TRANSPORTATION PLANNERS AND ENGINEERS

30 Elveden Drive SW

Transportation Impact Assessment

Version 2

Prepared for

2484344 Alberta Ltd.

Date

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Project Number

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TABLE OF CONTENTS

1. EXECUTIVE SUMMARY 1
2. INTRODUCTION 2
2.1 Scope of Work 2
2.2 Site Context 2
2.3 Development 2
3. VEHICLES 5
3.1 Network 5
3.1.1 Road Network 5
3.1.2 Intersections 5
3.2 Sight Triangles – 77 Street & Elveden Drive 5
3.3 Volumes 6
3.3.1 Existing 6
3.3.2 Long Term Background 7
3.3.3 Development 7
3.3.4 After Development 7
3.4 Intersection Analysis 14
3.5 Signal Warrant Analysis 16
3.6 Pedestrian Crossing Warrant 17
3.7 Daily Volumes 20
4. ACTIVE TRANSPORTATION 22
4.1 Pedestrian 22
4.2 Cycling 23
4.3 Transit 24
5. PARKING 25
APPENDIX A Traffic Data
APPENDIX B Synchro Reports
APPENDIX C Signal Warrants

EXHIBITS

Exhibit 3.1: Existing Intersection Configurations 8
Exhibit 3.2: Existing Traffic Volumes 9
Exhibit 3.3: Long Term Background Traffic Volumes 10
Exhibit 3.4: Site Traffic Distribution and Volumes 11
Exhibit 3.5: Opening Day After Development Traffic Volumes 12
Exhibit 3.6: Long Term After Development Traffic Volumes 13

FIGURES

Figure 2.1: Site Context 3
Figure 2.2: Site Plan 4
Figure 3.1: Sight Triangles 6
Figure 3.2: TAC Pedestrian Crossing Control – Treatment Selection Matrix – West Leg 18
Figure 3.3: TAC Pedestrian Crossing Control – Treatment Selection Matrix – North Leg 19
Figure 3.4: RA-8 Crossing Sign, West Leg 26 Avenue and Elveden Drive (Google Maps) 19
Figure 3.5: TAC RA-3 School Crosswalk Sign 20
Figure 4.1: Pedestrian Network 22
Figure 4.2: Cycling Network 23
Figure 4.3: Existing Transit Network 24

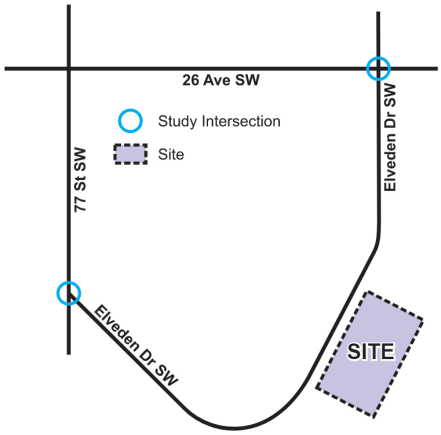
TABLES

Table 3.1: Existing Roadway Characteristics 5
Table 3.2: Traffic Data Summary 6
Table 3.3: Trip Generation Rates (Vehicle) 7
Table 3.4: Trip Generation (Vehicle) 7
Table 3.5: Intersection Analysis (Elveden Drive & 26 Avenue SW) 15
Table 3.6: Intersection Analysis (77 Street & Elveden Drive SW) 16
Table 3.7: Signal Warrant Analysis 16
Table 3.8: Average Pedestrian Volumes 17
Table 3.9: TAC Pedestrian Crossing Control – Preliminary Assessment 18
Table 3.10: Daily Volume Analysis 20
Table 4.1: Transit Frequency 24
Table 5.1: Bylaw Parking Requirement 25

This version of the report (Version 2) has been updated based on commentary received on January 26, 2026 from community members on the previous version (Version 1) of the Transportation Impact Assessment. Analysis has been completed with updated counts conducted on January 29, 2026.

1. EXECUTIVE SUMMARY

A Land Use Redesignation is proposed to accommodate up to 37 townhouses at 30 Elveden Drive SW in Calgary, AB. The current zoning of the site is Low-Density Mixed Housing (R-G), with Multi-Residential At-Grade Housing (M-G) being proposed. Based on the scale of development a Transportation Impact Assessment (TIA) is not required by the City. However, a TIA has been requested by the client to address neighbourhood concerns. This TIA reviews the transportation impacts of the proposed development. Study findings are outlined below.



Vehicles

Volumes
- Future volumes were forecast at study intersections for the Opening Day and Long Term horizon.

Analysis
- Intersection capacity analysis identified that all study intersections will continue to operate acceptably. Mitigation measures are not needed.
- Monitoring is recommended closer to the Long Term (2048) horizon to assess the level of volumes present on 26 Avenue, as collector volumes are expected to be exceeded by this horizon. The volumes are expected to remain within the environmental capacity of a Primary Collector cross-section.

Active Transportation

Pedestrian
- Numerous missing links are present in the surrounding area. Sidewalks are expected to be built as adjacent lands develop. Sidewalks will be built along the site frontage on Elveden Drive.
- Additional signage is recommended for the crossings at the Elveden Drive & 26 Avenue intersections based on existing traffic, without considering site development. An additional crossing is currently warranted on the south leg of this intersection to provide connectivity with the newly built multiuse pathway on the south side of 26 Avenue.

Cycling
- A multi-use pathway is provided on 69 Street and on the south side of 26 Avenue. The City's planned 5A network shows a potential future on-street bike lane on 26 Avenue SW.

Transit
- Bus service is provided on 26 Avenue, Springborough Boulevard, and 69 Street SW. The 69 Street LRT station is located within a 1.5 km walking distance.

Parking

Bylaw
- Parking requirements are expected to be exceeded.

2. INTRODUCTION

2.1 Scope of Work

The scope of work for this study included the following:

Vehicles

- *Network* – Identify controls and lanes at the following study intersections:
  - Elveden Drive SW & 26 Avenue SW
  - 77 Street SW & Elveden Drive SW
- *Volumes* – Identify weekday AM & PM peak hour traffic volumes for the following horizons:
  - *Existing* – With new traffic counts at 77 Street & Elveden Drive SW and recent Bunt counts at Elveden Drive/Springborough Boulevard & 26 Avenue SW.
  - *Long Term Background* – With traffic attributed to the Springbank Hill ASP buildout.
  - *Opening Day and Long-Term After Development* – With development traffic added using industry standards.
- *Analysis* – For traffic volumes horizons, complete intersection capacity and signal warrant analysis.
- *Mitigation* – Identify any mitigation measures required due to existing or development traffic.
- *Daily Volumes* – Review daily traffic volumes and roadway classifications near the study intersections.
- *Sightline review* – Review available sight distances at the 77 Street & Elveden Drive SW intersections.

Active Transportation

- *Pedestrian* – Review sidewalk connectivity and crossing controls near the site. Identify if any improvements are required.
- *Cycling* – Review connectivity to cycling facilities.
- *Transit* – Identify existing/planned routes servicing the site along with their service frequency.

Parking

- *Bylaw Requirement* – Calculate the vehicle and bicycle parking requirements for the proposed uses.

2.2 Site Context

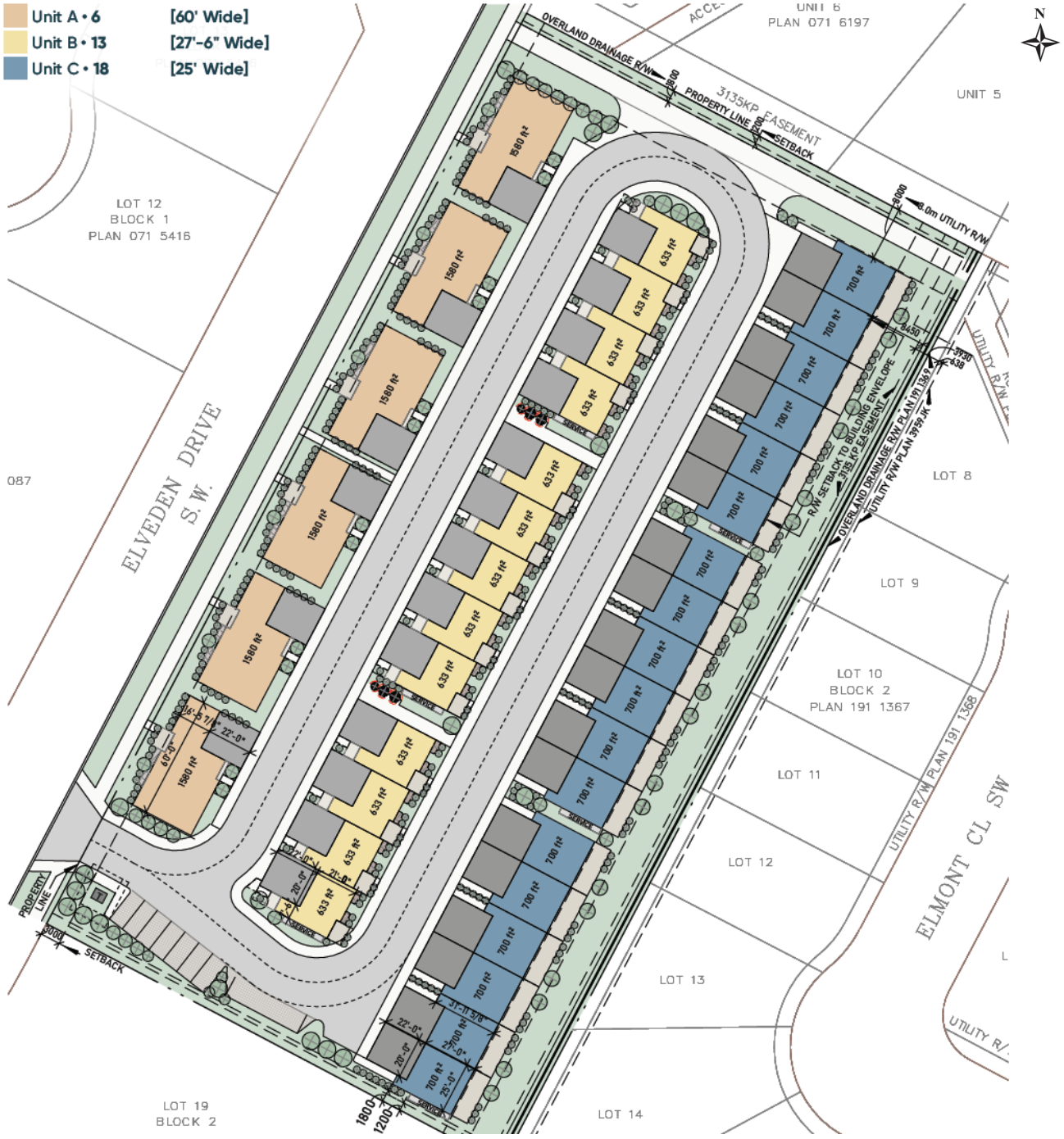
The site is in the community of Springbank Hill and bounded by existing single-family dwellings to the north, undeveloped lands to the east, existing single-family dwellings to the south, and Elveden Drive SW to the west. The site zoning is proposed to be zoned as Multi-Residential At-Grade Housing (M-G). The site context is illustrated in **Figure 2.1**.

2.3 Development

The development proposal is for 37 townhouse residential units. The site plan is illustrated in **Figure 2.2**.

Figure 2.1: Site Context

Figure 2.2: Site Plan



3. VEHICLES

3.1 Network

3.1.1 Road Network

Roadway characteristics near the site are summarized in **Table 3.1**.

Table 3.1: Existing Roadway Characteristics

ROADWAY	CLASSIFICATION	CROSS-SECTION		SPEED LIMIT	FACILITIES		
		# Lanes	Median		Parking	Bike Lanes	Bus Stops
26 Avenue SW	Collector	2	No	30-40 km/h	Yes	No	Yes
77 Street SW	Collector	2	No	50 km/h	Yes	No	Yes
Springborough Blvd SW	Collector	2	Yes	30-50 km/h	Yes	No	Yes
Elveden Drive SW	Residential	2	No	40 km/h	Yes	No	No

3.1.2 Intersections

Existing intersection controls and lane configurations at study intersections are illustrated in **Exhibit 3.1**.

The Elveden Drive & 26 Avenue intersection was analyzed with a separate southbound right lane. Although this leg is not striped for this movement, based on observed traffic behaviour and available roadway width, this leg operates with a de-facto through/left lane and a shorter right turn lane. Additional analysis completed as part of this study confirmed no change in conclusions if the movement were treated as a single lane.

3.2 Sight Triangles – 77 Street & Elveden Drive

Sight distance triangles were evaluated for the intersection of 77 Street & Elveden Drive based on the Transportation Association of Canada (TAC) *Geometric Design Guide for Canadian* Roads. Intersections sight distance review is based on roadway design speed. The minimum Intersection Sight Distance (ISD) required at 60 km/h design speed (50 km/h speed limit + 10 km/h) for a left turn is 130 metres. For right turns, the ISD for a 60 km/h design speed is 110 metres. The minimum Stopping Sight Distance (SSD) is 65 metres for the roadway's design speed.

ISD is typically applied in rural/Highway intersections. Stopping Sight Distance (SSD) is applied in urban locations. To provide a cautious review, ISD distances were used in this review. Additionally, all analysis was completed using a design speed of 10 km/h in excess of the posted speed limit.

Sight triangles for the identified ISD at 77 Street & Elveden Drive are illustrated in **Figure 3.1**. Sight triangles consider fixed objects and do not account for parked vehicles. TAC guidelines are based on a setback of 4.4 metres from the edge of pavement. The stop sign for westbound Elveden Drive SW is located more than 4.4 metres back from the edge of pavement; the TAC guidelines account for drivers pulling forward before making their movement.

Figure 3.1: Sight Triangles

The sight triangle review identifies that minimum intersection sight distances are met for the design speed. On-site observations confirmed the grade on 77 Street SW does not impact these sight distances. While the sight distance is met for a design speed of 60 km/h, the sight distance for left turns would be impacted at higher speeds by the existing retaining wall in the northeast corner of the study intersection.

3.3 Volumes

3.3.1 Existing

The traffic counts used are listed in **Table 3.2**. Traffic data is included in **Appendix A.** Existing traffic volumes are summarized in **Exhibit 3.2**. Counts at both study intersections were conducted during a school day (Thursday January 29, 2026). Note that both AM and PM school daily traffic peaks were covered in the counts, in addition to the PM street peak hour.

Table 3.2: Traffic Data Summary

INTERSECTION	COUNT DATE	DAY OF WEEK	SOURCE
Elveden Drive/Springborough Boulevard & 26 Avenue SW	2026-01-29	Thursday	Bunt & Associates
77 Street & Elveden Drive SW			

3.3.2 Long Term Background

Long Term Background volumes at both study intersections were developed from the *Springbank Hill (Partners + Trico) Transportation Impact Assessment*[1] along with additional volumes from the *Springbank Child Care Transportation Impact Assessment*[2]. These volumes included 2048 forecast volumes provided by the City in addition to accounting for full development of the Springbank Hill ASP sites located to the north on 77 Street. This included development between 85 Street and 77 Street as well as the remaining development of the sites located on the east side of 77 Street south of 17 Avenue. The additional growth included in the volumes used for the long term horizon is expected to account for development in the area surrounding the proposed site.

To generate volumes at the intersection of 77 Street & Elveden Drive, volumes were taken from the intersection of 26 Avenue & 77 Street in the previously mentioned *Springbank Hill TIA* and balanced to the counts conducted at the intersection of 77 Street & Elveden Drive. In addition to the growth assumed in the volumes taken from previous reports, a 25% growth rate was included for all turn movements into and out of Elveden Drive at the 77 Street & Elveden Drive intersection to account for future development directly surrounding the proposed site.

Long Term Background Volumes are shown in **Exhibit 3.3**.

3.3.3 Development

The industry standard trip generation rates used are listed in **Table 3.3** based on the Institute for Transportation Engineers (ITE) *Trip Generation Manual (11th Edition)*. Development generated vehicle trips are summarized in **Table 3.4**.

Table 3.3: Trip Generation Rates (Vehicle)

USE	TRIP GENERATION (VEHICLE)		DATA SOURCE
	AM Peak Hour	PM peak Hour	
Townhouse	0.48 per unit *(25% In, 75% Out)*	0.57 per unit *(59% In, 41% Out)*	ITE 215

Table 3.4: Trip Generation (Vehicle)

USE	DENSITY	AM PEAK HOUR			PM PEAK HOUR		
		Total	In	Out	Total	In	Out
Townhouse	37 units	18	5	13	21	12	9

Vehicle trips were distributed based on existing traffic patterns. Vehicle access to the development will be provided from Elveden Drive. The trip distribution and resulting development generated traffic volumes are illustrated in **Exhibit 3.4**.

3.3.4 After Development

Opening Day and Long Term After Development traffic volumes are illustrated in **Exhibit 3.5** and **Exhibit 3.6** respectively.

[1] *Springbank Hill (Partners + Trico) Transportation Impact Assessment Version 2*, Bunt & Associates, July 2020

[2] *Springbank Child Care Transportation Impact Assessment*, Bunt & Associates, July 2024

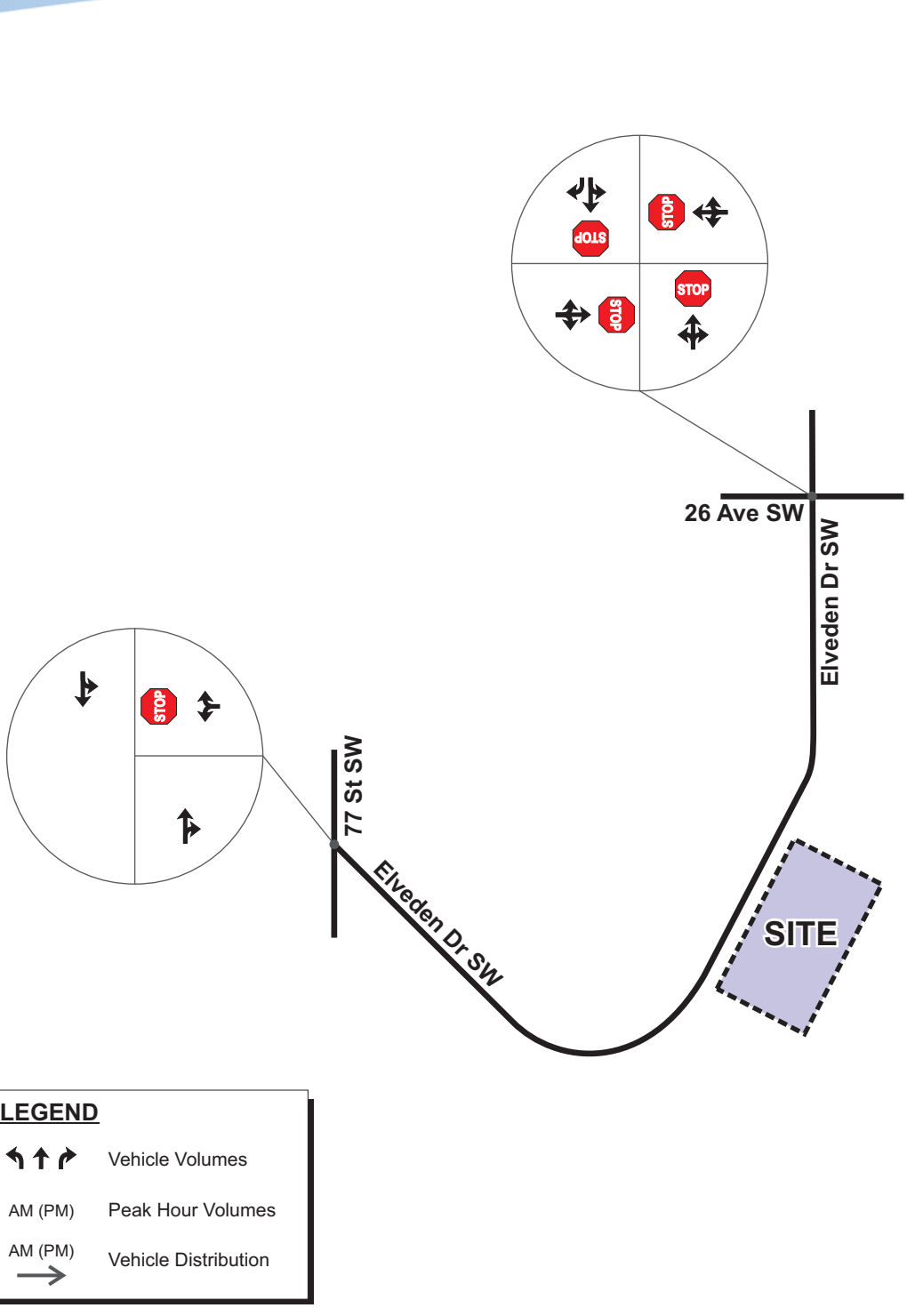


Exhibit 3.1

Existing Intersection Configurations

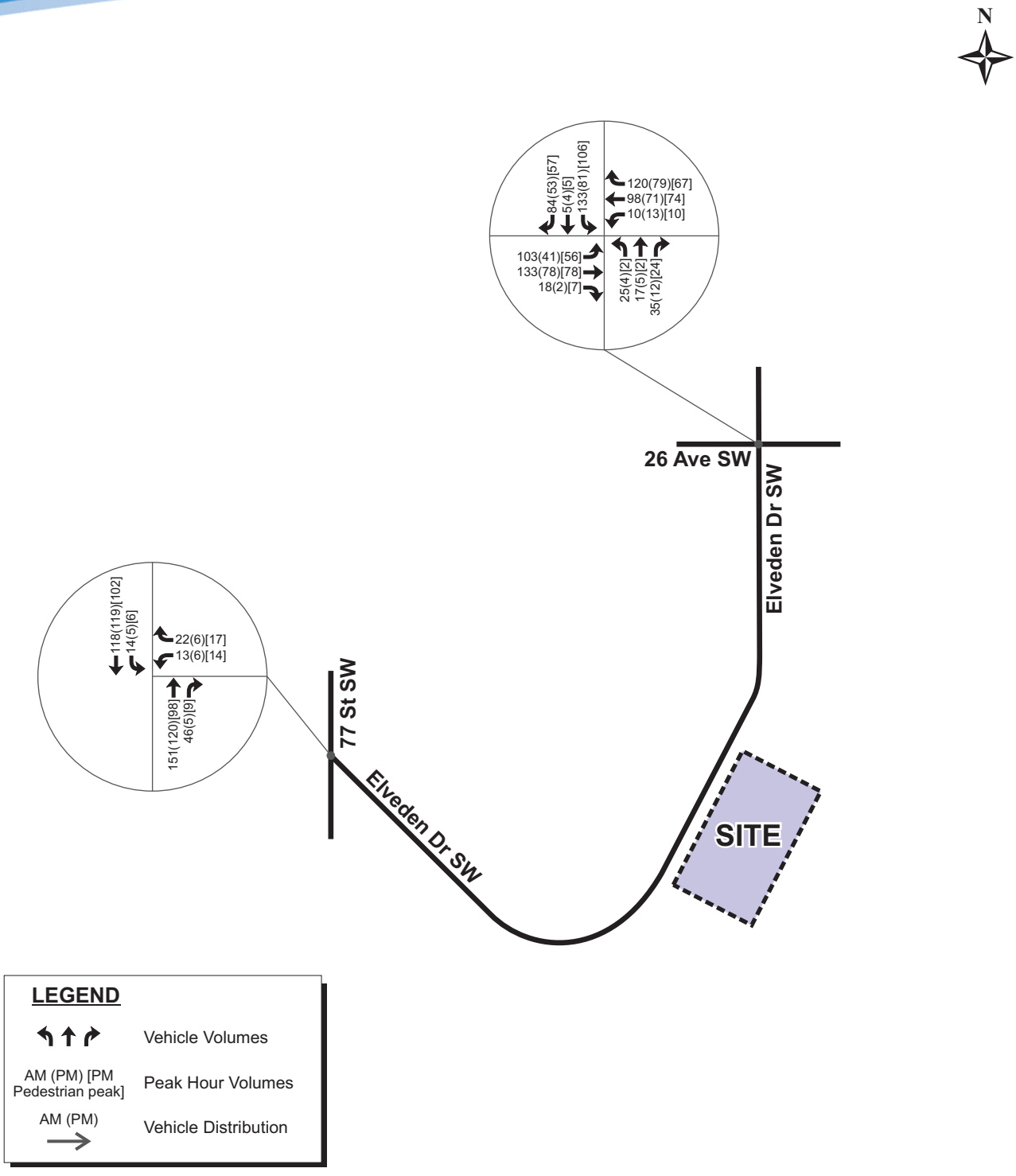


Exhibit 3.2

Existing Traffic Volumes

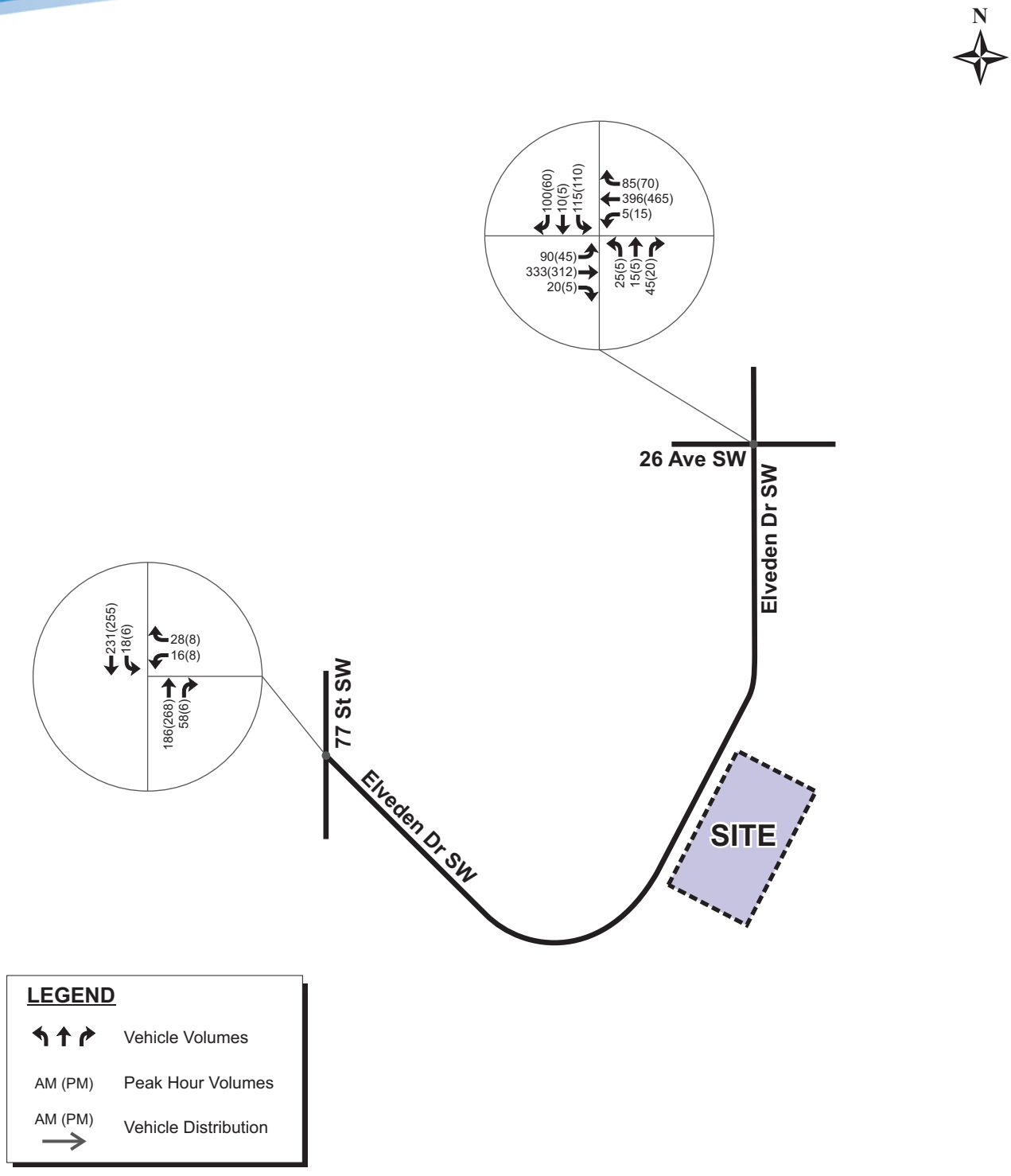


Exhibit 3.3

Long Term Background Traffic Volumes

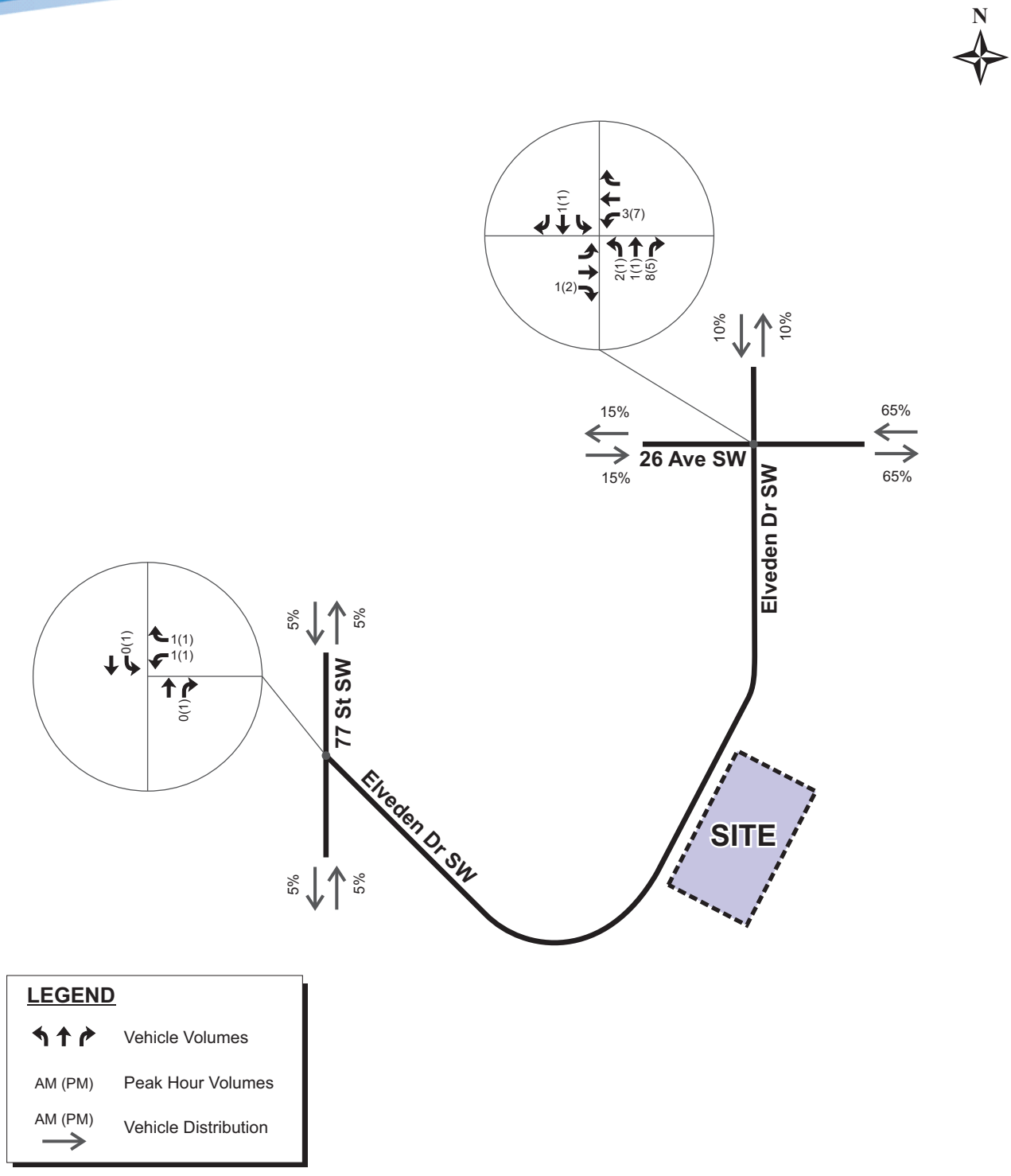


Exhibit 3.4

Site Traffic Distribution and Volumes

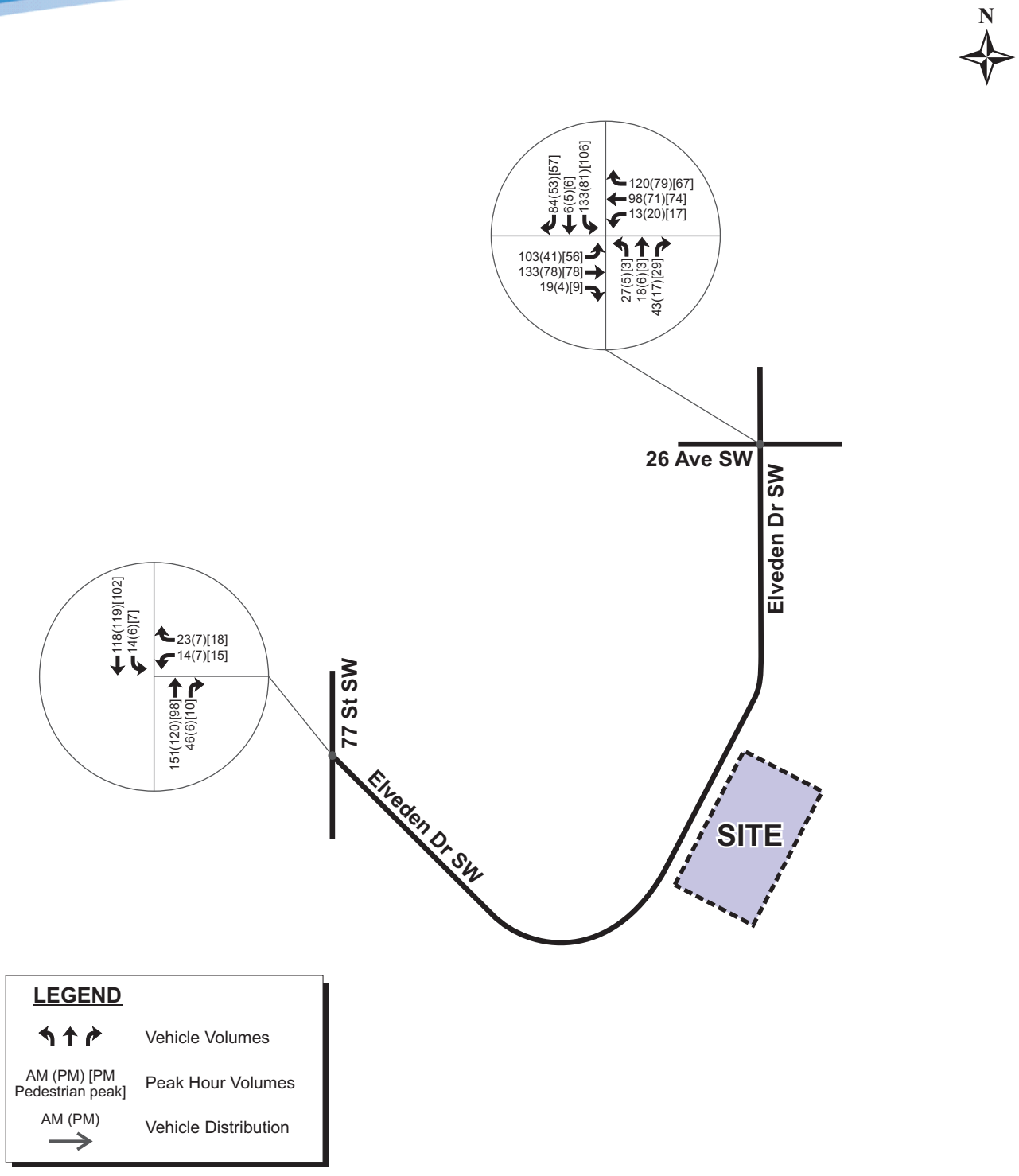


Exhibit 3.5

Opening Day After Development Traffic Volumes

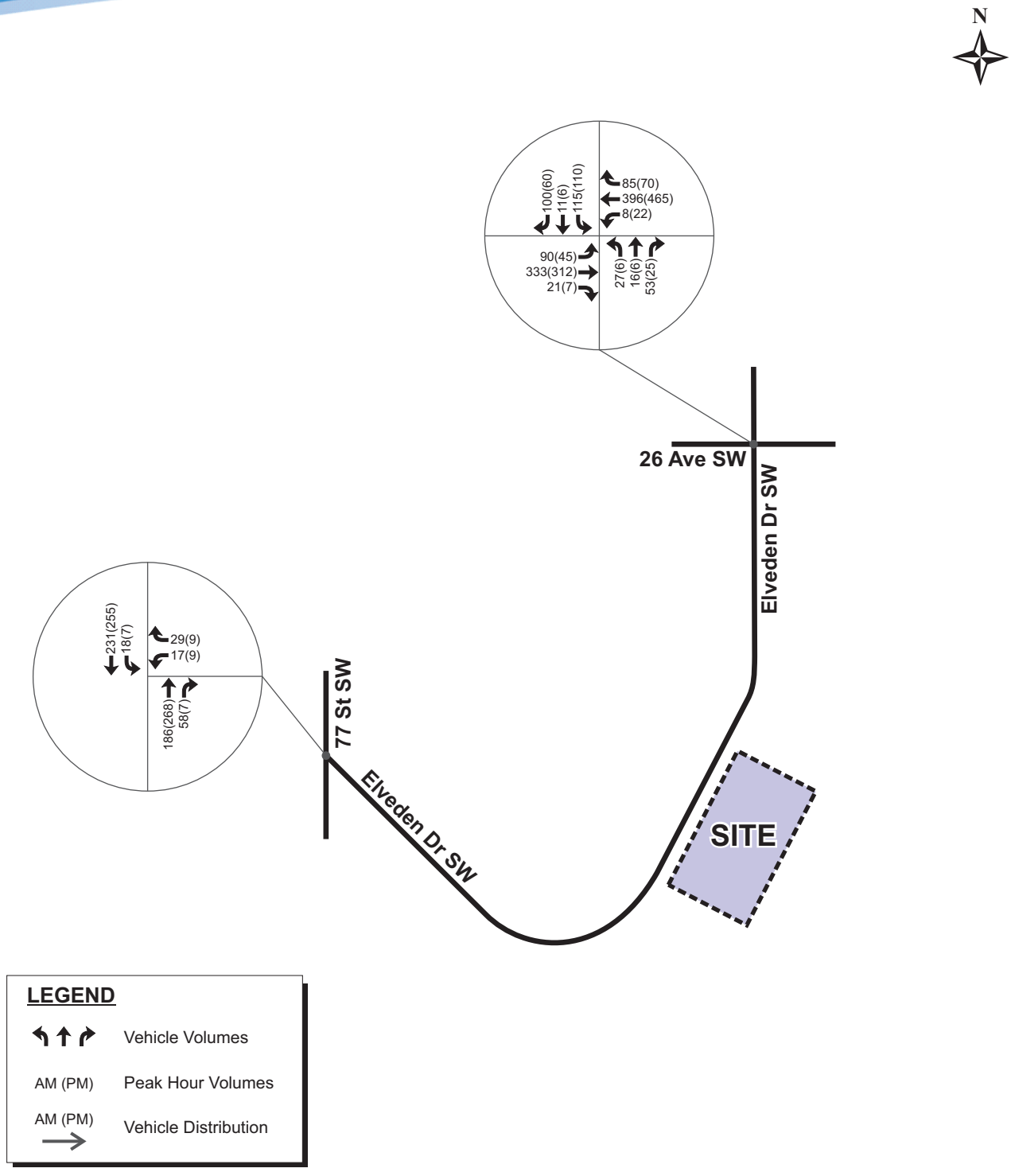


Exhibit 3.6

Long Term After Development Traffic Volumes

3.4 Intersection Analysis

Synchro 11 traffic analysis software was used to complete intersection capacity analysis based on the methods outlined in the Highway Capacity Manual (2000). Traffic operations were assessed using performance measures that include volume-to-capacity (v/c) and Level of Service (LOS).

The volume-to-capacity (v/c) ratio of an intersection movement represents the ratio between the demand volume and available lane capacity. A v/c ratio over 1.0 indicates a congested intersection where drivers may have to wait through more than one signal cycle. The Level of Service (LOS) rating is based on average vehicle delays, which ranges from LOS A (minimal delay) to LOS F (significant delay). 95th percentile queues for the four-way stop were obtained using Sim Traffic simulations. Note that results may vary between analysis horizons as the results for each horizon are based on different simulation runs.

To provide a conservative estimate, a minimum of 25 pedestrians per hour was assumed at the intersection of Elveden Drive & 26 Avenue SW for any legs with existing or potential future crosswalks.

Large pedestrian volumes were observed during the 15-minute period immediately proceeding the end of classes at the Griffith Woods school from 2:30 – 2:45 PM. The 2:30 – 3:30 PM period, labeled as the PM school pedestrian peak, was analyzed below in addition to the typical AM (7:45 – 8:45 AM) and PM (5:00 – 6:00 PM) street peak hours to assess the impacts of the increased pedestrian volumes. Note that AM street peak hour volumes overlap with the AM school peak hour and provides the most conservative analysis from any of the observed peak hours.

Analysis was completed per City of Calgary TIA guidelines. Synchro output reports are provided in **Appendix B**. Volume to capacity (v/c) ratios, levels of service, average control delays (seconds), and 95th percentile queues (metres) are summarized in:

- **Table 3.5** – *Elveden Drive & 26 Avenue SW*
- **Table 3.6** – *77 Street & Elveden Drive SW*

Table 3.5: Intersection Analysis (Elveden Drive & 26 Avenue SW)

INTERSECTION	HORIZON	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
				v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
Elveden Drive & 26 Avenue SW *(4-Way Stop)*	Existing	EB	1	0.39	B	12	41	0.17	A	9	19
		WB	1	0.34	B	11	41	0.20	A	8	26
		NB	1	0.13	A	10	23	0.03	A	8	12
		SBTL	1	0.26	B	11	26	0.14	A	9	19
		SBR	1	0.13	A	8	24	0.07	A	7	17
		Overall		-	A	11	-	-	A	8	-
	Opening Day After Development (Street Peak)	EB	1	0.40	B	12	41	0.17	A	9	18
		WB	1	0.35	B	11	45	0.21	A	8	25
		NB	1	0.15	A	10	23	0.04	A	8	12
		SBTL	1	0.27	B	11	23	0.14	A	9	21
		SBR	1	0.13	A	8	23	0.07	A	7	18
		Overall		-	B	11	-	-	A	8	-
	Opening Day After Development PM School Pedestrian Peak	EB	1	AM peak covers AM School Peak				0.20	A	9	20
		WB	1					0.21	A	9	23
		NB	1					0.05	A	8	15
		SBTL	1					0.19	A	9	18
		SBR	1					0.08	A	7	16
		Overall						-	A	9	-
	Long Term Background	EB	1	0.80	D	29	91	0.58	C	16	35
		WB	1	0.86	E	36	150	0.83	D	29	73
		NB	1	0.19	B	12	20	0.06	B	10	13
		SBTL	1	0.30	B	13	25	0.25	B	12	21
		SBR	1	0.21	B	11	23	0.11	A	9	20
		Overall		-	D	27	-	-	C	21	-
	Long Term After Development	EB	1	0.81	D	31	136	0.59	C	16	34
		WB	1	0.88	E	39	152	0.85	D	31	58
		NB	1	0.22	B	13	25	0.07	B	10	15
		SBTL	1	0.31	B	14	30	0.26	B	12	20
		SBR	1	0.21	B	11	24	0.11	A	9	18
		Overall		-	D	29	-	-	C	22	-

Table 3.6: Intersection Analysis (77 Street & Elveden Drive SW)

INTERSECTION	HORIZON	MOVEMENT & LANES		AM PEAK HOUR				PM PEAK HOUR			
				v/c	LOS	Delay	Queue	v/c	LOS	Delay	Queue
77 Street & Elveden Drive SW *(WB Stop)*	Existing	WB	1	0.05	B	10	<5	<0.02	A	10	<5
		NB	1	0.12	A	0	<5	0.08	A	0	<5
		SB	1	<0.02	A	1	<5	<0.02	A	0	<5
		Overall		-	A	1	-	-	A	1	-
	Opening Day After Development (Street Peak)	WB	1	0.05	B	10	<5	0.02	A	10	<5
		NB	1	0.12	A	0	<5	0.08	A	0	<5
		SB	1	<0.02	A	1	<5	<0.02	A	0	<5
		Overall		-	A	1	-	-	A	1	-
	Opening Day After Development PM School Pedestrian Peak	WB	1	AM peak covers AM School Peak				0.04	A	10	<5
		NB	1					0.07	A	0	<5
		SB	1					<0.02	A	1	<5
		Overall						-	A	2	-
	Long Term Background	WB	1	0.07	B	11	<5	0.03	B	11	<5
		NB	1	0.15	A	0	<5	0.17	A	0	<5
		SB	1	<0.02	A	1	<5	<0.02	A	0	<5
		Overall		-	A	1	-	-	A	0	-
	Long Term After Development	WB	1	0.07	B	11	<5	0.03	B	11	<5
		NB	1	0.15	A	0	<5	0.17	A	0	<5
		SB	1	<0.02	A	1	<5	<0.02	A	0	<5
		Overall		-	A	1	-	-	A	1	-

Intersection capacity analysis indicates that all study intersections are expected to operate within acceptable capacity parameters in all horizons.

3.5 Signal Warrant Analysis

Signal warrant analysis was completed for the intersection of 26 Avenue & Elveden Drive/Springborough Boulevard based on the Transportation Association of Canada (TAC) *Traffic Signal and Pedestrian Signal Head Warrant Handbook* (2014). A score of 100 points or more indicates a traffic signal is warranted. The warrant analysis is summarized in **Table 3.7** and included in **Appendix C**. Based on City of Calgary TIA guidelines, signal warrants should not be conducted for long-term scenarios (beyond 10 years). Instead, long-term intersection control recommendations should be based on the results of traffic analysis.

Table 3.7: Signal Warrant Analysis

INTERSECTION	HORIZON	SIGNAL WARRANT SCORE	COMMENT
Elveden Drive & 26 Avenue SW	Existing	42 (27 veh, 15 ped)	Not warranted
	Opening Day After Development	44 (28 veh, 16 ped)	

Signal warrant analysis indicated that a traffic signal is not warranted for the opening day horizon and intersection capacity analysis demonstrated that signalization would not yet be warranted at the subject intersection in the long term horizon.

3.6 Pedestrian Crossing Warrant

A pedestrian crossing review was completed to determine if an upgraded crossing is warranted at the intersection of Elveden Drive/Springborough Boulevard & 26 Avenue SW. This intersection is currently served with zebra crossings on the west and north legs. Daily vehicle volumes were calculated using a typical conversion of 10 times the PM peak volume.

Control Need

The Transportation Association of Canada (TAC) *Pedestrian Crossing Control Guide* (Decision Support Tool – Preliminary Assessment) identifies that a crossing is a candidate for control when average hourly pedestrian volumes exceed 15 Equivalent Adult Units (EAUs) per hour and vehicle volumes exceed 1,500 vehicles per day. Alternatively, a crossing can still be considered if there is a requirement for system connectivity and the crossing exceeds 100 metres from an existing crosswalk.

To ensure that the highest volumes of pedestrians were included in the calculations, average pedestrian volumes were calculated by using the two hour counts conducted during the AM school peak, the PM school peak and the PM street peak for a total of six hours. This calculation included the periods when the highest pedestrian volumes were identified. Note that the pedestrian crossing warrants are conducted using Equivalent Adult Units (EAUs) rather than simply using generic pedestrian volumes. This accounts for the presence of vulnerable road users such as children. For example, children under 12 years of age are equivalent to 2 EAUs. For the purposes of this analysis, it was assumed that 60% of pedestrians at these crossings were children under the age of 12. Calculations of pedestrian EAUs on each crosswalk leg are shown in.

The intersection of 26 Avenue and Elveden Drive/Springborough Boulevard currently has a zebra crossing on the north and west legs. As identified in **Table 3.9**, the north and west legs of this intersection currently meet the volume thresholds to warrant control treatments.

Long term pedestrian volumes were increased by 25% per leg to account for future growth in the area, not specifically attributed to the subject development.

The pedestrian and vehicle volumes that meet their individual portions of the pedestrian crossing warrant are highlighted in green below.

Table 3.8: Average Pedestrian Volumes

VOLUME TYPE	INTERSECTION LEG			
	North Side	South Side	East Side	West Side
Existing Total 6 Hour Volume	122	164	23	297
Existing Average Volume per Hour	20	27	4	50
Existing Average EAU per Hour (60% 12 years of age or younger)	33	44	6	79
Long Term EAU per Hour (25% increase)	41	55	8	99

Table 3.9: TAC Pedestrian Crossing Control – Preliminary Assessment

INTERSECTION	LEG	AVERAGE PEDESTRIAN VOLUMES (NEED >15/HOUR)		VEHICLE VOLUMES (DAILY, NEED >1,500/DAY)		VOLUME THRESHOLDS	
		Existing	Long Term AD	Existing	Long Term AD	Pedestrians	Vehicles
26 Avenue & Elveden Dr/ Springborough Blvd	North	33/hour	41/hour	2,600/day	3,000/day	Met	Met
	South	44/hour	55/hour	400/day	700/day	Met	Not Met
	East	6/hour	8/hour	3,300/day	10,000/day	Not Met	Met
	West	79/hour	99/hour	2,500/day	9,000/day	Met	Met

Control Type

Therefore, the north leg and the west leg met all applicable criteria to warrant crossing treatments. Per the treatment selection matrix illustrated in **Figure 3.2** (west leg) and **Figure 3.3** (north leg), the recommended treatment for the intersection of 26 Avenue & Elveden Drive is Side-Mounted Signs (GM).

Note that although not warranted based on volume requirements, the presence of a multi-use path on the south leg of this intersection warrants improved crossing treatment to provide greater system connectivity. Based on existing conditions, the addition of a GM crossing on the south leg is recommended. Note that this is warranted without the addition of any site traffic or the consideration for the development.

Figure 3.2: TAC Pedestrian Crossing Control – Treatment Selection Matrix – West Leg

Average Daily Traffic	Speed Limit [2] (km/h)	Total Number of Lanes [1]				
		1 or 2 lanes	3 lanes (two-way)	3 lanes (one-way)	2 or 3 lanes/direction w/ raised refuge	2 lanes/ direction w/o raised refuge
1,500 < ADT ≤ 4,500	≤ 50	GM	GM	GM	GM	GM+
	60	GM+	GM+	OF	RRFB or OF [3]	RRFB
	70	RRFB	RRFB	OF	OF	OF
4,500 < ADT ≤ 9,000	≤ 50	GM	GM	GM	GM	RRFB
	60	GM+	GM+	OF	RRFB or OF [3]	OF
	70	RRFB	OF	OF	OF	TS
9,000 < ADT ≤ 12,000	≤ 50	GM	RRFB	OF	RRFB or OF [3]	OF
	60	RRFB	RRFB	OF	RRFB or OF [3]	TS
	70	OF	OF	OF	TS	TS
12,000 < ADT ≤ 15,000	≤ 50	RRFB	RRFB	OF	RRFB or OF [3]	OF
	60	RRFB	OF			
	70	OF	TS			
> 15,000	≤ 50	RRFB	OF			
	60	RRFB	TS			
	70	OF	TS			

Existing/Opening Day

Long Term BG/AD

Figure 3.3: TAC Pedestrian Crossing Control – Treatment Selection Matrix – North Leg

Average Daily Traffic	Speed Limit [2] (km/h)	Total Number of Lanes [1]				
		1 or 2 lanes	3 lanes (two-way)	3 lanes (one-way)	2 or 3 lanes/direction w/ raised refuge	2 lanes/ direction w/o raised refuge
1,500 < ADT ≤ 4,500	≤ 50	GM	GM	GM	GM	GM+
	60	GM+	GM+	OF	RRFB or OF [3]	RRFB
	70	RRFB	RRFB	OF	OF	OF
4,500 < ADT ≤ 9,000	≤ 50	GM	GM	GM	GM	RRFB
	60	GM+	GM+	OF	RRFB or OF [3]	OF
	70	RRFB	OF	OF	OF	TS
9,000 < ADT ≤ 12,000	≤ 50	GM	RRFB	OF	RRFB or OF [3]	OF
	60	RRFB	RRFB	OF	RRFB or OF [3]	TS
	70	OF	OF	OF	TS	TS
12,000 < ADT ≤ 15,000	≤ 50	RRFB	RRFB	OF	RRFB or OF [3]	OF
	60	RRFB	OF	OF	RRFB or OF [3]	TS
	70	OF	TS	OF	TS	TS
> 15,000	≤ 50	RRFB	OF	OF	TS	TS
	60	RRFB	TS	OF	TS	TS
	70	OF	TS	OF	TS	TS

Existing/Opening Day

Long Term BG/AD

The TAC recommendation for the expected pedestrian and vehicular volumes seen at the study intersection includes the addition of side-mounted signage. No side-mounted signage is currently present beyond the RA-8 In-Street School Crosswalk Sign on 26 Avenue as seen in **Figure 3.4** below. The installation of RA-3 Crossing signs is recommended on both sides of the road for the west leg, north leg, and south leg crossings at the Elveden Drive/Springborough Boulevard & 26 Avenue SW intersection without consideration for the development of the site. The recommended signage, warranted based on existing volumes with or without the development of the subject site, is shown in **Figure 3.5**. Additional striping is recommended on the south leg crossing.

Figure 3.4: RA-8 Crossing Sign, West Leg 26 Avenue and Elveden Drive (Google Maps)

Figure 3.5: TAC RA-3 School Crosswalk Sign

3.7 Daily Volumes

Daily vehicle traffic volumes are compared to City of Calgary guidelines in **Table 3.10**. Volumes are rounded to the nearest 100.

Table 3.10: Daily Volume Analysis

ROADWAY	TYPE	SECTION	DAILY VOLUME GUIDELINE	DAILY VOLUMES			
				Existing	Opening Day After Dev.	Long Term Background	Long Term After Dev.
26 Avenue SW	Collector	West of Elveden Drive	2,000 – 8,000	2,500	2,500	8,900	9,000
		East of Elveden Drive		3,300	3,500	9,900	10,000
77 Street SW	Collector	North of Elveden Drive	2,000 – 8,000	2,500	2,500	5,400	5,400
		South of Elveden Drive		2,500	2,500	5,400	5,400
Springborough Boulevard	Collector	North of 26 Avenue	2,000 – 8,000	2,600	2,700	3,000	3,000
Elveden Drive	Residential	South of 26 Avenue	≤ 2,000	400	600	600	700
		East of 77 Street		200	300	300	300

**Daily volumes were determined using a standard factor of 10 applied to PM peak hour volumes.*

Daily volume analysis confirmed 77 Street SW, Springborough Boulevard, and Elveden Drive will continue to carry traffic volumes within their respective guidelines in the existing and Opening Day After Development horizons.

Note that the 100-metre section of Elveden Drive directly south of 26 Avenue is not currently built to a residential standard cross section. This section of road is not currently provided with curb and gutter or sidewalks. This does not affect the physical vehicle carrying capacity of the road, but sidewalks will be required as the adjacent lands develop.

By the Long Term (2048) horizon, 26 Avenue SW is shown to exceed the recommended daily volume guideline for a Collector roadway. The 2048 Long Term volumes are significantly higher than existing counts along 26 Avenue SW accounting for significant growth in the area, and not specifically attributable to the incremental increase from the subject development. It is recommended that this section of 26 Avenue SW be monitored closer to the 2048 horizon to assess the need for a roadway classification upgrade. No upgrade to classification is currently recommended.

4. ACTIVE TRANSPORTATION

4.1 Pedestrian

Pedestrian infrastructure within the study area is illustrated in **Figure 4.1**.

Figure 4.1: Pedestrian Network

A review identified:

- **Sidewalks** – There are multiple missing links impacting pedestrian connectivity.
- **Crossings** – Controlled crossings of both 26 Avenue SW and Springborough Boulevard are provided. A midblock crossing has been added adjacent to the Griffith Woods School to cross 26 Avenue SW.

Numerous sections of Elveden Drive SW are missing sidewalks. The stretches of road that are missing sidewalks are all adjacent to land that is either undeveloped or was built as country residential prior to the development of the surrounding community. It is expected that these missing links will be filled in when the adjacent lands are developed.

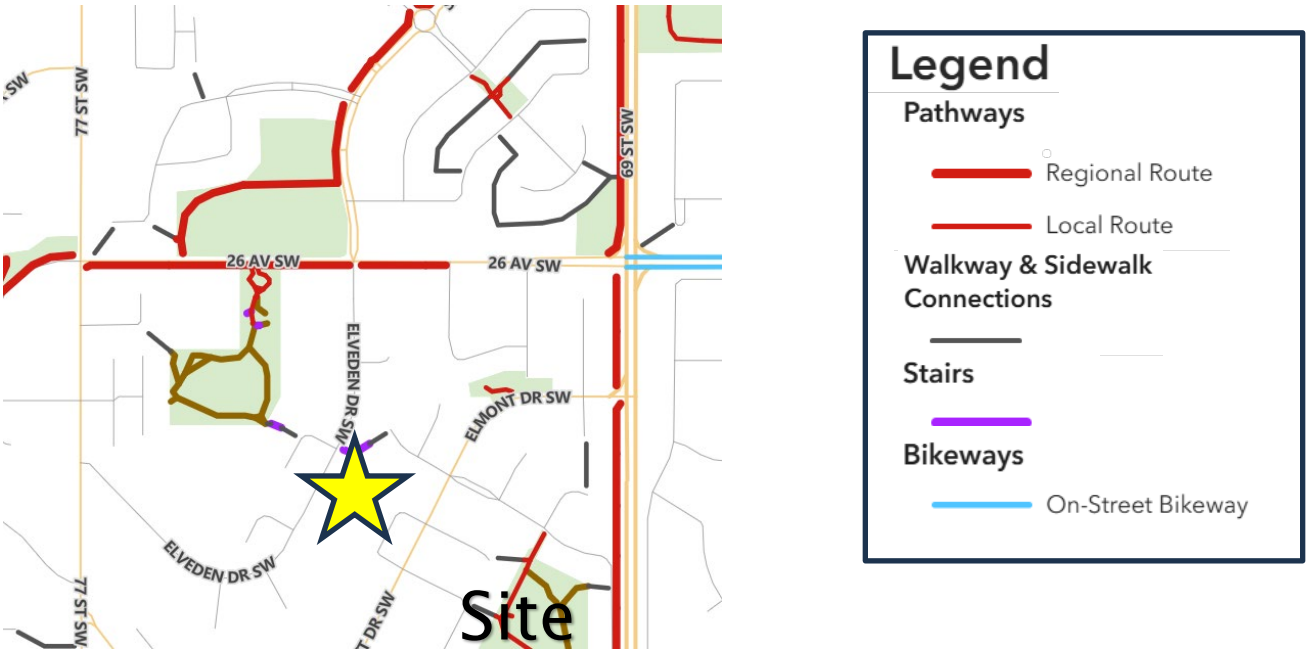
The road directly adjacent to the subject site does not currently have sidewalks. Sidewalks are required to be built as the site is developed, as seen in the site plan in **Figure 2.2**.

The previous temporary sidewalk located on the south edge of 26 Avenue has recently been made permanent with the addition of a paved multi-use pathway extending east of Elveden Drive and to 77 Street to the west.

4.2 Cycling

A multi-use pathway is provided on the west side of 69 Street SW and the north/west side of Springborough Boulevard. The City's Pathway and Bikeway Network (5A) map identifies a potential on-street bikeway on 26 Avenue SW east of 69 Street. Cycling infrastructure is shown in **Figure 4.2**.

Figure 4.2: Cycling Network



4.3 Transit

Bus service is provided via route #51 on 69 Street SW and route #164 on Springborough Boulevard SW and 26 Avenue. The 69 Street LRT station is located a 1.5km walk from the site. The existing area transit network is shown in **Figure 4.3** and summarized in **Table 4.1**.

Figure 4.3: Existing Transit Network

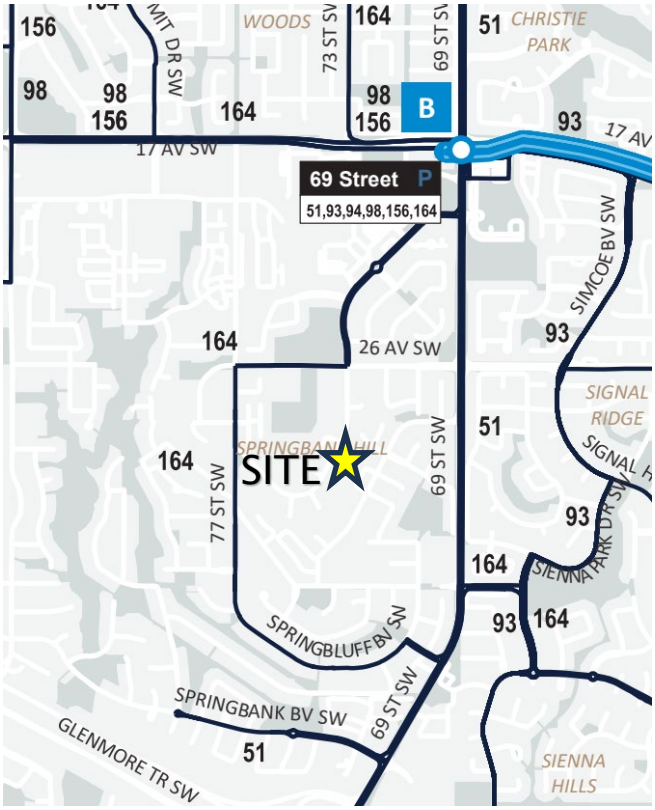


Table 4.1: Transit Frequency

ROUTE		DISTANCE TO STOP	FREQUENCY (MINUTES)	
#	Name		Peaks	Off-Peak
51	West Springs/Discovery Ridge	580 m (SB) 820 m (NB)	20 min	40 min
164	Aspen Summit	400 m (WB and NB)	32 min	32 min

5. PARKING

Bylaw parking requirements are calculated in **Table 5.1** in accordance with Land Use Bylaw 1P2007 (M-G District). The development is expected to exceed all bylaw requirements on-site.

Table 5.1: Bylaw Parking Requirement

STALL TYPE		DENSITY	BYLAW MINIMUM RATIO	STALLS		
				Bylaw	Proposed	Difference
Vehicle	Multi-Family Residential (M-G)	37 units	0.625 stalls per Dwelling Unit	23	74 resident 6 visitor	+57
			TOTAL	23	80	+57
Bicycle (Class 1)	Multi-Family Residential (M-G)	37 units	0.5 stall per Dwelling Unit	19	37	+18
			TOTAL	19	37	+18
Bicycle (Class 2)	Multi-Family Residential (M-G)	37 units	0.1 stalls per Dwelling Unit	4	6	+2
			TOTAL	4	6	+2

APPENDIX A

Traffic Data

Intersection Turning Movement Count Summary: Springborough Boulevard SW/Elveden Drive SW & 26 Avenue SW

N/S Road: Springborough Boulevard SW/Elveden Drive SW
E/W Road: 26 Avenue SW
Count Date: January 29, 2026 Thursday
Weather: Clear
Road Condition: Dry
Project #: 02-25-0137

AM Peak Hour: 7:45 AM to 8:45 AM
Mid-day Peak Hour: 11:45 AM to 12:45 PM
PM Peak Hour: 5:00 PM to 6:00 PM

PHF (AM Peak Hour): 0.82
PHF (Mid-day Peak Hour): 0.86
PHF (PM Peak Hour): 0.95

	Springborough Boulevard SW/Elveden Drive SW												26 Avenue SW																			
	Northbound (South Leg)						Southbound (North Leg)						Westbound (East Leg)						Eastbound (West Leg)								Pedestrians				Cyclists			
Time Starting	Left		Through		Right		Left		Through		Right		Left		Through		Right		Left		Through		Right		Total Vehicles		West Side	East Side	North Side	South Side	NB	SB	WB	EB
	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	15 Min	Hourly								
7:00	0	0	1	0	1	0	12	0	1	0	3	1	1	0	4	0	5	0	4	0	11	0	0	0	44		2	0	0	0	0	0	0	0
7:15	0	0	1	0	3	0	8	0	0	0	10	0	0	0	10	0	8	0	9	0	12	1	0	0	62		0	2	1	0	0	0	0	0
7:30	3	0	2	0	4	0	22	0	2	0	9	1	1	0	18	2	32	0	12	3	17	1	1	0	130		3	0	5	1	0	0	0	0
7:45	14	0	6	0	19	0	36	0	1	0	11	0	3	0	26	8	34	1	10	0	26	0	7	0	202	438	68	0	37	51	0	0	0	0
8:00	10	0	2	0	7	0	30	1	2	0	21	2	1	0	21	0	16	0	20	1	46	1	8	0	189	583	15	0	3	0	0	0	0	0
8:15	1	0	0	0	3	2	19	0	1	0	14	0	2	1	22	1	29	0	19	0	35	1	1	0	151	672	0	1	2	13	0	0	0	0
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	28		25		46		214		14		149		16		158		186		154		190		19		1199									
Peak Hour Total	**25**	**0**	**17**	**0**	**33**	**2**	**132**	**1**	**5**	**0**	**81**	**3**	**9**	**1**	**89**	**9**	**119**	**1**	**101**	**2**	**130**	**3**	**18**	**0**			**87**	**1**	**43**	**67**	**0**	**0**	**0**	**0**
	25		**17**		**35**		**133**		**5**		**84**		**10**		**98**		**120**		**103**		**133**		**18**		**781**									
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	4		6		18		93		8		90		17		98		60		51		108		4		557									
Peak Hour Total	**1**	**0**	**3**	**0**	**5**	**0**	**48**	**0**	**7**	**0**	**51**	**2**	**12**	**0**	**45**	**2**	**35**	**2**	**27**	**2**	**62**	**0**	**1**	**0**			**9**	**2**	**10**	**8**	**0**	**0**	**0**	**0**
	1		**3**		**5**		**48**		**7**		**53**		**12**		**47**		**37**		**29**		**62**		**1**		**305**									
16:00	0	0	1	0	1	0	27	1	2	0	16	1	5	0	21	0	16	0	7	1	28	0	1	0	128		2	0	1	1	0	0	0	0
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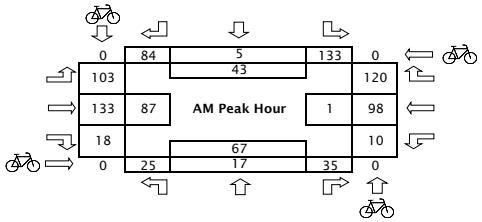
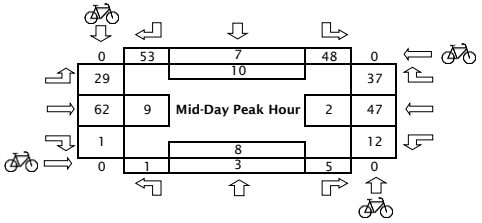
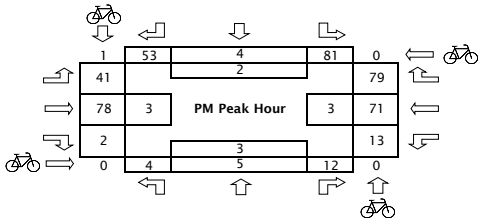
	7		8		22		177		10		101		24		129		140		87		168		4		877									
Peak Hour Total	**4**	**0**	**5**	**0**	**12**	**0**	**80**	**1**	**4**	**0**	**51**	**2**	**13**	**0**	**70**	**1**	**78**	**1**	**39**	**2**	**77**	**1**	**2**	**0**			**3**	**3**	**2**	**3**	**0**	**1**	**0**	**0**
	4		**5**		**12**		**81**		**4**		**53**		**13**		**71**		**79**		**41**		**78**		**2**		**443**									
6 Hour Total	**39**	**0**	**39**	**0**	**84**	**2**	**479**	**5**	**32**	**0**	**327**	**13**	**56**	**1**	**366**	**19**	**382**	**4**	**278**	**14**	**459**	**7**	**27**	**0**			**118**	**18**	**77**	**81**	**0**	**2**	**0**	**0**
	39		**39**		**86**		**484**		**32**		**340**		**57**		**385**		**386**		**292**		**466**		**27**		**2633**									

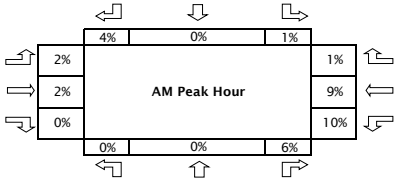
Volume Summaries

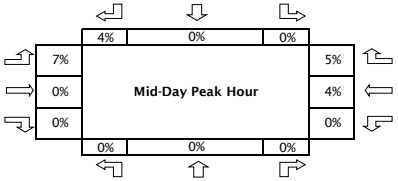


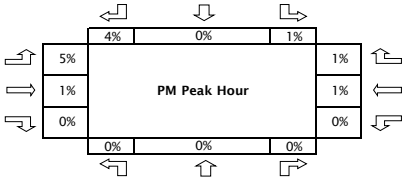




Heavy Vehicle Percentage







Intersection Turning Movement Count Summary: Elveden Drive SW & 26 Avenue SW

N/S Road: Elveden Drive SW
E/W Road: 26 Avenue SW
Count Date: January 29, 2026 Thursday
Weather: Clear
Road Condition: Dry
Project #: 02-25-0137

AM Peak Hour: to
PM School Ped Peak H 2:30 AM to 3:30 AM
PM Street Peak Hour: to

PHF (AM Peak Hour):
PHF (PM School Peak Hour): 0.69
PHF (PM Street Peak Hour):

	Elveden Drive SW												26 Avenue SW														Pedestrians				Cyclists			
	Northbound (South Leg)						Southbound (North Leg)						Westbound (East Leg)						Eastbound (West Leg)						Total Vehicles									
Time Starting	Left		Through		Right		Left		Through		Right		Left		Through		Right		Left		Through		Right				West Side	East Side	North Side	South Side	NB	SB	WB	EB
	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	15 Min	Hourly								
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0
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8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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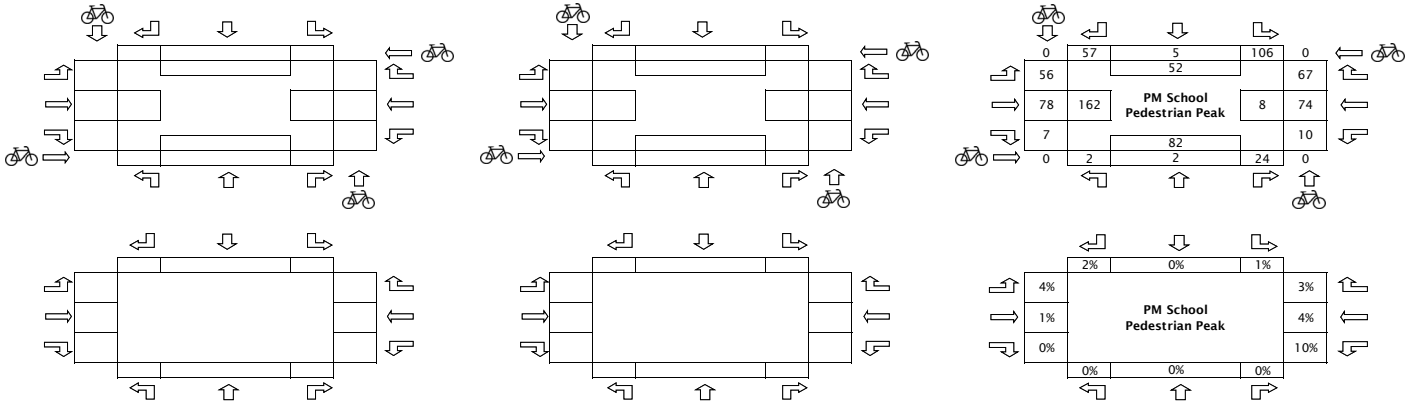
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 Hour Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0	0	0	0	0	0	0
		0		0		0		0		0		0		0		0		0		0		0		0	0									
Peak Hour Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**			**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
		0		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**								
14:00	1	0	0	0	1	0	19	0	0	0	20	0	5	0	12	1	20	1	10	0	9	0	1	0	100		2	1	1	1	0	0	0	0
14:15	1	0	1	0	0	0	16	0	1	0	9	1	4	0	7	8	21	0	9	1	10	1	8	0	98		26	0	7	6	0	0	0	0
14:30	1	0	1	0	15	0	42	0	3	0	18	0	5	0	16	0	20	0	4	0	25	0	6	0	156		147	4	43	79	0	0	0	0
14:45	1	0	0	0	5	0	28	0	0	0	15	1	1	0	15	1	10	0	7	1	21	0	0	0	106	460	2	2	5	2	0	0	0	0
15:00	0	0	0	0	2	0	15	0	1	0	6	0	1	0	15	2	8	1	8	0	16	0	1	0	76	436	10	0	4	0	0	0	0	0
15:15	0	0	1	0	2	0	20	1	1	0	17	0	2	1	25	0	27	1	35	1	15	1	0	0	150	488	3	2	0	1	0	0	0	0
15:30	0	0	0	0	3	0	56	1	1	0	70	2	5	0	21	0	25	1	21	1	15	0	1	0	223	555	3	1	2	2	0	0	0	0
15:45	0	0	1	0	1	0	39	0	1	0	47	1	4	0	20	1	21	0	9	0	21	0	1	0	167	616	3	0	2	0	0	0	0	0
2 Hour Total	4	0	4	0	29	0	235	2	8	0	202	5	27	1	131	13	152	4	103	4	132	2	18	0			196	10	64	91	0	0	0	0
		4		4		29		237		8		207		28		144		156		107		134		18	1076									
Peak Hour Total	**0**	**0**	**2**	**0**	**8**	**0**	**130**	**2**	**4**	**0**	**140**	**3**	**12**	**1**	**81**	**3**	**81**	**3**	**73**	**2**	**67**	**1**	**3**	**0**			**19**	**3**	**8**	**3**	**0**	**0**	**0**	**0**
		0		**2**		**8**		**132**		**4**		**143**		**13**		**84**		**84**		**75**		**68**		**3**		**616**								
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	540	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	390	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	167	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 Hour Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0	0	0	0	0	0	0
		0		0		0		0		0		0		0		0		0		0		0		0	0									
Peak Hour Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**			**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
		0		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**								
6 Hour Total	**4**	**0**	**4**	**0**	**29**	**0**	**235**	**2**	**8**	**0**	**202**	**5**	**27**	**1**	**131**	**13**	**152**	**4**	**103**	**4**	**132**	**2**	**18**	**0**			**196**	**10**	**64**	**91**	**0**	**0**	**0**	**0**
		4		**4**		**29**		**237**		**8**		**207**		**28**		**144**		**156**		**107**		**134**		**18**	**1076**									

pedestrian peak highlighted

Volume Summaries



Intersection Turning Movement Count Summary: 77 Street SW & Elveden Drive SW

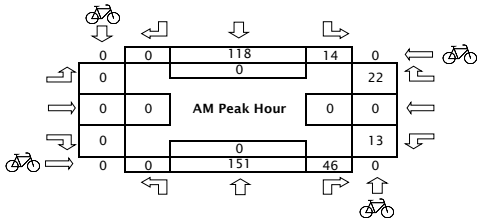
N/S Road: 77 Street SW
E/W Road: Elveden Drive SW
Count Date: January 29, 2026 Thursday
Weather: Clear
Road Condition: Dry
Project #: 02-25-0137

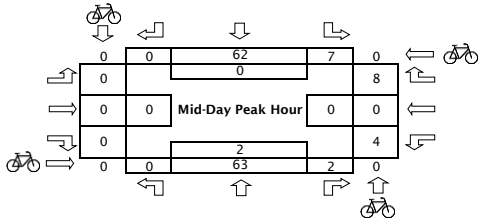
AM Peak Hour: 7:45 AM to 8:45 AM
Mid-day Peak Hour: 11:30 AM to 12:30 PM
PM Peak Hour: 4:00 PM to 5:00 PM

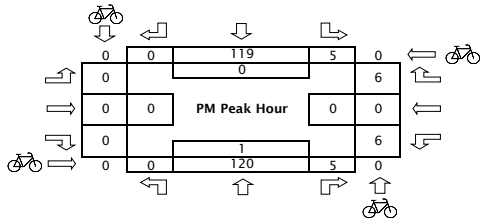
PHF (AM Peak Hour): 0.61
PHF (Mid-day Peak Hour): 0.76
PHF (PM Peak Hour): 0.80

	77 Street SW												Elveden Drive SW														Pedestrians				Cyclists			
	Northbound (South Leg)						Southbound (North Leg)						Westbound (East Leg)						Eastbound (West Leg)						Total Vehicles									
	Left		Through		Right		Left		Through		Right		Left		Through		Right		Left		Through		Right											
Time Starting	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	15 Min	Hourly	West Side	East Side	North Side	South Side	NB	SB	WB	EB
7:00	0	0	18	0	0	0	0	0	11	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31		0	1	0	0	0	0	2	0
7:15	0	0	21	1	1	0	1	0	20	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	46		0	0	0	0	0	0	0	0
7:30	0	0	20	1	7	0	0	0	20	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	50		0	0	0	0	0	0	0	0
7:45	0	0	58	0	38	0	9	0	32	2	0	0	3	0	0	0	6	0	0	0	0	0	0	0	148	275	0	0	0	0	0	0	0	0
8:00	0	0	28	1	4	0	2	0	32	2	0	0	7	0	0	0	8	0	0	0	0	0	0	0	84	328	0	0	0	0	0	0	0	0
8:15	0	0	24	0	0	0	2	1	21	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	51	333	0	0	0	0	0	0	0	0
8:30	0	0	39	1	4	0	0	0	28	1	0	0	2	0	0	0	6	0	0	0	0	0	0	0	81	364	0	0	0	0	0	0	0	0
8:45	0	0	21	0	0	0	0	0	19	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	44	260	0	0	0	0	0	0	0	0
2 Hour Total	0	0	229	4	54	0	14	1	183	10	0	0	17	0	0	0	23	0	0	0	0	0	0	0			0	1	0	0	0	0	2	0
	0		233		54		15		193		0		17		0		23		0		0		0		535									
Peak Hour Total	**0**	**0**	**149**	**2**	**46**	**0**	**13**	**1**	**113**	**5**	**0**	**0**	**13**	**0**	**0**	**0**	**22**	**0**	**0**	**0**	**0**	**0**	**0**	**0**			**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0		**151**		**46**		**14**		**118**		**0**		**13**		**0**		**22**		**0**		**0**		**0**			**364**								
11:00	0	0	8	2	0	0	1	0	19	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	34		0	0	0	0	0	0	0	0
11:15	0	0	10	0	0	0	0	0	19	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	32		0	0	0	0	0	0	0	0
11:30	0	0	23	0	2	0	0	0	20	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	48		0	0	0	0	0	0	0	0
11:45	0	0	12	1	0	0	2	0	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	140	0	0	0	0	0	0	0	0
12:00	0	0	9	0	0	0	2	0	12	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	26	132	0	0	0	2	0	0	0	0
12:15	0	0	17	1	0	0	3	0	18	1	0	0	3	0	0	0	3	0	0	0	0	0	0	0	46	146	0	0	0	0	0	0	0	0
12:30	0	0	18	0	1	0	1	0	17	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	39	137	0	0	0	0	0	0	0	0
12:45	0	0	11	1	0	0	1	0	18	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	33	144	0	0	0	1	0	0	0	0
2 Hour Total	0	0	108	5	3	0	10	0	133	4	0	0	8	0	0	0	13	0	0	0	0	0	0	0			0	0	0	3	0	0	0	0
	0		113		3		10		137		0		8		0		13		0		0		0		284									
Peak Hour Total	**0**	**0**	**61**	**2**	**2**	**0**	**7**	**0**	**60**	**2**	**0**	**0**	**4**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**			**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**
	0		**63**		**2**		**7**		**62**		**0**		**4**		**0**		**8**		**0**		**0**		**0**			**146**								
16:00	0	0	31	2	3	0	0	0	40	1	0	0	2	0	0	0	3	0	0	0	0	0	0	0	82		0	0	0	0	0	0	0	0
16:15	0	0	30	0	2	0	1	0	26	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	62		0	0	0	0	0	0	0	0
16:30	0	0	23	3	0	0	2	0	28	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58		0	0	0	0	0	0	0	0
16:45	0	0	31	0	0	0	2	0	22	0	0	0	3	0	0	0	1	0	0	0	0	0	0	0	59	261	0	0	0	1	0	0	0	0
17:00	0	0	19	1	2	0	2	0	33	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	59	238	0	0	2	0	0	0	0	0
17:15	0	0	21	0	0	0	1	0	28	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	53	229	0	0	0	0	0	0	0	0
17:30	0	0	18	1	2	0	2	0	32	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	58	229	0	0	0	0	0	0	0	0
17:45	0	0	22	0	1	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	208	0	0	0	0	0	0	0	0
2 Hour Total	0	0	195	7	10	0	10	0	224	5	0	0	9	0	0	0	9	0	0	0	0	0	0	0			0	0	2	1	0	0	0	0
	0		202		10		10		229		0		9		0		9		0		0		0		469									
Peak Hour Total	**0**	**0**	**115**	**5**	**5**	**0**	**5**	**0**	**116**	**3**	**0**	**0**	**6**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**			**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**
	0		**120**		**5**		**5**		**119**		**0**		**6**		**0**		**6**		**0**		**0**		**0**			**261**								
6 Hour Total	**0**	**0**	**532**	**16**	**67**	**0**	**34**	**1**	**540**	**19**	**0**	**0**	**34**	**0**	**0**	**0**	**45**	**0**	**0**	**0**	**0**	**0**	**0**	**0**			**0**	**1**	**2**	**4**	**0**	**0**	**2**	**0**
	0		**548**		**67**		**35**		**559**		**0**		**34**		**0**		**45**		**0**		**0**		**0**			**1288**								

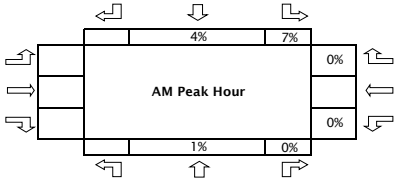
Volume Summaries

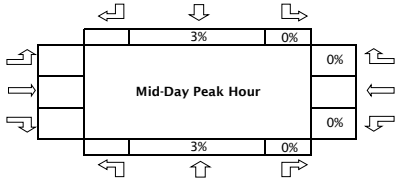


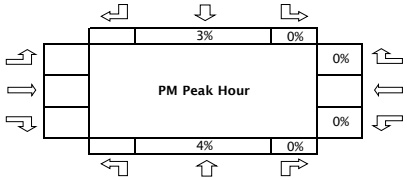




Heavy Vehicle Percentage







Intersection Turning Movement Count Summary: 77 Street SW & Elveden Drive SW

N/S Road: 77 Street SW
E/W Road: Elveden Drive SW
Count Date: January 29, 2026 Thursday
Weather: Clear
Road Condition: Dry
Project #: 02-25-0137

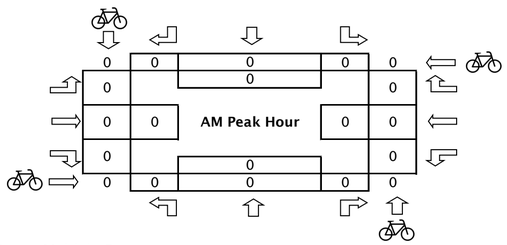
AM Peak Hour: to
PM School Peak Hour: 2:30 PM to 3:30 PM
PM Street Peak Hour: to

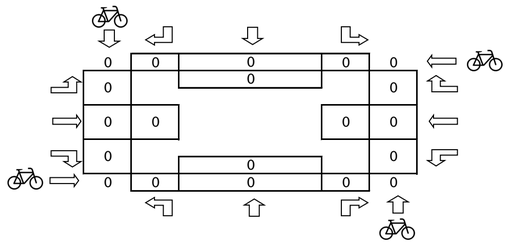
PHF (AM Peak Hour):
PHF (PM School Peak Hour): 0.88
PHF (PM Street Peak Hour):

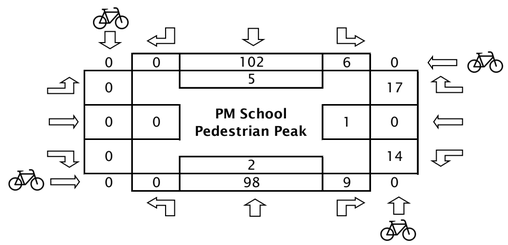
	77 Street SW												Elveden Drive SW														Pedestrians				Cyclists			
	Northbound (South Leg)						Southbound (North Leg)						Westbound (East Leg)						Eastbound (West Leg)						Total Vehicles									
	Left		Through		Right		Left		Through		Right		Left		Through		Right		Left		Through		Right											
Time Starting	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	15 Min	Hourly	West Side	East Side	North Side	South Side	NB	SB	WB	EB
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 Hour Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0	0	0	0	0	0	0
		0		0		0		0		0		0		0		0		0		0		0		0	0									
Peak Hour Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**			**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
		0		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**								
14:00	0	0	12	0	1	0	2	0	17	0	0	0	2	0	0	0	3	0	0	0	0	0	0	0	37		0	0	0	0	0	0	0	0
14:15	0	0	25	2	7	0	5	0	16	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	58		0	0	2	2	0	0	0	0
14:30	0	0	29	0	7	0	4	0	27	4	0	0	10	0	0	0	8	0	0	0	0	0	0	0	89		0	1	0	0	0	0	0	0
14:45	0	0	16	2	1	0	0	0	19	1	0	0	2	0	0	0	3	0	0	0	0	0	0	0	44	228	0	0	0	0	0	0	0	0
15:00	0	0	19	0	0	0	1	0	23	1	0	0	2	0	0	0	2	0	0	0	0	0	0	0	48	239	0	0	0	1	0	0	0	0
15:15	0	0	32	0	1	0	1	0	27	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	65	246	0	0	5	1	0	0	0	0
15:30	0	0	20	1	1	0	2	0	41	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	69	226	0	0	0	0	0	0	0	0
15:45	0	0	34	0	0	0	2	0	32	2	0	0	1	0	0	0	1	0	0	0	0	0	0	0	72	254	0	0	0	1	0	0	0	0
2 Hour Total	0	0	187	5	18	0	17	0	202	10	0	0	21	0	0	0	21	1	0	0	0	0	0	0			0	1	7	5	0	0	0	0
		0		192		18		17		212		0		21		0		22		0		0		0	482									
Peak Hour Total	**0**	**0**	**105**	**1**	**2**	**0**	**6**	**0**	**123**	**4**	**0**	**0**	**6**	**0**	**0**	**0**	**6**	**1**	**0**	**0**	**0**	**0**	**0**	**0**			**0**	**0**	**5**	**3**	**0**	**0**	**0**	**0**
		0		**106**		**2**		**6**		**127**		**0**		**6**		**0**		**7**		**0**		**0**		**0**		**254**								
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	206	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	141	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	72	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 Hour Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0	0	0	0	0	0	0
		0		0		0		0		0		0		0		0		0		0		0		0	0									
Peak Hour Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**			**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
		0		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**								
6 Hour Total	0	0	187	5	18	0	17	0	202	10	0	0	21	0	0	0	21	1	0	0	0	0	0	0			0	1	7	5	0	0	0	0
		0		192		18		17		212		0		21		0		22		0		0		0	482									

PM School Pedestrian Peak for Elveden & 26 Ave

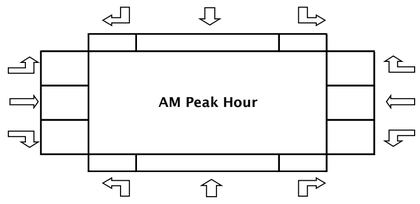
Volume Summaries

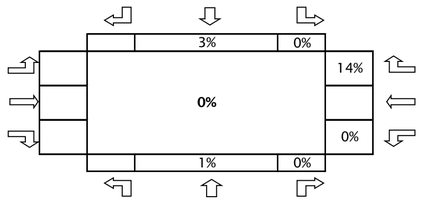


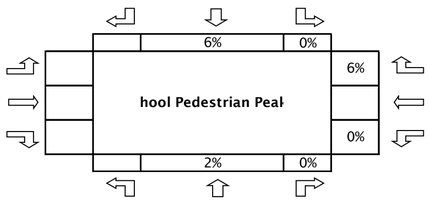




Heavy Vehicle Percentage



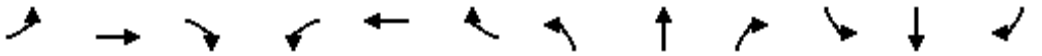




bunt & associates

APPENDIX B

Synchro Reports



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	103	133	18	10	98	120	25	17	35	133	5	84
Future Volume (vph)	103	133	18	10	98	120	25	17	35	133	5	84
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	110	141	19	11	104	128	27	18	37	141	5	89

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	270	243	82	146	89
Volume Left (vph)	110	11	27	141	0
Volume Right (vph)	19	128	37	0	89
Hadj (s)	0.07	-0.22	-0.14	0.52	-0.63
Departure Headway (s)	5.2	5.0	5.6	6.5	5.3
Degree Utilization, x	0.39	0.34	0.13	0.26	0.13
Capacity (veh/h)	649	675	558	516	623
Control Delay (s)	11.6	10.5	9.5	10.6	7.9
Approach Delay (s)	11.6	10.5	9.5	9.6	
Approach LOS	B	B	A	A	

Intersection Summary				
Delay	10.5			
Level of Service	B			
Intersection Capacity Utilization	54.3%	ICU Level of Service	A	
Analysis Period (min)	15			

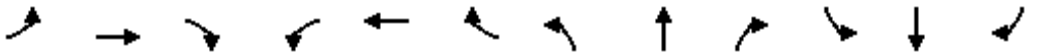
Intersection: 1: Elveden Drive SW/Springborough Blvd SW & 26 Avenue SW

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	R
Maximum Queue (m)	41.3	40.8	23.3	26.2	24.2
Average Queue (m)	17.5	18.8	10.8	12.8	11.2
95th Queue (m)	30.7	30.6	18.2	21.0	19.3
Link Distance (m)		141.6	91.6	91.6	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)					15.0
Storage Blk Time (%)				3	1
Queuing Penalty (veh)				3	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	13	22	151	46	14	118
Future Volume (Veh/h)	13	22	151	46	14	118
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	14	23	161	49	15	126
Pedestrians	5					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.1					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	346	190			215	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	346	190			215	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	98	97			99	
cM capacity (veh/h)	640	847			1320	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	37	210	141
Volume Left	14	0	15
Volume Right	23	49	0
cSH	755	1700	1320
Volume to Capacity	0.05	0.12	0.01
Queue Length 95th (m)	1.2	0.0	0.3
Control Delay (s)	10.0	0.0	0.9
Lane LOS	B		A
Approach Delay (s)	10.0	0.0	0.9
Approach LOS	B		

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	28.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	41	78	5	13	71	79	5	5	12	81	5	53
Future Volume (vph)	41	78	5	13	71	79	5	5	12	81	5	53
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	43	82	5	14	75	83	5	5	13	85	5	56

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	130	172	23	90	56
Volume Left (vph)	43	14	5	85	0
Volume Right (vph)	5	83	13	0	56
Hadj (s)	0.09	-0.24	-0.26	0.51	-0.63
Departure Headway (s)	4.6	4.2	4.6	5.7	4.6
Degree Utilization, x	0.17	0.20	0.03	0.14	0.07
Capacity (veh/h)	748	805	715	593	737
Control Delay (s)	8.5	8.3	7.8	8.5	6.7
Approach Delay (s)	8.5	8.3	7.8	7.8	
Approach LOS	A	A	A	A	

Intersection Summary				
Delay	8.2			
Level of Service	A			
Intersection Capacity Utilization	37.3%	ICU Level of Service	A	
Analysis Period (min)	15			

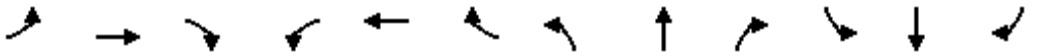
Intersection: 1: Elveden Drive SW/Springborough Blvd SW & 26 Avenue SW

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	R
Maximum Queue (m)	20.0	25.0	13.7	18.9	16.0
Average Queue (m)	9.9	13.5	5.3	9.1	8.5
95th Queue (m)	16.9	21.2	13.1	16.6	14.4
Link Distance (m)		141.6	91.6	91.6	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)					15.0
Storage Blk Time (%)				1	0
Queuing Penalty (veh)				0	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	6	6	120	5	5	119
Future Volume (Veh/h)	6	6	120	5	5	119
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	6	6	126	5	5	125
Pedestrians	5		1			
Lane Width (m)	3.5		3.5			
Walking Speed (m/s)	1.1		1.1			
Percent Blockage	0		0			
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	270	134			136	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	270	134			136	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	99			100	
cM capacity (veh/h)	714	912			1442	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	12	131	130
Volume Left	6	0	5
Volume Right	6	5	0
cSH	800	1700	1442
Volume to Capacity	0.01	0.08	0.00
Queue Length 95th (m)	0.3	0.0	0.1
Control Delay (s)	9.6	0.0	0.3
Lane LOS	A		A
Approach Delay (s)	9.6	0.0	0.3
Approach LOS	A		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	20.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	103	133	19	13	98	120	27	18	43	133	6	84
Future Volume (vph)	103	133	19	13	98	120	27	18	43	133	6	84
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	110	141	20	14	104	128	29	19	46	141	6	89

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	271	246	94	147	89
Volume Left (vph)	110	14	29	141	0
Volume Right (vph)	20	128	46	0	89
Hadj (s)	0.07	-0.21	-0.16	0.51	-0.63
Departure Headway (s)	5.3	5.1	5.6	6.5	5.4
Degree Utilization, x	0.40	0.35	0.15	0.27	0.13
Capacity (veh/h)	642	666	559	512	617
Control Delay (s)	11.7	10.7	9.6	10.7	8.0
Approach Delay (s)	11.7	10.7	9.6	9.7	
Approach LOS	B	B	A	A	

Intersection Summary				
Delay	10.6			
Level of Service	B			
Intersection Capacity Utilization	54.6%	ICU Level of Service	A	
Analysis Period (min)	15			

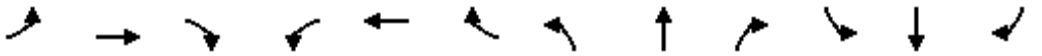
Intersection: 1: Elveden Drive SW/Springborough Blvd SW & 26 Avenue SW

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	R
Maximum Queue (m)	40.9	45.4	22.7	23.2	23.4
Average Queue (m)	18.1	19.4	10.9	13.0	11.2
95th Queue (m)	31.2	34.7	19.3	21.1	19.0
Link Distance (m)		141.6	91.6	91.6	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)					15.0
Storage Blk Time (%)				3	1
Queuing Penalty (veh)				3	1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	14	23	151	46	14	118
Future Volume (Veh/h)	14	23	151	46	14	118
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	15	24	161	49	15	126
Pedestrians	5					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.1					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	346	190			215	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	346	190			215	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	98	97			99	
cM capacity (veh/h)	640	847			1320	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	39	210	141
Volume Left	15	0	15
Volume Right	24	49	0
cSH	754	1700	1320
Volume to Capacity	0.05	0.12	0.01
Queue Length 95th (m)	1.2	0.0	0.3
Control Delay (s)	10.0	0.0	0.9
Lane LOS	B		A
Approach Delay (s)	10.0	0.0	0.9
Approach LOS	B		

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	28.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	41	78	5	20	71	79	5	6	17	81	5	53
Future Volume (vph)	41	78	5	20	71	79	5	6	17	81	5	53
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	43	82	5	21	75	83	5	6	18	85	5	56

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	130	179	29	90	56
Volume Left (vph)	43	21	5	85	0
Volume Right (vph)	5	83	18	0	56
Hadj (s)	0.09	-0.22	-0.30	0.51	-0.63
Departure Headway (s)	4.6	4.3	4.6	5.8	4.6
Degree Utilization, x	0.17	0.21	0.04	0.14	0.07
Capacity (veh/h)	743	798	717	590	732
Control Delay (s)	8.6	8.4	7.8	8.5	6.8
Approach Delay (s)	8.6	8.4	7.8	7.8	
Approach LOS	A	A	A	A	

Intersection Summary				
Delay	8.3			
Level of Service	A			
Intersection Capacity Utilization	36.6%	ICU Level of Service	A	
Analysis Period (min)	15			

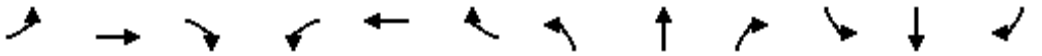
Intersection: 1: Elveden Drive SW/Springborough Blvd SW & 26 Avenue SW

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	R
Maximum Queue (m)	18.4	24.7	12.2	20.5	17.8
Average Queue (m)	9.7	13.2	5.8	9.5	8.5
95th Queue (m)	16.6	21.1	13.6	17.6	15.7
Link Distance (m)		141.6	91.6	91.6	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)					15.0
Storage Blk Time (%)				1	0
Queuing Penalty (veh)				0	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	7	7	120	6	6	119
Future Volume (Veh/h)	7	7	120	6	6	119
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	7	7	126	6	6	125
Pedestrians	5		1			
Lane Width (m)	3.5		3.5			
Walking Speed (m/s)	1.1		1.1			
Percent Blockage	0		0			
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	272	134			137	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	272	134			137	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	99			100	
cM capacity (veh/h)	711	911			1441	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	14	132	131
Volume Left	7	0	6
Volume Right	7	6	0
cSH	798	1700	1441
Volume to Capacity	0.02	0.08	0.00
Queue Length 95th (m)	0.4	0.0	0.1
Control Delay (s)	9.6	0.0	0.4
Lane LOS	A		A
Approach Delay (s)	9.6	0.0	0.4
Approach LOS	A		

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	21.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	56	78	9	17	74	67	5	5	29	106	6	57
Future Volume (vph)	56	78	9	17	74	67	5	5	29	106	6	57
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	59	82	9	18	78	71	5	5	31	112	6	60

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	150	167	41	118	60
Volume Left (vph)	59	18	5	112	0
Volume Right (vph)	9	71	31	0	60
Hadj (s)	0.09	-0.16	-0.40	0.51	-0.67
Departure Headway (s)	4.8	4.5	4.6	5.8	4.6
Degree Utilization, x	0.20	0.21	0.05	0.19	0.08
Capacity (veh/h)	713	756	714	585	729
Control Delay (s)	8.9	8.7	7.9	9.0	6.8
Approach Delay (s)	8.9	8.7	7.9	8.2	
Approach LOS	A	A	A	A	

Intersection Summary				
Delay	8.5			
Level of Service	A			
Intersection Capacity Utilization	41.9%	ICU Level of Service	A	
Analysis Period (min)	15			

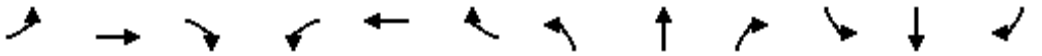
Intersection: 1: Elveden Drive SW/Springborough Blvd SW & 26 Avenue SW

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	R
Maximum Queue (m)	25.3	28.0	16.2	22.6	19.4
Average Queue (m)	11.5	14.2	6.9	10.9	8.5
95th Queue (m)	20.4	23.1	15.4	18.2	15.5
Link Distance (m)		141.6	91.6	91.6	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)					15.0
Storage Blk Time (%)				2	0
Queuing Penalty (veh)				1	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	15	18	98	10	7	102
Future Volume (Veh/h)	15	18	98	10	7	102
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	16	19	103	11	7	107
Pedestrians	5		1			
Lane Width (m)	3.5		3.5			
Walking Speed (m/s)	1.1		1.1			
Percent Blockage	0		0			
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	236	114			119	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	236	114			119	
tC, single (s)	6.4	6.3			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.2	
p0 queue free %	98	98			100	
cM capacity (veh/h)	745	924			1462	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	35	114	114
Volume Left	16	0	7
Volume Right	19	11	0
cSH	833	1700	1462
Volume to Capacity	0.04	0.07	0.00
Queue Length 95th (m)	1.0	0.0	0.1
Control Delay (s)	9.5	0.0	0.5
Lane LOS	A		A
Approach Delay (s)	9.5	0.0	0.5
Approach LOS	A		

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	21.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	90	333	20	5	396	85	25	15	45	115	10	100
Future Volume (vph)	90	333	20	5	396	85	25	15	45	115	10	100
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	96	354	21	5	421	90	27	16	48	122	11	106

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	471	516	91	133	106
Volume Left (vph)	96	5	27	122	0
Volume Right (vph)	21	90	48	0	106
Hadj (s)	0.05	0.03	-0.19	0.49	-0.63
Departure Headway (s)	6.1	6.0	7.6	8.1	7.0
Degree Utilization, x	0.80	0.86	0.19	0.30	0.21
Capacity (veh/h)	471	587	423	416	480
Control Delay (s)	29.1	35.5	12.3	13.4	10.6
Approach Delay (s)	29.1	35.5	12.3	12.1	
Approach LOS	D	E	B	B	

Intersection Summary				
Delay	27.4			
Level of Service	D			
Intersection Capacity Utilization	76.1%	ICU Level of Service	D	
Analysis Period (min)	15			

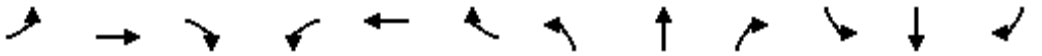
Intersection: 1: Elveden Drive SW/Springborough Blvd SW & 26 Avenue SW

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	R
Maximum Queue (m)	115.4	149.5	26.4	31.2	24.8
Average Queue (m)	45.5	78.4	11.5	14.2	13.5
95th Queue (m)	90.7	149.7	20.1	24.7	22.5
Link Distance (m)		141.6	91.6	91.6	
Upstream Blk Time (%)		9			
Queuing Penalty (veh)		0			
Storage Bay Dist (m)					15.0
Storage Blk Time (%)				6	4
Queuing Penalty (veh)				6	5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	16	28	186	58	18	231
Future Volume (Veh/h)	16	28	186	58	18	231
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	17	30	198	62	19	246
Pedestrians	5					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.1					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	518	234			265	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	518	234			265	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	97	96			98	
cM capacity (veh/h)	508	802			1265	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	47	260	265
Volume Left	17	0	19
Volume Right	30	62	0
cSH	663	1700	1265
Volume to Capacity	0.07	0.15	0.02
Queue Length 95th (m)	1.7	0.0	0.3
Control Delay (s)	10.8	0.0	0.7
Lane LOS	B		A
Approach Delay (s)	10.8	0.0	0.7
Approach LOS	B		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	45	312	5	15	465	70	5	5	20	110	5	60
Future Volume (vph)	45	312	5	15	465	70	5	5	20	110	5	60
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	47	328	5	16	489	74	5	5	21	116	5	63

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	380	579	31	121	63
Volume Left (vph)	47	16	5	116	0
Volume Right (vph)	5	74	21	0	63
Hadj (s)	0.06	-0.04	-0.34	0.51	-0.63
Departure Headway (s)	5.5	5.2	6.7	7.5	6.4
Degree Utilization, x	0.58	0.83	0.06	0.25	0.11
Capacity (veh/h)	624	674	464	445	524
Control Delay (s)	16.0	28.5	10.1	11.9	9.0
Approach Delay (s)	16.0	28.5	10.1	10.9	
Approach LOS	C	D	B	B	

Intersection Summary				
Delay	21.2			
Level of Service	C			
Intersection Capacity Utilization	59.8%	ICU Level of Service	B	
Analysis Period (min)	15			

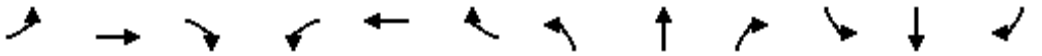
Intersection: 1: Elveden Drive SW/Springborough Blvd SW & 26 Avenue SW

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	R
Maximum Queue (m)	43.4	95.3	10.7	27.4	22.3
Average Queue (m)	21.1	38.7	5.8	12.3	10.2
95th Queue (m)	35.2	73.0	13.1	20.6	19.6
Link Distance (m)		141.6	91.6	91.6	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)					15.0
Storage Blk Time (%)				2	1
Queuing Penalty (veh)				1	1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	8	8	268	6	6	255
Future Volume (Veh/h)	8	8	268	6	6	255
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	8	8	282	6	6	268
Pedestrians	5		1			
Lane Width (m)	3.5		3.5			
Walking Speed (m/s)	1.1		1.1			
Percent Blockage	0		0			
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	571	290			293	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	571	290			293	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	99			100	
cM capacity (veh/h)	477	746			1263	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	16	288	274
Volume Left	8	0	6
Volume Right	8	6	0
cSH	582	1700	1263
Volume to Capacity	0.03	0.17	0.00
Queue Length 95th (m)	0.6	0.0	0.1
Control Delay (s)	11.4	0.0	0.2
Lane LOS	B		A
Approach Delay (s)	11.4	0.0	0.2
Approach LOS	B		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	28.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	90	333	21	8	396	85	27	16	53	115	11	100
Future Volume (vph)	90	333	21	8	396	85	27	16	53	115	11	100
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	96	354	22	9	421	90	29	17	56	122	12	106

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	472	520	102	134	106
Volume Left (vph)	96	9	29	122	0
Volume Right (vph)	22	90	56	0	106
Hadj (s)	0.05	0.03	-0.20	0.49	-0.63
Departure Headway (s)	6.2	6.1	7.6	8.2	7.1
Degree Utilization, x	0.81	0.88	0.22	0.31	0.21
Capacity (veh/h)	472	578	424	412	476
Control Delay (s)	30.8	38.5	12.7	13.6	10.7
Approach Delay (s)	30.8	38.5	12.7	12.3	
Approach LOS	D	E	B	B	

Intersection Summary				
Delay	29.1			
Level of Service	D			
Intersection Capacity Utilization	76.6%	ICU Level of Service	D	
Analysis Period (min)	15			

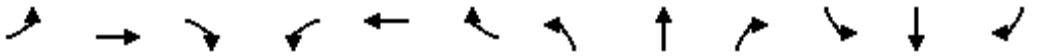
Intersection: 1: Elveden Drive SW/Springborough Blvd SW & 26 Avenue SW

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	R
Maximum Queue (m)	160.5	142.8	29.8	40.2	24.9
Average Queue (m)	63.1	81.0	13.7	15.9	14.1
95th Queue (m)	136.1	151.6	24.6	29.9	24.0
Link Distance (m)		141.6	91.6	91.6	
Upstream Blk Time (%)		11			
Queuing Penalty (veh)		0			
Storage Bay Dist (m)					15.0
Storage Blk Time (%)				9	6
Queuing Penalty (veh)				9	7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	17	29	186	58	18	231
Future Volume (Veh/h)	17	29	186	58	18	231
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	18	31	198	62	19	246
Pedestrians	5					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.1					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	518	234			265	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	518	234			265	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	96	96			98	
cM capacity (veh/h)	508	802			1265	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	49	260	265
Volume Left	18	0	19
Volume Right	31	62	0
cSH	661	1700	1265
Volume to Capacity	0.07	0.15	0.02
Queue Length 95th (m)	1.8	0.0	0.3
Control Delay (s)	10.9	0.0	0.7
Lane LOS	B		A
Approach Delay (s)	10.9	0.0	0.7
Approach LOS	B		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	45	312	7	22	465	70	6	6	25	110	6	60
Future Volume (vph)	45	312	7	22	465	70	6	6	25	110	6	60
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	47	328	7	23	489	74	6	6	26	116	6	63

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	382	586	38	122	63
Volume Left (vph)	47	23	6	116	0
Volume Right (vph)	7	74	26	0	63
Hadj (s)	0.05	-0.03	-0.34	0.51	-0.63
Departure Headway (s)	5.6	5.2	6.8	7.6	6.4
Degree Utilization, x	0.59	0.85	0.07	0.26	0.11
Capacity (veh/h)	617	667	464	444	521
Control Delay (s)	16.4	30.6	10.3	12.0	9.0
Approach Delay (s)	16.4	30.6	10.3	11.0	
Approach LOS	C	D	B	B	

Intersection Summary				
Delay	22.4			
Level of Service	C			
Intersection Capacity Utilization	56.4%	ICU Level of Service	B	
Analysis Period (min)	15			

Intersection: 1: Elveden Drive SW/Springborough Blvd SW & 26 Avenue SW

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	R
Maximum Queue (m)	44.0	76.8	17.4	24.0	22.3
Average Queue (m)	20.6	34.5	7.4	12.5	10.3
95th Queue (m)	34.1	57.7	15.0	20.2	18.0
Link Distance (m)		141.6	91.6	91.6	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)					15.0
Storage Blk Time (%)				3	1
Queuing Penalty (veh)				2	1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	9	9	268	7	7	255
Future Volume (Veh/h)	9	9	268	7	7	255
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	9	9	282	7	7	268
Pedestrians	5		1			
Lane Width (m)	3.5		3.5			
Walking Speed (m/s)	1.1		1.1			
Percent Blockage	0		0			
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	574	290			294	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	574	290			294	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	99			99	
cM capacity (veh/h)	475	745			1262	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	18	289	275
Volume Left	9	0	7
Volume Right	9	7	0
cSH	581	1700	1262
Volume to Capacity	0.03	0.17	0.01
Queue Length 95th (m)	0.7	0.0	0.1
Control Delay (s)	11.4	0.0	0.3
Lane LOS	B		A
Approach Delay (s)	11.4	0.0	0.3
Approach LOS	B		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	29.6%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX C

Signal Warrants

City of Calgary - Traffic Signal Warrant Analysis

Main Street (name)	26 Avenue SW	Direction (EW or NS)	EW	Road Authority:	City of Calgary
Side Street (name)	Elveden Drive SW	Direction (EW or NS)	NS	City:	Calgary
Quadrant / Int #		Comments	Opening Day - BG	Analysis Date:	2025 Aug 06, Wed
for Warrant Calculation Results, please hit 'Page Down'	CHECK SHEET			Count Date:	2024 Jun 13, Thu
				Date Entry Format:	(yyyy-mm-dd)

Lane Configuration		Excl LT	Th & LT	Through	Th+RT+LT	Th & RT	Excl RT	UpStream Signal (m)	# of Thru Lanes
26 Avenue SW	WB				1				1
26 Avenue SW	EB				1				1
Elveden Drive SW	NB				1				
Elveden Drive SW	SB		1				1		
Are the Elveden Drive SW NB right turns significantly impeded by through movements? (y/n)							n		
Are the Elveden Drive SW SB right turns significantly impeded by through movements? (y/n)							n		

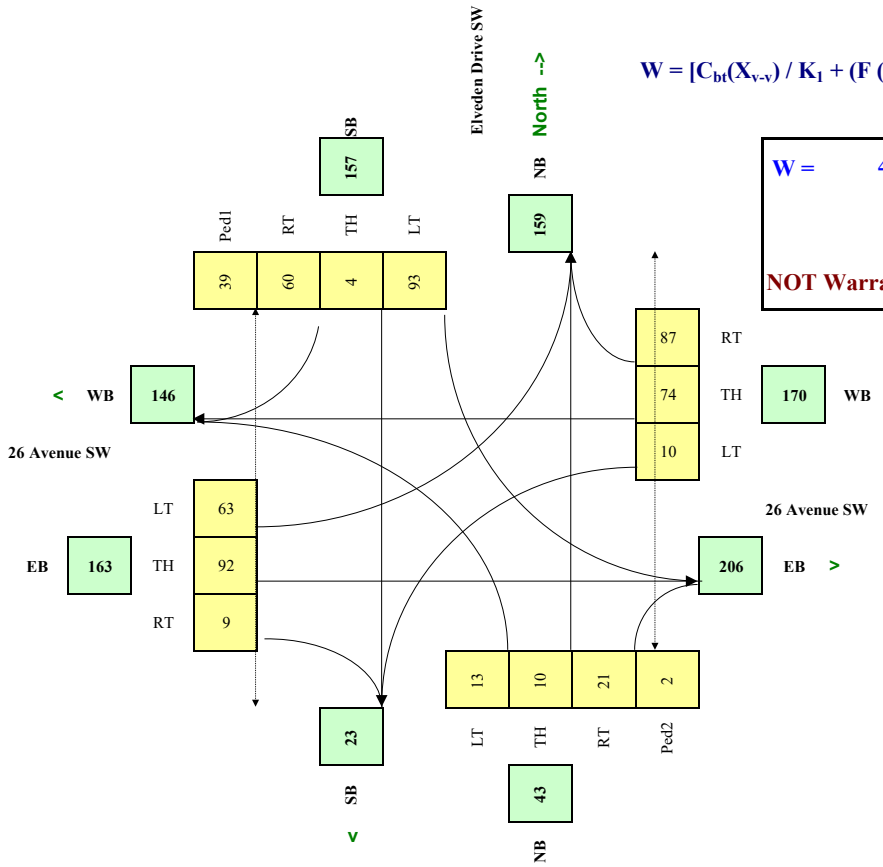
Demographics		
Elem. School/Mobility Challenged	(y/n)	y
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	y
Metro Area Population	(#)	1,700,000
Central Business District	(y/n)	n

Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
26 Avenue SW	EW	30	2.0%	y	0.0
Elveden Drive SW	NS		2.0%	n	

Set Peak Hours

Traffic Input	NB			SB			WB			EB			Ped1 NS	Ped2 NS	Ped3 EW	Ped4 EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S Side
Existing (6-Hour) (AM+PM)*2.61	76	57	123	559	23	358	60	441	519	376	551	52	235	10	117	183
Total (6-hour peak)	76	57	123	559	23	358	60	441	519	376	551	52	235	10	117	183
Average (6-hour peak)	13	10	21	93	4	60	10	74	87	63	92	9	39	2	20	31

Average 6-hour Peak Turning Movements



$$W = [C_{bt}(X_{v\text{-}v}) / K_1 + (F\,(X_{v\text{-}p})\,L) / K_2] \times C_i$$

W =	42	27	15
		Veh	*Ped*

NOT Warranted

RESET SHEET

City of Calgary - Traffic Signal Warrant Analysis

Main Street (name)	26 Avenue SW	Direction (EW or NS)	EW
Side Street (name)	Elveden Drive SW	Direction (EW or NS)	NS
Quadrant / Int #		Comments	Opening Day - AD

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Road Authority:	City of Calgary
City:	Calgary
Analysis Date:	2025 Aug 06, Wed
Count Date:	2024 Jun 13, Thu
Date Entry Format:	(yyyy-mm-dd)

Lane Configuration		Excl LT	Th & LT	Through	Th+RT+LT	Th & RT	Excl RT	UpStream Signal (m)	# of Thru Lanes
26 Avenue SW	WB				1				1
26 Avenue SW	EB				1				1
Elveden Drive SW	NB				1				
Elveden Drive SW	SB		1				1		
Are the Elveden Drive SW NB right turns significantly impeded by through movements? (y/n)							n		
Are the Elveden Drive SW SB right turns significantly impeded by through movements? (y/n)							n		

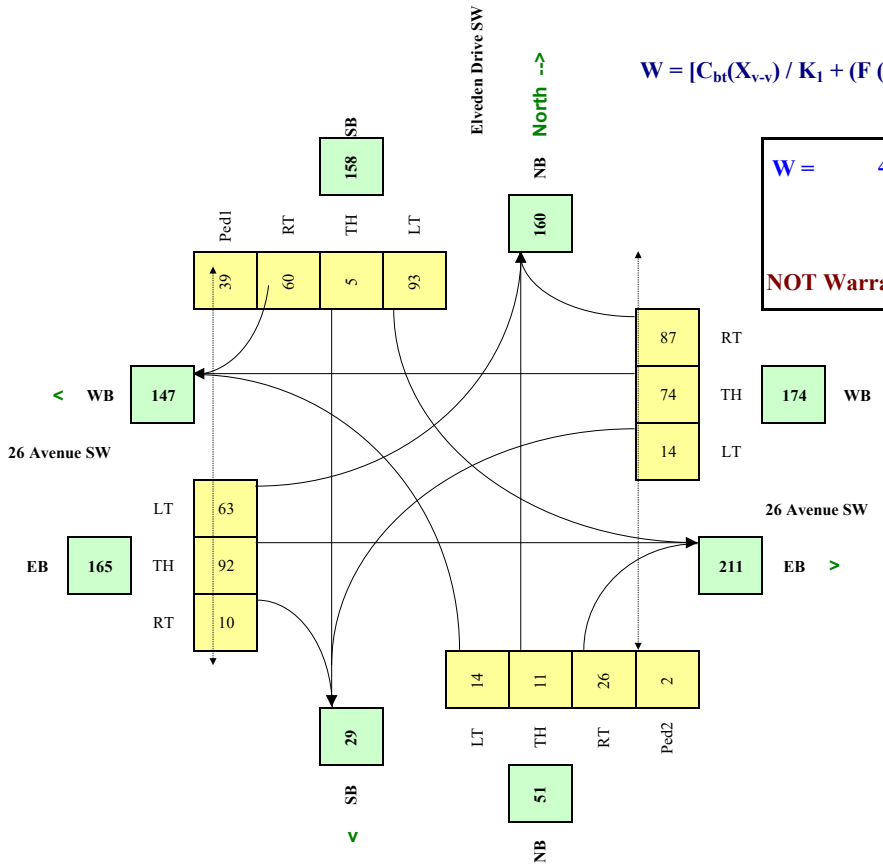
Demographics		
Elem. School/Mobility Challenged	(y/n)	y
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	y
Metro Area Population	(#)	1,700,000
Central Business District	(y/n)	n

Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
26 Avenue SW	EW	30	2.0%	y	0.0
Elveden Drive SW	NS		2.0%	n	

Set Peak Hours

Traffic Input	NB			SB			WB			EB			Ped1 NS	Ped2 NS	Ped3 EW	Ped4 EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S Side
Existing (6-Hour) (AM / PM) 63 61	84	63	157	559	29	358	86	441	519	376	551	60	235	10	117	183
Total (6-hour peak)	84	63	157	559	29	358	86	441	519	376	551	60	235	10	117	183
Average (6-hour peak)	14	11	26	93	5	60	14	74	87	63	92	10	39	2	20	31

Average 6-hour Peak Turning Movements



$$W = [C_{bt}(X_{v\text{-}v}) / K_1 + (F\,(X_{v\text{-}p})\,L) / K_2] \times C_i$$

W =	44	28	16
		Veh	*Ped*

NOT Warranted

RESET SHEET