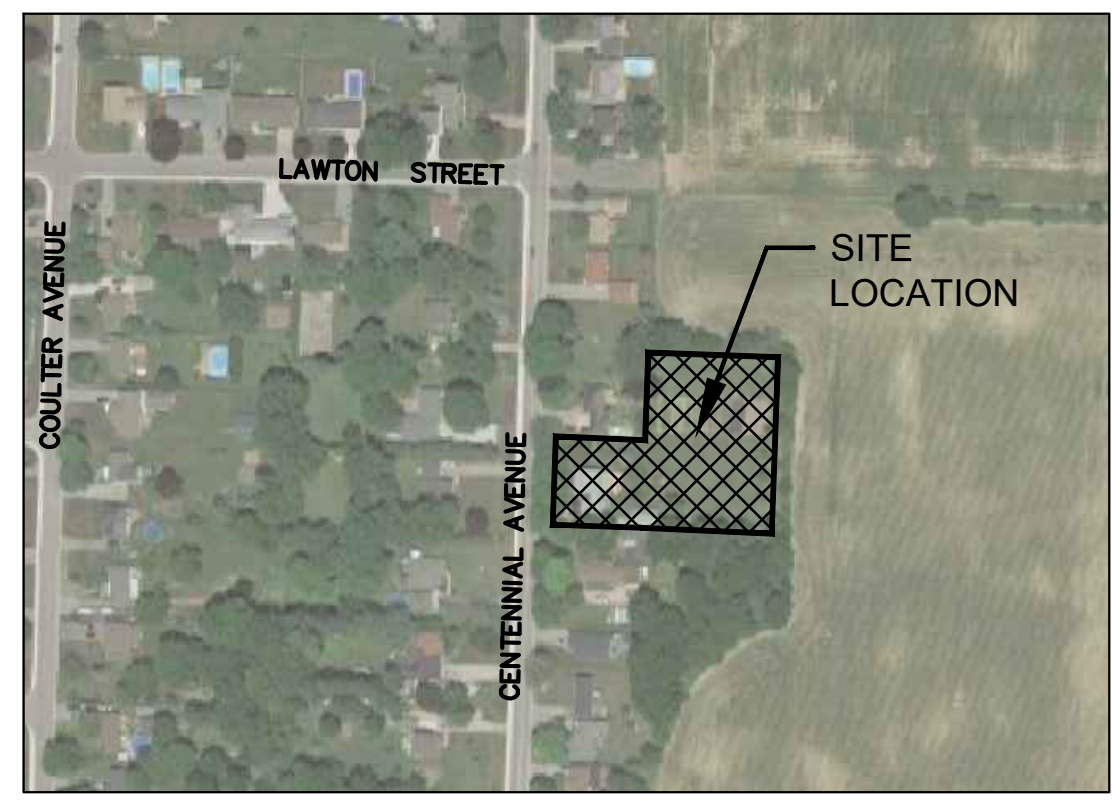
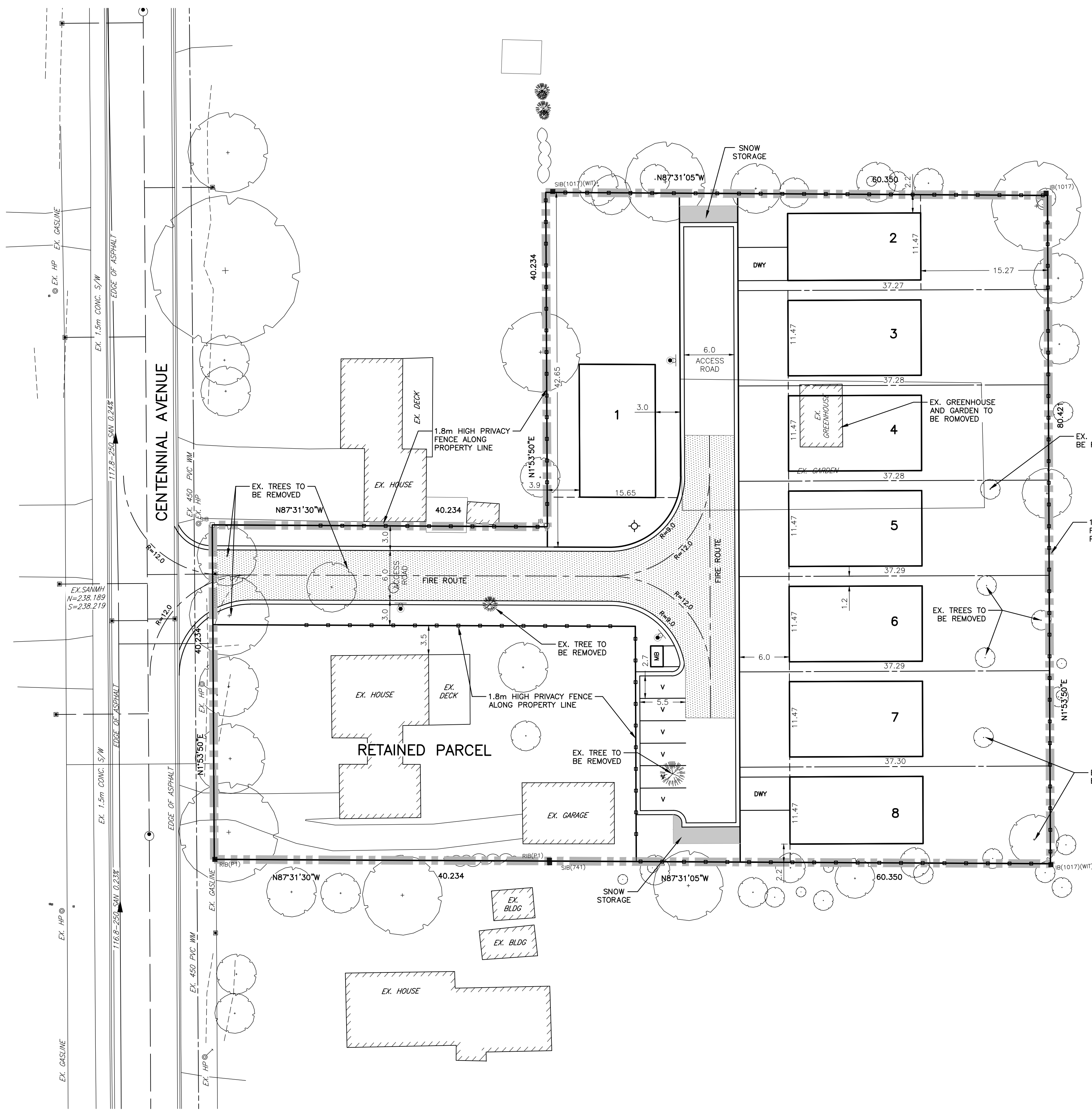
Class Counts

	Number	%
VEH_SM	34	0.5
VEH_MED	6290	95.2
VEH_LG	283	4.3
[VEH_SM=motorcycle, VEH_MED = sedan, VEH_LG = truck]		

	2023-06-26	to	2023-07-02					Week	Weekend	Week Day 85%
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Day Avg	Avg	Avg Speed
Hour	2023-06-26	2023-06-27	2023-06-28	2023-06-29	2023-06-30	2023-07-01	2023-07-02			
0 - 1	*	27	*	*	*	*	*	27	0	60
1 - 2	*	26	*	*	*	*	*	26	0	60.7
2 - 3	*	18	*	*	*	*	*	18	0	62
3 - 4	*	22	*	*	*	*	*	22	0	79
4 - 5	*	61	*	*	*	*	*	61	0	66.5
5 - 6	*	148	*	*	*	*	*	148	0	62.4
6 - 7	*	385	*	*	*	*	*	385	0	63.5
7 - 8	*	494	*	*	*	*	*	494	0	61.8
8 - 9	*	451	*	*	*	*	*	451	0	62.1
9 - 10	*	334	*	*	*	*	*	334	0	60.9
10 - 11	40	329	*	*	*	*	*	184.5	0	61.2
11 - 12	350	61	*	*	*	*	*	205.5	0	62.4
12 - 13	368	*	*	*	*	*	*	368	0	62.8
13 - 14	351	*	*	*	*	*	*	351	0	61.8
14 - 15	427	*	*	*	*	*	*	427	0	62
15 - 16	559	*	*	*	*	*	*	559	0	61.4
16 - 17	579	*	*	*	*	*	*	579	0	62.4
17 - 18	557	*	*	*	*	*	*	557	0	62.2
18 - 19	304	*	*	*	*	*	*	304	0	63
19 - 20	242	*	*	*	*	*	*	242	0	62.1
20 - 21	175	*	*	*	*	*	*	175	0	62.6
21 - 22	117	*	*	*	*	*	*	117	0	62.7
22 - 23	104	*	*	*	*	*	*	104	0	62.3
23 - 24	78	*	*	*	*	*	*	78	0	63
Totals	4251	2356	0	0	0	0	0			
% of Total	64.34%	35.66%	0%	0%	0%	0%	0%			

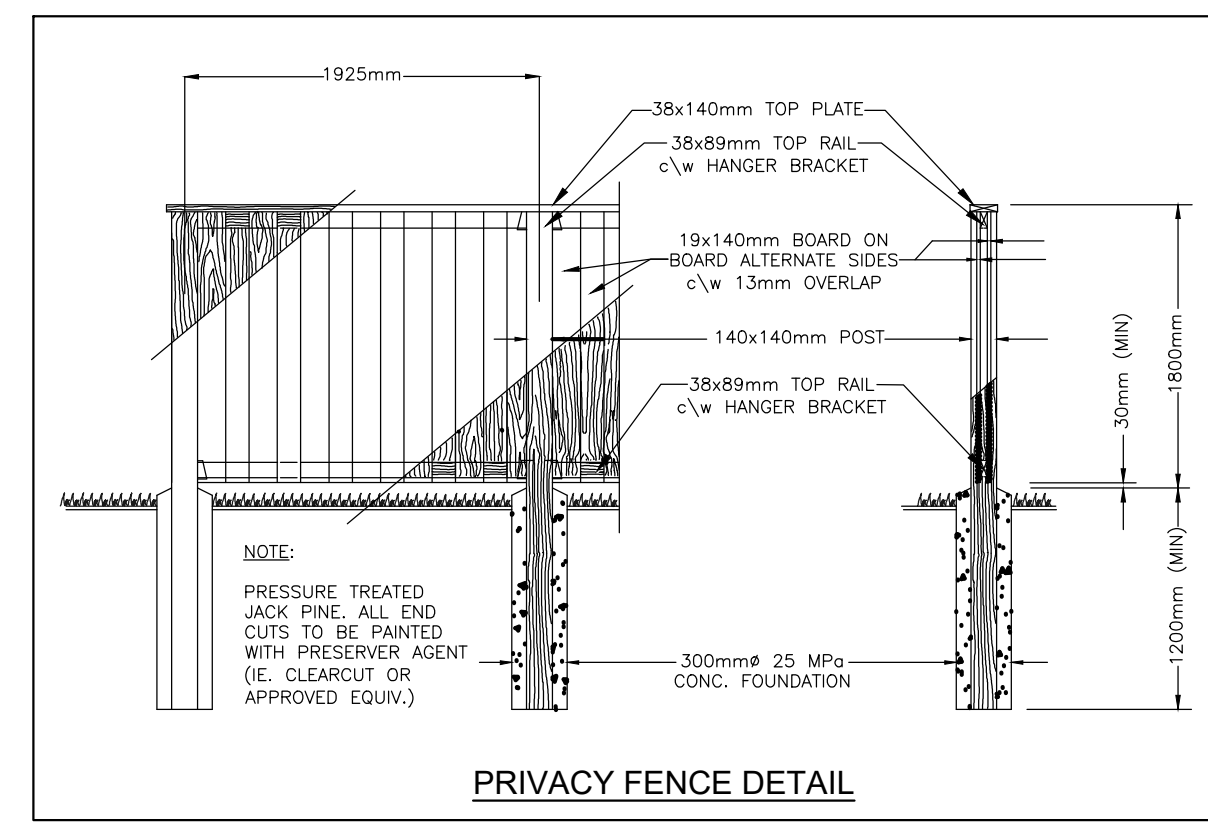
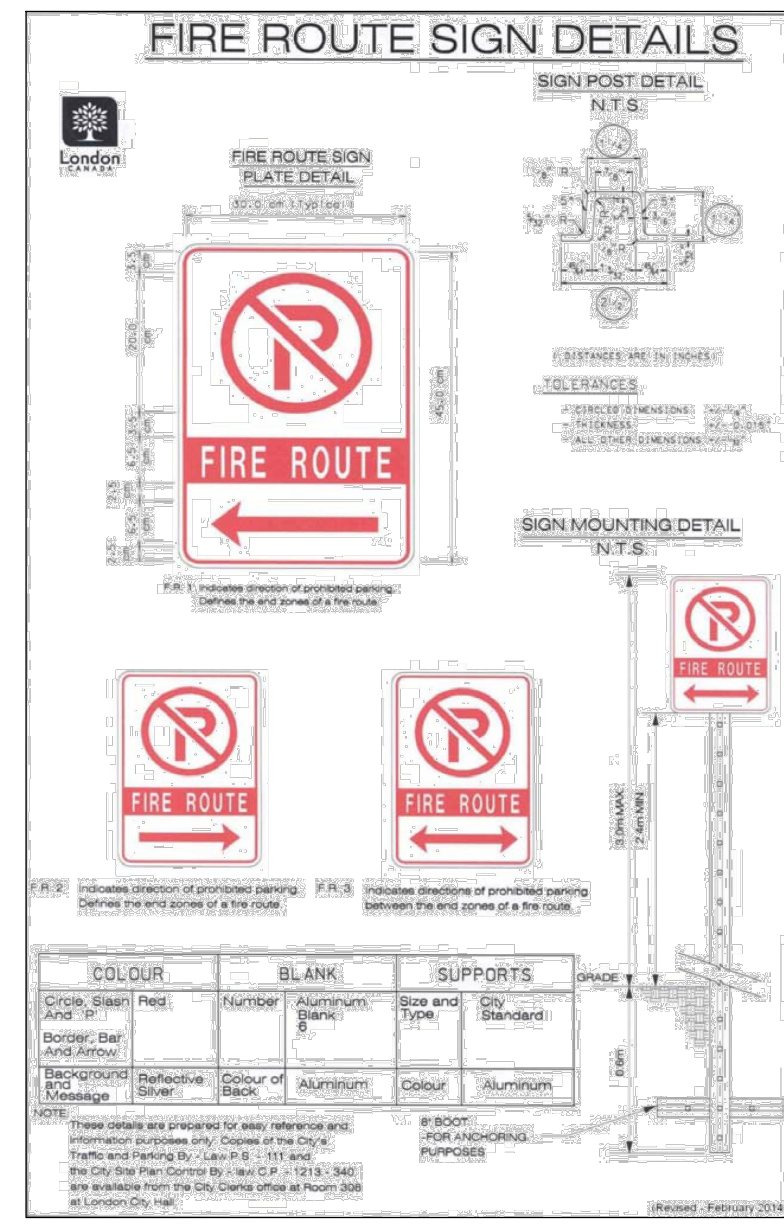
APPENDIX B

Site Plan



SITE DATA

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MAXIMUM LOT COVERAGE:	35 %	33.90 %
NUMBER OF LOTS:	--	8
PARKING SPACES:	--	16 + 6 visitor



LEGEND

5	UNIT NUMBER
●	DENOTES STREET LIGHT
⊖	DENOTES FIRE ROUTE SIGN
⊕	DENOTES FIRE ROUTE SIGN MOUNTED TO STREET LIGHT POLE
⊙	DENOTES FIRE HYDRANT
▨	DENOTES 6.0m WIDE FIRE ROUTE
▭	SITE BOUNDARY
▬	DENOTES 1.8m HIGH PRIVACY FENCE
MB	DENOTES COMMUNITY MAILBOX

Z:\LD-00303 - 216 CENTENNIAL AVE., CENTRAL ELGIN\DETAIL DESIGN\DWG\LD-00303_Site Planning.dwg 10:00 10/03/2023 PM 05:10:00

EXISTING SERVICES	DRAWING #, SOURCE	DATE	CONSTRUCTED SERVICES	COMPLETION	DETAILS	No.	REVISIONS	DATE	CONSULTANT
					DESIGN	AG			
					DRAWN BY	SB			
					CHECKED	SB			
					APPROVED	AG			
					DATE	2023-10-05			
					00303_Site Plan.dwg				

CONSULTANT OR DIVISION

ENGINEER'S STAMP

SCALE

HORZ - 1 : 300

TITLE

216 CENTENNIAL AVENUE
MUNICIPALITY OF CENTRAL ELGIN

SITE PLAN

PROJECT No. LD-00303

SHEET No. SP1

PLAN FILE No.